Working with the CentraSite Business UI

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WEBMETHODS

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Table of Contents

About this Guide

This guide describes the administration-level tasks that you can perform in the CentraSite Business UI.

Document Conventions

Convention	Description
Bold	Identifies elements on a screen.
Narrowfont	Identifies storage locations for services on webMethods Integration Server, using the convention *folder.subfolder:service* .
UPPERCASE	Identifies keyboard keys. Keys you must press simultaneously are joined with a plus sign (+).
Italic	Identifies variables for which you must supply values specific to your own situation or environment. Identifies new terms the first time they occur in the text.
`Monospace font`	Identifies text you must type or messages displayed by the system.
{ }	Indicates a set of choices from which you must choose one. Type only the information inside the curly braces. Do not type the { } symbols.
|	Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the | symbol.
[ ]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [ ] symbols.
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

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1 API Management Solutions

Overview

This topic describes how to use CentraSite Business UI for API management.

CentraSite and API Management

A new wave of innovation is revolutionizing enterprises as mobile internet users exceed internet desktop users. Today's enterprises are looking at leveraging their existing and new IT assets across multiple channels that include not only the existing internet based browser-centric model, but more importantly, cater to mobile device users. In addition, new opportunities to leverage these assets with third party sources, allows for innovative solutions and new operating models.

CentraSite's Application Programming Interface (API) Management Solutions enable enterprises to selectively externalize their new and existing assets as APIs across various channels, monitor the interface's lifecycle with an integrated infrastructure, and make sure the needs of developers and application using the API are met.

With an integrated infrastructure, you can securely expose your APIs to external developers and partners (By partners we mean any external entities with which your enterprise interacts, such as suppliers and other vendors, dealers and distributors, customers, government agencies, trade organizations and so forth.), and provide design time and run time governance capabilities to the APIs.

Why Do APIs Need to Be Managed?

The APIs that an organization chooses to expose contain core assets the organization would naturally want to protect. As with the services they support, these APIs have a life cycle, need to be managed and governed, and require mediation and security at run time.

From an API provider's perspective, an API management tool is needed that enables the provider to do the following:

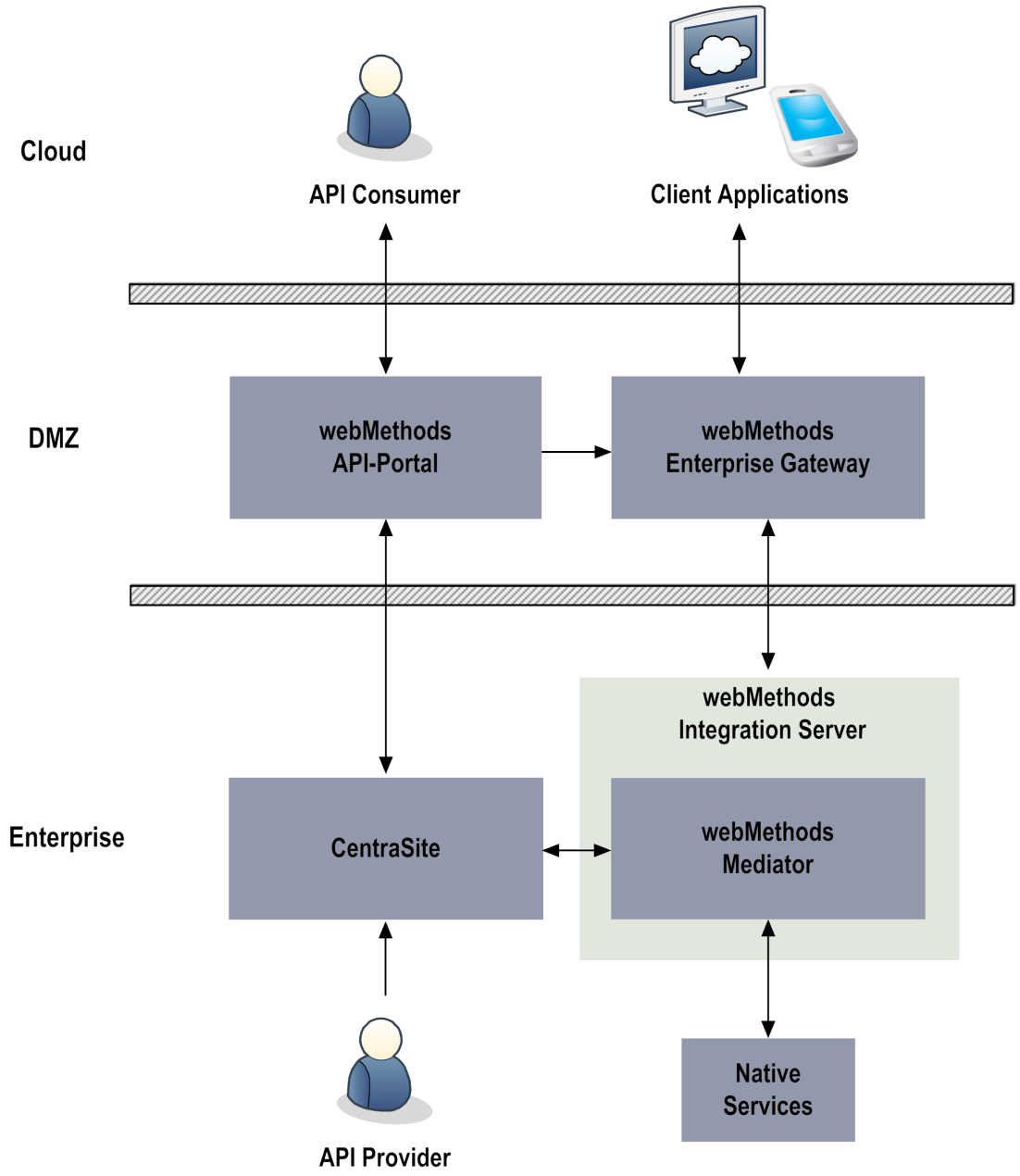
- Maintain an inventory of APIs and their associated resources.
- Publish, secure, and retire APIs according to defined service level agreements.
- Onboard API developers and give those developers the ability to publish APIs on behalf of the organization.
- Onboard API consumers who will use the published APIs in their own applications.
- Provide tiered access to APIs, for example according to authorization level.
- Track key performance indicators (KPIs) to help monitor and interpret API use.

From an API consumer's perspective, an API management tool should provide the ability to:

- Browse a catalog of APIs and obtain details and code samples for a specific API.
- Sign up and request and manage access tokens to download an API and its associated resources and documentation.
- Test the functionality of an API.
- Collaborate with other API consumers by way of forums or integration with social media.

The webMethods API Management Product Suite

The following diagram illustrates a typical scenario of products that make up the webMethods API management product suite.



In this scenario, webMethods API management suite products include the following:

- **webMethods API-Portal**. In API-Portal, API consumers browse the catalog of APIs that a provider has published. When the consumer finds an API of interest, the consumer can sign up and request an access token to download the API for further investigation and testing.

  API providers who have an API administrator role in API-Portal can also view dashboards containing details about API run-time usage.

Provided with each API-Portal installation is a sample portal called SAGTours. The SAGTours sample provides an end-to-end scenario using CentraSite, webMethods Mediator, and API-Portal to demonstrate how the fictitious company SAGTours has customized the content as well as the look and feel of an out-of-the-box API-Portal. For details about installing the SAGTours demo and using it as a basis for customizing your own portal, see *webMethods API-Portal Online Help*.

- **CentraSite**. CentraSite provides a registry and repository for APIs and offers complete design-time governance of those APIs. API providers add APIs to CentraSite by defining the APIs and their associated resources as objects. When APIs are ready to be made available to consumers, API providers publish the APIs from CentraSite to API-Portal.

  CentraSite administrators do the following API management tasks:

  - Register instances of API-Portal.
  - Manage API provider and API consumer user accounts.
  - Manage the API catalog.
  - Publish virtualized APIs to webMethods Mediator.
  - Configure policies to be enforced at run time.
  - Manage API and OAuth2 keys and API access tokens.

  When API providers add API services to CentraSite as assets, the providers can attach supporting documents to the API assets. Examples of such documents include input files containing WSDL or schema definitions, programming guides, sample code, legal notices and terms of use, and associated contracts and plans. When the APIs are published from CentraSite to API-Portal, these supporting documents are published to API-Portal as well.

- **webMethods Mediator**. Mediator provides complete run-time governance of APIs published to API-Portal. Mediator acts as an intermediary between service consumers and service providers. Mediator also enforces access token and operational policies such as security policies for run-time requests between consumers and native services. Using Mediator, API providers can do the following:

  - Enforce security, traffic management, monitoring, and SLA management policies.
  - Transform requests and responses into expected formats as necessary.
  - Perform routing and load balancing of requests.
  - Collect run-time metrics on API consumption and policy evaluation.

- **webMethods Integration Server**. Integration Server hosts Mediator and initiates connections to webMethods Enterprise Gateway. Integration Server also orchestrates the services and provides the connection to back-end systems.

- **webMethods Enterprise Gateway**. Enterprise Gateway protects API-Portal and the webMethods products installed behind the firewall from malicious attacks initiated

by external client applications. Administrators can secure traffic between API consumer requests and the execution of services on Mediator by doing the following:

- Filter requests coming from particular IP addresses and blacklist specified IP addresses.
- Detect and filter requests coming from particular mobile devices.
- Avoid additional inbound firewall holes through the use of reverse invoke.

Getting Started with API Management

Currently, CentraSite supports the API management concept for the base asset types:

- Service
- REST Service
- XML Service

and, their virtual types:

- Virtual Service
- Virtual REST Service
- Virtual XML Service

Instructions throughout the remainder of this document use the term *API* when referring to these base types, and *Virtual API* when referring to these virtual types in general.

Related sections of the CentraSite documentation provide the information you need for creating and managing your API.

The following steps outline how to get started with CentraSite for API management, as soon as a specific API is identified that needs to be exposed in your applications.

1. Create an API (asset) in the CentraSite Business UI. For procedures, see "Creating an API" on page 25.
2. Browse or Search for the API. For procedures, see *Run-Time Governance with CentraSite*.
3. View information stored for the API. For procedures, see "Viewing Details for an API" on page 28.
4. Specify the endpoints for the API. For procedures, see Editing the Properties of an API.
5. Create a virtual copy of the API. For procedures, see *Run-Time Governance with CentraSite*.
6. Configure the consumption settings for the API. For procedures, see Configuring the API Consumption Settings.

7. Publish the API to Mediator for consumption. For procedures, see *Run-Time Governance with CentraSite*.
8. Request an API by registering as consumer for the API. For procedures, see *Run-Time Governance with CentraSite*.
9. Review and approve the consumer registration requests for the API. For procedures, see Approving Requests for Consumer Onboarding Registration.
10. Review and approve the API key requests for consumption of the API. For procedures, see Approving Requests for Access Key Management.
11. Fetch and use your API key or OAuth token for consumption of the API. For procedures, see *Run-Time Governance with CentraSite*.

Creating an API

To create APIs in an organization, you must belong to a role that has the Create Assets or Manage Assets permission for that organization. For more information about roles and permissions, see *Getting Started with CentraSite*.

To create an API

1. In CentraSite Business UI, click the **Create Asset** activity. This opens the **Create a New Asset** wizard.
2. In **Basic Information** profile, specify the following fields:

In this field...	Do the following...
Name	*Mandatory.* Enter a name for the API. An API name can contain any character (including spaces). An API name does not need to be unique within the catalog. However, to reduce ambiguity, you should avoid giving multiple APIs of the same type the same name. As a best practice, we recommend that you adopt appropriate naming conventions to ensure that APIs are distinctly named within an organization.
Type	Choose the type of API that you want to create in the catalog. The APIs that are supported out-of-the-box are: Service, REST service, XML Service, Virtual Service, Virtual XML Service, and Virtual REST Service.
Organization	Choose the organization in which the API will be created. (The drop-down list will contain the list of organizations in which you are permitted to create APIs.) If you select an organization

In this field...	Do the following...
	other than your own organization, you will nevertheless be the owner of the API.
Version	*Optional.* Enter an identifier for the initial version of the API. This is the user-defined version, as opposed to the automatically assigned system version. You can enter any string in this field, i.e. the version identifier does not need to be numeric. You can also leave the field blank. You can later create new versions of the API.
Description	*Optional.* Enter a comment or descriptive information about the API.
URL or **File**	Specify whether the input file will be read from your local file system (the **File** option) or from a URL-addressable location on the network (the **URL** option). If the file you are importing resides on the network, specify its URL. If the file resides in your local file system, specify the file name. You can use the **Browse** button to navigate to the required folder.

3. Expand the **Advanced Settings** node. Enter the following information:

In this field...	Do the following...
Credentials	If you have specified a URL, and the site you want to access via the URL requires user authentication, enter a username and password for authentication at the URL site.
Resolution	Choose a resolution strategy, which will allow you to specify how an already existing imported/included file is handled. For each of the imported/included files you have one of these options: ■ Overwrite the importing file with new content. ■ Create a new version of the file with the new content (if, for example, you want to modify a WSDL file but want to retain its previous version).

4. Click **Next**.

   You will not be allowed to move to the next panel unless all of its required parameters have been set.

5. In the **Preview** panel, review the basic information for API before you actually add to CentraSite.

   If necessary, you can click **Previous** to return to the **Basic Information** profile and change your specifications.

6. Click **Save** to create the new API.

   If at any time you wish to abandon your unsaved API and return to your previous screen, just click the **Cancel** button.

7. Configure the API's extended attributes as described in "Editing the Properties of an API" on page 33.

Viewing the API List

The **Search Results** page displays the APIs in CentraSite. Note that this list displays APIs for which you have the View permission.

You can sort the list by attribute. To specify the sorting preference, select the attribute from the drop-down list labeled **Sort by**.

To view the list of APIs

1. In CentraSite Business UI, click the **Browse** link (in the upper left corner of the page).
   - Alternatively, select **Everything** or **Assets** from the drop-down beside the keyword search text box.
2. Expand the splitter pane using the given arrow.
3. In the **Narrow Your Results** section, locate **Additional Search Criteria**.
4. Select **Asset Types** from the drop-down list.
5. Enter the asset type in the text box. Click the plus button next to the text box or press *Enter* to add the asset type to the search recipe.
   - Else, click **Choose**. This opens the **Choose Asset Types** dialog.
     i. Navigate to the asset type and select the appropriate check box.
     ii. Click **OK**.
6. If you want to further filter the list to see a subset of the available APIs, Type a partial string in the **Keyword** text field. Click the plus button next to the text field or press *Enter* to add the keyword to the search recipe.
7. The **Search Results** page provides the following information about each API.

   Note: Only the first 7 attributes described below are displayed in this list by default. You can choose to display the additional attributes using the **View** menu.

Column	Description
Name	The name assigned to the API.
Description	Additional comments or descriptive information about the API.
Asset Type	The type of asset, “REST Service”.
Last Updated Date	The date on which the API was last modified.
Owner	The user to which the API belongs.
Organization	The organization to which the API belongs.
Version	The user-assigned version identifier for the API.

Viewing Details for an API

CentraSite provides several attributes that offer general and additional information about an API. The information rendered as attributes are grouped together as profiles.

When you view the details of an API, keep the following points in mind:

- The set of APIs that are available to you are the APIs on which you have View permission. You can obtain View permission on an API in the following ways:
  - By belonging to a role that includes any of the following permissions.

This permission...	Allows you to...
View Assets	View all APIs within a specified organization.
Modify Assets	View and edit all APIs within a specified organization.
Manage Assets	View, edit and delete all APIs within a specified organization, and set instance-level permissions on those APIs. This permission also allows you to create APIs.
Create Assets	Add new APIs to a specified organization. You automatically receive Full permission (which implies

This permission...	Allows you to...
	Modify and View permission) on all APIs that you create.

- By having View, Modify or Full instance-level permissions on a particular API.

- By default, all CentraSite users belong to the Asset Consumer role. This role includes the View Assets permission for the organization to which a user belongs.

  Having the Asset Consumer role gives you implicit view permission on all the APIs in your organization. You can view APIs from other organizations only if you are given permission to do so through the assignment of additional role-based or instance-level permissions.

- In rare instances, an administrator might not grant view permissions to all of the users in an organization. If the administrator of your organization has done this, you will need instance-level permissions on an API in order to view it. For more information about roles and permissions, see *Getting Started with CentraSite*.
- CentraSite renders the **Basic Information** profile by default.
- Beginning with version 9.8, **Advanced Information** profile is typically hidden from users who look for details of the object types to reuse. As a result, all the generic and custom profiles defined for an API are rendered in a flat structure.
- In the navigation panel of the API details page, the profile selected for rendering displays highlighted with a font awesome icon.
- CentraSite displays a font awesome icon if the profile has one or more mandatory attributes with empty value.
- Profiles that have no data are displayed in gray in the navigation panel when you are in view mode. These profiles become active in edit mode.
- Attributes that only have a value are displayed in the content panel when you are in view mode. However, CentraSite maintains all of the attributes associated with a profile in edit mode, irrespective of their values.
- You can view a tooltip text on mouse over of the truncated profile name. The tooltip text gives the fully qualified name of the profile as defined in the API's asset type definition.
- You can view a tooltip text for any attribute in a profile of the API's details by moving the cursor over the attribute. The tooltip text gives a summary of the attribute's purpose. The tooltip text shown is the content of the attribute's Description field, and is as defined for the API in the asset type definition.
- When you move the cursor over an action on the actions bar, a pop-up label displays the action name.
- The actions displayed vary depending on your current configuration settings and the type of asset instance.

- You will only see the profiles for which you have View permission. If you have Modify permission on the API, you can edit the API's attributes. For procedures, see "Editing the Properties of an API" on page 33.
- Profiles that have no data are displayed in gray in the navigation panel when you are in view mode. These profiles become active in edit mode.
- *This is of specific relevance to REST APIs.* Beginning with version 9.7, CentraSite supports the enhanced interface for REST APIs (in contrast, earlier versions of CentraSite supported a standardized interface for REST APIs). Documentation of the prior REST and XML service interface is available to Software AG customers who have a current maintenance contract in Empower, Software AG's global extranet (http://empower.softwareag.com/).
- If you have REST APIs that were created prior to version 9.7 or if you are using the current version of CentraSite Business UI, you will only be able to view details of these APIs in CentraSite Control. You cannot edit or delete REST APIs using the CentraSite Control user interface (not even if you belong to the CentraSite Administrator role). This is because, CentraSite Control does not support the enhanced REST interface. You will only be able to edit or delete REST APIs using the CentraSite Business UI.

To view the details that you have stored for an API, proceed as follows:

To view details for an API

1. Display the list of APIs (see "Viewing the API List" on page 27 for details).
2. In the displayed list, click the link of the API whose details you want to view. This shows the details of the API.

   The details include:

   - The API's basic information (version number, the asset type, owning organization, the current lifecycle state, the last modified date, owning user, the total number of watchers, consumers and pending approvals for the API, and a general description of the API).

     In addition, if the API has one or more associated APIs or access tokens, the basic information also includes the following details:

Attribute	Description
Virtual Services	Displays the virtual APIs that are associated to a native API. If the native API has a single virtual API associated to it, this attribute displays the name of that particular virtual API. If the native API has more than one virtual API associated to it, then this attribute simply displays the count of the associated virtual APIs. When you click this count, CentraSite lists the associated virtual APIs.

Attribute	Description
Native Service	Displays the native API to which a virtual API is associated.
Requested User	Displays the consumer who has requested for an API key or an OAuth2 Client access token.

- Additional information about the API (for example, technical and specification details, provider and consumer information, API-Portals to which the API is published and so on.)

3. On the individual profiles of the API, examine the attributes as necessary.

   An actions bar on the details page of the API contains a list of operations that can be performed on the API:

Action Name	Icon	Usage
Save		You use this action to save the change made to an API's information.
Edit		You use this action to view an API's information and modify them.
Version		You use this action to generate a new version of an API.
Delete		You use this action to remove an API.
Virtualize		You use this action to create a virtual copy of an API.
Attach		You use this action to attach a supporting document to an API.
Watch		You use this action to subscribe notifications when changes are made to an API's information.
Add to List		You use this action to add an API to the My Favorites list.

Action Name	Icon	Usage
Remove from List		You use this action to remove an API from the My Favorites list.
Export		You use this action to export an API from one instance of CentraSite to another.
Consume		You use this action to register as a consumer for an API.
Revert		You use this action to revert an API request than has been submitted for approval.
View Report		You use this action to generate and view reports for an API.
Permission		You use this action to assign instance-level and profile-level permissions on an API.
API Consumption Settings		You use this action to configure the client consumption settings for an API.
Publish		You use this action to publish an API to the Mediator for consumption.
Unpublish		You use this action to unpublish an API from the Mediator.
Publish to API-Portal		You use this action to publish an API to API-Portal.
Unpublish from API-Portal		You use this action to unpublish an API from API-Portal.

Editing the Properties of an API

This section describes how to view an API's attributes and how to change them.

When editing the properties of an API, keep the following general points in mind:

- If you are not the owner of the API, you cannot edit the API unless you have Modify permission on the API (granted though either a role-based permission or an instance-level permission).
- When you view the details for the API, you will only see profiles for which you have View permission. You will only be able to edit the profiles on which you have Modify permission.
- Some attributes accept only specific types of information. For example, if the asset type includes a URL type attribute, you must supply a URL when you edit that attribute. Other attribute types that require a specific type of value include Date attributes and Email attributes.
- Some attributes are designed to be read-only and cannot be edited even if they appear in an API on which you have Modify permission.
- *This is of specific relevance to REST APIs.* Beginning with version 9.7, CentraSite supports the enhanced interface for REST APIs (in contrast, earlier versions of CentraSite supported a standardized interface for REST APIs). Documentation of the prior REST and XML service interface is available to Software AG customers who have a current maintenance contract in Empower, Software AG's global extranet (http://empower.softwareag.com/).
- If you have REST APIs that were created prior to version 9.7 or if you are using the current version of CentraSite Business UI, you will only be able to view details of these APIs in CentraSite Control. You cannot edit REST API using the CentraSite Control user interface (not even if you belong to the CentraSite Administrator role). This is because; CentraSite Control does not support the enhanced REST interface. You will only be able to edit REST API using the CentraSite Business UI.

To edit the attributes of an API

1. In CentraSite Business UI, display the detail page of the API whose attributes you want to edit. If you need procedures for this step, see "Viewing Details for an API" on page 28.
2. In the action bar for the API, click **Edit** .
3. To edit an API's basic attributes (Name, Version, Organization, Description etc.), place the cursor in the appropriate field and modify the text as required.
4. To modify the extended attributes associated with the API, do the following:
   a. Select the profile that contains the attribute(s) that you want to modify.
   b. Edit the attributes on the profile as necessary.

c. Repeat the above steps for each profile that you want to edit.

5. When you have finished making your edits, click **Save** .

> **Note:** If at any time you want to abandon your unsaved edits, click **Close** . CentraSite will ask you if you want to save your edits. Click **No** to abandon your edits and return the API's attributes to their previous settings.

Specifying an Input File

Certain APIs contain one or more associated files. For example, the SOAP API includes a WSDL file and the XML / REST API includes a schema file. You can upload a new file or update an existing file for the API accordingly.

- For an instance of SOAP-based API. Attach the WSDL file to the catalog entry using **Attach** in the API's actions menu.
- For an instance of XML or REST-based API. Attach the schema file to the catalog entry using **Attach** in the API's actions menu.

Specifying a Native Endpoint

APIs (Service, XML service and REST service) can contain one or more operations or resources.

- For an instance of SOAP-based API If you are using WSDLs along with your SOAP API, attach the WSDL file to the catalog entry using **Attach** in the API's actions menu.

  CentraSite automatically populates the WSDL URL and the associated operations in the **Technical Details** profile.

- For an instance of XML or REST-based API If you are using XML schemas along with your XML / REST API, attach the schema file to the catalog entry using **Attach** in the API's actions menu.

  CentraSite automatically populates the schema URL and the associated resources in the **Technical Details** profile.

  After you have specified a schema, specify the following:

Attribute	Description
Endpoint	An endpoint for the API that allows consumers of the API to find and communicate with the API.
Namespace	A binding namespace for the endpoint.
Resource	A name for the resource. You can specify multiple resources for an endpoint.

Attribute	Description
HTTP Method	HTTP request method(s) for bridging protocols (GET, POST, PUT, DELETE).

Setting Permissions on an API

By default, everyone in your organization is permitted to view the APIs that you create. However, only you (as the owner of the API) and users who belong to a role with the Manage Assets permission for your organization are allowed to view, edit and delete these API. To enable other users to view, edit and/or delete an API that you have created, you must modify the API's permission settings.

Who Can Set Permissions on an API?

When setting permissions on APIs, keep the following points in mind:

- To set permissions on an API, you must belong to a role that has the Manage Assets permission or have the Full instance-level permission on the API itself.
- You can assign permissions to any individual user or group defined in CentraSite.
- The groups to which you can assign permissions include the following system-defined groups:

Group Name	Description
Users	All users within a specified organization.
Members	All users within a specified organization and its child organizations.
Everyone	All users of CentraSite*including guest users* (if your CentraSite permits access by guests).

- If a user is affected by multiple permission assignments, the user receives the union of all the assignments. For example, if group ABC has Modify permission on an API and group XYZ has Full permission on the same API, users that belong to both groups will, in effect, receive Full permission on the API.

  The same principle applies to users who have both role-based permissions and instance-level permissions on the same API. In this case, users receive the union of the role-based permission and the instance-level permission on the API.
- If you intend to give users in other organizations access to the API, and the API includes supporting documents that you want those users to be able to view, make

sure you give those users permission to view the supporting documents as well as the API itself.

Setting Instance Level Permissions on an API

To assign permissions to an API

1. In CentraSite Business UI, display the details page for the API whose permissions you want to edit. If you need procedures for this step, see "Viewing Details for an API" on page 28.
2. In the action bar for the API, click **Permissions** .
3. In the **Assign Permissions** dialog box, select the users or groups to which you want to assign permissions.
4. Use the View, Modify and Full check boxes to assign specific permissions to each user and/or group in the **User/Group Permissions** list as follows:

Permission	Allows the selected user or group to...
View	View the API.
Modify	View and edit the API.
Full	View, edit and delete the API. This permission also allows the selected user or group to assign instance-level permissions to the API.

5. When you assign instance-level permissions on an API, the related objects (for example, bindings, operations, interfaces etc.,) receive the same permissions that are assigned on the API.
6. Expand the **Advanced Settings** section, and do the following:
   a. To ensure that the dependent APIs (for example, a WSDL or schema) receive the same permissions, select the checkbox **Propagate asset permissions**. If you unselect this checkbox, the permissions of the dependent APIs will not be modified.
   b. To ensure that the dependent APIs of the same object type receive the same profile permissions, select the checkbox **Propagate profile permissions**.
7. If at any time you wish to remove one or more users' or groups' permissions, click the **Delete** icon next to the user or group name.
8. Click the **Ok** button to save the permission settings.
9. When you have finished making your changes, click the **Save** icon.

Setting Instance Level Profile Permissions on an API

To assign instance-level permissions on an API's profiles

1. Choose the API's **Permissions** action.
2. Locate the user or group for which you wish to set profile permissions. Then click the arrow icon beside the user or group name to open the profile permission list.
3. Use the checkboxes to indicate which profiles the user or group is permitted to view or modify.
4. Click **Ok** to save the new permission settings.
5. When you have finished making your changes, click the **Save** icon.

Configuring the API Consumption Settings

The APIs represented in the CentraSite Business UI require that requests for consumption include a unique identifier for consumption. A unique identifier can do the following:

- **Identify** who is making a request.
- **Authenticate and validate** the client who is making a request.
- **Authorize** whether the client making a request is allowed to make that request.

CentraSite supports two separate mechanisms to create a unique identifier for clients to use for consuming APIs: API keys and OAuth 2.0 tokens.

The API provider (owner of the API) enforces the type of authentication (API key or OAuth2 token) required for consuming an API. Based on the authentication enforced for the API, an API consumer will request the API key or the OAuth2 token in order to consume (call) that API.

Who Can Configure the API Consumption Settings?

To configure the API consumption settings, you must belong to a role that has the Modify Assets permission for the organization in which the API resides. Else, at least have the Full instance-level permission on the API itself. However, if you belong to a role that has the Manage Assets permission, you can configure the consumption settings for APIs in all organizations. To see a list of the predefined roles that include the Manage Assets or Manage Assets permission, see *Getting Started with CentraSite*.

Note: Until you have the instance-level Modify permission on an API (at a minimum), you will not be able to see the **API Consumption Settings** action in the API details page.

Configuring the API Consumption Settings for API Key Authentication

The API Provider (and users who belong to a role with the permissions stated above) can enforce API key authentication by configuring the API's detail page. Such users can configure the following characteristics about client requests for API keys:

- Specify the approval requirements for clients requesting API keys.

  You can specify that requests must be approved by approver groups of your choosing, or you can specify that requests will be automatically approved.

- Configure email messages to be sent to:
  - The approver groups when requests are submitted for approval.
  - The clients to inform them of their approval status.
- Specify the expiration of the API key.

Clients that want to use the API key to call (consume) an API in CentraSite must:

1. Register as a consumer for the API, as specified in *Run-Time Governance with CentraSite*.

   When the client registration request is approved, the client receives an API key (a base64-encoded string of the `consumer-key:consumer-secret` combination). It works for both SOAP and REST calls.

2. To call the API, the client must pass the API key in an HTTP request header or as a query string parameter. The use of this key establishes the client's identity and authentication.

   For information about how consumers will use generated API keys, see *Run-Time Governance with CentraSite*.

To configure the API Consumption Settings for API key authentication

1. In CentraSite Business UI, display the details page for the API whose key settings you want to configure. For procedures, see "Viewing Details for an API" on page 28.
2. In the action bar for the API, click **API Consumption Settings**  .
3. In the **API Consumption Settings** dialog, select **API Keys**.
4. In the **Usage Contract Expires After** field, specify the maximum time that an API key will be valid for use with the API. The key expires after the set number of seconds, minutes, hours, days, weeks, months, or years.

   The time is specified in the following form: # y # m # w # d # h # min # s, where:

   - # is a real number
   - *y* indicates the year

- *m* indicates the month
- *w* indicates the week
- *d* indicates the day
- *h* indicates the hour
- *min* indicates the minute
- *s* indicates the second

An example of a time: 1y 2m 3w 7d 5h 30min 15s. This value indicates that the API key will remain active until 1 year, 2 months, 3 weeks, 7 days, 5 hours, 30 minutes, and 15 seconds.

The default value of **Unlimited** denotes that the API key never expires.

When an API key expires, you can renew the expired API key in the following ways:

- You can re-submit an API key request for consumption.
- You (as an API provider) can renew the API key using the **Renew** action. For procedures, see "Renewing an API Key" on page 49.

5. Select the **Require Approval** checkbox if you want to initiate an approval workflow for generating and renewing the API key.

   When a client requests for generating or renewing an API key that triggers an approval, CentraSite initiates an approval workflow and submits the client's request to the designated group of approvers.

   Approvers receive the approval request in the **Pending Approval Requests** in the API details page. Approvers whose user account includes a valid email address also receive an email message informing them that a request is awaiting their approval.

   CentraSite does not execute the client's requested operation until it obtains the necessary approvals. If an approver rejects the request, CentraSite notifies the requestor.

   If you choose not to select the **Require Approval** checkbox, the request is automatically approved, and CentraSite executes the client's registration request.

6. If you select the **Require Approval** checkbox, complete the following fields:

Field	Description	
Approval is needed from	`All`	Requests must be approved by all users specified in **Approver Group**. (It does not matter in which order the approvals are issued.) A single rejection will cause the request to be rejected.
	`Any`	*Default*. Requests can be approved or rejected by any single user in **Approver Group**. Only one user

Field	Description
	from the set of authorized approvers is required to approve or reject the request.
Approver Group	Specify the approver group. You can specify multiple approver groups.

For more information on approval management, see "Working with Approval Workflows" on page 218.

7. In the **Key Generation Settings** section, complete the following fields so that CentraSite will send emails consumers initially request API keys.

   CentraSite automatically populates the default email settings (Subject, Template, Action) with the `<API Key Settings>` information from the centrasite.xml properties file.

Field	Description
Subject	The text that will appear on the subject line of the email.
Template	The template that will be used to generate the body of the email message. For information about using email templates, see "Email Notification Templates and Tokens" on page 65. To specify an additional template, use the plus button to add additional rows. **Important:** CentraSite sends notifications about a request status to the consumer requesting for an API key; only if the client has enabled the **Email** notifications option in his User Preferences page.
Action	Specify the approval action.

Value	Description
`Approved`	Default. CentraSite sends an email message to the client when requests are approved. If you choose this option, you can use the predefined template APIKeyGenerationSuccess.html for approval notifications if you do not

Field	Description
	want to create an email template of your own.
`Approval Request`	CentraSite sends an email message to the approver(s) when requests are submitted for approval. If you choose this option, you can use the predefined template PendingApprovalNotification.html for pending-approval notifications if you do not want to create an email template of your own.
`Rejected`	CentraSite sends an email message to the client when requests are rejected. If you choose this option, you can use the predefined template RejectionNotification.html for rejection notifications if you do not want to create an email template of your own.

8. In the **Key Renewal Settings** section, complete the following fields so that CentraSite will send emails when consumers request API key renewals.

   CentraSite automatically populates the default email settings (Subject, Template, Action) with the `<API Key Settings>` information fetched from the centrasite.xml properties file.

Field	Description
Subject	The text that will appear on the subject line of the email.
Template	The template that will be used to generate the body of the email message. For information about using email templates, see "Email Notification Templates and Tokens" on page 65. To specify an additional template, use the plus button to add additional rows. **Important:** CentraSite sends notifications to the client only if the client has enabled the **Email** notifications option in his User Preferences page.

Field	Description
Action	Specify the approval action. **Value** — **Description** `Approved` — Default. CentraSite sends an email message to the client when requests are approved. If you choose this option, you can use the predefined template APIKeyRenewalSuccess.html for approval notifications if you do not want to create an email template of your own. `Approval Request` — CentraSite sends an email message to the approver group(s) when requests are submitted for approval. If you choose this option, you can use the predefined template APIKeyRenewalPendingNotification.html for pending-approval notifications if you do not want to create an email template of your own. `Rejected` — CentraSite sends an email message to the client when requests are rejected. If you choose this option, you can use the predefined template RejectionNotification.html for rejection notifications if you do not want to create an email template of your own.

9. In the **Key Revocation Settings** section, complete the following fields so that CentraSite will send emails when consumers request to have API keys revoked.

   CentraSite automatically populates the default email settings (Subject, Template, Action) with the `<API Key Settings>` information fetched from the centrasite.xml properties file.

Field	Description
Subject	The text that will appear on the subject line of the email.

Field	Description
Template	The template that will be used to generate the body of the email message to the client. For information about using email templates, see "Email Notification Templates and Tokens" on page 65. If you choose this option, you can use the predefined template APIKeyRevocationSuccess.html for success notifications if you do not want to create an email template of your own. **Important** CentraSite sends notifications to the client only if the consumer has enabled the **Email** notifications option in his User Preferences page.

10. Click the **Configure** button.

    CentraSite internally creates and activates an API Key Generation Policy specific to the API. When a client registers as a consumer, this policy will start the process of approving and generating the API key.

Configuring the API Consumption Settings for OAuth2 Authentication

The type of OAuth2 authorization grant that Mediator supports is “Client Credentials”. Client credentials are used as an authorization grant when the client is requesting API to protected resources based on an authorization previously arranged with the authorization server. That is, the client application gains authorization when it successfully registers with CentraSite as a consumer.

The API provider (and users who belong to a role with the permissions stated above) can enforce OAuth 2.0 authentication by configuring the API’s detail page. Such users can configure the following characteristics about the approval process of granting OAuth2 client credentials:

- Specify the approval requirements for client requests for client credentials.

  You can specify that requests must be approved by approver groups of your choosing, or you can specify that requests will be automatically approved.

- Configure email messages to be sent to:
  - The approver groups when requests are submitted for approval.
  - The clients to inform them of their approval status.

Clients that want to use the OAuth2 protocol to call APIs in CentraSite must:

1. Register as a consumer for the API, as specified in *Run-Time Governance with CentraSite*.

When the client registration request is approved, the client receives client credentials (a client_id and client_secret).

2. Request an OAuth2 access token by passing the client credentials to the Mediator-hosted REST service mediator.oauth2.getOAuth2AccessToken. This service will provide an OAuth2 access token to the client. For more information about this service, see *Run-Time Governance with CentraSite*.

3. To call the API, the client must pass their OAuth access token in an HTTP request header.

   An OAuth2 token is a unique token that a client uses to invoke APIs using the OAuth 2.0 protocol. The token contains an identifier that uniquely identifies the client. The use of a token establishes the client's identity, and is used for both the authentication and authorization.

To configure the API Consumption Settings for OAuth 2.0 authentication

1. In CentraSite Business UI, display the details page for the API whose OAuth 2.0 token settings you want to configure. For procedures, see "Viewing Details for an API" on page 28.
2. In the action bar for the API, click **API Consumption Settings**  .
3. In the **API Consumption Settings** dialog, select **OAuth2**.
4. In the **Refresh Token After** field, specify the maximum time that an OAuth 2.0 token will be valid for use with the API. The token automatically refreshes after the set number of seconds, minutes, hours, days, weeks, months, or years.

   The time is specified in the following form: # y # m # w # d # h # min # s, where:

   - *#* is a real number
   - *y* indicates the year
   - *m* indicates the month
   - *w* indicates the week
   - *d* indicates the day
   - *h* indicates the hour
   - *min* indicates the minute
   - *s* indicates the second

   An example of a time interval: 1y 2m 3w 7d 5h 30min 15s. This value indicates that the OAuth 2.0 token will refresh after 1 year, 2 months, 3 weeks, 7 days, 5 hours, 30 minutes, and 15 seconds.

   The default value of **Unlimited** denotes that the OAuth 2.0 token never expires.

5. Select the **Require Approval** checkbox if you want to initiate an approval workflow for generating the client credentials.

When a client request triggers an approval, CentraSite initiates an approval workflow and submits the client's request to the designated group of approvers.

Approvers receive the approval request in the **Pending Approval Requests** in the API details page. Approvers whose user account includes a valid email address also receive an email message informing them that a request is awaiting their approval.

CentraSite does not execute the client's requested operation until it obtains the necessary approvals. If an approver rejects the request, CentraSite notifies the requestor.

If you choose not to select the **Require Approval** checkbox, the request is automatically approved, and CentraSite executes the client's registration request.

6. If you select the **Require Approval** checkbox, complete the following fields:

Field	Description	
Approval is needed from	`All`	Requests must be approved by all users specified in **Approver Group**. (It does not matter in which order the approvals are issued.) A single rejection will cause the request to be rejected.
	`Any`	*Default.* Requests can be approved or rejected by any single user in **Approver Group**. Only one user from the set of authorized approvers is required to approve or reject the request.
Approver Group	Specify the approver group. You can specify multiple approver groups.	

For more information on approval management, see "Working with Approval Workflows" on page 218.

7. In the **Key Generation Settings** section, complete the following fields so that CentraSite will send emails when a client requests a token.

   CentraSite automatically populates the default email settings (Subject, Template, Action) with the `<API Key Settings>` information from the centrasite.xml properties file.

Field	Description
Subject	The text that will appear on the subject line of the email.
Template	The template that will be used to generate the body of the email message.

Field	Description
	For information about using email templates, see "Email Notification Templates and Tokens" on page 65. To specify another template, use the plus button to add additional rows. **Important:** CentraSite sends notifications about a request status to the client only if the client has enabled the **Email** notifications option in his User Preferences page.
Action	Specify the approval action.

Value	Description
`Approved`	Default. CentraSite sends an email message to clients when requests are approved. If you choose this option, you can use the predefined template APIKeyGenerationSuccess.html for approval notifications if you do not want to create an email template of your own.
`Approval Request`	CentraSite sends an email message to the approver group(s) when requests are submitted for approval. If you choose this option, you can use the predefined template PendingApprovalNotification.html for pending-approval notifications if you do not want to create an email template of your own.
`Rejected`	CentraSite sends an email message to clients when requests are rejected. If you choose this option, you can use the predefined template RejectionNotification.html for rejection notifications if you do not want to create an email template of your own.

8. Click the **Configure** button.

When a client registers as a consumer, an approval request is sent to the approvers you specified above.

Managing API Keys and OAuth 2.0 Tokens

This section describes to how an API Provider (owner) can manage API keys and OAuth2 tokens.

To manage the various operations (Generate, Renew, Revoke or Delete) on an API key or OAuth token, you must belong to a role that has the Modify Assets permission for the organization in which the API resides. Else, at least have the Full instance-level permission on the API itself. However, if you belong to a role that has the Manage Assets permission, you can configure the consumption settings for APIs in all organizations. To see a list of the predefined roles that include the Manage Assets or Modify Assets permission, see *Getting Started with CentraSite*.

Satisfying Key and OAuth Token Generation Requirements

For a user to consume an API with the API key or an OAuth token, the following prerequisites must be met:

- Ensure that you have configured the API Consumption Settings so that the API is configured for either API key authentication or OAuth2 authentication, as described in Configuring the API Consumption Settings.
- Ensure that a run-time gateway instance (for example, Mediator) is up and running. For information on creating and managing gateways, see *Run-Time Governance with CentraSite*.

The API provider (and users who belong to a role with the permissions stated above) can satisfy the prerequisites.

Sometimes you might have to require an approval to generate an API key or OAuth token. If you selected the **Require Approval** option when you configure the API's consumption settings, CentraSite will not generate the API key or OAuth token until the required approvals are obtained. However, if an approval workflow is not configured for the API, the key or OAuth token is generated.

Once the API key or OAuth 2.0 request is approved by the designated approvers, an email notification is sent to both the API provider and API consumer.

CentraSite provides predefined email templates intended to be used for the API key or OAuth token generation. By default, these templates are configured in the centrasite.xml file. But, if you do not want to use the predefined email templates, you can create your own templates and configure the centrasite.xml file as necessary. For more information on how to configure the email templates for API key or OAuth token generation, see Configuring the Email Templates for API Key or OAuth Token Generation.

For more information on how to configure the email notifications for API key or OAuth token generation in the CentraSite Business UI, see "Configuring the API Consumption Settings" on page 37.

Configuring the Email Templates for API Key or OAuth Token Generation

Notifications informing details and usage of the new API key or OAuth token are generated and sent to both the API provider and API consumer.

There are three kinds of key generation notifications:

- An API key or OAuth token request is pending for approval - an information type message to the API provider.
- Your API key or OAuth token request is approved - an information type message to the API consumer.
- Your API key or OAuth token request is rejected - an information type message to the API consumer.

You can configure delivery of such notifications in the centrasite.xml configuration file.

To configure notifications for API key or OAuth token generation

1. Use a text editor to open the custom centrasite.xml file. The configuration file is located in the <*CentraSiteInstallDir*> \cast\cswebapps\BusinessUI\ directory.
2. Locate the `KeyGenerationSettings` element in the file.

   The key generation notification settings would look like the following:

```
<KeyGenerationSettings>
   <Approve
     subject="CS_MSG_INMBU_DEFAUL_EMAIL_SUBJECT_ACCESS_KEY_GENERATION_SUCCES
S_OR_APPROVE"
     template="APIKeyGenerationSuccess.html" />
   <ApprovalRequest
     subject="CS_MSG_INMBU_DEFAUL_EMAIL_SUBJECT_ACCESS_KEY_GENERATION_PENDI
NG"
     template="PendingApprovalNotification.html" />
   <Reject
     subject="CS_MSG_INMBU_DEFAUL_EMAIL_SUBJECT_ACCESS_KEY_GENERATION_REJE
CT"
     template="RejectionNotification.html" />
</KeyGenerationSettings>
```

3. Uncomment the section `API Key Settings` to enable key generation notifications.
4. Use the `Approve` property to set the subject and body of the notification message for the consumers whose API key or OAuth token request is approved.
5. Use the `ApprovalRequest` property to set the subject and body of the notification message for the provider who has an API key or OAuth token request pending for approval.
6. Use the `Reject` property to set the subject and body of the notification message for the consumers whose API key or OAuth token request is rejected.

7. Save and close the file.
8. Restart Software AG Runtime.

Renewing an API Key

After an API key is generated, sometimes you might have to renew the old key due to expiration or security concerns. You can also change expiration period for the API key or set it so that the key never expires.

The API provider (and users who belong to a role with the permissions stated above), can renew an API key.

Note: The **Renew** option is not available for the OAuth 2.0 tokens.

To renew an API key, the following prerequisites must be met:

- Ensure that you have configured the API Consumption Settings so that the API is configured for either API key authentication or OAuth2 authentication, as described in Configuring the API Consumption Settings.
- Ensure that a gateway instance (for example, Mediator) is up and running. For information on creating and managing gateways, see *Run-Time Governance with CentraSite*.

The API provider (and users who belong to a role with the permissions stated above), can renew an API key.

To renew an API key

1. Display the details page for the API whose key you want to renew. If you need procedures for this step, see "Viewing Details for an API" on page 28.
2. Locate the hyperlinked text “N” Consumers in the description area of the **Basic Information** profile, for example, “N” Consumers.
3. Click on the hyperlinked number “N” to see the list of keys available for the API.
4. Click on the hyperlinked API key name to see more information about who consume the API.
5. Review expiration date of the API key. A value of "Unlimited" indicates that the key never expires.
6. Locate the API key you want to renew.
7. Mouse over the API key name, and click on the **Renew** icon displayed to the right hand side.

   Important: If the API key has an unlimited expiration period, the **Renew** icon is *not* visible in the user interface.

Changing the Default Key Expiration Interval

API keys have a default expiration period, which you specify when you configure the API key consumption settings. For more information, see "Configuring the API Consumption Settings" on page 37.

You can also change expiration period for the API key or set it so that the key never expires.

Sometimes you might have to require an approval to renew (refresh) the API key. If you selected the **Require Approval** option when you configured the API key consumption settings, CentraSite will not renew the API key until the required approvals are obtained. However, if an approval workflow is not configured for the API, the key is renewed instantly. For more information about approval actions, see "Working with Approval Workflows" on page 218.

Once the API key renewal request is approved by the designated approvers, an email notification informing the new validity of API key is sent to both the API provider and API consumer.

CentraSite provides predefined email templates only intended for the API key renewal. By default, these templates are configured in the centrasite.xml file. But, if you do not want to use the predefined email templates, you can create your own templates and configure the centrasite.xml file as necessary. For more information on how to configure the email templates for API key renewal, see "Configuring the Email Templates for Key Renewal" on page 51.

The API key with the new validity is republished to the Mediator, triggered by a *Deploy API Key* action that is included in the API key renewal policy.

For more information on how to configure the email notifications for API key renewal in the CentraSite Business UI, see "Configuring the API Consumption Settings" on page 37.

Configuring the Email Templates for Key Expiration

Notifications informing about upcoming API key expiration and generated API key expired are generated and sent to the API consumer.

A consumer can have two kinds of key expiration notifications:

- API key has expired - a critical event type message.
- API key expires soon - a warning type message. It will be generated "n" days before the key expiration date and displayed every day before the key actually expires.

To configure templates for API key expiration

1. Use a text editor to open the custom configuration centrasite.xml file. The configuration file is located in the <*CentraSiteInstallDir*> \cast\cswebapps \BusinessUI\ directory.
2. Locate the `ExpiryNotificationSettings` element in the file.

The expiration notification settings would look like the following:

```
<ExpiryNotificationSettings>
  <ExpiredNotification
     subject="Access key has expired!"
     template="APIKeyExpiredNotification.html" />
  <AdvanceNotification
     subject="Access key about to expire!"
     template="APIKeyExpirationNotification.html" />
  <SchedulerExecutionFrequency>12h</SchedulerExecutionFrequency>
  <AdvanceNotificationInterval>5d</AdvanceNotificationInterval>
</ExpiryNotificationSettings>
```

3. Uncomment the section `API KEY EXPIRATION CONFIGURATION` to enable key expiration notifications.
4. Use the `ExpiredNotification` property to set the subject and body of the notification message for the consumers whose API key has expired.
5. Use the `AdvanceNotification` property to set the subject and body of the notification message for the consumers whose API keys are due to expire.
6. Use the `SchedulerExecutionFrequency` attribute to specify how frequently to check for the expiration status of API keys. Enter the time interval in the following format: years (y), months (m), days (d), hours (h), minutes (min).
7. Use the `AdvanceNotificationInterval` attribute to specify how many days should be consumers notified before the key expiration (in days). Then the consumers are entitled receive a notification message as configured in the `AdvanceNotification` property. Enter the time interval in the following format: years (y) months (m) days (d) hours (h) minutes (min).
8. Save and close the file.

Important: If you have set up a Software AG Runtime cluster with load balancing, locate the `CENTRASITE ACCESS URL CONFIGURATION` element, and ensure that the `lb_or_reverse_proxy_url` attribute in the following property points to the load balancer's IP/Port.

```
<CentraSite url="http://localhost:53305/CentraSite/CentraSite"
lb_or_reverse_proxy_url="http://localhost:53307"/>
```

9. Restart Software AG Runtime.

Configuring the Email Templates for Key Renewal

Notifications informing the new validity of the API key are generated and sent to both the API provider and API consumer.

There are three kinds of key renewal notifications:

- An API key renewal request is pending for approval - an information type message to the API provider.
- Your API key renewal request is approved - an information type message to the API consumer.

- Your API key renewal request is rejected - an information type message to the API consumer.

You can configure delivery of such notifications in the centrasite.xml configuration file.

To configure email templates for API key renewal

1. Use a text editor to open the custom centrasite.xml file. The configuration file is located in the <*CentraSiteInstallDir*> \cast\cswebapps\BusinessUI\ directory.
2. Locate the `KeyRenewalSettings` element in the file.

   The key renewal notification settings would look like the following:

```
<KeyRenewalSettings>
<Approve
  subject="CS_MSG_INMBU_DEFAUL_EMAIL_SUBJECT_ACCESS_KEY_RENEWAL_SUCCESS_OR_
APPROVE"
  template="APIKeyRenewalSuccess.html" />
<ApprovalRequest
  subject="CS_MSG_INMBU_DEFAUL_EMAIL_SUBJECT_ACCESS_KEY_RENEWAL_PENDING"
  template="APIKeyRenewalPendingNotification.html" />
<Reject
  subject="CS_MSG_INMBU_DEFAUL_EMAIL_SUBJECT_ACCESS_KEY_RENEWAL_REJECT"
  template="RejectionNotification.html" />
</KeyRenewalSettings>
```

3. Uncomment the section `API Key Settings` to enable key renewal notifications.
4. Use the `Approve` property to set the subject and body of the notification message for the consumers whose API key renewal request is approved.
5. Use the `ArppovalRequest` property to set the subject and body of the notification message for the provider who has an API key renewal request pending for approval.
6. Use the `Reject` property to set the subject and body of the notification message for the consumers whose API key renewal request is rejected.
7. Save and close the file.
8. Restart Software AG Runtime.

Revoking an API Key

After issuing an API key, you might want to revoke the key if you find serious error in the API. When you revoke an API key, client access to the associated API is blocked, and the client that is assigned that key can no longer access the resources exposed by that API.

The API provider (and users who belong to a role with the permissions stated above), can revoke an API key.

Note: The **Revoke** option is not available for the OAuth 2.0 tokens.

To revoke an API key, the following prerequisites must be met:

- Ensure that you have configured the API Consumption Settings so that the API is configured for either API key authentication or OAuth2 authentication, as described in Configuring the API Consumption Settings.
- Ensure that a gateway instance (for example, Mediator) is up and running. For information on creating and managing gateways, see *Run-Time Governance with CentraSite*.

To revoke an API key

1. Display the details page for the API whose key you want to revoke. If you need procedures for this step, see "Viewing Details for an API" on page 28.
2. Locate the hyperlinked text "N" Consumers in the description area of the **Basic Information** profile, for example, “N” Consumers.
3. Click on the hyperlinked number “N” to see the list of keys available for the API.
4. Click on the hyperlinked API key name to see more information about who consume the API.
5. Locate the API key you want to revoke.
6. Mouse over the API key name, and click on the **Revoke** icon displayed to the right hand side.

   A confirmation message appears that the API key will be revoked.

Once the API key revocation is processed, CentraSite sends an email message to the API consumer informing that the request has been processed successfully.

CentraSite provides predefined email template only intended for the API key revocation. By default, this template is configured in the centrasite.xml file. But, if you do not want to use the predefined email template, you can create your own template and configure the centrasite.xml file as necessary. For more information on how to configure an email template for API key revocation, see Configuring the Email Notification for Key Revocation.

For more information on how to configure an email notification for API key revocation in the CentraSite Business UI, see "Configuring the API Consumption Settings" on page 37.

Configuring the Email Notification for Key Revocation

Notification informing the successful processing of an API key revocation is sent to the API consumer.

You can configure delivery of such notification in the centrasite.xml configuration file.

To configure email templates for API key revocation

1. Use a text editor to open the custom centrasite.xml file. The configuration file is located in the <*CentraSiteInstallDir*> \cast\cswebapps\BusinessUI\ directory.
2. Locate the `KeyRevocationSettings` element in the file.

The key revocation notification settings would look like the following:

```
<KeyRevocationSettings>
  <Approve
     subject="CS_MSG_INMBU_DEFAUL_EMAIL_SUBJECT_ACCESS_KEY_REVOCATION_NOTIFI
CATION"
     template="APIKeyRevocationSuccess.html"/>
</KeyRevocationSettings>
```

3. Uncomment the section `API Key Settings` to enable key revocation notifications.
4. Use the `Approve` property to set the subject and body of the notification message for the consumers whose API key revocation request is processed successfully.
5. Save and close the file.
6. Restart Software AG Runtime.

Deleting an API Key

Deleting an API key permanently removes the entry for the API key (that is, it removes the instance of the API key from the CentraSite registry/repository). Deleting an API key will not remove the API that is associated with it.

The API provider (and users who belong to a role with the permissions stated above), can delete an API key.

When you delete an API key, keep the following points in mind:

- You cannot delete an API key that is in the “pending” mode (example, awaiting a renew approval).
- Deletion of an API key will succeed only if the key is already revoked.

Deleting a Single API Key

To delete a single API key

1. Display the details page for the API key that you want to delete. If you need procedures for this step, see "Viewing Details for an API" on page 28.
2. In the action bar for the API, click **Delete**  .
3. When you are prompted to confirm the delete operation, click **Yes**.

   The API key is permanently removed from the CentraSite registry.

Deleting a Set of API Keys

You can delete multiple API keys in a single step. The rules described above for deleting a single API apply also when deleting multiple API keys.

To delete multiple APIs in a single operation

1. Display the list of APIs. If you need procedures for this step, see "Viewing the API List" on page 27.
2. Mark the checkbox next to the name of each API key you want to delete.
3. In the action bar for the API, click **Delete** .

> **Note:** If one or more or the selected API keys is in pending state (e.g., awaiting approval) or has a consumer registration request pending for it, CentraSite will display an error message and ignore those keys.

Revoking an OAuth2 Client

When you revoke an OAuth2 client, access to the associated API is blocked, and you can no longer access the resources exposed by that API.

To revoke an OAuth2 client, the following prerequisites must be met:

- Ensure that you have configured the API Consumption Settings so that the API is configured for OAuth2 authentication, as described in Configuring the API Consumption Settings.
- Ensure that a gateway instance (for example, Mediator) is up and running. For information on creating and managing gateways, see *Run-Time Governance with CentraSite*.

An OAuth2 client can be revoked by an API provider and an API consumer. An API provider can revoke an OAuth2 client from the Asset Details page. While, an API consumer can revoke an OAuth2 client from the User Preferences page.

- "Revoking an OAuth2 Client by an API Provider" on page 55.
- "Revoking an OAuth2 Client by an API Consumer" on page 56.

Revoking an OAuth2 Client by an API Provider

An API provider can use the Asset Details page to revoke an OAuth2 client.

Revoking an OAuth2 client by an API provider

1. Display the details page for the API whose token you want to revoke. If you need procedures for this step, see "Viewing Details for an API" on page 28.
2. Locate the hyperlinked text "N" Consumers in the description area of the **Basic Information** profile, for example, “N” Consumers.
3. Click on the hyperlinked number “N” to see the list of access tokens available for the API.
4. Click on the OAuth2 client name to see more information about who can consume the API.

5. Locate the OAuth2 client you want to revoke.
6. Mouse over the OAuth2 client and click to revoke.

   A confirmation message appears that the OAuth2 client will be revoked.

Revoking an OAuth2 Client by an API Consumer

An API consumer can use the User Preferences page to revoke an OAuth2 client.

Revoking an OAuth2 client by an API consumer

1. Click your profile name in the navigation bar (at the top right of every page).
2. Under **My Access Keys**, locate the OAuth2 client you want to revoke.
3. Mouse over the OAuth2 client and click to revoke.

Configuring the Email Notification for OAuth2 Client Revocation

Once the OAuth2 client revocation is processed, CentraSite sends an email message to the API consumer informing that the request has been processed successfully.

CentraSite provides predefined email template only intended for the OAuth2 client revocation. By default, this template is configured in the centrasite.xml file. But, if you do not want to use the predefined email template, you can create your own template and configure the centrasite.xml file as necessary.

To configure email templates for OAuth2 client revocation

1. Use a text editor to open the custom centrasite.xml file. The configuration file is located in the <*CentraSiteInstallDir*> \cast\cswebapps\BusinessUI\ directory.
2. Locate the `KeyRevocationSettings` element in the file.

   The key revocation notification settings would look like the following:

```
<KeyRevocationSettings>
  <Approve
     subject="CS_MSG_INMBU_DEFAUL_EMAIL_SUBJECT_ACCESS_KEY_REVOCATION_NOTIFI
CATION"
     template="APIKeyRevocationSuccess.html"/>
</KeyRevocationSettings>
```

3. Uncomment the section `API Key Settings` to enable key revocation notifications.
4. Use the `Approve` property to set the subject and body of the notification message for the consumers whose OAuth2 client revocation request is processed successfully.
5. Save and close the file.
6. Restart Software AG Runtime.

For more information on how to configure an email notification for OAuth2 client revocation in the CentraSite Business UI, see "Configuring the API Consumption Settings" on page 37.

Approving a Request

If you are the CentraSite Administrator, an API provider or a designated approver, CentraSite places requests for your review and approval.

This section details on how to review and approve the API related requests.

Approving Requests for Consumer Onboarding Registration

The onboarding requests for *a user* or *an organization with user* is tracked in the following ways:

- If the user has specified an existing organization in the CentraSite registry, the Consumer Onboarding request is visible in the details page of the organization that is configured in the specified organization's **Consumer Onboarding** policy.
- If the user has specified an organization that does not exist in the CentraSite registry, the organization with Consumer Onboarding request is visible in the Default Organization's details page.
- If the user has not specified any organization, the Consumer Onboarding request is visible in the details page of the organization that is configured in the **Global Onboarding** policy.

Users with the Manage Organizations system-level permission (such as the users with the role CentraSite Administrator) can view and approve onboarding requests for any organization. Users with the Organization Administrator organization-level role for a given organization can perform view and approve onboarding requests on that organization.

For more information about roles and permissions, see *Getting Started with CentraSite*.

To view and approve consumer registration requests

1. In CentraSite Business UI, display the details page for the organization whose user registration request you want to review and approve.
2. You will see the pending user registration requests in the description area of the **Basic Information** profile, for example, `N user registration requests are pending`.

   If there are no pending approval requests for the organization, this is displayed as `0`.
3. Click the hyperlinked number `N` to open the **Pending User Registration Requests** dialog. This dialog contains a list of all requests that have been submitted for the particular organization, including requests that were auto-approved.
4. Choose the user registration request that you want to review and approve by clicking its hyperlinked name.

   The details for the request will appear in the **User Registration Requests** dialog.

5. In the **Comment** text box, type a comment. For example, *"Request rejected. Add required specifications to this user and resubmit"*.
6. Click the **Accept** or **Reject** button as appropriate to approve or reject the request.

Approving Requests for Access Key Management

When a user submits an API request that requires an approval, CentraSite initiates an approval workflow and submits the user's request to both the API provider and designated group of approvers.

Approvers receive the approval requests in the API details page in CentraSite Business UI. Approvers whose user account includes a valid email address also receive an email message informing them that a request is awaiting their approval.

CentraSite does not process an API request until it obtains the necessary approvals. If an approver rejects the request, CentraSite notifies the requestor and ignores further processing.

The following requests for API key management can trigger an approval workflow:

- Generating an API Key / OAuth Token
- Renewing an API Key
- Revoking an API Key

Note: For CentraSite to issue email messages, an administrator must first configure CentraSite's email server settings. For procedures, see the *CentraSite Administrator's Guide*.

Points to consider when approving or rejecting an API key request for consumption:

- If the user who makes an API request is also an authorized approver for the action, the request is auto-approved. (In other words, the requestor's approval is granted implicitly.)
- If an API provider has configured the **Require Approval** option in the API consumption settings for "Anyone" approval mode, only one user in the group is required to approve or reject the request. This is the default mode. For more information, see "Configuring the API Consumption Settings" on page 37.
- If an API provider has configured for the "All" approval mode, the request must be approved by all users in the approver group (it does not matter in which order the approvals are obtained). A rejection by any approver in the group will cause the request to be rejected.

To view and approve key requests

1. In CentraSite Business UI, display the details page for the API whose request you want to review and approve. If you need procedures for this step, see "Viewing Details for an API" on page 28.

2. You will see the pending approval requests for an API in the description area of the **Basic Information** profile, for example, `N number of pending approvals`.

   If there are no pending approval requests for the API, this is displayed as `0`.

3. Click the hyperlinked number `N` to open the **Pending Approval Requests** dialog. This dialog contains a list of requests that have been submitted for the particular API, including requests that were auto-approved.

4. Choose the API request that you want to review and approve by clicking its hyperlinked name.

   The details for the request will appear in the **API Request** dialog.

5. In the **Comment** text box, type a comment. (For example, *"Request rejected. Add required specifications to this asset and resubmit"*.)

6. Click the **Accept** or **Reject** button as appropriate to approve or reject the request.

Deleting an API

Deleting an API permanently removes the API from the CentraSite registry.

When you delete an API, CentraSite removes the registry entry for the API (that is, it removes the instance of the API from CentraSite's object database). Also note that:

- You cannot delete the predefined APIs (not even if you have the default permissions associated with the CentraSite Administrator role).
- If you are not the owner of the API, you cannot delete the API unless you have Manage Assets permission (granted though a role-based permission) or at least Full permission on the API (granted through an instance-level permission).
- You cannot delete an API that is in pending state (e.g., awaiting approval).
- You cannot delete an API if any user in your CentraSite registry is currently modifying the API.
- Deleting an API will not remove the supporting documents that are attached to it.
- *This is of specific relevance to REST APIs.* Beginning with 9.7, CentraSite supports the enhanced interface for REST APIs (in contrast, earlier versions of CentraSite supported a standardized interface for REST APIs). Documentation of the prior REST and XML service interface is available to Software AG customers who have a current maintenance contract in Empower, Software AG's global extranet (http://empower.softwareag.com/).
- If you have REST APIs that were created prior to version 9.7 or if you are using the current version of CentraSite Business UI, you can only view details of these REST APIs in CentraSite Control. Keep in mind that you cannot delete REST APIs using the CentraSite Control user interface (not even if you belong to the CentraSite Administrator role). You will only be able to delete REST APIs using the CentraSite Business UI.

You can delete a single proxy API or a selected set of proxy APIs. The descriptions in this section give you details on how to do this.

Deleting a Single API

To delete a single API

1. In CentraSite Business UI, display the details page for the API that you want to delete. If you need procedures for this step, see "Viewing Details for an API" on page 28.
2. In the action bar for the API, click **Delete** ( ).
3. When you are prompted to confirm the delete operation, click **Yes**.

   The API is permanently removed from the CentraSite registry.

Deleting a Set of APIs

You can delete multiple APIs in a single step. The rules described above for deleting a single API apply also when deleting multiple APIs.

Important: If you have selected several APIs where one or more of them are predefined APIs, only those APIs you have permission for will be deleted. The same applies to any other APIs for which you do not have the required permission.

To delete multiple APIs in a single operation

1. In CentraSite Business UI, display the list of APIs. If you need procedures for this step, see "Viewing the API List" on page 27.
2. Mark the checkbox next to the name of each API you want to delete.
3. In the actions menu, click **Delete** ( ).

   Note: If one or more or the selected APIs is in pending state (e.g., awaiting approval) or has a consumer registration request pending for it, CentraSite will display an error message and ignore those APIs.

Exporting and Importing an API

You use the export and import features to export an API from one instance of CentraSite and import it into another.

Before You Begin

Before you use the export and import features with APIs, keep in mind the following points:

- If the API or any referenced object in the archive already exists in the gateway instance of CentraSite, the existing object will be overwritten according to the appropriate conditions.
- To export an API, you must have the instance-level “View” permission on the API.
- To import an API successfully, you must belong to a role that includes the “Manage Assets” permission for the organization in which the selected API resides.
- The export process does not export the selected API's instance-level permissions.
- The export operation creates an archive file on the file system. The archive file contains a copy of the APIs that you have exported. The archive file can be imported afterwards into the same CentraSite registry or into a new registry.
- When you import the API on the gateway instance, CentraSite assigns instance-level permissions to the imported API just as though you created the API manually. (In other words, the imported API receives the same permission settings as the APIs you create from scratch.)
- When an imported API *replaces* (updates) an existing API in the target registry, all of the API's properties, except for its permission settings, are updated according to the API object in the archive. This includes the API's organizational scope and its lifecycle state. If the referenced organization and/or lifecycle model does not already exist on the target registry, the import process will fail.
- If the archive file contains a reference to an object that is not already present in the target registry or is not included in the archive file itself, the API will not be imported.
- If design/change-time policies exist for the events that the import process initiates (e.g., the creation of an API), those policies will be triggered.
- The archive you wish to import must reside in the file system of the computer where your browser is running.
- *This is of specific relevance to REST APIs.* Beginning with version 9.7, CentraSite supports the enhanced interface for REST services (in contrast, earlier versions of CentraSite supported a standardized interface for REST services). Documentation of the prior REST and XML service interface is available to Software AG customers who have a current maintenance contract in Empower, Software AG's global extranet (http://empower.softwareag.com/).
- Starting with this version 9.7, you cannot import a REST service implemented by current version of CentraSite to previous versions of CentraSite. This is because, CentraSite prior to version 9.7 does not support the enhanced REST interface.

- The following sections provide specific information about exporting and importing APIs. Before you use the export and import features with APIs, review the general information provided in the *CentraSite Administrator's Guide*.

Exporting an API

In this task you export a single API from API details page.

To export a single API

1. Display the details page for an API you want to export. If you need procedures for this step, see "Viewing Details for an API" on page 28 .
2. In the actions bar for the API, click **Export** . The **Export** dialog shows the selected API.
3. Expand the **Advanced Settings** to display the additional export options.
4. If the selected API contains references to other APIs, then choose the **Include assets referenced by selected assets** option to include the referenced APIs also in the export set. This selection process is repeated recursively until all API references are satisfied.
5. After you have selected the export options, click **Apply Settings**. The Export Preview page is displayed.
6. The Export Preview page displays the selected API and its dependent objects.

   The checkbox beside each object indicates whether or not the object should be included in the export set. By default, all displayed objects are included in the export set.

   If you want to remove an object from the export set, unmark its checkbox. This removes the object and all of its dependent objects (if any) from the export set.
7. Click **Export** to start the export operation.

   If the **Include assets referenced by selected assets** option is not selected for export, then the **Export** button is disabled.
8. An **Export Inprogress** popup will display the export progress bar.
9. Click **Download** if you wish to download the export archive file. This starts the creation of the archive file.

   Note that the **Download** button will be disabled until the entire export operation is completed.

   Important: The default location to which the archive file is downloaded is My Documents\Downloads.

Exporting Multiple APIs in a Single Operation

You can export multiple APIs in a single step.

To export a set of APIs

1. In CentraSite Business UI, display the list of APIs. If you need procedures for this step, see "Viewing the API List" on page 27.
2. Mark the checkbox next to the name of each API you want to export.
3. In the action bar of the Search Results page, click **Export**  .
4. In the **Export** dialog, specify the export options, in the same way as described previously for exporting an individual API.

Importing APIs

You import an API by importing the archive file to which it was previously exported. You can import an API into the same CentraSite registry from which it was originally exported or to a different CentraSite registry.

To import an API

1. In CentraSite Control, go to **Asset Catalog > Browse**.
2. Click the **Import** button. This activates the import dialog.
   a. In the field **Import as**, select **Archive** from the drop-down list. When you select this option, the layout of the wizard changes to show just the fields that are required for importing an archive.
   b. In the field **File**, supply the name of the file that contains the archive.
   c. Click **Finish**. The **Import Preview** page is now displayed.

      If the archive you wish to import was created with CentraSite 8.2 or earlier, the **Import Preview** page is not available. In this case, when you click **Finish**, the import operation continues with the **Import Options** dialog in step 4.
3. The **Import Preview** page displays the names of the APIs contained in the export archive.

   Additional options are available that allow you to choose how the imported objects will be created. To access these options, click **Import Options**.
4. In the **Import Options** dialog, set the following options.

Option	Description
Keep current organization / Assign new organization	When you import APIs, you can import them into the same organization in the target registry

Option	Description
	as in the source registry from which they were exported, or you can assign a new owning organization. Choose **Keep current organization** to import the APIs into the same organization. The organization in the target registry must have the same name and UUID as in the source registry. Choose **Assign new organization** to import the APIs into a new organization. If you choose this option, you can select the new organization via the **Select Organization** button.
Keep current owner / Assign new owner	The imported APIs can be assigned to the same owner as in the source registry, or you can assign a new owner. Choose **Keep current owner** to assign the APIs objects to the same owner as in the source registry. The owner in the target registry must have the same name and UUID as in the source registry. Choose **Assign new owner** to assign the imported APIs to a new owner. If you choose this option, you can select the new owner via the **Select Owner** button.
Keep lifecycle state	This option determines whether the lifecycle state of the imported APIs is preserved. Enable the option to retain the lifecycle state of the APIs being imported.
Allow replace of registry objects	Choose this option to specify that existing APIs with the same name in the target registry will be overwritten, even if the API in the archive is older than the one in the target registry.

5. Click **OK** to leave the **Import Options** dialog.

   If you are importing an archive that was created with CentraSite 8.2 or earlier, the import now starts.

   If you are importing an archive that was created after CentraSite 8.2, the **Import Preview** dialog is displayed again. Now click **OK** to start the import.

6. When the import operation completes, the import wizard informs you if the import was successful or if there were any errors.

   You can click **OK** here to terminate the import wizard without viewing the import log.

   - Alternatively, to see details of the APIs that were imported, the wizard offers you a link to view the import log. When you click this link, the import log lists each API and indicates whether or not it was successfully imported. The import log also lists the import status of any related objects that were contained in the archive.

     In the import log view page, click **OK** to terminate the import wizard.

Email Notification Templates and Tokens

CentraSite provides default email templates that you can customize as needed. The templates are used to send email messages to users when certain workflow-related events occur in CentraSite. For example, you might use an email template to alert a certain group of administrators when a consumer onboards as a user in CentraSite. Or, you might issue an email notification to certain users when an approval request is rejected.

Note: For CentraSite to issue email messages, an administrator must first configure the email server settings. For procedures, see the *CentraSite Administrator's Guide*.

Predefined Email Templates Installed with CentraSite

For each approval workflow in the API management, there are default email templates provided that CentraSite uses to send email notifications to requesters about the status of their requests. These templates are provided for you to use with the approval workflow listed below if you do not want to create your own email templates.

Template Name	Description	To use with...
APIKeyGeneration Success.html	Default email template used when an approval request for API key generation is approved.	The `Approved` action in the Key Generation Settings panel.
PendingApproval Notification.html	Default email template used when an approval request for API key generation is submitted to approvers.	The `Approval Request` action in the Key Generation Settings panel.

Template Name	Description	To use with...
APIKeyRenewal Success.html	Default email template used when an approval request for API key renewal is approved.	The `Approved` action in the Key Renewal Settings panel.
APIKeyRenewalPending Notification.html	Default email template used when an approval request for API key renewal is submitted to approvers.	The `Approval Request` action in the Key Renewal Settings panel.
Rejection Notification.html	Default email template used when an approval request is rejected.	The `Rejected` action in the Key Generation Settings and Key Renewal Settings.
APIKeyRevocation Success.html	Default email template used when an approval request for API key revocation is approved.	The `Approved` action in the Key Revocation Settings panel.
APIKeyExpired Notification.html	Default email template used when an API key has expired.	In the custom centrasite.xml configuration file located in the <*CentraSiteInstallDir*> \cast \cswebapps \BusinessUI\ directory
APIKeyExpiration Notification.html	Default email template used when an API key is about to expire.	In the custom centrasite.xml configuration file located in the <*CentraSiteInstallDir*> \cast \cswebapps \BusinessUI\ directory
OnboardingSuccess Message.html	Default notification template used for notifying a consumer that a request for consumer onboarding has been processed successfully.	The `Onboarding Organization` action in the Global Onboarding Policy. - OR -

Template Name	Description	To use with...
		The `Onboarding User` action in the Consumer Onboarding Policy.
APIKeyDeploy Failed.html	Default notification template used for notifying a provider that an API key generation has failed.	For internal use.

Customizing Email Templates

You can change the default subject and content for any of the preshipped email templates, or write your own email template to incorporate your own contents as needed.

Writing a Custom Email Template

Let's create an email template to use specifically with the API consumption approval workflow. Perform the following procedures to create your custom email template.

1. Write your custom HTML email template, such that the HTML document includes the <html> and <label> tags as displayed in the example below.

   APIKeyGenerationSuccess.html

```
<html>
<p>Thanks!<br>
<p>Your request for consuming the <b>${entity.name}</b>
 API on <b>${request.date}</b> has been processed successfully.<br>
You now have a valid access key, <b>${policycontext.apikey},</b>
which you can use to access the protected API.
The key expires on <b>${apikey.expirationdate}.</b><br><br>
<br>
<p><b>API Usage Information:</b><br>
<p><b>${api.usage}</b></p><br>
<h4>This is an auto-generated email. Please do not reply to this email.
If you have any queries, kindly contact your administrator.<br></h4>
</html>
```

2. Specify the key parameters.

Set this parameter...	To specify...
`{policycontext.consumer.name}`	The name of the consumer who has submitted the API key request.

Set this parameter...	To specify...
`{entity.name}`	The name of the API that the consumer has requested API key for accessing.
`{request.date}`	The date on which the API key is requested.
`{policycontext.apikey}`	The API key the consumer needs to access the API.
`{apikey.expirationdate}`	The date on which the API key will expire.
`{api.usage}`	This token will be replaced with the usage tips for API key.

Using Substitution Tokens

You can use any of the following substitution tokens within your email template to incorporate data from the runtime information in the email message. The tokens are valid in both the email Subject and Content fields. Before sending the email notification, CentraSite replaces the token with the corresponding value.

This token...	Will replace with...
`${apikey.expirationdate}`	The date on which the API key will expire.
`${entity.BUIapprovalURL}`	A deep link to the URL of the CentraSite Business UI that the approver will use to approve/reject the API key generation or renewal request.
`${entity.bui.userpreferences.url}`	A deep link to the URL of the User Preferences page of the user who onboarded in CentraSite Business UI.
`${policycontext.apikey}`	The API key the user needs to access the API.

This token...	Will replace with...
`${policycontext.consumer.name}`	The name of the consumer who submitted the API key request.
`${request.date}`	The date on which the consumer requested for the API key.

Predefined Policies for API Management

API management policies are predefined, design-time or change-time policies that CentraSite uses to perform internal requests (for example, registering the consumers for an API) and governance functions (for example, ensuring the validity of policies). By default, the API management policies are not displayed by CentraSite Control; however you can view them by enabling the **Show Predefined Policies** option on the Design/Change-Time Policy page.

If you belong to a role that includes the Manage System-Wide Design/Change-Time Policies permission, you have the ability to edit, delete and deactivate CentraSite's predefined API management policies. However, you should not do this. These policies perform critical functions within the registry and must not be deleted, or deactivated except under the direction of a technical representative from Software AG.

Summary of User Registration Policies

Policy	Description
Global New User Account Policy	Registers a user as user of any existing or new organization.
New User Account Policy	Registers a user as user of the specified organization.

Summary of Consumer Onboarding Policies

Policy	Description
Global Consumer Onboarding Policy	Registers a user as consumer of any existing or new organization.
Consumer Onboarding Policy	Registers a user as consumer of the specified organization.

Summary of API Key Management Policies

Policy	Description
API Key Generation Policy	Generates an API key to authorize access and usage of the API.
API Key Renewal Policy	Extends the validity of an expired API key.
API Key Revocation Policy	Revokes an API key to suspend access and usage of the API.

Summary of OAuth2 Client Management Policies

Policy	Description
OAuth2 Client Generation Policy	Generates an OAuth2 access token to authorize access and usage of the API.
OAuth2 Client Revocation Policy	Revokes an OAuth2 access token to suspend access and usage of the API.

Summary of API-Portal Integration Policies

Policy	Description
Publish to API-Portal Policy	Creates metadata for a new API and updates metadata for an existing API in the API-Portal repository.
Unpublish from API-Portal Policy	Removes the metadata for an existing API metadata from the API-Portal repository.

Note: To use the email options provided by these policies, CentraSite must have a connection to an SMTP email server. For instructions on how to configure CentraSite's connection to an email server, see the *CentraSite Administrator's Guide*.

The User Registration Policies

The User Registration policies trigger an approval workflow when users request for an account in the CentraSite registry.

When users request a CentraSite account (as described in "Creating your New Account in CentraSite " on page 89), the policy is triggered and the User Registration or an Organization with User Registration request is submitted to all members of the approval list specified in the Initiate Approval action. Then, the approvers can either approve or decline the request. If the approvers approve the request, the users will be registered in the CentraSite registry, and appropriate permissions will be assigned to users.

To use the CentraSite's new account feature, you *must configure* the Global New User Account Policy and every organization's New User Account Policy.

Note: You do not need to explicitly activate the new account policies.

Global New User Account Policy

The Global New User Account Policy enables an automated user registration to address the following scenarios:

- If the user does not explicitly specify an organization, the policy registers the user in the organization defined in the Onboarding Organization action of the policy. By default, it is set to Default Organization.
- If the user specifies an organization which does not currently exist in the CentraSite registry, the policy creates the new organization, and registers the user in the new organization.

The Global New User Account Policy has input parameters that you must set to enforce the user registration.

To configure the input parameters for Global New User Account Policy

1. Display the Global New User Account Policy Details page whose actions you want to configure. If you need procedures for this step, see the *CentraSite User's Guide* .
2. On the **Actions** tab do the following:
   a. *Mandatory.* To configure the **Initiate Approval** action, set the following parameters:
      - *Mandatory.* **Approver Group**: Specify the designated group of approvers.
      - *Mandatory.* **Approval is needed from**: Specify an approval mode `All` or `Anyone`.

   b. Click **Save** to update the parameter settings.

      For more information about configuring the Initiate Approval action, see the *CentraSite Developer's Guide*.

   c. To configure the **Onboarding Organization** action, set the following parameters:
      - *Mandatory.* **Onboarding Organization**: Specify the organization in which you want to register the user, when the requestor has not specified any organization. By default, `Default Organization`.
      - **Onboarding Success Message**: Specify a notification template for the new user account success message. By default, `NewAccountSuccessMessage.html`.

d. Click **Save** to update the parameter settings.

New User Account Policy

The "New User Account Policy" of an organization enables an automated registration of user for the particular organization.

The New User Account Policy has input parameters that you must set to enforce the user registration.

To configure the input parameters for New User Account Policy

1. Display the New User Account Policy Details page whose actions you want to configure. If you need procedures for this step, see the *CentraSite User's Guide* .
2. On the **Actions** tab do the following:
   a. On the **Initiate Approval** action, set the parameters:
      - *Mandatory.* **Approver Group**: Specify the designated group of approvers.
      - *Mandatory.* **Approval is needed from**: Specify an approval mode `All` or `Anyone`.
   b. Click **Save** to update the parameter settings.
   c. On the **Onboarding User** action, set the parameters:
      - **Onboarding Organization**: Specify the organization in which you want to register the user. By default, `Default Organization`.
      - **Onboarding Success Message**: Specify a notification template for the new user account success message. By default, `NewAccountSuccessMessage.html`.
   d. Click **Save** to update the parameter settings.

The Consumer Onboarding Policies

CentraSite's approval-management framework enables you to configure policies that trigger approval processes when guest users (i.e. users without a valid CentraSite user account) try to access and register as consumers of APIs.

When users register as consumers for APIs (as described in *Run-Time Governance with CentraSite*), the policy is triggered and the User Registration or an Organization with User Registration request is submitted to all members of the approval list specified in the Initiate Approval" action. Then, the approvers can either approve or decline the request. If the approvers approve the request, the users will be registered as consumers, and appropriate permissions will be assigned to users.

To use the CentraSite's consumer-onboarding feature, you *must configure* the Global Onboarding Policy and every organization's Consumer Onboarding Policy.

Note: You do not need to explicitly activate the onboarding policies.

Global Consumer Onboarding Policy

The Global Onboarding Policy enables an automated onboarding to address the following scenarios:

- If the user does not explicitly specify an organization, the policy onboards the user in the organization defined in the Onboarding Organization action of the policy. By default, it is set to Default Organization.
- If the user specifies an organization which does not currently exist in the CentraSite registry, the policy creates the new organization, and onboards the user in the new organization with an Organization Administrator role.

On successful onboarding of an user within the specified organization, CentraSite performs the API consumption process that has already been initiated.

The Global Onboarding Policy has input parameters that you must set to enforce the consumer onboarding.

To configure the input parameters for Global Onboarding Policy

1. Display the Global Onboarding Policy Details page whose actions you want to configure. If you need procedures for this step, see the *CentraSite User's Guide* .
2. On the **Actions** tab do the following:
   a. *Mandatory.* To configure the **Initiate Approval** action, set the following parameters:
      - *Mandatory.* **Approver Group**: Specify the designated group of approvers.
      - *Mandatory.* **Approval is needed from**: Specify an approval mode `All` or `Anyone`.

   b. Click **Save** to update the parameter settings.

      For more information about configuring the Initiate Approval action, see the *CentraSite Developer's Guide*.

   c. To configure the **Onboarding Organization** action, set the following parameters:
      - *Mandatory.* **Onboarding Organization**: Specify the organization to which you want to onboard the user as a consumer, when user requesting for an account has not specified any organization. By default, it is set to Default Organization.
      - **Onboarding Success Message**: Specify a notification template for the consumer onboarding success message. By default, `OnboardingSuccessMessage.html`.

   d. Click **Save** to update the parameter settings.

Consumer Onboarding Policy

The "Consumer Onboarding Policy" of an organization enables an automated onboarding of user for that organization. On successful onboarding, performs the API consumption process that has already been initiated. If the API consumption includes an approval workflow, on approval, CentraSite generates the API key. On the other hand, if

the API consumption does not include an approval workflow, CentraSite generates the API key immediately.

The Consumer Onboarding Policy has input parameters that you must set to enforce the consumer onboarding.

To configure the input parameters for Consumer Onboarding Policy

1. Display the Consumer Onboarding Policy Details page whose actions you want to configure. If you need procedures for this step, see the *CentraSite User's Guide* .
2. On the **Actions** tab do the following:
   a. On the **Initiate Approval** action, set the parameters:
      - *Mandatory.* **Approver Group**: Specify the designated group of approvers.
      - *Mandatory.* **Approval is needed from**: Specify an approval mode `All` or `Anyone`.
   b. Click **Save** to update the parameter settings.
   c. On the **Onboarding User** action, set the parameters:
      - **Onboarding Organization**: Specify the organization to which you want to onboard the user as consumer. By default, `Default Organization`.
      - **Onboarding Success Message**: Specify a notification template for the consumer onboarding success message. By default, `OnboardingSuccessMessage.html`.
   d. Click **Save** to update the parameter settings.

The API Key Management Policies

The following sections describe the predefined API key management policies installed with CentraSite.

API Key Generation Policy

To prevent unauthorized access of an API, API Providers generate an access key which serve as the user access token for identifying the final consumer of the particular API.

When a user/consumer appplication registers as a consumer for an API (as described in *Run-Time Governance with CentraSite*), CentraSite internally triggers an API Key Generation policy for the API. A request for the API consumption is subsequently submitted to all members of the specified approval list. The approvers can either approve or decline the request. If the approvers approve the request, CentraSite generates the access key, deploys the generated key in the Mediator, and notifies the consumer that the API is now ready for consumption using the generated key.

Object Scope

The API Key Generation policy operates on the following object:

- Virtual Service

- Virtual XML Service
- Virtual REST Service

Event Scope

OnTrigger

Policy Actions

The API Key Generation policy includes the following built-in actions:

- **Initiate Approval** - Initiates an approval workflow.
- **API Key Generator** - Generates an access key which authorizes the consumer to access and use the API, thereby creating a relationship between the API and the specified consumer.

Input Parameters

`Key Expiration Interval`	*String. Mandatory.* Specifies the time interval an access key can remain active. When the interval expires, the current key is marked expired.

- **Deploy API Key** - Initiates an access key deployment in the gateway (for example, Mediator).

  Note: If the gateway is down/unreachable, this action will fail. In this case, the API Provider is notified through the configured email.

Input Parameters

None.

- **Create Auditable Events** - Creates an audit log record about the generation of the access key.
- **Send Email Notification** - Sends an email message to specified a group of users.

For more information about configuring the parameters for built-in actions, see the *CentraSite Developer's Guide*.

API Key Renewal Policy

After an API key is generated, users sometimes want to renew the old key due to expiration or security concerns. API Consumers can re-generate/renew API keys to change the default expiration time of an API key, consumer of an API generates the API key which serves as an authentication token when the consumer requests for consumption of the API.

When a consumer requests for renewing an API key (as described in *Renewing API Keys*), CentraSite internally creates and triggers an API Key Renewal policy for the API. A request for the API key renewal is subsequently submitted to all members of the approval list specified in the Initiate Approval action. The approvers can either approve or decline the request. If the approvers approve the request, CentraSite re-generates the API key, deploys the generated key in the Mediator, and notifies the consumer that the API is now ready for consumption using the newly generated key.

Object Scope

- Virtual Service
- Virtual XML Service
- Virtual REST Service

Event Scope

OnTrigger

Policy Actions

The API Key Renewal policy includes the following built-in actions:

- **Initiate Approval** - Initiates an approval workflow.
- **Renew API Key** - Re-generates an API key with new validity for the API.

Input Parameters

`Key Expiration Interval`	*String. Mandatory.* Specifies the new time interval a re-generated API key can remain active. When the interval expires, the current key is marked expired.

- **Deploy API Key** - Re-deploys the API key with new validity in the gateway (for example, Mediator).

> **Note:** The action is prone to failure due to the fact that the gateway may be down/unreachable. In case of failure, the API Provider is informed through the configured email. For example, if an API key is already deployed in multiple gateways and upon API key renewal, re-deployment fails in a couple of gateways, a mail would be sent to API Provider informing that the API key deployment failed in the listed gateways. Currently, API Provider is not allowed to deploy an API key alone. Instead, the Provider has to redeploy the API itself so as to deploy the updated key (after taking corrective actions in Mediator).

Input Parameters

None.

- **Create Auditable Events** - Creates an audit log record about the renewal of the access key.
- **Send Email Notification** - Sends an email message to specified a group of users.

For more information about configuring the parameters for built-in actions, see the *CentraSite Developer's Guide*.

API Key Revocation Policy

After an access key is generated, users sometimes want to revoke the token if compromised in any way, or no longer wants to use it. API Provider can revoke access keys to disable usage of an API subscribed by the consumer.

When a provider or consumer requests for revocation of an access key, CentraSite internally triggers an API Key Revoke policy for the API. The policy revokes the access key, and then notifies the consumer that the requested key is revoked and no longer available for accessing the API.

Object Scope

- Virtual Service
- Virtual XML Service
- Virtual REST Service

Event Scope

OnTrigger

Policy Actions

The API Key Revocation policy includes the following built-in actions:

- **Revoke API Key** - Revokes an existing access key for the API.

Input Parameters

None.

- **Create Auditable Events** - Creates an audit log record about the revocation of the access key.
- **Send Email Notification** - Sends an email message to the consumer who requested for key revocation.

> **Note:** In case of failure to revoke the API key, the API Provider is informed through the configured email.

For more information about configuring the parameters for built-in actions, see the *CentraSite Developer's Guide*.

The OAuth2 Client Management Policies

The following sections describe the predefined OAuth2 client management policies installed with CentraSite.

OAuth2 Client Generation Policy

If you will be using the OAuth 2.0 protocol and you have successfully registered as a consumer for an API, CentraSite internally triggers an OAuth2 Client Generation policy to generate the OAuth2.0 credentials (access token).

Object Scope

- Virtual Service
- Virtual XML Service
- Virtual REST Service

Event Scope

OnTrigger

Policy Actions

The OAuth2 Client Generation Policy includes the following built-in actions:

- **Initiate Approval** - Initiates an approval workflow.
- **OAuth Client Generator** - Generates the OAuth2 client credentials (a client_id and client_secret) which authorizes the consumer to access and use the API, thereby creating a relationship between the API and the specified consumer.

Input Parameters

`OAuth Token Expiration Interval`	*String. Mandatory.* Specifies the time interval an OAuth token can remain active. When the interval expires, the current OAuth token is marked expired.

- **Deploy OAuth Client** - Initiates an OAuth token deployment in the gateway (for example, Mediator).

> **Note:** If the gateway is down/unreachable, this action will fail. In this case, the API Provider is notified through the configured email.

Input Parameters

None.

- **Send Email Notification** - Sends an email message to specified a group of users.

For more information about configuring the parameters for built-in actions, see the *CentraSite Developer's Guide*.

OAuth2 Client Revocation Policy

After an OAuth2 client access token is generated, users sometimes want to revoke the OAuth2 client token if compromised in any way, or no longer wants to use it.

When a consumer requests for revocation of an OAuth2 client through API-Portal, CentraSite internally triggers an OAuth2 Client Revocation policy for the API. The policy revokes the OAuth2 client, and then notifies the consumer that the requested client is revoked and no longer available for accessing the API.

Object Scope

OAuth2 Client

Event Scope

OnTrigger

Policy Actions

The OAuth2 Client Revocation policy includes the following built-in actions:

- **Revoke OAuth2 Client** - Revokes an existing OAuth2 client of the API.

Input Parameters

None.

- **Create Auditable Events** - Creates an audit log record about the revocation of the OAuth2 client.
- **Send Email Notification** - Sends an email message to the consumer who requested for OAuth2 client revocation through API-Portal.

> **Note:** In case of failure to revoke the OAuth2 client, the API Provider is informed through the configured email.

For more information about configuring the parameters for built-in actions, see the *CentraSite Developer's Guide*.

The API-Portal Integration Policies

The API-Portal integration policies enable you to secure, govern, and mediate integrations between CentraSite and API-Portal. When you publish and unpublish APIs to an API-Portal, you have registered through Business UI, the **Publish to API-Portal** and **UnPublish from API-Portal** policies, respectively, get invoked with an **OnTrigger** event.

Publish to API-Portal Policy

The Publish to API-Portal policy (1) creates metadata for a new API and (2) updates metadata for an existing API in the API-Portal repository.

The Publish to API-Portal policy has a built-in Publish to API-Portal action.

Object Scope

The Publish to API-Portal policy operates on the following objects:

- Service
- Virtual Service
- XML Service
- Virtual XML Service
- REST Service
- Virtual REST Service

Event Scope

By default, the Publish to API-Portal policy executes on OnTrigger event. However, to have this policy execute on a PreStateChange or PostStateChange event that is not provided by default, you can create a custom policy and configure the Publish to API-Portal action to execute on these events, as needed.

To integrate CentraSite and API-Portal for publishing processes, you *must configure* the policy's action parameters and activate the policy.

For information on the configuration parameters for Publish to API-Portal action, see the *CentraSite Developer's Guide*.

Unpublish from API-Portal Policy

The Unpublish from API-Portal policy removes the metadata for an existing API metadata from the API-Portal repository.

The Unpublish from API-Portal policy has a built-in Unpublish from API-Portal action.

Object Scope

The UnPublish from API-Portal policy operates on the following objects:

- Service
- Virtual Service
- XML Service
- Virtual XML Service
- REST Service

- Virtual REST Service

Event Scope

By default, the UnPublish from API-Portal policy executes on OnTrigger event. However, to have this policy execute on a different event, for example, PreStateChange or PostStateChange, that is not provided by default, you can create a custom policy and configure the UnPublish from API-Portal action to execute on the following events, as needed:

- PreDelete
- PostDelete
- PreStateChange
- PostStateChange

To integrate CentraSite and API-Portal for publishing processes, you *must configure* the policy's action parameters and activate the policy.

For information on the configuration parameters for UnPublish from API-Portal action, see the *CentraSite Developer's Guide*.

2 Administering the Business UI

Overview

This topic describes how to configure and administer the CentraSite business-level user interface (Business UI). It contains information for developers who want to use the CentraSite Business UI to browse assets in the catalog, create assets in the catalog, publish assets for consumption, perform basic actions on the asset and generate reports.

Conceptual Overview of the CentraSite Business UI

The CentraSite Business User Interface (UI) allows you to quickly and simply access CentraSite's features geared towards occasional users and non technical user roles.

CentraSite is a registry for creating, searching, and publishing assets in a Service Oriented Architecture (SOA) environment. SOA is an approach to building business systems using reusable blocks of functionality known as services. Business analysts, enterprise architects and developers assemble services into higher level constructs such as business processes, composite applications and complex services.

CentraSite serves as the central catalog for the services, APIs and other computing assets of an organization, and provides the tools and infrastructure necessary to implement and manage SOA-based applications, from their design and implementation to their deployment and ongoing operation in the runtime environment.

The CentraSite Business UI offers business-level features such as the following:

- Search or browse for assets in CentraSite.
- Create assets in CentraSite.
- Export assets from one CentraSite registry to another.
- Monitor the lifecycle state of an asset.
- Create reports about asset usage.
- Navigate to frequently-used functions from your Welcome page.
- Receive automatic notifications about changed assets.
- View or respond to your most important notifications from the Inbox.

The Welcome page of the Business UI is configurable and you can set up views of your most frequently used functions and search queries, such as “My Favorite Assets”, and “Recently changed assets”.

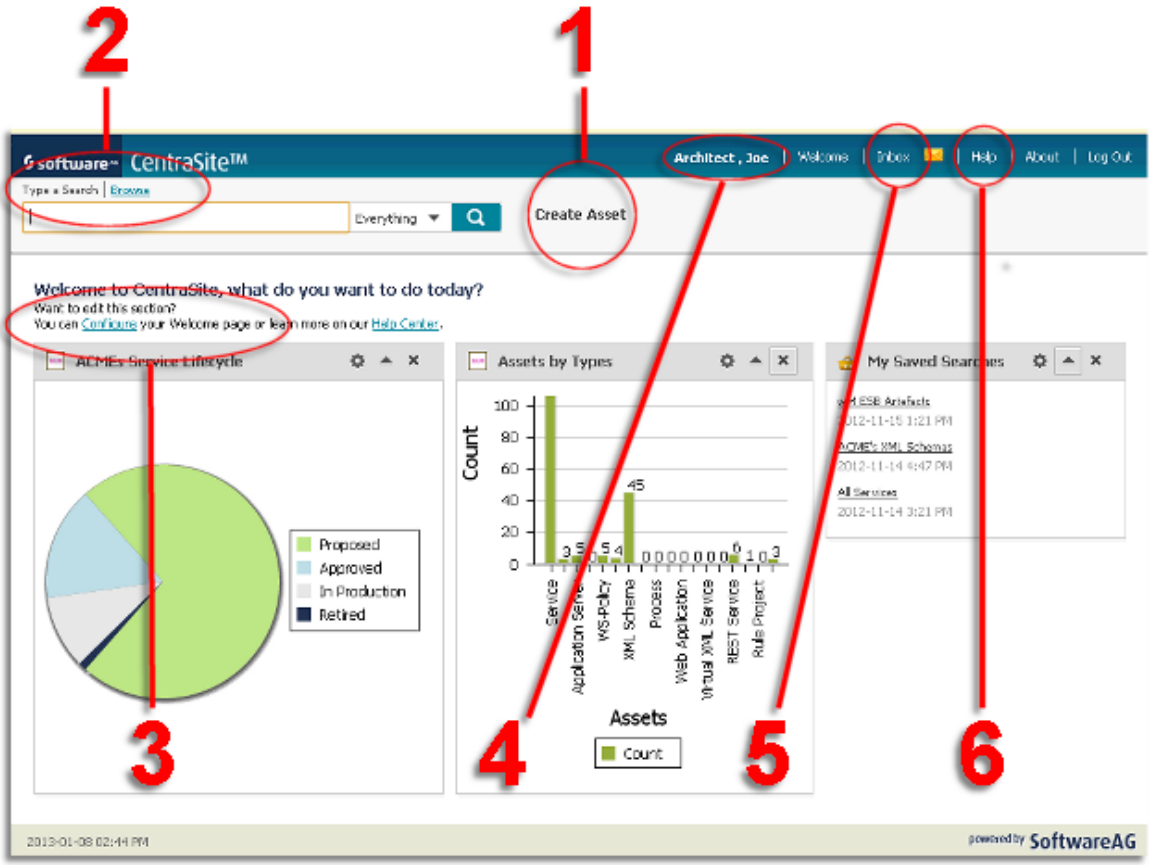
Working with the CentraSite Business UI

This section provides basic information about working with CentraSite Business UI, including logging on/off, using the basic navigation controls and setting the user preferences.

About CentraSite Business UI

The CentraSite Welcome page is your entry point to the CentraSite Business UI.

From this page you can:



1. Perform the CentraSite Business functions from the *Activities* menu.
2. *Search* or *Browse* for assets in CentraSite registry.
3. Navigate to frequently-used *Saved Searches*.
4. Set *User Preferences.*
5. View or respond to your most important notifications from the *Inbox*.
6. Access *Help Center* for information on the CentraSite Business functions.

Access CentraSite Business Functions

Use the *Activities* menu to access the core CentraSite function (**Create Asset**). For more information about creating assets, see "Managing Assets" on page 132.

Search or Browse for Assets

Search or *Browse* to find assets stored in the CentraSite registry. For more information about using the search or browse feature, see "Managing the Catalog" on page 187.

Navigate to Frequently-Used Functions

Customize the Welcome page to view your frequently-used functions (such as My Saved Searches, Pending Approvals etc.). CentraSite Business UI organizes these functions as widgets and renders them based on your preferences. For more information about portlets, see "Working with Portlets" on page 234.

Set Preferences

Select the *user ID* to set personal options. Options include account information, the name of your organization, contact information, language, time zone, notification style, saved searches, lists, and formats for dates and numbers. For more information about setting the user preferences, see "Accessing the User Preferences Page to Set User Preferences" on page 96 and "User Preference Components Available via the User Preferences Page" on page 96.

Manage the Inbox

The *Inbox* displays items that involve your user account, such as the notification requests. For more information about managing the inbox, see "Managing Your Inbox" on page 105.

Help Center

On the *Help Center*, you can perform a browse to find the CentraSite help information you want.

Additionally, click on a topic of interest to display information on the top-level topics. For more information about help center, see "Using the Help Center" on page 108.

Starting the Graphical User Interface

This section describes how to access the browser-based Business UI for managing the CentraSite Registry Repository.

Note: Because CentraSite's browser-based user interface uses JavaScript, you must ensure that your web browser is set up to allow JavaScript to execute. For more information about how to verify that your web browser settings to allow JavaScript, see the help for your web browser.

Important: The use of theCentraSite Business UI is not supported if you are using a CentraSite Community Edition license.

Using URL to Start the Graphical User Interface

The following URL has been predefined to allow you to start the CentraSite Business UI directly in a browser:

http://*<server>*:*<port>*/BusinessUI/

This URL starts the CentraSite Business UI component.

In the URL, *<server>* is the machine on which the Software AG Runtime is running, and *<port>* is the number of the Software AG Runtime port. So, for example, `http://localhost:53307/BusinessUI/` would start CentraSite Business UI on a local installation using the default Software AG Runtime port number.

Alternative Procedures on Windows

The Windows **Start** menu item **Programs > Software AG > Tools** contain an entry for starting CentraSite Business UI.

This Start menu entry is available on the machine where the Software AG Runtime is installed.

If you have just installed CentraSite, clear your web browser's cache, otherwise JavaScript errors can occur when you start some browser-based components of CentraSite.

Logging In and Out

This section explains how to log in to CentraSite using the Business UI. Also, this section addresses how to request an account in the CentraSite Business UI.

Your First Logon after Installation

When you log in for the first time after the product installation, you must use the username `Administrator` and password `manage`. This logs you on as the internal user `Administrator`, and this user has the CentraSite Administrator role. After you have logged on with this username and password, you can perform all administration tasks, such as customizing the portlets, viewing your inbox etc.

You can alternatively log in as a guest user (see instructions in the following section), but this user cannot perform any administration tasks.

Logging in into Business UI

You can log in as the internal user `Administrator`, or as a user who has been registered as a CentraSite user by another user with the appropriate permissions. Alternatively, you can log in as a guest user without being registered as a user.

When you log in as a registered user, you supply a username and password. CentraSite Business UI validates the username and password against your machine's user repository (for example, operating system or LDAP). For information about defining CentraSite users and associating them with users in the user repository, see *Getting Started with CentraSite*.

When you access CentraSite Business UI as a guest, you are permitted to view only the assets that have been made available for general viewing by their owners. By default, guest users cannot create, modify or delete any asset data. However, if the guest users have been granted permissions explicitly they can then access the user interface functions appropriately.

How to Log in to CentraSite Business UI as Registered User

If you want to log in to CentraSite Business UI as registered user, proceed as follows:

To log in to CentraSite Business UI as registered user

1. Open a web browser and navigate to the CentraSite Business UI.
2. In the Login screen, enter your account username in the **Username** field and press tab.
3. You may opt to select the **Remember Me** check box to store the specified login credentials as a cookie in your computer.

   This cookie contains information that Software AG Runtime can use to authenticate your user credentials automatically the next time you visit the CentraSite Business UI.

   Whether or not this check box appears on the login page is controlled by a property in the centrasite.xml configuration file:

   ```
   <RememberMe visibility="true"/>
   ```
4. Then type your password in the **Password** field.
5. Click **Log In**.

How to Log in to CentraSite Business UI as Guest User

If you want to log in to CentraSite Business UI as Guest user, proceed as follows:

To log in to CentraSite Business UI as Guest user

1. Open a web browser and navigate to the CentraSite Business UI.
2. In the Login screen, click the **Access as guest** link.

   Access the CentraSite Business UI without supplying a username or password.

How to Log in to CentraSite Business UI as Registered User

If you want to log in to CentraSite Business UI as registered user, proceed as follows:

To log in to CentraSite Business UI as registered user

1. In CentraSite Business UI, display the details page of the asset you want to stop watching. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. In the action bar for the asset, click **Unwatch**  .

Resetting your Password

If you are an existing user and have forgotten your password, use the **Forgot Your Password?** link to enter your registered username and email address.

Creating your New Account in CentraSite

If you do not have an existing CentraSite account and wish to open one, use the **Register** button to create a new account.

To create an account in

1. Open a web browser and navigate to the CentraSite Business UI.
2. In the Login screen, click the **Register** link. You will find the link below the **Log In** button.
3. In the **Create a New Account** screen, enter the following information:

   a.  **First Name** - Enter your first name.

   Enter a name that contains letters, numbers, or a combination of both. You can also use the following special characters: . (dot), _ (underscore), and @ (at sign). Other special characters and spaces are not allowed. Your user name is case sensitive.

   b.  **Last Name** - Enter your last name.

   Enter a name that contains letters, numbers, or a combination of both. You can also use the following special characters: . (dot), _ (underscore), and @ (at sign). Other special characters and spaces are not allowed. Your user name is case sensitive.

   c.  **Password** - Enter a password.

   Enter a password that contains letters, numbers, special characters, or a combination. Spaces are not allowed. Your password is case sensitive. Reenter your password to confirm.

   d.  **Email** - Enter your email address.

Enter a valid email address that you can access. All emails from the system will be sent to this address. The email address is not made public and will only be used if you wish to receive a new password or wish to receive certain notifications by email.

> **Note:** You cannot specify an email address that is already associated with a CentraSite account.

e. **Organization** - Enter the name of your organization.

f. **Reason** - State in few words why you need this account in CentraSite.

g. **Show Password** - Select this check box to display your password in plain text as you type in the **Password** text box.

h. Do one of the following:

- Click **Register**.

  Or

- Click the **Back to Login page** link to return to the Login screen.

4. CentraSite Business UI displays a message informing that your request for a new account is submitted to a user in the Organization Administrator role.

   CentraSite internally executes an user registration workflow and submits the request for new account to the administrator or a designated group of approvers. For more information about an user's registration workflow, see "Working with Approval Workflows" on page 218.

   > **Important:** This workflow helps you to create a new account in an organization of interest within the CentraSite registry/repository.

   CentraSite does not execute the user's request for new account operation until it obtains the necessary approvals. If an approver rejects the request, CentraSite sends a notification at the specified email address and immediately exits the workflow. On the other hand, if all the designated approvers accept the request, CentraSite sends a email notification with your account details.

5. You can log in and use CentraSite Business UI.

Take a Tour through

CentraSite helps govern SOA and manage APIs. It governs the lifecycle of services, APIs and related metadata such as policies. This allows an organization to offer a robust API for developers and partners. It also helps increase of re-use software assets and improve their alignment with business needs. Before you use CentraSite, you can take a tour to learn more about the features of CentraSite.

To take a tour through

1. Open a web browser and navigate to the CentraSite Business UI. There is no need to log in or register at this point. The tour can be taken by both registered users and users who are not yet registered in the CentraSite.
2. Click the **Take a Tour** button. You will find the button below the CentraSite Login screen. This opens the URL configured in centrasite.xml

   This opens a new browser page with the URL that is configured in the centrasite.xml file.

Logging out from Business UI

To log out from CentraSite Business UI, click the **Log Out** link at the top right hand corner of the screen.

If you do not log out when you are finished using CentraSite (that is, if you simply close the browser window without logging out), your session will automatically time out after 60 minutes of inactivity.

If configured Single-Sign-On (SSO) authentication, you specify a URL to redirect to when you log out. When you specify a logout URL, and when you click **Log Out** or your session expires, you are redirected to that page. If you don't specify a logout URL, you are redirected to the general CentraSite login page.

You can specify any customized page to open when the logout event occurs. This is controlled by the following property statement in the centrasite.xml configuration file:

```
<SSOLogoffLandingURL>http://www.softwareag.com</SSOLogoffLandingURL>
```

Note: We recommend you to explicitly log out when you have finished using the user interface. Logging off ensures that the cookies from your session are cleared from your machine. If you close your browser without logging out, these cookies might not be cleared (depending on which browser you use) and could be reused if you were to log in to CentraSite Business UI before your earlier session's timeout period had elapsed.

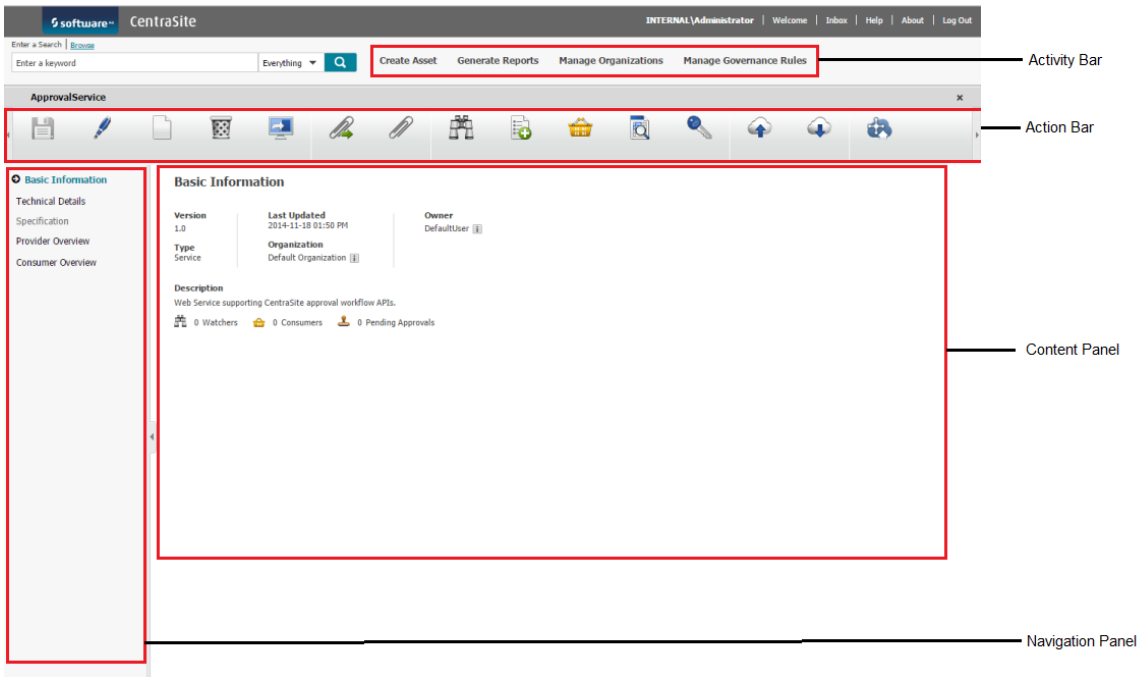
Starting CentraSite Business UI

For information about starting and logging in to CentraSite Business UI, see Starting the Graphical User Interface.

After you have logged in to CentraSite Business UI, you see the Welcome page. In addition to the standard navigation bar, this page offers you links to frequently used CentraSite Business UI features and also to **Help Center** links.

The Navigation Controls in the User Interface

The following section describes the main navigation controls in CentraSite Business UI. The example shown is the asset details page.



- **Activity bar** You use the activity bar to perform various registry functions in CentraSite. The activity bar lets you select the activities, namely, Create Assets, Generate Reports, Manage Organizations and Manage Governance Rules that you want to perform on the user interface. The activities that appear on this space depends upon your custom configuration.
- **Action bar**

  You use the icons on the action bar to select the task that you want to perform on the individual registry object. The action icons that appear on this space depends on the role(s) assigned to user account.
- **Navigation panel**

  The navigation panel in the details page of an object displays the profiles that are defined in the object's type definition. You use the navigation panel to display the detailed information of each individual profile in the object.
- **Content Panel**

  This is the area in which CentraSite Business UI displays the details associated the individual registry object. The actual content that you will see for an object depends on the role-based and instance-based permissions assigned to your user account.

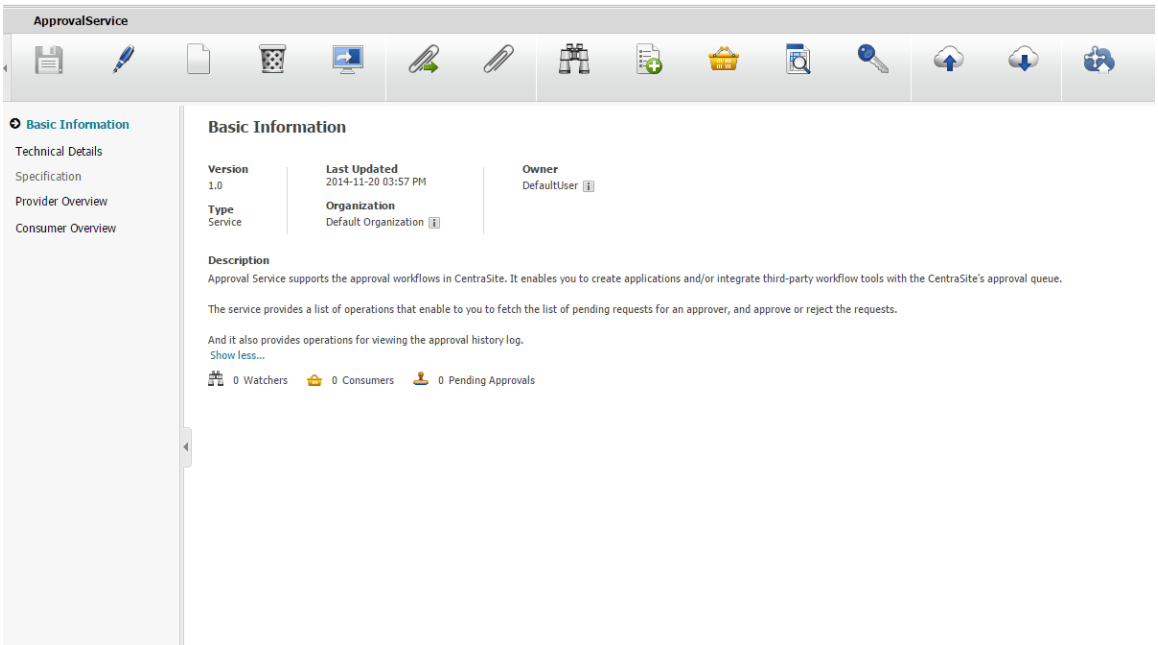
Configuring the Enhanced Profile Layout for Rendering Details of Registry Objects

CentraSite Business UI now offers a new profile layout that provides easier access to the details of the individual profiles of registry objects.

You can configure CentraSite to indicate whether you want to use the enhanced or legacy profile layout.

What is the Enhanced Profile Layout?

The enhanced profile layout provides a split view representation of the profile details for an individual object and includes a navigation panel and a content panel. The layout maintains a list of all of the profile names on the navigation panel and displays the details for the selected profile on the content panel.



Keep the following information in mind when viewing the enhanced profile layout:

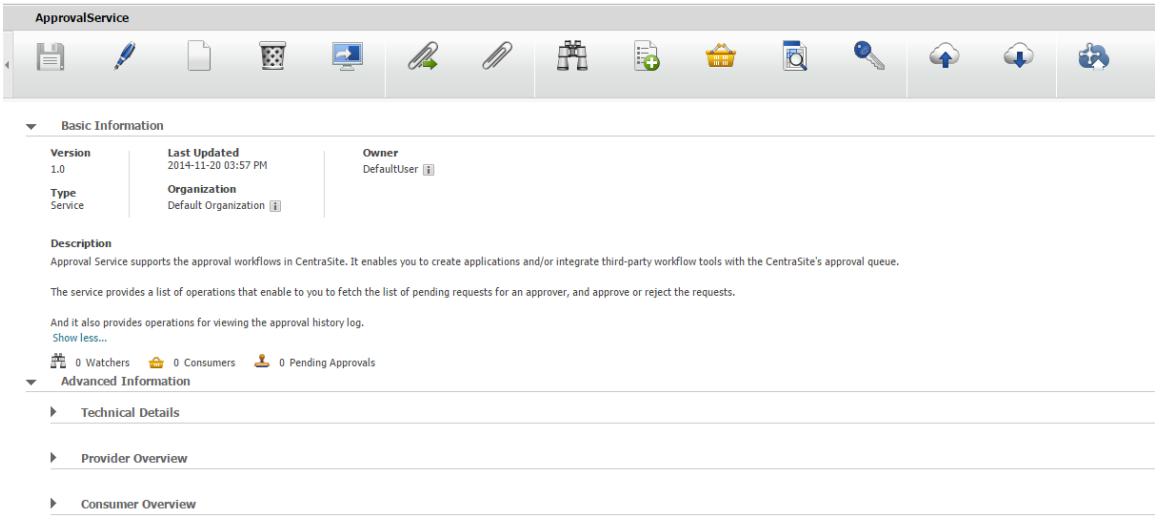
- CentraSite renders the **Basic Information** profile by default.
- Profile selected for rendering displays highlighted in the navigation panel with an active icon. Also, if the profile has one or more required attributes with an empty value, then CentraSite displays an invalid icon in edit mode.
- Profiles that have no data are displayed in gray in the navigation panel when you are in view mode. These profiles become active in edit mode.
- Attributes that only have a value are displayed in the content panel when you are in view mode. CentraSite maintains all of the attributes associated with a profile in edit mode, irrespective of their values.

- When displaying the list of profiles in the navigation panel, if the character length for any single profile name exceeds the limit set by the `navigationPanelMaxCharLength` value, then that profile name gets truncated.
- If you have a profile name which displays truncated in the navigation panel, move the cursor over the profile to view its fully qualified name as defined in the type definition.

What is the Legacy Profile Layout?

Note: Beginning with version 9.8, support for legacy profile layout in CentraSite Business UI is deprecated and will be removed in future releases.

In contrast, the legacy profile layout provides an object's profile details through a collection of profiles that remain within a single scrollable window. The layout maintains all of the profiles and their details in a stack. In order to display details of an individual profile, you would expand the top-level (primary) profile, namely, Advanced Information, and then navigate to the particular (secondary) profile.



Because the legacy profile layout maintains all of the profiles along with details stacked one after the other in the shared area while displaying details for an object, namely asset, profiles with multiple attributes will suffer readability and scrolling issues. Also, be aware that the profile details are pre-fetched in the legacy profile layout.

Where is the Enhanced Profile Layout Used?

CentraSite uses the enhanced layout of the profile details for displaying information of the following registry objects:

- Organizations
- Users
- Groups
- Roles
- Assets (instances)
- Gateways

Configuring the Enhanced Profile Layout

When you configure the enhanced profile layout, you indicate whether or not CentraSite will display the asset profile information in the enhanced or legacy profile layout and the maximum size of the navigation panel in the CentraSite configuration file.

Beginning with version 9.8, the default rendering is the enhanced profile layout.

The only time you will need to configure the enhanced profile layout is if the system administrator had explicitly configured for legacy profile layout.

To configure the enhanced profile layout

1. Use a text editor to open the configuration file centrasite.xml, which is typically located in the <*CentraSiteInstallDir*> \cast\cswebapps\BusinessUI\custom\conf directory.
2. Locate the section `AssetDetailSettings` in the file.
3. The `AssetDetailSettings` would look like the following:

```
<GUIConfiguration>
    ..
    <UIProperties>
     ...
     <AssetDetailSettings newRenderingMode="true" navigationPanelMaxCharLength="25" />
    </UIProperties>
</GUIConfiguration>
```

4. To take advantage of the enhanced profile layout, set the property `newRenderingMode` to `true`.

   Possible values:

Value...	Indicates...
`true` (default value)	Use the enhanced profile layout.

Value...	Indicates...
`false`	Use the legacy profile layout.

5. When displaying the asset details page in the enhanced profile layout, the `navigationPanelMaxCharLength` property defines the default size of the navigation panel. Specify the number of characters to use for displaying the profile name in the navigation panel.

   If the character length for any single profile name exceeds the number of characters you specify, CentraSite truncates the name to the specified length. The default number of characters is 25.

6. Save and close the file.
7. Restart Software AG Runtime.

Note: If at a later stage you want to use the legacy profile layout, you must set the property `newRenderingMode` to `false`, and then restart Software AG Runtime.

Accessing the User Preferences Page to Set User Preferences

The User Preferences page allows you to set preferences related to the appearance and functionality of each component of your CentraSite application.

Note: Some settings might not take effect until you log out and then log back in to your CentraSite application.

To access the User Preferences page

- To access the User Preferences page (having logged on), click your profile name in the navigation bar (at the top right of every page).

User Preference Components Available via the User Preferences Page

Once you have logged in, you can customize various aspects of CentraSite via the User Preferences page. The preferences are split into the following components:

- Account Details
- Notification Options
- Language and Time Settings
- My API Keys
- Saved Searches
- My Favorites
- My Portlets

This section describes how to handle the various user preference components.

Viewing/Editing Information About Your User Account

In the **Account Details**, you can change your basic account information, including your name, email address, contact information and avatar.

Note: You may not be able to change certain fields in your user profile. Contact your CentraSite administrator for information.

To view/edit information about your user account

1. In the navigation bar of the CentraSite Business UI, click your profile name.

   The User Preferences page appears.

2. Display **Account Details**.
3. To modify general information about your user account (name, email address, contact phone and fax numbers, avatar etc.,), edit the contents of the **Account Details** tab as necessary.
4. If you have made any changes to your account information, click **Save**.

Setting Notification Options

Using the notification feature, you can request CentraSite to alert you when specified assets are modified.

The **Notification Options** allows you to enable or disable the notification options on specific events.

To set the notification options

1. Display the User Preferences page.
2. Select **Notification Options**.

   The options include:

   - CentraSite – wherein notifications will be sent to your **Inbox**.
   - **Email** – wherein notifications will be sent to your email address (as configured above).

3. Select or unselect the check boxes to enable or disable the notification options as necessary.
4. If you have made any changes to your notification options, click **Save**.

   Important: When you attempt to disable both the notification options, keep the following points in mind:

- The **Watch** action in the asset details page will not be visible, even if you belong to the CentraSite Administrator role.
- The **Inbox** in navigation bar will remain disabled.

Setting Display Options

You can configure your display settings in the CentraSite Business UI. The display settings specify the language in which CentraSite Business UI displays the user interface (assuming the appropriate language pack is installed on the Software AG Runtime) and the time zone in which timestamped events are rendered when you view the activity logs and other dated information in the CentraSite Business UI.

To set display preferences

1. Display the User Preferences page.
2. Select **Language and Time Settings**.
3. Specify the following details:

In this field...	Specify...
Display Language	The language in which you want CentraSite Business UI to be displayed.
Operating Language (Locale)	The language in which you want data in the CentraSite Business UI to be displayed.
Date Format	The format in which you want CentraSite Business UI to display dates to you.
Time Format	The format in which you want CentraSite Business UI to display times to you.
Time Zone	The time zone in which you want time stamped log information rendered when it is displayed to your user account.

4. If you have made any changes to your display settings, click **Save**.

Important: Changes to the **Display Language** and **Operating Language (Locale)** setting take effect at the next logon. All other changes you make are immediately active.

Managing My API Keys

The API key acts as both a unique identifier and secret token for authentication, and has a set of access rights on the API associated with it.

On the **My API Keys** panel, you can:

- View a list of all the API keys generated in your CentraSite registry.
- View details of the individual API key.
- Renew an expired API key.
- Delete the key if you no longer require it.

Viewing the List of API Keys

Use the following procedure to view the list of API keys you have generated in your CentraSite registry.

To view the list of your API Keys

1. Display the User Preferences page.
2. Select **My API Keys**. This displays a list of your API keys in CentraSite.

Renewing an API Key

Use the following procedure to renew an expired API key.

To renew an API key

1. Display the User Preferences page.
2. Select **My API Keys**. This displays a list of your API keys in CentraSite.
3. Move the cursor over the API key that you want to renew.
4. Click the **Renew** icon. This renews the selected API key.

> **Important:** If the API key has an unlimited expiration period, the Renew icon is *not* visible in the user interface.

Deleting an API Key

Use the following procedure to delete an API key permanently from the CentraSite registry.

To delete an API key

1. Display the User Preferences page.
2. Select **My API Keys**. This displays a list of your API keys in CentraSite.
3. Move the cursor over the API key that you want to delete.

4. Click the **Delete** icon. This deletes the selected API key.

   A confirmation message appears that the API key will be deleted.

Setting Saved Searches Preferences

The Saved Searches feature enables you to execute the search and display the results with a single click.

On the Saved Searches, you can view a list of any saved searches that you have created. You can open the saved searches to modify their contents, and you can delete them if you no longer require them.

Viewing the List of Saved Searches

Use the following procedure to view the list of Saved Searches that you have created.

To view the list of Saved Searches

1. Display the User Preferences page.
2. Select **Saved Searches**. This displays a list of your saved searches in CentraSite.

Adding a Search to Saved Searches

Use the following procedure to add a user-defined search to the Saved Searches.

To add a search to Saved Searches

1. Define a simple search or and advanced search. If you need procedures for this step, see "Searching the Catalog" on page 190.
2. Specify a name for the saved search.

   If the name you specify for the saved search already exists, you will be asked to provide a different name.
3. Select **Save**. Note that you can save your search without first executing it.

   Important: If a saved search with the given name already exists in the CentraSite, you will be asked whether you wish to replace the existing search with your current search criteria.

Modifying a Search in Saved Searches

Use the following procedure to modify a user-defined search in the Saved Searches.

To modify a search in Saved Searches

1. Display the User Preferences page.
2. Select **Saved Searches**. This displays a list of your saved searches in CentraSite.
3. Click on the name of the saved search that you want to view of edit.

This runs the saved search and shows the results in the Search Results page.

4. The Search Results page displays the search criteria that were used in the search.
5. Examine and/or redefine your search criteria as necessary.
6. If you have made changes to the search criteria, click **Save** to save the changes.

Renaming a Search in Saved Searches

Use the following procedure to rename a search in Saved Searches.

To rename a search in Saved Searches

1. Display the User Preferences page.
2. Select **Saved Searches**. This displays a list of your saved searches in CentraSite.
3. Move the cursor over the saved search that you want to rename.
4. Click the **Edit** icon.
5. Specify a new name for the search and click **Save**.

> **Important:** If a saved search with the given name already exists in the CentraSite, you will be asked whether you wish to replace the existing search with your current search criteria.

Removing a Search from Saved Searches

Use the following procedure to remove a search from Saved Searches.

To remove a search from Saved Searches

1. Display the User Preferences page.
2. Select **Saved Searches**. This displays a list of your saved searches in CentraSite.
3. Move the cursor over the saved search that you want to delete.
4. Click the **Delete** icon.

   A confirmation message appears that the saved search will be deleted.

Working with My Favorites

The My Favorites feature enables you to create lists and shortcuts to items that you use routinely or otherwise want to keep close at hand.

Using My Favorites, you can create quick links to selected assets in the catalog.

Viewing My Favorites

Use the following procedure to view the lists that you have created.

To view the lists in My Favorites

1. Display the User Preferences page.
2. Select **My Favorites**. This displays a list of the favorites that you have created in CentraSite.

Adding an Asset to My Favorites

Using My Favorites, you can build a collection of assets that you can display as a group. When the asset names are displayed as a group, you can click on the name of any given asset and select the actions that are appropriate for that asset. See also "Adding Multiple Assets to My Favorites" on page 102.

To add an asset to a list in My Favorites

1. In CentraSite Business UI, display the asset that you want to add to My Favorites. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. In the details page for the asset, click the **Add to List** icon.
3. In the **Add to List** dialog, do one of the following:
   - If you want to add the asset to an existing list, select the list from the drop-down **Select an Existing List**.
   - Otherwise, type a name in the text box to create a new list.
4. Select **Add**.
   - If at any time you wish to abandon your unsaved list and return to your previous screen, just click the **Cancel** button.

Adding Multiple Assets to My Favorites

Using My Favorites, you can build a collection of assets that you can display as a group. When the asset names are displayed as a group, you can click on the name of any given asset and select the actions that are appropriate for that asset. See also "Adding Multiple Assets to My Favorites" on page 102.

To add multiple assets to a list in My Favorites in a single operation

1. In CentraSite Business UI, use either the Browse or the Search feature in the registry to select a list of the assets you want to add. If you need information on how to browse or search the registry, see "Browsing the Catalog" on page 189 or "Searching the Catalog" on page 190.
2. Mark the checkbox of each asset you want to add.
3. In the action bar of the Search Results page, click **Add to List** .
4. In the **Add to List** dialog, select the assets, and then continue as described above for an individual asset.

Removing an Asset from My Favorites

If at a later stage you want to remove the asset from a list in My Favorites, use the following procedure.

To remove an asset from a list via My Favorites

1. Display **My Favorites** and select the list that contains the asset that you want to remove. This displays the names of the assets contained in the list.
2. Mark the checkbox of the asset you want to remove from the list.
3. Select **Remove from List**  .

Removing an Asset from My Favorites via Asset Details Page

If at a later stage you want to remove the asset from a list in My Favorites, use the following procedure.

To remove an asset from a list via asset details page

1. In CentraSite Business UI, display the asset that you want to remove from a list in My Favorites. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. In the details page for the asset, click **Remove from List**  .
3. In the **Remove from List** dialog, select the list from that you want to remove the asset by the drop-down list. If you want to specify multiple lists, use the plus button to add additional rows.
4. Select **Remove**.

Removing Multiple Assets from My Favorites

You can also remove multiple assets from a list in My Favorites in a single operation. To do this, use the following procedure.

To remove multiple assets from a list via My Favorites

1. In CentraSite Business UI, use either the Browse or the Search feature in the registry to select a list of the assets you want to remove. If you need information on how to browse or search the registry, see "Browsing the Catalog" on page 189 or "Searching the Catalog" on page 190.
2. Mark the checkbox of each asset you want to remove.
3. In the action bar of the Search Results page, click **Remove from List**  .
4. In the **Remove from List** dialog, select the list, and then continue as described above for an individual asset.

Renaming an Entry in My Favorites

Use the following procedure to rename an entry in My Favorites.

To rename an entry in My Favorites

1. Display the User Preferences page.
2. Select **My Favorites**.
3. Move the cursor over the entry that you want to rename.
4. Click the **Edit** icon.
5. Specify a new name for the entry. Then click **Save**.

> **Important:** If an entry with the given name already exists in the CentraSite, you will be asked whether you wish to replace the existing entry with your current entry.

Removing an Entry from My Favorites

Use the following procedure to remove an entry from My Favorites.

Note that when you remove an entry, any underlying assets to which the entry refers are not affected.

To remove an entry from My Favorites

1. Display the User Preferences page.
2. Select **My Favorites**.
3. Move the cursor over the entry that you want to delete.
4. Click the **Delete** icon.

   A confirmation message appears that the entry will be deleted.

Working with My Portlets

The My Portlets feature includes a list of portlets that represent the result set of a search query, any external HTML page or a graphical image.

Viewing My List of Portlets

Use the following procedure to view the list of portlets that you have created.

To view the list of portlets

1. Display the User Preferences page.
2. Select **My Portlets**. This displays a list of portlets in the user interface.

Renaming a Portlet

Use the following procedure to rename a portlet.

To rename a portlet

1. Display the User Preferences page.
2. Select **My Portlets**. This displays a list of portlets in the user interface.
3. Move the cursor over the portlet that you want to rename.
4. Click the **Edit** icon.
5. Specify a new name for the portlet. Then click **Save**.

> **Important:** If a portlet with the given name already exists in the CentraSite, you will be asked whether you wish to replace the existing portlet with your current portlet.
>
> **Note:** As an alternative, you can rename a portlet using its **Configure** option, as described in Configuring a Portlet.

Removing a Portlet

Use the following procedure to permanently remove a portlet from CentraSite.

Note that when you remove a portlet, any underlying objects to which the portlet refers are not affected.

To remove a portlet

1. Display the User Preferences page.
2. Select **My Portlets**. This displays a list of portlets in the user interface.
3. Move the cursor over the portlet that you want to delete.
4. Click the **Delete** icon.

   A confirmation message appears that the portlet will be deleted.

Managing Your Inbox

This section describes how to manage your inbox in CentraSite Business UI.

Overview

Your Inbox is where you receive notifications and send and receive messages.

If you have requested to receive notifications whenever certain assets are modified, CentraSite Business UI's inbox shows the list of such notifications.

> **Important:** Remember that CentraSite will not display **Inbox** in navigation bar unless you have chosen to receive notifications via CentraSite inbox. For information about setting the notification preferences, see "Setting Notification Options" on page 97.

Using the Inbox

- Every notification you receive appears as an item in your inbox. You may choose to receive other notifications in your inbox as well.
- Explicitly clear an entry from the list using the **Delete Notification** icon.

How to Access Your Inbox

Use the following procedure to access your inbox in the CentraSite Business UI.

To access your inbox

1. Log in into the CentraSite Business UI.
2. Click the **Inbox** link in the upper right-hand corner of the user interface. CentraSite displays the Welcome to Your Inbox page.

Creating a Notification Request

Use the following procedure to have CentraSite notify you when a specified asset is modified.

How to Create Notification Request for an Asset

To create notification request for an asset

1. In CentraSite Business UI, display the asset that you want to watch. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. In the details page for the asset, select the **Watch** icon.

   Your notification request is reflected as `Watchers` on the asset's **Basic Information** profile. The `Watchers` displays the list of users who are currently registered to receive notifications for the asset.

   > **Note:** If you see the **Unwatch** icon on the actions menu instead of the **Watch** icon, that indicates that you are already registered to receive notifications for the selected asset.

3. Go to the **Inbox** to verify that the notification request has been added to your notifications list.

How to Create Notification Request for Multiple Assets

You can also create notification requests for multiple assets in a single operation. To do this, proceed as follows:

To create notification requests for multiple assets in a single operation

1. In CentraSite Business UI, use either the Browse or the Search feature in the registry to select a list of the assets you want to watch. If you need information on how

to browse or search the registry, see "Browsing the Catalog" on page 189 or "Searching the Catalog" on page 190.

2. Mark the checkbox next to the name of each asset you want to watch.
3. In the action bar of the Search Results page, select the **Watch** icon.

Viewing Notifications You Have Received

If you have requested a notification for one or more assets, CentraSite Business UI displays an envelope ( ) beside the **Inbox** in navigation bar indicating objects on your notification list have been updated since the last time you viewed your notifications.

Use the following procedure to display the notifications that you have received.

To view notifications you have received

1. Display **Inbox**.
2. Click the name of the asset whose details you want to view.

Deleting a Notification Request

If you no longer want to receive notifications for an asset, use the following procedure to delete your notification request.

How to Delete Notification Request for an Asset

To delete notification request for an asset

1. In CentraSite Business UI, display the asset that you want to unwatch. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.

   Note: If you see the **Watch** icon on the actions menu instead of the **Unwatch** icon, that indicates that you are not registered to receive notifications for the selected asset.

2. In the action bar for the asset, select the **UnWatch** icon. This automatically changes the watcher count in the asset's **Basic Information** profile.
3. Go to the Inbox to verify that the remove from notification request has been added to your notifications list.

How to Delete Notification Request for Multiple Assets

You can also create notification requests for multiple assets in a single operation. To do this, proceed as follows:

To delete notification requests for multiple assets in a single operation

1. In CentraSite Business UI, use either the Browse or the Search feature in the registry to select a list of the assets you want to watch. If you need information on how

to browse or search the registry, see "Browsing the Catalog" on page 189 or "Searching the Catalog" on page 190.

2. Mark the checkbox next to the name of each asset you want to unwatch.
3. In the action bar of the Search Results page, select the **Unwatch** icon.

Removing Notifications from Your Inbox

Use the following procedure to remove a notification from your **Inbox**. Note that when you remove a notification, any underlying assets to which the notification refers are not affected.

To remove a notification from your

1. Display **Inbox** and locate the notification that you want to remove.
2. In the action bar of the Search Results page, select the **Delete Notification** icon.

Using Refiners in Your Inbox

Refiners enable you to drill down into the Inbox based on attributes that are associated with the notifications, such as name, description, event type, last modified date, last modified user, comment etc.

Refiners are displayed in the **View** menu that is located just above the result view area.

Using the Help Center

CentraSite Help Center gives an overview of the functionality of the CentraSite Business UI. Browse the CentraSite Help Center to get information about your product. This section describes how to access and use the various help topics in CentraSite Business UI.

Access Business UI Help Center

Use the following procedure to access the CentraSite Business UI Help Center.

To access the CentraSite Help Center

1. Log in to the CentraSite Business UI.
2. Click the **Help** link in the upper right-hand corner of the user interface. CentraSite displays the Welcome to the Help Center page.

   Alternatively, you will find **Help Center** links on several pages through out the CentraSite Business UI.
3. In the Help Center page, browse topics in the view area. Click on a topic to have it displayed.

What You Will Find in the Help Center

Introduction

Don't have a CentraSite Business UI yet? Begin with our Introduction section to know about the features that are offered by the CentraSite Business UI.

All about Assets

Chances are, you're here to check out the possible actions on an asset. For quick access to various modifications on the asset, start with this page that lists All about Assets.

Using Keyword Searching

Need some help with Using Keyword Searching? The CentraSite Business UI provides a powerful search facility. You can search for assets across organizations, classifications and types on the basis of several search criteria using ALL/ANY combinations. We'll also tell you how to define a simple search and give you plenty of points that help you define a simple search.

Browsing the Catalog

You'll undoubtedly need to view the complete list of assets at some point. You can also view a list of assets that belong to a particular asset type, organization, and user by Browsing the Catalog.

Managing the Catalog

Need some help with Managing the Catalog? CentraSite has dozens of assets that you'll want to get familiar with. We'll show you how to create or import an asset of a certain type and give you plenty of information if you want to go further on asset's definition.

Collaborating on Assets

We can provide you with all the details about approving requests for assets. The Collaborating on Assets section of the Help Center is all about approval management, so start here if you need info about the approval workflows.

Working with Notifications

You can start **Working with Notifications** feature to request CentraSite to alert you when specified assets are modified. The notification can be sent to you via Email and/or Inbox, depending on how notification is configured in your user preferences.

Customizing your Welcome Page

The Welcome page of the CentraSite Business UI is configurable and you can set up views of your most frequently used functions and reports as *portlets*. You can walk through the contents of the Welcome page and the supported portlet types in our Customizing Your Welcome Page section.

Updating Your User Profile

Need some help with Updating Your User Profile? You can change various aspects of the Business UI displays to suit your personal preferences.

Further Resources

For more information about CentraSite Business UI and its functions, see the Further Resources section.

Customizing CentraSite i18n Messages

CentraSite supports Internationalization (i18n) out of the box. With CentraSite's extensibility you can customize the default i18n messages that appear in the Business UI based on a user's language.

Understanding Message Bundles

To use different languages in CentraSite you create message bundle file for each different languages that you wish to render. Message bundles in CentraSite are located inside the <<*CentraSiteInstallDir*>> /cast/cswebapps/BusinessUI/custom/resources directory and are simple Java properties files.

Each bundle starts with the name i18nresources by convention and ends with the language (_en). By default, CentraSite looks in the i18nresources_xx.properties file for messages based on the user specific language.

Customizing i18n Messages

The i18n messages are stored in the form of key/value pairs. The key is the identifier used by CentraSite to retrieve the text, and the value is the actual text. CentraSite allows you to modify the default i18n messages to suit your needs.

After you decide which specific i18n message you want to customize, you must first fetch the key (unique identifier) from CentraSite's message database, and then manually update the i18n properties file.

Fetching a Message Key

CentraSite provides a command line tool `i18NMessageFinder` that allows you to fetch the keys for one or more message texts.

The tool has an executable jar file i18NMessageFinder.jar to fetch the message keys. The input parameters are:

Parameter	Description
`-message`	The message for which key is to be found.

Parameter	Description
`-file`	Name of the configuration file containing all of the messages for which keys are to be found. For multiple messages, use a comma to separate the values.
`-dump`	Dumps all of the key-value pairs to be used for customization of messages. If `-file` parameter is specified, the key-value pairs are dumped in the given file. If `-file` parameter is not specified, the key-value pairs are displayed in the console.
`-locale`	Represents a language code of the form `xx`. The language code is always in lower case. The `-locale` parameter is used only if the `-dump` parameter is specified. Default value is `en`.

The syntax for the command is: `CentraSiteToolbox.[cmd|sh] I18NMessageFinder.jar -message <value of the message to be customized>`

- Or -

```
CentraSiteToolbox.[cmd|sh] I18NMessageFinder.jar -file <config file> [-dump] [-locale <messages of this locale>]
```

Note: Please make sure the combination of configuration parameters in the command syntax is valid. The invalid combinations are: `-message` and `-file` are mutually exclusive; `-message` and `-dump` are mutually exclusive.

The precedence of the configuration parameters for i18n customization is as follows:

- If you configure all of the parameters - `-message`, `-dump` and `-file` for customization, then the `-message` configuration takes precedence over the `-dump` and `-file` configurations.
- If you configure the parameters - `-dump` and `-file` for customization, then the `-dump` configuration takes precedence over the `-file` configuration.

Few Examples

- Fetching message ID of a single message text

  ```
  CentraSiteToolbox.cmd I18NMessageFinder.jar
  -message "Welcome to CentraSite Business UI"
  ```

  The script generates a single message ID for the corresponding message text in the following format:

  ```
  INMBU_STR_WELCOME_PAGE_MESSAGE
  ```

- Fetching multiple message IDs of the default locale (in one execution of the tool)

  ```
  CentraSiteToolbox.[cmd|sh] I18NMessageFinder.jar -dump
  ```

The script displays all of the messages that belong to the default English (en) locale in the console.

- Fetching multiple message IDs of the user-defined locale (in one execution of the tool)

```
CentraSiteToolbox.[cmd|sh] I18NMessageFinder.jar -dump -locale ar
```

The script displays all of the messages that belong to the user-defined, for example, Arabic (ar) locale, in the console.

- Fetching multiple message IDs of multiple message texts in one execution of the tool:

```
CentraSiteToolbox.[cmd|sh] I18NMessageFinder.jar
c:\tmp\customize-config.xml -dump - locale ar -file
```

Here, the parameter `customize-config.xml` specifies a plain-text file that contains the comma-separated message texts.

The script generates an <config file>_ results.properties file that contains a list of the message IDs. Each line of the configuration file includes a message ID and the corresponding message text.

This process may take some time. The tool progress is reported to standard output.

Changing a Message Value

After you have identified the message key, you must then manually configure the i18n properties file in the following way:

1. Open the i18nresources_xx.properties file located in the folder <<*CentraSiteInstallDir*>>/cast/cswebapps/BusinessUI/custom/resources.

   If you don't have an i18nresources_xx.properties file that suits your language, create one custom properties file that ends with the language you are interested. For example, i18nresources _de.properties for German language.

2. Add the message ID and the corresponding text you want to display in the user interface as follows.

```
<ID of the message to be customized>=<text of the message to be customized>
```

   Example

```
INMBU_STR_WELCOME_PAGE_MESSAGE=Welcome to CentraSite
```

3. Repeat the previous step for the required message IDs.
4. Save your configuration.
5. Restart Software AG Runtime.
6. Log on to CentraSite Business UI to see your customized messages.

Working with Organizations, Users, Groups and Roles

This section describes how to add organizations to CentraSite and perform administrative tasks on the organizations. It also describes how to manage users, groups and roles associated with the organization.

Working with Organizations

Introduction

The CentraSite Business UI allows you to view, add, manage and delete organizations. Each organization that you add is stored in the CentraSite registry as an object of the type Organization.

The typical information that you store for an organization includes:

- general information about the organization, such as the organization's name, the description of the organization, the contact person for the organization and the address of the organization's web site.
- the CentraSite users who belong to the organization, as well as any group or role assignments.
- details of any child organizations of the organization.

Users with the Manage Organizations system-level permission (such as the users with the role CentraSite Administrator) can perform all of the above actions on any organization. Users with the Organization Administrator organization-level role for a given organization can perform all of the above actions on that organization.

Displaying a List of Your Organizations

The Manage Organizations activity allows you to view a list of the organizations that you are allowed to access. The list includes all organizations for which you are the owner. If you have the Manage Organizations system-level permission, the list includes all of the organizations defined in the registry.

To view the list of organizations

- In the activity bar, click **Manage Organizations**.

  When you do this, you see a list of all of the currently defined organizations. Also, the action bar shows the set of actions that are available for working with organizations.

  For each organization, the list includes various attributes of the organization such as the organization name and the owner. You can adjust the view to show or hide any of the available attributes. To do this, open the drop-down list labeled **View**, then

mark the checkboxes for any attributes that you want to include in the view, and unmark the checkboxes for attributes that you do not want to display.

Similarly, you can change the order in which the attributes are displayed. To do this, open the drop-down list labeled **Show by**. The list shows all of the attributes that currently selected in the **View** drop-down list. The order in which the attributes appear in the drop-down list **Show by** is the order in which the attributes appear for each displayed organization. If you want to change the order in which any given attribute is displayed, select the attribute in the drop-down list **Show by**, then use the arrows to move the attribute to the required position.

Adding an Organization

This section describes how to add an organization to CentraSite.

To add an organization to CentraSite

1. In the activity bar, click **Manage Organizations**.

   When you do this, you see a list of all of the currently defined organizations. Also, the action bar shows the set of actions that are available for working with organizations.

2. Click **Add Organization**.

   This opens a dialog in which you can enter the required information for the organization.

3. Enter the appropriate information for each of the displayed data fields. To access a data field, click on the link for the field.

   Each organization requires at least one administrator. The administrator receives all permissions required to perform any administrator-level operation on the organization.

   The **Administrator(s)** field is a type-ahead field; as you enter characters in this field, the dialog shows you all known users whose user ID begins with the characters you have entered. If your user repository is based on LDAP, the search will look additionally for any user that has an LDAP attribute value that matches the characters you enter.

   You can use wildcards in this field. For example "*abc" will find users with user IDs such as `org1abc` or `department52abc`, or users with LDAP attributes that have these values. The wildcard `*` represents any number of characters; the wildcard `%` represents any single character.

   The list of user IDs returned shows users who are already registered in the organization, as well as users in the user repository who are not yet registered as users in CentraSite. If you select one of the unregistered users, this user becomes a registered user in the organization and is assigned to be an administrator of the organization.

You can define more than one administrator for the organization. Use the **+** button beside the field labeled **Administrator(s)** to add additional administrators.

4. Click **Save** to save the details.

Viewing or Modifying Details of an Organization

To view or modify the details that you have stored for an organization, proceed a follows:

To view or modify an organization's details

1. Display the list of organizations (see "Displaying a List of Your Organizations" on page 113 for details).
2. In the displayed list, click the link of the organization whose details you want to view. This shows the details of the organization.

   The details include:

   - The organization's basic information (organization's postal address, the web page URL, the name of the organization's administrator, the primary contact person and a general description of the organization).
   - The immediate child organizations of this parent organization.
   - The users who belong to this organization.
   - The groups which belong to this organization.
   - The roles that belong to this organization.
3. If you want to modify the organization's details that are displayed in the Basic Information section, click the Edit icon. You can then enter new values for the organization's fields.

   Then click the Save icon to save the changes.

   If you want to make changes related to the child organizations of an organization, follow the instructions in "Working with Child Organizations" on page 116.

Deleting an Organization

This section describes how to delete an organization. You can also delete multiple organizations in a single action.

To delete an organization, you must have the Manage Organizations organization-level permission for this organization (the Organization Administrator role has this permission), or the Manage Organizations system-level permission (the CentraSite Administrator role has this permission).

If you want to delete an organization that has one or more child organizations, you must first delete the child organizations before you can delete the organization.

To delete an organization

1. In the activity bar, click **Manage Organizations**.

   When you do this, you see a list of all of the currently defined organizations. Also, the action bar shows the set of actions that are available for working with organizations.

2. Mark the checkbox of the organization that you want to delete. If you want to delete more than one organization, mark the checkbox of each organization that you want to delete.

3. Click **Delete**.

Working with Child Organizations

Each organization can have one or more child organizations, each of which in turn can also have child organizations, and so on. This allows you to model hierarchies such as, for example, when a large corporation consists of many independently operating companies that in turn have regional subdivisions.

The Business UI allows you to add, view, modify or delete an existing child organization.

Add a Child Organization

To add a child organization

1. In the activity bar, click **Manage Organizations**.

   When you do this, the action bar shows the set of actions that are available for working with organizations.

2. Select the organization where you want to add a child organization.

3. In the details page of the organization, click the **Add Child Organization** icon.

4. Enter data for the fields displayed.

   The fields displayed are the same fields as for the parent organization, so for a description of the fields, follow the instructions provided above for adding an organization.

View or Modify a Child Organization

To view or modify a child organization

1. In the activity bar, click **Manage Organizations**.

2. Select the parent organization that contains the required child organization.

3. In the navigation panel, select **Child Organizations**. You will see a list of all of the child organizations of this parent organization.

4. Click the name of the child organization that you want to view or modify.

   The details include:

   - The child organization's basic information (organization's postal address, the web page URL, the name of the organization's administrator, and a general description of the organization).
   - The immediate child organizations of this organization.
   - The users who belong to this organization.
   - The groups which belong to this organization.
   - The roles that belong this organization.

5. If you want to modify the attributes of the child organization, as displayed in the Basic Information profile, click the **Edit** icon. You can then enter new values for the child organization's fields. Then click the **Save** icon to save the changes.

Delete a Child Organization

To delete a child organization

1. Display the details page of the parent organization. Then select **Child Organizations** to display a list of child organizations that belong to the organization.
2. Move the mouse over the child organization you want to delete. This causes an icon to appear, that you can use for deleting.
3. Click the icon to delete the child organization.

Operations on Users, Groups and Roles at the Organization level

The detail information for an organization lists the users, groups and roles that belong to the organization (as well as other information such as details of child organizations). The information is dynamically updated each time you refresh the display.

In the navigation panel, you can select **Users**, **Groups** and **Roles** to display details for these categories.

When you are viewing the users, groups, or roles for an organization, if you move the cursor over an individual user, group, or role, one or more icons appear. Use these icons to perform actions on the selected user, group, or role.

If, for example, you want to delete a user-defined user, group or role, then proceed as follows:

To delete a user, group or role at the organization level

1. In the navigation panel, select **Users**, **Groups** or **Roles** as required.
2. Move the cursor over the user, group or role that you want to delete.
3. Click the **Delete** icon. This deletes the selected user, group or role.

Working with Users

Each user that you add within the context of a specific organization has permissions to access information within that organization, but does not have permission to access information belonging to any other organization.

Adding a User to an Organization

You can add a user to an organization. The user must be already registered in the current default user repository.

To add a user to an organization

1. In the activity bar, click **Manage Organizations** and click on the organization where you will add the user.
2. In the actions bar for the organization, click **Add User**.

   This opens a dialog for adding a user.
3. Enter the user ID of the user in the search field.

   If your current default user repository is LDAP-based, you can instead enter the value of any mapped LDAP property of the user you want to search for.

   You can also specify just the first characters of the user ID or the LDAP property's value. In this case, CentraSite will find all users whose user ID begins with these characters, or all users who have at least one mapped LDAP property that begins with these characters.
4. Then click Search. CentraSite will display a list of users matching the search criteria.
5. Mark the checkbox for the user you wish to add, then click **Add**.

   If you want to add more than one user, mark the checkbox of each user you want to add, then click **Add**.

Viewing or Modifying Details of a User

If you want to view or modify the information stored for a user, proceed as follows:

To view or modify the details stored for a user

1. Display details for the organization to which the user belongs. Then select **Users** to display a list of users that belong to the organization.
2. Click the name of the user whose details you want to view or modify.

   The details include:

   - The user's basic information (display name, user ID, email address, owning organization, a description of the user, telephone and mobile numbers).

The data fields shown are selected according to the user's current display preferences. For more information about setting user preferences, see "User Preference Components Available via the User Preferences Page" on page 96.

- The assets that the user owns.
- The groups of which the user is a member.
- The roles to which the user is assigned.

  The roles also include the roles inherited through the groups of which the user is a member.

3. If you want to modify the user details, click the **Edit** icon. You can then enter new values for fields such as the user's first name, last name and the user's organization.

   Then click the **Save** icon to save the changes.

Adding a User to a Group from the User Details View

There are two ways of adding a user to a group, namely from the user details view or the group details view. Details for adding a user from the group details page are provided in "Adding a User to a Group from the Group Details View" on page 122.

To add a user to a group from the user details page, proceed as follows:

To add a user to a group (from the user details page)

1. In the details page for the user, select the **Add to Group** icon.
2. If you want to see a list of all defined groups, click the **Search** icon. You can also type the first few characters of the group name in the search field, then click the **Search** icon. This will display all groups whose name starts with the given characters. You can use wildcard characters (`*` or `%`) in the search field.

   You can sort the groups based on the name/description/organization of the group by using the **Sort By** chooser. You can also configure the group attributes that you want to view by using the **View** chooser.
3. In the list of displayed groups, select the group where you want to add the user.

   You can add a user to more than one group. To do this, you can select several groups from the list.

Deleting a User from a Group from the User Details View

When you delete a user from a group, you delete the association between the user and the group, but both the user and the group continue to exist.

There are two ways of deleting a user from a group, namely from the user details view or the group details view. Details for deleting a user from the group details page are provided in "Deleting a User from a Group from the Group Details View" on page 122.

To delete a user from a group from the user details page, proceed as follows:

To delete a user from a group (from the user details page)

1. In the details page for the user, select **Groups**.
2. In the list of displayed groups, move the cursor to the group from which you want to remove the user. This displays icons for one or more actions that you can perform on the group.
3. Click the **Delete** icon. This removes the user from the group.

> **Note:** You cannot remove a user from pre-defined group such as `Users` or `Members`.

Deleting a User

To delete a user

1. Display the list of users currently defined for the organization.

   See Viewing or Modifying Details of a User for details about how to do this.
2. Move the mouse over the user you want to delete. This displays icons for one or more actions that you can perform on the user.
3. Click the **Delete** icon. This deletes the user.

> **Note:** You cannot delete a user who is the only administrator or the primary contact of the organization.

Viewing or Deleting Assets of a User

You can view or delete the assets of a user.

View Assets of a User

To view the assets of a user

1. Display the details page for the user.
2. Select **Assets**. This displays the assets owned by the user.

Delete Asset Belonging to a User

If you want to delete any of these assets, proceed as follows:

To delete the asset belonging to a user

1. View the list of assets belonging to the user, as described in "View Assets of a User" on page 120.

2. Move the cursor over the asset you want to delete. This causes the **Delete** icon to appear.
3. Click the **Delete** icon.

Working with Groups

You can define organization-specific groups. A group can contain users who are defined in different organizations.

Adding a Group to an Organization

To add a group to an organization

1. In the activity bar, click **Manage Organizations** and click on the organization where you will add the group.
2. In the actions bar for the organization, click **Add Group**.
3. Choose one of the following options:
   - If you want to add a new local group, enter the name of the group in the field labeled **Create a new Group**.

     Then assign users to the group, as described below.
   - If you want to import a group from an external user repository, enter the name of the external group in the field labeled **Import an external Group**.

     When you import an external group, you can also choose the option **Import all group members as users**. This ensures that all of the users defined in the external group are also added as users to the group in CentraSite. Since the group is assigned to a specific organization, the users will be assigned to the same organization.

   A group can be empty. Each user can be assigned to zero, one, or more than one group.

Viewing or Modifying Details of a Group

To view or modify the details stored for a group

1. Display details for the organization to which the group belongs. Then select **Groups** to display a list of groups that belong to the organization.
2. Click the name of the group whose details you want to view or modify.

   The details include:
   - The group's basic information, which shows an owning organization and a description of the group.
   - The users who belong to the group.

- Roles that have been assigned to the group.

3. If you want to modify the group's basic details, click the **Edit** icon. You can then enter new values for the group's name and description fields.

   Then click the **Save** icon to save the changes.

   If the group is an external repository group, then the **Edit** icon is disabled, since modifying an external repository group is not supported.

Adding a User to a Group from the Group Details View

There are two ways of adding a user to a group, namely from the user details view or the group details view. Details for adding a user from the user details page are provided in "Adding a User to a Group from the User Details View" on page 119.

To add a user to a group from the group details page, proceed as follows:

To add a user to a group (from the group details page)

1. In the details page for the group, select the **Assign User** icon.
2. If you want to see a list of all available users, click the **Search** icon. You can also type the first few characters of the user ID in the search field, then click the **Search** icon. This will display all users whose name starts with the given characters. You can use wildcard characters (`*` or `%`) in the search field.

   You can sort the users based on attributes, such as user name or the owning organization of the user, by using the **Sort By** chooser. You can also configure the user attributes that you want to view by using the **View** chooser.
3. In the list of displayed users, select the users you want to add to the group user.

   You can add more than one user to a group. To do this, you can select several users from the list.

Deleting a User from a Group from the Group Details View

There are two ways of deleting a user from a group, namely from the user details view or the group details view. Details for deleting a user from the user details page are provided in "Deleting a User from a Group from the User Details View" on page 119.

To delete a user from a group from the group details page, proceed as follows:

To delete a user from a group (from the group details page)

1. Display details for the group from which you want to remove the user. Then select **Group Members** to display a list of users who belong to the group.
2. Move the cursor over the user you want to delete. This causes the **Delete** icon to appear.
3. Click the **Delete** icon. This removes the user from the group.

> **Note:** You cannot remove a user from pre-defined group such as `Users` or `Members`.

Modifying or Deleting Groups

To modify or delete a group

1. Display the list of groups currently defined for the organization (see Viewing or Modifying Details of a Group for details).
2. Move the mouse over the group you wish to modify or delete. This causes two icons to appear, one for modifying and one for deleting.
3. Click the appropriate icon for modifying or deleting the group.

   If you delete the group, you delete all of the assignments of users to the group, but the users continue to exist without the group.

> **Note:** You cannot delete the `Users` or `Members` groups of an organization. These are pre-defined groups and are created automatically when an organization is created. They will only be deleted if you delete the organization that they belong to.

Working with Roles

Roles can be assigned to users or groups defined in an organization. Users or groups who have roles receive all of the permissions associated with the roles.

Adding a Role to an Organization

To add a role to an organization

1. In the activity bar, click **Manage Organizations** and click on the organization where you will specify the role assignment.
2. In the actions bar for the organization, click **Add Role**.
3. In the data fields provided, specify the name of the new role and provide a description.

   Also mark the checkboxes of all permissions that will be assigned to the role. The dialog offers only the permissions that are appropriate for the logged-in user. If, for example, you are a user with the role CentraSite Administrator, the dialog offers all available permissions (i.e. organization-specific and system-wide permissions), otherwise the dialog offers just the organization-specific permissions.
4. Click **Add** to save the role.

   You can define a role without assigning it (yet) to a user or group. Each user or group can have zero, one, or more than one role assignments. For information about role assignments, see "Assigning a Role to a User or Group" on page 124.

Viewing or Modifying Details of a Role

To view or modify the details of a role

1. Display details for the organization to which the role belongs. Then select **Roles** to display a list of roles that belong to the organization.
2. Click the name of the role whose details you want to view or modify.

   The details include:

   - The role's basic information, which shows an owning organization and a description of the role.
   - The users assigned to the role.
   - The groups assigned to the role.
   - The permissions assigned to the role.
3. If you want to modify the basic information of the role, click the **Edit** icon in the actions bar. You can then enter new values for the fields.

   If you are a user with the Organization Administrator role, you can make the following changes:

   - **Role name**

     You can change the name of the role by entering a new name in the **Name** field. If you had previously assigned the role to a user or group, you will see the new name when you subsequently display the role information for the user or group.
   - **Role description**

     You can enter a new text in the **Description** filed for the role.

   If you are a user with the CentraSite Administrator role, you can additionally make the following change:

   - **Owning Organization**

     You can change the organization to which the role belongs by entering a new organization name in the **Organization** field. This is only possible if the role is not already assigned to any user or group in the current organization.

   Then click the **Save** icon to save the changes.

Assigning a Role to a User or Group

To assign a role to a user or group

1. If you want to assign a role to a user, display the details page of the user.

   If you want to assign a role to a group, display the details page of the group.
2. In the actions bar, click **Assign Role**.

3. If you want to see a list of all available roles, click the **Search** icon. You can also type the first few characters of the role name in the search field, then click the **Search** icon. This will display all roles whose name starts with the given characters. You can use wildcard characters (`*` or `%`) in the search field.

   You can sort the roles based on the role attributes available with the **Sort By** chooser. You can also configure the role attributes that you want to view by using the **View** chooser.

4. Select the role that you want to assign to the user or group, then click **Add**.

Deleting Role Assignments from a User or Group

There are two ways of deleting a role assignment from a user or group: (a) you can remove the role from the set of roles defined for the user or group, or (b) you can remove the user or group from the set of users and groups to which this role has been assigned.

Instructions for these two methods are as follows:

Delete a Role from the Set of Roles Assigned to a User or Group

To delete a role from the set of roles assigned to a user or group

1. Display the details page of the user or group (see Viewing or Modifying Details of a User or Viewing or Modifying Details of a Group for details).
2. Select **Roles** to display the roles to which the user or group is assigned.
3. Move the mouse over the role assignment that you want to remove from this user or group. When you do this, a pop-up menu appears.
4. From the pop-up menu, click the icon for deleting the role.

Remove a User or Group from the Set of Users and Groups Assigned to a Role

To remove a user or group from the set of users and groups assigned to a role

1. Display the details page of the role (see "Viewing or Modifying Details of a Role" on page 124 for details).
2. Select **Users** or **Groups** to view the list of users or groups assigned to the role.
3. Move the mouse over the user or group where you want to remove the role assignment. When you do this, a pop-up menu appears.
4. From the pop-up menu, click the icon for deleting the user or group from the set.

   If you delete a role assignment, the affected user or group loses the permissions associated with the role, unless the user or group has another role assignment that provides the same permissions.

Modifying a Role's Permissions

The permissions originally assigned to a role are defined when you create the role (see "Adding a Role to an Organization" on page 123 for details). If you wish to modify the permissions assigned to a role, proceed as follows:

Assign Permission to a Role

To assign a permission to a role

1. Display details for the organization where the role is defined. Then select **Roles** to display a list of roles that belong to the organization.
2. Click the role whose permissions you want to modify. This displays the details page of the role.
3. Click the **Assign Permissions** action.
4. In the list of displayed permissions, mark the checkbox of the permission that you want to assign to the role. Multiple selections are also possible.
5. Click **Add** to save your changes.

Remove Permission from a Role

To remove a permission from a role

1. Display the details page of the role (see "Viewing or Modifying Details of a Role" on page 124 for details).
2. Select **Permissions** to view the permissions assigned to the role.
3. Move the mouse over the permission that you want to remove from the role. When you do this, a pop-up menu appears.
4. From the pop-up menu, click the icon for removing the permission.

Deleting a Role from an Organization

If you no longer require a role that has been previously defined for an organization, you can delete the role, provided that it is not currently assigned to any user or group.

To delete the role, follow the instructions given in "Operations on Users, Groups and Roles at the Organization level" on page 117.

Note: You cannot delete pre-defined system-wide roles from the Default Organization.

Exporting and Importing Registry Objects Using Business UI

This section describes how to export/import objects from one CentraSite registry to another.

Introduction

CentraSite enables you to export registry objects from a registry to an archive file on the file system, and import them from the archive file into the same registry or to another instance of CentraSite.

Please note that the import/export feature is designed specifically for exporting selected objects from the registry. If you want to make a copy of an entire instance of the CentraSite registry/repository in order to move it to another machine or for disaster recovery purposes, see instructions for backing up the database in the *CentraSite Administrator's Guide*.

Which Objects Can You Export and Import?

The following native CentraSite objects are objects that you can select for export:

- Organizations

  By exporting an organization, it is possible to export and import the following objects that are associated to it:

  - Users
  - Lifecycle Models
  - Design-Time Policies
  - Run-Time Policies
- Assets (instances)

An Overview of the Export/Import Process

Exporting registry objects and repository items is done in two steps; the exported objects are first copied to an archive file (a zip file that contains the exported registry objects and repository items) and at a later stage the contents of the archive file are imported into a target registry (which may be the registry from which the objects were exported or a different one).

Exporting an Object

You can export an object using the CentraSite Business UI.

Be aware that when you export an object, CentraSite generally exports a number of additional objects besides the one you select. The specific set of objects that CentraSite exports with an object varies by object type (this topic is discussed in more detail below).

To export an object successfully, you must have view permission on the object that you select for export and all of the additional objects that will export with that object.

After CentraSite completes the export process, it generates a report that identifies each of the objects that it attempted to export and indicates whether or not the object was exported successfully. The export report also identifies all referenced objects that were omitted from the archive file.

Review the information in the *CentraSite Administrator's Guide* before exporting an object to ensure that you create an archive that can be imported successfully.

Importing an Object

You import an object by importing the archive file to which it was previously exported. You can import an object into the same CentraSite registry from which it was originally exported or to a different registry.

The import dialog displays the contents of the archive to be imported, and you can select either the entire archive or just a subset of the objects to import.

Note: If the archive contains a registry object with references which cannot be satisfied during import, the import process will continue but this object is not imported.

For more information about the import process, see the *CentraSite Administrator's Guide*.

Exporting and Importing Specific Object Types

Organizations

When you export an Organization, the export set consists of:

- The definition of the organization itself
- The contents of the Supporting Documents library of the organization

Additionally, you can optionally export the following objects with the organization:

- Definitions of users, groups and roles, together with their associated permissions.
- Child organizations with their related objects
- Lifecycle Models
- Policies
- Assets

Note: Keep the following in mind:

- Users, Groups, Roles and Permissions objects cannot be directly exported. You can only export these kinds of objects by exporting the organization to which they belong.
- If lifecycle models and policies are selected to be exported with the organization, users are automatically selected for export also. If lifecycle models and policies are not included in the export, you have the option to select the users for export.
- If an organization with login-users is imported where the user is already present in the target registry, the import of the user object is ignored and the object is not replaced. This is also true when only the user name but not its `Key` attribute are identical; in this case the conflicting user will be ignored at import and a warning message is displayed. The user is removed from its group and any **Keep current owner** settings referring to this user are ignored.
- If the organization is exported with users and a user is a member of one of the organization's groups without being related to the organization itself, then this user will not be exported with the organization. This is true even if the user is the Organization Administrator.
- If the organization was exported without users or if the Organization Administrator belongs to a foreign organization, the Organization Administrator will be set to the importing user on import; otherwise the Organization Administrator will not change. An organization's Primary Contact will always be the importing user.
- If the replace option was set and the imported organization is already present in the target registry, its associated groups and users will be updated. Furthermore, if the export included users, the groups are entirely replaced with the corresponding information of the export set, i.e., users may be added to or deleted from the organization and the groups. However, if the export did not include users, the organization and its groups will retain their users.
- If an archive with one or more organizations is imported, then the **Keep current organization** option is implicitly switched on, thereby ensuring that all objects will be imported to their original organization.

Asset Instances

When you export an instance of an asset, the export set consists of:

- The asset's type definition
- The asset object itself
- All supporting documents associated with the asset
- The taxonomy associated with the asset type, if the taxonomy is a custom taxonomy or a modified predefined taxonomy.

- All referenced objects to which the asset to export has an association.
- For each exported asset instance, the export set contains all referenced asset types and association types. This means that when the export set is imported on the target machine, imported assets have no unsatisfied references.
- Assets that are referenced by the assets that you wish to export (if you select the option Include assets referenced by selected assets). If referenced assets themselves reference other assets, also those assets will be included; this selection process is repeated until all asset references are satisfied.

  Note: This option can cause the size of the export set to be very large.

Note: When you export an asset that refers to XML Schemas, the referenced XML Schemas are also exported automatically, provided that you have permission to export them. If you do not have permission to export a referenced XML Schema, the referenced XML Schema will not be exported and a warning message will be logged.

Exporting Objects Using CentraSite Business UI

With Business UI, you can export one or more objects in each export operation. To export an object, you typically select it and then specify which related objects you would like to export along with it.

The export operation creates an archive file on the file system. The archive file contains a copy of the objects that you have exported. The archive file can be imported afterwards into the same CentraSite registry or into a new registry. For details of the import operation, see the *CentraSite Administrator's Guide*.

Objects can be exported either by viewing the details page of the object you wish to export and choosing **Export** action, or by selecting the object you wish to export in the Search Results page and choosing the **Export** action. The Search Results page allows you to export multiple objects in one step whereas the details page of the object only allows you to export that particular object.

Note: You must have view permission for the assets you want to include in the export set.

To export an object or a set of objects

1. In CentraSite Business UI, display the page that contains the object or the set of objects that you want to export. For example, if you want to export an asset, go to the asset's details page or if you want to export a set of assets, go to the search results page. Both pages are described in the *CentraSite Administrator's Guide* .
2. Select the object or set of objects you want to export and click the **Export** ( ) icon.
3. The **Export** dialog shows the selected object.

4. Expand the **Advanced Settings** to display a list of the additional export options.

   The available options depend on the type of object you wish to export.

Object type	Available export options
Asset	■ **Include assets referenced by selected assets** If the selected assets contain references to other assets, then include the referenced assets also in the export set. This selection process is repeated recursively until all asset references are satisfied.
Organization	■ **Include users** Include all users who belong to the organization. ■ **Include child organizations** Include all organizations that are child organizations of the organization. If the option `Include assets of organization` is selected, include also all assets that belong to the child organizations. ■ **Include lifecycle models and policies** Include all lifecycle models and policies that have been define for the organization. ■ **Include assets of organization** Include all assets that belong to the organization. ■ **Include assets referenced by selected assets** If the assets that are selected by the option **Include assets of organization** contain references to other assets, then include the referenced assets also in the export set. This selection process is repeated recursively until all asset references are satisfied.

5. After you have selected the export options, click **Apply Settings**. The Export Preview page is displayed.
6. The Export Preview page displays the list of selected objects and its dependent objects.

   The checkbox beside each object indicates whether or not the object should be included in the export set. By default, all displayed objects are included in the export set.

   If you wish to remove an object from the export set, unmark its checkbox. This removes the object and all of its dependent objects (if any) from the export set.
7. Click **Export** to start the export operation.

Important: If none of the object is selected for export, the **Export** button is disabled.

Note: If at any time you wish to abandon all your changes and return to your previous screen, just click the **Cancel** button.

8. An **Export Progress** popup will display the export progress bar.
9. Click **Download** if you wish to download the export archive file. This starts the creation of the archive file.

   Note that the **Download** button will remain disabled until the entire export operation is completed.

   The default location to which the archive file is downloaded is My Documents \Downloads.

Importing Objects from an Archive Using CentraSite Business UI

With Business UI, you can import one or more objects from source CentraSite registry to the target CentraSite registry. You can import objects by importing the archive file to which the objects were previously exported. For more information on importing objects from an archive, see "Importing Assets" on page 185

Note: The archive you wish to import must reside in the file system of the computer where your browser is running.

Managing Assets

This section describes how to add assets to CentraSite and perform various actions on an asset.

Introduction

CentraSite enables business users to view and manage assets such as the web services, XML schemas, XML services and REST services.

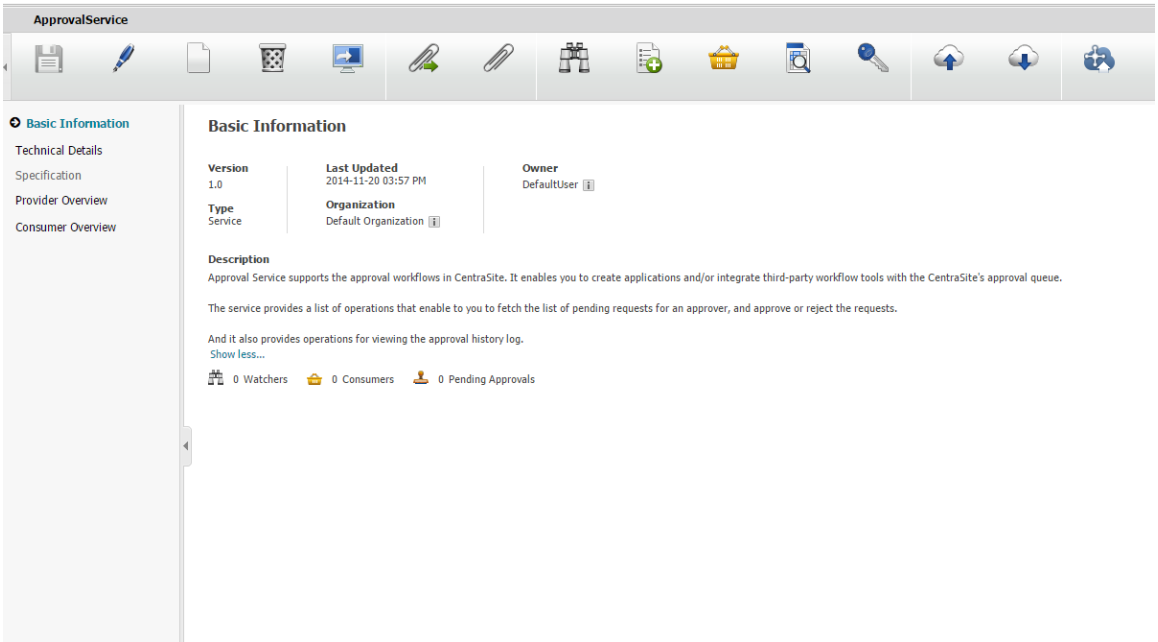
- Business users use the CentraSite catalog to view and manage their organization's assets, publish assets, edit asset details and assign permissions to assets.
- Consumer and guest users use the CentraSite catalog tab to browse the catalog and search for assets.

CentraSite serves as the central catalog of reusable assets within a development environment. When initially installed, the CentraSite catalog supports several types of assets, such as web services, XML schemas, XML services, REST services and application servers.

Note: Not all operations are allowed for all users. A user's role and the instance-level permissions on an asset determine which assets a user is allowed to see and what operations the user is allowed to perform on the asset.

Displaying Details of an Asset

CentraSite provides a summary of details of the asset. The details rendered as attributes are grouped together as profiles.



Additionally, on the action bar you will find the list of operations (such as export, view report, and download asset) that can be performed on the asset.

Before You Begin

Before you begin to view the details of an asset, keep in mind the following points:

- CentraSite renders the **Basic Information** profile by default.
- Profile selected for rendering displays highlighted in the navigation panel with an active icon. Also, if the profile has one or more required attributes with an empty value, then CentraSite displays an invalid icon in edit mode.
- Profiles that have no data are displayed in gray in the navigation panel when you are in view mode. These profiles become active in edit mode.
- Attributes that only have a value are displayed in the content panel when you are in view mode. CentraSite maintains all of the attributes associated with a profile in edit mode, irrespective of their values.
- When displaying the list of profiles in the navigation panel, if the character length for any single profile name exceeds the limit set by the

`navigationPanelMaxCharLength` value, then that profile name gets truncated. If you have a profile name which displays truncated, move the cursor over the profile to view its fully qualified name as defined in the type definition.

- You can view a tooltip text for any attribute in a profile of the asset's details page by moving the cursor over the attribute. The tooltip text gives a summary of the attribute's purpose. The tooltip text shown is the content of the attribute's Description field, and is as defined for the asset in the asset type definition.
- The action bar displays a list of actions (operations) that you can perform on the individual asset. The list of actions that you will see for an asset depends on your current configuration settings and the type of asset instance.
- You will only see profiles for which you have View permission.
- *This is of specific relevance to REST and XML based service assets.* Beginning with version 9.7, CentraSite supports the enhanced interface for REST services (in contrast, earlier versions of CentraSite supported a standardized interface for REST services). Documentation of the prior REST service interface is available to Software AG customers who have a current maintenance contract in Empower, Software AG's global extranet (http://empower.softwareag.com/).
- If you have REST services that were created prior to version 9.7 or if you are using the current version of CentraSite Business UI, you will only be able to view details of these services in CentraSite Control. You cannot edit or delete REST services using the CentraSite Control user interface (not even if you belong to the CentraSite Administrator role). This is because, CentraSite Control does not support the enhanced REST interface. You will only be able to edit or delete REST services using the CentraSite Business UI.

Viewing the Details of an Asset

Use the following procedure to view the details for an asset.

To view details for an asset

1. In CentraSite Business UI, there are two alternatives for handling access to the list of assets.
   - Use the **Browse** link. If you need procedures for this step, see "Browsing the Catalog" on page 189.
   - Use the **Type a Search** field. If you need procedures for this step, see "Searching the Catalog" on page 190.
2. Locate the asset whose details you want to view.
3. Click the asset's hyperlinked name.
4. On the asset's detail page, examine the properties as necessary.

   CentraSite will display the attributes for the selected asset. If you have Modify permission on the asset, you can edit the asset's attributes.

Creating a New Asset in the Catalog

This section describes how to add assets to the CentraSite catalog.

Who Can Create Asset to the Catalog?

To add assets to an organization's CentraSite catalog, you must belong to a role that has the Create Assets or Manage Assets permission for that organization. To see a list of the predefined roles that include the Create Assets or Manage Assets permission, see *Getting Started with CentraSite*.

Who Can Access the Assets that You Create?

By default, everyone in your organization is permitted to view the assets that you create in your organization's catalog. However, only you (as the asset owner) and users that belong to a role that has the Manage Assets permission for your organization can view, edit and delete the assets that you add to the catalog.

To enable other users to view, edit and/or delete an asset that you have created, you must modify the asset's instance-level permission settings. For more information about allowing other users to access an asset, see *Getting Started with CentraSite*.

Adding an Asset to the Catalog

Some asset types, such as Application Servers, do not have importers. To add this type of asset to the catalog, you must define it from scratch, meaning that you must create the asset and set its attributes manually.

Note that CentraSite allows you to add any type of asset to the catalog manually, even those that you can create using importers. Be aware, however, that you might not be able to manually set all of the attributes for these types of assets. Certain attributes can only be set by an importer. For example, CentraSite allows you to add a web service to the catalog from scratch, but attributes such as the list of operations and the service endpoints cannot be specified manually. To set these attributes, you must attach the WSDL file to the catalog entry using the **Attach Document** command in the asset's actions menu. Similarly, CentraSite allows you to add a REST service or an XML service to the catalog from scratch, but attributes such as the HTTP methods, content type and service endpoints cannot be specified manually. To set these attributes, you must specify the HTTP methods, content type and schema files to the catalog entry using the Add resource command in the asset's **Technical Details** profile.

Generally speaking, you should ensure that the following conditions are satisfied before you create a virtualized service:

- Ensure that the interface for the native service is completely implemented and that interface is reflected in the WSDL or schema file that is registered for the service in the CentraSite registry.
- An instance of the service is deployed and running at a known point in network.

- The metadata for the native service is valid and up-to-date. If the metadata for the native service has not been completely specified or is out-of-date, you should update it before you generate the virtual service so that you do not carry inaccurate/incomplete data into the virtualized service.

How to Add an Asset to the Catalog

Use the following procedure to add an asset to the CentraSite catalog from scratch.

To add an asset to the catalog

1. In CentraSite Business UI, click the **Create Assets** activity. This opens the **Create Asset** wizard.
2. In the **Basic Information** panel, specify the following attributes:

In this field...	Do the following...
Name	*Mandatory.* Enter a name for the asset. An asset name can contain any character (including spaces). An asset name does not need to be unique within the catalog. However, to reduce ambiguity, you should avoid giving multiple assets of the same type the same name. As a best practice, we recommend that you adopt appropriate naming conventions to ensure that assets are distinctly named within an organization.
Type	Choose the type of asset that you want to add to the catalog. All top-level asset types are shown in the drop-down list. The asset types that are supported out-of-the-box are: Application, Web service, REST service, XML Service, BPEL Process, XML Schema, virtualized services etc.) CentraSite supports three types of virtualized services, all of which are predefined asset types that CentraSite supports out-of-the-box: Virtual Service, Virtual REST Service and Virtual XML Service. This document uses the term `virtualized service` when referring to the three types of virtualized services in general. For information about virtualized services, see *Run-Time Governance with CentraSite*.
Organization	Choose the organization to which the asset will be added. (The drop-down list will contain the list of organizations to which you are permitted to add assets.) If you select an organization other than your own organization, you will nevertheless be the owner of the asset.

In this field...	Do the following...
	Note: Choose the organization with care. You cannot change the organization assignment after the asset is added to the catalog. You can, however, export an asset from one organization and import it to another.
Initial Version	*Optional.* Enter an identifier for the initial version of the asset. This is the user-defined version, as opposed to the automatically assigned system version. You can enter any string in this field, i.e. the version identifier does not need to be numeric. You can also leave the field blank. You can later create new versions of the asset (see "Versioning an Asset" on page 160). If the versioning feature is disabled for this asset type, the field is nevertheless displayed, thus allowing you to assign an identifier for this first version. If the import of the asset also causes other related objects to be imported (for example, if the WSDL definition for a web service includes references to other WSDL or schema definition files), the initial version is only assigned to the main asset identified in this dialog, and the initial version of the other imported objects is not assigned.
Description	*Optional.* Enter a comment or descriptive information about the new asset.
URL or **File**	Specify whether the input file will be read from your local file system (the **File** option) or from a URL-addressable location on the network (the **URL** option). If the file you are importing resides on the network, specify its URL. If the file resides in your local file system, specify the file name. You can use the **Browse** button to navigate to the required folder.

3. Expand the **Advanced Settings** node. Enter the following information:

In this field...	Do the following...
Credentials	If you have specified a URL, and the site you want to access via the URL requires user authentication, enter a username and password for authentication at the URL site.

In this field...	Do the following...
Resolution	Choose a resolution strategy, which will allow you to specify how an already existing imported/included file is handled. For each of the imported/included files you have one of these options: ■ Overwrite the importing file with new content. ■ Create a new version of the file with the new content (if, for example, you want to modify a WSDL file but want to retain its previous version).

4. Click **Next**.

   If a name for the asset is not specified, the **Next** button will be disabled.

5. In **Mandatory Information** panel, specify the required attributes that make up the asset.

   Important: During creation of an asset, CentraSite will not allow you to add the asset to the catalog unless you have specified all "required" attributes in the asset's type definition. The value for the required attribute must be specified in the asset's profiles.

   Note: In the user interface, a required attribute is displayed with an asterisk (*) next to its name.

6. After you specify the value for required attributes, click **Next**.

   You will not be allowed to move to the next panel unless all of its required parameters have been set.

7. In the **Preview** panel, verify that you have the specified values for all of the required attributes.

   If necessary, you can click **Previous** to return to the **Mandatory Information** panel and change your specifications.

8. Click **Finish** to add the new asset to the catalog.

   Note: If at any time you wish to abandon your unsaved asset and return to your previous screen, just click the **Cancel** button.

   Note: Configure the asset's extended attributes as described in "Editing the Properties of an Asset" on page 138.

Editing the Properties of an Asset

This section describes how to change an asset's attributes.

General

When editing attributes, keep the following general points in mind:

- If you are not the owner of the asset, you cannot edit the asset unless you have Modify permission on the asset (granted though either a role-based permission or instance-level permission).
- When you view the details for the asset, you will only see profiles for which you have View permission. You will only be able to edit the profiles on which you have Modify permission.
- Some attributes accept only specific types of information. For example, if the asset type includes a URL type attribute, you must supply a URL when you edit that attribute. Other attribute types that require a specific type of value include Date attributes and Email attributes. For a list of the attributes types that an asset in the registry can include, see Attribute Data Types.
- Some attributes are designed to be read-only and cannot be edited even if they appear in an asset on which you have Modify permission.
- If you have Modify permission on a profile, you can also edit its nested profiles and associated attributes.
- If no value has been assigned to an attribute, then it will not be available to edit in its associated profile.
- A profile will not be available to edit if all of its associated attributes does not have an assigned value.
- *This is of specific relevance to REST and XML based service assets.* Beginning with version 9.7, CentraSite supports the enhanced interface for REST services (in contrast, earlier versions of CentraSite supported a standardized interface for REST services). Documentation of the prior REST service interface is available to Software AG customers who have a current maintenance contract in Empower, Software AG's global extranet (http://empower.softwareag.com/).
- If you have REST services that were created prior to version 9.7 or if you are using the current version of CentraSite Business UI, you will only be able to view details of these services in CentraSite Control. You cannot edit REST services using the CentraSite Control user interface (not even if you belong to the CentraSite Administrator role). This is because; CentraSite Control does not support the enhanced REST interface. You will only be able to edit REST services using the CentraSite Business UI.

How to Edit the Attributes of an Asset

Use the following procedure to edit the attributes of an asset.

To edit the attributes of an asset

1. In CentraSite Business UI, display the details page of the asset that you want to edit. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. In the action bar for the asset, click the **Edit** ( ) icon.
3. To edit an asset's **Basic Information** profile that includes the generic attributes, namely: **Name**, **Description**, **Organization** or **Owner**, place the cursor in the appropriate field and modify the text as required.
4. To modify an asset detail that includes extended attributes associated with the asset, do the following:
   a. Select the profile that contains the attributes that you want to modify.

      CentraSite will display the attributes for the selected asset. If you have Modify permission on the asset, you can edit the asset's attributes.

   b. Edit the attributes on the profile as necessary.

      Editing an Asset File

      Certain assets contain one or more associated files. For example, the web service includes a WSDL file and the XML service includes a schema file. You can upload a new file or update an existing file for the asset accordingly.

      - **For an instance of a web service or abstract service only**

        Attach the WSDL file to the catalog entry using the **Attach** icon in the asset's actions menu.

        If you are attaching a WSDL file to a service which already has a WSDL, the service name in the new WSDL must be identical to the service name in the existing one or the process will fail.

        If you select the option **Resolution**, and the attached WSDL contains an Import or Include reference to a WSDL or schema that already exists in the registry, the dialog allows you to choose whether to retain the existing WSDL or schema, or to replace the existing WSDL or schema by a uploading a new one. If you choose to use upload a new WSDL or schema, you can specify whether the new WSDL or schema should overwrite the existing one, or whether a new version of the WSDL or schema should be created.

        If you select the option **Resolution**, and the attached WSDL contains an Import or Include reference to a WSDL or schema that does not already exist in the registry, the dialog allows you to upload the WSDL or schema.

      - **For an instance of an XML Schema only**

        Attach the schema file to the catalog entry using the **Attach** button in the asset's **Technical Details** profile. For additional information about attaching a schema file to an XML schema catalog entry, see "Attaching a Document to an Asset" on page 145.

- **For an instance of an XML service or REST service only**

  Attach the schema file to the catalog entry using the **Add** (resource) button in the asset's **Technical Details** profile. For additional information about attaching a schema file to an XML service or REST service, see the *CentraSite User's Guide*.

Editing a Service Endpoint

Assets such as the REST services and webMethods IS REST services can contain one or more service endpoints. You can specify multiple endpoints or modify existing endpoints as required.

c. Repeat steps 4.a and 4.b for each profile that you want to edit.

Note: If at any time you want to abandon all your changes, click **Close**. CentraSite will ask you if you want to save your edits. Click **No** to abandon your edits and return the asset's attributes to their previous settings.

5. When you have finished making your edits, click the **Save** ( ) icon from the actions menu.
6. When you are prompted to confirm the save operation, click **Yes**.

Note: An attribute can be a required attribute (i.e. you must supply a value for it) and have a default value. If you do not supply a value for an attribute that is required and has a default value, the default value is automatically assigned to this attribute.

Viewing a List of Your Assets

The **Search Results** page displays the assets in CentraSite. Note that this list displays assets for which you have the View permission.

You can sort the list by attribute. To specify the sorting preference, select the attribute from the drop-down list labeled **Sort by**.

To view the asset list

1. In CentraSite Business UI, click the **Browse** link (in the upper left corner of the page).

   Alternatively, select `Everything` or `Assets` from the drop-down beside the keyword search text box.
2. Expand the splitter pane using the given arrow.
3. In the **Narrow Your Results** section, locate **Additional Search Criteria**.
4. Select **Asset Types** from the drop-down list.
5. Enter the asset type in the text box. Click the plus button next to the text box or press *Enter* to add the asset type to the search recipe.

- Else, click **Choose**. This opens the **Choose Asset Types** dialog.
  i. Navigate to the asset type and select the appropriate check box.
  ii. Click **OK**.

6. If you want to further filter the list to see a subset of the available assets, Type a partial string in the **Keyword** text field. Click the plus button next to the text field or press *Enter* to add the keyword to the search recipe.
7. The **Search Results** page provides the following information about each asset.

> **Note:** Only the first 7 attributes described below are displayed in this list by default. You can choose to display the additional attributes using the **View** menu.

Column	Description
Name	The name assigned to the asset.
Description	Additional comments or descriptive information about the asset.
Asset Type	The type of asset, “REST Service.”
Last Updated Date	The date on which the asset was last modified.
Owner	The user to which the asset belongs.
Organization	The organization to which the asset belongs.
Version	The user-assigned version identifier for the asset.

Watching and Unwatching an Asset

This section describes how to watch and unwatch information about an asset.

Introduction

The watch feature enables you to watch information on an asset. When you watch an asset, you receive a notification when changes are made to that asset's information. You can also unwatch changes that you have been watching.

When there is a change in the asset's information, CentraSite will automatically send notification of the changes via Email and/or Inbox (depending on how notification is configured in the User Preferences page). For detailed information on the User Preferences, see "Accessing the User Preferences Page to Set User Preferences" on page

96 and "User Preference Components Available via the User Preferences Page" on page 96.

Assets can be watched (added to your watch list) and unwatched (removed from your watch list). However, you can only add or remove assets to or from your own watch list.

Watching an Asset

This feature lets you request the right to be a watcher of the displayed asset.

You can watch or unwatch a single asset or a selected set of assets. The descriptions in this section give you details on how to do this.

When watching or unwatching an asset, keep the following points in mind:

- If you are not the owner of the asset, you cannot use the **Watch** or **Unwatch** feature unless you have Modify permission on the asset (granted though either a role-based permission or an instance-level permission).
- If you do not have the notification selected in the User Preferences page, the **Watch** or **Unwatch** icon will not be visible in the user interface (this functionality will be still be available via the API).
- When you attempt to watch an asset for the first time, the **Watch** icon will be displayed in the user interface. However, if you are already watching the asset, then the **Unwatch** icon will be displayed.

Note: This functionality is not available to guest users.

The following sections describe how to watch or unwatch assets.

How to Watch an Asset

If you want to watch an asset, proceed as follows:

To watch an asset

1. In CentraSite Business UI, display the details page of the asset you want to watch. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. In the action bar for the asset, click **Watch**  .

   CentraSite automatically changes the watcher count in the asset's **Basic Information** profile.

How to Unwatch an Asset

If you want to unwatch an asset, proceed as follows:

To unwatch an asset

1. In CentraSite Business UI, display the details page of the asset you want to stop watching. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. In the action bar for the asset, click **Unwatch**  .

   If you still are still able to see the **Watch** action, it is probably because you are not registered to receive notifications for the selected asset.

   CentraSite automatically changes the watcher count in the asset's **Basic Information** profile.

Watching or Unwatching a Set of Assets

You can watch or unwatch multiple assets in a single step. The rules described above for watching or unwatching a single asset apply also when watching or unwatching multiple assets.

> **Important:** If you have selected several assets where one or more of them are already being watched, and if you choose to watch the selected set of assets, CentraSite immediately initiates the **Watch** action on that set and ignores the assets that are already watched. Similarly, If you have selected several assets where one or more of them are not watched, and if you choose to unwatch the selected set of assets, CentraSite immediately initiates the **Unwatch** action on that set and ignores the assets that are already not watched.

How to Watch a Set of Assets

If you want to watch a set of assets, proceed as follows:

To watch multiple assets in a single operation

1. In CentraSite Business UI, display the asset list. If you need procedures for this step, see "Viewing a List of Your Assets" on page 141.
2. Mark the checkbox next to the name of each asset you want to unwatch.
3. In the action bar of the Search Results page, click **Watch**  .

How to Unwatch a Set of Assets

If you want to unwatch a set of assets, proceed as follows:

To unwatch multiple assets in a single operation

1. In CentraSite Business UI, display the asset list. If you need procedures for this step, see "Viewing a List of Your Assets" on page 141.
2. Mark the checkbox next to the name of each asset you want to unwatch.
3. In the action bar of the Search Results page, click **Unwatch**  .

Viewing the List of Watchers for Your Asset

The watch list shows the number of users who are watching the asset.

The number of users who are watching the asset is displayed with icons (representing the *Watchers*) in the description area of the **Basic Information** profile in the asset details page, for example, `8 Watchers`. When you are watching the asset, this is displayed as `You and 8 Watchers`. If no users are watching the asset, this is displayed as `0 Watchers`.

Clicking on this watch list displays the basic information about the watchers.

Attaching a Document to an Asset

This section describes how to attach an input file or a supporting document to an asset.

Overview

Assets include attributes that allow you to associate documents such as a WSDL or schema, and related documents such as programming guides, sample code and project plan with the asset.

You can attach either of the following documents to an asset:

- An input file that includes either a WSDL definition or an XML Schema definition for the asset as described in "Attaching an Input File to an Asset" on page 146.
- External documents, such as Functional requirements, Error Messages etc., that provide additional information for the asset as described in "Attaching a Supporting Document to an Asset" on page 149.

When attaching a document to an asset, keep the following points in mind:

- If you are not the owner of the asset, you cannot attach a document to the asset unless you have Modify permission on the asset (granted though either a role-based permission or an instance-level permission).
- CentraSite relies on file extensions to determine a file's type. When you upload a file from your local machine to the asset, be sure the name of the file on your local machine includes a file extension so that CentraSite can determine the file's type and mark it correctly in the repository.
- When you attach a document to the asset using a URL, CentraSite retrieves the document from the URL and place it in its document repository.
- Make sure that you attach the appropriate type-specific files.

Attaching an Input File to an Asset

An input file is type-specific and depends on the type of asset to which it will be attached. The following table lists the asset types installed with CentraSite and identifies the types of files they require as input.

For this asset...	You must supply this type of file...
Web Service (including Abstract Service)	Web Service Definition Language (WSDL) file.
XML Schema	XML Schema Definition (XSD) file.
Process	XML Process Definition Language (XPDL) file.

You can also choose the option Resolution, which will allow you to specify how already existing imported/included files (further WSDL or schema) are handled. For each of the imported/included files you have one of these options:

- Overwrite the file with new content.
- Create a new version of the file with the new content (if, for example, you want to modify a schema but want to retain its previous version).
- Reuse any version of the file (if, for example, an intermediate version of a schema is currently referred to by a WSDL, you can redirect it to the newest version).

You can attach an input file to an asset instance in the following ways:

- You can attach a document from your file system.
- You can attach any document on the network that is accessible via a URL.

Use the following procedure to attach an input file (WSDL/Schema/BPEL) to the asset.

To attach an input file to the asset

Before you begin, you must have the input file that you want to attach. This file can reside on the file system of the computer where your browser is running, or it can reside anywhere on the network, as long as its location is addressable via a URL.

1. In CentraSite Business UI, display the details page for the asset to which you want to attach an input file. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. In the action bar for asset, click **Attach**  .
3. In the **Attach Document** dialog, specify whether the input file will be read from a URL-addressable location on the network (the **URL** option) or from your local file system (the **File** option). Do one of the following as appropriate:

If the file you are attaching resides on the network, enable the **URL** option. Specify its URL.

— OR —

If the file resides in your local file system, enable the **File** option. Specify the file name. You can use the **Choose File** button to navigate to the required folder.

> **Note:** To ensure that CentraSite sets the file type correctly in the repository, the name of the file should include an extension that indicates the type of data it contains.

4. Expand **Advanced Settings** and complete the following steps as necessary.
   a. If you have specified a URL, and the site you want to access via the URL requires user authentication, enter a username and password for authentication at the URL site.
   b. You can also use the **Resolution** option, which will allow you to specify how an already existing imported/included file (further WSDL or schema) is handled. For each of the imported/included files you have one of these options:

Options	Usage
Always ask	Reuse the existing WSDL/schema files referred to in the main WSDL/schema file, or replace the existing WSDL/schema files by uploading new files.
Always overwrite	Overwrite the existing WSDL/schema files in the registry with the new ones specified by the input file.
Always create new versions	Create a new version of the file with the new content.

   If you choose the **Always ask** option, and there is more than one input file with the same name and namespace, you can choose between these. To allow you to select the required file, the dialog **Reuse Existing Asset** lists the available assets that match the given file name, and also their available versions. You can view the description of any asset in the list; this is useful if you want to check that you have selected the correct asset's file from the list.

5. Choose **Attach**.

> **Note:** If at any time you wish to abandon your unsaved document and return to your previous screen, just click the **Cancel** button.

Attaching a WSDL File to a Service Asset

You can attach a WSDL file to the Service asset by using the **Attach** button in the details page of the asset.

General

When you attach a WSDL file, the following situations are possible:

- **The Service asset has no WSDL already attached.** In this case the WSDL will just be attached to the asset.

  You have the choice between just reusing any existing version of the WSDL/schema file or uploading a new version.

  - **Select an existing version.** An existing version of the WSDL/schema file is attached to the asset. The asset name will be changed to the WSDL's file name.
  - **Upload a new version.** A new version of the WSDL/schema file is attached and uploaded in the repository. The asset name will be changed to the WSDL's file name.

    The WSDL can only be attached if no WSDL with the same name and namespace already exists in the CentraSite repository.

- **The Service asset already has an attached WSDL file.** In this case you can attach any WSDL file to it, even with a different file name and/or different namespace.

  Moreover you have the choice between just overwriting the Service asset or creating a new version.

  - **Always overwrite.** The WSDL content in the repository gets replaced by the new content. The asset's name and the classifications Local-Name and namespace are modified according to the new information.
  - **Always create new versions.** A new asset will be established with the information from the WSDL file which will be a new version of the attached one. The original WSDL asset will not be modified.

Restrictions

The following restrictions apply for attaching a WSDL file to a Service asset:

- If a WSDL W1 is already referred to by another WSDL W2, WSDL W1 cannot be replaced by a new WSDL that has a modified file name or a modified namespace. This restriction does not apply if the create new version option is used.
- When you use the **Attach** button, you can only attach a WSDL file to the most recent version of a Service asset.
- If you attach a WSDL with a different file name and/or a different namespace, then there must not be another existing WSDL with same name and namespace.

- Consider the Service asset has a Name Validate Policy defined that enforces unique name. In this case; the WSDL file is attached only if the Service name in the WSDL is the same as the `Name` pattern defined in the validation policy.

Note: Attaching XML Schema/XPDL files to XML Schema/Process asset are similar to the information explained above.

Attaching a Supporting Document to an Asset

Some assets include attributes that allow you to associate supporting documents such as programming guides, sample code, script files and project plan with the asset.

For example, Service assets include the **Specification** profile. This profile contains several file-related attributes representing external documents such as Functional Requirements, Error Messages, Release Notes and so forth.

You can attach a document to an asset instance in the following ways:

- You can attach any document on the network that is accessible via a URL.
- You can attach a document from the computer's file system.
- You can attach a document from your organization's supporting document library. The supporting document library is a collection of shareable documents that members of your organization have uploaded to CentraSite's document repository. For more information about the supporting document library, see the *CentraSite User's Guide*.

Attaching Documents from a URL

Use the following procedure to attach a document using a URL.

To attach a document using a URL

1. In CentraSite Business UI, display the details pages for the asset to which you want to attach a document. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. Select the profile that contains the attribute to which you want to attach the document.
3. Locate the attribute and click its **Attach** button. (If the attribute has existing attachments, be sure to click the bottom-most **Attach** button. If you click an **Attach** button that belongs to an existing attachment, you will replace that attachment. If you do not see an available **Attach** button, use the plus button to display one.)

   The **Attach to...** dialog is displayed.
4. Enable the **URL** option and type the document's URL into the URL text box.
5. In the **Display Name** text box, specify a name that users will see when the document is attached to a *File* attribute.
6. Click **Attach**.

Note that the **Attach** button will be disabled until a URL is specified.

> **Note:** If at any time you wish to abandon the attach operation and return to your previous screen, just click the **Cancel** button.

7. Repeat steps 3 to 6 for each URL that you want to attach to the attribute.
8. When you have finished making your changes, click the **Save** ( ) icon from the asset's actions menu.

Attaching Documents from the Computer's File System

If the document that you want to attach to the asset is not already in the supporting document library, use the following procedure to attach a document from the file system of the computer where your browser is running.

Note that this procedure uploads a document to the supporting document library and then creates a link to the asset's attribute.

To attach a document using the file system

1. In CentraSite Business UI, display the details pages for the asset to which you want to attach a document. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. Select the profile that contains the attribute to which you want to attach the document.
3. Locate the attribute and click its **Attach** button. (If the attribute has existing attachments, be sure to click the bottom-most **Attach** button. If you click an **Attach** button that belongs to an existing attachment, you will replace that attachment. If you do not see an available **Attach** button, use the plus button to display one.)

   The **Attach to...** dialog is displayed.
4. Enable the **Upload document** option and type the document's URL into the URL text box.
5. In the **Display Name** text box, specify a name that users will see when the document is attached to a *File* attribute. This is also the name by which the document will be identified in the library.
6. In the **File** text box, specify the full pathname within your operating system environment of the file that you want to upload to the supporting document library. You can use the **Choose File** button to navigate to the required file.

   To ensure that CentraSite sets the file type correctly in the supporting document library, the name of the file should include an extension that indicates the type of data it contains.
7. In the **Select a Folder** text box, specify a folder in the supporting document library where the new document will be stored. Note that a type-ahead feature is provided in this text box. You can use the **Browse** button to select the required folder.

8. Click **Attach**.

   Note that the **Attach** button will be disabled until a URL is specified.

   > **Note:** If at any time you wish to abandon the attach operation and return to your previous screen, just click the **Cancel** button.

9. Repeat steps 3 to 8 for each document that you want to attach to the attribute.
10. When you have finished making your changes, click the **Save** ( ) icon from the asset's actions menu.

Attaching Documents from the Supporting Document Library

Use the following procedure to attach a document from the supporting document library.

To attach a document from the supporting document library

1. In CentraSite Business UI, display the details pages for the asset to which you want to attach a document. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. Select the profile that contains the attribute to which you want to attach the document.
3. Locate the attribute and click its **Attach** button. (If the attribute has existing attachments, be sure to click the bottom-most **Attach** button. If you click an **Attach** button that belongs to an existing attachment, you will replace that attachment. If you do not see an available **Attach** button, use the plus button to display one.)

   The **Attach to...** dialog is displayed.

4. Enable the **Reuse existing document** option.
5. In the **Select a File** text box, specify the file that you want to attach to the asset from the supporting document library. You can use the **Browse** button to navigate to the required file.
6. In the **Display Name** text box, specify a name that users will see when the document is attached to a *File* attribute.
7. Click **Attach**.

   Note that the **Attach** button will be disabled until a URL is specified.

   > **Note:** If at any time you wish to abandon the attach operation and return to your previous screen, just click the **Cancel** button.

8. Repeat steps 3 to 7 for each document that you want to attach to the attribute.
9. When you have finished making your changes, click the **Save** ( ) icon from the asset's actions menu.

Removing a Supporting Document from an Asset

Use the following procedure to remove an attachment from a *File* attribute of an asset.

To remove a supporting document from an asset

1. In CentraSite Business UI, display the details pages for the asset from which you want to remove an attached document. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. Select the profile that contains the attribute to which the document is attached.
3. Locate the supporting document that you want to delete and click its minus button. Repeat for each document that you want to delete.
4. When you have finished making your changes, click the **Save** ( ) icon from the asset's actions menu.

Changing the Lifecycle State of an Asset

This section describes how to switch an asset to a different lifecycle state.

Introduction

CentraSite provides the ability to define and track the lifecycle of an asset by using a state model. CentraSite allows the use of active policies to govern specific transitions in the lifecycle management process of an asset.

Lifecycle Management

The lifecycle management (LCM) system for an asset helps to:

- Assess change impact and manageability across all service consumers;
- Ensure service quality through an integrated lifecycle approval process;
- Enable a single viewpoint for service stages and their artifacts.

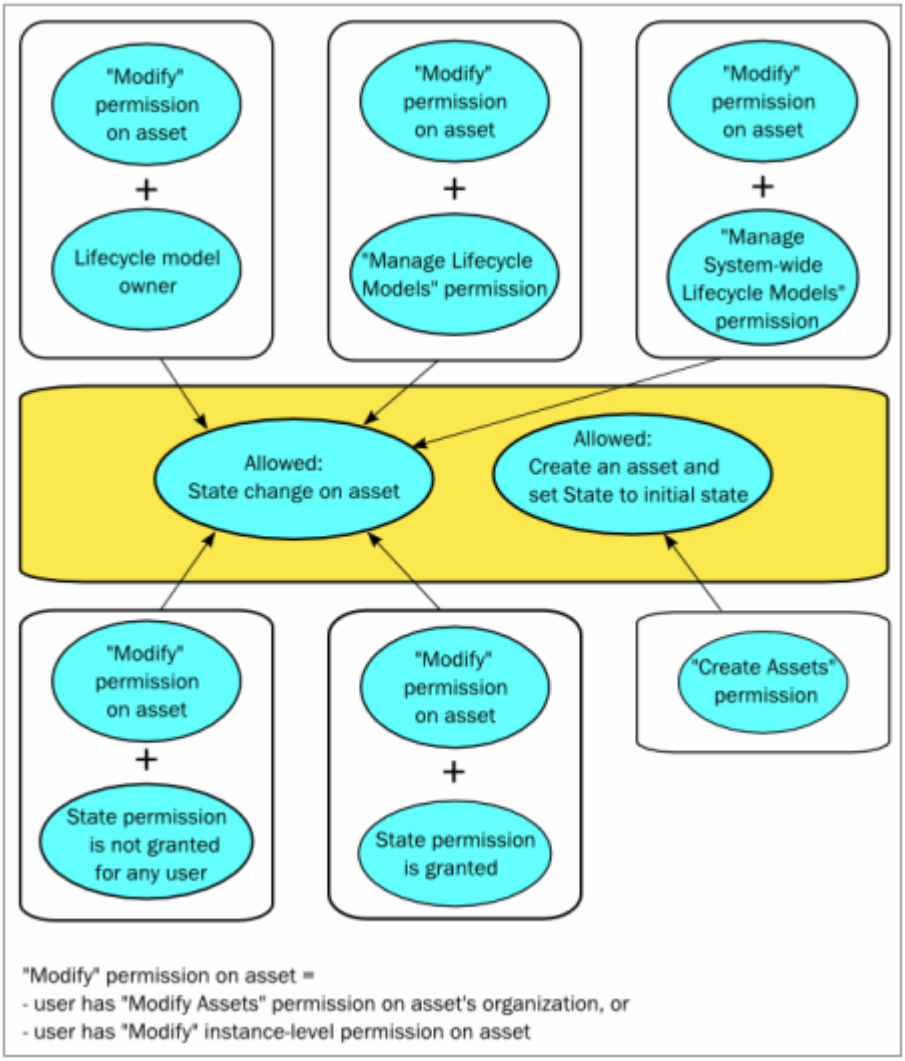
Typically, assets such as web services pass through different states (designing, implementation, testing) before they can be used in a production environment. As the number of objects in a registry grows, it is necessary to introduce stages (Development, Test, Production) to provide adequate operational environments for all parties involved in the lifecycle. Furthermore, an organization may want to add conditions and rules for passing an object through the lifecycle. Therefore the registry should allow administrators to define roles and permissions and connect these to lifecycle steps.

For more information on the lifecycle management process, see the *CentraSite Administrator's Guide*.

Who Can Change Lifecycle State of an Asset?

For any given lifecycle model, a list of names of users and/or groups who are allowed to move assets to new states is maintained within the definition of the lifecycle model. For each user or group, the permission to move assets to new states can be restricted to a subset of the available states in the model. When the lifecycle model is assigned to an asset, and a state has users or groups defined for it, only a user who is one of the defined users or groups can make the transition of the asset into that state. If no users or groups are defined for a particular state, any user who has Modify permission on the asset can change the lifecycle state for that asset.

Several rules determine who can change the lifecycle state of an asset. These rules are summarized in the following diagram.



For example: If you are the owner of a lifecycle model, you can assign any lifecycle state of this lifecycle to an asset whose asset type has this lifecycle model assigned, as long as you have the Modify Assets permission for the asset.

Any user who has the Create Assets permission can create an asset whose asset type has a lifecycle model assigned. When the asset is created, CentraSite automatically sets the lifecycle state of this asset to the initial state. However, to change the state from the initial state to another lifecycle state, the user requires the appropriate permissions as described above.

Note that the Manage Assets permission does NOT include the rights to change lifecycle states.

For more information about permissions, see *Getting Started with CentraSite*.

How to Change Lifecycle State of an Asset

If an asset has an associated lifecycle model, you can use the following procedure to switch the asset's lifecycle state.

To change the lifecycle state of an asset

1. In CentraSite Business UI, display the details page for the asset whose lifecycle state you want to change. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. In the action bar for the asset, click **Edit** .
3. In the **Basic Information** profile, locate the **Lifecycle State** attribute.
4. From the drop-down box, select the state to which you want to switch the asset. (The list will contain only the states that you are permitted to assign to the asset.)
5. When you have finished making your selection, click **Save** .

   When you are prompted to confirm the save operation, click **Yes**.

   If the state change requires approval, CentraSite Business UI will initiate an approval workflow and your request for a state change will be submitted to the appropriate approvers. While the request is awaiting approval, the asset will appear in the `pending` mode.

Setting Permissions on an Asset

By default, everyone in your organization is permitted to view the assets that you create. However, only you (as the owner of the asset) and users who belong to a role with the Manage Assets permission for your organization are allowed to view, edit and delete these assets. To enable other users to view, edit and/or delete an asset that you have created, you must modify the asset's permission settings.

Who Can Set Permissions on an Asset?

When setting permissions on assets, keep the following points in mind:

- To set permissions on an asset, you must belong to a role that has the Manage Assets permission or have the Full instance-level permission on the asset itself.

- You can assign permissions to any individual user or group defined in CentraSite.
- The groups to which you can assign permissions include the following system-defined groups:

Group Name	Description
Users	All users within a specified organization.
Members	All users within a specified organization and its child organizations.
Everyone	All users of CentraSite*including guest users* (if your CentraSite permits access by guests).

- If a user is affected by multiple permission assignments, the user receives the union of all the assignments. For example, if group ABC has Modify permission on an asset and group XYZ has Full permission on the same asset, users that belong to both groups will, in effect, receive Full permission on the asset.

  The same principle applies to users who have both role-based permissions and instance-level permissions on the same asset. In this case, users receive the union of the role-based permission and the instance-level permission on the asset.
- If you intend to give users in other organizations access to the asset, and the asset includes supporting documents that you want those users to be able to view, make sure you give those users permission to view the supporting documents as well as the asset itself.

Restricting Access to Specific Profiles

CentraSite allows you to set permissions on individual profiles within an asset. This feature enables you to specify which of the available profiles can be viewed or edited by users when they display the asset in CentraSite Business UI. For any given asset, you can define different profile permissions for different users. For example, if an asset includes a profile called Source Control that displays links to your source control systems, you might want to restrict the visibility of that profile to authorized developers.

You define the user-specific or group-specific profile permissions of an asset via the asset's **Permissions** action. For details, see "Setting Instance Level Permissions on an Asset" on page 156 and "Setting Instance Level Profile Permissions on an Asset's Profile" on page 159.

The profile permissions that can be set on a given asset for any user or group are:

Permission	Description
View	Enables the specified user or group to see the profile when they view the asset.

Permission	Description
Modify	Enables the specified user or group to modify the attribute settings in the profile when they view the asset.

Note that the individual profiles do not include the Full permission because users cannot delete a profile from an individual asset.

Ways in Which You Can Set Permissions

You can set the permissions on an asset in two ways:

- **Using the Permissions action in the user interface**

  You can use the **Permissions** action in the user interface as described in "Setting Instance Level Permissions on an Asset" on page 156 and "Setting Instance Level Profile Permissions on an Asset's Profile" on page 159.

- **Using the "Set Instance and Profile Permissions" policy action**

  You can use the Set Instance and Profile Permissions policy action in a design/change-time policy to automatically assign permissions to an asset during any of the following events:

  - PostCreate
  - PreStateChange
  - PostStateChange
  - OnTrigger

  For more information about creating policies, see the *CentraSite User's Guide*. For more information about using the Set Instance and Profile Permissions action, see the *CentraSite Developer's Guide*.

Setting Instance Level Permissions on an Asset

Use the following procedure to set instance-level permissions on an asset using CentraSite Business UI.

To assign permissions to an asset

1. In CentraSite Business UI, display the details page for the asset whose permissions you want to edit. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. In the action bar for the asset, click **Permissions**  .

   Note: If you do not see the **Permissions** action, it is probably because you do not have the Modify permission on the asset. See "Who Can Set Permissions on an Asset?" on page 154 and "Restricting Access to Specific Profiles" on page 155 above for details.

3. In the **Assign Permissions** dialog box, select the users or groups to which you want to assign permissions.
   - If you want to select the users or groups using the typeahead option and you need procedures for this step, see "Selecting Users or Groups Using Search Option" on page 157.
   - If you want to select the users or groups using the browse option and you need procedures for this step, see "Selecting Users or Groups Using Browse Option" on page 158.
4. Use the View, Modify and Full check boxes to assign specific permissions to each user and/or group in the **User/Group Permissions** list as follows:

Permission	Allows the selected user or group to...
View	View the asset.
Modify	View and edit the asset.
Full	View, edit and delete the asset. This permission also allows the selected user or group to assign instance-level permissions to the asset.

5. When you assign instance-level permissions on an asset, the related objects (for example, bindings, operations, interfaces etc.,) receive the same permissions that are assigned on the asset.
6. If you want to ensure that the asset's dependent assets (for example, a WSDL or schema) receive the same permissions, expand the **Advanced Settings** section and mark the checkbox **Propagate permissions**. If you do not mark this checkbox, the permissions of the dependent assets will not be modified.

   In addition, you can ensure that the dependent assets of the same object type receive the same profile permissions. To do this, mark the checkbox **Propagate profile permissions**. See "Propagation of Permissions" on page 159 below for more information concerning propagation of permissions and propagation of profile permissions.
7. If at any time, you wish to remove one or more users' or groups' permissions, click the **Delete** ( ) icon next to the user or group name.
8. Click the **Ok** button to save the permission settings.
9. When you have finished making your changes, click the **Save** ( ) icon.

Selecting Users or Groups Using Search Option

The following procedure describes how to use CentraSite's typeahead search feature to search for users or groups in the user database.

Keep the following points in mind when performing a search:

- You must type a search string to retrieve the desired list of users or groups.
- CentraSite treats the text you enter as a partial string. For example, if you enter "ali", then "Alison", "Calient" and "Salie" all fit the search criteria.
- The search starts with the specified number of offset characters counted from the beginning of the string.
- Search strings are not case-sensitive. Example: A search for “alison” will return the same results as a search for “Alison” or “ALISON”.
- Search strings are not accent-sensitive.
- When you are searching the user list, CentraSite searches the user name attribute, not the user ID attribute. Thus, if a user has the name “John Smith” and the user ID “MyDomain\AdminUser01”, a search for will find the user “John”, whereas a search for “Admin” will not.

To select users or groups by typeahead search

1. In the **Add User or Group** text box, type a search string that specifies the characters contained in the user or group name.

   As you enter the search string, CentraSite returns the top n assets that meet your search text.

   By default, the result set is ordered alphabetically.
2. Press the Up Arrow and Down Arrow keys to scroll through one user or group at a time.
3. Locate the user or group to whom you wish to set permissions for the asset.
4. Click the Add ( ) icon.
5. Repeat steps 1 to 5 until you have all the required users and/or groups.
6. Click the **Ok** button to add the chosen users and/or groups to the **User/Group Permissions**.
7. Assign specific permissions to each user and/or group as mentioned above.

Selecting Users or Groups Using Browse Option

The following procedure describes how to use CentraSite's browse feature to search for users or groups in the user database.

Keep the following points in mind when performing a search:

- The **Choose** option opens to the **Choose Users and Groups** dialog. You must type a search string to retrieve the desired list of users or groups.
- CentraSite treats the text you enter as a partial string. For example, if you enter "ali", then "Alison", "Calient" and "Salie" all fit the search criteria.

- The search starts with the specified number of offset characters counted from the beginning of the string.
- Searches are not case sensitive nor accent sensitive.
- CentraSite performs a search based on the *Name* attribute.

To select users or groups by browse option

1. In the **Add User or Group** text box, type a search string that specifies the characters contained in the user or group name.

   By default, the result set is ordered alphabetically.
2. Refine the search result set by choosing one of the options from the drop-down **Sort** (*Name* or *Organization*).
3. Select the checkbox next to the name of the users or groups whom you wish to set permissions for the asset.
4. Click the **Ok** button.
5. Repeat steps 1 to 4 until you have all the required users and/or groups.
6. Click the **Ok** button to add the chosen users and/or groups to the **User/Group Permissions**.
7. Assign specific permissions to each user and/or group as mentioned above.

Setting Instance Level Profile Permissions on an Asset's Profile

Use the following procedure to set instance-level permissions on an asset's profiles.

To assign instance-level permissions on an asset's profiles

1. Choose the asset's **Permissions** ( ) action.
2. Locate the user or group for which you wish to set profile permissions. Then click the arrow icon beside the user or group name to open the profile permission list.
3. Use the checkboxes to indicate which profiles the user or group is permitted to view or modify.
4. Click **Ok** to save the new permission settings.
5. When you have finished making your changes, click the **Save** ( ) icon.

Propagation of Permissions

An asset can have one or more dependent assets. For example, a Service asset can refer to a WSDL which in turn can refer to one or more XML Schema assets. You can optionally choose whether the permissions assigned to an asset instance should be automatically propagated to the asset instance's dependent assets.

In the context of CentraSite Control, propagation of permissions means that the new permissions completely replace the old permissions; the new permissions are not

merged with the old permissions. As an alternative, you can use a change-time policy containing the action Set Instance and Profile Permissions. With this action, you can choose whether the new permissions will be merged with the old permissions or will replace the old permissions. For details, see the *CentraSite Developer's Guide*

Propagation of Instance Level Permissions

By default, the access level permissions that are assigned on an asset are implicitly propagated to these dependent assets. This behavior is activated when you mark the checkbox **Propagate asset permissions** in the asset's **Advanced Settings**. For example, assigning Modify permission on a Service asset propagates the Modify permission to the asset's WSDL, schemas, etc.

If you do not have permission to assign instance-level permissions to a dependent object, the dependent object will not be modified and a warning message will be issued.

Propagation of Profile Level Permissions

In addition to propagating permissions that control the access to an asset instance (as described above), it is also possible to propagate permissions that control the access to the asset instance's profiles. This means that the profile permissions that you define for an asset instance can be propagated to the asset's dependent assets. However, this is only possible if the dependent object is of the same asset type as the first object; this restriction arises because different asset types can have different sets of profiles.

This behavior is activated when you mark the checkbox **Propagate profile permissions** in the asset's **Advanced Settings**.

Versioning an Asset

You can use the versioning feature in CentraSite to add an updated version of an asset to the registry. For example, if you make significant changes to a web service (such as adding operations to the service or modifying the data types that it uses), you can use the versioning feature to add the new version of the service to the registry.

When you generate a new version of an asset, CentraSite adds a new asset of the same type to the registry. The new asset will have the same name and description as the one from which it was versioned. It will have an updated version number.

Note: Depending on the type of asset you version, some of the attributes are cloned from the original asset and others are not. For example, when you version a web service, the settings on the **Classifications** profile are cloned, however, the attribute settings on many of the other profiles, including the **Permissions** profile, are not. After you version an asset, you should always examine the attribute settings for the new version and set them appropriately.

The metrics and event information that was collected for the old version of the asset will remain unchanged in the registry/repository. The old version's metrics and event information will not be copied to the new version. CentraSite will begin collecting metrics and event information for the new version of the asset.

CentraSite maintains two sets of version numbers for an asset. One set is maintained for CentraSite's own internal use. CentraSite automatically assigns this version number when you create a new version of an asset. You cannot modify it. The version numbers assigned by CentraSite have the format *<MajorVersion>.<Revision>* and are always sequentially numbered starting from 1.0 (e.g., 1.0, 2.0, 3.0). If the revision feature is enabled, the revision number is incremented automatically each time you modify the current version of the asset.

Each version of an asset also has a separate user-defined version identifier. This is the "Public" version number that displays in the user interface. The user-defined version identifier does not need to be numeric. For example, you might use a value such as "V2.a (beta)" to identify a version.

This section describes how to use CentraSite's versioning feature for an asset.

Generating New Asset Versions

You can create a new version of an asset or a new version of a selected set of assets. The descriptions in this section give you details on how to do this.

To create a new version of any given asset, you must belong to a role that has the Manage Assets permission for the organization in which the asset resides.

When you version an asset, you become the owner of the new version of the asset. Ownership is not carried forward from the previous version.

The new version of the asset will belong to the same organization as its previous version.

Note: You cannot create a new version of a virtual asset.

The following sections describe how to create new asset versions.

Creating a New Version of an Asset

Use the following procedure to create a new version of a single asset.

To generate a new version of an asset

1. In CentraSite Business UI, display the details page for the asset you want to generate a new version. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. In the action bar for the asset, click **New Version** .
3. Complete the fields in the **Add Version** dialog box as follows:

In this field...	Specify...
Namespace	The namespace associated with this new version. This is of specific relevance for web service assets. The namespace given here reflects the target namespace defined in the associated WSDL file. A change of the namespace can be a

In this field...	Specify...
	differentiating factor between versions. Note that if you supply a new namespace here, you should ensure that the WSDL associated with this asset also reflects the new namespace.

New User Version	An identifier for the new version. You can use any versioning scheme you choose. The version identifier does not need to be numeric.
	
	Examples:
	
	`0.0a`
	`1.0.0 (beta)`
	`Pre-release 001`
	`V1-2007.04.30`

Organization	Specify the organization to which this new version will be added. **Note:** The **Organization** list contains the names of all organizations for which you have `Manage Assets` permission. **Important:** Choose the organization with care. You cannot change the organization assignment after the service is versioned. You can, however, export a versioned service from one organization and import it to another.
Change Log	*Optional*. A comment or other descriptive information about the new version.
Propagate versions to dependent objects	*(CentraSite only processes this checkbox for assets of type Service.)* Mark this checkbox if you wish to automatically create new versions of all of the service's dependent schemas. The schemas will only be updated if you have permissions to modify them.

4. Click **OK**.
5. When you have finished making your selection, click **Save** .

Creating a New Version of a Set of Assets

You can create a new version for a set of assets, as described in this section. The rules described above for versioning a single asset apply also when versioning multiple assets.

Use the following procedure to create a new version of a set of assets.

To generate a new version of a set of assets

1. In CentraSite Business UI, display the asset list. If you need procedures for this step, see "Viewing a List of Your Assets" on page 141.
2. Mark the checkbox of each asset for which a new version will be created.
3. In the action bar of the Search Results page, click **New Version** .
4. In the **Add Version** dialog, specify the attributes, in the same way as described previously for creating a new version of an individual asset.

   Note: Keep the following in mind:

   - If one or more or the selected assets is not the most recent version of the asset, an error message will appear and no new version will be created for any of the assets.
   - If one or more or the selected assets is a virtual asset, an error message will appear and no new version will be created for any of the assets.

5. When you have finished making your selection, click the **Save** ( ) icon.

Locating Other Versions of an Asset

The **Basic Information** profile for an asset displays the list of all the asset's versions. To locate other versions of an asset, simply display the asset and examine its **Basic Information** profile

as described below.

To locate other versions of an asset

1. In CentraSite Business UI, display the asset whose versions you want to examine. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.

   The **Basic Information** profile displays a list of versions for the asset.

2. In the list of displayed versions, select the number of that version whose details you want to view.

Changing the Ownership of an Asset

This section describes how to transfer ownership of an asset to another user or organization.

Introduction

In CentraSite, there are two concepts of ownership. An asset belongs to a particular *user* (known as the asset's *owner*) and it also belongs to a particular organization. The owner of an asset has special access rights to the asset and serves as the asset's main point of

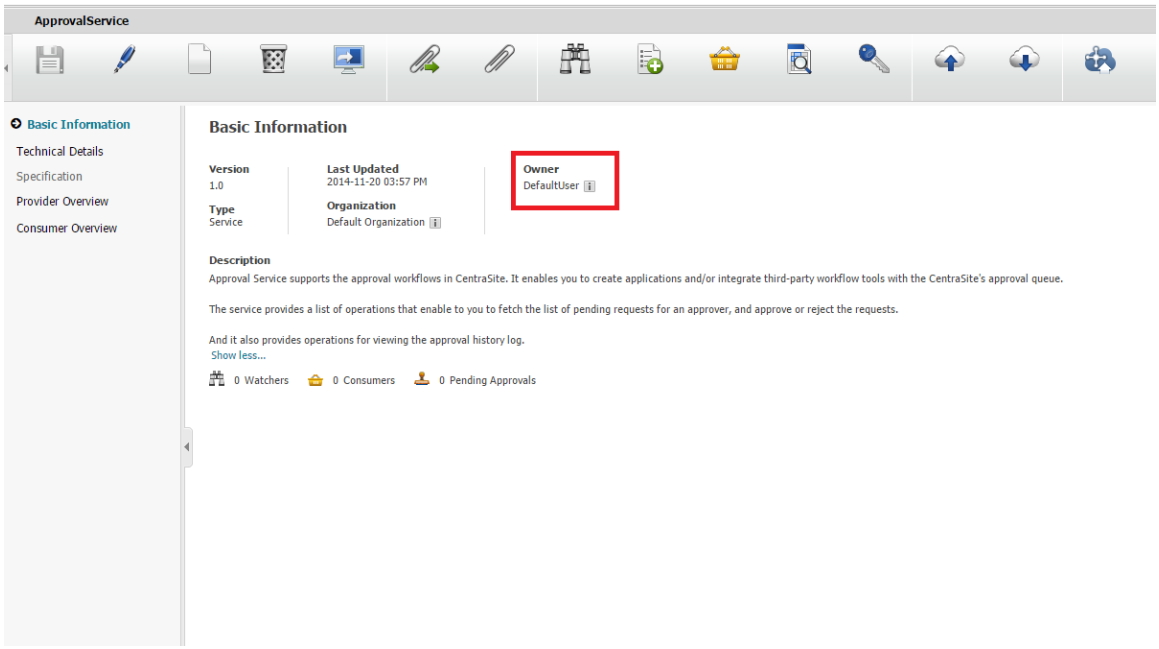
contact. The asset's organization determines whose rules of governance apply to the asset.

After an asset is created, it is sometimes necessary to change its ownership. For example:

- You might need to transfer an asset *to another user* if the original owner leaves the company, transfers to another position, or is otherwise unable to continue serving as the owner of an asset.
- You might need to transfer ownership of an asset *to another organization* when the asset reaches a point in its lifecycle where it is managed by a different group of users. When a service moves into production, for example, you might want to transfer it to your operations organization.

User Ownership

The user who adds an asset to the catalog automatically becomes the asset's owner. User ownership is specified by the asset's `Owner` attribute, which appears on the details page in CentraSite Business UI.



The owner of an asset automatically receives Full permission on the asset. The owner also participates in various processes and policies that affect the asset. For example, the owner of an asset is responsible for reviewing and approving all consumer-registration requests that users submit against the asset.

When you change ownership of an asset, you transfer all of the permissions and responsibilities associated with ownership of the asset to another user.

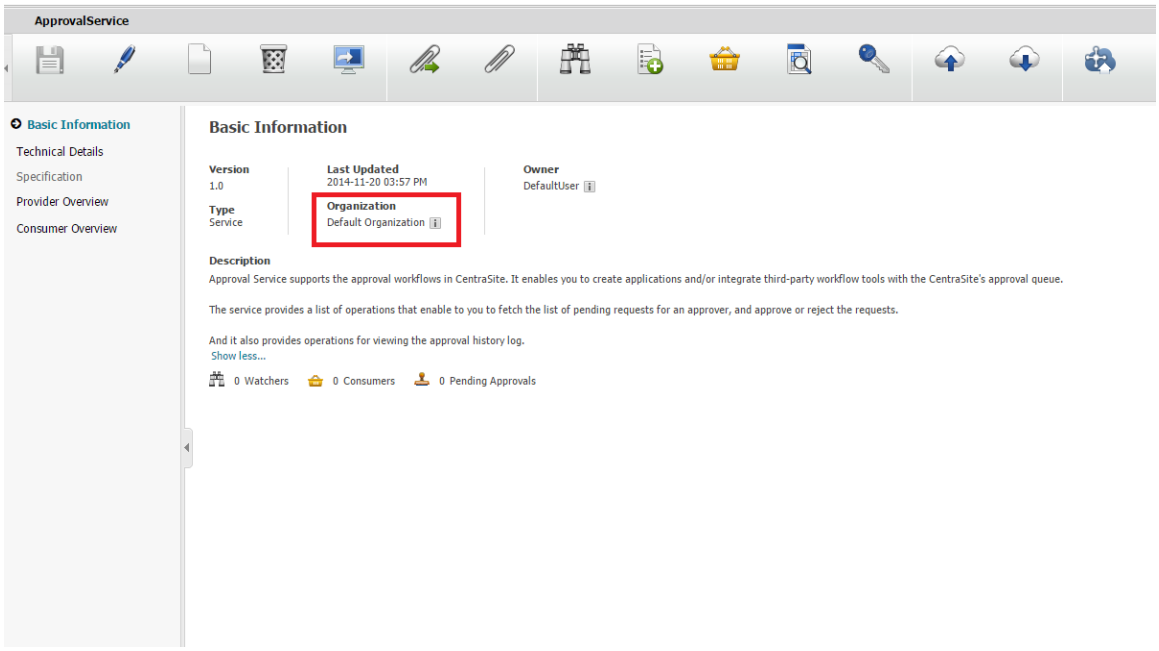
Note: Certain predefined assets that are installed with CentraSite are owned by an internal user known as the *default user*. You cannot transfer assets to or from this user.

Organizational Ownership

The organizational ownership for an asset is specified by the asset's **Organization** attribute. The organization to which an asset belongs determines which policies apply to the asset, which lifecycle model it follows, and which group of users have implicit permission to view the asset. In other words, it determines whose rules of governance apply to the asset. Consequently, when you change an asset's organizational ownership, you are in effect placing the asset under the governance of a different organization.

An asset's **Organization** attribute is specified when a user adds the asset to the catalog. Users can add assets to any organization for which they have `Create Assets` permission. (Most users only have permission to create assets in their own organization, so most assets in the registry belong to the same organization as their owner.)

The organization to which an asset belongs is shown in the **Organization** attribute on the asset's details page.



Who Can Change Ownership of an Asset?

To change the ownership of an asset, you must belong to the CentraSite Administrator role.

Conditions that Must be Satisfied in Order to Change Ownership of an Asset

To change the ownership of an asset, the following conditions must be met:

- The asset that you are moving must not belong to the default user (nor can you move an asset to the default user).

- The asset that you are moving must not be in a pending state (e.g., awaiting approval) or have a consumer registration request pending for it.
- You cannot move the asset to an inactive user.

To assess the effect that an ownership change has on various aspects of an asset, see the *CentraSite User's Guide*. Before transferring an asset to another user and/or organization, review this information so you understand how the asset will be affected.

How to Change Ownership of an Asset

This section provides procedures for transferring an asset to a different user or a different organization.

How to Change User Ownership of an Asset

Use the following procedure to transfer the ownership of an asset to a specified user.

To change the ownership of an asset

1. In CentraSite Business UI, display the details page for the asset whose ownership you want to change. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. In the action bar for the asset, click **Edit** .
3. In the **Basic Information** profile, locate the **Owner** attribute.
4. In the adjacent text box, type a partial string to search for the user. You can use one or more wildcards to specify the user.
5. Select the user to whom you want to transfer ownership of the asset.
6. When you have finished making your changes, click the **Save** ( ) icon.

   When you are prompted to confirm the save operation, click **Yes**.

How to Change the Organization of an Asset

Use the following procedure to transfer an asset to a specified organization.

To change the organization of an asset

1. In CentraSite Business UI, display the details page for the asset whose ownership you want to change. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. In the action bar for the asset, click **Edit** .
3. In the **Basic Information** profile, locate the **Organization** attribute.
4. In the adjacent text box, type a partial string to search for the organization. You can use one or more wildcards to specify the organization.
5. Select the organization to which you want to transfer ownership of the asset.

6. When you have finished making your changes, click the **Save** ( ) icon.

   When you are prompted to confirm the save operation, click **Yes**.

Registering as a Consumer for an Asset

This section describes how to provide consumers with access to assets, and how relationships between assets and their consumers are maintained.

Introduction

The register as consumer feature provides the following important advantages to CentraSite registry:

- A secure consumer provisioning that provides users with the ability to consume assets.
- An effective consumer-provider relationship tracking that enables you to control and monitor who consumes assets.

A consumer is the user who is identified in an application asset. Typically, an application asset specifies the consumer applications that are authorized to consume a particular service, BPEL process or XML schema.

For information on how to create an application asset, see the *CentraSite User's Guide*.

To control and monitor which application assets consume assets, you:

- **Register application assets to consume assets.**

  CentraSite users with the proper permissions can register application assets as consumers of specified assets. That is, users can request permission to associate any consumer application with a specified asset in the registry. The owners of the assets may approve or reject such requests.

- **Specify the registered consumers in the asset's Basic Information profile.**

  After applications are approved to consume an asset, CentraSite automatically updates those consumers in the asset's **Basic Information profile**.

Because consumers are registered, CentraSite can easily track consumer-provider relationships. The purpose of tracking consumer-provider relationships is to identify:

- The artifacts in the registry that will be affected if an asset is not available or must be changed.
- The organizations that need to be informed in such situations.

Registering Users to Consume Assets

If you have permissions to view an asset in the CentraSite registry, and you belong to a role that includes the `Register as Consumer` permission, the **Consume** action is enabled in the asset details page. This feature opens a dialog that lets you request the

right to be a consumer of the displayed asset. You can request the right for any consumer application owned by any organization.

The request must be subsequently approved or rejected for by at least the owner of the asset. This functionality is not available to guest users.

> **Note:** The asset that you want to consume must not be in a `pending` state (e.g., awaiting approval).

Prerequisite:

In order to register as consumer for an asset, CentraSite requires that you have a design-time policy named `Consumer-Provider Relationship Policy` in CentraSite Control. This policy will process the consumer registrations that are initiated using the **Consume** action.

CentraSite does not provide a Consumer-Provider Relationship policy out-of-the-box. You must create this policy for your instance of CentraSite. At a minimum, this policy must include the **Consume** action, because this action performs the work of actually registering a consumer (that is, it establishes the actual relationship between the asset and the specified consumers) and execute the OnConsumerRegistration event. The OnConsumerRegistration event occurs when the owner of the asset approves the registration request, not when the user submits the registration request. If, in addition to the asset owner, you want designated individuals to review and approve the registration request, place an approval action before the **Consume** action.

> **Note:** CentraSite will not enable the **Consume** action until you create this policy in CentraSite Control.

The following section describes how to register a user to consume an asset.

How to Register as Consumer for an Asset

Use the following procedure to register as consumer for an asset

To register users to consume an asset

1. In CentraSite Business UI, display the details page for the asset you want to consume. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. In the action bar for the asset, click **Consume**  . This opens the **Consume Asset** dialog.
3. In the **Application** textbox, type the keyword(s) to search for. CentraSite applies the filter to the application asset's name. Choose an application asset from the selection list.
4. If you want to specify additional application assets, use the plus button beside the **Application** field to create a new **Application** input field, and choose another application asset.

5. When you have specified all required applications, click **Consume**. Requests to register the applications are sent to the owner(s) of the assets.
6. The owner of each asset can either accept or decline a register as consumer request as follows:
   - Go to the asset details page.
   - You will see the pending consumer registration requests ( ) for an asset in the description area of the **Basic Information** profile, for example, "`N consumer registration requests are pending`".

     If there are no pending consumer registration requests for the asset, this is displayed as "`0`".
   - Click the hyperlinked number ("`N`") to open the **Pending Consumer Registration Requests** dialog. This dialog contains a list of all consumer registration requests that have been submitted for the particular asset, including requests that were auto-approved.
   - Choose the consumer registration request that you want to review and approve by clicking its hyperlinked name.

     The details for the request will appear in the **Consumer Registration Request** dialog.
   - In the **Comment** text box, type a comment. (e.g., *"Request rejected. Add required specifications to this asset and resubmit"*.)
   - Click the **Accept** or **Reject** button as appropriate to approve or reject the request.

     After the applications are approved to consume an asset, CentraSite automatically changes the consumer count in the asset's **Basic Information** profile.

     For more information about consumers of an asset, see "Monitoring Consumer Count for an Asset" on page 170.

Viewing Consumer Registration Requests

To view a summary of all register as consumer requests, go to the asset details page:

- If you are the owner of an asset, and another user has made a request to register as a consumer of the asset, you can view the request here. As the asset owner, you can accept or decline the request.
- If you have made a request to register as a consumer of an asset owned by another user, you can view the status of the request here.

Note: Keep the following in mind:

- If an asset has at least one pending state change approval request and a pending consumer registration request, then the pending state change approval takes priority over the pending consumer registration request. This is because a pending consumer registration request cannot complete if at least one pending approval request exists.

- If an asset has multiple consumer registration requests, then CentraSite will simply establish a connection between the asset and the first pending consumer registration request.

Monitoring Consumer Count for an Asset

CentraSite Business UI has extensive support for consumer-provider tracking that allows you to monitor the number of consumers for an asset.

The number of users who consume an asset is displayed in brackets with icons (representing the *Consumers*) in the description area of the **Basic Information** profile in the asset details page, for example, `(5) Consumers`. If no consumers are registered for the asset, this is displayed as `(0) Consumers`.

Clicking on this consumer count displays the consumers' information.

Displaying Runtime Information for an Asset

You can use the **Runtime Metrics** and **Runtime Events** profiles to display run-time information for any virtualized asset (that is, a Virtual Service, Virtual REST Service or Virtual XML Service).

Instances of virtual asset types contain these profiles by default.

You can view the runtime information of an asset if you have View permission on the **Runtime Metrics** and **Runtime Events** profiles of the asset.

The Runtime Metrics

You view the following types of Key Performance Indicator (KPI) metrics that webMethods Mediator creates in the **Runtime Metrics** profile of each virtualized service.

Note: Ensure that Mediator is configured to collect and report runtime metrics to CentraSite, as described in *Administering webMethods Mediator*.

Metric	Description
Availability	The percentage of time that a service was available during the current interval. A value of 100 indicates that the virtualized service was always available. If invocations fail due to policy violations, this parameter could still be as high as 100.
Success Count	The number of successful service invocations in the current interval.

Metric	Description
Total Request Count	The total number of requests (successful and unsuccessful) in the current interval.
Fault Count	The number of failed invocations in the current interval.
Average Response Time	The average amount of time it took the service to complete all invocations in the current interval. This is measured from the moment Mediator receives the request until the moment it returns the response to the caller.
Minimum Response Time	The minimum amount of time it took the service to complete an invocation in the current interval.
Maximum Response Time	The maximum amount of time it took the service to complete an invocation in the current interval.

Note: Keep the following in mind:

- For more information about KPI metrics, see *Administering webMethods Mediator*.
- For details about metrics tracking intervals, see *Administering webMethods Mediator*.
- By default, the Response Time metrics do not include metrics for failed invocations. To include metrics for failed invocations, set the `pg.PgMetricsFormatter.includeFaults` parameter to true. For details, about advanced settings, see *Administering webMethods Mediator*.

Displaying the Runtime Metrics

Use the following procedure to display runtime metrics for a virtualized asset.

When you view the runtime metrics, be aware that:

- To view the runtime metrics of a virtualized service, it is necessary that the virtual type's definition includes the **Runtime Metrics** profile.
- If you do not see the **Runtime Metrics** profile of a virtualized service, it is probably because you do not have “View” permission for the profile.

To display runtime metrics for an asset

1. In CentraSite Business UI, display the details page for the asset whose runtime metrics you want to view. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.

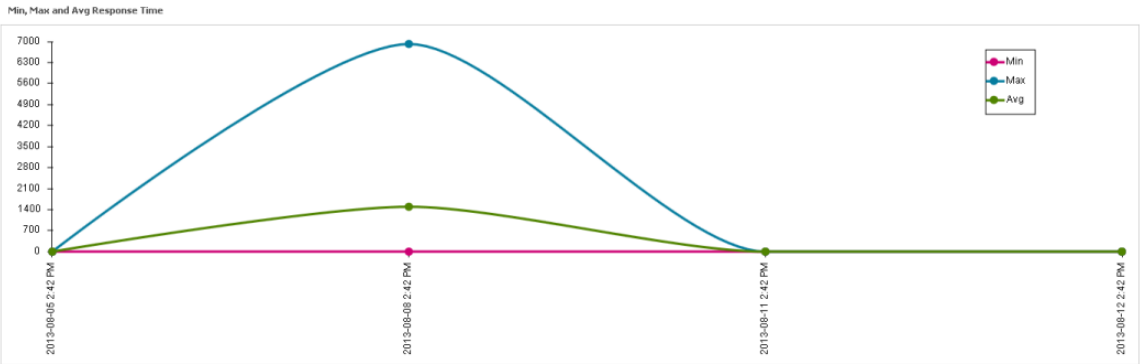
2. Select the **Runtime Metrics** profile.
3. Expand the **Filters** node.
4. Use the following fields to filter the metrics list you want to view:

In this field...	Specify...
Gateway	A gateway of the asset, or select **All** to view the metrics of all gateways to which the virtual service is deployed. CentraSite displays **None** by default.
Date Range	A range of dates from which to view the metrics (e.g., Last 1 hour, Last 12 hours, Last 1 day, Last 5 days, Last 10 days, Last 20 days, Custom, etc.). CentraSite displays **Last 10 days** by default.
Start Date/End Date	If chosen **Custom** in the previous field, then the time period for which to view the metrics. **Start Date**: Click the calendar and select a starting date and time. **End Date**: Click the calendar and select a ending date and time.
Display Interval	A running count metrics of the service displayed at regular time intervals. The interval is specified in the format 3m 2d 6h; wherein m indicates the month, d indicates the day and h indicates the hour.

5. Click **Refine**.

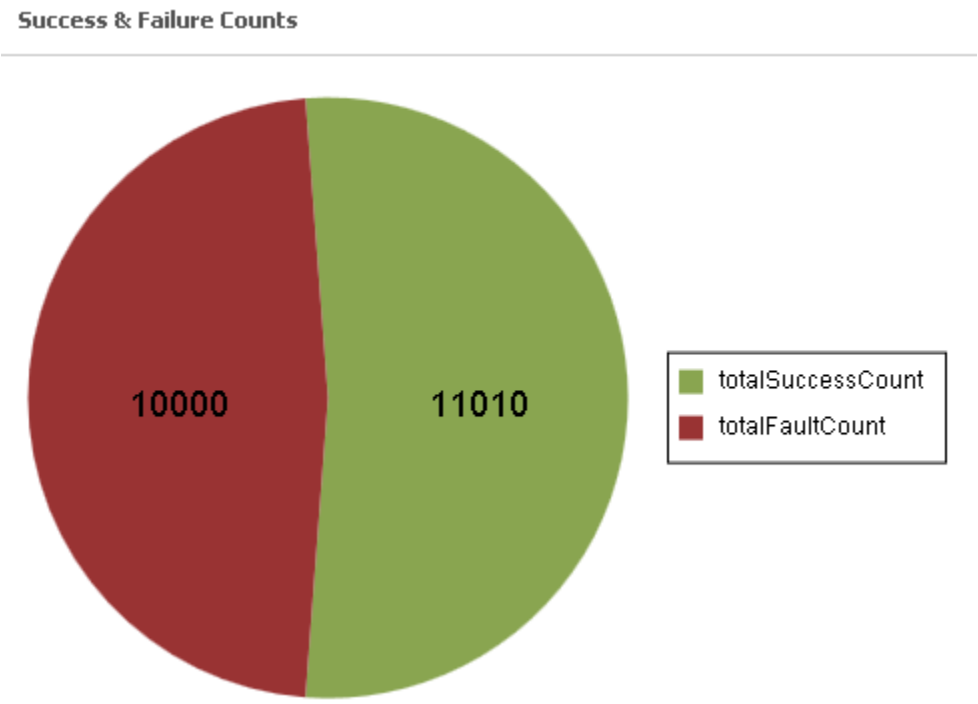
   CentraSite displays a graphical view of the metrics for all performance categories as shown below:

   Figure 1. Multi-line Chart



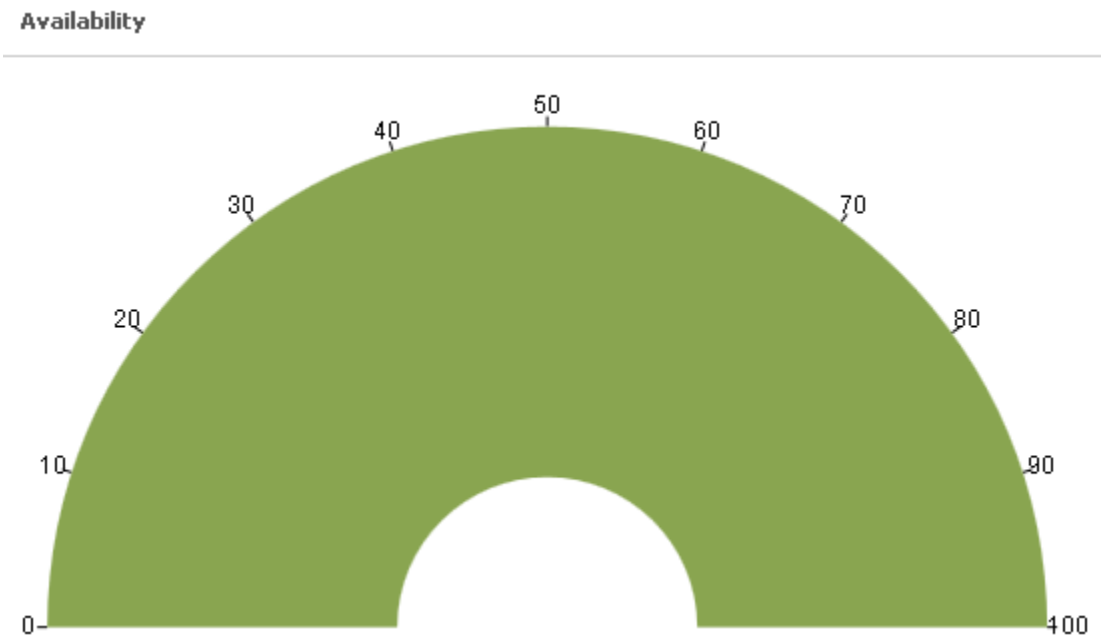
The chart shows the Minimum Response Time, Maximum Response Time and Average Response Time of the virtualized service.

Figure 2. Pie Chart



The chart shows the Success Request Counts, Total Request Counts and Fault Counts of the virtualized service.

Figure 3. Gauge Chart



The chart shows the availability of the virtualized service.

The Runtime Events

CentraSite can receive the following predefined runtime event types.

Note: Keep the following in mind:

- Ensure that Mediator is configured to collect and report runtime metrics to CentraSite, as described in *Administering webMethods Mediator*.
- Ensure that CentraSite is configured to receive run-time events from Mediator, as described in *Run-Time Governance with CentraSite*.

Event Type	Description
Lifecycle	A Lifecycle event occurs each time Mediator is started or shut down.
Error	An Error event occurs each time an invocation of a virtualized service results in an error.
Policy Violation	A Policy Violation event occurs each time an invocation of a virtualized service violates a run-time policy that was set for the virtualized service.

Event Type	Description
Transaction	A Transaction event occurs each time a virtualized service is invoked (successfully or unsuccessfully).
Monitoring	Mediator publishes key performance indicator (KPI) metrics, such as the average response time, fault count, and availability of all virtualized services (described below).

Note: For more information about runtime event types, see *Administering webMethods Mediator*. For details about metrics tracking intervals, see *Administering webMethods Mediator*.

Displaying the Runtime Events

Use the following procedure to display runtime events for a virtualized asset.

When you view the runtime events, be aware that:

- To view the runtime events of a virtualized service, it is necessary that the virtual type's definition includes the **Runtime Events** profile.
- If you do not see the **Runtime Events** profile of a virtualized service, it is probably because you do not have "View" permission for the profile.

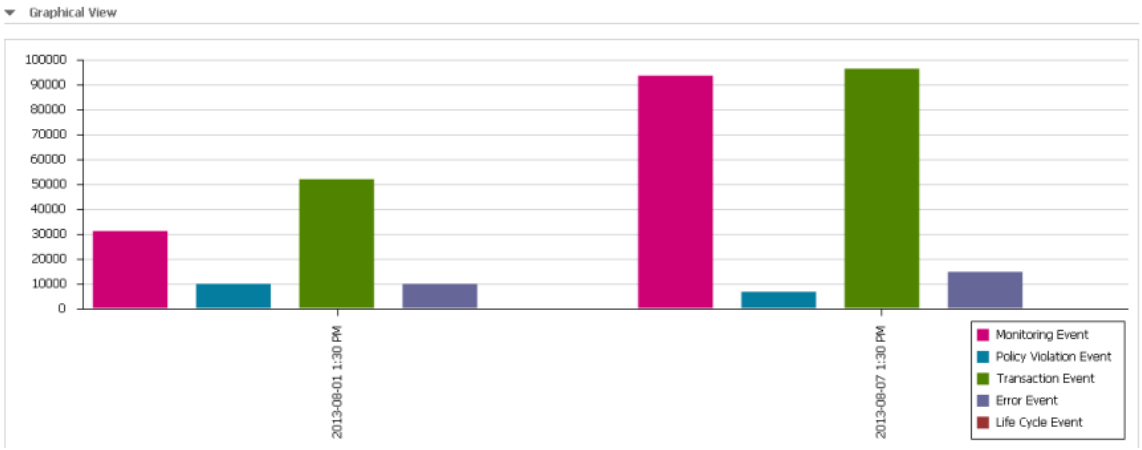
To display event information for an asset

1. In CentraSite Business UI, display the details page for the asset whose runtime events you want to view. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. Select the **Runtime Events** profile.
3. Use the following fields to filter the event list you want to view:

In this field...	Specify...
Gateway	A gateway of the asset, or select **All** to view the event information of all gateways to which the virtualized service is deployed. CentraSite displays **None** by default.
Consumer	A consumer of the asset, or select **All** to view the runtime event information of all consumers of the asset. CentraSite displays **All** by default. However, if you do not have at least one consumer registered in the registry, CentraSite displays **None** by default.
Event Type	A particular event type, or select **All** to view all event types.

In this field...	Specify...
	For a list of the supported event types, see "The Runtime Events" on page 174. CentraSite displays **All** by default.
Date Range	A range of dates from which to view the events (e.g., Last 1 hour, Last 12 hours, Last 1 day, Last 5 days, Last 10 days, Last 20 days, Last 1 month, Custom, etc.). CentraSite displays **Last 1 month** by default.
Start Date/End Date	If chosen **Custom** in the previous field, then the time period for which to view the metrics. **Start Date**: Click the calendar and select a starting date and time. **End Date**: Click the calendar and select a ending date and time.
Display Interval	A running count events of the service displayed at regular time intervals. The interval is specified in the format 3m 2d 6h; wherein m indicates the month, d indicates the day and h indicates the hour.

4. Click the **Refine** button.
5. Expand the **Graphical** node to display a graphical view of the event information as shown below:



6. Expand the **Tabular** node.

   CentraSite displays a tabular view of the event information in the left pane as shown below:

Field	Description
Date/Time	The date/time that the event occurred. Click this hyperlinked value to view the **Event Detail** page, which will contain the event's SOAP request or response name in the Attribute column. Click the hyperlinked request or response name to display the full SOAP request or response.
Event Type	(Read-only.) The type of event (e.g., Monitoring, Policy Violation, Error, etc.).
Gateway	(Read only.) The gateway on which the event occurred.

7. To access the details of an event, click on the link for the event.

   The **Event Details** dialog in the right pane shows a detailed information about the event that you select in the left pane.

Deleting an Asset

This section describes how to delete an asset permanently from the registry.

General

Deleting an asset permanently removes the asset from the CentraSite registry.

When you delete an asset, CentraSite removes the registry entry for the asset (that is, it removes the instance of the asset from CentraSite's object database). Also note that:

- You cannot delete the predefined assets (not even if you have the default permissions associated with the CentraSite Administrator role).
- If you are not the owner of the asset, you cannot delete the asset unless you have `Manage Assets` permission (granted though a role-based permission) or at least Full permission on the asset (granted through an instance-level permission).
- You cannot delete an asset that is in pending state (e.g., awaiting approval) or has a consumer registration request pending for it.
- You cannot delete an asset that has one or more associated objects. For example, if an asset “Web Service” relates to another asset “XML Schema”, an internal association “Related To” exists between the assets. CentraSite does not let you delete an asset with incoming associations. Therefore, to delete an asset you must first delete all of its associated objects.
- When you delete an XML Schema that refers to other XML Schemas, the referenced XML Schemas are also deleted automatically, provided that you have permission to delete them. If you do not have permission to delete a referenced XML Schema, the referenced XML Schema will not be deleted and a warning message will be issued.

- You cannot delete an asset if any user in your CentraSite registry is currently modifying the asset.
- *This is of specific relevance to REST and XML based service assets.* Beginning with version 9.7, CentraSite supports the enhanced interface for REST services (in contrast, earlier versions of CentraSite supported a standardized interface for REST services). Documentation of the prior REST service interface is available to Software AG customers who have a current maintenance contract in Empower, Software AG's global extranet (https://empower.softwareag.com/).
- If you have REST services that were created prior to version 9.7 or if you are using the current version of CentraSite Business UI, you can only view details of these REST services in CentraSite Control. Keep in mind that you cannot delete REST services using the CentraSite Control user interface (not even if you belong to the CentraSite Administrator role). You will only be able to delete REST services using the CentraSite Business UI.

Deleting an asset will not remove:

- Other assets to which the asset refers (unless the reference is to an asset that is a nonshared component of the asset you are deleting). For example, if the asset that you are deleting is a Service asset with a “Consumes” or “Consumed By” relationship with other services in the registry, the related services will not be deleted.
- Supporting documents that are attached to the asset.

Deleting Assets

You can delete a single asset or a selected set of assets. The descriptions in this section give you details on how to do this.

To delete any given asset, you must belong to a role that has the Manage Assets permission for the organization in which the asset resides.

Deleting Assets

Use the following procedure to delete a single asset.

To delete an asset

1. In CentraSite Business UI, display the details page for the asset that you want to delete. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. In the action bar for the asset, click **Delete** .
3. When you are prompted to confirm the delete operation, click **Yes**.

   The asset is permanently removed from the CentraSite registry.

Deleting a Set of Assets

You can delete multiple assets in a single step. The rules described above for deleting a single asset apply also when deleting multiple assets.

> **Important:** If you have selected several assets where one or more of them are predefined assets, you can use the **Delete** icon to delete the assets. However, as you are not allowed to delete predefined assets, only assets you have permission for will be deleted. The same applies to any other assets for which you do not have the required permission.

Use the following procedure to delete a set of assets.

To delete multiple assets in a single operation

1. In CentraSite Business UI, display the asset list. If you need procedures for this step, see "Viewing a List of Your Assets" on page 141.
2. Mark the checkbox next to the name of each asset you want to delete
3. In the action bar of the Search Results page, click **Delete** .

   > **Note:** If one or more or the selected assets is in pending state (e.g., awaiting approval) or has a consumer registration request pending for it, CentraSite will display an error message and ignore those assets.

Downloading an Asset

CentraSite Business UI offers two methods of retrieving the source files of CentraSite assets, namely exporting and downloading. The source file is the file that was imported into CentraSite in order to create the registry entry for the asset. For example, the source file for a web service asset is the service's WSDL file. The source file for an XML schema asset is its schema file. The difference between exporting and downloading is as follows:

- The export feature creates a zip file containing one or more assets from the repository, as well as all associated registry objects. The export feature is described in the document "Exporting Assets" on page 184.
- The download feature creates a zip file containing just the source file of a single asset from the repository, without any of the associated registry objects. If the source file refers to other source files in the repository (for example, a WSDL file can reference XML schema files), the referenced files will also be included in the zip file. If the asset refers to files in the Supporting Document Library, these can optionally be included in the zip file.

If an asset was not created by an importer, but was instead created from scratch without using a source file, the download feature can still be activated. In this case, however, the downloaded zip file does not contain an asset source file but instead only contains files from the Supporting Document Library that are attached to the asset.

Before You Begin

The following general guidelines apply when downloading an asset:

- To download any given asset, you must belong to a role that has the Manage Assets permission for the organization in which the asset resides.
- If you use the download feature to create a zip file, it contains only the files that you have permission to view. The default location to which the zip file is downloaded is `My Documents\Downloads`.
- *This is of specific relevance to REST and XML based service assets.* Beginning version 9.7, CentraSite supports the enhanced interface for REST services (in contrast, earlier versions of CentraSite supported a standardized interface for REST services). Documentation of the prior REST and XML service interface is available to Software AG customers who have a current maintenance contract in Empower, Software AG's global extranet (http://empower.softwareag.com/).
- If you have REST services that were created prior to version 9.7 or if you are using the current version of CentraSite Business UI, you will only be able to view details of these services in CentraSite Control. You cannot download schemas from REST services using the CentraSite Control user interface (not even if you belong to the CentraSite Administrator role). This is because; CentraSite Control does not support the enhanced REST interface. You will only be able to download schemas from REST services using the CentraSite Business UI.

Performing the Zip Download

You can download a single asset and its associated files, or a selected set of assets and their associated files. The descriptions in this section give you details on how to do this.

Prerequisite:

The asset that you want to download must belong to an asset type for which there is an importer. The importer can be either one of the predefined importers or a user-defined importer. For a list of the available importers, see the *CentraSite User's Guide*.

To download any given asset, you must belong to a role that has the Manage Assets permission for the organization in which the asset resides.

Downloading an Asset

Use the following procedure to download a single asset and its associated files.

To download an asset and its associated files

1. In CentraSite Business UI, display the details page for the asset you want to download. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. In the action bar for the asset, click **Download Documents**  .

3. In the **Download Documents** dialog, check the box **Include all Supporting Documents** if you want to include attached documents from the Supporting Document Library.
4. Click **OK**. This starts the creation of the zip file.

> **Note:** The default location to which the zip file is downloaded is My Documents \Downloads.

Downloading a Set of Assets

You can download a set of assets, as described in this section. The rules described above for downloading a single asset apply also when downloading multiple assets.

Use the following procedure to download a set of assets.

To download a set of assets and their associated files

1. In CentraSite Business UI, display the asset list. If you need procedures for this step, see "Viewing a List of Your Assets" on page 141.
2. Mark the checkbox of each asset you want to download.
3. In the action bar of the Search Results page, click **Download Documents**  .
4. In the **Download Documents** dialog, specify the attributes, in the same way as described previously for downloading an individual asset.
5. Click **OK**. This starts the creation of the zip file.

Structure of the Zip File

The zip file is organized as a directory that holds a collection of downloaded files. If any of the names of the downloaded files are not unique; then such files are stored with consecutive numbers (for example: SchemaA_1.xsd, SchemaA.xsd_2, etc.).

If a downloaded file refers to one or more other downloaded files, for example if a WSDL file refers to a schema, the reference within the file is adjusted so that it points relatively to the file in the zip file.

Example: The WSDL file Service.wsdl refers to SchemaA.xsd, to another SchemaA.xsd with a different namespace, and to SchemaB.xsd. The resulting .zip file expands into a folder with the following files:

Service.wsdl

SchemaA_1.xsd

SchemaA_2.xsd

SchemaB.xsd

Performing the Single Document Download

You can download a document from the Supporting Document Library or from an asset, as usual text file. To do this, proceed as follows:

How to download a attached document from Supporting Document Library

If you want to download a attached document from Supporting Document Library (SDL), proceed as follows:

To download an attached document from the SDL

1. Open the details page of the asset to which the supporting document is attached.
2. Select the **Specification** or **Technical Details** profile, as appropriate for the asset type.

   This shows the files that are attached to the asset.
3. Locate the supporting document that you want to download. Click the **Download** button for this entry.
4. Specify the location in the file system where you want to store the supporting document, and then click **OK**.

How to download a WSDL/XSD document from Service/Schema

If you want to download a WSDL/XSD document from Service/Schema, proceed as follows:

To download a WSDL/XSD document from Service/Schema

1. Open the details page of the asset to which the document is attached.
2. Select the **Technical Details** profile of the asset.
3. Click on the WSDL/URL hyperlink.
4. Click the **Download** button.
5. Specify the location in the file system where you want to store the supporting document, and then click **OK**.

   If the WSDL or schema file includes a reference to another file (usually a relative address) in the repository, then this reference will be changed to an absolute repository address.

How to download a XSD document from REST/XML services

If you want to download a XSD document from REST/XML services, proceed as follows:

To download a XSD document from REST/XML services

1. Open the details page of the asset to which the document is attached.
2. Select the **Technical Details** profile of the asset.

3. Click the **Download** button adjacent to the attribute **Schema Name**.

Exporting and Importing Assets

You use the export and import features to export an asset from one instance of CentraSite and import it into another.

Before You Begin

Before you export and import an asset in the CentraSite Control, review the following information. Software AG also recommends that you review the general information about exporting and importing registry objects in the *CentraSite Administrator's Guide*.

- If the asset or any referenced object in the archive already exists in the gateway instance of CentraSite, the existing object will be overwritten according to the conditions described in the *CentraSite Administrator's Guide*.
- To export an asset, you must have the instance-level "View" permission on the asset.
- To import an asset successfully, you must belong to a role that includes the "Manage Assets" permission for the organization in which the selected asset resides.
- The export process does not export the selected asset's instance-level permissions.
- The export operation creates an archive file on the file system. The archive file contains a copy of the assets that you have exported. The archive file can be imported afterwards into the same CentraSite registry or into a new registry.
- When you import the asset on the gateway instance, CentraSite assigns instance-level permissions to the imported asset just as though you created the asset manually. (In other words, the imported asset receives the same permission settings as the assets you create from scratch.)
- When an imported asset *replaces* (updates) an existing asset in the target registry, all of the asset's properties, except for its permission settings, are updated according to the asset object in the archive. This includes the asset's organizational scope and its lifecycle state. If the referenced organization and/or lifecycle model does not already exist on the target registry, the import process will fail.
- If the archive file contains a reference to an object that is not already present in the target registry or is not included in the archive file itself, the asset will not be imported.
- If design/change-time policies exist for the events that the import process initiates (e.g., the creation of an asset), those policies will be triggered.
- The archive you wish to import must reside in the file system of the computer where your browser is running.
- *This is of specific relevance to REST and XML based service assets.* Beginning with version 9.7, CentraSite supports the enhanced interface for REST services (in contrast, earlier versions of CentraSite supported a standardized interface for REST services). Documentation of the prior REST service interface is available to Software AG

customers who have a current maintenance contract in Empower, Software AG's global extranet (https://empower.softwareag.com/).

- Starting with this version 9.7, you cannot import a REST service implemented by current version of CentraSite to previous versions of CentraSite. This is because, CentraSite prior to version 9.7 do not support the enhanced REST interface.

If You Migrate REST Services from a Pre-9.7 Release

If you have REST services that were created prior to version 9.7, these REST services will continue to hold the old version's metadata in the enhanced REST service interface implemented by current version of CentraSite. Examine their property settings in the current version and set them appropriately.

Exporting Assets

The export operation creates an archive file on the file system. The archive file contains a copy of the assets that you have exported. The archive file can be imported afterwards into the same CentraSite registry or into a new registry.

You can export a single asset or a selected set of assets. The descriptions in this section give you details on how to do this.

Exporting a Single Asset

Use the following procedure to export a single asset.

To export an asset

1. In CentraSite Business UI, display the asset that you want to export. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. In the action bar for the asset, click **Export**  . The **Export** dialog shows the selected asset.
3. Expand the **Advanced Settings** to display a list of the additional export options.
4. Specify the options as described in "Exporting Objects Using CentraSite Business UI" on page 130 of the document Exporting and Importing Registry Objects.
5. After you have selected the export options, click **Apply Settings**. The Export Preview page is displayed.
6. The Export Preview page displays the list of selected objects and its dependent objects.

   The checkbox beside each object indicates whether or not the object should be included in the export set. By default, all displayed objects are included in the export set.

   If you wish to remove an object from the export set, unmark its checkbox. This removes the object and all of its dependent objects (if any) from the export set.
7. Click **Export** to start the export operation.

If none of the object is selected for export, the **Export** button is disabled.

> **Note:** If at any time you wish to abandon all your changes and return to your previous screen, just click the **Cancel** button.

8. An **Export Progress** popup will display the export progress bar.
9. Click **Download** if you wish to download the export archive file. This starts the creation of the archive file.

   Note that the **Download** button will be disabled until the entire export operation is completed.

   The default location to which the archive file is downloaded is My Documents \Downloads.

Exporting Multiple Assets in a Single Operation

You can export multiple assets in a single step. The rules described above for exporting a single asset apply also when exporting multiple assets.

Use the following procedure to export of a set of assets.

To export a set of assets

1. In CentraSite Business UI, display the asset list. If you need procedures for this step, see "Viewing a List of Your Assets" on page 141.
2. Mark the checkbox of each asset you want to export.
3. In the action bar of the Search Results page, click **Export**  . The **Export** dialog shows the selected set of assets.
4. In the **Export** dialog, specify the export options, in the same way as described previously for exporting an individual asset.

Importing Assets

You can import an asset by importing the archive file (zip file) to which the asset was previously exported. You can import assets into the same CentraSite registry from which they were originally exported or to a different CentraSite registry.

Predefined asset types that are exported from older versions of CentraSite may not get imported. The asset instances will get imported only if they conform to the asset type schema in the target CentraSite registry.

Use the following procedure to import assets.

To import an asset

1. In CentraSite Business UI, click the **Create Assets** activity. This opens the **Create New Asset** wizard. The bottom panel of the **Create New Asset** wizard shows the option to import an archive file.

2. To import an archive file, click **Choose** to navigate to the folder where the exported archive file resides, and choose the file. When you choose a file to import, the fields in the **Basic Information** panel cannot be edited.
3. Click **Next**.
4. The **Create New Asset** wizard displays the list of objects to import. The checkbox beside each object indicates whether the object should be imported. By default, all objects displayed are included in the import set.

   To exclude any object from the import set, unmark its checkbox.

   If you are importing an archive file that was generated prior to CentraSite version 9.0, the wizard does not display the list of objects. However, the objects are imported.
5. Expand **Advanced Settings** to display a set of additional import options. These settings are optional.

Option	Description
Change Owner	The imported assets can be assigned to the same owner as in the source CentraSite registry, or you can assign a new owner. The **Change Owner** field is type-ahead field. As you enter characters in this field, the dialog will list the usernames that match the characters you enter.
Change Organization	When you import assets, you can import them into the same organization in the target CentraSite registry as in the source CentraSite registry from which they were exported, or you can assign a new organization. The **Change Organization** field is type-ahead field. As you enter characters in this field, the dialog will list the organization names that match the characters you enter.
Retain lifecycle state	This option determines whether the lifecycle state of the imported assets is preserved. Enable the option to retain the lifecycle state of the assets being imported.
Overwrite existing entities	This option specifies that existing assets with the same uuid in the target CentraSite registry will be overwritten, even if the asset in the archive is older than the one in the target CentraSite registry. Enable the option to overwrite the existing assets.

Option	Description
Import groups that the user belongs to	This option determines that when you import a user, whether you want to import the groups that the user belongs to. This applies only to user-defined groups. System-defined groups are not imported. Enable the option to import the groups.

6. Click **Import** to import the assets.
7. If an asset has an attribute that is required in the target CentraSite registry but not in the source CentraSite registry, CentraSite displays intermediate screens to provide values for each required attribute, before importing the asset.

   This happens when an asset type definition in the source CentraSite registry is different from an asset type definition in the target CentraSite registry. For example, the asset type in the target CentraSite registry represents an updated version of the asset type with different attribute definitions.
8. When the import operation completes, the import wizard informs you if the import was successful or if there were any errors/warnings. Click **Download Import Log** to view the import logs. When you click this link, the import log lists the status of all the objects stating whether they were successfully imported or if there were errors/warnings.
9. Click **OK** to terminate the import wizard.

Managing the Catalog

This section contains an overview of the main features of the CentraSite catalog.

About the Catalog

This section describes how to find the assets in the CentraSite catalog.

What does the Catalog Contain?

As a consumer, business or guest user, you can use the CentraSite Business UI to browse or search for assets in the CentraSite by name, description, attribute values, asset types and/or taxonomy groups. You can also use the Business UI to view and edit the attributes for an asset.

The CentraSite Business UI provides a powerful search facility. You can search for assets across organizations, classifications and types on the basis of several search criteria using a logical conjunction (ALL) or disjunction (ANY) operation. If you need to find assets based on attributes, then the sophisticated advanced search interface also allows you to search against the attributes defined in assets. The CentraSite Business UI also makes

custom fields available as search criteria, allowing you to refine your searches even further.

You can also save your search as a filter in the CentraSite Business UI, allowing you to recall the same search and run it again or even share it with other users.

Browse

You can search for assets whose attributes contain a certain keyword (character string). Additionally, you can search for assets on the basis of several search criteria using ALL or ANY combinations.

Keyword Search

You can search for assets whose attributes contain a certain keyword (character string).

Advanced Search

You can search for assets on the basis of several search criteria using ALL or ANY combinations.

Who Can View the Catalog?

All CentraSite users, including guests, have permission to browse the CentraSite catalog. You do not need any explicit permission to use the CentraSite catalog in the Business UI.

The set of assets available to you when you browse the catalog are the assets on which you have View permission. You can obtain View permission on an asset in the following ways:

- By belonging to a role that includes any of the following permissions.

This permission...	Allows you to...
View Assets	View all assets within a specified organization.
Modify Assets	View and edit all assets within a specified organization.
Manage Assets	View, edit and delete all assets within a specified organization, and set instance-level permissions on those assets. This permission also allows you to create assets.
Create Assets	Add new assets to a specified organization. You automatically receive Full permission (which implies Modify and View permission) on all assets that you create.

- By having View, Modify or Full instance-level permissions on a particular asset.

By default, all CentraSite users belong to the Asset Consumer role. This role includes the View Assets permission for the organization to which a user belongs.

Having the Asset Consumer role gives you implicit view permission on all the assets in your organization. You can view assets from other organizations only if you are given permission to do so through the assignment of additional role-based or instance-level permissions.

Note: In rare instances, an administrator might not grant view permissions to all of the users in an organization. If the administrator of your organization has done this, you will need instance-level permissions on an asset in order to view it.

For more information about permissions, see *Getting Started with CentraSite*.

Browsing the Catalog

When you browse the catalog, CentraSite directs you to the advanced search panel.

You can select the following options:

- View the complete list of assets.
- View a list of assets whose name attribute contains a certain keyword (character string).
- View a list of assets that belong to certain asset types.
- View a list of assets that have been classified according to a specific taxonomy or a category within taxonomy.
- View a list of assets that belong to a certain organization.

Important: CentraSite Business UI will not display instances of the sub types in the Search Results page, if the **Exclude sub types from Business UI search** option is enabled in its base type definition. As a result, only instances of the base type will be displayed, and you cannot browse for the sub type instances. However, you can also view the instances of a sub type if you add that particular sub type to the recipe in the Advanced Search section.

You can enable or disable this option in the **Edit Asset Type - Advanced Settings** dialog of the base type definition. However, to modify this option, you must belong to a role that has the Manage Asset Types permission. For more information about excluding sub types from CentraSite Business UI search, see the *CentraSite Administrator's Guide*.

Performing a Quick Find by Browse

This section describes how to use CentraSite's Browse feature to locate assets using search scopes.

To perform a quick search

1. In CentraSite Business UI, locate the search panel in the top left corner of the navigation bar.
2. In the list of scopes shown in the search panel, select the scope that you want to include in the view. The list of scopes consists of predefined scopes and custom (i.e. customer-defined) scopes.

   Note: Use the arrow icons in the search panel to extend or retract the scopes list as necessary.

3. Click the **Browse** link.

   CentraSite returns the assets that match the search scope in the Search Results panel.

4. You can further refine your search by specifying asset attributes to search for in the search panel. If you need procedures for this step, see "Advanced Search" on page 194.

Searching the Catalog

This section describes how to locate assets in the CentraSite catalog using keyword searches and advanced searches.

Important: CentraSite Business UI will not display instances of the sub types in the Search Results page, if the **Exclude sub types from Business UI search** option is enabled in its base type definition. As a result, only instances of the base type will be displayed, and you cannot search for the sub type instances. However, you can also view the instances of a sub type if you add that particular sub type to the recipe in the Advanced Search section.

You can enable or disable this option in the **Edit Asset Type - Advanced Settings** dialog of the base type definition. However, to modify this option, you must belong to a role that has the Manage Asset Types permission. For more information about excluding sub types from CentraSite Business UI search, see the *CentraSite Administrator's Guide*.

The following sections describe how to perform simple and advanced searches.

Simple Search

The basic search is a simple and easy to use search facility in which you can specify arbitrary search patterns. It helps you choose relevant and popular terms related to your selected key pattern.

You can search for all assets that contain one or more specified keywords (i.e., text strings) in the asset's string attributes (asset name, description, etc.). You may use the

Scope (such as **Organizations**, for example) drop-down to restrict the types on which the search is conducted.

Using Search Metacharacters in the Simple Search

Certain characters have a special function when used in the simple search:

- Wildcard characters allow you to search for keywords that match a string pattern. See "Using Wildcards" on page 192.
- The quote character (") is used to group keywords into phrases, as described in "Using Keywords" on page 191.
- To force the simple search to treat these metacharacters as normal characters, precede the character with a backslash (`\`). If you want to include the backslash character itself in the search, type two backslashes.

Using Keywords

You can define the input for the simple search in the following ways:

- A simple search consists of 1-n search keywords. Multiple keywords are space separated. If multiple keywords are given, a logical disjunction (OR) is implied.
- A keyword is treated as partial text which can occur at the beginning of a word within the searched strings. The `starts with` semantics are implied.

  Example: If the keyword is `customer`, then the following matches are returned: `A sample svc for customers` as well as `customerservice`.
- As you enter the partial text, CentraSite returns the top n assets that meet your search text. You can choose to define the number of search results by configuring the property `numOfResultsToShow` in the custom configuration file centrasite.xml. By default, the maximum number of results to display is set to "5".
- The search starts with the specified number of offset characters counted from the beginning of the string. You can choose to define the required offset for search by configuring the property `minOffsetToStartSearch` in the configuration file. By default, the minimum offset character is set to `3`.

  Note: The minimum offset character cannot be less than `3`.
- As multiple keywords are OR combined, the keywords can match a single phrase (e.g. in the description) or individual keywords can occur in different attributes.

  Example: If a search is conducted for `customer service`, then `customer` could be matched in the description and `service` in an object specific attribute.
- If there are quotes (" ") around a phrase, then a search is performed on the exact phrase within the quotes. A space within a quoted phrase is considered as a space character and not as a logical separator.
- You can mix and match any number of words and quoted phrases within the text field.

- The search is neither case nor accent sensitive, even within a quoted phrase. Example: A search for `abc` will return the same results as a search for `ABC` or `Abc`.
- If you enter a string that contains an odd number of double-quote characters, then the last double-quote character is ignored when the search is performed.
- If the search input field is empty, then the search execution will not happen.
- If an asset name exceeds n characters, the name is automatically truncated. You can choose the maximum number of characters to display in the asset name using the property `maxCharactersToShow` in the configuration file. By default, the maximum character limit is set to “60”.
- The simple search can include wildcard characters. See "Using Wildcards" on page 192 for details.

Using Wildcards

The available wildcard characters are as follows:

Character	Usage
* or %	If you use the percent symbol (`%`) or the asterisk (`*`), CentraSite replaces the wildcard symbol with as many characters as necessary to find a match. For example, an entry of `A%n` returns both `Amazon` and `American`. If you enter `*al`, then `CalcService`, `Calendar` and `AustralianPostCode` all fit the search criteria.
? or _	If you use the question mark (`?`) or the underscore (_), CentraSite replaces the wildcard symbol with a single character in order to find a match. Example: `CustomerSVC?Request` matches any character for `?`.

You can use a wildcard character at any point in the keyword text, and multiple times throughout the keyword text. If you enter a wildcard character in the middle of a string, for example `cat*dog`, then at least one of the searched attributes must contain the string in order for the asset to be included in the result set.

If a wildcard character between two words is surrounded by spaces, such as `word1 * word2`, the wildcard will match one word.

Note: Keep the following in mind:

- Certain non-alphanumeric characters that can appear in the name of an asset are currently ignored by CentraSite's wildcard mechanism when you include them in a keyword search. In particular, the hyphen (-) is ignored. Thus, if you have created the assets `asset-1` and `asset_1`, the wildcard search for `asset?1` will find `asset_1` but not `asset-1`.

- The percent (%) character acts as a word delimiter when it appears in the text to be searched. Thus, for example, if the name of an asset contains the text `abc%def` (the characters a, b, c, %, d, e, f), this is treated by the search mechanism as two adjacent words `abc` and `def`. A wildcard search such as `abc*def` looks for a single word beginning with `abc` and ending with `def`, so the search will not find this asset.

Performing a Simple Search

This section describes how to use CentraSite's Search feature to locate assets using keyword searches and scopes.

You can search for all assets that contain one or more specified keywords (i.e., text strings) in the asset's attribute. You may use the **Scope** drop-down to restrict the types (e.g., **Everything**, **Assets**, **Users**, **Organizations**) on which the search is conducted.

The number of search results is displayed directly beneath the title line of the results area, for example “About 43 results”. If no results are found, this is displayed as “Your search did not match any data”.

To search by keyword

1. In CentraSite Business UI, locate the `Type a Search` text box at the top of the screen.
2. In the text box, type the keyword(s) to search for. You can use one or more wildcards to specify the keywords.

   If you leave the text box blank, or enter just a wildcard, the first 5 related assets are returned.

   CentraSite applies the filter to the **Name** of the asset.

If you type...	CentraSite displays...
b	Names that contain "b"
bar	Names that contain "bar"
%	All names

3. In the list of scopes shown in the search panel, select the scope (example, **Assets**) that you want to include in the view. The list of scopes consists of predefined scopes and custom (i.e. customer-defined) scopes.

   Note: Use the arrow icons in the search panel to extend or retract the scopes list as necessary.

4. Click the **Search** ( ) icon.

CentraSite returns the assets that match both the search keyword and scope in the Search Results panel.

For assets, the search looks for the keyword(s) in the asset's name, description and attributes.

By default, the result set is ordered by relevance. Relevance is decided as follows:

- If the search criteria contain more than one keyword, the assets that match the most keywords are ranked higher.
- Assets where one or more search criteria match the **Name** or **Description** are rated higher than those where other attributes match.

5. Press the `Up Arrow` and `Down Arrow` keys to scroll through one asset at a time.
6. Locate the asset whose details you want to view.
7. Double click or press `Enter`.
8. If you would like to see more assets for the specified key pattern, click the **Click here to see more results** link.
9. The **Search Results** panel appears. The panel list one or more assets that fit in the specified search pattern.

   If you would like to narrow your search results down further, locate the content splitter on the left hand side. Click on the small arrow of the content splitter to expand the search options.

   For more information on defining the search filters, see "Advanced Search" on page 194.

Advanced Search

CentraSite's advanced search capabilities allow you to build sophisticated search clauses to search for assets on the basis of asset types, taxonomies and attribute values. The search criteria can be combined by a conjunction (ALL) or disjunction (ANY) operation.

There are two alternatives for handling access to the advanced search panel.

- Use the **Browse** link. If you need procedures for this step, see "Performing a Quick Find by Browse" on page 189.
- Use the Type a Search text box. If you need procedures for this step, see "Performing a Simple Search" on page 193.

This section contains descriptions for further refining your search results.

Search by Keyword

The keyword-based search is an easy to use search facility.

You can search for all assets that contain one or more specified keywords (i.e., text strings) in the asset's string attributes (asset name, description, etc.). However, if you

wish to search for assets in specific by the generic attributes (asset name, description, owner etc.), follow the steps as described in "Search by Attribute Values" on page 199.

Using Keywords

You can define the input for the keyword search in the following ways:

- A keyword is treated as partial text which can occur at the beginning of the searched strings. The `contains` semantics are implied.

  Example: If the keyword is `customer`, then the following matches are returned: `A sample svc for customers` as well as `customerservice`.

- As you enter the partial text, CentraSite returns the top n assets that meet your search text. You can choose to define the number of search results by configuring the property `numOfResultsToShow` in the centrasite.xml file. By default, the maximum number of results to display is set to 5.

- As multiple keywords are OR combined, the keywords can match a single phrase (e.g. in the description) or individual keywords can occur in different attributes.

  Example: If a search is conducted for `customer service`, then `customer` could be matched in the description and `service` in an object specific attribute.

- The search is neither case nor accent sensitive. Example: A search for `abc` will return the same results as a search for `ABC` or `Abc`.

- If the search input field is empty, the search execution does not happen.

- The keyword search can include wildcard characters. See "Using Wildcards" on page 192 for details.

Search by Keyword

To search for an asset by keyword

1. Go to the advanced search panel.
2. Locate the **Keyword** section under **Narrow your Results**.
3. Expand the node **Keyword**.
4. In the text box, type the keyword to search for.

   You can use one or more wildcards to specify the keyword. If you enter just a wildcard in the text box, the entire list of assets is returned. However, if you leave the text box blank, then no search action is performed.

   Note that a type-ahead feature is provided in this text box.

5. Add the keyword to the recipe by either clicking the plus button next to the text box or by pressing `Enter`. If required, add additional keywords to the recipe by repeating steps 4 and 5.

   You can delete your entries from the recipe by clicking the delete symbol next to the keyword.

CentraSite returns the assets that match the specified search criteria.

For assets, the search looks for the keyword(s) in the asset's generic and type-specific attributes.

By default the result set is ordered by relevance. Relevance is decided as follows:

- If the search criteria contain more than one keyword, the assets that match the most keywords are ranked higher.
- Assets where one or more search criteria match the **Name** or **Description** are rated higher than those where other attributes match.

Search by Taxonomy

The taxonomy search capability allows you to search assets that have been classified according to a specific taxonomy or a category within taxonomy.

To search for an asset by taxonomy

1. Go to the advanced search panel.
2. Locate the **Filter Categories** section under **Narrow your Results**.
3. Expand the node **Filter Categories**.
4. Choose **Taxonomies** from the drop-down list.
5. In the text box, type in the taxonomy or category to search for.

   You can use one or more wildcards to specify the taxonomy or category.

   If you enter just a wildcard in the text box, the entire list of taxonomies or categories is returned. However, if you leave the text box blank, then no search action is performed.

   Note that a type-ahead feature is provided in this text box.
6. Add the taxonomy or category to the recipe by either clicking the plus button next to the text box or by pressing `Enter`. If required, add additional taxonomies or categories to the recipe by repeating step 5 and 6. You can delete entries from the recipe by clicking the delete symbol next to them.
7. You can optionally use the **Browse** option to narrow the search as you need. Do the following:

   a. Click **Browse**.

   b. When you click the button, a **Browse Taxonomies** dialog appears which allows you to select the required taxonomies and categories.

   c. Click the expand node next to any taxonomy to view the categorization tree.

      You can expand or collapse the list of taxonomies, that is, to show or hide the list of categories in a hierarchy view. For example, you can show only the header for

a specific taxonomy, say `Countries`, and display the complete list of categories in the hierarchy by clicking on the header.

You can configure the number of taxonomies to display in the hierarchy view using the CentraSite's expandable property. For procedures on how to configure, see "Configuring CentraSite's Expandable Property" on page 206.

d. Mark the checkbox beside the name of the taxonomies or categories that you wish to add to the search recipe.

e. Click **OK**.

CentraSite automatically adds the selected taxonomies or categories to the existing recipe entries, and returns the assets that match the specified search scope.

Note: If at any time you want to abandon your unsaved search, just click the **Cancel** button.

Note: The list of taxonomies displayed contains only the taxonomies that are currently browsable. For information on how to make a taxonomy visible to users, see the *CentraSite Administrator's Guide*.

Search by Lifecycle Model

You can search for assets on the basis of lifecycle models and states.

Note: This functionality is available when the lifecycle model itself is in the `productive` or `retired` state.

To search for an asset by lifecycle model and state

1. Go to the advanced search panel.
2. Locate the **Filter Categories** section under **Narrow your Results**.
3. Expand the node **Filter Categories**.
4. Choose **Lifecycle Model** from the drop-down list.
5. In the text box, type in the lifecycle model or state to search for.

   You can use one or more wildcards to specify the lifecycle model or state. If you enter just a wildcard in the text box, the entire list of lifecycle models or states is returned. However, if you leave the text box blank, then no search action is performed.

   Note that a type-ahead feature is provided in this text box.
6. Add the lifecycle model or state to the recipe by either clicking the plus button next to the text box or by pressing `Enter`. If required, add additional lifecycle models or states to the recipe by repeating step 5 and 6.

   You can delete entries from the recipe by clicking the delete symbol next to them.

7. You can optionally use the **Browse** option to narrow the search as you need. Do the following:
   a. Click **Browse**.
   b. When you click the button, a **Browse Lifecycle Models** dialog appears which allows you to select the required lifecycle models or states.
   c. Click the expand node next to any lifecycle model to view the categorization tree.

      You can expand or collapse the list of lifecycle models, that is, to show or hide the list of states in a hierarchy view. For example, you can show only the header for a specific lifecycle model, and display the complete list of states in the hierarchy by clicking on the header.

      You can configure the number of lifecycle models to display in the hierarchy view using the CentraSite's expandable property. For procedures on how to configure, see "Configuring CentraSite's Expandable Property" on page 206.
   d. Mark the checkbox beside the name of the lifecycle models or states that you wish to add to the search recipe.
   e. Click **OK**.

   CentraSite automatically adds the selected lifecycle models or states to the existing recipe entries, and returns the assets that match the specified search scope.

Search by Asset Type

The type search capability allows you to search for assets on the basis of asset types.

To search for an asset using the asset type

1. Go to the advanced search panel.
2. Locate the **Filter Categories** section under **Narrow your Results**.
3. Expand the node **Filter Categories**.
4. Choose **Asset Types** from the drop-down list.
5. In the text box, type in the asset type to search for.

   You can use one or more wildcards to specify the asset type. If you enter just a wildcard in the text box, the entire list of asset types is returned. However, if you leave this text box blank, then no search action is performed.

   Note that a type-ahead feature is provided in this text box.
6. Add the asset type to the recipe by either clicking the plus button next to the text box or by pressing `Enter`. If required, add additional asset types to the recipe by repeating step 3 and 4.

   You can delete entries from the recipe by clicking the delete symbol next to them.

7. You can optionally use the **Browse** option to narrow the search as you need. Do the following:
   a. Click **Browse**.
   b. When you click the button, a **Browse Asset Types** dialog appears which allows you to select the either one of the following options:

If you choose…	CentraSite displays…
Everything	Displays the list of asset types, organizations and users that are registered in the CentraSite registry/repository.
Assets	Displays the list of asset types (predefined & custom) that is available in the CentraSite registry/repository.
Organizations	Displays the list of organizations (default and custom) that is available in CentraSite registry.
Users	Displays the list of users who are registered in the CentraSite registry/repository.

   c. Click the expand node next to any type to view the list.

      You can expand or collapse the list of types to show or hide the list in a hierarchy view. For example, you can show only the header for a specific type, say Assets, and display the complete list of asset types in the hierarchy by clicking on the header.

      You can configure the number of types to display in the hierarchy view using the CentraSite's expandable property. For procedures on how to configure, see "Configuring CentraSite's Expandable Property" on page 206.
   d. Mark the checkbox beside the name of the types that you wish to add to the search recipe.
   e. Click **OK**.

      Note: If at any time you want to abandon your unsaved search, just click the **Cancel** button.

   CentraSite automatically adds the selected assets to the existing recipe entries, and returns the assets that match the specified search scope.

Search by Attribute Values

You can further refine your search by specifying asset attributes to search for.

If you specify a single asset type for the search, the set of attributes that you can use for the search is the set of attributes for that asset type. If you have specified several asset

types for the search, the set of attributes available for the search is a combination of the respective type-specific attributes.

To search for an asset by attribute values

1. Go to the advanced search panel.
2. Locate the **Filter Categories** section under **Narrow your Results**.
3. Expand the node **Filter Categories**.
4. Choose **Further Attributes** from the drop-down list.
5. In the text box, type in the attribute to search for.

   You can use one or more wildcards to specify the attribute. If you enter just a wildcard in the text box, the entire list of attributes is returned. However, if you leave this text box blank, then no search action is performed.

   Note that a type-ahead feature is provided in this text box.
6. Add the attribute to the recipe by either clicking the plus button next to the text box or by pressing `Enter`. If required, add additional attributes to the recipe by repeating step 3 and 4. You can delete entries from the recipe by clicking the delete symbol next to them.

   You can delete entries from the recipe by clicking the delete symbol next to them.
7. You can optionally use the **Browse** option to narrow the search as you need. Do the following:

   a. Click **Browse**.

   b. When you click the button, a **Browse Further Attributes** dialog appears which allows you to select the following attributes.

      - Common Attributes that contain the assets generic attributes (name, description, owner etc.). See "Generic Attributes" on page 201 for details.
      - Type-Specific Attributes that contain the asset types and their type-specific attributes. See "Type-Specific Attributes" on page 202 for details.

   c. Click the expand node next to any common or type-specific attribute to view the list of attributes and their data types.

      You can expand or collapse the list of attributes, that is, to show or hide the list in a hierarchy view. For example, you can show only the header for a specific type, say Service, and display the complete list of type-specific attributes in the hierarchy by clicking on the header.

      You can configure the number of attributes to display in the hierarchy view using the CentraSite's expandable property. For procedures on how to configure, see "Configuring CentraSite's Expandable Property" on page 206.

   d. Mark the checkbox beside the name of the attributes that you wish to add to the search recipe.

e. Click **OK**.

> **Note:** If at any time you want to abandon your unsaved search, just click the **Cancel** button.

CentraSite automatically adds the selected attributes to the existing recipe entries, and returns the assets that match the specified search scope.

Searchable Attributes

You can specify generic attributes (i.e. attributes common to all asset types) and type-specific attributes as search criteria.

Generic Attributes

The generic attributes that can be used as search criteria are described in the following table:

Search Attribute	Usage
Name	Use this attribute to search for assets whose name matches a specified text string. You can specify a substring or expression that can be combined with a "contains word" (default option), "starts with", "equals" or "not equals" expression. The search is neither case nor accent sensitive. If "starts with" is used, no wildcard is necessary as a postfix. If "contains word" is used, the word given is treated as a partial string with implicit wildcards. If "equals" or "not equals" is used, no wildcards are supported. If multiple substrings have been given the parameters are implicitly quoted. Explicit quotations and wildcards can be used, and behave in the same way as for keyword searches.
Description	Use this attribute to search for assets whose description matches a specified text string. Usage is the same as for the `Name` attribute.
Type	Use this attribute to search for assets belonging to a specific asset type. Choose the asset type via a `Browse` selection list.
Creation Date	Use this attribute to search for assets with a specified creation date.

Search Attribute	Usage
	You can select a date and apply a before/after/on/between criterion. If "between" is used, a second input field allows you to specify the end date. The date input parameters allow year, month and day input as well as hour and minute. Hour and minute default to `0`. The data format is used as specified in the account preferences of a user (defaults to "yyyy-mm-dd"). No wildcards are supported.
Modified Date	Use this attribute to search for assets with a specified modification date. Usage is the same as for the `Creation Date` attribute.
State	Use this attribute to search for assets that are in a specified lifecycle state.
Key	Use this attribute to search for an asset that exactly matches the given UDDI V3 key. If no prefix `uddi:` is given, this is implied automatically. No wildcards are supported.
Owner	Use this attribute to search for assets belonging to a specified user. Choose the user via a `Browse` selection list.
Submitting Organization	Use this attribute to search for assets provided by a specified organization. Choose the organization via a `Browse` selection list.
Consumers	Use this attribute to register users and applications to consume the asset.
Subscribers	Use this attribute to register users to receive notifications when changes are made to the asset.

Type-Specific Attributes

In addition to the generic attributes listed in the table above, each asset type can have its own type-specific search criteria, based on the type-specific attributes of the asset type. For example an asset might include attributes that do the following:

- Classify the asset according to one or more taxonomies

- Describe an asset's relationship to other assets or registry objects
- Provide links to program documentation, sample code, usage notes and so forth

The type-specific attributes are shown in the **Browse Further Attributes** dialog.

For example, if you select the asset type Service in the **Types** field, the **Browse Further Attributes** dialog contains search criteria like `SOAP-Version (String)`, which refers to the service's type-specific attribute **SOAP-Version** which has the data type String.

Depending on the data type of the type-specific attribute you choose, the **Browse Further Attributes** dialog changes to reflect the search possibilities for that data type.

For a general information on type-specific attribute's data types, see "Attribute Data Types" on page 203.

Attribute Data Types

Each attribute in an asset includes a specific data type. The data type determines what kind of information the attribute can hold.

The following table lists the data types that are available for an attribute. Most types are configured to hold a single value or multiple values (i.e., an array of values).

Data Type	Search Operators and Description
String	`Equals, Not Equals, Contains and Startswith` Holds a string of text. When this type of string is displayed, it is displayed in a single-line text box. If a value exceeds the width of the box, the excess characters are simply not displayed.
International String	`Equals, Not Equals, Contains and Startswith` Holds a String attribute that holds different values for different locales.
Multiline String	`Equals, Not Equals, Contains and Startswith` Holds a string of text. When this type of string is displayed in a CentraSite user interface, the string is displayed in a multi-line text box and lines of text are wrapped to fit the width of the box. (Compare this with the String data type described below.)
Email	`Equals, Startswith` Holds an email address. This data type only accepts values in the format: *anyString@anyString*

Data Type	Search Operators and Description
	Note: When a user enters a value for an Email attribute, CentraSite verifies that the value conforms to the format above, but it does not attempt to validate the address itself.
URL/URI	`Equals, Startswith` Holds a URL/URI. This type of attribute only accepts values in the form: *protocol* ://*host* / *path* Where: ■ *protocol* is any protocol that java.net.URL supports ■ *host* is the name or IP address of a host machine ■ *path* (optional) is the path to the requested resource on the specified host
Number	`Equals, Not Equals, Greater, Smaller, GreaterorEquals, SmallerorEquals` Holds a numeric value. **Note:** The underlying data type for this kind of attribute is a Java double.
Boolean	`N/A` Holds a `true` or `false` value. **Note:** When a Boolean value is displayed in the CentraSite user interface, its value is generally displayed as “Yes” (if the attribute's value is true) or “No” (if the attribute's value is false).
Date/Time	`Before, After, Between, On` Holds a timestamp that represents a specific date and/or time.
Duration	`N/A` Holds a value that represents a period of time as expressed in Years, Months, Days, Hours, Minutes and Seconds.
IP Address	`Equals, Between`

Data Type	Search Operators and Description
	Holds a numeric IP address in the v4 or v6 format.
File	`Equals, Startswith` Holds references to one or more documents that reside in CentraSite's supporting document library or at a specified URL. You can use this type of attribute to attach documents such as programming guides, sample code and other types of files to an asset.
Classification	`N/A [Assumed to Equals]` Holds references to one or more categories in a specified taxonomy. You use this type of attribute to classify assets according to a specified taxonomy.
Relationship	`N/A [Assumed to Equals]` Holds references to other registry objects. You use this type of attribute to express a relationship between an asset and another object in the registry.

Depending on the data type you select, new drop-down lists or text fields appear that allow you to refine the search. Complete the type-specific options as described below:

If you are choosing this type of data…	Do the following...
Classification	1. Select the classification via the **Browse Further Attributes** selection list. 2. Choose the **Browse** button next to the text box. 3. Locate the taxonomy that contains the category that you wish to search. 4. Ensure that the taxonomy's categories are visible by choosing the drop-down arrow beside the taxonomy name. 5. Locate the category that you wish to search. CentraSite returns the assets that match the above specifications.

If you are choosing this type of data…	Do the following...
	6. Sort the search results by choosing one of the options from the drop-down list labeled **Sort by**.
Relationship	1. Select the relationship via the **Browse Further Attributes** selection list. 2. Choose the **Browse** button next to the text box. 3. Specify an association type and associated object to be searched in the CentraSite registry. CentraSite returns the assets that match the above specifications. 4. Sort the search results by choosing one of the options from the drop-down list labeled **Sort by**.

Configuring CentraSite's Expandable Property

CentraSite's `isExpandable` property allows you to create an expandable/collapsible list of objects (such as taxonomies, lifecycle models, asset types and attributes), that is, to show or hide the list of asset types in a hierarchy view.

For example, you can show only the header for a specific type, say Assets, and display the complete list of assets by clicking on the header.

You can enable the expandable property for a specific asset type by setting the `isExpandable` property for that particular type in the configuration file. The settings for the `isExpandable` property are as follows:

Setting this property to “true” will show the header of asset type with an expandable triangle icon. You can click on this icon to expand the type; this reveals the node or nodes in a hierarchy view. To collapse the type, i.e. to hide the node or nodes, click on the triangle icon, and the display reverts to its original state.

Setting this property to “false” will show the header of asset type collapsed. You cannot see the node or nodes of the type.

Using the Search Result List

The Browse, Keyword, and Advanced searches return a list of assets that match the search criteria in the **Search Results** panel.

The number of search results is displayed below the title line of the Search Results area, for example `About 114 results`. If no results are found, then the search result is displayed as "query does not match any existing data" in the CentraSite registry.

The **Search Results** view shows various attributes of the assets, such as the name of the asset, the asset type and, the description.

You can perform various actions on the displayed list of assets. If you want to perform an action on just one or several of the displayed assets, you can mark the check boxes of the required assets, and then select an action from the actions menu.

Here is a sample of the available actions:

- Export one or more of the displayed assets.
- Delete one or more of the displayed assets.
- Change the lifecycle state of one or more of the displayed assets.
- Add one or more of the displayed assets to the **My Favorites** list.

Important: CentraSite Business UI will not display instances of the sub types in the Search Results page, if the **Exclude sub types from Business UI search** option is enabled in its base type definition. As a result, only instances of the base type will be displayed, and you cannot browse or search for the sub type instances. However, you can also view the instances of a sub type if you add that particular sub type to the recipe in the Advanced Search panel.

You can enable or disable this option in the **Edit Asset Type - Advanced Settings** dialog of the base type definition. However, to modify this option, you must belong to a role that has the "Manage Asset Types" permission. For more information about excluding sub types from CentraSite Business UI search, see the *CentraSite Administrator's Guide*.

Managing the Search Results Page

In CentraSite Business UI the result view is rendered in the Search Results page. The Search Results page includes several components that you can configure to improve the end-user experience.

The relevant results of a query are displayed in the Search Results. By configuring the properties in this Search Results page, you can control how search results are displayed. You can for example:

- Change the number of results that appear on a page
- Change the number of characters in the asset name
- Change the number of characters in the asset description
- Change the number of character in the attribute name
- Use refiners to drill down in search results

  Refiners enable you to drill down into the search results based on attributes that are associated with the search items, such as creation date, owner, and organization name. The refiners include a collection of generic attributes and the type-specific attributes of the asset type chosen in the search criteria.

By using refiners, you can narrow the search results to only show search items like for example certain assets, created in a certain time period, created by a given person. Refiners are displayed in the **View** menu that is located just above the result view area.

For information on the attributes available to refine a search result, see "Searchable Attributes" on page 201.

- Add sort options to search results

  You can sort the search results by choosing one of the options from the drop-down list labeled **Sort by** on the Search Results page. The sort options are rendered based on respect to the attributes that were earlier selected in the View menu. Default sorting is by the **Name** field.

  You can choose to reorder the list of assets by toggling the ascending or descending arrow located next to the option.

Configuring the Search Results Page

The results appear by default on the Search Results page. When you query the CentraSite registry with a simple search or an advanced search, if more than one page of results is returned, the Search Results displays page numbers and forward and back arrows. You can edit the properties of the Search Results to change how it looks. This includes how many page links appear and how they are displayed.

The following table lists what configurations to perform to change how the Search Results page displays:

To do this...	Perform the following steps...
Change the number of results that appear on a page	■ Open the custom configuration file centrasite.xml in the *<CentraSiteInstallDir>\cast\cswebapps\BusinessUI\custom\conf* folder. ■ Locate the property statement: `<SearchResult noOfRows="20" />` ■ Type the maximum number of results that you want to appear on the Search Results page before pagination is required. The maximum is `50` results. The default is `20` results. Increasing this number affects how quickly the user interface renders.
Change the number of characters in the attribute name	■ Open the custom configuration file centrasite.xml in the *<CentraSiteInstallDir>\cast\cswebapps\BusinessUI\custom\conf* folder. ■ Locate the property statement: `<AttributeDisplaySize>10</AttributeDisplaySize>`

To do this...	Perform the following steps...
	■ Type the maximum number of characters to truncate an attribute name. The default is `32` characters.

Managing the Search Recipe

This section helps users focus searches on particular registry objects.

Search Filters

To focus a search on particular registry objects, you select filters from the drop-downs beneath the **Narrow Your Results** section in the Advanced Search pane. You can choose **Everything** (from the **Types** drop-down) to search for all available registry objects or select a specific scope (e.g., **Assets**, **Organizations**, **Users** etc.) to limit your searches to certain objects or to content marked with a particular property value (from the **Further Attributes** drop-down).

The CentraSite Business UI supports three kinds of search filters:

- Scopes
- Keywords
- Conditions

Scopes

Default scopes such as **Everything**, **Assets**, **Organizations** and **Users** are defined in the system configuration level.

The following table provides information about each of these predefined scopes:

This system scope...	Displays...
Everything	List of asset types, organizations and users that are registered in the CentraSite registry/repository.
Assets	List of asset types (predefined & custom) that is available in the CentraSite registry/repository.
Organizations	List of organizations default and custom) that is available in CentraSite registry.
Users	List of users who are registered in the CentraSite registry/repository.

In addition, the CentraSite Administrator can define custom scopes. Any scope defined at the system configuration level is shared among the organizations that are registered in CentraSite.

Defining a Search Recipe

The search recipe can contain any combination of the search filters.

The recipe is located in the Advanced Search pane.

Adding a Search Filter to the Recipe

Adding a search filter to the recipe triggers validation for all search values. If any part of the validation fails, it prompts you with a warning message and sets the focus to the search filter of the incorrect value. The validation fails when a search filter has incorrect/invalid or duplicate values.

When performing these procedures, keep the following points in mind:

- The recipe list cannot be empty when you trigger a search execution. This avoids generating empty search values.
- For the search to execute, at least one scope is mandatory; else the validation fails and user interface displays an error. For usage information of the scopes, see "Rendering of Search Scopes" on page 212.
- If you attempt to execute a saved search via deep linking, wherein the search recipe includes one or more filters (say for example, an asset type **Application** and/or an attribute **SOAP Version**) that currently do not exist in the CentraSite registry, then the user interface displays an error icon beside the non-existing search filter and a message stating `Invalid Search Condition`.
- Consider you have a search recipe with two or more search scopes, and sometime later you remove one of the scopes from the recipe, then the UI internally revokes the attributes that were specific to this scope and earlier listed in the **Sort by** and **View** drop-downs.
- If you add a keyword or condition filter that already exists in the recipe, the user interface will simply add the duplicate entry (the newest) to the recipe with an error icon. However, if ever you remove the existing entry from the recipe, then the user interface automatically revokes the error icon from the duplicate entry.
- If you are attempting to specify an invalid search scope via the text box, the scope will not be added to the recipe.

Use the following procedures (listed in the table below) to add the search filters to the recipe:

For the search filter...	See...
Scopes (Predefined and Custom)	Search by Asset Type
Keyword	"Search by Keyword" on page 194
Others	"Search by Taxonomy" on page 196 (OR) "Search by Lifecycle Model" on page 197 (OR) "Search by Attribute Values" on page 199

Removing a Search Filter from the Recipe

If you want to delete a search filter temporarily, click the **Remove** ( ) symbol beside its name in the search recipe.

To delete a search filter permanently, remove the appropriate property statement from the centrasite.xml file, and restart Software AG Runtime.

```
<SearchFilterCategories>
    <SearchFilterCategory
      id="Types"
      displayName="CS_MSG_INMBU_STR_ASSET_TYPES" />
    <SearchFilterCategory
      id="Taxonomy"
      displayName="CS_MSG_INMBU_STR_TAXONOMIES" />
    <SearchFilterCategory
      id="FurtherAttribute"
      displayName="CS_MSG_INMBU_STR_FURTHER_ATTRIBUTES" />
    <SearchFilterCategory
      id="LCM"
      displayName="CS_MSG_INMBU_STR_LCM" />
</SearchFilterCategories>
<SearchScopes>
    <SearchScope
      id="Assets" isExpandable="false"
      class="com.softwareag.centrasite.api.csom.search.impl.AssetScope"
      exclude="uddi:7613515f-77eb-11dd-bc9f-f62b6cf80b00">
          INMCL_STR_Assets
    </SearchScope>
    <SearchScope id="Everything" isExpandable="true"
      class="com.softwareag.centrasite.api.csom.search.impl.EverythingScope"
      exclude="uddi:7613515f-77eb-11dd-bc9f-f62b6cf80b00">
          INMCL_STR_Everything
    </SearchScope>
    <SearchScope id="Users" isExpandable="false"
      class="com.softwareag.centrasite.api.csom.search.impl.CSOTypeScope"
      types="User" include="uddi:2ebc76b4-128b-11dd-8c31-ae80cb45c029"
      exclude="uddi:7613515f-77eb-11dd-bc9f-f62b6cf80b00">
          INMCL_STR_Users
    </SearchScope>
    <SearchScope id="Organizations" isExpandable="false"
      class="com.softwareag.centrasite.api.csom.search.impl.CSOTypeScope"
      types="Organization"
```

```
      exclude="uddi:7613515f-77eb-11dd-bc9f-f62b6cf80b00">
          INMCL_STR_Organizations
    </SearchScope>
</SearchScopes>
```

Combining Search Filters

You can specify in which way the search filters should be combined:

To specify how the search filters should be combined

- Beneath the **Current Filters** label, select one of the following:
  - To specify that an asset must meet all scopes to be considered a match, select **All**.
  - To specify that an asset must meet at least one of the scopes to be considered a match, select **Any**.

Rendering of Search Scopes

CentraSite will always return the registry objects that match the search scopes currently available in the recipe.

When rendering the search results, search scopes in the recipe are considered in a hierarchical order. This rendering behavior can be best understood with the following scenarios:

- The predefined default scope **Everything** overrides all other predefined and custom scopes in the search recipe. If you have, for example, an **Assets** scope already defined in the recipe, when you add the scope **Everything** to the recipe, CentraSite automatically removes the existing scope **Assets** from the recipe and returns all the registry objects that match the **Everything** scope. On the other hand, if you have, for example, the **Everything** scope already defined in the recipe, CentraSite will not allow you to add any of the other predefined or custom scopes in the recipe.
- Similarly, if you have, for example, a **Service** scope already defined in the recipe, then you add the scope **Assets** to the recipe, CentraSite automatically removes the existing scope **Service** from the recipe and returns all the registry objects that match the **Assets** scope. On the other hand, if you have the **Assets** scope already defined in the recipe, CentraSite will not allow you to add any of the other predefined or custom scopes in the recipe.
- However, if the search recipe for example includes scopes other than the scope **Everything**, CentraSite will allow you to add any number of scopes in the recipe and return a collection of registry objects that match the scopes currently in the recipe.

If at any time you revert back to the Search Results page, the results are rendered based on the most recent search scopes added to the search recipe.

Saving and Re-Executing Saved Searches

When you define a keyword search or an advanced search, you might want to save the search definition, so that you can execute the same search again at a later stage.

This section describes how to save a search and re-execute a saved search.

Note: A saved search can only be executed by the user who created the saved search.

Saving a Search Definition

To save a search definition

1. Define a keyword search or an advanced search, as described above.
2. Specify a name for the saved search.
3. Click **Save**.

   The search is stored under this name in the **My Favorites** list.

Re-executing a Saved Search

To re-execute a saved search

1. Open the **My Favorites** list in CentraSite's Welcome page.
2. Select the entry for the search in your **My Favorites** list. This starts the search directly.

   CentraSite runs the search and displays the results.

   Additionally, the CentraSite Business UI supports deep linking for a saved search. You can simply copy the URL of a saved search from your browser and use it as a deep link to directly navigate to the appropriate search results page.

Creating a New Search from a Saved Search

If you want to create a new search based on an existing saved search, proceed as follows:

To create a new search based on an existing saved search

1. Run the saved search from the **My Favorites** list or use the deep link to navigate to a particular search results page.

   You will see the search definition page that was initially used to create the saved search. The page shows all of the search parameters of the saved search.
2. Adapt the search definition as required.
3. If you want to save the modified search also as a saved search, click **Save** and specify a name for the new saved search.

   Note: You cannot overwrite an existing saved search with a modified saved search.

Adding a Custom Reporting Search from the Command Line

You can add a custom XQuery reporting search by executing the following command in the command line interface CentraSiteCommand.cmd (Windows) or CentraSiteCommand.sh (UNIX) of CentraSiteCommand. The tool is located in the directory <*CentraSiteInstallDir*> /utilities.

If you start this command line tool with no parameters, you receive a help text summarizing the required input parameters.

The parameters of the command are case-sensitive, so for example the parameter `-url` must be specified as shown and not as `-URL`.

If you omit the passwords from the command, you will be prompted to provide them.

The syntax for the command is:

```
C:\SoftwareAG\CentraSite\utilities>CentraSiteCommand.cmd|sh add Search
[-url <CENTRASITE-URL>] -user <USER-ID> -password<PASSWORD> -savedSearch
<SAVED-SEARCH> [-module <XQUERY-MODULE>] [-overwrite<CONFIRM-OVERWRITE>]
[-scope <SCOPE>]
```

The input parameters are:

Parameter	Description
`-url`	**(Optional)** The URL of the CentraSite registry. Default value is `http:/localhost:53307`.
`-user`	The user ID of a registered CentraSite user. For example, a user who has the CentraSite Administrator role.
`-password`	The password for the registered CentraSite user identified by the parameter `-user`.
`-savedSearch`	Name of the saved search XML file.
`-module`	The fully qualified namespace of the XQuery module.
`-overwrite`	Specifies whether to overwrite an existing XQuery module. Possible values: `true` - overwrite existing XQuery module; `false` - do not overwrite existing XQuery module.
`-scope`	Specifies the folder to store the newly added search. The possible values are: ■ `global` - This option stores the search information in "Default Organization" folder.

Parameter	Description
	■ `org` - This option stores the search information in the user's organization folder. ■ `user` (default value) - This option stores the search information in the user folder.

Example:

```
C:\SoftwareAG\CentraSite\utilities>CentraSiteCommand.cmd|sh add Search -
url http://localhost:53305/CentraSite/CentraSite -user Administrator -
password manage -savedSearch MySearch.xml -module MySearchQuery.xquery -
overwrite true -scope org
```

The response to this command could be:

```
Executing the command : add Search
Successfully executed the command : add Search
```

Important: CentraSite relies on file extensions to determine a file's type. When you upload a saved search XML file or an XQuery module from your local machine using the command line, be sure you specify the name of the file along with its extension (.xml or .xquery) so that CentraSite can determine the file's type and mark it correctly in the repository.

Writing Your Own Reporting Search

CentraSite supports design-time and run-time reporting searches to display information of the registry objects as portlets in the Welcome page of the Business UI.

CentraSite includes many built-in portlets that you can use to perform the design-time or run-time reporting search. However, if you need to display information that is not provided by a built-in portlet, you can create a custom reporting search to display the custom portlet against the built-in portlets.

In order to create a custom reporting search, the user must have good knowledge of XQuery language.

In the following sections, we demonstrate a sample named TopXAPIsByAPIKeys that illustrates how a custom reporting search can be set up in the CentraSite Business UI. The sample extends the Add New Portlet dialog and presents a screen that prompts for the data feed to be rendered in the new portlet. After confirming the data feed, the appropriate search results are rendered in the newly created portlet Top N APIs with Keys.

You may use this sample as a guideline, adapting it and renaming it to suit your individual requirements.

To add a custom reporting search in CentraSite, you must perform the following steps:

- Write an XQuery Module

- Write a Saved Search XML
- Upload the Search File from theCommand Line
- Activate the Reporting Search

Writing an XQuery Module

This section explains a sample XQuery function with the required search parameters. After you write your own custom XQuery function, you must enclose the function in an XQuery module.

For our example, we will create an XQuery function etAPIsWithAPIKeys() and enclose the function in an XQuery module. Let's call this module as apiusage.module.

XQuery Module

```
module namespace au="http://namespaces.CentraSite.com/modules/reports/apiusage";

import module namespace cs="http://namespaces.CentraSite.com/Schema/jaxr";
import module namespace csdt = "http://namespaces.CentraSite.com/modules/datetime";
import module namespace const = "http://namespaces.CentraSite.com/jaxr/constants";
import module namespace util = "http://namespaces.CentraSite.com/modules/util"
import module namespace cs1 = "http://namespaces.CentraSite.com/Schema";

(:
############Top X APIs based on the number of API Keys generated ##########
:)
declare function au:getAPIsWithAPIKeys($noOfAssets as xs:integer) as node()*
{
(
let $ulp := csdt:getUserLocalePreferences()
for $assetKey in au:getUniqueAPIswithAPIKeys()
let $oi := collection("CentraSite")/cs:objectInfo[@v3Key = $assetKey]
let $apiKeysCount := au:getNumberOfAPIKeys($assetKey)
order by $apiKeysCount descending
return
<result>
<assetKey>{$assetKey}</assetKey>
<assetName>{if(empty($oi/cs:name)) then () else data(cs:localString($oi/cs:name, $ulp))}</assetName>
<assetDesc>{if(empty($oi/cs:description)) then () else data(cs:localString($oi/cs:description, $ulp))}</assetDesc>
<apiKeysCountForAsset>{$apiKeysCount}</apiKeysCountForAsset>
</result>
)[position() <= $noOfAssets]
}
declare function au:getUniqueAPIswithAPIKeys() as node()*
{
distinct-values(
for $oi in collection ('CentraSite')/cs:objectInfo
where $oi/cs:associationType = const:ASSOCIATION_TYPE_KEY_HasParent()
and $oi/cs:instanceSlots/cs1:attributeKey = 'uddi:94d5c3f9-eeb6-11e2-ae4b-baecf12f5373'
return $oi/cs:targetObject)
}
declare function au:getNumberOfAPIKeys($assetKey as xs:string) as xs:integer
{
 count(
        for $oi in collection ('CentraSite')/cs:objectInfo
        where $oi/cs:associationType = const:ASSOCIATION_TYPE_KEY_HasParent()
        and $oi/cs:instanceSlots/cs1:attributeKey = 'uddi:94d5c3f9-eeb6-11e2-ae4b-baecf12f5373'
        and $oi/cs:targetObject = $assetKey
        return $oi
  )
}
```

Writing a Saved Search XML

This section explains how you write a saved search XML file that makes use of the above XQuery function and defines the required search parameters and result attributes.

Saved Search XML

```
<?xml version="1.0" encoding="UTF-8" ?>
<Search type="report">
  <Expression name="getAPIsWithAPIKeys" namespace="http://namespaces.CentraSite.com/modules/reports/apiusage">
    <Params>
       <Param type="xs:integer" isMultiValued="false" displayName="INMCL_PARAM_LIMIT_CNT">noOfAssets</Param>
     </Params>
  </Expression>
  <ResultAttributes>
    <Attribute type="xs:string">
        <Name>assetName</Name>
        <DisplayName>INMCL_COLUMN_ASSET_NAME</DisplayName>
        <Link type="AssetDetail">
            <Param>assetKey</Param>
        </Link>
    </Attribute>
    <Attribute type="xs:string">
        <Name>assetDesc</Name>
        <DisplayName>INMCL_COLUMN_ASSET_DESC</DisplayName>
    </Attribute>
    <Attribute type="xs:integer">
        <Name>apiKeysCountForAsset</Name>
        <DisplayName>No of API Keys</DisplayName>
    </Attribute>
  </ResultAttributes>
</Search>
```

Note: Make sure that the value of XQuery function name and module namespace in the saved search XML file exactly match with the values specified in the XQuery module definition. Let's call this saved search XML file as TopXAPIsByAPIKeys.xml.

Uploading Required Search Files from the Command Line

After you create the required XQuery search module and the XML file, you must upload them to the CentraSite repository.

You can upload the XQuery search module and the XML file by executing the following command in the command line interface `CentraSiteCommand.cmd` (Windows) or `CentraSiteCommand.sh` (UNIX) of CentraSiteCommand. The tool is located in the directory <*CentraSiteInstallDir*>>/utilities.

The syntax of the command is:

```
C:\SoftwareAG\CentraSite\utilities>CentraSiteCommand.cmd add Search [-
url <CENTRASITE-URL>] -user <USER-ID> -password <PASSWORD> -savedSearch
<SAVED-SEARCH> [-module <XQUERY-MODULE>] [-overwrite <CONFIRM-OVERWRITE>
[-scope <SCOPE>]
```

Important: CentraSite relies on file extensions to determine a file's type. When you upload a saved search XML file or an XQuery module from your local machine using the command line, be sure you specify the name of the file along with its extension (.xml or .xquery) so that CentraSite can determine the file's type and mark it correctly in the repository.

Example:

```
C:\SoftwareAG\CentraSite\utilities>CentraSiteCommand.cmd add Search -url
http://localhost:53305/CentraSite/CentraSite -user AdminUser -password
AdminPass -savedSearch TopXAPIsByAPIKeys.xml -module apiusage.xquery -
overwrite true -scope user
```

The above example assumes that there is a user `AdminUser` who has the CentraSite Administrator role, and this user has the password `AdminPass`.

The response to this command could be:

```
Executing the command : add Search
Successfully executed the command : add Search
```

For more information about the usage of `add Search` command, see "Adding a Custom Reporting Search from the Command Line" on page 214.

After the command executes successfully, scroll through the **Data Feed** selection list of **Add New Portlet** dialog to find the new reporting search, TopXAPIsByAPIKeys.

Activating the Reporting Search

Use the following procedure to activate your custom reporting search in CentraSite Business UI.

To activate a custom reporting search

1. Display the **Add New Portlet** dialog. If you need procedures for this step, see "Viewing Your Portlets" on page 238.
2. Select the name of your reporting search in the **Data Feed** selection list.

Working with Approval Workflows

This section describes how to work with approval workflows.

About Approval Policies

CentraSite's approval-management framework enables you to review a request and approve or reject the request when certain time events occur in the registry. For example, you might require a system architect to review and approve all assets before they are switched to a productive state.

To impose an approval process on a change time event, you create an *approval policy* for the event. An approval policy is a policy that contains one of CentraSite's built-in *approval actions*.

Note: In this guide, the term *approval policy* is used to generally refer to policies that you use to perform approvals. Technically speaking, an approval policy is no different than an ordinary design/change-time policy. It is simply one that includes an approval action. An approval policy can also include other actions (assuming they are within the policy's scope).

Predefined Approval Policies for CentraSite Business UI

CentraSite provides predefined policies specific to the Business UI.

By default, predefined policies are not displayed by CentraSite Control. To view predefined policies, you must enable the **Show Predefined Policies** option on the Design/Change-Time Policy page.

Policy	For information about this policy
User Registration	See "The User Registration Policies" on page 70.
Consumer Onboarding	See "The Consumer Onboarding Policies" on page 72.
Access Key Generation	See "API Key Generation Policy" on page 74.
Access Key Renewal	See "API Key Renewal Policy" on page 75.
Access Key Revocation	See "API Key Revocation Policy" on page 77.
Publish to API-Portal	See "Publish to API-Portal Policy" on page 80.
UnPublish from API-Portal	See "Unpublish from API-Portal Policy" on page 80.

For more information about the approval policies, see the *CentraSite User's Guide*.

Approval Actions for CentraSite Business UI

CentraSite provides the following actions for obtaining approvals. To impose an approval process on an event, you include one of these actions in your policy.

Action Name	Description
Initiate Approval	This action submits a request to a designated group of approvers (referred to as the *approval group*). For information about using this action, see "Using the Initiate Approval Action" on page 222.
Initiate Group-dependent Approval	This action submits a request to the approval group *only* if the requestor belongs to a specified user group. For information about using this action, see "Using the Initiate Group-Dependent Approval Action" on page 222.

What Happens When an Approval Action is Enforced?

When a user performs an operation that triggers an approval policy, CentraSite initiates an approval workflow and submits the user's request to the designated group of approvers. Approvers receive the approval request in their details page in CentraSite Business UI. Approvers whose user account includes a valid e-mail address also receive an email message informing them that a request is awaiting their approval. You can configure an approval action to send an email notification to other specified users, too.

Note: To use the email options provided by this action, CentraSite must have a connection to an SMTP email server. For instructions on how to configure CentraSite's connection to an email server, see the *CentraSite Administrator's Guide*.

CentraSite does not execute the user's requested operation until it obtains the necessary approvals. If an approver rejects the request, CentraSite notifies the requestor and immediately exits the policy. It does not perform the user's requested operation nor does it execute any remaining actions in the approval policy.

Using the details page in CentraSite Business UI, users can view the status of the requests that they have submitted for approval. Approvers also use the details page to review and authorize requests that require their approval.

- For information about checking the status of requests that you have submitted for approval, see "Reviewing Requests that You Have Submitted for Approval" on page 228.
- For information about reviewing requests that require your approval, see "Approving a Request" on page 229.

Auto-Approval

When the user who submits a request is also an authorized approver for the requested operation, the request is *auto-approved*. (In other words, the requestor's approval is granted implicitly.)

The way in which a request is handled after it is auto-approved depends on whether the approval workflow is configured to execute in *Anyone* or *Everyone* mode.

- *In Anyone mode*, an auto-approval completes the approval process. Such requests do not formally initiate an approval workflow, however, they do appear in the Approval History log (the log will indicate that the request was auto-approved).
- *In Everyone mode*, the requestor's approval is registered and then the request is submitted to the remaining approvers in the approval group.

Note: The auto-approval process also occurs when an approval action is invoked and all of its specified approver groups are empty or all users in the specified groups are inactive.

Approval Modes

An approval workflow operates in one of the following modes:

- **Anyone**

  In Anyone mode, a request can be approved or rejected by any single user in the approver group. In this mode, only one user in the group is required to approve or reject the request. This is the default mode.

- **Everyone**

  In Everyone mode, a request must be approved by all users in the approver group (it does not matter in which order the approvals are obtained). A rejection by any approver in the group will cause the request to be rejected.

What Types of Events and Objects Can Be Approved?

You can add approval policies for the following combinations of events and object types.

Event Type	Supported Object Types	Supported Approval Actions
PreStateChange	Asset	Initiate Approval Initiate Group-dependent Approval
OnConsumerRegistration	Asset	Initiate Approval Initiate Group-dependent Approval
OnTrigger	Service, Organization	Initiate Approval

Using the Initiate Approval Action

You use the Initiate Approval action when you want to define an approval process that applies to *all of the users* who submit requests that trigger the policy.

The parameters required to define the action include the name of the approval flow that the action initiates, the name of the approver groups (i.e. the groups of users who are allowed to approve requests that trigger the policy), and email addresses of users who should be informed of the progress of the action.

The parameters are described in the description of the Initiate Approval action in the *CentraSite Developer's Guide*.

Using the Initiate Group-Dependent Approval Action

When you want a policy to initiate an approval process for some groups of requestors and not for others, or when you need to route requests to different approvers based on the user group to which a requestor belongs, you use the *Initiate Group-dependent Approval* action.

The parameters required to define the action include the name of the approval flow that the action initiates, the name of the approver groups (i.e. the groups of users who are allowed to approve requests that trigger the policy), the names of the related triggering groups (i.e. the groups of members whose requests require approval), and email addresses of users who should be informed of the progress of the action.

The parameters are described in the description of the action Initiate Group-Dependent Approval in the *CentraSite Developer's Guide*.

You can route approvals to different approver groups based on the triggering group to which the requestor belongs. For example, you could configure the action to route requests to the approver groups Approvers-A and Approvers-B when a requestor belongs to a particular triggering group.

Points to consider when using the Initiate Group-dependent Approval action:

- If a requestor does not belong to any of the groups specified in the **Triggering Groups** parameter, CentraSite does not even initiate an approval workflow. Approval is waived and CentraSite simply executes the next action in the policy. (Be aware that, because the request does not enter the approval framework, requests that are waived do not appear in the Approval History log.)
- The UI dialog allows you to combine triggering groups and approval groups into sets, where each set defines one or more triggering groups and the associated approver groups. You can specify multiple sets, and CentraSite processes each set in the order given in the dialog. When it encounters a set whose **Triggering Groups** parameter includes a user group to which the requestor belongs, it immediately initiates an approval workflow based on that set and ignores any remaining sets in the dialog. In other words, if the requestor is a member of multiple **Triggering Groups**, approval is determined by whichever of those groups appears first in the dialog.

- If a requestor is a member of both **Triggering Groups** and a member of **Approver Group** in the same triggering group/approver group combination, the request is auto-approved.

Switching the State of an Object when an Approval Request is Rejected

By default, an asset's lifecycle state is not changed when an approval request is rejected. For example, let's say that asset Approval Service is in the `Tested` state and an approval request is submitted to switch asset Approval Service to the `Production` state. If the approval request is rejected, asset Approval Service stays in the `Tested` state. For some approval workflows, however, you might want to switch assets to a particular state when they are rejected. To do this you use the `Reject State` parameter in CentraSite Control.

Important: If you use this option, make sure that the lifecycle model provides a transition from the state(s) that an asset might be in when the approval policy executes and the state that you specify in the **Reject State** parameter. Otherwise, the approval engine will not be able to switch the target asset to the specified state when a rejection occurs.

Also be aware that you can specify only one state in the **Reject State** parameter. Therefore, if an approval policy applies to assets with different lifecycle models, the **Reject State** can apply to only one of those models. For example, let's say you use the same approval policy for both XML schemas and services, but these two asset types follow different lifecycle models. If you set the **Reject State** to a state in the lifecycle model for XML schemas, only XML schemas will switch to this state when an approval request is rejected. Services, when rejected, will simply remain in their current state. If you want to specify one reject state for XML schemas and another for services, you must create a separate approval policy for each type.

Adding an Approval Policy to CentraSite

To create an approval policy, you must perform the following general steps:

1. If one does not already exist, create a user group composed of the individuals who are authorized to approve the type of request that triggers the policy. For information about creating user groups that represent authorized approvers, see "Approver Groups" on page 228.
2. Create a design/change-time policy with the appropriate scope (event type and object type) and into this policy, insert an approval action.
   - For information about the event types and object types with which you can use an approval action, see "What Types of Events and Objects Can Be Approved?" on page 221.

- For general information about creating policies, see "Adding an Approval Policy to CentraSite " on page 223.
- For specific information about using policies with the PreStateChange event type, see "Using Approvals with PreStateChange Events" on page 225.

Including Multiple Actions in an Approval Policy

An approval policy can include actions in addition to the approval action. For example, you might create a policy like the example shown below, which validates a particular attribute in the asset and executes a custom action before it initiates the approval process.

Example

```
Validate Attribute Value
MyCustomAction
Initiate Approval
```

The example above illustrates how you can execute policy actions before you initiate the approval process. You can also insert actions after the approval action as long as those actions DO NOT attempt to modify the asset on which the policy is acting. When an asset enters an approval process, CentraSite locks the asset to prevent any modifications to the asset while it is undergoing approval. The asset remains locked until the approval policy *and all additional policies that are triggered by the same event* are complete.

If an approval policy includes an action that attempts to update the asset after approval process has been initiated, that action will fail. When this occurs, CentraSite immediately exits the policy and reverts the asset to its previous state.

The following shows an approval policy that includes an action after the approval action. This policy will execute successfully, because the action following the approval action simply sends out an email notification. It does not attempt to modify the asset on which the policy is acting.

Example A (correct)

```
Validate Classification
Set Instance and Profile Permissions
Initiate Approval
Send Email Notification
```

The following shows an approval policy that would not execute successfully. In this example, the Set Instance and Profile Permissions action follows the Initiate Approval action. Because the asset is locked at this point in the policy, the Set Instance and Profile Permissions action will fail and the asset will revert to its previous lifecycle state.

Example B (correct)

```
Validate Classification
Initiate Approval
Set Instance and Profile Permissions
Send Email Notification
```

Tip: As a best practice, avoid executing any additional actions after the approval action in an approval policy. If there are actions that you need to execute after approval is granted, place those actions in a separate policy that executes on the PostStateChange event.

Using Approvals with PreStateChange Events

The PreStateChange event occurs when you change the lifecycle state of an asset.

You can use an approval policy with the PreStateChange event to prevent users from switching the assets to certain lifecycle states (e.g., to the Productive state) without first getting the required approvals:

To create an approval policy that executes on a PreStateChange, you must perform the following general steps:

1. Make sure that the state change(s) that will trigger the policy are defined in an existing lifecycle model. If the lifecycle model, with the appropriate state, has not yet been defined, you must create it before you create the approval policy. For procedures, see the *CentraSite Administrator's Guide*.
2. Create a design/change-time policy with the following scope:

   Event Type: PreStateChange

   Object Type: Asset or Lifecycle Model

   For procedures, see the *CentraSite User's Guide*.
3. In the **Before the Object Enters State** section of the policy's **States** tab, specify the state change that requires approval. For procedures, see the *CentraSite User's Guide*.
4. On the policy's **Actions** tab, specify and configure the approval action that is to be executed when an asset switches to the state specified in the preceding step. If other actions are to be executed before or after the approval action, insert those actions on the **Action** tab, too. For procedures, see the *CentraSite User's Guide*.

   Caution: Only certain kinds of actions can be included *after* the approval action in an approval policy. Some actions, if they occur after the approval action, will cause the policy to fail. For information about what kind of actions can follow an approval action, see "Including Multiple Actions in an Approval Policy" on page 224.

Using Approvals with OnConsumerRegistration Events

The OnConsumerRegistration event occurs when an asset owner reviews a consumer registration request and accepts the request by clicking the "pending approval requests" in the asset's **Basic Information** profile.

An organization must have a consumer-registration policy to process the consumer registrations that are initiated using the **Register As Consumer** menu command. At a

minimum, this policy must include the Register Consumer action, because this action performs the work of actually registering a consumer (that is, it establishes the actual relationship between the asset and the specified consumers). If, in addition to the asset owner, you want designated individuals to review and approve the registration request, place an approval action before the Register Consumer action.

Note: The approval process that is imposed by a consumer-registration policy occurs *in addition* to the review and approval that is required by the asset owner. That is, the asset owner always reviews the registration first, and if he or she accepts the registration, the request proceeds through the approval process defined by the consumer-registration policy.

The following procedure describes the general steps you use to create a consumer-registration policy that includes an approval action.

1. Create a design/change-time policy with the following scope:
   - **Event Type:** OnConsumerRegistration
   - **Object Type:** Asset (of any type)

   If you need procedures for this step, see the *CentraSite User's Guide*.
2. On the policy's **Actions** tab, add the following actions. Make sure the approval action *precedes* the Register Consumer action.
   - Initiate Approval —OR— Initiate Group-dependent Approval
   - Register Consumer

   If you need procedures for adding actions to a policy, see the *CentraSite User's Guide*.
3. Configure the approval action's input parameters. If you need procedures for this step, see "Configuring Policy Action Parameters" on page 351.
4. Insert additional actions before and/or after this pair of actions as necessary.

   The following example shows an action list that obtains the required approval, executes the registration process, and then grants instance-level permissions to the consumers that the policy registers.

   ```
   Initiate Approval
   Register Consumer
   Set Consumer Permission
   ```

Using Approvals with OnTrigger Events

The OnTrigger event occurs when an Organization Administrator reviews a consumer (user) registration request and accepts the request by clicking the "pending user registrations requests" in the organization's **Basic Information** profile.

An organization must have a consumer-onboarding policy to process the consumer registrations that are initiated using the **Consume** action. At a minimum, this policy must include the Create User and Consume API actions, because these actions perform the work of actually registering a user as consumer and establishing the actual relationship

between the API and the specified consumers). If, in addition to the API owner, you want designated individuals to review and approve the registration request, place an approval action before the Create User action.

Note: The approval process that is imposed by a consumer-onboarding policy occurs *in addition* to the review and approval that is required by the Organization Administrator. That is, the Organization Administrator always reviews the registration first, and if he or she accepts the registration, the request proceeds through the approval process defined by the consumer-onboarding policy.

The following procedure describes the general steps you use to create a consumer-onboarding policy that includes an approval action.

1. Create a design/change-time policy with the following scope:
   - **Event Type:** OnTrigger
   - **Object Type:** Asset (Service, Organization)

   If you need procedures for this step, see the *CentraSite User's Guide*.
2. On the policy's **Actions** tab, do one of the following.

   Note: Make sure the approval action *precedes* the operation-specific actions.

   - If the object type "Organization" is selected, choose the following actions.
     i. Initiate Approval
     ii. Onboarding Organization —OR— Onboarding User
   - If the object type "Service" is selected, choose the following actions.
     i. Initiate Approval
     ii. Onboarding Organization —OR— Onboarding User
     iii. Onboarding Consume API

   If you need procedures for adding actions to a policy, see the *CentraSite User's Guide*.
3. Configure the approval action's input parameters. If you need procedures for this step, see "Configuring Policy Action Parameters" on page 351.
4. Insert additional actions before and/or after this pair of actions as necessary.

   The following example shows an action list that obtains the required approval, executes the registration process, and then grants the API for consumption to the consumers that the policy registers.

```
Initiate Approval
Onboarding User
Onboarding Consume API
```

Approver Groups

An approver group is simply a user group that identifies the set of individual who are authorized to approve a submitted request. An approver group can be composed of users from any organization.

Note: If you want approvers to be able to review the details for an asset that they are asked to approve, make those users have View permission on the asset. For example, if the users in group ABC will be required to approve assets that are switched to a certain lifecycle state, make sure that the users in group ABC have View permission on the assets that they will be asked to approve. Without View permission, approvers will not be able to examine the details of the assets that users submit to them for approval.

Changing the Membership of an Approver Group

Changing the membership of an approver group *does not* affect requests that are already pending approval. When CentraSite submits a request to the approval engine, it assigns the users from the specified approver group to that request. The request retains its assigned set of approvers throughout the entire approval process.

For example, let's say that approval policy P1 uses approver group AG1, and that AG1 contains users A and B. If a user submits a request that triggers P1, users A and B will become the designated approvers for that request. Let's say that while this request is waiting for approval, an administrator modifies group AG1 and replaces users A and B with users X and Y. This change will have *no effect* on the request that is awaiting approval. Users A and B will continue to its designated approvers. The changes to group AG1 will only affect new requests that policy P1 submits for approval.

Reviewing Requests that You Have Submitted for Approval

In the CentraSite Business UI's Inbox, CentraSite maintains a record of every request that users submit for approval. You can use the following procedure to view your requests and examine their status.

Note: The list displays *all* requests that have been submitted on your behalf, including requests that were auto-approved.

To view requests that you have submitted for approval

1. In CentraSite Business UI, display **Inbox**. You will see a list of requests that you have submitted for approval.
2. To examine the details for a particular request (including a list of the individuals who are authorized to approve the request), click its hyperlinked name. The details for the request will appear in the **Approval Request** dialog.

The **Status** column in the **Approval Requests** dialog indicates the state of the particular request as follows:

Status	Description
Pending	The request has been submitted for approval, but has not yet been processed by the required approvers.
Approved	The request has been submitted and approved by the required approvers.
Rejected	The request has been submitted and rejected. The operation you requested was not executed.
Auto-Approved	The request was auto-approved. This occurs when you submit a request for which you are also an authorized approver.

Approving a Request

If you are an approver, CentraSite places approve requests (i.e., any request whose approver group included you as a member) in the organization or asset details page for you to review and authorize the requests.

To view and approve requests for an asset

1. Display the details page for the asset that requires your approval. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. Locate the pending approval requests for an asset in the description area of the Basic Information profile. For example, "N number of pending approvals".

   If there are no pending approval requests for the asset, this is simply displayed as “0 ".
3. Select the request that you want to review and approve by clicking its hyperlinked name. The details for the request will appear in the Approval Request dialog.
4. In the **Comment** text box, type a comment. (e.g., *”Request rejected. Add required specifications to this asset and resubmit”*.)
5. Click the **Approve** or **Reject** button as appropriate to approve or reject the request.

Approving a Pending Request by a CentraSite Administrator

CentraSite maintains a record of every request that users submit for approval. If a request is pending for an approval for a long time, the CentraSite administrator can approve the request on behalf of the original approver.

To enable an administrator to approve the request on behalf of the original approver, set `allowCSAProxyApproval = true` in the custom configuration centrasite.xml file. The configuration file is located in the <*CentraSiteInstallDir*> \cast\cswebapps\BusinessUI \custom\conf directory.

To approve a pending request

1. Log in to CentraSite Business UI as an administrator. The list of pending approvals is listed on the Welcome page.
2. Select the asset pending for approval.
3. In the approval dialog box, select the user on behalf of whom you are approving the request.
4. Provide comments at the **Comment from the Approver** text box.
5. Click the **Approve** or **Reject** button as appropriate to approve or reject the request.

An email is sent to the original approver notifying the action taken on the pending request.

Reverting the State of an Asset That is Pending Approval

Occasionally, you might need to revert a request that has been submitted for approval. For example, if a request that has already been submitted to the approval engine requires the approval of a user who has left the company, you will need to back that request out of the approval engine and resubmit it (after updating the approver group, of course).

When you have an approval request that is stuck in the `pending` mode, a user in the CentraSite Administrator role can use the following procedure to revert the object to its previous state so that the condition can be corrected and the object can be resubmitted for approval.

Note: Reverting the lifecycle state of an asset does not undo any attribute changes that might have been made by policies that were executed by the original state-change event. It simply returns the asset's lifecycle property to its previous state. If other attribute changes occurred during the state-change event, you will need to undo those changes manually.

To revert the state of an asset that is pending approval

1. Display the details page for the asset whose pending state you want to revert. If you need procedures for this step, see "Displaying Details of an Asset" on page 133.
2. In the actions bar for the asset, select the **Revert Pending** ( ) icon.

Message Handling and Diagnostics

The CentraSite Business UI must anticipate runtime errors and attempt to recover from them.

This section contains information for the CentraSite user who wants to extend CentraSite's message handling by adding email notifications.

Presenting Error Messages in CentraSite Business UI

The CentraSite Business UI provides user-friendly error messages that can be tailored to the requirements. In the CentraSite Business UI, these error messages are displayed using a dialog box. The dialog box contains a title, a short explanation of the error, and the possible action(s) a user can do. Additionally, the dialog box includes a **Provide Diagnostics** button that offers diagnostic information and help.

The diagnostic information and help includes:

- Full stack trace of an error.
- User action that caused an error to happen.
- Screenshot of an error.
- Tokenization support.

Setting the Diagnostic Email Notification Configurations

You can use the diagnostic email notifications to alert users whenever an error occurs in CentraSite Business UI.

Use the following procedure to configure the diagnostic email notification settings:

To configure the diagnostic email notification settings

1. Create an XML diagnostics configuration as shown in the example below:

```
<DiagnosticsConfiguration>
  <EmailAddresses>
    <EmailAddress id="defaultEmail">admin@softwareag.com</EmailAddress>
  </EmailAddresses>
    <EmailTemplate id="defaultDiagnosticTemplate"
                   name="DefaultDiagnostics.html"
                   mimetype="html" />
    <EmailPreSubject id="defaultSubject">
          Diagnostic from ${system.user.name}
    </EmailPreSubject>
</DiagnosticsConfiguration>
```

2. Append the XML configuration to the custom configuration file centrasite.xml. This file is located in the cast\cswebapps\BusinessUI\custom\conf folder under the CentraSite installation directory.

The diagnostics snippet would look like the following:

```
<GUIConfiguration>
<DiagnosticsConfiguration>
  <EmailAddresses>
    <EmailAddress id="defaultEmail">admin@softwareag.com</EmailAddress>
  </EmailAddresses>
    <EmailTemplate id="defaultDiagnosticTemplate"
                   name="DefaultDiagnostics.html"
                   mimetype="html" />
    <EmailPreSubject id="defaultSubject">
          Diagnostic from ${system.user.name}
    </EmailPreSubject>
</DiagnosticsConfiguration>
</GUIConfiguration>
```

3. Specify the following parameters:

Parameter	Description
`EmailAddress`	The email address of the users to whom the email message is to be sent.
`EmailTemplate name`	The email template represents the body of the message. You can specify substitution tokens in the body of the email message. Substitution tokens enable you to incorporate run-time information into the email. For example, you can use the `${system.user.name}` token to insert (into the email message) the name of the user who caused the error. For a complete list of the supported substitution tokens, see "Substitution Tokens" on page 232.
`EmailPreSubject`	The text that will appear on the subject line of the email. You can specify the text of the email by typing a message directly into the EmailPreSubject parameter or by using an email template. For more information about these options, see "Using a Custom Message in Diagnostic Email Notification" on page 234.

Substitution Tokens

The following list describes substitution tokens that you can use to incorporate data from the runtime errors into the email. For example, you can use tokens to return information about the object on which the error occurred, identify the user who caused the error, and/or indicate what type of action caused the error to occur.

This token...	Inserts the following information into the parameter value at execution time...
`${error.id}`	The unique identifier of the error.
`${error.message}`	A short message text describing the error.
`${error.action}`	An action that a user can perform to resolve the error.
`${error.explanation}`	A description of the error.
`${error.stacktrace}`	The stack trace of the error.
`${entity.name}`	The object's name (in the user's locale).
`${entity.description}`	The object's description.
`${entity.owner}`	The name of the user who owns the object on which the error occurred.
`${entity.organization}`	The organization to which the object on which the error occurred belongs.
`${entity.state}`	The state of the object on which the error occurred.
`${entity.type}`	The type of object on which the error occurred.
`${entity.XML}`	XML of the object on which the error occurred.
`${entity.URL}`	The URL for the object on which the error occurred.
`${entity.version}`	The object's user-assigned version identifier.
`${system.repository.url}`	The fully qualified URL for the CentraSite registry/repository (http://localhost:53305/CentraSite/CentraSite).

This token...	Inserts the following information into the parameter value at execution time...
`${system.user.name}`	The name of the user who caused the error.
`${user.locale}`	The locale of the user who caused the error.
`${diagnostic.all.properties}`	Renders all custom properties provided during diagnostics.

Using a Custom Message in Diagnostic Email Notification

One way to specify the body of the email message is to simply type the message directly into the `EmailTemplate name` parameter.

Example of a HTML Message

```
<EmailPreSubject/> Error occurred while creating the service ${entity.name}.
The operation was executed by the customer
${system.user.name}<EmailPreSubject/>
```

Working with Portlets

The standard Welcome page gives you quick links to the pages of CentraSite Business UI that you will probably use frequently during your day-to-day work with CentraSite. It also provides links to external web sites that provide useful information related to CentraSite.

The Welcome page consists of a menu bar at the top and a set of default portlets below. Each portlet contains a header and content. The header includes a title, some selectable markers (example, to set user configuration of an individual portlet, expand or collapse a portlet etc.) and a close button. Under the header, you can have a list of entries, either representing the result set of a search query, any external HTML page or a graphical image.

The result set of a search query represents a particular type of information, such as recent searches, recently created assets or changes to assets, most popular assets and so on.

An administrator defines the default set of portlets to display in the Welcome page. You can personalize the Welcome page to suit your requirements and preferences; you can add or remove portlets, rearrange portlets anywhere you want by simply dragging them, and customize the settings of individual portlets. For details on the portlet configuration, see "Installing the Customized Welcome Page" on page 259.

Using portlets, you can:

- Display the list of assets that you own in a single portlet.

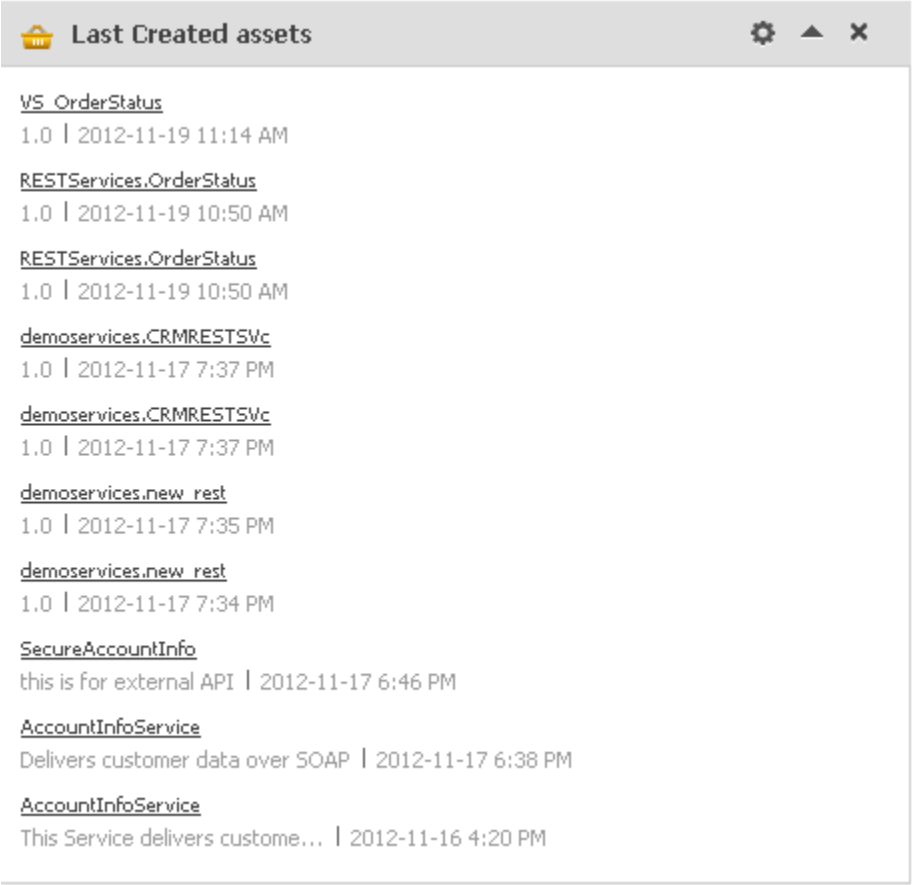
- Display the list of recently modified assets in a single portlet.
- Display the list of active users in CentraSite registry in a single portlet.
- Create a quick link to the list of saved searches.
- Create a quick link to the list of recent saved searches.

Portlet Types

CentraSite Business UI includes several types of portlets that you can add to your Welcome page. Each portlet has features that make the portlet suitable for particular types of content. The following sections describes each type of portlet.

Text Portlet

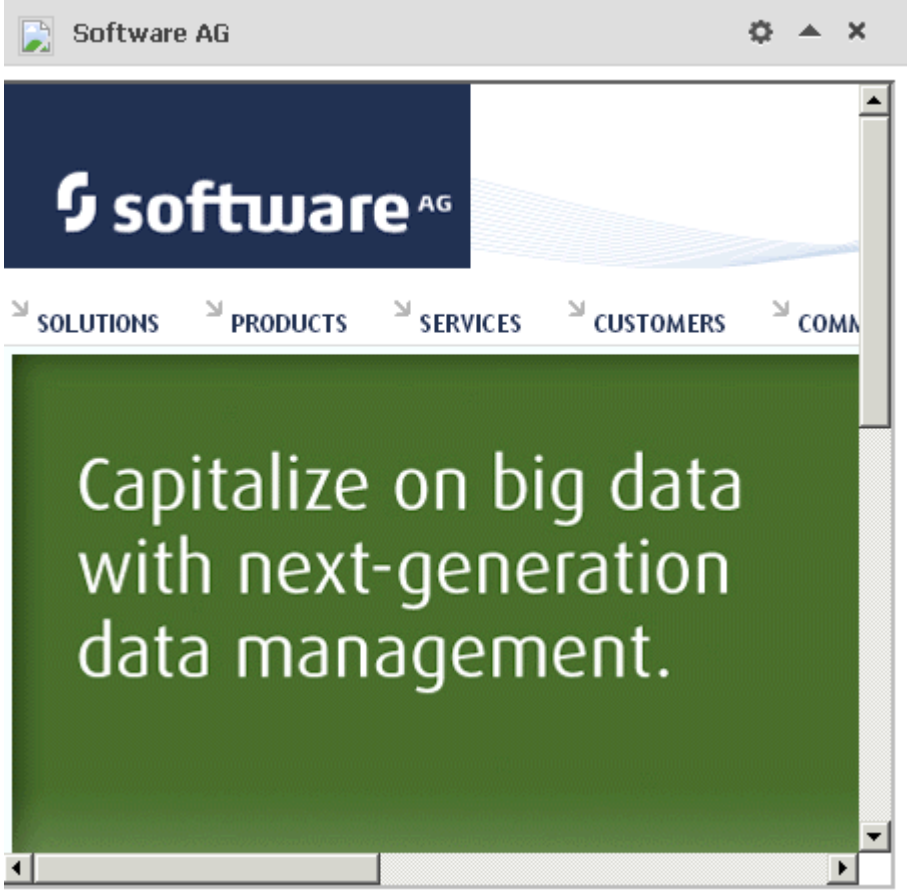
A **Text** portlet enables you to view and work with content that you find by browsing or using the search tool at design time or runtime. You can create any number of text portlets and add them to your Welcome page. Here is a sample Text portlet:



For information about how to create these portlets, see "Creating a Text Portlet" on page 239.

IFrame Portlet

An **Inline Frame (IFrame)** portlet accesses a specified URL and displays the returned information within a rectangular region that includes scroll bars and borders. You can create any number of IFrame portlets and add them to your Welcome page. When you create an IFrame portlet, you usually supply a URL that points to a complete HTML page, as shown in the following example:



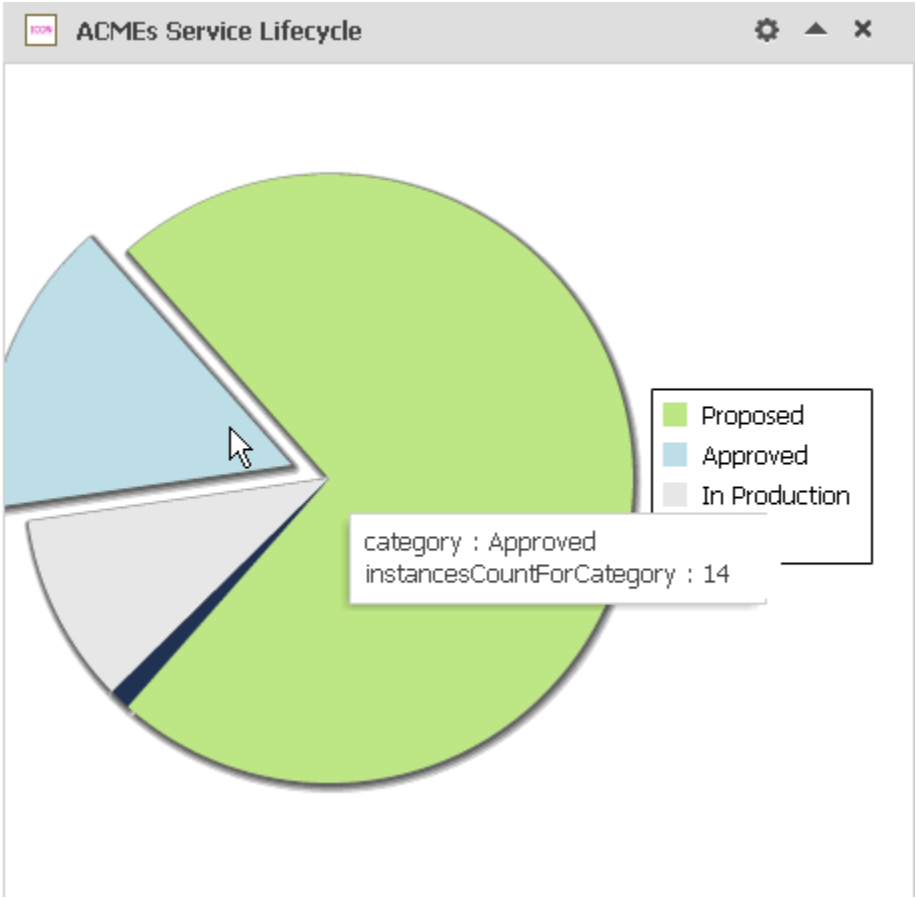
Within this IFRAME, portlets can display many types of content, including HTML, formatted text, images, or elements of an HTML form.

The default height of the frame is `400` pixels. (If necessary, the frame is displayed with scroll bars so that all of the portlet contents can be viewed within the frame.)

For information about how to create these portlets, see "Creating an IFrame Portlet" on page 241.

Graphical Portlet

A **Graphical** portlet displays a line chart, bar chart, or pie chart of data that is derived from a reporting search. You can create any number of graphical portlets and add them to your Welcome page. Here is a sample Graphical portlet:



For information about how to create these portlets, see "Creating a Graphical Portlet" on page 243.

Tailor Your Portlets

You can customize the portlets in your Welcome page in these ways:

- Add portlets — You can add an existing portlet or new portlet to your Welcome page using the **Configure** link at the top left corner of the Welcome page. For procedures, see Adding a Portlet.
- Remove portlets — You can remove a portlet from your Welcome page by using the close icon at the top right corner. For procedures, see Removing a Portlet.
- Change layout — You can drag and drop a portlet in to the desired position. For procedures, see the section Rearranging Portlets.
- Change portlet behavior — The portlet has a gear-shaped icon in the bar at the top, which you can click to display a **Settings** drop-down. This helps you redefine the behavior of a portlet. For procedures, see Configuring a Portlet.

- Show/hide portlet contents – You can switch the portlet to show or hide its contents using the expand or collapse icon in the bar at the top right corner. For procedures, see Expanding or Collapsing a Portlet.

Portlet Quick Facts and Links

For a list of the default set of design/change-time and run-time portlets installed with CentraSite, see "Built-in Portlets Reference" on page 296.

Viewing Your Portlets

Use the following procedure to view the portlets in your Welcome page.

Important: The Welcome page only includes portlets that are "configured", that is, the portlets that have been enabled for display via the **Configure Your Welcome Page** dialog will appear. Portlets that are available to you, but have not yet been enabled for display in the **Configure Your Welcome Page** dialog, do not appear in your Welcome page.

To view your portlets

1. In CentraSite Business UI, click the **Welcome** link (in the upper right corner of the page).

   The Welcome page displays a list of portlets that are configured for your view.

2. Locate the portlet that you want to view. Each portlet contains one to multiple entries that match the data feed defined for the portlet.

   A list of entries and attributes for each of these entries will display based on the portlet's configuration.

3. Click the name of the entry whose details you want to view.

   To see all the portlets that are available to you, click the **Configure** link in the upper left corner of the Welcome page.

   You can view a tooltip text for any attribute of the entry in a portlet by moving the cursor to the attribute value. The tooltip text gives the name the attribute. The tooltip text shown is the content of the attribute's Name field, as defined for the asset in the asset type definition. For information on defining attributes for asset types, see the *CentraSite Administrator's Guide*.

Adding a Portlet

You can add one or more portlets predefined in the CentraSite or a new custom portlet to your Welcome page.

The following sections describe how to add customized portlets to your Welcome page using the user interface.

Important: Alternatively, you can add customized portlets to your Welcome page as GWT extension points. For procedures, see "Add Portlet" on page 278.

Adding an Existing Portlet

Use the following procedure to add one or more portlets that are available for your Welcome page.

To add an existing portlet to your Welcome page

1. In CentraSite Business UI, access your Welcome page. If you need procedures for this step, see "Viewing Your Portlets" on page 238.
2. Click the **Configure** link in the upper left corner of your Welcome page.
3. The **Configure your Welcome Page** dialog opens. This displays a list of portlets that are available to you.
4. Select the portlet(s) that you want to add to your Welcome page.
5. When you have finished making your selection, click **OK**.

   The settings take effect immediately and you will see the personalized Welcome page with the selected portlet(s).

Adding a New Portlet

Adding a new portlet to your Welcome page is a two-step process:

1. Create a new portlet. You can create a Text, IFrame, or Graphical portlet. For instructions, see:
   - "Creating a Text Portlet" on page 239
   - "Creating an IFrame Portlet" on page 241
   - "Creating a Graphical Portlet" on page 243
2. Add the portlet to the Welcome page. For instructions, see Adding the New Portlet to Your Welcome Page

Important: If you want to create a new portlet of type “custom” and add it to the Welcome page, see "Extension Points for Customizing Content Pages" on page 264.

Creating a Text Portlet

Use the following procedure to create a portlet of type “Text”.

To create a Text portlet

1. In CentraSite Business UI, access your Welcome page. If you need procedures for this step, see "Viewing Your Portlets" on page 238.
2. Click the **Configure** link in the upper left corner of your Welcome page.
3. In the **Configure Your Welcome Page** dialog, click the **Add a new portlet** link.
4. Complete the fields in the **Add Portlet** dialog as follows:

In this field...	Specify...
Name	Enter a name for the portlet. A portlet name can contain any character (including spaces). A portlet name does not need to be unique within the Welcome page. However, to reduce ambiguity, you should avoid giving multiple portlets of the same type the same name. As a best practice, we recommend that you adopt appropriate naming conventions to ensure that portlets are distinctly named within the Welcome page.
Description	*Optional*. Enter a comment or descriptive information about the new portlet.
Type	Select **Text**.
Number of Entries	*Optional*. Set the number of entries to display in the portlet. If the number of entries is set to 0, then all the available entries are displayed.
Data Feed	Select the name of a saved search query available in the CentraSite.
Attributes	Specify values for the attributes that dynamically render depending on the chosen search query.

5. Expand the **Advanced Settings** and complete the following fields as necessary.

In this field...	Specify...
Actions	*Optional*. Select the actions that you want to add to the portlet. By default, CentraSite supports the following actions: ■ **Refresh**

In this field...	Specify...
	■ **Configure**
Icon URL	*Optional*. Specify the path to an icon that is to be used to represent this portlet in the Welcome page. Prerequisite: The icon must be in PNG format. To ensure proper alignment when it is displayed in the user interface, the icon must be 16 x 16 pixels in size. The icon must reside in the folder <*CentraSiteInstallDir*> \cast \cswebapps\BusinessUI\images\system. The path for the icon should be specified as `images/system/icon.png`
Refresh Interval	*Optional*. The time interval (in seconds) after which a refresh of the portlet contents will happen. If a value is not specified (or if the value `0` is specified), refresh will not happen.
Suppress Zero Values	This option determines how rows containing zero values are handled in the portlet. When this option is enabled, any row that contains a value equal to zero is typically hidden in the portlet. By default, the **Suppress Zero Values** property is set to **Yes**.

6. Click **OK** to create the new text portlet.

   The new portlet is created and you will be redirected to the **Configure Your Welcome Page** dialog. By default, the new portlet will remain unselected and disabled.

   If you choose to cancel the settings, you will still be redirected to the **Configure Your Welcome Page** dialog.

   You can choose to add this new portlet in user interface as described in "Adding the New Portlet to Your Welcome Page" on page 246.

Creating an IFrame Portlet

Use the following procedure to create a portlet of type “IFrame”.

To create an IFrame portlet

1. In CentraSite Business UI, access your Welcome page. If you need procedures for this step, see "Viewing Your Portlets" on page 238.
2. Click the **Configure** link in the upper left corner of your Welcome page.

3. In the **Configure Your Welcome Page** dialog, click the **Add a new portlet** link.
4. Complete the fields in the **Add Portlet** dialog as follows:

In this field...	Specify...
Name	Enter a name for the portlet. A portlet name can contain any character (including spaces). A portlet name does not need to be unique within the Welcome page. However, to reduce ambiguity, you should avoid giving multiple portlets of the same type the same name. As a best practice, we recommend that you adopt appropriate naming conventions to ensure that portlets are distinctly named within the Welcome page.
Description	*Optional*. Enter a comment or descriptive information about the new portlet.
Type	Select **IFrame**.
URL	Specify an arbitrary URL that points to any external HTML page.

5. Expand the **Advanced Settings** and complete the following fields as necessary.

In this field...	Specify...
Actions	*Optional*. Select the actions that you want to add to the portlet. By default, CentraSite supports the following actions: ■ **Refresh** ■ **Configure**
Icon URL	*Optional*. Specify the path to an icon that is to be used to represent this portlet in the Welcome page.Prerequisite: The icon must be in PNG format. To ensure proper alignment when it is displayed in the user interface, the icon must be 16 x 16 pixels in size. The icon must reside in the folder <*CentraSiteInstallDir*> \cast\cswebapps\BusinessUI\images \system.

In this field...	Specify...
	The path for the icon should be specified as `images/system/icon.png`
Refresh Interval	*Optional*. The time interval (in seconds) after which a refresh of the portlet contents will happen. If a value is not specified (or if the value `0` is specified), refresh will not happen.

6. Click **OK** to create the new IFrame portlet.

   The new portlet is created and you will be redirected to the **Configure Your Welcome Page** dialog. By default, the new portlet will remain unselected and disabled.

   If you choose to cancel the settings, you will still be redirected to the **Configure Your Welcome Page** dialog.

   You can choose to add this new portlet in user interface as described in "Adding the New Portlet to Your Welcome Page" on page 246.

Creating a Graphical Portlet

Use the following procedure to create a portlet of type “Graphical”.

To create a Graphical portlet

1. In CentraSite Business UI, access your Welcome page. If you need procedures for this step, see "Viewing Your Portlets" on page 238.
2. Click the **Configure** link in the upper left corner of your Welcome page.
3. In the **Configure Your Welcome Page** dialog, click the **Add a new portlet** link.
4. Complete the fields in the **Add Portlet** dialog as follows:

In this field...	Specify...
Name	Enter a name for the portlet. A portlet name can contain any character (including spaces). A portlet name does not need to be unique within the Welcome page. However, to reduce ambiguity, you should avoid giving multiple portlets of the same type the same name. As a best practice, we recommend that you adopt appropriate naming conventions to ensure that portlets are distinctly named within the Welcome page.
Description	*Optional*. Enter a comment or descriptive information about the new portlet.

In this field...	Specify...
Type	Select **Graphical**.
Data Feed	Select the name of a saved search query available in the CentraSite.
Chart Type	Select one of the following chart types as appropriate: ■ Bar Chart ■ Line Chart ■ Pie Chart By default, the first option (i.e.,) Bar Chart is selected in the user interface.
X-axis Label and Feed	*For Bar/Line charts*. Type in the label that you want to display for the X-axis. A label can contain any character (including spaces). Select the attribute that you want to show in the X-axis, relative to the specified search query.
Y-axis Label and Feed	*For Bar/Line charts*. Type in the label that you want to display for the Y-axis. A label can contain any character (including spaces). Select the attribute that you want to show in the Y-axis, relative to the specified search query.
Vertical Bar	*For Bar/Line charts*. Use this option to specify if you want to display data in either a horizontal bar or a vertical bar format. The allowed values are `Yes` or `No`. Default `Yes`.
X-axis Value Orientation	For Bar/Line charts. Use this option to specify whether you want to display the X-axis data in either a horizontal or a vertical direction. The allowed values are `Vertical` or `Horizontal` with the default being `Vertical`.
Attribute Label	*For Pie charts*. Select an attribute that you want to display in the pie chart, relative to the specified search query.

In this field...	Specify...
Attribute Value	*For Pie charts*. Select a value for the attribute you want to dynamically render in the pie chart, relative to the specified attribute label.

5. Expand the **Advanced Settings** and complete the following fields as necessary.

In this field...	Specify...
Actions	*Optional*. Select the actions that you want to add to the portlet. By default, CentraSite supports the following actions: ■ **Refresh** ■ **Configure**
Icon URL	*Optional*. Specify the path to an icon that is to be used to represent this portlet in the Welcome page.Prerequisite: The icon must be in PNG format. To ensure proper alignment when it is displayed in the user interface, the icon must be 16 x 16 pixels in size. The icon must reside in the folder <*CentraSiteInstallDir*> \cast \cswebapps\BusinessUI\images\system. The path for the icon should be specified as `images/system/icon.png`
Refresh Interval	*Optional*. The time interval (in seconds) after which a refresh of the portlet contents will happen. If a value is not specified (or if the value `0` is specified), refresh will not happen.
Show Plot Values	Use this option to show or hide the data value of a bar, line or pie plot. By default, this option is set to `Yes`.
Plot Value Position	Use this option to specify the position of the data value in a bar, line or pie plot. Possible values are `Start`, `End`, `Outside`. The default value for a bar or line chart is `Outside`, and for a pie chart is `Start`.

In this field...	Specify...
Show Plot in Different Color	Use this option to show each bar, line or pie plot in a different color. By default, this option is set to `No`. When you set this option to `Yes`, specify the colors for each bar, line or pie plot in the *centrasite.xml* configuration file. You should specify the colors using the HEX color code format. The HEX format is a hash (#) followed by 6 numbers or letters. The position of the numbers/letters correlate to the RGB value. For example, "#0000ff" translates into "blue".
Show Legend	Use this option to show or hide legends in the chart. The legend appears by default — unless you specify to hide it in the graphical chart.
Show Tooltip	Use this option to show or hide tooltips in the chart. The tooltip appears by default — unless you specify to hide it in the graphical chart.
Suppress Zero Values	This option determines how rows or columns containing zero values are handled in the portlet. When this option is enabled, any row or column that contains a value equal to zero is typically hidden in the portlet. By default, the **Suppress Zero Values** property is set to **Yes**.

6. Click **OK** to create the new graphical portlet.

   The new portlet is created and you will be redirected to the **Configure Your Welcome Page** dialog. By default, the new portlet will remain unselected and disabled.

   If you choose to cancel the settings, you will still be redirected to the **Configure Your Welcome Page** dialog.

   You can choose to add this new portlet in user interface as described in "Adding the New Portlet to Your Welcome Page" on page 246.

Adding the New Portlet to Your Welcome Page

Use the following procedure to add the new portlet to your Welcome page.

To add the new portlet to you Welcome page

1. After you have created the new portlet in CentraSite Business UI, the portlet is visible in the **Configure your Welcome Page** dialog.
2. Select the new portlet and click **OK**.

The settings take effect immediately and you will see the personalized Welcome page with the new portlet.

Configuring a Portlet

You can configure each portlet in your Welcome page to suit your preferences; modify the portlet configuration parameters, refresh the contents of the portlet and so on.

By default, CentraSite Business UI supports the following configurable options for each type (Text, IFrame and Graphical) of portlet in your Welcome page:

- **Configure**
- **Refresh**

However, you can define your own options for each portlet in the configuration level.

Use the following procedures to perform the predefined configurable options for a portlet in your personalized Welcome page:

Personalization Settings for Portlet Functions

Use the following procedure to redefine the functional settings of a portlet in your Welcome page.

To redefine the functional settings of a portlet

1. In CentraSite Business UI, access your Welcome page. If you need procedures for this step, see "Viewing Your Portlets" on page 238.
2. Locate the portlet that you want to configure.
3. Click the **Settings** ( ) icon. Then select **Configure** action from its drop-down menu.
4. To edit a portlet's generic settings (**Name**, **Description**, **Attributes** etc.), place the cursor in the appropriate field and modify the text as required.
5. To modify the extended settings associated with the portlet, do the following:
   a. Expand the **Advanced Settings** node.
   b. Make the changes as necessary.
6. After you have made the required changes, click **OK**.

Refresh Intervals for Portlets

The content in your portlet may need to be refreshed periodically if you are examining real-time data. You can reset the refresh intervals for individual portlets on your Welcome page.

Use the following procedure to reset the refresh interval for individual portlets in your Welcome page.

To reset the refresh interval for a portlet in your Welcome page

1. In CentraSite Business UI, access your Welcome page. If you need procedures for this step, see "Viewing Your Portlets" on page 238.
2. Locate the portlet that you want to modify.
3. Click the **Settings** ( ) icon. Then select **Configure** action from its drop-down menu.
4. Expand the **Advanced Settings** node and specify the **Refresh Interval** field as required.
5. After you have made the required changes, click **OK**.

Expanding or Collapsing a Portlet

Use the following procedure to expand or collapse a portlet in your Welcome page.

To expand or collapse a portlet in your Welcome page

1. In CentraSite Business UI, access your Welcome page. If you need procedures for this step, see "Viewing Your Portlets" on page 238.
2. Locate the portlet that you want to expand or collapse.
3. Toggle on the **Collapse** ( ) icon or **Expand** ( ) icon as required.

Removing a Portlet

Use the following procedure to remove a portlet from your Welcome page.

To remove a portlet from your Welcome page

1. In CentraSite Business UI, access your Welcome page. If you need procedures for this step, see "Viewing Your Portlets" on page 238.
2. Select the **Configure** link in the upper left corner of your Welcome page. The **Configure your Welcome Page** dialog opens.
3. Unselect the checkbox of the portlet that you wish to remove. You can select multiple portlets for removal.
4. When you have finished removing the portlet, close the dialog.

   The settings take effect immediately and you will the see the customized Welcome page.

   You can alternatively choose to close ( ) the portlet.

   Note: The above operations will temporarily remove the portlet from your Welcome page. If at a later stage you want to add the portlet, proceed as described in Adding an Existing Portlet.

5. Select the **Delete** ( ) icon in **My Portlets** of the User Preferences page to permanently remove the portlet from CentraSite registry.

Rearranging Portlets

You can move a portlet to a different location in a column by grabbing it by the bar at the top of it and dragging it to the desired location.

CentraSite Business UI Pluggable Architecture

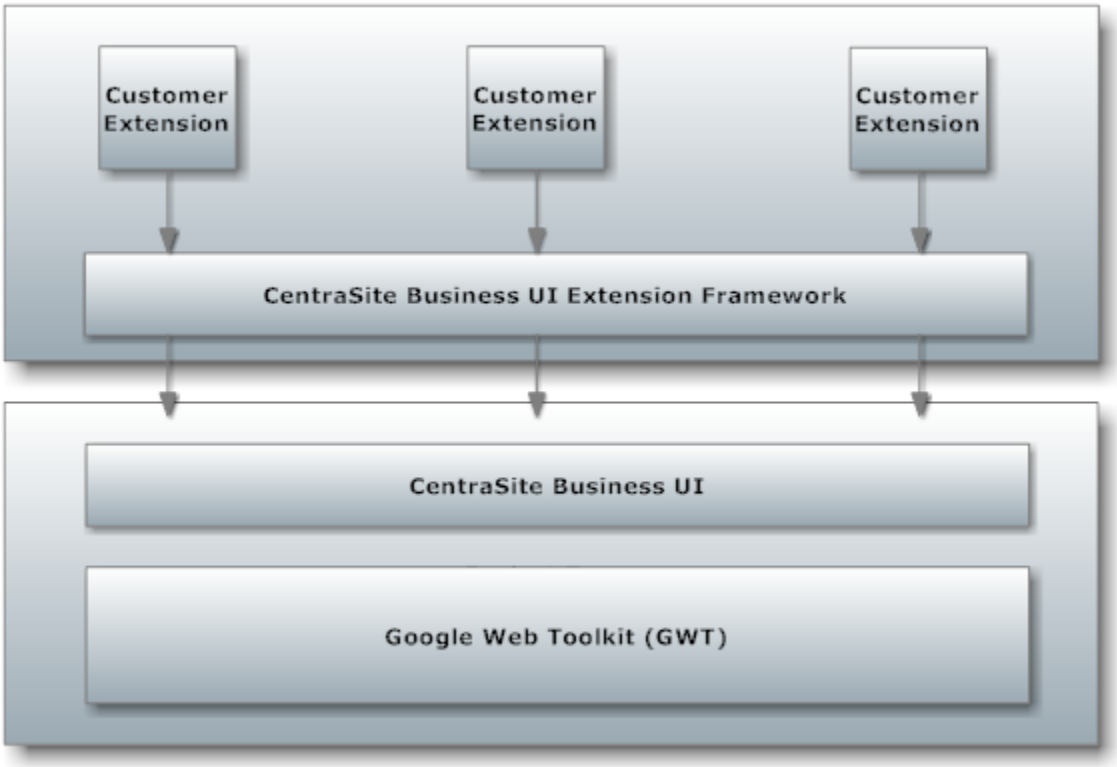
This section describes the CentraSite Business UI's pluggable architecture. Using this architecture, you can extend CentraSite Business UI's functionality by adding your own features with appropriate widgets and JavaScripts.

Introduction

CentraSite Business UI offers a pluggable architecture that allows you to extend the standard graphical interface by adding your own widgets.

The CentraSite Business UI extension framework is a plug-in to a core infrastructure, in other words, the core infrastructure provides extension points where CentraSite Business UI extension framework is plugged in. The core infrastructure comprises of the CentraSite Business UI built on top of the Google Web Toolkit (GWT), which provides the widget classes for the CentraSite.

The pluggable architecture is illustrated in the following diagram:



Extensions are implemented as widgets. The points in the code at which extensions can be added are called extension points. CentraSite Business UI offers extension points that allow you to implement or extend the following features:

- Provide an alternative login screen.
- Provide an alternative screen for requesting an account.
- Extend the search dialog by additional search conditions.
- Replace the standard asset details view.
- Extend the set of available actions in an asset's details page.

The available extension points are described in the section "Extension Points for Customizing Content Pages" on page 264 below.

Customizing the Login Page

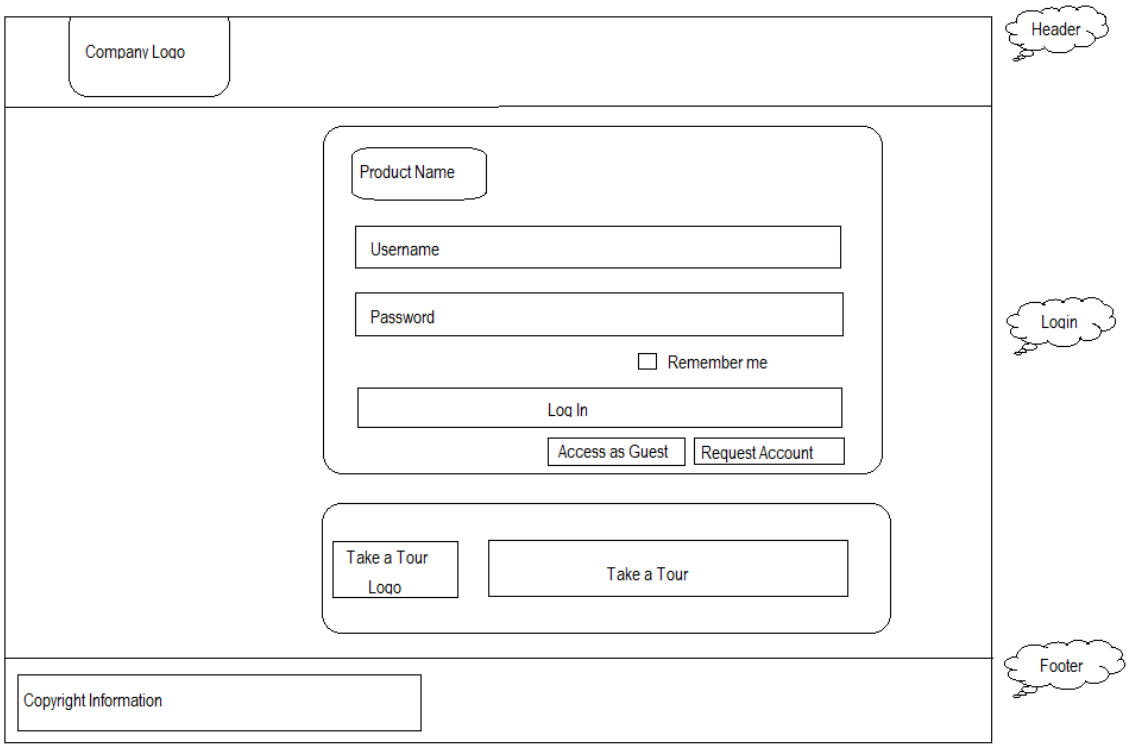
The Login page that you see when you access CentraSite Business UI can be customized to suit your own requirements. You can change aspects such as logos used, colors, text, time formats and layouts. You can also define links that will take you straight to the Welcome page or guest access page, and links to the user registration and the “Take a Tour” mechanism of the CentraSite Business UI.

The information contained in the following sections describes how to customize your login page.

Introduction

The standard Login page contains a header section, a login section and a footer section.

The login page has the following schematic layout:



The Header section at the top shows a company logo. You can change the company logo and colors used to display the logo. You can hide the logo as part of the page customization.

The Login section shows the basic fields that are of use for logging in to the CentraSite Business UI. The fields include:

- The product name **CentraSite**. You can change the product name, and the font and color used to display the product name. You can hide the product name as part of the page customization.
- The username and password text fields to type in your CentraSite login credentials.
- The **Remember Me** check box to store the specified login credentials as a cookie in your computer. You can change the product name, and the font and color used to display the product name. You can hide the product name as part of the page customization.
- The **Log In** button.
- The **Access as Guest** link that redirects you to the CentraSite's Welcome page.
- The **Request an Account** link that redirects you to the Create an Account page.

- **Take a Tour** link that redirects you to a download site, either from Software AG or a popular external site, or a delivered document such as a PDF document. By default, http://www.softwareag.com/corporate/default.asp.

You can change the product name and the individual field labels. You can change the font and color used to display them. You can optionally choose to hide the product name as part of the page customization.

The Footer section shows the copyright information. You can hide the copyright information as part of the page customization.

Installing the Customized Login Page

The Login page is implemented as an extension point in the context of CentraSite's Business UI architecture. To install your customized login page, you need to modify the CentraSite Business UI configuration in the Software AG Runtime environment.

The following table lists the required steps:

Step	Description
Stop Software AG Runtime	Before you make any changes, stop the Software AG Runtime.
Customize the login configuration	The standard configuration file centrasite.xml delivered with the CentraSite kit contains all of the names of the CentraSite Business UI extension points, including the extension point for the login configuration. You must create a copy of the extension point for the login configurations in the custom configuration file centrasite.xml in order to define a customized login page. For more information, see "The CentraSite Business UI Configuration Files" on page 252 and "Configurations for a Custom Login Page" on page 253.
Start Software AG Runtime	After you have made the changes, restart Software AG Runtime. The changes you have made should now be visible when you view the login page.

The CentraSite Business UI Configuration Files

The configuration files for the CentraSite Business UI reside in the following directory.

When you start Software AG Runtime, property settings in the following files determine the features of the CentraSite Business UI.

Configuration File	Location	Description
centrasite.xml	<*CentraSiteInstallDir*> \cast \cswebapps \BusinessUI\system \conf directory	Contains property settings that are installed for the CentraSite Business UI. Throughout this document, we use the term *system configuration file* when referring to this standard system file. **Important:** Do not modify the contents of this file unless asked to do so by Software AG.
centrasite.xml	<*CentraSiteInstallDir*> \cast \cswebapps \BusinessUI\custom \conf directory	Contains properties that modify the installed settings in the system configuration file. Throughout this document, we use the term *custom configuration file* when referring to this customizable file. If you need to modify the property settings for the CentraSite Business UI, you make your changes in this file.

Configurations for a Custom Login Page

The element `<GUIConfiguration>` in the centrasite.xml file refers to the CentraSite Business UI login page configuration.

The login page configuration includes:

Header Configuration

Layout Component	Source Element	Description
SoftwareAG (logo)	`CompanyLogo`	Contains property settings that are of use to modify the company logo in header. For example, to modify a company logo, specify: `<LoginCompanyLogo tooltip= "CS_MSG_INMBX_IMG_APP_MAIN_LOGO_ALT_TEXT"> custom/images/SoftwareAG.png </LoginCompanyLogo>` Specify an image file using its relative path in the <*CentraSiteInstallDir*> \cast \cswebapps\BusinessUI\custom\images directory. In a Windows environment, you should use forward slashes instead of backward slashes in the path name.

Login Configuration

Layout Component	Source Element	Description
CentraSite (logo)	`ProductLogo`	Contains property settings that are of use to modify the product logo in information panel. For example, to modify a product logo, specify: `<LoginProductLogo tooltip= "CS_MSG_INMBX_LBL_PAGE_TITLE"> custom/images/CentraSite.png </ProductLogo>` Specify an image file using its relative path in the <*CentraSiteInstallDir*> \cast \cswebapps\BusinessUI\custom \images directory. In a Windows environment, you should use forward slashes instead of backward slashes in the path name.
Access as Guest (link)	`loginAsGuest`	If the property `loginAsGuest` is set to `true`, then the login screen is skipped and the Welcome page is shown to users when accessing the CentraSite

Layout Component	Source Element	Description
		Business UI. This allows anonymous users to skip the login screen and access the registry anonymously. You can perform a login by hitting the **Log in** link in the masthead of Business UI. If the property `loginAsGuest` is set to `false`, then the login screen is shown to users when accessing the CentraSite Business UI.
	`Guest visibility`	If the property `Guest visibility` is set to `true`, then the **Access as Guest** link is shown in the login screen of the CentraSite Business UI. If the property `Guest visibility` is set to `false`, then the **Access as Guest** link is not visible in the user interface. This prevents anonymous users from skipping the login screen and accessing the registry anonymously.
Remember me (check box)	`RememberMe`	If the property `RememberMe visiblity` is set to `true`, then the **Remember Me** check box is shown in the login screen of the CentraSite Business UI. This helps users to store the specified login credentials as a cookie and automatically use it the next time they access the CentraSite Business UI. If the property `RememberMe visiblity` is set to `false`, then the **Remember Me** check box is not visible in the user interface. This enforces users to manually specify their login credentials every time they access the CentraSite Business UI.
Request an Account (link)	`RequestAccount`	If the property `RequestAnAccount visiblity` is set to `true`, then the **Request an Account** link is shown in the login screen of the CentraSite Business UI. This enables anonymous users to

Layout Component	Source Element	Description
		create or register a new user account in CentraSite registry. If the property `RequestAccount visiblity` is set to `false`, then the **Request an Account** link is not visible in the user interface.
	`ReasonForRequest`	If the property `ReasonForRequest` is set to `true`, then the **Reason for Request** text box is shown in the Create an Account page of the CentraSite Business UI. This allows users to enter the specific reason why they require this account in CentraSite. If the property `ReasonForRequest` is set to `true`, then the **Reason for Request** text box is not visible in the user interface.
Take a Tour (button)	`TakeATour`	Contains property settings that are of use to modify the **Take a Tour** button. However, the **Take a Tour** button is only visible if the attribute `TakeATour visibility` value is set to `true`. If the property `TakeATour visiblity` is set to `false`, then the **Take a Tour** button is not visible in the user interface.

Footer Configuration

Layout Component	Source Element	Description
Copyright	`CopyRight`	Contains property settings that are of use to modify the copyright information of CentraSite in footer. However, the copyright information is only visible if the attribute `CopyRight visibility` is set to `true`. If the property `CopyRight visiblity` is set to `false`, then the copyright

Layout Component	Source Element	Description
		information is not visible in the user interface.

Customizing the Welcome Page

The Welcome page that you see when you access CentraSite Business UI can be customized to suit your own requirements. You can change aspects such as the search widget, search scopes, activity menus, the main navigation links and Welcome page.

The information contained in the following sections describes how to customize your Welcome page.

Introduction

The standard Welcome page gives you quick links to the pages of CentraSite Business UI that you will probably use frequently during your day-to-day work with CentraSite. It also provides links to external web sites that provide useful information related to CentraSite.

A search box allows you perform a keyword search for registry assets whose name or description contains the given keyword.

The Welcome page has the following schematic layout:

The header section at the top contains a company logo and a product logo. You can change the logo and colors used to display the logo. You can hide the logos as part of the page customization. You can change the background color for the whole header section.

A set of header links in this section provide easy access to items (such as the assets, search capabilities etc.) that you use routinely, notifications and alerts, the CentraSite product documentation and related information.

The navigation bar contains a search widget which allows you to perform a keyword search for an asset. You can choose to have a user-defined search widget or the default search widget as part of the page customization. You can change the background color of the search widget. Additionally, a browse link is displayed by default, which allows you to perform an advanced search for an asset. You can customize the browse link to contain a custom URL that either opens an Advanced Search page or an external page of your choice. You can rename or hide the browse link as part of the page customization.

Adjacent to the search widget is the activities menu. This menu includes options that enable you to access the various CentraSite functions (such as the Create Assets, Import Assets etc). You can rearrange the order of these menu options. Also, you can customize the activities menu to include or exclude one or more CentraSite functions as part of the customization process.

Below the header section, we have the Welcome page. The Welcome page can contain one or more so-called portlets. Each portlet contains a header and content. The header includes a title, with an icon adjacent to the text, some selectable markers (example, set

user configuration of an individual portlet, expanding and collapsing a portlet etc.) and a close button. Under the header, you can have a list of entries, either representing the result set of a search query, any external HTML page or a graphical image.

CentraSite Business UI supports the following portlets:

- **Text portlet** – This portlet represents the result set of a saved search query as executable actions. Typically, an action contains the URL of a search result (for example, the name of an asset) that renders the appropriate details page (in this case, the asset details page) within the CentraSite Business UI.

  The names of the search results are displayed as a table consisting of single or multiple columns. Each table cell contains one executable action. Each cell can also have an icon beside it.

- **IFrame portlet** – Represents an arbitrary URL that points to the corresponding external HTML page inside the HTML IFrame component.

- **Graphical portlet** – Represents the saved search queries in graphical representation.

The portlets are rendered in the welcome page according to how you configure them. The portlets can be displayed side by side in rows. For details on the portlet configuration, see "Installing the Customized Welcome Page" on page 259 below.

The footer section displays the current date and time. Additionally, it contains the CentraSite copyright information and subtitle text. You can hide the copyright information and the subtitle text as part of the page customization. You can change the background color of the whole footer section.

In general, you can use CSS stylesheet statements to customize the appearance of text and colors in the Welcome page.

Installing the Customized Welcome Page

To install your customized Welcome page, you need to modify the CentraSite Business UI configuration in the Software AG Runtime environment.

The required steps are described in the following table:

Step	Description
Stop Software AG Runtime	Before you make any changes, stop the Software AG Runtime process.
Updating the centrasite.xml configuration file	If you need to customize the Welcome page for the CentraSite Business UI, make your changes in the custom configuration file located in the <*CentraSiteInstallDir*> \cast \cswebapps\BusinessUI\custom\conf directory.

Step	Description
Start Software AG Runtime	After you have made the changes, restart Software AG Runtime. The changes you have made should now be visible when you view the Welcome page.

Configurations for a Custom Welcome Page

Header Links

Header links are product-specific information links you can define to display pages or trigger functions when a user clicks on an information label. Header links only appear in the headers when defined in the `<HeaderLinks>` element of the configuration file.

By default, the CentraSite Business UI contains the following header links:

- **Welcome**
- **Inbox**
- **Help**
- **About**
- **Logout**

```
<HeaderLinks>
  <HeaderLink id="dashboard" displayName="CS_MSG_INMBU_LINK_DASHBOARD"
              token="welcome:welcome" />
  <HeaderLink id="inbox" displayName="CS_MSG_INMBU_LINK_INBOX"
              token="inbox:inbox" />
  <HeaderLink id="help" displayName="CS_MSG_INMBU_LINK_HELP"
              token="help:help" />
  <HeaderLink id="about" displayName="CS_MSG_INMBU_LINK_ABOUT"
              token="about:about" />
  <HeaderMenuSeparator tooltip="CS_MSG_INMBX_LBL_HEADER_MENU_SEPERATOR">
     images/system/Separator_White_1X1.png
  </HeaderMenuSeparator>
</HeaderLinks>
```

Additionally, you can create a custom header link to suit your requirement. You define a custom header link under the section `Header Panel Configuration` in the custom configuration file.

Important: You cannot customize the header link **Logout** (even if you belong to the CentraSite Administrator role).

Search Scopes

The search scopes enable you to narrow the search for assets based on the following objects:

- Everything

- Assets

```
<SearchScopes>
   <SearchScope
          id="Assets" isExpandable="false"
          class="com.softwareag.centrasite.api.csom.search.impl.AssetScope"
          exclude="uddi:7613515f-77eb-11dd-bc9f-f62b6cf80b00">
     INMCL_STR_Assets
   </SearchScope>
   <SearchScope
          id="Everything" isExpandable="true"
          class="com.softwareag.centrasite.api.csom.search.impl.EverythingScope"
          exclude="uddi:7613515f-77eb-11dd-bc9f-f62b6cf80b00">
     INMCL_STR_Everything
   </SearchScope>
</SearchScopes>
```

Additionally, you can create a custom scope with the search query that you require. You define a custom search scope under the section `Search Scopes Configuration` in the custom configuration file.

Activity Menu

The CentraSite Business UI's Activity Menu helps you access the following functions by default:

- Create Assets
- Global Reports
- Manage Organizations

```
<Activities>
   <Activity id="Create Assets"
    class="com.softwareag.centrasite.api.activity.impl.CreateAssetActivityImpl">
      INMCL_ACTIVITY_CREATE_ASSET
   </Activity>
   <Activity id="Global Reports"
   class="com.softwareag.centrasite.api.activity.impl.GlobalReportActivityImpl">
      INMCL_ACTIVITY_GLOBAL_REPORTS
   </Activity>
   <Activity id="Manage Organizations"
    class="com.softwareag.centrasite.api.activity.impl.ManageOrganizationsImpl">
      INMCL_ACTIVITY_MANAGE_ORGANIZATIONS
   </Activity>
 </Activities>
```

Additionally, you can create a custom activity that have the specific function and format that you require. You define a custom activity as an extension under the section `Activities Configuration` in the custom configuration file. For procedures, see "Extend Activity Menu by Additional Functions" on page 265.

Browse Link

The **Browse** link enables you to locate assets in the CentraSite registry using the advanced search options.

```
<BrowseLink visibility="true" displayName="CS_MSG_INMBU_LINK_BROWSE"
             token="browse:browse" />
```

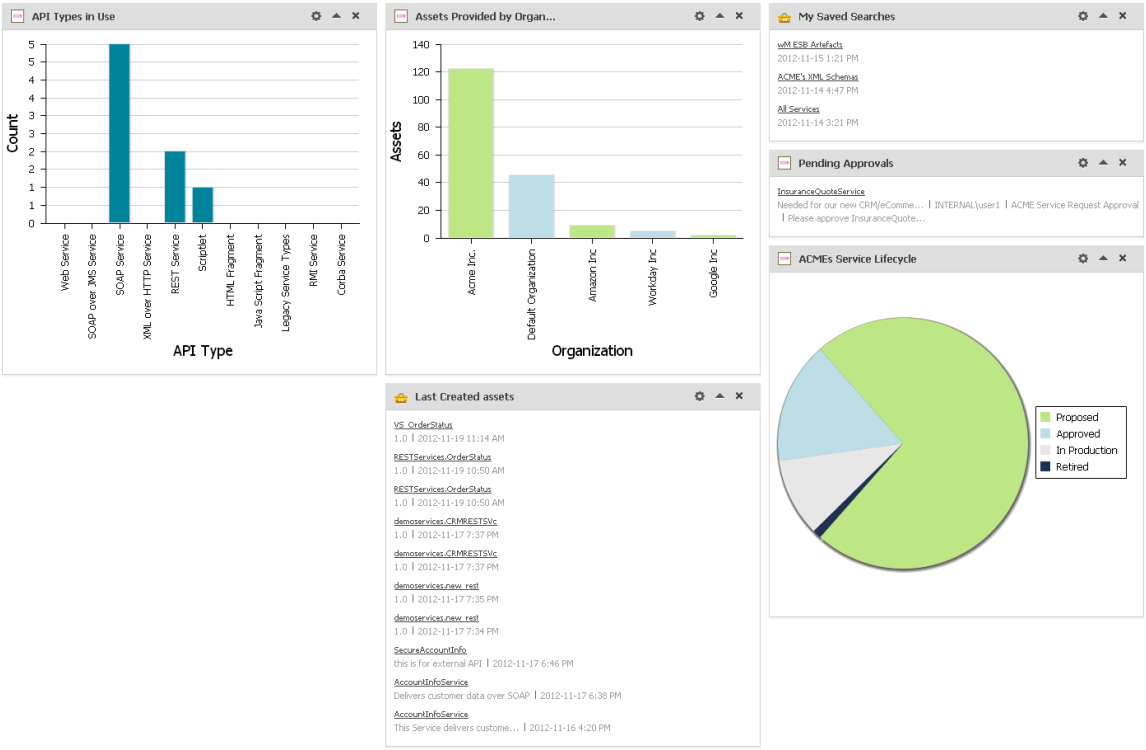
You can customize the **Browse** link in the custom configuration file to show any of the following behaviors:

- Enable or disable the Browse link
- Provide custom URL
- Rename the Browse link

Portlets

Portlets are the information display components of the CentraSite Business UI. A portlet can process requests from the user and generate dynamic content such as report lists, notifications or performance metrics. In addition to a set of standard portlets, CentraSite provides a framework that enables you to define and deploy custom portlets that meet your requirements.

Portlets that are created with the framework provided in the CentraSite Business UI have a standard appearance. A portlet includes a title bar with icons that link to portlet actions, and a list of content items as shown in the following example:



The CentraSite Business UI includes a default set of portlets. For a list of the design/change-time portlets and run-time portlets that CentraSite preships, see "Built-in Portlets Reference" on page 296.

```
<Portlets>
  <Portlet id="MyFavoritesPortlet"
           description="INMBU_STR_PORTLET_FAVORITES_DESC"
           type="text"
           dataFeed="MyFavorites"
```

```
          icon="images/system/favorites_16X16.png"
          row="0"
          column="0"
          isVisible="true"
          refreshInterval="0"
          actions="configure,refresh">
  INMBU_STR_PORTLET_NAME_MY_FAVORITES
</Portlet>
<Portlet id="TopXServicesBasedOnInvocationsPortlet"
          description="INMBU_STR_PORTLET_TOPX_SERVICES_BASED_ON_INVOCATIONS"
          type="text"
          dataFeed="TopXServicesBasedOnInvocations"
          icon="images/system/highest_invocation_16X16.png"
          row="0"
          column="1"
          isVisible="true"
          refreshInterval="0"
          actions="configure,refresh">
  INMBU_STR_PORTLET_NAME_TOPX_SERVICES
</Portlet>
<Portlet id="RecentLifecycleChangesPortlet"
          description="INMBU_STR_PORTLET_RECENT_LIFECYCLE_CHANGES_DESC"
          type="text"
          dataFeed="RecentLifecycleChanges"
          icon="images/system/recent_lifecycle_changed_16X16.png"
          row="0"
          column="2"
          isVisible="true"
          refreshInterval="0"
          actions="configure,refresh">
 INMBU_STR_PORTLET_NAME_RECENT_LCM_CHANGES
</Portlet>
<Portlet id="LastCreatedAssetsPortlet"
          description="INMBU_STR_PORTLET_RECENTLY_CREATED_ASSETS_DESC"
          type="text"
          dataFeed="LastCreatedAssets"
          icon="images/system/recently_created_16X16.png"
          row="1"
          column="0"
          isVisible="true"
          refreshInterval="0"
          actions="configure,refresh">
  INMBU_STR_PORTLET_NAME_LAST_CREATED_ASSETS
</Portlet>
<Portlet id="MySavedSearchesPortlet"
          description="INMBU_STR_PORTLET_SAVED_SEARCH_DESC"
          type="text"
          dataFeed="MySavedSearches"
          icon="images/system/saved_searches_16X16.png"
          row="1"
          column="1"
          isVisible="true"
          refreshInterval="0"
          actions="configure,refresh">
  INMBU_STR_PORTLET_NAME_MY_SAVED_SEARCHES
</Portlet>
<Portlet id="MyPendingApprovalRequestsPortlet"
          description="INMBU_STR_PORTLET_PENDING_APPROVAL_DESC"
          type="text"
          dataFeed="MyPendingApprovalRequests"
          icon="images/system/pending_approval_16X16.png"
          row="1"
          column="2"
```

```
            isVisible="true"
            refreshInterval="0"
            actions="configure,refresh">
    INMBU_STR_PORTLET_NAME_MY_PENDING_APPROVALS
  </Portlet>
</Portlets>
```

Additionally, you can create a custom portlet to suit your requirement. You define a custom portlet as an extension under the section `Portlets Configuration` in the custom configuration file. For procedures, see "Add Portlet" on page 278.

About Customizing Content Pages

To customize content pages, you can use extension points for the CentraSite Business UI and implement Java classes and methods t to plug in to the extension points.

Extension Points for Customizing Content Pages

An extension point is characterized by the following properties:

- An ID by which it can be referenced.
- A GWT widget that wraps the extension functionality.

The available extension points are described in the following sections.

Log in to CentraSite Business UI

Usage Use at the start of a session of CentraSite Business UI.

Elements
- element name=ExtensionPointLogin
- Value of attribute "custom" (true or false)

Processing When you log in to the user interface, a custom defined login page is rendered.

Provided by *BusinessUI*

Example

```
<ExtensionPointLogin custom="false" />
```

Request an Account

Usage Use this when requesting an account in the CentraSite Business UI.

Elements
- element name=ExtensionPointRegister

- Value of attribute "custom" (true or false)

Processing When you request an account in CentraSite, this invokes a user-defined registration page that displays parameters that are required for entering the user credentials.

Provided by *BusinessUI*

Example

```
<ExtensionPointRegister custom="false" />
```

Extend Activity Menu by Additional Functions

The Activity Menu contains a set of functions that you can perform on the CentraSite Business UI. CentraSite's flexible and extensible registry structure enables you to model any kind of activity menu that you might want to include in your Business UI.

The CentraSite Business UI's Activity Menu helps you access the following functions by default:

- Create Assets
- Global Reports
- Manage Organizations

You can add a custom activity to have the specific function and format that you require.

Additionally, you can change the order of displaying activities within the activity menu.

To define a tailored activity, you perform the following high-level steps:

1. Implement the new activity as a GWT extension point. For procedures, see "Implement Activity as an Extension" on page 265.
2. Configure the new activity in custom configuration file. For procedures, see "Enable Activity through Configuration" on page 266.

Implement Activity as an Extension

Usage Use this to define a custom activity menu. For example, add an activity, reorder the existing activities, and remove activities to suit your requirements.

Elements

- id
- class

Interfaces

- ActivityManager
- ActivityMenu

Abstract base class	Activity
Processing	When starting the user interface, a custom defined activity menu is rendered.
Provided by	*CentraSiteLogicLayer*
Code	See the sample code.

You can find the following sample code for defining an activity as extension point in the CentraSiteBUIExtension.gwt.xml file that is provided in the demos folder under the CentraSite installation folder.

```
<!-- Use ExtensionWidgetFactory by default -->
   <replace-with
 class="com.softwareag.centrasite.bui.extension.client.factory.ExtensionWidgetF
actory">
   <when-type-is
 class="com.softwareag.centrasite.bui.extension.core.client.IExtensionWidgetF
actory"/>
   </replace-with>
```

Enable Activity through Configuration

After you define a custom activity as an extension with the above steps, you need to enable the activity configuration so as to display the activity in the CentraSite Business UI. To enable the custom activity configuration, follow these steps:

Important: The activity configuration parameters initially defined in the configuration file are editable and cannot be protected.

1. Open the custom configuration file.
2. Locate the `Activities Configuration` section under `CLL Configurations`.

   The configuration snippet looks like this:

```
<CLLConfigurations>
 <Activities>
   <Activity id="Create Assets"
              class="com.softwareag.centrasite.api.activity.impl.CreateAssetAc
tivityImpl">
     INMCL_ACTIVITY_CREATE_ASSET
   </Activity>
   <Activity id="Global Reports"
             class="com.softwareag.centrasite.api.activity.impl.GlobalReport
ActivityImpl">
     INMCL_ACTIVITY_GLOBAL_REPORTS
   </Activity>
   <Activity id="Manage Organizations"
             class="com.softwareag.centrasite.api.activity.impl.ManageOrganiz
ationsImpl">
     INMCL_ACTIVITY_MANAGE_ORGANIZATIONS
   </Activity>
 </Activities>
```

```
</CLLConfigurations>
```

3. Append the required custom activity (for example, "Create Report Templates") configuration statement as below:

```
<CLLConfigurations>
 <Activities
   <Activity id="Create Report Templates"
             class="com.softwareag.centrasite.api.activity.impl.CreateRepor
tTemplatesImpl">
      INMCL_ACTIVITY_CREATE_REPORT _TEMPLATES
   </Activity>
 </Activities>
</CLLConfigurations>
```

wherein,

Parameter	Denotes
`id`	A unique identifier for the activity, in this example `"Create Report Templates"`. It uniquely distinguishes an activity in the CentraSite registry. If you wish to reset the activity at a later stage, you identify the activity using this id.
`class`	The implementation class of `"com.softwareag.centrasite.api.activity.Activity"` interface.
`INMCL_ACTIVITY`	The i18n string to display the activity in CentraSite Business UI. If you want to specify a localized name, enter the message ID starting with a prefix "INMCL" (in this example, `"INMCL_ACTIVITY_CREATE_REPORT_TEMPLATES"`). The activity will internally identify the message ID, and display the localized name, if available in the message database. Else, if you specify a name without INMBU prefix, the activity will simply display a plain text name.

4. Now the `Activities Configuration` section looks similar to this.

```
<CLLConfigurations>
 <Activities>
   <Activity id="Create Assets"
              class="com.softwareag.centrasite.api.activity.impl.CreateAsset
ActivityImpl">
      INMCL_ACTIVITY_CREATE_ASSET
   </Activity>
   <Activity id="Global Reports"
             class="com.softwareag.centrasite.api.activity.impl.GlobalRepor
tActivityImpl">
      INMCL_ACTIVITY_GLOBAL_REPORTS</Activity>
   <Activity id="Manage Organizations"
             class="com.softwareag.centrasite.api.activity.impl.ManageOrgani
zationsImpl">
```

```
      INMCL_ACTIVITY_MANAGE_ORGANIZATIONS
   </Activity>
   <Activity id="Create Report Templates"
             class="com.softwareag.centrasite.api.activity.impl.CreateReport
TemplatesImpl">
      INMCL_ACTIVITY_CREATE_REPORT_TEMPLATES
   </Activity>
 </Activities>
</CLLConfigurations>
```

5. Locate the `Activities Configuration` section under `BUI Configurations`.

```
<UIProperties>
  <Activities noOfActivitiesInMainNav="5">
    <Activity refId="Create Assets"
              numOfProfilesPerRow="3"
              token="activity:Create Assets"/>
    <Activity refId="Global Reports"
              token="activity:Global Reports"/>
    <Activity refId="Manage Organizations"
              token="activity:Manage Organizations"/>
  </Activities>
</UIProperties>
```

The configuration snippet looks like this:

6. Append the defined custom activity (for example, "Create Report Templates") configuration statement as below:

```
<Activity refId="Create Report Templates"
          token="customactivity:Create Report Templates"/>
```

wherein,

Parameter	Denotes
`refId`	Refers to an unique identifier `id` for the activity, as defined in the `CLL Configurations`.
`token`	The place tokenizer of the activity that helps in rendering the activity as a deep link URL. **Important:** Be aware that for rendering any custom activity, the place tokenizer should contain the prefix `customactivity:`. Thus for example, a custom activity `"Create Report Templates"` would have the place tokenizer read as `"customactivity:Create Report Templates"`.

7. Now the `Activities Configuration` section looks similar to this.

```
<UIProperties>
  <Activities noOfActivitiesInMainNav="5">
    <Activity refId="Create Assets"
              numOfProfilesPerRow="3"
              token="activity:Create Assets"/>
    <Activity refId="Global Reports"
              token="activity:Global Reports"/>
```

```
    <Activity refId="Manage Organizations"
              token="activity:Manage Organizations"/>
    <Activity refId="Create Report Templates"
              token="customactivity:Create Report Templates"/>
</UIProperties>
```

8. Save and close the configuration file.
9. Restart Software AG Runtime.

Replace Standard Search Widget

Usage Use this when the layout of a standard search widget (comprising of search field, search options and search execution) needs to be replaced with a custom search widget.

Elements
- element name=ExtensionPointSearchWidget
- Value of attribute "custom" (true or false)

Processing When starting the user interface, a custom defined (keyword) search widget is rendered.

Provided by *BusinessUI*

Example `<ExtensionPointSearchWidget custom="false" />`

Advanced Search Criteria

Usage Extend the existing advanced search panel of an asset keyword search for entering custom related search settings, for example, you can add specific search predicates for your own object types.

Elements
- element name=ExtensionPointSearchCriteria
- Value of attribute "custom" (true or false)

Processing
- This extension is initialized via the `Extension.showSearchResults()` method.
- Returns a user-defined advanced search (layout) screen showing the available search options.
- Refreshes the default search results page.

Provided by *BusinessUI*

Example `<ExtensionPointSearchCriteria custom="false" />`

Browse Link

Usage

- Change the text string **Browse** displayed in the default view.
- Change the URL of the **Browse** link to contain either a page of your choice within the CentraSite Business UI, or to an external web page that you regularly visit within the context of your work with CentraSite.

Elements

- element name=ExtensionPointBrowseView
- Value of attribute "custom" (true or false)

Processing

Browse link that would either open a custom Search Results page or a custom link that would either open a CentraSite page or an external web page of your choice.

Provided by

BusinessUI

Example

```
<ExtensionPointBrowseView custom="false" />
```

Browse Search Criteria

Usage

Extend the existing advanced search panel of an asset browse for entering custom related search settings, for example, you can add specific search predicates for your own object types.

Elements

- element name=ExtensionPointBrowseCriteria
- Value of attribute "custom" (true or false)

Processing

- This extension is initialized via the `Extension.showBrowseResults()` method.
- Returns a user-defined advanced search (layout) screen showing the available search options.
- Refreshes the default search results page.

Provided by

BusinessUI

Example

```
<ExtensionPointBrowseCriteria custom="false" />
```

Extend Search View

Usage Change the default layout of entire search view to suit your requirements.

Elements
- element name=ExtensionPointSearch
- Value of attribute "custom" (true or false)

Processing When you opt for a search of assets, this invokes:
- a user-defined advanced search (layout) screen showing the available search options.
- a user-defined search results (layout) screen displaying all assets that fit the search criteria.

Provided by *BusinessUI*

Example
```
<ExtensionPointSearch custom="false" />
```

Replace Standard Asset Detail Page

Usage Use this to customize the layout of a standard asset details page to fit your needs.

Elements
- element name=ExtensionPointAssetDetails
- Value of attribute "custom" (true or false)

Processing If the details page for an asset is opened, an user-defined asset details page is rendered.

Provided by *BusinessUI*

Example
```
<ExtensionPointAssetDetails custom="false" />
```

Add Action Menu

The *Action Menu* allows you to perform various actions such as modifying properties, attaching documents, generating reports etc., for a single asset or a set of assets.

CentraSite supports the following predefined actions:

- Save
- Edit

- Version
- Delete
- Download Documents
- Attach
- Export
- Watch/Unwatch
- Add to List
- Remove from List
- Permission
- Consume
- View Report

You can define actions to suit your needs and configure the tailored action to display in the asset details page and Search Results page.

Additionally, you can customize the way in which you want action to render:

- You can add or remove an action to or from the action menu.
- You can change the text string displayed for an action in the action menu.
- You can change the icon that represents an action in the action menu.
- You can enable an action for "bulk" operation.

To define a tailored action, you perform the following high-level steps:

1. Implement the new action as a GWT extension point. For procedures, see "Implement Action as an Extension" on page 272.
2. Configure the new action in custom configuration file. For procedures, see "Implement Action as an Extension" on page 272.

Implement Action as an Extension

Usage	Use this to define a custom action menu. For example, add an action, reorder the existing actions, enable/disable an action, and remove actions to suit your requirements.
Elements	■ String actionId ■ String commaSeparatedAssetId ■ String positionParam
Interface	See the sample code
Abstract base class	ActionListener

Processing When a list of actions for an action menu is retrieved, the following steps are performed for each known action:

- create an instance of class
- implement the method processAction of type String.

Provided by *BusinessUI*

Code See the sample code

You can find sample code for defining the action menu as an extension point in the file CentraSiteBUIExtension.gwt.xml that is provided in the demos folder under the CentraSite installation folder.

```
<!-- Use ActionListener by default -->
   <replace-with
class="com.softwareag.centrasite.bui.extension.client.action.ActionListener">
   <when-type-is
class="com.softwareag.centrasite.bui.extension.core.client.IActionListener"/>
   </replace-with>
```

Enable Action through Configuration

After you define a custom action as an extension with the above steps, you need to enable the custom action configuration so as to display the action in the CentraSite Business UI. To enable a custom action configuration, follow these steps:

Important: The action configuration parameters initially defined in the configuration file are editable and cannot be protected.

1. Open the custom configuration file.
2. Locate the `Actions Configuration` section under `CLL Configuration`.

   The configuration snippet looks like this:

```
<CLLConfigurations>
 <Actions>
      <Action id="SaveAction" inbox="false" bulk="false" group="basic"
              icon="images/system/actionbar/01_Save.gif"
              class="com.softwareag.centrasite.api.csom.action.impl.SaveAct
ionImpl">
         INMCL_ACTION_SAVE
      </Action>
      <Action id="EditAction" inbox="false" bulk="false" group="basic"
              icon="images/system/actionbar/02_Edit.gif"
              class="com.softwareag.centrasite.api.csom.action.impl.EditActi
onImpl">
         INMCL_ACTION_EDIT
      </Action>
      <Action id="NewVersionAction" inbox="false" bulk="true" group="basic"
              icon="images/system/actionbar/03_NewVersion.gif"
               class="com.softwareag.centrasite.api.csom.action.impl.NewVer
sionActionImpl">
         INMCL_ACTION_VERSION
      </Action>
```

```
      <Action id="DeleteAction" inbox="false" bulk="true" group="basic"
              icon="images/system/actionbar/04_Delete.gif"
               class="com.softwareag.centrasite.api.csom.action.impl.Delete
ActionImpl">
         INMCL_ACTION_DELETE
      </Action>
      <Action id="DownloadDocumentAction" isAllowedForGuest="true"
              inbox="false" bulk="true" group="attach"
              icon="images/system/actionbar/download_32x32.png"
               class="com.softwareag.centrasite.api.csom.action.impl.Downl
oadDocumentActionImpl">
         INMCL_ACTION_DOWNLOADDOCS
      </Action>
      <Action id="AttachDocumentAction" timeout="600000" inbox="false"
              bulk="false" group="attach"
              icon="images/system/actionbar/08_Attach.gif"
              class="com.softwareag.centrasite.api.csom.action.impl.AttachDo
cumentActionImpl">
         INMCL_ACTION_ATTACH
      </Action>
      <Action id="Export" isAllowedForGuest="true" inbox="false" bulk="true"
              group="attach" icon="images/system/actionbar/Export.gif"
              class="com.softwareag.centrasite.api.csom.action.impl.ExportAc
tionImpl">
         INMCL_ACTION_EXPORT
      </Action>
      <Action id="WatchAction" inbox="false" bulk="true" group="moniter"
              icon="images/system/actionbar/watch.png"
              class="com.softwareag.centrasite.api.csom.action.impl.WatchAc
tionImpl">
      INMCL_ACTION_WATCH
      </Action>
      <Action id="UnwatchAction" inbox="false" bulk="true" group="moniter"
              icon="images/system/actionbar/unwatch.png"
              class="com.softwareag.centrasite.api.csom.action.impl.Unwatch
ActionImpl">
      INMCL_ACTION_UNWATCH
      </Action>
      <Action id="AddToListAction" inbox="false" bulk="true" group="moniter"
              icon="images/system/actionbar/AddtoList_32x32.png"
               class="com.softwareag.centrasite.api.csom.action.impl.AddToLi
stActionImpl">
      INMCL_ACTION_ADD_TO_LIST
      </Action>
      <Action id="RemoveFromListAction" inbox="false" bulk="true"
              group="moniter"
              icon="images/system/actionbar/RemovefromList_32X32_up.png"
               class="com.softwareag.centrasite.api.csom.action.impl.RemoveF
romListActionImpl">
      INMCL_ACTION_REMOVE_FROM_LIST
      </Action>
      <Action id="Consume" inbox="false" bulk="true" group="moniter"
              icon="images/system/actionbar/consume.png"
              class="com.softwareag.centrasite.api.csom.action.impl.ConsumeA
ctionImpl">
      INMCL_ACTION_CONSUME
</Action>
      <Action id="ApproveAction" inbox="false" bulk="false" group="moniter"
              icon="images/system/actionbar/Approve.png"
               class="com.softwareag.centrasite.api.csom.action.impl.Approve
ActionImpl">
      NMCL_ACTION_APPROVE
      </Action>
```

```
      <Action id="RejectAction" inbox="false" bulk="false" group="moniter"
              icon="images/system/actionbar/Reject.png"
              class="com.softwareag.centrasite.api.csom.action.impl.RejectA
ctionImpl">
      INMCL_ACTION_REJECT
      </Action>
      <Action id="RevertAction" inbox="false" bulk="false" group="moniter"
              icon="images/system/actionbar/Revert.png"
              class="com.softwareag.centrasite.api.csom.action.impl.RevertAc
tionImpl">
      INMCL_ACTION_REVERT
      </Action>
      <Action id="ViewReportAction" inbox="false" bulk="false"
              group="moniter" icon="images/system/actionbar/ViewReport.png"
               class="com.softwareag.centrasite.api.csom.action.impl.ViewRe
portActionImpl">
      INMCL_ACTION_VIEW_REPORT
      </Action>
      <Action id="DeleteNotificationAction" inbox="true" bulk="true"
              group="moniter" icon="images/system/actionbar/04_Delete.gif"
              class="com.softwareag.centrasite.api.csom.action.impl.DeleteN
otificationActionImpl">
      INMCL_ACTION_DELETE_NOTIFICATION
      </Action>
      <Action id="Permission" inbox="false" bulk="false" group="moniter"
              icon="images/system/actionbar/Permission_32x32_up.png"
              class="com.softwareag.centrasite.api.csom.action.impl.Permiss
ionActionImpl">
      INMCL_ACTION_PERMISSION
      </Action>
</Actions>
</CLLConfigurations>
```

3. Append the required custom action (for example, "Change Owner") configuration statement as below:

```
<Action id="ChangeOwnerAction" inbox="false" bulk="false" group="basic"
         icon="images/system/actionbar/ChangeOwner.gif"
         class="com.softwareag.centrasite.api.csom.action.impl.ChangeOwnerAc
tionImpl">
   INMCL_ACTION_CHANGE_OWNER
</Action>
```

wherein,

Parameter	Denotes
`Action id`	A unique identifier for the action, in this example `"ChangeOwnerAction"`. It uniquely distinguishes an action in the CentraSite registry. If you wish to reset the action at a later stage, you identify the action using this id.
`class`	The implementation class of `"com.softwareag.centrasite.api.csom.action.impl.ChangeOwnerActionImpl"` interface.
`INMCL_ACTIVITY`	The i18n string to display the action in CentraSite Business UI.

Parameter	Denotes
	If you want to specify a localized name, enter the message ID starting with a prefix "INMBU" (in this example, `INMCL_ACTION_CHANGE_OWNER`). The action will internally identify the message ID, and display the localized name, if available in the message database. Else, if you specify a name without INMBU prefix, the action will simply display a plain text name.

4. Now the `Actions Configuration` section looks similar to this.

```
<CLLConfigurations>
 <Actions>
      <Action id="SaveAction" inbox="false" bulk="false" group="basic"
              icon="images/system/actionbar/01_Save.gif"
              class="com.softwareag.centrasite.api.csom.action.impl.SaveActi
onImpl">
         INMCL_ACTION_SAVE
      </Action>
      <Action id="EditAction" inbox="false" bulk="false" group="basic"
              icon="images/system/actionbar/02_Edit.gif"
              class="com.softwareag.centrasite.api.csom.action.impl.EditAc
tionImpl">
         INMCL_ACTION_EDIT
      </Action>
      <Action id="NewVersionAction" inbox="false" bulk="true" group="basic"
              icon="images/system/actionbar/03_NewVersion.gif"
              class="com.softwareag.centrasite.api.csom.action.impl.NewVersi
onActionImpl">
         INMCL_ACTION_VERSION
      </Action>
      <Action id="DeleteAction" inbox="false" bulk="true" group="basic"
              icon="images/system/actionbar/04_Delete.gif"
              class="com.softwareag.centrasite.api.csom.action.impl.DeleteA
ctionImpl">
         INMCL_ACTION_DELETE
      </Action>
      <Action id="DownloadDocumentAction" isAllowedForGuest="true"
              inbox="false" bulk="true" group="attach"
             icon="images/system/actionbar/download_32x32.png"
             class="com.softwareag.centrasite.api.csom.action.impl.DownloadD
ocumentActionImpl">
         INMCL_ACTION_DOWNLOADDOCS
      </Action>
      <Action id="AttachDocumentAction" timeout="600000" inbox="false"
              bulk="false" group="attach"
              icon="images/system/actionbar/08_Attach.gif"
              class="com.softwareag.centrasite.api.csom.action.impl.AttachD
ocumentActionImpl">
         INMCL_ACTION_ATTACH
      </Action>
      <Action id="Export" isAllowedForGuest="true" inbox="false" bulk="true"
              group="attach" icon="images/system/actionbar/Export.gif"
              class="com.softwareag.centrasite.api.csom.action.impl.ExportAc
tionImpl">
         INMCL_ACTION_EXPORT</Action>
      <Action id="WatchAction" inbox="false" bulk="true" group="moniter"
              icon="images/system/actionbar/watch.png"
              class="com.softwareag.centrasite.api.csom.action.impl.WatchAct
```

```
ionImpl">
         INMCL_ACTION_WATCH
      </Action>
      <Action id="UnwatchAction" inbox="false" bulk="true" group="moniter"
              icon="images/system/actionbar/unwatch.png"
              class="com.softwareag.centrasite.api.csom.action.impl.UnwatchA
ctionImpl">
         INMCL_ACTION_UNWATCH</Action>
      <Action id="AddToListAction" inbox="false" bulk="true" group="moniter"
              icon="images/system/actionbar/AddtoList_32x32.png"
               class="com.softwareag.centrasite.api.csom.action.impl.AddToLis
tActionImpl">
         INMCL_ACTION_ADD_TO_LIST
      </Action>
      <Action id="RemoveFromListAction" inbox="false" bulk="true"
              group="moniter"
              icon="images/system/actionbar/RemovefromList_32X32_up.png"
              class="com.softwareag.centrasite.api.csom.action.impl.RemoveFr
omListActionImpl">
         INMCL_ACTION_REMOVE_FROM_LIST
      </Action>
      <Action id="Consume" inbox="false" bulk="true" group="moniter"
              icon="images/system/actionbar/consume.png"
              class="com.softwareag.centrasite.api.csom.action.impl.ConsumeA
ctionImpl">
         INMCL_ACTION_CONSUME
      </Action>
      <Action id="ApproveAction" inbox="false" bulk="false" group="moniter"
              icon="images/system/actionbar/Approve.png"
              class="com.softwareag.centrasite.api.csom.action.impl.ApproveA
ctionImpl">
         INMCL_ACTION_APPROVE
      </Action>
      <Action id="RejectAction" inbox="false" bulk="false" group="moniter"
              icon="images/system/actionbar/Reject.png"
               class="com.softwareag.centrasite.api.csom.action.impl.Reject
ActionImpl">
         INMCL_ACTION_REJECT
      </Action>
      <Action id="RevertAction" inbox="false" bulk="false" group="moniter"
              icon="images/system/actionbar/Revert.png"
              class="com.softwareag.centrasite.api.csom.action.impl.RevertA
ctionImpl">
         INMCL_ACTION_REVERT
      </Action>
      <Action id="ViewReportAction" inbox="false" bulk="false"
              group="moniter" icon="images/system/actionbar/ViewReport.png"
              class="com.softwareag.centrasite.api.csom.action.impl.ViewRepo
rtActionImpl">INMCL_ACTION_VIEW_REPORT</Action>
      <Action id="DeleteNotificationAction" inbox="true" bulk="true"
              group="moniter" icon="images/system/actionbar/04_Delete.gif"
              class="com.softwareag.centrasite.api.csom.action.impl.Delete
NotificationActionImpl">
         INMCL_ACTION_DELETE_NOTIFICATION
      </Action>
      <Action id="Permission" inbox="false" bulk="false" group="moniter"
              icon="images/system/actionbar/Permission_32x32_up.png"
              class="com.softwareag.centrasite.api.csom.action.impl.Permissi
onActionImpl">
         INMCL_ACTION_PERMISSION
      </Action>
      <Action id="ChangeOwnerAction" inbox="false" bulk="false" group="basic"
              icon="images/system/actionbar/ChangeOwner.gif"
```

```
                 class="com.softwareag.centrasite.api.csom.action.impl.ChangeO
wnerActionImpl">
         INMCL_ACTION_CHANGE_OWNER
      </Action>
</Actions>
</CLLConfigurations>
```

5. To enable an action entry for bulk usage, change “false” to “true”. Similarly, if the action is already available for bulk usage and you want to revert back, set the value to “false”.
6. Save and close the configuration file.
7. Restart Software AG Runtime.

Add Portlet

Portlets enable you to create shortcuts and access the frequently-used functions (for example, Most Popular Assets, Recent Searches etc.) that you routinely use or otherwise want to keep close at hand.

The CentraSite Business UI's Welcome page contains a default set of portlets, where each portlet represents a collection of predefined entries fetched using a saved search query.

You can define portlets to suit your needs and configure the tailored portlet to display in the Welcome page.

Additionally, you can customize the way in which you want portlet to render:

- You can add a portlet of type "custom".
- You can define the configuration settings of the custom portlet.
- You can specify a display icon to represent the custom portlet in the Welcome page.
- You can make the custom portlet visible or invisible in the Welcome page.
- You can specify a location for displaying the custom portlet in the Welcome page.
- You can set the refresh interval for the custom portlet.

To define a tailored portlet, you perform the following high-level steps:

1. Implement the new portlet as a GWT extension point. For procedures, see "Implement Portlet as an Extension" on page 278.
2. Configure the new portlet in custom configuration file. For procedures, see "Enable Portlet through Configuration" on page 280.

Implement Portlet as an Extension

Usage Define a portlet of type "custom" in the CentraSite Business UI.

Elements renderPortletContent

- String portletId

- String contentId
- String commaSeparatedParam

executePortletAction

- String portletId
- String actionId
- String contentId
- String commaSeparatedParam

Abstract base class

IPortListener

Processing

When the Welcome page containing one or more `custom` type portlets is loaded in the CentraSite Business UI, the following steps are performed for each "custom" portlet:

- create an instance of class
- implement the method renderPortletContent (within the class instance) to render each custom portlet defined in the configuration file.
- implement the method executePortletAction (within the class instance) to render each action of a custom portlet defined in the configuration file.

Provided by

BusinessUI

Code

See the sample code

You can find the following sample code for defining a portlet as extension point in the CentraSiteBUIExtension.gwt.xml file that is provided in the demos folder under the CentraSite installation folder.

```
<!-- Use PortletListener by default -->
  <replace-with
class="com.softwareag.centrasite.bui.extension.client.portlet.PortletListener">
    <when-type-is
class="com.softwareag.centrasite.bui.extension.core.client.IPortletListener"/>
  </replace-with>
```

Important: On a “custom” portlet defined as GWT extension point, whenever you execute a basic action (e.g., Expand, Collapse or Close) through the user interface, CentraSite internally sends a corresponding actionId to the GWT extension.

Enable Portlet through Configuration

After you define a custom portlet as an extension with the above steps, you need to enable the custom portlet configuration so as to display the portlet in the CentraSite Business UI. To enable a custom portlet configuration, follow these steps:

Important: The portlet configuration parameters initially defined in the configuration file are editable and cannot be protected.

1. Open the custom configuration file.
2. Locate the `Portlet Configuration` under `BUI Configuration`.

   The configuration snippet looks like this:

```
<Portlets>
  <Portlet id="MyFavoritesPortlet"
           description="INMBU_STR_PORTLET_FAVORITES_DESC"
           type="text"
           dataFeed="MyFavorites"
           icon="images/system/favorites_16X16.png"
           row="0"
           column="0"
           isVisible="true"
           refreshInterval="0"
           actions="configure,refresh">
    INMBU_STR_PORTLET_NAME_MY_FAVORITES
  </Portlet>
  <Portlet id="TopXServicesBasedOnInvocationsPortlet"
           description="INMBU_STR_PORTLET_TOPX_SERVICES_BASED_ON_INVOCATIONS"
           type="text"
           dataFeed="TopXServicesBasedOnInvocations"
           icon="images/system/highest_invocation_16X16.png"
           row="0"
           column="1"
           isVisible="true"
           refreshInterval="0"
           actions="configure,refresh">
    INMBU_STR_PORTLET_NAME_TOPX_SERVICES
  </Portlet>
  <Portlet id="RecentLifecycleChangesPortlet"
           description="INMBU_STR_PORTLET_RECENT_LIFECYCLE_CHANGES_DESC"
           type="text"
           dataFeed="RecentLifecycleChanges"
           icon="images/system/recent_lifecycle_changed_16X16.png"
           row="0"
           column="2"
           isVisible="true"
           refreshInterval="0"
           actions="configure,refresh">
    INMBU_STR_PORTLET_NAME_RECENT_LCM_CHANGES
  </Portlet>
  <Portlet id="LastCreatedAssetsPortlet"
           description="INMBU_STR_PORTLET_RECENTLY_CREATED_ASSETS_DESC"
           type="text"
           dataFeed="LastCreatedAssets"
           icon="images/system/recently_created_16X16.png"
           row="1"
           column="0"
           isVisible="true"
```

```
          refreshInterval="0"
          actions="configure,refresh">
    INMBU_STR_PORTLET_NAME_LAST_CREATED_ASSETS
  </Portlet>
  <Portlet id="MySavedSearchesPortlet"
          description="INMBU_STR_PORTLET_SAVED_SEARCH_DESC"
          type="text"
          dataFeed="MySavedSearches"
          icon="images/system/saved_searches_16X16.png"
          row="1"
          column="1"
          isVisible="true"
          refreshInterval="0"
          actions="configure,refresh">
    INMBU_STR_PORTLET_NAME_MY_SAVED_SEARCHES
  </Portlet>
</Portlets>
```

3. Append the required custom portlet (for example, "My Custom Portlet") configuration statement as below:

```
<Portlet id="MyCustomPortlet"
        description="INMBU_STR_PORTLET_CUSTOM_DESC"
        type="text"
        dataFeed="MyFavorites"
        icon="images/system/custom_16X16.png"
        row="1"
        column="1"
        isVisible="true"
        refreshInterval="0"
        actions="configure,refresh">
  INMBU_STR_PORTLET_NAME_MY_CUSTOM_PORTLET
</Portlet>
```

wherein,

Parameter	Description
`id [Portlet]`	A unique identifier for the portlet. It uniquely distinguishes a portlet in the CentraSite registry. If you wish to reset the portlet at a later stage, you identify the portlet using this id.
`description`	A comment or descriptive information about the portlet.
`type`	The type of portlet. CentraSite Business UI supports the following portlet types: ■ text ■ iframe ■ graphical ■ custom
`dataFeed`	*Required for text/graphical type*. Name of a saved search query that feeds in the data to the portlet.

Parameter	Description
`url`	*Required for iframe type*. An arbitrary URL that points to any external HTML page. It renders the HTML content within an HTML IFRAME on the portlet.
`icon`	An icon to display at the top left corner of the portlet header. The icon is specified as the path to an image file. Prerequisite: The icon must be in PNG format. To ensure proper alignment when it is displayed in the user interface, the icon must be 16 x 16 pixels in size. The icon must reside in the folder <*CentraSiteInstallDir*> \cast\cswebapps\BusinessUI \images\system. The path for the icon should be specified as images/system/ icon.png
`row, column`	The row and column number to place a portlet in the Welcome page. By default, the portlet is configured to start at level 0. Thus a setting of 0 (zero) refers to the first portlet in the Welcome page. For example, if you want to place a portlet in second row and fourth column, you will need to specify `row=1column=3`. However, if at a later state, you attempt to drag and drop a portlet in the Welcome page, automatically updates the GUI configuration in the repository. **Important:** To define a portlet of type custom, make sure that you have set the value of row=-1column=-1 in order to dynamically place the custom portlet in your Welcome page.
`isVisible`	To show/hide the portlet in the Welcome page when you log in to CentraSite Business UI for the first time after product installation. Once you have logged in, you can show/hide the portlet directly from the Welcome page. Possible values: true (default value) – show the portlet; false – hide the portlet.

Parameter	Description
`refreshInterval`	The time interval (in seconds) to refresh your portlet content automatically. **Note:** A value 0 is indicates that the portlet content will not be refreshed automatically.
`actions`	Actions that you want to display in the portlet's configuration. By default, CentraSite supports the following actions: ■ Configure ■ Refresh **Note:** You can specify a comma separated list of actions. **Important:** When you define a custom action, make sure that you do not specify any of the inherited actions (Expand, Collapse and Close) explicitly.

4. Now the `Portlet Configuration` section looks similar to this.

```
<Portlets>
  <Portlet id="MyFavoritesPortlet"
           description="INMBU_STR_PORTLET_FAVORITES_DESC"
           type="text"
           dataFeed="MyFavorites"
           icon="images/system/favorites_16X16.png"
           row="0"
           column="0"
           isVisible="true"
           refreshInterval="0"
           actions="configure,refresh">
    INMBU_STR_PORTLET_NAME_MY_FAVORITES
  </Portlet>
  <Portlet id="TopXServicesBasedOnInvocationsPortlet"
           description="INMBU_STR_PORTLET_TOPX_SERVICES_BASED_ON_INVOCATIONS"
           type="text"
           dataFeed="TopXServicesBasedOnInvocations"
           icon="images/system/highest_invocation_16X16.png"
           row="0"
           column="1"
           isVisible="true"
           refreshInterval="0"
           actions="configure,refresh">
    INMBU_STR_PORTLET_NAME_TOPX_SERVICES
  </Portlet>
  <Portlet id="RecentLifecycleChangesPortlet"
           description="INMBU_STR_PORTLET_RECENT_LIFECYCLE_CHANGES_DESC"
           type="text"
           dataFeed="RecentLifecycleChanges"
           icon="images/system/recent_lifecycle_changed_16X16.png"
           row="0"
           column="2"
```

```
          isVisible="true"
          refreshInterval="0"
          actions="configure,refresh">
    INMBU_STR_PORTLET_NAME_RECENT_LCM_CHANGES
  </Portlet>
  <Portlet id="LastCreatedAssetsPortlet"
          description="INMBU_STR_PORTLET_RECENTLY_CREATED_ASSETS_DESC"
          type="text"
          dataFeed="LastCreatedAssets"
          icon="images/system/recently_created_16X16.png"
          row="1"
          column="0"
          isVisible="true"
          refreshInterval="0"
          actions="configure,refresh">
    INMBU_STR_PORTLET_NAME_LAST_CREATED_ASSETS
  </Portlet>
  <Portlet id="MySavedSearchesPortlet"
          description="INMBU_STR_PORTLET_SAVED_SEARCH_DESC"
          type="text"
          dataFeed="MySavedSearches"
          icon="images/system/saved_searches_16X16.png"
          row="1"
          column="1"
          isVisible="true"
          refreshInterval="0"
          actions="configure,refresh">
    INMBU_STR_PORTLET_NAME_MY_SAVED_SEARCHES
  </Portlet>
  <Portlet id="MyCustomPortlet"
          description="INMBU_STR_PORTLET_CUSTOM_DESC"
          type="text"
          dataFeed="MyFavorites"
          icon="images/system/custom_16X16.png"
          row="1"
          column="1"
          isVisible="true"
          refreshInterval="0"
          actions="configure,refresh">
    INMBU_STR_PORTLET_NAME_MY_CUSTOM_PORTLET
  </Portlet>
</Portlets>
```

5. Define the actions that you want to render in the portlet's settings as described in the following property statements.

```
<PortletActions>
        <PortletAction id="configure">
            INMBU_STR_PORTLET_ACTION_EDIT
        </PortletAction>
        <PortletAction id="refresh">
            INMBU_STR_PORTLET_ACTION_REFRESH
        </PortletAction>
      </PortletActions>
```

Parameter	Description
`id` `[PortletAction]`	A unique identifier for the action. It uniquely distinguishes an action in the CentraSite registry. If you

Parameter	Description
	want to reset the action at a later stage, you identify the action using this id.

6. Define the parameters that you wish to display in the portlet as described in the following property statements:

```
<PortletParameters>
    <PortletParameter
        id="MyFavoritesPortletParam" ref="MyFavoritesPortlet"
        params="noOfAssets#VSEP#10#PSEP#assetTypeKeys#VSEP#uddi:cd906138-59
f5-4d7f-4f5f-6115adfa8d9c#ASEP#uddi:cd906138-59f5-4d7f-4f5f-6115adfa8e3d"
        attributes="" />
</PortletParameters>
```

Parameter	Description
`id` `[PortletParameter]`	A unique identifier for the parameter. It uniquely distinguishes the portlet's parameter in the CentraSite registry. If you want to reset the parameter at a later stage, you identify the parameter using this id.
`ref`	The specified unique identifier for the portlet.
`params`	Parameters that you want to display in the portlet's configuration. The parameter values determine which data displays in the portlet. When you define a parameter, keep the following points in mind: ■ A value separator (`#VSEP#`) is required between the parameter name and the value. Thus, for example, if you want to define a parameter `noOfAssets` with value `10`, you can write the parameter name-value pair as `noOfAssets#VSEP#10` ■ A parameter separator (`#PSEP#`) is required between the multiple parameters. Thus, for example, if you want to define two parameters, one parameter `noOfAssets` with value `10`, and another parameter `assetTypeKeys` with value `uddi:cd906138-59f5-4d7f-4f5f-6115adfa8d9c`, you can write the above parameters as `params="noOfAssetsToReturn#VSEP#10#PSEP#asset`

Parameter	Description
	`TypeKeys#VSEP#uddi:cd906138-59f5-4d7f-4f5f-6115adfa8d9c"` ■ An array separator (`#ASEP#`) is required between multiple values (i.e., an array of values). Thus, for example, if you want to assign a parameter `assetTypeKeys` with more than one value (`uddi:cd906138-59f5-4d7f-4f5f-6115adfa8d9c`, `uddi:cd906138-59f5-4d7f-4f5f-6115adfa8e3d`), you can write the parameter as `assetTypeKeys#VSEP#uddi:cd906138-59f5-4d7f-4f5f-6115adfa8d9c#ASEP#uddi:cd906138-59f5-4d7f-4f5f-6115adfa8e3d`
`attributes`	List of attributes you wanted to display in the portlet's configuration.

7. *For a graphical chart configuration.* If you have opted to show different colors in a graphical chart configuration, specify the colors for each bar, line or pie plot.

   In this case, the line would look like this:

```
<Colors>
  <Color id="#233356">OceanBlue</Color>
  <Color id="#038299">LagunaBlue</Color>
</Colors>
```

   The `<Colors>` list should have the colors specified in the HEX color code format. The HEX format is a hash (`#`) followed by 6 numbers or letters. The position of the numbers/letters correlates to the RGB value. For example, "`#233356`" translates into "OceanBlue".

8. Locate the following property statement and specify the required values:

```
<PortletConfigurations portletsPerRow="3" settingsPopupColumnCount="2"
    helpToken="HELPCENTER_007" headerMaxCharacterLength="27">
```

Parameter	Description
`PortletsPerRow`	The number of portlets to display per row in the Welcome page.
`settingsPopupColumnCount`	The number of columns to display in the **Configure Your Welcome Page** dialog.
`helpUrl`	The URL of the standard Help Center that's delivered with the CentraSite Business UI.

Parameter	Description
`headerMaxCharacterLength`	The maximum content length of a portlet's header text. By default, the allowed header text length is 27 characters. If the character in the header text exceeds 27, the text gets automatically truncated.

9. Save and close the configuration file.
10. Restart Software AG Runtime.

Portlet Display Names

The display name for a portlet or an action is the name that is displayed by the CentraSite Business UI. A portlet's or action's display name can either be a localized string fetched from the message database or a plain string.

If you want to specify a localized name, enter the message ID. The message ID (e.g., `INMBU_LBL_PORTLET_PENDING_APPROVALS`) must begin with a `INMBU` label. The portlet will internally identify the message ID, and display the localized name, if available in the message database. Else, if you specify a name without INMBU label, the portlet will simply display a plain text name.

For details on configuration of the portlets using the user interface, see "Working with Portlets" on page 234.

Computed Runtime Actions

If you would like a runtime workflow to execute a task that is not provided by a built-in runtime action, you can create a custom computed runtime action to perform the work.

The CentraSite Business UI contains a default set of actions, where each action represents a collection of predefined parameters.

Your CentraSite installation contains a sample computed action (which is contained as an extension in demos folder) that you can adapt to suit your needs and configure the tailored action to display in the policy accordion.

To define a tailored computed action, you perform the following high-level steps:

1. Implement the new runtime action as a GWT extension point. For procedures, see "Implement Runtime Action as an Extension" on page 287.
2. Configure the new runtime action in custom configuration file. For procedures, see "Enable Runtime Action through Configuration" on page 288.

Implement Runtime Action as an Extension

Usage Define a computed runtime action in the CentraSite Business UI.

Provided by *BusinessUI*

Code See the sample code

You can find sample code for defining a computed runtime action as extension point in the CentraSiteBUIExtension.gwt.xml file in the demos folder under the CentraSite installation folder.

Enable Runtime Action through Configuration

After you define the computed action as an extension with the above steps, enable the computed action configuration so as to display the action in the policy accordion.

Important: The action parameters defined in the configuration file are editable and cannot be protected.

1. Open the custom configuration file.
2. Locate `Policy Action Templates` under the `CLL Configuration`.
3. Append the required computed runtime action (“MyComputedRuntimeAction”) configuration statement as below:

```
<PolicyActions>
   <PolicyAction
     id="uddi:44e3e2de-064c-432f-b67a-8fbca0fb04d6"
     class="com.softwareag.centrasite.bui.extension.service.MyComputedRuntim
eActionParser" />
</PolicyActions>
```

   wherein,

Parameter	Description
`id`	A unique identifier for the computed action. It uniquely distinguishes an action in the CentraSite registry. If you wish to reconfigure the action at a later stage, you identify the action using this id.
`class`	A parser implementation for the computed action.

4. Save and close the configuration file.
5. Restart Software AG Runtime.

Action Display Names

The display name for a portlet or an action is the name that is displayed by the CentraSite Business UI. A portlet's or action's display name can either be a localized string fetched from the message database or a plain string.

If you want to specify a localized name, enter the message ID. The message ID (e.g., `INMBU_LBL_PORTLET_PENDING_APPROVALS`) must begin with a `INMBU` label. The portlet will internally identify the message ID, and display the localized name, if available in the message database. Else, if you specify a name without INMBU label, the portlet will simply display a plain text name.

For details on configuration of the portlets using the user interface, see "Working with Portlets" on page 234.

GWT Sample Code Location

You can find sample code for defining the above mentioned extension points in the file ExtensionViewFactory.java that is provided in the demos folder under the CentraSite installation folder.

For configuring an extension on the CentraSite Business UI, see "Configuring an Extension" on page 293.

Step-by-Step Guide for Customizing Content Pages

A step-by-step guide of how to create customized extensions for the CentraSite Business UI content pages is provided in "Installing an Extension" on page 289.

Installing an Extension

This section gives examples of how you can use the pluggable architecture to define and install the extensions.

Eclipse Prerequisites

The descriptions in this section are based on the GWT project CentraSiteBUIExtension.gwt.xml. We will show how to use Eclipse and standard CentraSite features in order to add the extension to CentraSite.

Before you start, ensure that you have a recent Eclipse version installed on your machine. Eclipse is available as a download from http://www.eclipse.org/.

In Eclipse, select **Help > Install New Software** in order to configure usage of GWT plug-in with the Java version currently supported by CentraSite.

The system requirements can be checked at http://documentation.softwareag.com/.

Setting up the GWT project

To set up a new GWT project in Eclipse, you must perform the following high-level steps:

1. Set the classpath.
2. Import the GWT project.

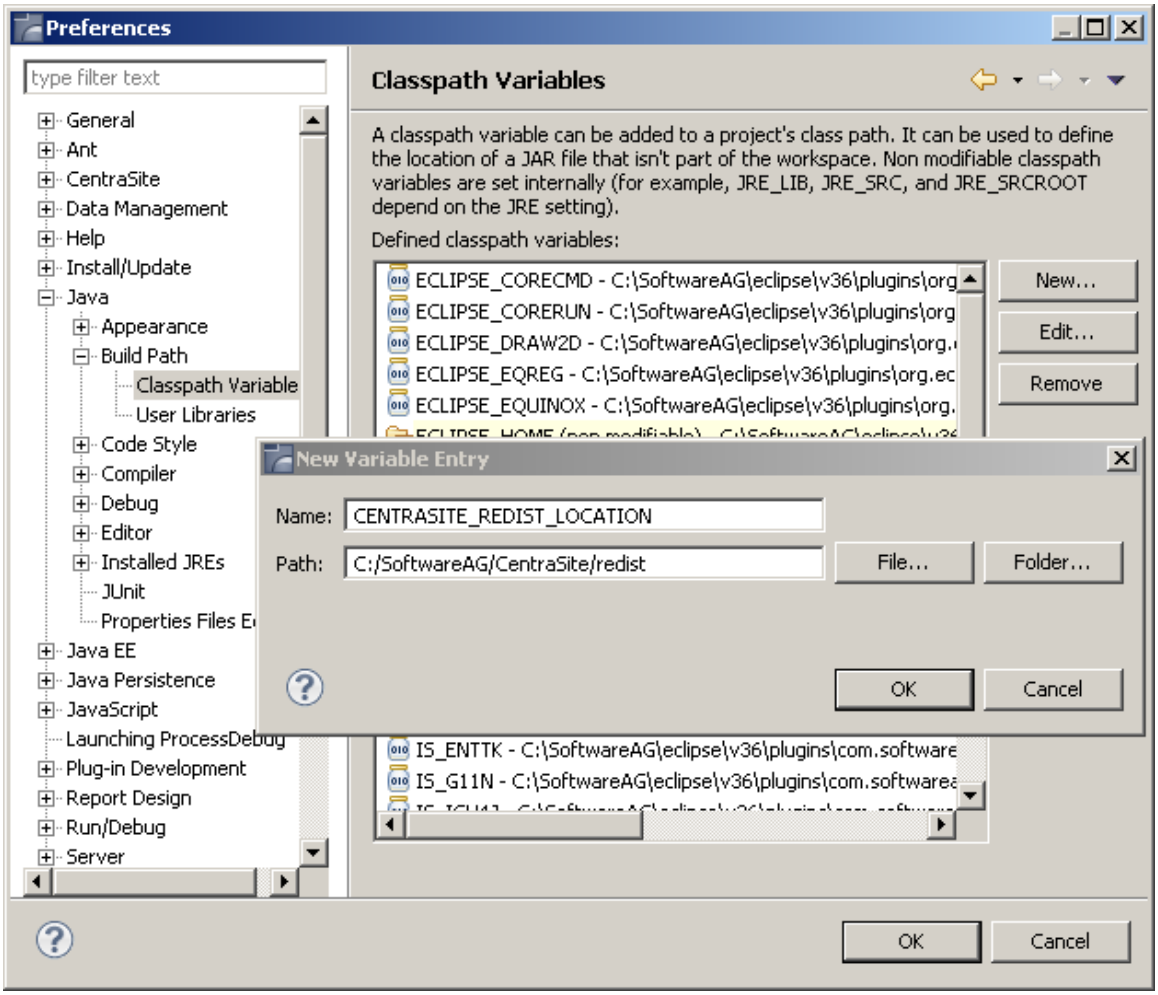
Setting the Classpath

Specify the classpath variables for the new GWT project as follows.

To specify classpaths for the new project

1. In Eclipse, select **Window > Preferences > Java > Build Path**.
2. Expand the **Build Path** node.
3. Select the **Classpath Variables**.
4. In the **Classpath Variables** dialog, choose **New**. The **New Variable Entry** popup displays.
5. Specify a name for the new classpath variable (`CENTRASITE_REDIST_LOCATION`) and the location. The redist folder is typically located at C:\SoftwareAG\CentraSite\redist (Microsoft Windows) or /opt/softwareag/CentraSite/redist (UNIX).

   Figure 4. Example:



6. Click **OK**.

7. In the **Classpath Variables** dialog that becomes visible again, click **OK**.
8. Specify a second classpath variable `CENTRASITE_RTS_LOCATION`. The rts folder is also typically located at <CentraSiteInstallDir>.

   Two new Java classpath variables called `CENTRASITE_REDIST_LOCATION` and `CENTRASITE_RTS_LOCATION` have been created due to the previous actions.
9. Add all of the JAR files contained in the redist folder to the classpath.

   In addition, if you upgraded to CentraSite 9.7 from a previous version of CentraSite, and you want to use the extension points of the previous version, you must do the following:

   a. Open the MANIFEST.MF file located in the directory old_<CentraSiteInstallDir> \cast\cswebapps\BusinessUI\META-INF.

   b. You will find the relative path of the jar files, for example, CentraSiteBUIExtension.jar and CentraSiteBUIExtensionCore.jar, in the `Bundle-ClassPath` section:

   ```
   WEB-INF/lib/CentraSiteBUIExtension.jar,WEB-INF/lib/CentraSiteBUI
       BUIExtensionCore.jar
   ```

   c. Copy the file path into the `Bundle-ClassPath` section in the MANIFEST.MF file located in the directory 9.7_<*CentraSiteInstallDir*> \cast\cswebapps\BusinessUI \META-INF.

   > **Note:** If you have created custom extensions in your previous version of CentraSite, make sure you include their associated jar files into the META-INF folder.

   d. Add the extension's associated Java archives to the directory 9.7_<*CentraSiteInstallDir*> \cast\cswebapps\BusinessUI\META-INF.

   e. Save your modifications.

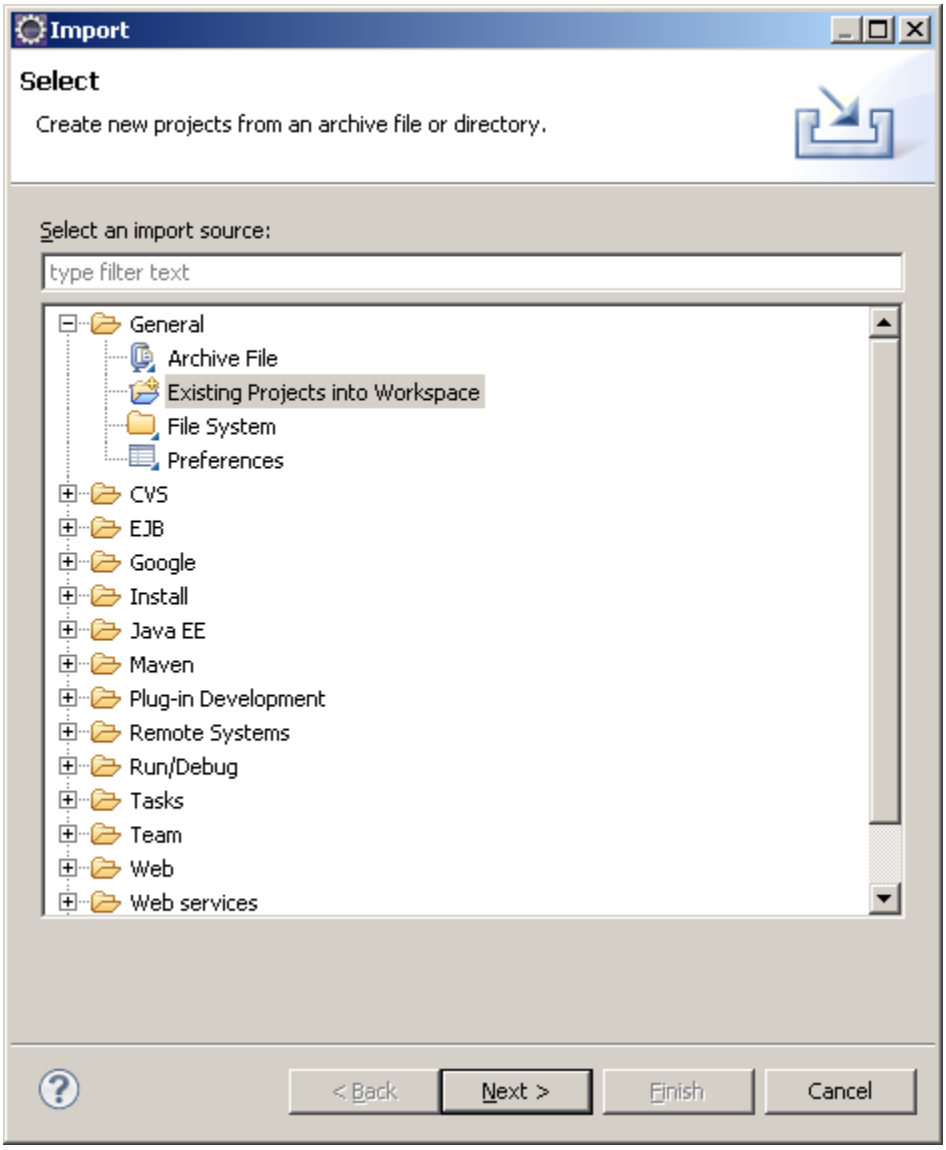
   f. Restart the Software AG Runtime.

Importing the GWT Project

Import a new GWT project in Eclipse as follows:

To import a project in Eclipse

1. Select **File > Import** from the main menu.
2. On the **Select** page of the **Import** wizard, select **Existing Projects into Workspace** and click **Next**.



3. On the **Import Projects** dialog, choose the **Select root directory** radio button.
4. Click the **Browse** button that is located beside the input field labeled **Select root directory**. The **Browse for Folder** dialog is displayed.
5. Within the **Browse for Folder** dialog, navigate to and click on the CentraSiteBUIExtension folder of the Software AG Runtime application. This folder contains the definitions for the extensions that CentraSite supports out of the box.

   The CentraSiteBUIExtension folder resides in the demos folder under the CentraSite installation directory.
6. Click **OK**.
7. In the **Import Projects** dialog that becomes visible again, click **Finish**.

A new Java project called `CentraSiteBUIExtension` has been created due to the previous actions. This project is now visible in the **Package Explorer** view in Eclipse.

It contains example implementations of the existing extension points for the Business UI. You can modify them to suit your needs. For using your own Widget as Extension Point, specify it as a return value in the ExtensionWidgetFactory class in the com.softwareag.centrasite.bui.extension.client.factory package.

8. Open the file build.properties. Enter the paths to your `GoogleWebToolkit_HOME`, the Extension target location, the redist and the rts folder. Now the project can be build using apache ant. Run the build.xml script.
9. To install the extension, use the ant `deploy` target. Open a command line and navigate to your project location. Enter: `ant deploy`.

Configuring an Extension

We have now created a Java project inside the Business UI web application. The extension functionality for the CentraSite Business UI is contained in the custom configuration file. You can configure this file to adapt to the appropriate extensions as required.

To configure an extension

1. On the file system, locate the custom configuration file.
2. Open the file in a text editor, and locate the configuration entry `EXTENSION POINTS`:

```
<Extensions src="">
  <! --
    centrasitebuiextension/centrasitebuiextension.nocache.js -->
   <ExtensionPointLogin custom="false" />
   <ExtensionPointRegister custom="false" />
   <ExtensionPointBrowseView custom="false" />
   <ExtensionPointBrowseCriteria custom="false" />
   <ExtensionPointSearchWidget custom="false" />
   <ExtensionPointSearch custom="false" />
   <ExtensionPointSearchCriteria custom="false" />
   <ExtensionPointAssetDetails custom="false" />
      <ExtensionPlaces protected="true">
      <ExtensionPlace
         className="com.softwareag.centrasite.bui.client.place.home.Extensi
onPlace" />
      </ExtensionPlaces>
</Extensions>
```

3. Specify the extensions file path as CentraSiteBUIExtension/ centrasitebuiextension.nocache.js in order to point to the location of the Java script files.
4. Identify the extension point that you want to configure to the CentraSite Business UI.
5. Enable the extension point by modifying its custom value from “false” to “true”. The default value is “false”.
6. After making the above changes, the extension entry would look like this:

```
<Extensions src="centrasitebuiextension/centrasitebuiextension.nocache.js">
```

```
   <ExtensionPointLogin custom="true" />
   <ExtensionPointRegister custom="true" />
   <ExtensionPointBrowseView custom="true" />
   <ExtensionPointBrowseCriteria custom="true" />
   <ExtensionPointSearchWidget custom="true" />
   <ExtensionPointSearch custom="true" />
   <ExtensionPointSearchCriteria custom="true" />
   <ExtenstionPointAssetDetails custom="true" />
      <ExtensionPlaces protected="true">
      <ExtensionPlace
         className="com.softwareag.centrasite.bui.client.place.home.Extensi
onPlace" />
      </ExtensionPlaces>
</Extensions>
```

7. Save and close the file.
8. Locate the configuration file web.xml in the folder *<CentraSiteInstallDir>\cast\cswebapps\BusinessUI\WEB-INF* .
9. Open the file in a text editor, and locate the `ExtensionServlet` entry:

```
<servlet>
    <servlet-name>ExtensionServlet</servlet-name>
    <servlet-class>
      com.softwareag.centrasite.ui.extension.service.ExtensionServiceImpl
    </servlet-class>
</servlet>

<servlet-mapping>
    <servlet-name>ExtensionServlet</servlet-name>
    <url-pattern>/centrasitebuiextension/extensionService</url-pattern>
</servlet-mapping>
```

10. Uncomment the `ExtensionServlet` entry in order to enable the extension configurations that are performed in the previous actions. Similarly, if the extension configuration is already enabled and you want to disable it, simply comment out the `ExtensionServlet` entry.
11. Save and close the file.
12. Restart Software AG Runtime.

Note: The extension point's readme file is recommended for reading. The readme file is available in the *<CentraSiteInstallDir>* \demos\CentraSiteBUIExtension directory.

Uninstalling an Extension

The following actions need to be performed to uninstall extension(s) manually:

Note: The extension point's readme file is recommended for reading. The readme file is available in the *<CentraSiteInstallDir>* \demos\CentraSiteBUIExtension.

Uninstalling a Single Extension

The following procedure describes how to uninstall a single extension point.

To uninstall an extension point

1. Open the custom configuration file in a text editor and locate the configuration entry for extension points:

```
<Extensions src="centrasitebuiextension/centrasitebuiextension.nocache.js">
   <ExtensionPointLogin custom="false" />
   <ExtensionPointRegister custom="false" />
   <ExtensionPointBrowseView custom="false" />
   <ExtensionPointBrowseCriteria custom="false" />
   <ExtensionPointSearchWidget custom="false" />
   <ExtensionPointSearch custom="false" />
   <ExtensionPointSearchCriteria custom="false" />
   <ExtenstionPointAssetDetails custom="false" />
      <ExtensionPlaces protected="false">
      <ExtensionPlace
          className="com.softwareag.centrasite.bui.client.place.home.Extensi
onPlace" />
      </ExtensionPlaces>
</Extensions>
```

2. Remove the above configuration entry for extension points.
3. Save and close the file.
4. Restart Software AG Runtime.

Uninstalling a Set of Extensions

The following procedure describes how to uninstall a set of extension points.

To uninstall a set of extension points

1. Open the custom configuration file in a text editor and locate the configuration entry for extension points:

```
<Extensions src="centrasitebuiextension/centrasitebuiextension.nocache.js">
   <ExtensionPointLogin custom="false" />
   <ExtensionPointRegister custom="false" />
   <ExtensionPointBrowseView custom="false" />
   <ExtensionPointBrowseCriteria custom="false" />
   <ExtensionPointSearchWidget custom="false" />
   <ExtensionPointSearch custom="false" />
   <ExtensionPointSearchCriteria custom="false" />
   <ExtenstionPointAssetDetails custom="false" />
      <ExtensionPlaces protected="false">
      <ExtensionPlace
         className="com.softwareag.centrasite.bui.client.place.home.Extensi
onPlace" />
      </ExtensionPlaces>
</Extensions>
```

2. Identify the extension point that you want to uninstall.

3. Set the extension point's custom value to "false". Similarly, you can uninstall multiple extension points.
4. After making the above changes, the extension entry would look like this:

```
<Extensions src="centrasitebuiextension/centrasitebuiextension.nocache.js">
   <ExtensionPointLogin custom="false" />
   <ExtensionPointRegister custom="false" />
   <ExtensionPointBrowseView custom="false" />
   <ExtensionPointBrowseCriteria custom="true" />
   <ExtensionPointSearchWidget custom="false" />
   <ExtensionPointSearch custom="false" />
   <ExtensionPointSearchCriteria custom="true" />
   <ExtenstionPointAssetDetails custom="true" />
      <ExtensionPlaces protected="true">
      <ExtensionPlace
         className="com.softwareag.centrasite.bui.client.place.home.Extensi
onPlace" />
      </ExtensionPlaces>
</Extensions>
```

5. Save and close the file.
6. Restart Software AG Runtime.

Creating a Custom Extension

To create a custom GWT specific extension to your requirements, perform the following steps:

To create a custom extension

1. Write a new widget class.
2. Open the file ExtensionWidgetFactory.java that resides in the CentraSiteBUIExtension folder.
3. Locate the method corresponding to the extension Id whose widget you wish to customize.
4. Return the new widget in the corresponding method.
5. Save and close the ExtensionWidgetFactory.java file.
6. Edit the custom configuration file to configure the extensions as appropriate. For more information on configuring the extension properties, see "Configuring an Extension" on page 293.

Built-in Portlets Reference

This section describes the sets of design/change-time and run-time report searches that are installed as portlets with CentraSite.

Summary of Portlets in the Design/Change-Time Category

Portlet	Description
"Asset Instance Count Per Category for Taxonomy" on page 299	Shows a count of all asset instances currently defined for the specified category (taxonomy).
"Get Undelivered Access Tokens" on page 300	Lists the access tokens that are not delivered to API-Portal during the retry attempts.
"Inbox Notifications" on page 300	Lists the activity notifications received in your Inbox.
"Instance Count Per State for Lifecycle Model" on page 301	Shows a count of currently defined asset instances for each lifecycle state.
"Instances Per Type" on page 301	Shows a count of currently defined asset instances for each asset type.
"Last Created Assets" on page 301	Lists all of the assets that have recently been added.
"Last Updated Assets" on page 302	Lists all of the assets that have recently been modified.
"Linked Instance Count Per Category For Taxonomy" on page 303	Shows a count of currently defined asset instances for each category (taxonomy).
"My All List" on page 303	Displays the lists that are available to you.
"My All Saved Searches" on page 304	Lists all of the currently defined saved searches.
"My API Keys" on page 304	Lists all of the currently available API keys.
"My Approval Requests" on page 304	List of all requests that you submitted and, if any, requests that were submitted on your behalf by another user.

Portlet	Description
"My Favorites" on page 305	Lists all of the assets that you have marked as favorites.
"My List" on page 306	Displays the lists that you have created.
"My Pending Approval Requests" on page 306	Lists all of the requests for which you are an authorized approver.
"My Pending Consumer Registration Requests" on page 307	Lists all of the pending consumer registration requests for which you are an authorized approver.
"My Saved Searches" on page 308	Lists the saved searched that you have created.
"Recent Lifecycle Changes" on page 308	Lists all of the assets that have their lifecycle state recently modified.
"Top X Assets by Consumers" on page 309	Lists the top X assets based on number of consumers.
"Top X Assets by Incoming Association" on page 309	Lists the top X assets based on number of incoming associations.
"Top X Assets by Watchers" on page 310	Lists the top X assets based on number of watchers.
"Top X Assets Consumed Per Organization" on page 311	Shows a count of all assets consumed by each organization.
"Top X Assets Provided Per Organization" on page 311	Shows a count of all assets defined by each organization.
"Top X Assets with Watcher and Consumer Count" on page 312	Lists the top X assets based on the total number of watchers and consumers.
"Top X Most Versioned Services" on page 313	Lists the top X services that have been versioned for the maximum number of times.

Summary of Portlets in the Run-Time Category

Portlet	Description
"Service Performance Metrics" on page 313	Displays the run-time metrics of the selected service over a specific period of time.
"Service Performance Metrics Over Time" on page 314	Displays the run-time metrics of the selected service over an extended period of time.
"Top X Consumers Based on Runtime Invocations" on page 315	Lists the top X consumers based on the maximum run-time invocations on services.
"Top X Monitoring Events Per Service" on page 316	Lists the top X services based on the maximum run-time events on services for the given number of days.
"Top X Services Based on Invocations" on page 317	Lists the top X services based on the maximum invocations for the given number of days.
"Top X Services Based on Payload Size" on page 318	Lists the top X services based on the maximum payload size.
"Top X Services Based on Runtime Errors" on page 318	Lists the top X services based on the maximum run-time errors.
"Top X Services Based on Runtime Policy Violations" on page 319	Lists the top X services based on the maximum run-time policy violations.

Built-in Portlets for Design/Change-Time Category

Asset Instance Count Per Category for Taxonomy

The Asset Instance Count Per Category for Taxonomy on the Welcome page shows a count of all asset instances that are currently classified by a specified taxonomy or taxonomy category.

Input Parameters

The following table describes the set of input parameters that you can use with the Asset Instance Count Per Category for Taxonomy portlet:

Parameter	Description
`Taxonomy`	*Required*. *String*. Specifies the name of a taxonomy or taxonomy category by which you want to filter the asset instances.

Result Attributes

The Asset Instance Count Per Category for Taxonomy portlet displays the following default results in a text-only or graphical format.

- **Category** – The fully qualified name of the taxonomy.
- **Instance Count for Category** – The number of asset instances that are classified with this taxonomy.

Get Undelivered Access Tokens

The Get Undelivered Access Tokens portlet on the Welcome page lists the access tokens that are not delivered to API-Portal during the retry attempts.

Input Parameters

The following table describes the set of input parameters that you can use with the Get Undelivered Access Tokens portlet:

Parameter	Description
`Number of Entries`	*Required*. *Integer*. Specifies the number of access tokens that you want to include in the view. By default, this portlet lists the (up to) five recently undelivered access tokens.

Inbox Notifications

The Inbox Notifications portlet on the Welcome page lists the recent activity notifications received in your Inbox.

Input Parameters

None.

Instance Count Per State for Lifecycle Model

The Instance Count Per State for Lifecycle Model portlet on the Welcome page shows a count of all asset instances that are currently classified by a specified lifecycle model.

Input Parameters

The following table describes the set of input parameters that you can use with the Instance Count Per State for Lifecycle Model portlet:

Parameter	Description
`Lifecycle Model`	*Required*. *String*. Specifies the name of a lifecycle model by which you want to filter the asset instances.

Result Attributes

The Instance Count Per State for Lifecycle Model portlet displays the following default results in a text-only or graphical format.

- **Lifecycle Model** – The fully qualified name of the lifecycle model.
- **Instance Count for Lifecycle Model** – The number of asset instances that are assigned with this lifecycle model.

Instances Per Type

The Instances Per Type portlet on the Welcome page shows a count of all asset instances that are currently defined for the asset type.

Input Parameters

None.

Result Attributes

The Instances Per Type portlet displays the following default results in a text-only or graphical format.

- **Asset Type** – The fully qualified name of the asset type definition.
- **Instances Count for Asset Type** – The number of asset instances that are defined for this asset type.

Last Created Assets

The Last Created Assets portlet on the Welcome page lists the assets that are recently added to CentraSite.

Input Parameters

The following table describes the set of input parameters that you can use with the Last Created Assets portlet:

Parameter	Description
`Number of Entries`	*Required*. *Integer*. Specifies the number of assets that you want to include in the view. By default, this portlet lists the (up to) five recently created assets.
`Asset Type`	*Required*. *String*. Specifies the name of an asset type by which you want to filter the asset instances.

Result Attributes

The Last Created Assets portlet displays the following default results in a text-only format.

- **Asset Name** – The fully qualified name of the asset. The Asset Name is a link to the asset details page – that contains detailed information about the asset. See "Displaying Details of an Asset" on page 133.
- **Asset Description** – The comment or descriptive information about the asset.
- **Asset Version** – The user-assigned version identifier for the asset.
- **Asset Created Date** – The creation date of the asset.

Last Updated Assets

The Last Updated Assets portlet on the Welcome page lists the assets that are recently updated in CentraSite.

Input Parameters

The following table describes the set of input parameters that you can use with the Last Updated Assets portlet:

Parameter	Description
`Number of Entries`	*Required*. *Integer*. Specifies the number of assets that you want to include in the view. By default, this portlet lists the (up to) five recently modified assets.

Parameter	Description
`Asset Type`	*Required*. *String*. Specifies the name of an asset type by which you want to filter the asset instances.

Result Attributes

The Last Updated Assets portlet displays the following default results in a text-only format.

- **Asset Name** – The fully qualified name of the asset. The Asset Name is a link to the asset detail page – that contains detailed information about the asset. See "Displaying Details of an Asset" on page 133.
- **Asset Description** – The comment or descriptive information about the asset.
- **Asset Version** – The user-assigned version identifier for the asset.
- **Asset Updated Date** – The modification date of the asset.

Linked Instance Count Per Category For Taxonomy

The Linked Instance Count Per Category For Taxonomy portlet on the Welcome page shows a count of all asset instances that are currently classified by a specified taxonomy or taxonomy category.

Input Parameters

The following table describes the set of input parameters that you can use with the Linked Instance Count Per Category For Taxonomy portlet:

Parameter	Description
`Taxonomy`	*Required*. *String*. Specifies the name of a taxonomy or taxonomy category by which you want to filter the asset instances.

Result Attributes

The Linked Instance Count Per Category For Taxonomy portlet displays the following default results in a text-only or graphical format.

- **Category** – The fully qualified name of the taxonomy.
- **Instance Count for Category** – The number of asset instances that are classified with this taxonomy.

My All List

The My All List portlet on the Welcome page displays the lists that are available to you.

Input Parameters

None.

Result Attributes

The My All List portlet displays the following default results in a text-only format.

- **List Name** – The fully qualified name of the list. The List Name is a link to the saved search page – that contains detailed information about the search criteria and results.
- **List Description** – The comment or descriptive information about this list.

My All Saved Searches

The My All Saved Searches portlet on the Welcome page displays the saved searches that are available to you.

Input Parameters

None.

Result Attributes

The My All Saved Searches portlet displays the following default results in a text-only format.

- **Search Name** – The fully qualified name of the saved search.
- **Level** – Whether the saved search is user-specific or organization-specific or global-specific.
- **Last Modified Date** – The last modified date of this saved search.

My API Keys

The My API Keys portlet on the Welcome page lists the API Keys that are available to you.

Input Parameters

None.

My Approval Requests

The My Approval Requests portlet presents a list of all the requests for which you are an authorized approver (that is, the list includes any request whose approver group included you as a member).

Input Parameters

Parameter	Description
`Number of Entries`	*Required* . *Integer* . Specifies the number of approval requests to display in the portlet. Default is 5.

Result Attributes

- **Asset Name** – The fully qualified name of the asset for which an approval request has been triggered. Click on an asset name to view more information about that asset.
- **Asset Description** – Descriptive information about the asset.
- **Approval Flow Name** – Name of the approval workflow.
- **Approval Flow Creation Date** – Date when the approval workflow was created.
- **Approval Flow Status** – Status of the approval workflow (for example, In Progress, Approved, or Rejected).

My Favorites

The My Favorites portlet on the Welcome page lists the assets that are marked as favorites.

Input Parameters

The following table describes the set of input parameters that you can use with the My Favorites portlet:

Parameter	Description
`Number of Entries`	*Required*. *Integer*. Specifies the number of favorite assets that you want to include in the view. By default, this portlet lists the (up to) five favorite assets.

Result Attributes

The My Favorites portlet displays the following default results in a text-only format.

- **Asset Name** – The fully qualified name of the asset. The Asset Name is a link to the asset details page – that contains detailed information about the asset. See "Displaying Details of an Asset" on page 133.
- **Asset Description** – The comment or descriptive information about the asset.
- **Asset Version** – The user-assigned version identifier for the asset.

My List

The My List portlet on the Welcome page displays the lists that you have created.

Input Parameters

The following table describes the set of input parameters that you can use with the My List portlet:

Parameter	Description
`Number of Entries`	*Required*. *Integer*. Specifies the number of lists that you want to include in the view. By default, this portlet displays the (up to) five lists.

Result Attributes

The My List portlet displays the following default results in a text-only format.

- **List Name** – The fully qualified name of the list. The List Name is a link to the saved search page – that contains detailed information about the search criteria and results.
- **List Description** – The comment or descriptive information about the list.

My Pending Approval Requests

The My Pending Approval Requests portlet on the Welcome page lists the requests for which you are an authorized approver (i.e., the list includes any request whose approver group included you as a member).

Input Parameters

The following table describes the set of input parameters that you can use with the My Pending Approval Requests portlet:

Parameter	Description
`Number of Entries`	*Required*. *Integer*. Specifies the number of approval requests that you want to include in the view. By default, this portlet displays the (up to) five requests.

Result Attributes

The My Pending Approval Requests portlet displays the following default results in a text-only format.

- **Approval Flow Name** – The fully qualified name of the approval workflow.
- **Approval Flow Description** – The comment or descriptive information about the approval workflow.
- **Pending Asset Name** – The fully qualified name of the asset for which an approval request has been triggered. The Asset Name is a link to the asset details page – that contains detailed information about the asset. See "Displaying Details of an Asset" on page 133.
- **Pending Asset Version** – The user-assigned version identifier for the asset.
- **Requestor Name** – User who triggered the approval workflow.

My Pending Consumer Registration Requests

The My Pending Consumer Registration Requests portlet on the Welcome page lists the pending consumer registration requests for which you are an authorized approver.

Input Parameters

The following table describes the set of input parameters that you can use with the My Pending Consumer Registration Requests portlet:

Parameter	Description
`Number of Entries`	*Required*. *Integer*. Specifies the number of consumer registration requests that you want to include in the view. By default, this portlet displays the (up to) five requests.

Result Attributes

The My Pending Consumer Registration Requests portlet displays the following default results in a text-only format.

- **Consumer Request Id** – The unique identifier of the registration request to consume the asset.
- **Requested Asset Name** – The fully qualified name of the asset for which a consumer registration request has been triggered. The Asset Name is a link to the asset details page – that contains detailed information about the asset. See "Displaying Details of an Asset" on page 133.
- **Requested Asset Version** – The user-assigned version identifier for the asset.
- **Requested Asset Description** – The comment or descriptive information about the asset.

My Saved Searches

The My Saved Searches portlet on the Welcome page lists the saved searches that you have created.

Input Parameters

The following table describes the set of input parameters that you can use with the My Saved Searches portlet:

Parameter	Description
`Number of Entries`	*Required*. *Integer*. Specifies the number of saved searches that you want to include in the view. By default, this portlet displays the (up to) five requests.

Result Attributes

The My Saved Searches portlet displays the following default results in a text-only format.

- **Search Name** – The fully qualified name of the saved search.
- **Level** – Whether the saved search is user-specific or organization-specific or global-specific.
- **Last Modified Date** – The last modified date of the saved search.

Recent Lifecycle Changes

The Recent Lifecycle State Change Assets portlet on the Welcome page lists the assets whose lifecycle state was modified after the specified number of days passes.

Input Parameters

The following table describes the set of input parameters that you can use with the Recent Lifecycle State Change Assets portlet:

Parameter	Description
`Number of Days Past`	*Required*. *Integer*. Specifies the number of days in the past to filter assets for which lifecycle model is modified. All assets whose lifecycle model was modified within this period are listed in the portlet.

Result Attributes

The Recent Lifecycle State Change Assets portlet displays the following default results in a text-only format.

- **Asset Name** – The fully qualified name of the asset. The Asset Name is a link to the asset details page – that contains detailed information about the asset. See "Displaying Details of an Asset" on page 133.
- **Asset Description** – The comment or descriptive information about the asset.
- **Asset Version** – The user-assigned version identifier for the asset.

Top X Assets by Consumers

The Top X Assets by Consumers portlet on the Welcome page lists the top X assets based on the number of consumers.

Input Parameters

The following table describes the set of input parameters that you can use with the Top X Assets by Consumers portlet:

Parameter	Description
`Number of Entries`	*Required*. *Integer*. Specifies the number of most popular assets (which is based on the consumers count) that you want to include in the view. By default, this portlet displays the (up to) five assets.

Result Attributes

The Top X Assets by Consumers portlet displays the following default results in a text-only format.

- **Asset Name** – The fully qualified name of the asset. The Asset Name is a link to the asset details page – that contains detailed information about the asset. See "Displaying Details of an Asset" on page 133.
- **Asset Version** – The user-assigned version identifier for the asset.
- **Consumers Count for Asset** – The number of consumers for the asset.

Top X Assets by Incoming Association

The Top X Assets by Incoming Association portlet on the Welcome page lists the top X assets based on the number of incoming associations.

Input Parameters

The following table describes the set of input parameters that you can use with the Top X Assets by Incoming Association portlet:

Parameter	Description
`Number of Entries`	*Required*. *Integer*. Specifies the number of most popular assets (which is based on the total count of incoming associations) that you want to include in the view. By default, this portlet displays the (up to) five assets.

Result Attributes

The Top X Assets by Incoming Association portlet displays the following default results in a text-only format.

- **Asset Name** – The fully qualified name of the asset. The Asset Name is a link to the asset details page – that contains detailed information about the asset. See "Displaying Details of an Asset" on page 133.
- **Asset Description** – The comment or descriptive information about the asset.
- **Asset Version** – The user-assigned version identifier for the asset.
- **Incoming Associations Count** – The number of incoming associations for the asset.

Top X Assets by Watchers

The Top X Assets by Watchers portlet on the Welcome page lists the top X assets based on the number of watchers.

Input Parameters

The following table describes the set of input parameters that you can use with the Top X Assets by Watchers portlet:

Parameter	Description
`Number of Entries`	*Required*. *Integer*. Specifies the number of most popular assets (which is based on the watchers count) that you want to include in the view. By default, this portlet displays the (up to) five assets.

Result Attributes

The Top X Assets by Watchers portlet displays the following default results in a text-only format.

- **Asset Name** – The fully qualified name of the asset. The Asset Name is a link to the asset details page – that contains detailed information about the asset. See "Displaying Details of an Asset" on page 133.
- **Asset Version** – The user-assigned version identifier for the asset.
- **Watchers Count for Asset** – The number of watchers for the asset.

Top X Assets Consumed Per Organization

The Top X Assets Consumed Per Organization portlet on the Welcome page displays the top X assets consumed in each organization.

Input Parameters

The following table describes the set of input parameters that you can use with the Top X Assets Consumed Per Organization portlet:

Parameter	Description
`Number of Entries`	*Required*. *Integer*. Specifies the number of most popular assets (which is based on the consumption in each organization) that you want to include in the view. By default, this portlet displays the (up to) five assets.

Result Attributes

The Top X Assets Consumed Per Organization portlet displays the following default results in a text-only or graphical format.

- **Organization Name** – The fully qualified name of the organization.
- **Consumed Assets Count for Organization** – The number of assets consumed in this organization.

Top X Assets Provided Per Organization

The Top X Assets Provided Per Organization portlet on the Welcome page displays the top X assets created in each organization.

Input Parameters

The following table describes the set of input parameters that you can use with the Top X Assets Provided Per Organization portlet:

Parameter	Description
`Number of Entries`	*Required*. *Integer*. Specifies the number of most popular assets (which is based on the usage in each organization) that you want to include in the view. By default, this portlet displays the (up to) five assets.

Result Attributes

The Top X Assets Provided Per Organization portlet displays the following default results in a text-only or graphical format.

- **Organization Name** – The fully qualified name of the organization.
- **Provided Assets Count for Organization** – The number of assets created in this organization.

Top X Assets with Watcher and Consumer Count

The Top X Assets with Watcher and Consumer Count portlet on the Welcome page lists the top X assets based on the total number of watchers and consumers.

Input Parameters

The following table describes the set of input parameters that you can use with the Top X Assets with Watcher and Consumer Count portlet:

Parameter	Description
`Number of Entries`	*Required*. *Integer*. Specifies the number of most popular assets (which is based on the total count of watchers and consumers) that you want to include in the view. By default, this portlet displays the (up to) five assets.

Result Attributes

The Top X Assets with Watcher and Consumer Count portlet displays the following default results in a text-only format.

- **Asset Name** – The fully qualified name of the asset. The Asset Name is a link to the asset details page – that contains detailed information about the asset. See "Displaying Details of an Asset" on page 133.
- **Asset Version** – The user-assigned version identifier for the asset.
- **Watchers and Consumers Count for Asset** – The total number of watchers and consumers for the asset.

Top X Most Versioned Services

The Top X Most Versioned Services portlet on the Welcome page lists the top X services that have been versioned for the maximum number of times.

Input Parameters

The following table describes the set of input parameters that you can use with the Top X Most Versioned Services portlet:

Parameter	Description
`Number of Entries`	*Required*. *Integer*. Specifies the number of most versioned assets that you want to include in the view. By default, this portlet displays the (up to) five assets.

Result Attributes

The Top X Most Versioned Services portlet displays the following default results in a text-only format.

- **Asset Name** – The fully qualified name of the asset. The Asset Name is a link to the asset details page – that contains detailed information about the asset. See "Displaying Details of an Asset" on page 133.
- **Asset Description** – The comment or descriptive information about the asset.
- **Asset Version** – The user-assigned version identifier for the asset.

Built-in Portlets for Run-Time Category

Service Performance Metrics

The Service Performance Metrics portlet on the Welcome page displays the run-time metrics for a service over a specified period of time.

Input Parameters

The following table describes the set of input parameters that you can use with the Service Performance Metrics portlet:

Parameter	Description
`Service Key`	*Required*. Specifies the Universally Unique Identifier (UUID) of the service that you want to include in the view.

Parameter	Description
`Start Time` / `End Time`	*Required*. Specifies the starting and ending date and time during which you want to examine metrics.

Result Attributes

The Service Performance Metrics portlet displays the following default results in a text-only or graphical format.

- **Service Name** – The fully qualified name of the service.
- **Service Key** – The Universally Unique Identifier (UUID) that is assigned to the service and uniquely identifies it within the registry.
- **Service Description** – The comment or descriptive information about the service.
- **Service Version** – The user-assigned version identifier for the service.
- **Total Request Count** – The total number of requests for the service running for the current interval.
- **Total Success Count** – The number of successful service invocations for the service for the current interval.
- **Total Fault Count** – The number of failed invocations for the service for the current interval.
- **Minimum Response Time** – The minimum amount of time (in milliseconds) it took to complete an invocation in the current interval.
- **Maximum Response Time** – The maximum amount of time (in milliseconds) it took to complete an invocation in the current interval.
- **Average Response Time** – The average amount of time it took the service to complete each invocation in the current interval.

Service Performance Metrics Over Time

The Service Performance Metrics portlet on the Welcome page displays the run-time metrics for a service over an extended period of time.

Input Parameters

The following table describes the set of input parameters that you can use with the Service Performance Metrics portlet:

Parameter	Description
`Service Key`	*Required*. Specifies the Universally Unique Identifier (UUID) of the service that you want to include in the view.

Parameter	Description
`Time Interval`	*Required*. Specifies the time interval (as expressed in Days, Hours, Minutes, and Seconds) between consecutive repeats of examining metrics.
`Duration (Past X Days/Hours)`	*Required*. Specifies a duration (as expressed in Days, Hours, Minutes, and Seconds) during which you want to examine metrics.

Result Attributes

The Service Performance Metrics portlet displays the following default results in a text-only or graphical format.

- **Service Name** – The fully qualified name of the service.
- **Service Key** – The Universally Unique Identifier (UUID) that is assigned to the service and uniquely identifies it within the registry.
- **Service Description** – The comment or descriptive information about the service.
- **Service Version** – The user-assigned version identifier for the service.
- **Total Request Count** – The total number of requests for the service running for the current interval.
- **Total Success Count** – The number of successful service invocations for the service for the current interval.
- **Total Fault Count** – The number of failed invocations for the service for the current interval.
- **Minimum Response Time** – The minimum amount of time (in milliseconds) it took to complete an invocation in the current interval.
- **Maximum Response Time** – The maximum amount of time (in milliseconds) it took to complete an invocation in the current interval.
- **Average Response Time** – The average amount of time it took the service to complete each invocation in the current interval.

Top X Consumers Based on Runtime Invocations

The Top X Consumers Based on Runtime Invocations portlet on the Welcome page lists the top X consumers based on number of run-time invocations of services.

Input Parameters

The following table describes the set of input parameters that you can use with the Top X Consumers Based on Runtime Invocations portlet:

Parameter	Description
`Number of Entries`	*Required*. *Integer*. Specifies the number of most popular consumers (which is based on the total number of invocations) that you want to include in the view. By default, this portlet displays the (up to) five consumers.

Result Attributes

The Top X Consumers Based on Runtime Invocations portlet displays the following default results in a text-only format.

- **Consumer Application Name** – The fully qualified name of the consumer application asset.
- **Consumer Application Key** – The Universally Unique Identifier (UUID) that is assigned to the consumer application and uniquely identifies it within the registry.
- **Consumer Application Description** – The comment or descriptive information about the consumer application asset.
- **Invocation Count for Consumer Application** – The number of invocations made by the consumer application asset on a service.

Top X Monitoring Events Per Service

The Top X Monitoring Events per Service portlet on the Welcome page lists the top X run-time events for a selected service for the given number of days.

Input Parameters

The following table describes the set of input parameters that you can use with the Top X Monitoring Events per Service portlet:

Parameter	Description
`Number of Entries`	*Required*. *Integer*. Specifies the number of most popular run-time events for the service that you want to include in the view.
`Number of Days Past`	*Required*. *Integer*. Specifies the number of days in the past to filter run-time events for the service.

Result Attributes

The Top X Monitoring Events per Service portlet displays the following default results in a text-only format.

- **Service Name** – The fully qualified name of the service.
- **Service Key** – The Universally Unique Identifier (UUID) that is assigned to the service and uniquely identifies it within the registry.
- **Service Description** – The comment or descriptive information about the service.
- **Service Version** – The user-assigned version identifier for the service.
- **Monitoring Event Count for Service** – The number of monitoring events made on the service.

Top X Services Based on Invocations

The Top X Services Based on Runtime Invocations portlet on the Welcome page lists the top X services based on run-time invocations for the given number of days.

Input Parameters

The following table describes the set of input parameters that you can use with the Top X Services Based on Runtime Invocations portlet:

Parameter	Description
`Number of Entries`	*Required*. *Integer*. Specifies the number of most popular services (which is based on the maximum number of invocations) that you want to include in the view.
`Number of Days Past`	*Required*. *Integer*. Specifies the number of days in the past to filter services that had the maximum number of invocations.

Result Attributes

The Top X Services Based on Runtime Invocations portlet displays the following default results in a text-only format.

- **Service Name** – The fully qualified name of the service.
- **Service Key** – The Universally Unique Identifier (UUID) that is assigned to the service and uniquely identifies it within the registry.
- **Service Description** – The comment or descriptive information about the service.
- **Service Version** – The user-assigned version identifier for the service.
- **Invocation Count for Service** – The number of invocations made on the service.

Top X Services Based on Payload Size

The Top X Services Based on Payload Size portlet on the Welcome page lists the top X services with maximum payload size.

Input Parameters

The following table describes the set of input parameters that you can use with the Top X Services Based on Payload Size portlet:

Parameter	Description
`Number of Entries`	*Required*. *Integer*. Specifies the number of services that you want to include in the view.
`Maximum Payload Size`	*Required*. *Integer*. Specifies the maximum payload size (in bytes).

Result Attributes

The Top X Services Based on Payload Size portlet displays the following default results in a text-only format.

- **Service Name** – The fully qualified name of the service.
- **Service Key** – The Universally Unique Identifier (UUID) that is assigned to the service and uniquely identifies it within the registry.
- **Service Description** – The comment or descriptive information about the service.
- **Service Version** – The user-assigned version identifier for the service.
- **Maximum Payload Size for Service** – The maximum payload size for the service.

Top X Services Based on Runtime Errors

The Top X Services Based on Runtime Errors portlet on the Welcome page lists the top X services with maximum run-time errors.

Input Parameters

The following table describes the set of input parameters that you can use with the Top X Services Based on Runtime Errors portlet:

Parameter	Description
`Number of Entries`	*Required*. *Integer*. Specifies the number of services that you want to include in the view.

Result Attributes

The Top X Services Based on Runtime Errors portlet displays the following default results in a text-only format.

- **Service Name** – The fully qualified name of the service.
- **Service Key** – The Universally Unique Identifier (UUID) that is assigned to the service and uniquely identifies it within the registry.
- **Service Description** – The comment or descriptive information about the service.
- **Service Version** – The user-assigned version identifier for the service.
- **Error Count for Service** – The number of runtime errors marked on the service.

Top X Services Based on Runtime Policy Violations

The Top X Services Based on Runtime Policy Violations portlet on the Welcome page lists the top X services with maximum run-time policy violations.

Input Parameters

The following table describes the set of input parameters that you can use with the Top X Services Based on Runtime Policy Violations portlet:

Parameter	Description
`Number of Entries`	*Required*. *Integer*. Specifies the number of services that you want to include in the view.

Result Attributes

The Top X Services Based on Runtime Policy Violations portlet displays the following default results in a text-only format.

- **Service Name** – The fully qualified name of the service.
- **Service Key** – The Universally Unique Identifier (UUID) that is assigned to the service and uniquely identifies it within the registry.
- **Service Description** – The comment or descriptive information about the service.
- **Service Version** – The user-assigned version identifier for the service.
- **Policy Violations Count for Service** – The number of runtime policy violations marked on the service.

3 Managing Organizations

Introduction

The *SOA Governance* framework of CentraSite:

- Enables organizations to realize the full potential of Service Oriented Architecture (SOA).
- Structures organizations with authorized users, policy definitions and reusable assets.
- Enforces, across organizations, the policies that define the rules and regulations under which an organization functions, as well as the processes that ensure compliance.

Broadly speaking, an *organization* represents an entity that owns a particular collection of assets. Within a CentraSite registry, any object that is not an organization belongs to an organization. In this respect, organizations enable you to partition your registry into autonomous collections of objects that can be administered independently.

Typically, you define organizations that represent actual entities within your enterprise, such as functional lines of business, regional subsidiaries or branches, legal entities, B2B partners (e.g., suppliers and customers), projects or departments. You can define parent-child associations between organizations to model the hierarchical structure of entities in your enterprise.

Organizations also function as a scoping mechanism for the following registry functions:

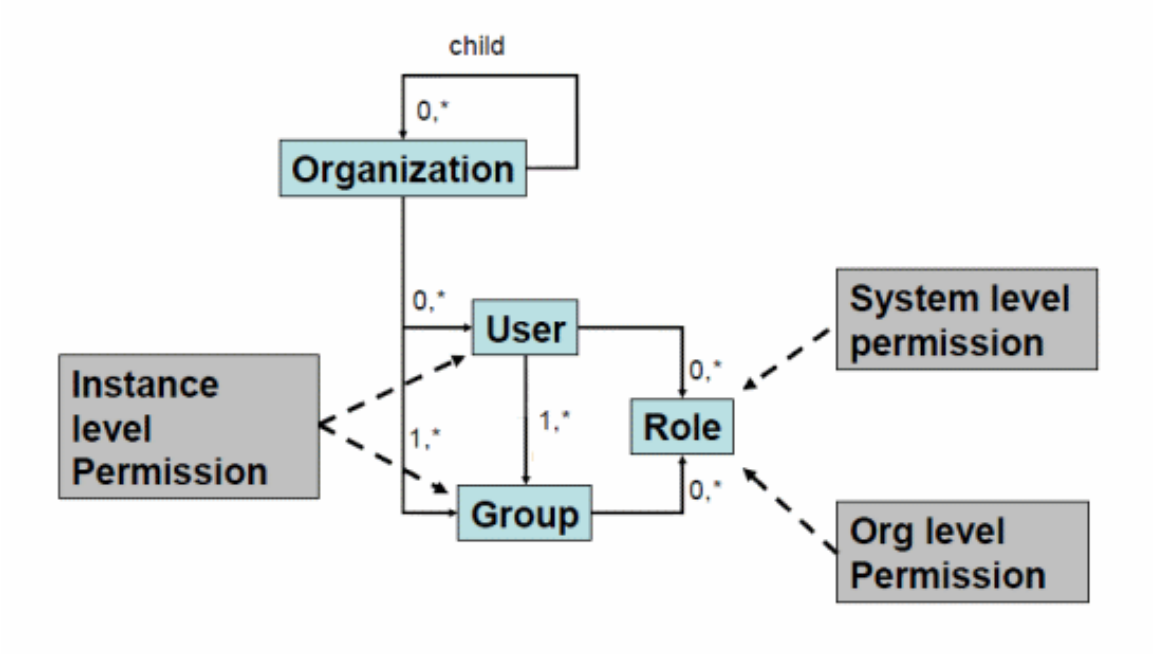
- Role-based permissions
- Lifecycle models
- Design/change-time policies
- Supporting documents

For example, organizations enable administrators to create lifecycle models and design/change-time policies that apply only to the assets that belong to their organization.

Basic Organization Structure

An organization functions as a high-level container for a set of users and the assets that they own. The users that belong to an organization are permitted to access all of the organization's assets. If other users require access to the organization's assets, they must obtain explicit permissions to do so.

An organization is composed of users, groups, roles and permissions.



- An organization can have zero or more *child organizations*. Each child organization is a separate organization in its own right and has its own set of users, groups, roles and permissions.
- An organization can have one or more *users*. A user represents an individual who is an authorized user of CentraSite. Users are identified by a unique ID known to the external authentication system that CentraSite is configured to use. *A user can belong to only one organization*.
- An organization has one or more *groups*. A group represents a set of users. Groups enable you to collectively apply permissions and other capabilities to a specified set of users. All organizations include the following predefined groups:

Group	Description
Users	All users belonging to the organization. The API requires all organizations to have this group.
Members	All users belonging to the organization or any of its descendants (i.e., children, children's children, and so forth).

- An organization has one or more *roles* that can be assigned to users or groups. By default, each organization includes the following set of roles: Organization Administrator, Policy Administrator, Asset Administrator, Asset Provider and Asset Consumer. A role is a collection of *system-level permissions* and/or *organization-level permissions*. These permissions enable users to work with specific types of objects or perform certain tasks. Roles can be assigned to individual users or to groups. The

assignment of a role confers the permissions in the role upon the assigned user or group.

- *Instance-level permissions* are used to give specific users or groups access to individual assets or registry objects. They enable you to apply very fine-grain access controls to the assets in your organization.

The Default Organization

CentraSite is installed with one predefined organization called *Default Organization*. The default organization owns the system-defined registry objects that CentraSite uses. You cannot delete the Default Organization, nor can you rename it.

As a best practice, you should avoid using the default organization as an ordinary organization. Instead, treat it as the home for system-wide objects such as asset types, taxonomies, gateways and system-wide policies, and restrict membership in this organization to a small number of administrative users.

Planning Your Organization Structure

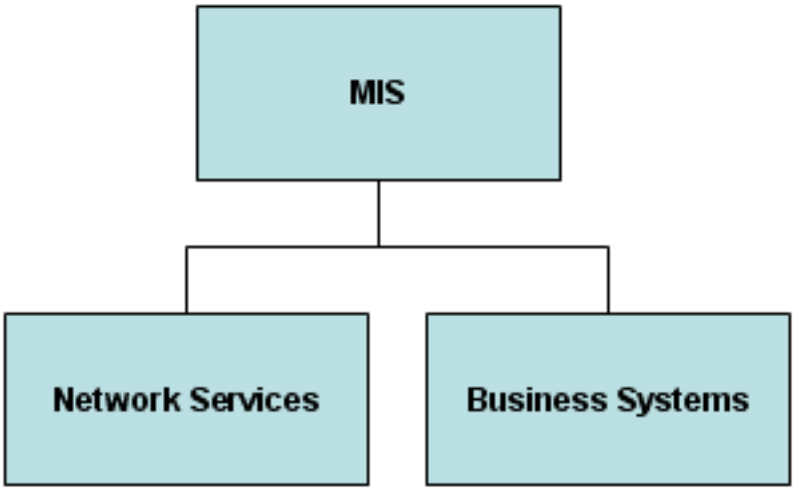
To capitalize on CentraSite's governance capability, you must plan and create your organization structure. Doing this involves the following high-level steps:

1. Create an organization and assign an administrator for the organization. For procedures, see Adding a Top-Level Organization.
2. Create child organizations to represent different divisions or departments in your organization. For procedures, see Adding a Child Organization to an Organization.
3. Create users for your organization. For procedures, see the *CentraSite Administrator's Guide*.
4. Create groups for your organization. For procedures, see the *CentraSite Administrator's Guide*.
5. Assign roles to users and groups to specify the level of access they will have to various objects related to the organization. For procedures, see the *CentraSite Administrator's Guide*.
6. Define taxonomies for organizing assets and classifying assets. For procedures, see the *CentraSite Administrator's Guide*.
7. Create design/change-time policies for management of CentraSite objects such as organizations, users, taxonomies, lifecycle models, assets, policies and report templates. For information about creating policies, see the *CentraSite User's Guide*.
8. Create lifecycle models that define the states that make up the lifecycles of assets and other objects associated with your organizations. For procedures, see the *CentraSite Administrator's Guide*.

Who Can Create and Manage Organizations?

To create and manage (i.e., view, edit and delete) a top-level organization (i.e., an organization that is a sibling of the Default Organization), you must belong to a role that has the Manage Organizations system-level permission. By default, users with the CentraSite Administrator role have this permission, and can assign this permission to other roles. Besides allowing you to create organizations at the top level, the Manage Organizations permission enables you to manage *all* organizations (including the Default Organization). This permission allows you to create, view, edit and delete virtually any object within any organization.

To create child organizations from an organization, you must belong to a role that has either the Manage Organizations permission for the organization in which you want to create the child organization or that permission for one of that organization's antecedents. For example, if you create an organizational structure that looks like the one below, you can create a child organization under the Business Systems organization if you have the Manage Organizations permission for the Business Systems organization *or* for the MIS organization.



When you have Manage Organizations permission for an organization, you can edit an organization's attributes and manage that organization's registry objects (including all of its children and their registry objects). In effect, the Manage Organizations permission allows you to create, view, edit and delete virtually any object within an organization or its descendants. By default, users in the Organization Administrator role for an organization have this permission, although an administrator can assign this permission to other roles.

Organization Administrators and Primary Contacts

When you create an organization, you must specify a user to serve as the organization's *Organization Administrator* and a user to serve as the organization's *primary contact*.

- The *Organization Administrator* is a user that has the Organization Administrator role for the organization. An organization must have at least one user in the Organization Administrator role. It can have multiple users in this role. A user in one organization can serve as an Organization Administrator for another organization; however, this role is typically given to someone within the organization. An organization administrator performs administrative tasks for the organization, such as:
  - Adding users to the organization
  - Defining groups and roles
  - Defining custom lifecycle models for the organization
  - Creating child organizations

  An organization administrator can also view, edit and delete any asset, policy or lifecycle model that belongs to the organization or any of its descendants.
- The *Primary Contact* is simply a user who acts as the point-of-contact for an organization. An organization has just one primary contact. The user who is designated as the primary contact does not receive any additional roles or permissions by serving as the primary contact; this user is simply designated as the individual who serves as the main point-of-contact for the organization. Usually, the same user serves as both the organization's administrator and its primary contact, but CentraSite does not require this. You can assign a different user to each position. The primary contact is not required to be a user within the organization itself, but usually this is the case.

Adding a Top-Level Organization

Initially, the only organization that CentraSite contains is the Default Organization. You use the following procedure to create other top-level organizations (i.e., organizations that are siblings of the Default Organization).

When you add a new organization to CentraSite, CentraSite creates the new organization in the registry and populates the organization with a set of default objects (roles, users, policies, a folder in the supporting document library, and so forth).

To create an organization

1. In CentraSite Control, go to **Administration > Organizations**.

   The Organizations page lists all of the organizations that are defined in CentraSite.
2. Click **Add Organization** to open the Add Organization page.

3. In the **Organization Information** panel, specify the following fields:

In this field...	Do the following...
Name	Enter a name for the new organization. An organization name can contain any character (including spaces). **Note:** An organization name does not need to be unique within the CentraSite registry. However, to reduce ambiguity, you should avoid giving multiple organizations the same name.
Description	*Optional*. Enter a description for the new organization. This description appears when a user displays the list of organizations on the CentraSite Control.
Administrator	Assign an administrator for this organization. ■ To assign an existing user to this position (i.e., a user that is already defined within CentraSite), click **Pick Existing** and select the user from CentraSite's existing database. ■ To add a new user to CentraSite to serve in this position, click **Create New** and select the user from the external directory. For instructions on how to add a user, see the *CentraSite Administrator's Guide*.
Web Page	*Optional*. Enter the website URL of the organization.

4. In the **Address Information** tab, specify the following:

In this panel...	Do the following...
Address	*Optional*. Specify the address information for the primary location of this organization.
Contact Information	Specify the contact information for the primary contact of this organization. a. Enable the **Select Administrator as Primary Contact** option if you want the individual specified in the **Administrator** field to serve as the organization's primary contact. —OR—

In this panel...	Do the following...
	Use the **Pick Existing** or **Create New** button to select a user from CentraSite's user database or from an external directory, respectively. b. Specify the phone and fax numbers for the primary contact. You can specify multiple phone and fax numbers.

5. If you have any custom properties (key-value pairs) that you want to specify for the organization, select the **Object-Specific Properties** tab and specify the key-value pairs as follows:
   a. Click **Add Property**.
   b. In the **Add Object-Specific Properties** dialog box, enter a keyword and value for the property. You can add multiple values for a single property.
      - The name of the property can consist of letters, numbers and the underscore character (_). It cannot contain a space or other special characters.
      - You can optionally supply a namespace for the property.
   c. Click **OK**.
6. If a user with administration permissions has added custom attributes to the Organization object type definition, select the **Attributes** tab and specify the attributes as necessary. Attributes that are marked with an asterisk (*) are required. You must at least specify all required attributes.

   Note: You will see the **Attributes** tab only if a user with administration permissions has added custom attributes to the Organization object type definition.

7. Click **Save** to save the new organization.

Viewing or Editing the Properties of an Organization

You use the Edit Organization page to examine and/or edit the properties of an organization. When viewing or editing the properties of an organization, keep the following points in mind:

- By default, all users have implicit (and irrevocable) view permissions on organizations. To edit an organization you must have the Manage Organizations permission on that organization.
- You cannot modify the name of the Default Organization (not even if you have the default permissions associated with the CentraSite Administrator role).

- You can change the organization administrator and/or the primary contact of an organization when necessary. You cannot, however, leave these positions unassigned.
- You cannot change an organization's parent assignment (i.e., you cannot move a child organization from one parent to another).

To view and/or edit an organization

1. In CentraSite Control, go to **Administration > Organizations**.
2. By default, all of the available organizations are displayed.

   If you want to filter the list to see just a subset of the available organizations, type a partial string in the **Search** field. CentraSite applies the filter to the **Name** column. The **Search** field is a type-ahead field, so as soon as you enter any characters, the display will be updated to show only those organizations whose name contains the specified characters. The wildcard character % is supported.
3. Locate the organization that you want to view or edit.
4. From the organization's context menu, select **Details**.
5. View or edit the attributes on the Edit Organization page as necessary. For additional information about the attributes on this page, see the relevant steps in Adding a Top-Level Organization.
6. Click **Save**.

Adding a Child Organization to an Organization

A *Child Organization* represents a subdivision of a parent organization. An organization can have multiple child organizations. Each of these child organizations can have their own child organizations, users, policies, taxonomies and assets. For example, a banking organization might have two child organizations, a “Personal Banking” organization and a “Commercial Banking organization”. Each of these child organizations might have additional children, for example, a “Credit Division” and a “Finance Division”.

You use the following procedure to create a child organization.

To create a child organization

1. Open the Edit Organization page for the organization to which you want to add the child organization. If you need procedures for this step, see "Viewing or Editing the Properties of an Organization" on page 328.
2. On the Organizations page, locate the organization for which you want to create a child organization.
3. From the organization's context menu, select **Details**.
4. Select the **Child Organizations** tab and click **Add Child Organization**.

5. Complete the requested information for the child organization. If you need procedures for this step, refer to the relevant steps in Adding a Top-Level Organization.
6. When you have entered all of the details for the child organization, click **Save** to save the new child organization.

Deleting an Organization

You use the Organizations page to delete an organization. When deleting an organization, keep the following points in mind:

- To delete a top-level organization, you must have the Manage Organizations permission at the system level.
- To delete a child organization, you must have the Manage Organizations on the organization's parent (or other antecedent).
- You cannot delete the Default Organization (not even if you have the default permissions associated with the CentraSite Administrator role).
- You cannot delete an organization that has one or more associated objects. For example, if an organization "ABC" owns the child organization "DEF", an internal association Owns or Owned By exists between the organizations. CentraSite does not let you delete an organization with incoming associations. Therefore, to delete an organization you must first delete all of its associated objects.
- You cannot delete an organization if one of its users serves as the primary contact of another organization.

To delete an organization

1. In CentraSite Control, go to **Administration > Organizations**.
2. In the **Organizations** page, select the organization(s) that you want to delete.
3. Click **Delete**.

4 Managing Governance Rules

Working with Run-Time Policies

You create run-time policies and apply them to proxy APIs in order to govern the APIs' run-time execution.

A run-time policy is a sequence of actions that are carried out by a policy-enforcement point (PEP) gateway when a consumer requests a particular API through the gateway. The actions in a run-time policy perform activities such as identifying and validating consumers, validating signatures, and capturing performance metrics.

This section describes how to create run-time policies using CentraSite Business UI and store them in the CentraSite registry/repository.

When you create a run-time policy in CentraSite Business UI, you:

- Define the virtual types on which to you want to enforce the policy. CentraSite provides predefined virtual types.
- Add run-time actions to the policy and configure their parameters. CentraSite provides a set of built-in run-time actions.
- Specify the gateway (for example, webMethods Mediator) to which you will publish the policy and its virtual types.
- Activate the policy.

Actions that Run-Time Policies Can Execute

A run-time action is a single task that is included in a run-time policy and is evaluated by webMethods Mediator. Actions in run-time policies perform tasks such as identifying and validating consumers, traffic management and logging transaction activity. You specify actions when you define the policy.

CentraSite provides run-time action templates. A run-time action template is a definition of an action that can be used in a run-time policy. Most action templates specify a set of parameters associated with a particular policy action. For example, when you configure the Evaluate WSS Username Token action you use an identifier (for example, a WSS username token) to identify and validate the consumers who are trying to access the APIs. You can include multiple actions in a single policy.

Built-in Actions

CentraSite includes many built-in actions that you can use to compose run-time policies. Built-in actions are provided in the following categories:

Category	Description
Logging and Monitoring	Actions that monitor and collect information about the number of messages that were processed

Category	Description
	successfully or failed, the average execution time of message processing, and the number of alerts associated with an API.
Security	Actions that enforce identification and validation of the consumers who are trying the access the API.
Traffic management	Actions that limit the number of service invocations allowed during a specified time interval, and send alerts to a specified destination when the performance conditions are violated.
Validation	Actions that validate all XML request and/or response messages against an XML schema referenced in the WSDL.

For information about the built-in actions that CentraSite provides for run-time policies, see *Run-Time Governance with CentraSite*.

Custom Actions

If you need to execute a task that is not provided by a built-in action, you can create a custom action to perform the work. CentraSite offers the functionality to implement custom computed actions with your own algorithms using the GWT framework. For information about adding custom actions to CentraSite, see *Run-Time Governance with CentraSite*.

Supported Asset Type and Action Combinations

Not all virtual asset types support the full set of actions. Some actions execute only with a certain type of virtual assets. For example, a Require Encryption action executes only on Virtual Service asset type. If you create a run-time policy whose scope applies to Virtual REST Service asset type, that policy action definition will not include the Require Encryption action.

The following table identifies the actions that each virtual asset type supports:

Action	Virtual Service	Virtual REST Service	Virtual XML Service
Log Invocation	✔	✔	✔
Monitor Service Level Agreement	✔	✔	✔

Action	Virtual Service	Virtual REST Service	Virtual XML Service
Monitor Service Performance	✓	✓	✓
Authorize User	✓	✓	✓
Evaluate Client Certificate for SSL Connectivity	✓	✓	✓
Evaluate Hostname	✓	✓	✓
Evaluate HTTP Basic Authentication	✓	✓	✓
Evaluate IP Address	✓	✓	✓
Evaluate OAuth2 Token	✓	✓	✓
Evaluate WSS Username Token	✓		
Evaluate WSS X.509 Certificate	✓		
Evaluate XPath Expression	✓	✓	✓
Require Encryption	✓		
Require Signing	✓		
Require SSL	✓		
Require Timestamps	✓		

Action	Virtual Service	Virtual REST Service	Virtual XML Service
Require WSS SAML Token	✓		
Throttling Traffic Optimization	✓	✓	✓
Validate Schema	✓		

For detailed descriptions of these built-in run-time actions, see the document *Run-Time Governance with CentraSite*.

Who Can Create and Manage Run-Time Policies?

To create and manage run-time policies, you must belong to a role that includes the Manage Runtime Policies permission (or the Manage System-wide Runtime Policies permission).

By default, the predefined roles API Runtime Provider and CentraSite Administrator include the Manage Runtime Policies and Manage System-wide Runtime Policies permissions, respectively.

To publish a run-time policy to webMethods Mediator, you must belong to the Mediator Publisher role.

For more information about roles and permissions, see *Getting Started with CentraSite*.

Adding a Run-Time Policy to CentraSite

To create a run-time policy in CentraSite, you must perform the following high-level steps:

1. **Create a new run-time policy**: During this step, you specify the scope of the policy. For procedures, see "Creating a New Run-Time Policy" on page 336.
2. **Optionally refine the scope of the policy**: During this step you can specify additional criteria to narrow the set of objects to which the policy applies. For procedures, see "Refining the Policy Scope" on page 348.
3. **Configure the policy actions**: During this step, you select the actions you want the policy to execute, and you assign values to the input parameters for the individual actions. For procedures, see "Configuring Policy Action Parameters" on page 351.
4. **Activate the policy**: During this step, you make the new policy ready to publish to webMethods Mediator. For procedures, see "Activating a Run-Time Policy" on page 338.

Creating a New Run-Time Policy

Perform these steps to create a run-time policy and save it to CentraSite.

To create a run-time policy

1. In the activity bar, click **Manage Governance Rules**.

   When you do this, you see a list of all of the currently defined run-time policies. Also, the action bar shows the set of actions that are available for working with policies.

2. In the actions bar of the Search Results page, select the **Add Policy** icon. This displays the Create Run-Time Policy page in which you can enter the required information for the policy.

3. In **Create Run-Time Policy (Step 1 of 3)**, specify the basic details and scope for the new policy.

   a. Complete the following fields as necessary.

In this field...	Do the following...
Name	Enter a name for the new policy. A policy name can contain any character (including spaces). A policy name does not need to be unique within the registry. However, to reduce ambiguity, you should avoid giving multiple policies the same name. As a best practice, we recommend that you adopt appropriate naming conventions to ensure that policies are distinctly named within your organization.
Description	*Optional*. Enter a description for the new policy. This description appears when a user displays a list of policies in the user interface.

Version	*Optional*. Specify a version identifier for the new policy.
	Note: The version identifier does not need to be numeric.
	Examples:
	`0.0a`
	`1.0.0 (beta)`
	`Pre-release 001`
	`V1-2007.04.30`
	The version identifier you enter here is the policy's public, user-assigned version identifier.

In this field...	Do the following...
Apply policy to all organizations	Enable the **Apply policy to all organizations** checkbox if you want to apply the policy to the specified services in all organizations. **Note:** The **Apply policy to all organizations** checkbox appears if you belong to the CentraSite Administrator role. For more information about the **Apply policy to all organizations** property, see "System-Wide versus Organization-Specific Policy Enforcement" on page 347.
Apply Policy to Organization	Alternatively, select an organization to which the policy applies. **Note:** The **Apply Policy to Organization** list contains the names of all organizations if you belong to the API Runtime Provider role. For more information about the **Apply Policy to Organization** property, see "System-Wide versus Organization-Specific Policy Enforcement" on page 347.

b. In the **Filters** panel, specify the scope of the policy.

   a. In the **Applicable Types** section, select the virtual types of APIs to which this policy applies. Choose one of the following:

      Virtual Service

      Virtual REST Service

      Virtual XML Service

   b. In the **Filter Criteria** section, specify additional selection criteria to narrow the set of APIs to which this policy applies. For procedures, see "Refining the Policy Scope" on page 348.

c. Click **Next**.

4. In **Create Run-Time Policy (Step 2 of 3)**, do the following:

   a. Choose the actions that you want CentraSite to execute when it applies this policy.

      If necessary, you can click **Previous** to return to **Create Run-Time Policy (Step 1 of 3)** and change your scope.

      Click **Save** to save the run-time policy.

   b. Configure the parameters for each action on the **Message Flow** area. For procedures, see "Configuring Policy Action Parameters" on page 351.

c. Click **Next**.

5. In **Create Run-Time Policy (Step 3 of 3)**, do the following:

   a. In the **Available Gateways** list, mark the checkbox next to the name of each gateway (for example, webMethods Mediator) you want to publish the policy. (You can select multiple gateways.)

   b. Review the virtual APIs that are in the scope of this policy and already published to the selected gateways.

   c. If necessary, you can click **Previous** to return to **Create Run-Time Policy (Step 2 of 3)** and modify your action parameters.

   d. **Activate** the policy when you are ready to put it into effect. For procedures, see "Activating a Run-Time Policy" on page 338.

Activating a Run-Time Policy

CentraSite does not begin enforcing a run-time policy until you *activate* it.

When you activate a policy, you change the policy's lifecycle state to the “Productive” state.

When you activate a run-time policy, CentraSite applies it to the virtual APIs that are in the scope of this policy.

When you activate a policy, keep the following points in mind:

- You will not be allowed to activate the policy unless all of its parameters have been set.
- Some organizations require an approval to activate a policy. If your organization has an approval action associated with the activation of a policy, CentraSite will not activate the policy until the required approvals are obtained. For more information about approval actions, see *Working with the CentraSite Business UI*.
- When a policy becomes active, CentraSite begins enforcing it immediately. You can suspend enforcement of a policy by switching it to the “Suspended” state as described in "Deactivating a Run-Time Policy" on page 339.
- To activate a policy, you must have permission to change the policy to the “Productive” state.
- To successfully change a policy to the "Productive" state, you must also have the “Modify” permission on all virtual type services to which the policy is applied.

To determine whether a policy is active or inactive, examine the policy's decoration indicator on the **Search Results for Governance Rules** page. The decoration indicates the policy's activation state as follows:

Decoration	Description
	Policy is active.
	Policy is inactive.

To activate a policy

1. Display the **Run-Time Policy Details** page for the policy you want to activate. If you need procedures for this step, see "Viewing or Changing a Run-Time Policy" on page 344.
2. Examine the information on **Run-Time Policy Details (Step 2 of 3)** and verify that all of the actions on the **Message Flow** area are set properly. For information about setting action parameters, see "Configuring Policy Action Parameters" on page 351.
3. In **Run-Time Policy Details (Step 3 of 3)**, do one of the following:
   - Click the **Activate** button. (If you do not see the **Activate** button, it is probably because you do not have permission to change the lifecycle state of a policy.) When you click this button, you simply activate the policy.
   - Click the **Activate and Publish** button. (If you do not see the **Activate and Publish** button, it is probably because you do not have permission to change the lifecycle state of a policy or publish the policy.) When you click this button, you activate and publish the policy to webMethods Mediator in a single step.
4. Examine the policy's decoration indicator on the **Search Results for Governance Rules** page to verify that the policy's state has been changed.

   If this state change requires approval, the policy's decoration indicator will indicate that the policy is in the “pending” mode. CentraSite will automatically switch the policy to the requested state (and activate the policy) after all the necessary approvals have been obtained. For information about checking the status of objects that you have submitted for approval, see *Working with the CentraSite Business UI*.

   Alternatively, in the **Search Results for Governance Rules** page, you can change the policy's lifecycle state to the “Productive” state, by toggling the policy's decoration indicator on and off.

   Note: While the policy is in pending mode, it cannot be edited.

Deactivating a Run-Time Policy

Deactivating a run-time policy causes CentraSite to suppress enforcement of the policy. You usually deactivate a policy for the following reasons:

- To suspend enforcement of a particular policy (temporarily or permanently).
- To edit a policy (for example, to modify the scope of a policy or change its action list).

To deactivate a policy, you change the policy to the “Suspended” state. Switching the policy to this state triggers the *Automatic Policy Deactivation* policy, which deactivates the policy. (Switching the policy to the “Retired” state also deactivates the policy, but you do not want to switch a policy to this state unless you intend to deactivate it permanently. After you place a policy in the “Retired” state, you cannot reactivate it.)

When you deactivate a policy, keep the following points in mind:

- CentraSite will not deactivate a policy if it is in the process of being executed. If you attempt to deactivate a policy while it is executing, your state change request will fail. If this occurs, wait for a period time and then try to deactivate the policy again.
- To deactivate a policy, you must have permission to change the policy to the “Suspended” state.

To deactivate a policy

1. Display the list of run-time policies that exist on your instance of CentraSite. If you need procedures for this step, see "Viewing the Run-Time Policy List" on page 341.
2. Locate the policy you want to deactivate.
3. Toggle the policy's decoration indicator to “Suspended” state (to deactivate it temporarily) or the “Retired” state (to deactivate it permanently). (If you do not see the decoration indicator, it is probably because you do not have permission to change the lifecycle state of a policy.)
4. Examine the policy's decoration indicator on the **Search Results for Governance Rules** page to verify that the policy's state has been changed.

   If this state change requires approval, the policy's decoration indicator will indicate that the policy is in the “pending” mode. CentraSite will automatically switch the policy to the requested state (and deactivate the policy) after all the necessary approvals have been obtained. For information about checking the status of objects that you have submitted for approval, see *Working with the CentraSite Business UI*.

Publishing a Run-Time Policy

You can publish a run-time policy to webMethods Mediator for enforcement. When publishing a policy, keep the following points in mind:

- If your user account belongs to the Mediator Publisher role for an organization, you automatically have permission to publish all of the policies in that organization. If your user account belongs to the CentraSite Administrator role, you have permission to publish any system-wide policy on the server.

- You cannot publish an inactive policy. If the policy that you want to publish is in the inactive state, you must activate it. For information about activating a policy, see "Activating a Run-Time Policy" on page 338.
- If you publish a run-time policy that is already applied to a published virtual API, you must manually republish the policy to put those changes into immediate effect.

Publishing a Single Run-Time Policy

When publishing a run-time policy, you activate it in CentraSite and publish it to Mediator.

To publish a single run-time policy

1. Display the details page for the run-time policy that you want to publish. If you need procedures for this step, see "Viewing or Changing a Run-Time Policy" on page 344.
2. Navigate to **Run-Time Policy Details (Step 3 of 3)**.
3. Click the **Activate and Publish** button. (If you do not see the **Activate and Publish** button, it is probably because you do not have permission to change the lifecycle state of a policy or publish the policy.)

   When you click this button, you activate and publish the policy to the Mediator in a single step.

Publishing Multiple Run-Time Policies in a Single Operation

You can publish multiple run-time policies in a single step.

To publish a set of run-time policies

1. In CentraSite Business UI, display the list of run-time policies. If you need procedures for this step, see "Viewing the Run-Time Policy List" on page 341.
2. Mark the checkbox next to the name of each run-time policy you want to publish.
3. In the actions bar of the Search Results page, click the **Publish** icon. (If you do not see the **Publish** action, it is probably because you do not have permission to publish the policy.)

Viewing the Run-Time Policy List

The **Search Results for Governance Rules** page displays the run-time policies in CentraSite. Note that this list displays policies for all organizations, not just your own. It also includes system-wide policies (policies that apply to all organizations).

To view the policy list

1. In CentraSite Business UI, click **Manage Governance Rules**.

By default, all of the available policies, aliases and API-Portals that are residing in the CentraSite registry are displayed.

2. To filter the list to see just a list of the available policies, do the following:
   a. Go the advanced search panel.
   b. In the **Narrow Your Results** section, do the following:
      a. Locate **Applicable Scopes**.
      b. Choose **Run-Time Policy** from the drop-down list.
      c. Click the plus button next to the drop-down box or press Enter to add the scope "Runtime Policy" to the search recipe.

         CentraSite displays the list of available run-time policies.
   c. If you want to further filter the list:

To see...	Do this...
A subset of the available policies	Type a partial string in the **Keyword** text field. Click the plus button next to the text field or press Enter to add the keyword to the search recipe.
The list of policies whose scope applies for a particular virtual type	Click **Choose a type** button. In the **Runtime Virtual Types** dialog box, choose **Everything** or one of the following virtual types: ■ **Everything** to display the list of policies whose scope applies to any of the virtual types: Virtual Service, Virtual REST Service, and Virtual XML Service. ■ **Virtual Service** to display the list of policies whose scope applies to the Virtual Service type. ■ **Virtual REST Service** to display the list of policies whose scope applies to the Virtual REST Service type. ■ **Virtual XML Service** to display the list of policies whose scope applies to the Virtual XML Service type.
A list of the active run-time policies	Enable the **Show only active policies** option.

To see...	Do this...
The list of policies whose scope applies for a particular organization	a. In the **Applicable Organizations** section, select an organization from the drop-down list. b. Click the plus button ➕ next to the drop-down list or press Enter to add the selected organization to the search recipe.
The list of policies whose scope applies for all organizations	a. In the **Applicable Organizations** section, select **All**. b. Click the plus button ➕ next to the drop-down list or press Enter to add the selected organization to the search recipe.

3. The **Search Results for Governance Rules** page provides the following information about each policy.

Column	Description
Name	The name assigned to the run-time policy.
Description	Additional comments or descriptive information about the policy.
Created Date	The date on which the policy was added to the catalog. CentraSite automatically sets this attribute when a user adds the policy to the registry. Once it is set, it cannot be modified.
State	The policy's current lifecycle state.
Owner	The user to which the policy belongs.
Organization	The organization to which the policy applies.

This value...	Indicates that...
Global	The policy is system-wide and applies to all organizations.
OrgName	The policy applies to the specified organization.

Column	Description
	For more information about this property, see "System-Wide versus Organization-Specific Policy Enforcement" on page 347.
Version	The user-assigned version identifier for the policy.
Status Indicator (icon)	The policy's current enforcement state.

Icon	Description
	The policy is active (that is, ready to be enforced).
	The policy is inactive. Inactive policies, meaning that they are not enforced.

Viewing or Changing a Run-Time Policy

You use the Run-Time Policy Details page to examine and/or edit the details for a policy. When editing a policy, keep the following points in mind:

- If your user account belongs to a role that has the Manage Runtime Policies permission for an organization, you automatically have permission to modify all of the policies in that organization. If your user account belongs to a role that has the Manage System-Wide Runtime Policies permission, you have permission to edit any system-wide policy on the server.
- You cannot modify an active policy. If the policy that you want to edit is in the active state, you must deactivate it. For information about deactivating a policy, see "Deactivating a Run-Time Policy" on page 339.
- If you modify a run-time policy that is applied to a published virtual API, you must manually republish the policy to put those changes into immediate effect.

To view or edit the details of a policy

1. In CentraSite Business UI, click **Manage Governance Rules** to display the policy list. For procedures, see "Viewing the Run-Time Policy List" on page 341.
2. Locate the policy whose details you want to view or edit, and click its hyperlinked name.

3. If the policy is active, deactivate it. You cannot edit the details of an active policy. If you need procedures for this step, see "Deactivating a Run-Time Policy" on page 339.
4. In the details page for the policy, examine or modify the policy details as necessary.

Field	Description
Name	The name of the run-time policy. A policy name can contain any character (including spaces). A policy name does not need to be unique within the registry. However, to reduce ambiguity, you should avoid giving multiple policies the same name. As a best practice, we recommend that organizations adopt appropriate naming conventions to ensure the assignment of distinct policy names.
Description	*Optional*. Additional comments or descriptive information about the policy.

Version	The user-assigned version ID assigned to this policy. You may use any versioning scheme you choose for identifying different versions of a policy. The identifier does not need to be numeric.
	Examples:
	`0.0a`
	`1.0.0 (beta)`
	`Pre-release 001`
	`V1-2007.04.30`

Apply policy to all organizations (option)	This property determines if the policy is system-wide (global).
Apply Policy to Organization	This property determines if the policy belongs to a specific organization.
Filters	The settings on this section determine the virtual types to which the policy is applied. For more information about the settings on this Filters section, see "Specifying the Scope of a Run-Time Policy" on page 346.
Policy Actions Message Flow	The settings on this area specify the actions that the gateway will execute when the policy is enforced. For more information about setting the properties on this

Field	Description
	area, see "Assigning Actions to a Run-Time Policy" on page 350.
Gateways	One or more gateways to which the policy is published.
Published Virtual APIs	Displays the list of virtual APIs/virtual REST APIs/ virtual XML APIs to which the policy applies. For more information, see "Viewing the List of Virtual APIs to Which a Run-Time Policy Applies" on page 352.

5. If you edited the settings on any of the **Run-Time Policy Details** panels, click **Save** to save the updated policy.
6. If you deactivated the policy to edit it, activate the policy as described in "Activating a Run-Time Policy" on page 338.
7. When you are ready to put the policy into effect, publish it as described in "Publishing a Run-Time Policy" on page 340.

Specifying the Scope of a Run-Time Policy

Scope refers to the set of properties that determine when a policy is enforced. For a run-time policy, scope is determined by the policy's **Organization**, **Applicable Virtual Types**, **Published APIs** and **Gateways** properties, which are described below.

Property	Description
Organization	Determines whether the policy belongs to a specific organization or is system-wide. For more information about the **Organization** property, see "System-Wide versus Organization-Specific Policy Enforcement" on page 347.
Applicable Virtual Types	The list of virtual types (Virtual Service, Virtual REST Service, Virtual XML Service) of APIs to which this policy applies. You can optionally restrict the scope of the selected virtual types by specifying additional filter criteria. For procedures, see "Refining the Policy Scope" on page 348.
Applicable Gateways	The list of gateways to which the policy will be published (e.g., webMethods Integration Server).

System-Wide versus Organization-Specific Policy Enforcement

The **Organization** properties specify the organization to which the policy applies. When the **Apply policy to all organizations** option is set enabled, it indicates that the policy is *system-wide*. When the **Apply Policy to Organization** property specifies a particular organization, it indicates that the policy is *organization-specific*.

System-Wide Policies

A system-wide policy is enforced for all organizations. For example, if you create a system-wide policy that executes when an API is published to the gateway, CentraSite will enforce the policy whenever *any* user in *any* organization publishes an API of the specified virtual type to the gateway.

To create a system-wide policy, you must belong to the CentraSite Administrator role.

Organization-Specific Policies

An organization-specific policy is enforced on APIs that belong to the same organization as the organization to which the policy applies. For example, if you have a policy that executes when APIs of the Virtual REST Service asset type are published and its **Apply Policy to Organization** property specifies organization ABC, CentraSite will only execute that policy when API instances of the Virtual REST Service asset type *in organization ABC* are published to the gateways.

Modifying the Scope of a Run-Time Policy

Perform the following steps to modify a policy's scope.

To modify the scope of a run-time policy

1. Display the **Run-Time Policy Details** page for the policy whose scope you want to modify. If you need procedures for this step, see "Viewing or Changing a Run-Time Policy" on page 344.
2. If the policy is active, deactivate it. You cannot change the scope of an active policy. If you need procedures for this step, see "Deactivating a Run-Time Policy" on page 339.
3. Modify the properties on the **Run-Time Policy Details** panels as necessary.
   - Enable the **Apply policy to all organizations** option if the policy applies to all organizations. Else, in the **Apply Policy to Organization** property, select the organization to which the policy applies.
   - In the **Applicable Types** lists, select the virtual service types to which the policy applies.
   - Optional. In the **Filter Criteria** section, specify additional selection criteria to narrow the set of objects to which this policy will be applied. For procedures, see "Refining the Policy Scope" on page 348.

- In the **Available Gateways** lists, select the gateways to which the policy will be applied.

4. Click **Save** to save the modified policy.
5. If you deactivated the policy to edit it, activate the policy as described in "Activating a Run-Time Policy" on page 338.
6. When you are ready to put the policy into effect, publish it as described in "Publishing a Run-Time Policy" on page 340.

Refining the Policy Scope

If you want to further restrict the set of virtual APIs to which the policy is applied, you can specify additional selection criteria in the **Filter criteria** section of the **Run-Time Policy Details** page. Using this section, you can filter objects by Name, Description and/or Classification attributes. If you specify no filter criteria, the policy will apply to all virtual APIs.

- **Filtering By Name and Description**

  You can filter policies based on their Name and/or Description attributes using any of the following comparison operators:

Comparison Operator	Description
Equals	Selects APIs whose Name or Description value matches a given string of characters. For example, you would use this operator if you wanted to apply a policy only to APIs with the **Name** or **Description** value `Mobile App Store`.
Contains	Selects APIs whose Name or Description value includes a given string of characters anywhere within the property's value. For example, you would use this operator if you wanted to apply a policy to APIs that had the word `Mobile` anywhere in their **Name** or **Description** property.
StartsWith	Selects APIs whose Name or Description value begins with a given string. For example, you would use this operator if you wanted to apply a policy only to APIs whose **Name** or **Description** begins with the characters `Mobile`.

  When specifying match strings for the comparison operators described above, keep the following points in mind:

  - Match strings *are not* case-sensitive. If you define a filter for names that start with "ABC" it will select names starting "abc" and "Abc".

- Wildcard characters are not supported. That is, you cannot use characters such as * or % to represent *any sequence of characters*. These characters, if present in the match string, are simply treated as literal characters that are to be matched.

- **Filtering By Classification Attribute**

  You can also filter APIs based on the way in which they are classified. When you filter APIs in this way, CentraSite applies the policy to APIs that have at least one classification attribute whose value matches a specified taxonomy category. For example, you could use a classification filter to apply a policy to those APIs that are classified with “Production” sandbox.

  When you filter APIs by classification, CentraSite inspects all of an APIs classification attributes. If any of those attributes contain the exact category specified by the selection criteria, the API is listed in **Run-Time Policy Details (Step 3 of 3)** of the policy.

  Note: To satisfy the selection criteria, the attribute value in the API must match the category specified in the selection criteria *exactly*. Sub-categories of the specified category *are not* considered to be matches. For example, say you have a taxonomy category called "Project ABC", and that category has the subcategories “Project ABC Design”, “Project ABC Development” and “Project ABC Deployment”. If you filter for category “Project ABC”, CentraSite will apply the policy to objects that are classified by the specific category “Project ABC”, but not objects that are classified by that category's sub-categories.

Use the following procedure to specify additional criteria for selecting APIs to which you want the policy applied.

To refine the policy scope

1. Display the Run-Time Policy Details page for the policy whose scope you want to refine. If you need procedures for this step, see "Viewing or Changing a Run-Time Policy" on page 344.
2. If the policy is active, deactivate it. You cannot refine the scope of an active policy. If you need procedures for this step, see "Deactivating a Run-Time Policy" on page 339.
3. In **Run-Time Policy Details (Step 1 of 3)**, locate the **Filter Criteria** section.
4. If you want to filter by Name or Description, take the following steps:
   a. Select **Name** or **Description** in the first field.
   b. Select the comparison operator (e.g., Equals, Contains, StartsWith) in the second field.
   c. Specify the match string in the third field.
5. If you want to filter by APIs' classification, take the following steps:
   a. Select **Classification** in the first field.

b. Click **Browse** and select the category by which you want to filter APIs.

6. If you want to specify additional criteria, click the plus button and repeat steps 4 and 5.

> **Important:** If you specify multiple filters, the policy is applied only if the API matches *all the selection criteria* (i.e., the selection criteria is combined using an AND operator, not an OR).

7. You will see the generated list of services displayed in **Run-Time Policy Details (Step 3 of 3)**.
8. If you deactivated the policy to edit it, activate the policy as described in "Activating a Run-Time Policy" on page 338.
9. When you are ready to put the policy into effect, publish it as described in "Publishing a Run-Time Policy" on page 340.

Assigning Actions to a Run-Time Policy

The **Message Flow** area on **Run-Time Policy Details (Step 1 of 3)** specifies the list of actions that you want CentraSite to execute when it enforces the run-time policy. CentraSite executes actions in the order in which they appear in the list.

The action list can include any built-in or custom actions that are compatible with the policy's scope.

For descriptions of the built-in run-time actions that you can include in a run-time policy, see *Run-Time Governance with CentraSite*.

Modifying the Action List

Use the following procedure to modify the action list for a run-time policy.

To modify the action list for a run-time policy

1. Display the Run-Time Policy Details page for the policy whose actions you want to edit. If you need procedures for this step, see "Viewing or Changing a Run-Time Policy" on page 344.
2. If the policy is active, deactivate it. You cannot change the action list of an active policy. If you need procedures for this step, see "Deactivating a Run-Time Policy" on page 339.
3. Navigate to **Run-Time Policy Details (Step 2 of 3)** to display the list of actions associated with the policy.
4. To add actions to the list, you simply drag and drop the individual actions from the **Policy Actions** area to the **Message Flow** area.
5. To remove actions from the list, mouse hover the action name you want to delete. Choose the **Delete** ( ) icon that is displayed to the right of the action name.

6. Use the procedure in "Configuring Policy Action Parameters" on page 351 to configure the parameter values for any new actions that you might have added to the list, or to make any necessary updates to the parameter values for existing actions.

   For information about the parameter settings for the built-in run-time actions provided by CentraSite, see *Run-Time Governance with CentraSite*.

7. When the action list is complete and you have configured all of the input parameters for the actions correctly, click **Save** to save the updated policy.
8. If you deactivated the policy to edit it, activate the policy as described in "Activating a Run-Time Policy" on page 338.
9. When you are ready to put the policy into effect, publish it as described in "Publishing a Run-Time Policy" on page 340.

Configuring Policy Action Parameters

Policy actions have parameters that you must set to configure the behavior of the action at enforcement time.

> **Important:** Until the required parameters are set for all actions, you will not be able to activate the policy (if it is inactive) or save the policy (if it is already active).

To configure the input parameters for a policy action

1. Display the Run-Time Policy Details page for the policy whose actions you want to configure. If you need procedures for this step, see "Viewing or Changing a Run-Time Policy" on page 344.
2. If the policy is active, deactivate it. You cannot configure the actions of an active policy. If you need procedures for this step, see "Deactivating a Run-Time Policy" on page 339.
3. Navigate to **Run-Time Policy Details (Step 2 of 3)** to display the list of actions associated with the policy.
4. In the **Message Flow** area, do the following for each action in the list.
   a. Mouse hover the action name whose parameters you want to examine or configure.
   b. Choose the **Configure** ( ) icon that is displayed to the right of the action name.
   c. In the **<action_name>** dialog box, set the parameters as necessary.

      > **Note:** If you fail to specify all of the required parameters, CentraSite issues a red error icon. Mouse hover the error icon shows a hint with the error description.

   d. Click **Save** to save the parameter settings.

5. After you configure the parameters for all of the actions in the list, click **Save** to save the updated policy.

   Note: If you fail to specify all of the required parameters, CentraSite issues an error message with the description.

6. If you deactivated the policy to edit it, activate the policy as described in "Activating a Run-Time Policy" on page 338.
7. When you are ready to put the policy into effect, publish it as described in "Publishing a Run-Time Policy" on page 340.

Viewing the List of Virtual APIs to Which a Run-Time Policy Applies

Use the following procedure to view the list of virtual APIs to which a run-time policy applies.

Important: The list only includes virtual APIs that are published to the specified gateways in the policy definition. Virtual APIs that are within the scope of the policy, but have not yet been published to the specified gateways, do not appear in this list.

To view the list of APIs

1. Display the Run-Time Policy Details page for the policy you want to view. If you need procedures for this step, see "Viewing or Changing a Run-Time Policy" on page 344.
2. Navigate to **Run-Time Policy Details (Step 3 of 3)** to display the list of APIs that was generated based on the criteria you specified in the **Filters** section of **Run-Time Policy Details (Step 1 of 3)**.

Deleting a Run-Time Policy

You delete a policy to remove it from CentraSite permanently.

If your user account belongs to a role that has the “Manage Runtime Policies” permission for an organization, you automatically have permission to delete all of the policies in that organization. If your user account belongs to a role that has the “Manage System-Wide Runtime Policies” permission, you have permission to delete any system-wide policy on the server. In addition, a user with the “Manage System-Wide Runtime Policies” permission, can also delete the policies that were published to the Mediator.

To delete a run-time policy

1. In CentraSite Business UI, click **Manage Governance Rules** to display the policy list. For procedures, see "Viewing the Run-Time Policy List" on page 341.

2. Enable the checkbox next to the name of the policy that you want to delete. You can delete multiple policies in a single step.
3. In the actions bar of the Search Results page, click the **Delete**( ) icon.

> **Important:** If you have selected several policies where one or more of them are system-wide policies, you can use the **Delete** button to delete the policies. However, if you do not have the required permission for all of the selected policies, only policies you have permission for will be deleted.

Mediator Runtime Aliases

Typically you will develop, test, and publish a virtual service in stages (Development stage, Test stage, and Production stage as described in the implementation concepts in *Getting Started with CentraSite*.) When you promote a virtual service from one stage to the next, you will need to change environment settings such as:

- The runtime (routing) endpoint for the virtual service.
- The routing endpoint connection properties. For example, connection timeout settings, endpoint client certificates.
- Outbound authentication tokens.

You can promote a virtual service from one stage to the next in CentraSite by:

- promoting the same virtual service from one stage to the next.

  Using this method, you have to export/import the virtual service to the next stage, change its environment settings, and then deploy it. In addition, this method of promotion requires a dedicated CentraSite instance for each stage.
- creating a separate virtual service for each stage.

  Using this method only requires one instance of CentraSite, but you had to use a unique name for each virtual service.

An easier way to promote a virtual service is to define separate routing runtime aliases to be used in each stage. These aliases are deployed to the runtime gateways along with the virtual services, and are referenced by the virtual services at runtime.

Defining the Runtime Aliases

Before you define the runtime (routing) endpoint aliases, the following prerequisites must be met:

- Ensure that the gateways for the aliases have already been created. For example, you might have three gateways: Development, Testing, and Production.

- Ensure that you have the necessary permissions to deploy the endpoint aliases. If no user credentials are provided, CentraSite uses the credentials of the user who is logged in.

To define runtime endpoint aliases

1. In CentraSite Business UI, click **Manage Governance Rules**.
2. Click the **Add Runtime Alias** action and complete the following fields in the runtime alias wizard:

Field	Description
Runtime alias type	Select the type of runtime alias: ■ **Simple Alias**: A simple routing URL or host and port name. ■ **Secure Alias**: Contains username, password, and domain values. The password is hashed and put into secure storage so that it is not visible in clear text. ■ **Endpoint Alias**: A name and value pair which can also contain endpoint properties such as Connection Timeout, Read Timeout, etc.
Authentication Scheme	For the Secure Alias type only. Select one of the following: ■ HTTP Basic Authentication ■ NTLM ■ OAuth2
Name	Assign a name to the alias.
Description	**(Optional)** Write a description for the alias.

3. Click **Next**.
4. Complete the following fields:

Field	Description
Default Value	Enter a default URL or components of the URL such as service name to use when no stage-specific values are entered. This default value is overwritten at deployment time by stage-specific values, if they exist.

Field	Description
Stage-specific Values	Select an instance of Mediator. The stage-specific gateways and their URLs are displayed below this field.

Endpoint Properties	**For the Endpoint Alias type only**. Click the endpoint properties icon next to **Stage-specific Values** to configure endpoint properties.
	■ **SOAP Optimization Method**: **Optional**, This setting is not applicable for REST services. Mediator can accept the following methods to optimize the payloads of SOAP requests:
	  ■ **MTOM**: Indicates that Mediator expects to receive a request with a Message Transmission Optimization Mechanism (MTOM) attachment, and will forward the attachment to the native service.
	  ■ **SwA**: Indicates that Mediator expects to receive a "SOAP with Attachment" (SwA) request, and will forward the attachment to the native service.
	  ■ **None** (the default).
	■ **Connection Timeout**: The time interval (in seconds) after which a connection attempt will timeout. If a value is not specified (or if the value 0 is specified), Mediator will use the value of the global property `pg.endpoint.connectionTimeout` located in the file *Integration Server_directory* \packages\WmMediator \config\resources\pg-config.properties. The default of that property is 30 seconds.
	■ **Read Timeout**: The time interval (in seconds) after which a socket read attempt will timeout. If a value is not specified (or if the value 0 is specified), Mediator will use the value of the global property `pg.endpoint.readTimeout` located in the file *Integration Server_directory* \packages\WmMediator \config\resources\pg-config.properties. The default of that property is 30 seconds.
	
	SSL Options: To enable SSL client authentication for the endpoint, you must specify values for both the **Client Certificate Alias** field and the **IS Keystore Alias** field. If you specify a value for only one of these fields, a deployment error will occur.

Field	Description
	Note: SSL client authentication is optional; you may leave both fields blank. ■ **Client Certificate Alias**: The client's private key to be used for performing SSL client authentication. If you specify a client certificate alias, you must also include in the virtual service's policy the “Require SSL” action and select that action's “Client Certificate Required” option. The “Client Certificate Required” option specifies whether client certificates are required for the purposes of: 1) Verifying the signature of signed SOAP requests or decrypting encrypted SOAP requests, and 2) Signing SOAP responses or encrypting SOAP responses. ■ **IS Keystore Alias**: The keystore alias of the instance of Integration Server on which Mediator is running. This value (along with the value of **Client Certificate Alias**) will be used for performing SSL client authentication. **WSS Header Customization**: Indicates whether Mediator should pass the WS-Security headers of the incoming requests to the native service. ■ **Pass all security headers**: Passes the security header, even if it is processed by Mediator (i.e., even if Mediator processes the header according to the virtual service's security run-time policy). **Note:** If the virtual service does not contain a security run-time policy, and the `mustUnderstand` attribute of the security header is 0/false, then Mediator will *always* forward the security header to the native service. ■ **Remove processed security header from request before routing**: Removes the security header if it is processed by Mediator (i.e., if Mediator processes the header according to the virtual service's security run-time policy). Note that Mediator will *not* remove the security header if *both* of the following conditions are true: 1) Mediator did not process the security header, and 2) the `mustUnderstand` attribute of the security header is 0/false).

Examples:

Endpoint Type	Field Values
Alias	■ Name: ProdSandbox ■ Default Value: http://myhost:5555
Secure Alias	■ Name: ProdAuthToken ■ Password: **** ■ Domain: mysever.sag

Endpoint Alias	■ Name: SearchServiceProductionEndpoint
	■ Description: The clustered production endpoint for the search service.
	■ Default Value: http://prodcluster:6666/Search
	■ Endpoint Properties:
	  ■ Connection Timeout: 5
	  ■ Read Timeout: 15

5. Click **Publish**.

   Next, you need to reference the alias in the virtual service, as described in "Referencing the Runtime Aliases in Virtual Services" on page 357.

Referencing the Runtime Aliases in Virtual Services

After you have defined the runtime (routing) aliases, you need to reference them in the virtual services. Before you do this, the following prerequisites must be met:

- Ensure that the gateways to which the virtual service will be deployed has already been created. For example, you might have three gateways: Development, Testing, and Production.
- Ensure you have the necessary permissions to deploy endpoint aliases. If none are given, the logged-in user's credentials are taken.

To reference an alias in a virtual service

1. In CentraSite Business UI, open the virtual alias.
2. Click **Virtualize** in the action bar.
3. Select **Create New Virtual Alias** and specify a name for the virtual alias and click Next.

   You may also reconfigure an existing virtual alias.

4. **For Simple and Endpoint aliases** In the **Policy Actions** window, **Policy Enforcement > Routing** section, select one of the following routing actions and use `${<aliasname>}` (*<aliasname>* is the name of the alias specified in the previous step) in **Route to**, to form the complete routing URL:

Routing Action	Description
Straight Through Routing	Routes the requests directly to a native endpoint that you specify.
Content Based Routing	Route requests to different endpoints based on specific criteria that you specify.
Load Balancing and Failover Routing	Routes the requests across multiple endpoints
Context Based Routing	Route requests to different endpoints based on specific values that appear in the request message.

5. **For Secure alias only** In the **Policy Actions** window, **Policy Enforcement > Outbound Authentication**,

   a. Select one of the following authentication actions:

Authentication Action	Description
HTTP Basic Authentication	Uses HTTP basic authentication to verify the client's authentication credentials contained in the request's Authorization header against the Integration Server's user account.
NTLM Authentication	Uses NTLM authentication to verify the client's authentication credentials contained in the request's Authorization header against the Integration Server's user account.
OAuth2 Authentication	Uses OAuth2 authentication to verify the client's authentication credentials contained in the request's Authorization header against the Integration Server's user account.

   b. For **Authenticate Using**, select Secure Alias.

   c. Enter the **Alias name**.

6. Click **Virtualize**.

Publishing the Virtual Service

To publish the virtual service that references the runtime alias

1. In CentraSite Business UI, select the virtual service with the runtime alias you want to publish.
2. Click **Publish** in the action bar.
3. In the publish window, choose the gateway(s) you want to publish to or select **All Gateways**
4. Click **Publish**.

   To unpublish the virtual service, select the service, select **All Gateways**, and click **Unpublish**

Using CentraSite with webMethods API-Portal

CentraSite uses webMethods API-Portal to publish APIs to external developers and partners and provides design-time governance capabilities to the APIs, whereas webMethods API-Portal allows developers to self-register, learn about these APIs, and try out the APIs in their applications.

Before You Configure CentraSite for API-Portal

Before you start configuring CentraSite for API-Portal, make sure the following products are installed in addition to CentraSite:

- webMethods API-Portal
- webMethods Integration Server
- webMethods Mediator
- webMethods Enterprise Gateway (optional)

If you are using Enterprise Gateway to secure traffic between API consumer requests and the execution of services on Mediator, ensure that CentraSite, Mediator, and Integration Server are installed behind the firewall. In this scenario, the Enterprise Gateway Server is installed in the DMZ for external access. Alternatively, for internal users only, you can use Integration Server with Mediator deployed in a secure network behind the firewall.

For more information about installing these products, see *Installing webMethods and Intelligent Business Operations Products*.

Roles Needed to Manage API-Portals

To add and manage API-Portal instances in CentraSite, you must belong to the CentraSite Administrator role or at least the API-Portal Administrator role.

- If you belong to the CentraSite Administrator role, you can manage any API-Portal instance within any organization.
- If you belong to the API-Portal Administrator role for an organization, you can manage all of the API-Portal instances in that particular organization.

For more information about roles and permissions, see *Getting Started with CentraSite*.

Configuring CentraSite, Mediator, and API-Portal

After the components listed in are installed, additional configuration tasks must be performed to set up the environment in preparation for publishing APIs to API-Portal. The following table lists these high-level configuration steps and where to go for more information:

Step	Where to Go for Procedures
Configure the CentraSite infrastructure, including LDAP, email server, and log purging.	*CentraSite Administrator's Guide*
Set up an organization structure for API provider and consumer organizations.	Section on adding an organization in *Working with the CentraSite Business UI*
(Optional) Configure Mediator in a clustered Integration Server environment.	Section on configuring communication with CentraSite in *Administering webMethods Mediator*
(Optional) Configure the communication link between Mediator and Enterprise Gateway.	Section on configuring Enterprise Gateway in *webMethods Integration Server Administrator's Guide*
(Optional) Configure the communication link between CentraSite and Mediator by defining Mediator gateways in CentraSite.	*Working with the CentraSite Business UI*
Create a technical user in CentraSite.	Sections on adding a user, assigning a user to a group, and assigning a role

Step	Where to Go for Procedures
Specify this user when registering an API-Portal instance in CentraSite. It is considered a best practice not to tie critical actions (such as publishing data or APIs) to a real user whose credentials can expire. **Note:** Software AG recommends specifying the same user credentials as the technical user created in Mediator and API-Portal.	to a user in *Working with the CentraSite Business UI*
Create a technical user for Mediator and add the user to the Administration group so that it may be used by CentraSite when publishing APIs to Mediator. **Note:** Software AG recommends specifying the same user credentials as the technical user created in CentraSite and API-Portal.	Section on adding user accounts and adding users to a group in *webMethods Integration Server Administrator's Guide*
Create a technical user in API-Portal and assign the user to the API Provider role. Specify this user when registering an API-Portal instance in CentraSite. It is considered a best practice not to tie critical actions (such as publishing data or APIs) to a real user whose credentials can expire. **Note:** Software AG recommends specifying the same user credentials as the technical user created in CentraSite and Mediator.	Sections on adding a user, assigning a user to a group, and assigning a role to a user in *Working with the CentraSite Business UI*
Create Mediator Publisher users (developers who can publish APIs to API-Portal) and assign the users to the API-Portal Publisher role or at least the Modify instance-level permission on the API-Portal.	Sections on adding a user, assigning a user to a group, and assigning a role to a user in *Working with the CentraSite Business UI*

Step	Where to Go for Procedures
Set up and customize email templates to be used when informing users about access token request, renewal, and expiration.	Section on managing API keys and OAuth 2.0 tokens in *Working with the CentraSite Business UI*
Create taxonomies in CentraSite that you can use to categorize APIs in API-Portal.	Section on adding a taxonomy in *CentraSite Administrator's Guide*
Register API-Portal instances with CentraSite.	"Adding an API-Portal to CentraSite " on page 363

Displaying a List of Available API-Portals

The **Manage Governance Rules** activity allows you to view a list of the registered API-Portals that you are allowed to access. The list includes all API-Portals for which you are the owner. If you have the API-Portal Administrator role for an organization, the list includes all of the API-Portals defined in that particular organization.

Perform the following steps to view the list of API-Portals.

To view the list of API-Portal

1. In the activity bar, click **Manage Governance Rules**.
2. To see a list of the available API-Portals, do the following:
   a. Go to the advanced search panel.
   b. In the **Narrow Your Results** section, do the following:
      a. Locate **Available Scopes**.
      b. Choose **API-Portal** from the drop-down list.
      c. Then click the plus button next to the drop-down box or press Enter to add the scope **API-Portal** to the search recipe.

         The Search Results for Governance Rules page displays a list of all API-Portals for which you have the view permission.
   c. To further filter the list to see a subset of the available API-Portals, type a partial string in the **Keyword** text field. Then click the plus button next to the text field or press Enter to add the keyword to the search recipe.
3. For each API-Portal, the list includes basic information of the API-Portal. The details include:

Column	Description
Name	The name of the API-Portal.
Description	A descriptive information about the API-Portal.
Created Date	The date on which the API-Portal was registered with the CentraSite registry. CentraSite automatically sets this attribute when an administrator registers the API-Portal with CentraSite. **Note:** Once it is set, it cannot be modified.
Owner	The user to which the API-Portal belongs.
Organization	The organization to which the API-Portal belongs.
Version	The system-assigned version identifier for the API-Portal.

Adding an API-Portal to CentraSite

To establish communication between CentraSite and an API-Portal instance, you must first capture the configuration details of API-Portal, and then publish (register) the API-Portal to CentraSite registry as described in "Registering an API-Portal with CentraSite " on page 368. CentraSite will not enable the API-Portal communication until you register it.

You add the configuration details of an API-Portal instance using the **Add Gateway** action. If you do not see the **Add Gateway** icon, it is probably because you not have the required role to add API-Portal to CentraSite.

Perform the following steps to add an instance of API-Portal and save it to CentraSite.

To add an API-Portal to CentraSite

1. In the activity bar, click **Manage Governance Rules**.

   When you do this, you see a list of all of the currently registered API-Portals. Also, the action bar shows the set of actions that are available for working with API-Portals.
2. Click **Add Gateway**  .
3. In the Add Gateway page, specify the following fields.

In this field…	Do the following…
Name	Enter a name for the new API-Portal. An API-Portal name can contain any character (including spaces). An API-Portal name does not need to be unique within the registry. However, to reduce ambiguity, you should avoid giving multiple API-Portals the same name. As a best practice, consider adopting appropriate naming conventions to ensure that API-Portal are distinctly named within an organization.
Description	*Optional.* Enter a description for the new API-Portal. This description appears when a user displays a list of API-Portal in the CentraSite Business UI.
Gateway	Choose **API-Portal**.
Organization	Choose the organization to which this API-Portal will be registered. (The **Organization** drop-down contains the list of organizations to which you are permitted to add API-Portals.)
Onboarding Consumer Organization	Choose the organization to which the users of API-Portal will be added. ■ **Use Existing** (default): Select a previously existing organization. ■ **Create New**: Enter a new organization name. **Note:** When this field is specified, CentraSite automatically associates the API-Portal user with the specified organization during the user onboarding process. To know more about the API-Portal user onboarding process in CentraSite, see "Understanding Communication Between CentraSite and API-Portal " on page 380.
CentraSite Communication Information (API-Portal to CentraSite)	You must set the communication parameters described in this section for API-Portal to send and receive data with CentraSite.

In this field…	Do the following…

Name	Description
Username	The CentraSite user ID for authenticating against the CentraSite when API-Portal communicates with CentraSite. This implies the user ID of a user who has the CentraSite Administrator role or the API-Portal Administrator role.
Password	The password of the user specified in the **Username** field.

Note: The **CentraSite Endpoint** field shows the URL (scheme, host, and port) of the CentraSite Application Server Tier (CAST) in the format, `<scheme>://<host>:<port>`. The scheme is `http` or `https`. The `host` is the machine on which CAST is running, and `port` is the port on which CentraSite is listening. The value for the **CentraSite Endpoint** field is determined by the URL that you use to access the CentraSite Business UI.

API-Portal Communication Information (CentraSite to API-Portal)

You must set the communication parameters described in this section for CentraSite to send and receive data with API-Portal.

Name	Description

Endpoint	The URL (host and port) of the API-Portal.
	`http://server:port/<WebAppContext>>`
	Where, server is the machine on which the API-Portal is running and port is the port on which API-Portal is listening.
	Example
	`http://myServer:18101/abs`

In this field…	Do the following…
Tenant	Enter the name of a tenant residing in the API-Portal. By default, this field is populated with the `default` tenant that is preshipped with API-Portal.
Use CentraSite Credentials	Select the checkbox to enable reuse of the CentraSite credentials for authenticating against the API-Portal. When this checkbox is selected, CentraSite automatically disables the subsequent Username and Password fields.
Username	The API-Portal user ID as configured in the UMC. This implies the user ID of a user who has the API Provider role in API-Portal.
Password	The password of the API-Portal as configured in the UMC. This implies the password of the user specified in the above **Username** field.
Sandbox	*Optional.* The sandbox category for classifying the API-Portal instance. a. Click **Choose**. b. When you click the button, the **Choose Sandbox Categories** dialog appears allowing you to select the required categories for URL. c. Mark the checkbox beside the name of the category you want to use to classify the API-Portal's URL. d. Click **OK**.

In this field…	Do the following…
	CentraSite includes a set of predefined categories for the taxonomy node **Sandbox**, especially for classifying an API-Portal instance. By default, API-Portal gateway can be classified into the following predefined categories - Development, Production, or Test. For information on the Sandbox categories that CentraSite supports out-of-the-box, in CentraSite Control, go to **Administration > Taxonomies**. In the Taxonomies page, navigate to **Sandbox** in the list of taxonomies. If you would like to use sandbox categories that are not supported by CentraSite, you can define your custom categories. **Note:** Although it is possible to define subcategories for the predefined and custom categories within the Sandbox taxonomy, you cannot use these subcategories to classify the URL. CentraSite only displays the names of the top-level categories (that is, categories that are defined for the Sandbox taxonomy) for the classification.

4. After you specify the details of the new (as yet incomplete) API-Portal, do one of the following:
   - Click **Save** to add the new API-Portal to the CentraSite registry. You can register the API-Portal with CentraSite at a later time.

- Click **Publish** to add the new API-Portal to the CentraSite registry and, register it with CentraSite in a single step.

Registering an API-Portal with CentraSite

After you add an API-Portal to the CentraSite registry, you must register the same instance of API-Portal with CentraSite before you begin publishing APIs to the API-Portal registry.

You register an instance of API-Portal with CentraSite by using the **Publish** action. If you do not see the **Publish** icon in the API-Portal details page, it is probably because you not have the required role to register the instance of API-Portal with CentraSite.

Registering a Single API-Portal

Perform the following steps to register a single instance of API-Portal with CentraSite.

To register an individual API-Portal with CentraSite

1. Display the list of API-Portals. If you need procedures for this step, see "Displaying a List of Available API-Portals" on page 362
2. In the displayed list, click the link of the API-Portal you want to register with CentraSite.
3. In the details page of the API-Portal, click the **Publish** icon.

Registering a Set of API-Portals

You can register multiple instances of API-Portal with CentraSite in a single step.

Perform the following steps to register a set of API-Portals with CentraSite.

To register multiple API-Portals with CentraSite in a single operation

1. Display the list of API-Portals. If you need procedures for this step, see "Displaying a List of Available API-Portals" on page 362.
2. In the displayed list, mark the checkbox next to the name of each API-Portal you want to register with CentraSite.
3. Click the **Publish** icon.

Viewing or Modifying Details of an API-Portal

You use the API-Portal details page to examine and/or edit the properties of an instance of API-Portal.

You modify the details of an API-Portal by using the **Edit** action in the API-Portal details page. If you do not see the **Edit** icon, it is probably because you not have the required role to modify the details of API-Portal.

When you edit the details of an API-Portal, keep the following points in mind:

- To edit an API-Portal, you must have instance-level Modify permission on the API-Portal. If your user account belongs to API-Portal Administrator organization-level role, you automatically have permission to modify all of the API-Portals in that organization. If your user account belongs to the CentraSite Administrator role, you have permission to modify any API-Portal in the CentraSite registry.
- CentraSite will not allow you to directly modify the endpoint URL and tenant user information of API-Portal, for example, if you have an API or access token associated to the CentraSite. However, If you still want to modify the information, a warning message will be issued.
- Some attributes accept only specific types of information. For example, for a URL type attribute, you must supply a URL when you edit that attribute.
- Some attributes are designed to be read-only and cannot be edited even if they appear in an API-Portal on which you have Modify permission.

Perform the following steps to view or edit the details of an API-Portal.

To view or edit the properties of an API-Portal

1. Display the list of API-Portals. If you need procedures for this step, see "Displaying a List of Available API-Portals" on page 362.
2. In the displayed list, click the link of the API-Portal whose details you want to view or modify. This shows the details of the API-Portal.

   The details include:

   - The API-Portal's basic information (asset type, the last modified date, owning organization, owning user, the home page URL of webMethods API-Portal, and the name of the organization for onboarding API-Portal users in CentraSite).
   - The CentraSite communication information, which shows an endpoint URL of CentraSite, and the username of a CentraSite user.
   - The API-Portal communication information, which shows an endpoint URL of API-Portal, and the username of a technical user in API-Portal.
   - The APIs published to the API-Portal.
3. If you want to modify the details of the API-Portal, click the **Edit** icon. You can then enter new values for the API-Portal's fields.
4. In the **Basic Information** profile, examine or modify the following properties as necessary.

In this field...	Do the following...
Name	The name of the API-Portal.

In this field...	Do the following...
Organization	The organization to which the API-Portal belongs.
Onboarding Consumer Organization	The organization to register users of the API-Portal. You are not allowed to modify the value of this field if there is at least one API-Portal user onboarded in this organization.
Owner	The user to whom the API-Portal belongs.
Description	Additional comments or descriptive information about the API-Portal.

5. In the **CentraSite Communication** profile, examine or modify the properties as necessary.

In this field...	Do the following...
Endpoint	The endpoint URL of CentraSite.
Username	The user ID of the CentraSite user who have a CentraSite Administrator or API-Portal Administrator role in CentraSite.
Password	The password of the CentraSite user specified in the above **Username** field.

6. In the **API-Portal Communication** profile, examine or modify the properties as necessary.

In this field...	Do the following...
Endpoint	*Read-only.* The endpoint URL of API-Portal.
Tenant	The name of the tenant user in API-Portal. **Important:** You cannot change the value of the **Tenant** property if there is an API already published to the API-Portal.
Use CentraSite Credentials	Enables the usage of CentraSite credentials for authenticating against API-Portal.

In this field...	Do the following...
Username	The user ID of the API-Portal user who have an API Runtime Provider role in CentraSite.
Password	The password of the user specified in the above **Username** field.
Sandbox	The sandbox category of the API-Portal instance.

7. In the **Published APIs** profile, examine or modify the properties as necessary.

Attribute	Description
Name	A deep link to the URL of the API details page in CentraSite.
Description	A descriptive information of the API.
Version	The user-assigned version identifier for the API.
View in API-Portal	A link to the API details page in API-Portal.

8. If you edited the settings on the details page of API-Portal, click the **Save** icon to save the changes.

   If you have made changes to the CentraSite username or password field, make sure you publish the API-Portal again.

Setting Permissions on an API-Portal

By default, everyone in your organization is permitted to view the API-Portal that you register in CentraSite. However, only you (as the owner of the API-Portal) and users who have a API-Portal Administrator role for your organization are allowed to view, edit and delete these API-Portals. To enable other users to view, edit and/or delete an API-Portal that you have registered, you must modify the API-Portal's permission settings.

You modify the instance-level permissions for an API-Portal by using the **Permissions** action in the API-Portal details page. If you do not see the **Permissions** icon, it is probably because you not have the required role to modify the permission settings of API-Portal.

Who Can Set Permissions on an API-Portal?

When setting permissions on an API-Portal, keep the following points in mind:

- To set permissions on an API-Portal, you must have the CentraSite Administrator role, or API-Portal Administrator role, or have the Full instance-level permission on API-Portal itself.
- You can assign permissions to any individual user or group defined in CentraSite.
- The groups to which you can assign permissions include the following system-defined groups:

Group Name	Description
Users	All users within a specified organization.
Members	All users within a specified organization and its child organizations.
Everyone	All users of CentraSite *including guest users*.

- If a user is affected by multiple permission assignments, the user receive the union of all the assignments. For example, if group ABC has Modify permission on an API-Portal and group XYZ has Full permission on the same API-Portal, users that belong to both groups will, in effect, receive Full permission on the API-Portal.

Setting Instance Level Permissions on an API-Portal

Perform the following steps to assign instance-level permissions to an API-Portal.

To assign permissions to an API-Portal

1. Display the details page for the API-Portal whose permissions you want to modify. If you need procedures for this step, see "Displaying a List of Available API-Portals" on page 362.
2. In the action bar for the API-Portal, click the **Permissions** icon. This opens the **Assign Permissions** dialog in which you can set the required permissions for the API-Portal.
3. To add users or groups to the **User and Group Permissions** list, do one of the following:
   a. Type a partial string in the **Add User or Group** text box. CentraSite applies the filter to the users and groups in registry.
   b. Select the user or group to which you want to assign permissions.
   c. Click the plus button next to the text box or press Enter to add the user or group to the **User and Group Permissions** list.

   -OR-

   a. Click **Choose**. This opens the **Choose Users and Groups** dialog.
   b. Type a partial string in the **Add User or Group** text box. CentraSite applies the filter to the users and groups in registry.

c. Click the **Search** icon.

d. Select the users and groups to which you want to assign permissions.

e. Click **OK**.

4. To remove a user or group from the **User and Group Permissions** list, select the **Delete** icon beside the group name or user ID.
5. Use the **View**, **Modify** and **Full** check boxes to assign specific permissions to each user and/or group in the **User and Group Permissions** list as follows:

Permission	Allows the selected user or group to...
View	View the API-Portal.
Modify	View and edit the API-Portal. This permission also allows the selected user or group to publish and unpublish APIs to the API-Portal.
Full	View, edit and delete the API-Portal. This permission also allows the selected user or group to assign instance-level permissions to the API-Portal.

6. Click **Save** to save the new permission settings.

Setting Instance Level Profile Permissions on an API-Portal

Perform the following steps to set instance-level permissions on an API-Portal's profiles.

To assign instance-level permissions on an API-Portal's profiles

1. Open the API-Portal's **Permissions** action.
2. Locate the user or group for which you wish to set profile permissions. Then click the arrow icon beside the user or group name to open the profile permission list.
3. Use the checkboxes to indicate which profiles the user or group is permitted to view, modify or delete.
4. Click **Save** to save the new permission settings.

API-Portal Specific Profiles in CentraSite

CentraSite provides several predefined profiles that includes attributes that are of use when API-Portal is integrated with CentraSite.

API-Portal Information Profile

The Service asset type definitions (Service, REST Service, and XML Service) and its variants (Virtual Service, Virtual REST Service, and Virtual XML Service) contains a

profile named **API-Portal Information**, which will display the classification details of an API in API-Portal.

The **API-Portal Information** profile is an optional profile that is disabled by default. When you add an API-Portal asset to the CentraSite registry, it is enabled for all Service asset type definitions.

This profile includes the following attributes:

Attribute	Description
API Proxy URLs	Specifies the URL of the proxy server through which requests are routed to the actual endpoint of the native service or the Mediator endpoint of the virtual service.
API Grouping	Groups the APIs by freely definable business terminology to indicate the API usage. The following are some of the predefined categories in the **API Grouping** taxonomy in CentraSite. ■ CRM ■ Financing, Banking and Insurance ■ Sales and Ordering ■ Search ■ Transportation and Warehousing In addition to the predefined categories, you can create your own custom categories. For instructions on how to create a custom category, see the *CentraSite Administrator's Guide*.
API Icon	Specifies the icon shown in API-Portal to represent the API.
API Maturity Status	Defines the maturity of your API based on a customizable set of terms, allowing you to indicate the maturity status for the API. The following are some of the predefined categories in the **API Maturity Status** taxonomy in CentraSite. ■ A Beta phase - the first stage of API maturity, when the features and functions of the API are currently undergoing beta testing.

Attribute	Description
	■ An Experimental phase is the next stage of API maturity, when the usage of an API is limited and focused on gathering feedbacks. ■ A Test phase, when the features and functions of the API are undergoing testing in a controlled environment that mimics production scenarios. ■ A Production phase is the final stage of API maturity, when the features and functions of the API are available publically. In addition to the predefined categories, you can create your own custom categories. For instructions on how to create a custom category, see the *CentraSite Administrator's Guide*.
API Subscription Terms	Specifies the category of the key assigned to the client to access the API based on subscription plans. The following are some of the predefined categories in the **API Subscription Terms** taxonomy in CentraSite. ■ Donationware - Usage of the API is free of charge, but users are encouraged to make a donation if they like the API and want to continue using it. ■ Flat Fee - There is a fixed amount charged for unlimited use of the API for a limited period of time. ■ Free - Usage of the API is free of charge. ■ Freemium - Limited usage of the API for free, and then charge for the extra usage. ■ Pay per use - Pay for usage of the API based on the transaction or volume. In addition to the predefined categories, you can create your own custom categories. For instructions on how to create a custom category, see the *CentraSite Administrator's Guide*.
List of Access Tokens	*Read-only.* Specifies the access tokens generated for clients who request them through API-Portal.
Supported Access Token Types	*Read-only.* Specifies the type of client authentication mechanism for the API.

Attribute	Description
	The following client authentication mechanisms for supported for an API in CentraSite: ■ API Key Authentication - The API's authentication requires using an API key. ■ Basic Authentication - The API's authentication requires using Basic Access Authentication as described in RFC2617. ■ Digest Authentication - The API's authentication requires using Digest Access Authentication as described in RFC2617. ■ OAuth 1.0 Authentication - The API's authentication requires using OAuth 1.0 as described in RFC5849. ■ OAuth 2.0 Authentication - The API's authentication requires using OAuth 2.0 as described in RFC5849. ■ x-{other} - The API's authentication requires using another authentication method.
Deprecated	Marks the API as deprecated in API-Portal.

CentraSite Communication Profile

The API-Portal asset type definition contains a profile named **CentraSite Communication**, which will display the communication details for API-Portal to send and receive data with CentraSite. For more information about this profile, see "Viewing or Modifying Details of an API-Portal " on page 368.

API-Portal Communication Profile

The API-Portal asset type definition contains a profile named **API-Portal Communication**, which will display the communication details for CentraSite to send and receive data with API-Portal. For more information about this profile, see "Viewing or Modifying Details of an API-Portal " on page 368.

Published APIs Profile

The API-Portal asset type definition contains a profile named **Published APIs**, which will display the details of the APIs published to API-Portal. For more information about this profile, see "Viewing or Modifying Details of an API-Portal " on page 368.

The Design/Change-Time Policies that are Used for API-Portal Communication

CentraSite includes the following predefined policies.

Name	Purpose

Publish to API-Portal Policy	The Publish to API-Portal policy creates or updates an API metadata in the API-Portal.
	■ This policy contains the action Publish to API-Portal, which publishes an API metadata to API-Portal, thereby creating or updating the API metadata in the API-Repository.
	■ You can apply this policy when the following events occur to asset type Service and its variants:
	  ■ PreStateChange
	  ■ PostStateChange
	  ■ OnTrigger

UnPublish from API-Portal Policy	The UnPublish from API-Portal policy removes an existing API metadata from the API-Repository.
	■ This policy contains the action UnPublish from API-Portal, which removes specified API metadata from the API-Repository.
	■ You can apply this policy when the following events occur to asset type Service and its variants:
	  ■ PreDelete
	  ■ PostDelete
	  ■ PreStateChange
	  ■ PostStateChange
	  ■ OnTrigger

Configuring the Design/Change-Time Policies that are of use for API-Portal

You use the following procedures to configure the predefined design/change-time policies used by API-Portal.

By default, the design/change-time policies for API-Portal communication are in the active state. You cannot configure a design/change-time policy while it is active. To configure an active policy you must do one of the following:

- Switch the policy to the Suspended state (to deactivate it), update the policy and then switch it back to the Productive state (to reactivate it).

  OR

- Create a new version of the policy, make your changes to the new version of the policy and then switch the new version to the Productive state. Switching the new version of the policy to the Productive state will automatically Retire (and deactivate) the old version.

For more information about design/change-time policies, see the *CentraSite User's Guide*.

Configuring the Publish to API-Portal Policy

Perform the following steps to configure the Publish to API-Portal action in the Publish to API-Portal policy. This policy (1) creates a new API and (2) updates an existing API metadata in the API-Portal registry.

To configure the publish to API-Portal policy

1. Open CentraSite Control.
2. Go to **Policies** > **Design/Change Time** to display the policy list.
3. Enable the **Show Predefined Policies** option to display the predefined policies that CentraSite provides.
4. Click the `Publish to API-Portal` policy. This opens the Design/Change-Time Policy Details page.
5. If the policy is active, deactivate it. You cannot configure an active policy. If you need procedures for this step, see the *CentraSite User's Guide* .
6. In the **Actions** tab, click the Publish to API-Portal action. Open the Edit Action Parameters page, and then do the following.
   a. Set the following parameters:

`API-Portal`	*Optional. String. Array.* The name of the API-Portal to which the API would be published. This assumes that you have already registered the API-Portal in CentraSite, as described in the document *Working with the CentraSite Business UI*. **Note:** However, if this action is to be executed in a different event other than OnTrigger, for example, prestatechange or poststagechange, that is not provided by default, you *must* specify a value for this field.

`Endpoint Category`	*Optional. String. Array.* The names of specific taxonomy categories by which the base URLs (endpoints) of the API are classified.
`REST Service Attributes`	*Optional. String. Array.* A metadata bundle can be supplied with additional information of a RESTful API and published to an API-Portal. You use this field to specify additional attributes of the REST API to be published to API-Portal.
`SOAP Service Attributes`	*Optional. String. Array.* A metadata bundle can be supplied with additional information of a SOAP-based API and published to an API-Portal. You use this field to specify additional attributes of the SOAP API to be published to API-Portal.

The event scope of this action is:

- PreStateChange
- PostStateChange
- OnTrigger

b. Click **Save** to save the parameter settings.

7. After you configure the parameters for all of the actions in the list, click **Save** to save the updated policy.
8. When you are ready to put the policy into effect, activate it as described in the *CentraSite User's Guide* .

Configuring the UnPublish from API-Portal Policy

Perform the following steps to configure the UnPublish from API-Portal action in the UnPublish from API-Portal policy. This policy removes specified API metadata bundle from the API-Portal registry.

To configure the UnPublish from API-Portal policy

1. Open CentraSite Control.
2. Go to **Policies** > **Design/Change Time** to display the policy list.
3. Enable the **Show Predefined Policies** option to display the predefined policies that CentraSite provides.
4. Click the UnPublish from API-Portal policy. This opens the Design/Change-Time Policy Details page.
5. If the policy is active, deactivate it. You cannot configure an active policy. If you need procedures for this step, see the *CentraSite User's Guide* .

6. In the **Actions** tab, click the UnPublish from API-Portal action. Open the Edit Action Parameters page, and then do the following.
   a. Set the following parameter:

`API-Portal`	*Optional. String. Array.* The name of the API-Portal from that repository the API metadata would be removed.

> **Note:** However, if you want to execute this policy in a prestatechange or poststatechange event that is not provided by default, then you *must* specify a value for this field.

   The event scope of this action is:

   - PreDelete
   - PostDelete
   - PreStateChange
   - PostStateChange
   - OnTrigger

   b. Click **Save** to save the parameter setting.
7. After you configure the parameters for all of the actions in the list, click **Save** to save the updated policy.
8. When you are ready to put the policy into effect, activate it as described in the *CentraSite User's Guide* .

Understanding Communication Between CentraSite and API-Portal

CentraSite provides a secure platform for access token generation and management.

An API Runtime Provider might want to restrict the API usage by enforcing the access tokens. If the API that's exposed in API-Portal enforces access token, a user gets an option to request for an access token of type API key or OAuth2. The API access token request for an API is a three step process in CentraSite.

1. **Client creation process**: Whenever a client requests an access token for an API in API-Portal, CentraSite receives the request for the API access token, and processes the request. CentraSite checks if the client who made the access token request already exists in the CentraSite registry. If the client already exists in the registry, then CentraSite generates an access token entry in the registry. However, if the client does not already exist in the registry, CentraSite performs the client creation process. During this process CentraSite registers the client as a member of the consumer organization configured for the registered API-Portal in the CentraSite registry. For more information about the **Consumer Organization** property for a registered API-Portal, see "Adding an API-Portal to CentraSite " on page 363.

2. **Access token generation process**: After a client (API-Portal user) is successfully created in the registry, CentraSite generates the access token and usage details for the API.

   If an approval process is configured fro access token generation, CentraSite initiates the approval process and submits the client's request to the designated group of approvers. Approvers receive the approval request in the Pending Approval Requests of the API details page. Approvers whose user account includes a valid email address also receive an email message informing them that a request is awaiting for their approval. CentraSite does not execute the client's requested operation until it obtains the necessary approvals. If an approver rejects the request, the requested access token is not generated.

3. **Notification process**: If the access token generation is successful, CentraSite returns a success message to the API-Portal and notifies the client (including data that is pertinent to the access token validity and usage of the API) through email.

Similarly, when those clients subsequently request for renewal or revocation of the access key, CentraSite verifies the client credentials, performs the requested operation, and notifies the API-Portal and client.

Points to keep in mind when API-Portal is jointly used with CentraSite:

- When a client requests for an access token from the API-Portal, CentraSite generates an User object entry in the registry that describes the client, and then stores the user entry in the repository. This user will not be allowed to log into CentraSite or perform any operation in CentraSite.
- CentraSite automatically associates the users with the API-Portal's **Consumer Organization**. This **Consumer Organization** property, which is configured during the registration of an API-Portal with CentraSite, specifies the organization to which the new user will be added.
- The consumer organization owns the users from an API-Portal. You cannot delete this consumer organization, unless you belong to a CentraSite Administrator role.
- You cannot delete an API-Portal user from the registry, unless you belong to a CentraSite Administrator role.
- If your user account belongs to the API Runtime Provider role for an organization, you automatically have permission to renew or revoke access keys in that organization. If your user account belongs to the CentraSite Administrator role, you have permission to renew or revoke any access key on the server.

Retry Mechanism

Retry mechanism is a facility that ensures the delivery of messages from CentraSite to API-Portal, and protects requests from transient failures that might occur while sending messages from CentraSite to API-Portal.

When an API developer requests an API access token (access token of type API key or OAuth2) in API-Portal, CentraSite receives the request for the access token, and processes the request. CentraSite then generates the access token and sends the access

token details to the API-Portal. If a transient failure occurs while sending the access token to the API-Portal, CentraSite uses the retry mechanism to resend the token. Requests for renewal and revocation of access tokens are also handled in a similar manner.

CentraSite uses the global values set for *numberOfRetries* and *retryIntervals* to resend the tokens to API-Portal. For *n* retries, specify *n* number of values (comma separated) for retry intervals. By default, `numberOfRetries = 5` and `retryIntervals = 10,300,900,1800,3600` seconds. In case of a transient failure, CentraSite tries to resend the token `5` times at time intervals of `10,300,900,1800` and `3600` seconds respectively.

Note: If *numberOfRetries* is more than the number of values specified for *retryIntervals*, CentraSite uses the last time interval specified in *retryIntervals* for the remaining retry attempts. For example, if `numberOfRetries = 5` and `retryIntervals = 10,300,900,1800` seconds, CentraSite tries to resend the token `5` times at time intervals of `10,300,900,1800,1800` seconds. If *numberOfRetries* is less than the number of values specified for *retryIntervals*, CentraSite ignores the values that are beyond the value set for *numberOfRetries*. For example, if `numberOfRetries = 4` and `retryIntervals = 10,300,900,1800,3600,7200` seconds, CentraSite tries to resend the token `4` times at time intervals of `10,300,900,1800` seconds. Time intervals beyond `1800` seconds are ignored.

Changing the Default Values for Retry Mechanism

You can view and change the values of *numberOfRetries* and *retryIntervals* using the command line interface `CentraSiteCommand.cmd` (Windows) or `CentraSiteCommand.sh` (UNIX) of CentraSiteCommand. The tool is located in the directory <*CentraSiteInstallDir*> /utilities.

Use the `get ApiPortalConfig` command to read the values set for *numberOfRetries* and *retryIntervals*.

The syntax of the command is:

```
C:\SoftwareAG\CentraSite\utilities>CentraSiteCommand.cmd get
ApiPortalConfig [-url <CENTRASITE-URL>] -user <USER-ID> -password
<PASSWORD> [-file <CONFIG-FILE>]
```

The input parameters are:

Parameter	Description
`-url`	**(Optional)** The URL of the CentraSite registry. Default value is `http:/localhost:53307`.
`-user`	The user ID of a registered CentraSite user. For example, a user who has the CentraSite Administrator role.

Parameter	Description
`-password`	The password for the registered CentraSite user identified by the parameter `-user`.
`-file`	Name of the xml file where *numberOfRetries* and *retryIntervals* values are saved. You can change the values in this file. If you are saving the file in a different location other than *<CentraSiteInstallDir>*/utilities, provide the absolute file path.

Example:

```
C:\SoftwareAG\CentraSite\utilities>CentraSiteCommand.cmd get
ApiPortalConfig -url http://localhost:53305/CentraSite/CentraSite -
user Administrator -password manage -file C:\CentraSite\configuration
\test.xml
```

The response to this command could be:

```
Executing the command : get ApiPortalConfig
Successfully executed the command : get ApiPortalConfig
```

Use the `set ApiPortalConfig` to set the new values for *numberOfRetries* and *retryIntervals* ..

The syntax of the command is:

```
C:\SoftwareAG\CentraSite\utilities>CentraSiteCommand.cmd set
ApiPortalConfig [-url <CENTRASITE-URL>] -user <USER-ID> -password
<PASSWORD> -file <CONFIG-FILE>
```

The input parameters are:

Parameter	Description
`-url`	**(Optional)** The URL of the CentraSite registry. Default value is `http:/localhost:53307`.
`-user`	The user ID of a registered CentraSite user. For example, a user who has the CentraSite Administrator role.
`-password`	The password for the registered CentraSite user identified by the parameter `-user`.
`-file`	Name of the xml file where *numberOfRetries* and *retryIntervals* values are changed. If the file is in a

Parameter	Description
	different location other than *<CentraSiteInstallDir>*/utilities, provide the absolute file path.

Example:

```
C:\SoftwareAG\CentraSite\utilities>CentraSiteCommand.cmd set
ApiPortalConfig -url http://localhost:53305/CentraSite/CentraSite -
user Administrator -password manage -file C:\CentraSite\configuration
\test.xml
```

The response to this command could be:

```
Executing the command : set ApiPortalConfig
Successfully executed the command : set ApiPortalConfig
```

Viewing Undelivered Access Tokens

Access tokens that are not delivered during the retry attempts are flagged and persisted in the database. To view the list of undelivered access tokens, add the **GetUndeliveredAccessTokens** portlet to the standard Welcome page. To add a portlet to the Welcome page, see "Adding a Portlet" on page 238.

Resending Undelivered Access Tokens

If access tokens are not delivered during the retry attempts, the undelivered tokens are flagged and persisted in the database. CentraSite uses a scheduler that is scheduled to run once every 2 hours to pick up the undelivered tokens, and resend them to the API-Portals. You can reschedule the scheduler to run at different time intervals.

Rescheduling the Scheduler

To reschedule the scheduler to run at a different time interval, change the value of `PollingInterval` in the custom configuration centrasite.xml file.

To reschedule a scheduler

1. Use a text editor to open the custom configuration centrasite.xml file. The configuration file is located in the *<CentraSiteInstallDir>* \cast\cswebapps \BusinessUI\custom\conf directory.
2. Locate the `PollingInterval` element in the file.

   The polling interval setting is commented and would look like the following:

   ```
   <!-- <AccessTokenPublishSettings>
      <!-- Undelivered API Keys and OAuth tokens will be
    delivered periodically  -->
      <!-- Interval duration is minutes -->
      <!-- Default polling interval is 120 minutes -->
      <PollingInterval>120</PollingInterval>
   </AccessTokenPublishSettings> -->
   ```

3. Uncomment the code and change the value.

4. Save the file and restart Software AG Runtime.

Resending Access Tokens from the Command line

You can also resend the undelivered tokens by executing the following command using the command line interface `CentraSiteCommand.cmd` (Windows) or `CentraSiteCommand.sh` (UNIX) of CentraSiteCommand. The tool is located in <*CentraSiteInstallDir*> /utilities.

The syntax of the command is:

```
C:\SoftwareAG\CentraSite\utilities>CentraSiteCommand.cmd send
AccessTokens [-url <CENTRASITE-URL>] -user <USER-ID> -password
<PASSWORD> [-api <API>] [-apiPortal <APIPORTAL>] [-accessToken
<ACCESSTOKEN>]
```

Note: To resend the undelivered access tokens using `send AccessTokens` command, provide values for any one of the parameters:

- `-api`
- `-apiPortal`
- `-accessToken`

If you do not specify values for any of the three parameters, CentraSite resends all the undelivered tokens to the respective API-Portals.

The input parameters are:

Parameter	Description
`-url`	**(Optional)** The URL of the CentraSite registry. Default value is `http:/localhost:53307`.
`-user`	The user ID of a registered CentraSite user. For example, a user who has the CentraSite Administrator role.
`-password`	The password for the registered CentraSite user identified by the parameter `-user`.
`-api`	Name or ID (uuid) of the API virtual service. For multiple services, use a comma to separate the values. All values should either be the names or the IDs of the services, not a combination of both.
`-accessToken`	Name or ID (uuid) of the access tokens to be resent. To resend multiple tokens to the API-Portal, use a comma to separate the values. All values should

Parameter	Description
	either be the names or the IDs of the access tokens, not a combination of both.
`-apiPortal`	Name or ID (uuid) of the API-Portal to which the tokens have to be resent. To resend tokens to multiple API-Portals, use a comma to separate the values. All values should either be the names or the IDs of the API-Portals, not a combination of both.

Examples:

Providing multiple IDs

```
C:\SoftwareAG\CentraSite\utilities>CentraSiteCommand.cmd send
AccessTokens -url http://localhost:53305/CentraSite/CentraSite -user
Administrator -password manage -api uddi:5f0ad20e-9bdd-11e4-9184-
dc550a8f1855, 9f0ad41e-9crd-11e4-9172-dc550a8f2345
```

Providing multiple service names

```
C:\SoftwareAG\CentraSite\utilities>CentraSiteCommand.cmd
send AccessTokens -url http://localhost:53305/CentraSite/
CentraSite -user Administrator -password manage -api
ApprovalVirtualService,SearchVirtualService
```

If the service, access tokens, or the API-Portal names contain white spaces, enclose the names within “”.

```
C:\SoftwareAG\CentraSite\utilities>CentraSiteCommand.cmd send
AccessTokens -url http://localhost:53305/CentraSite/CentraSite -user
Administrator -password manage -api “Approval Virtual Service, Search
Virtual Service”
```

Sharing a Report Template with API-Portal

Report templates can be used for scheduling reports from API-Portals connected to CentraSite. To make a predefined or a custom report template visible to the API-Portal users, the template must be shared. For more information, see "Sharing a Report with API-Portal " on page 399

Deregistering an API-Portal from CentraSite

Deregistering an API-Portal causes CentraSite to suppress interactions with the API-Portal. You usually deregister an API-Portal as a fallback option for the following reasons:

- The API-Portal server is irreversibly down, for example, the machine hosting the API-Portal has crashed, or is inaccessible.

- An internal or application error on the CentraSite or API-Portal server.
- To edit an API-Portal (for example, to modify the hostname of an API-Portal).
- To suspend publishing of APIs and handling requests (new, renew, revoke) of access tokens for the API-Portal registry (temporarily or permanent).

You can deregister an instance of API-Portal from CentraSite by using the **Unpublish** action. If you do not see the **Unpublish** icon in the API-Portal details page, it is probably because you not have the required role to deregister an instance of API-Portal.

To deregister an API-Portal, you must have the CentraSite Administrator or API-Portal Administrator role. If your user account belongs to API-Portal Administrator organization-level role, you automatically have permission to deregister all of the API-Portals in that organization. If your user account belongs to the CentraSite Administrator role, you have permission to deregister any API-Portal in the CentraSite registry.

What Happens When You Deregister an API-Portal?

When you deregister an API-Portal, CentraSite executes the following operations:

1. Removes any relationship between the APIs (which are already published to the API-Portal) and the API-Portal object in the repository (that is, CentraSite removes any existing association between the API-Portal registry and the APIs published to it.
2. Deletes the onboarded users specific to API-Portal from the CentraSite registry.
3. Deletes access tokens of the deleted API-Portal users from the Mediator and CentraSite registry. .

   If at the time of deregistration, the Mediator instance is unavailable, the access tokens of the deleted API-Portal users are marked as revoked. When the API is republished to Mediator at a later time, CentraSite sends a list of valid access tokens to Mediator. Then the Mediator removes the access tokens that were associated with the deleted users.

What Happens When Deregistration Fails?

If you encounter a problem when deregistering an API-Portal, CentraSite shows a popup describing the problem.

- When a fault is returned by the API-Portal server, CentraSite ignores the exception and deregisters the API-Portal, provided the **Force Unpublish** option is selected by the user.
- However, if the reason for the failure is CentraSite server, then the CentraSite Administrator or API-Portal Administrator should take corrective action.

What If You Need to Modify Deregistered API-Portals?

If you need to modify the details of an API-Portal that is already deregistered from CentraSite, you must modify it in CentraSite and then republish (reregister) it with

CentraSite. If you make changes to the endpoint of an API-Portal, for example, you must update the details page of the API-Portal with the new API-Portal's configuration, reregister the API-Portal with CentraSite to put those changes into effect.

Deregistering a Single API-Portal

Perform the following steps to deregister a single instance of API-Portal from CentraSite.

To deregister an individual API-Portal from the CentraSite registry

1. Display the list of API-Portals. If you need procedures for this step, see "Displaying a List of Available API-Portals" on page 362
2. In the displayed list, click the link of the API-Portal you want to deregister from CentraSite.
3. In the details page of the API-Portal, click the **Unpublish** icon.
4. In the **Unpublish API-Portal** dialog, click **Unpublish**.
5. If you encounter a problem during the deregistration, try selecting the **Force Unpublish** option, and then click **Unpublish**.

Deregistering a Set of API-Portals

You can deregister multiple instances of API-Portal from the CentraSite registry in a single step.

Perform the following steps to deregister a set of API-Portals with CentraSite.

To deregister multiple API-Portals from CentraSite in a single operation

1. Display the list of API-Portals. If you need procedures for this step, see "Displaying a List of Available API-Portals" on page 362.
2. In the displayed list, mark the checkbox next to the name of each API-Portal you want to deregister from CentraSite.
3. Click the **Unpublish** icon.
4. In the **Unpublish API-Portal** dialog, click **Unpublish**.

   If you have selected multiple API-Portals where one or more of them are deregistered from CentraSite, CentraSite initiates the deregistration mechanism on that set of API-Portals, and ignores the already deregistered API-Portals. Also remember that only API-Portals you have permission for will be deregistered.
5. If you encounter a problem during the deregistration, try selecting the **Force Unpublish** option, and then click **Unpublish**.

Deleting an API-Portal

Deleting an API-Portal permanently removes the API-Portal from the CentraSite registry.

When you delete an API-Portal, keep the following points in mind:

- CentraSite will not delete an API-Portal if it has at least one API published to it.
- To delete an API-Portal, you must have the Full instance-level permission on the API-Portal itself.

Deleting a Single API-Portal

Perform the following steps to delete (remove) a single instance of API-Portal from the CentraSite registry.

To deregister an API-Portal

1. Display the list of API-Portals. If you need procedures for this step, see "Displaying a List of Available API-Portals" on page 362
2. In the displayed list, click the link of the API-Portal you want to delete.
3. In the details page of the API-Portal, click the **Delete** icon.

Deleting a Set of API-Portals

You can delete multiple instances of API-Portal from the CentraSite registry in a single step. Perform the following steps to delete a set of API-Portals.

To delete multiple API-Portals in a single operation

1. Display the list of API-Portals. If you need procedures for this step, see "Displaying a List of Available API-Portals" on page 362.
2. In the displayed list, mark the checkbox next to the name of each API-Portal you want to delete.
3. Click the **Delete** icon.

   If you have selected multiple API-Portals, only API-Portals you have permission for will be deleted. CentraSite ignores the remaining API-Portals for which you do not have the required permission.

5 Working with Reports and Report Templates

Introduction

Whether you need to document or present information about your assets, you can use reports to do so.

Reports provide a way for you to view, share and print information derived from the assets that are created in the CentraSite registry.

CentraSite Reports can be used to register BIRT (Business Intelligence and Reporting Tools) reports. Such reports can be created, for example, using the Eclipse plug-ins delivered with CentraSite. For information about installing and starting the plug-ins, see *CentraSite Administrator's Guide*. Documentation describing how to create BIRT reports is contained in the Eclipse online help that is delivered with the plug-ins.

The data model that UDDI CentraSite uses to store the metadata of a BIRT report complies with the best practices given in the technical note entitled "Using BPEL4WS in a UDDI Registry", available on the OASIS web site at https://www.oasis-open.org/committees/uddi-spec/doc/tn/uddi-spec-tc-tn-bpel-20040725.htm.

For general information about the BIRT technology, see the description of the BIRT project in the **Projects** section of the Eclipse site at http://www.eclipse.org/birt/.

This section describes how to schedule and manage reports in CentraSite.

About Report Templates

A report template contains instructions for gathering metadata from CentraSite Business UI or the CentraSite registry/repository for one or more assets, and formatting it into an asset-specific report. The template lets you create detailed reports for your assets containing data that you have specified. Using the Report Designer, you can also create report templates that have the exact content and presentation that you need.

CentraSite provides a variety of predefined global report templates that you can use to obtain, view and share information from your assets. In addition, you can design your own custom report templates to produce detailed reports that have the specific content and format that you require. You may use the Eclipse-based Business Intelligence Reporting Tools (BIRT) Report Designer to create report templates, and then upload the custom report templates to the CentraSite registry through CentraSite Control UI.

For information on how to create report templates and upload report templates to CentraSite, see the *CentraSite User's Guide*.

Global Report Templates

To access metadata and display details on an asset, the following report templates are available in the Global category:

Report Template	Description
API Invocations (daily)	This report displays the number of requests made for the selected API by a user during the specified date.
API Invocations (monthly)	This report displays the number of requests made for the selected API by a user during the specified month.
API Invocations (weekly)	This report displays the number of requests made for the selected API by a user during the specified week.
Asset Changes Since Date	This report lists all changes that have occurred on the assets of the specific organization since selected date.
New Assets Since Date	This report lists all new assets that were created in the specific organization since selected date.
Run-time Asset Quality of Service	This report displays the quality of service information about runtime assets.
Run-time Asset Error	This report displays details about the runtime asset errors for that particular day.
Run-time Asset Usage	This report displays details about the selected asset (or all assets) usage over the selected period.
Run-time Consumer Usage	This report displays details about the usage by each consumer over the selected period.
Run-time Policy Errors	This report displays policy violation errors for that particular day.
Run-time Services	This report displays the summary level information about virtual services.
Service Details	This report displays the details of services in CentraSite.

Report Template	Description
SLA Violations	This report displays details about the SLA violations reports over the selected period.
SOA Maturity	For each month in the current and previous year this report calculates the number of services available per month with the total number of usage references for those services.
Top Ten Consumers	This report displays the top ten consumers in the SOA infrastructure.
Top Ten Services	This report displays the top ten services in the SOA infrastructure.
Unreferenced Assets	This report displays all assets that have no incoming relationships.

Roles and Permissions Needed to Manage Reports and Report Templates

In general, all CentraSite users have implicit (and irrevocable) view permission on report templates. This permission enables you to generate reports from any report template that exists in the CentraSite registry/repository.

However, if you are trying to generate report for a specific asset through the details page, then the **View Report** action is visible only if you have the following permissions:

- A Modify permission on the asset (granted though either a role-based permission or an instance-level permission).
- `Use the Reports UI` permission.

For more information about roles and permissions, see *Getting Started with CentraSite*.

Generating a Report

Generate a Report from the Asset Details page

You use the following procedure to generate a report from the details page of an asset. To use this procedure, you must have Modify permission on the asset for which you want to generate report.

To generate report from the asset details page

1. Open the details page for the asset for which you want to generate report.
2. In the actions bar for the asset, click **View Report** ( ).

   When you do this, you see a list of the supported report templates for this asset.
3. In the list of displayed report templates, select the template with which you want to generate the asset specific report.
4. Select the print format of your report.
5. Click **View** to generate the report.
6. If you have specified the **Asset Change History** template, then you will be prompted to specify a value for the required parameters in order to generate the report.
7. After you specify the value for all of the required parameters, click **OK**.

   CentraSite displays the report on the same page.

   You can use the following icons under the report name to save your report.

Use this icon to...	Do the following...
Toggle table of contents	Toggle the Table of Contents On and Off.
Run report	Switch the BIRT reporting engine to run mode display the report with data. The length of time it takes to run the report depends on the complexity of the report and how busy the reporting engine is.
Export data	Export the report data in Comma Separated Values (CSV) file format.
Export report	Export the report with data in the required format. For a list of the supported export formats, see "Export Report" on page 397.
Print report	Print and save the report with data on a local system folder. For a list of the supported print formats, see "Print Report" on page 397. Note that the BIRT Report Viewer does not have a **Save Report** icon available for you to save a report to a PDF file. To save a BIRT report to a PDF file, you must install a generic, text-only printer, and then redirect the BIRT report to this printer.

Use this icon to...	Do the following...
Print report on the server	Print and save the report with data in the CentraSite registry/repository.

Generating a Report from the Activity Bar

You use the following procedure to generate a report from the activity bar.

To generate report from the activity bar

1. In the activity bar, click **Generate Reports**.

   When you do this, you see a list of all of the available report templates in the registry.
2. In the list of displayed report templates, select the template with which you want to generate the asset specific report.
3. Select the print format of your report.
4. Click **View** to generate the report.
5. If you have specified a template with required parameters, then you will be prompted to specify a value for the required parameters in order to generate the report.
6. After you specify the value for all of the required parameters, click **OK**.

   CentraSite displays the report on the same page.

   You can use the icons under the report name to save your report.

Saving a Report

Use the following links under the display for a report to save the report for later use.

Export Data

When you click **Export Data**, BIRT Report Viewer displays the supported CSV format for exported data of your report.

The **Export Data** mandates that you specify the required parameters.

When you click **OK**, CentraSite displays the exported version of your report data in a CSV format on your Web browser.

Export Report

When you click **Export Report**, BIRT Report Viewer displays following supported formats for the exported version of your report.

- DOCX
- Excel
- OpenDocument Presentation
- OpenDocument Spreadsheet
- OpenDocument Text
- PDF
- PostScript
- PowerPoint
- PPTX
- Spudsoft Excel
- Word
- XLSX

The **Export Report** mandates that you specify the required parameters.

When you click **OK**, CentraSite displays the report in the required format on your Web browser.

Print Report

When you click **Print Report**, BIRT Report Viewer displays following supported formats for the printed version of your report.

- HTML
- PDF

The **Print Report** mandates that you specify the required parameters.

When you click **OK**, CentraSite displays the report in the required format on your Web browser.

Print Report on the Server

When you click **Print report on the server**, BIRT Report Viewer displays the printer settings for the printed version of your report.

The **Print report on the server** mandates that you specify the required parameters.

When you click **OK**, CentraSite displays the report in the required printer.

Reporting API Usage

CentraSite provides default reports that CentraSite users and API-Portal users can use to monitor and manage the usage of their APIs and their applications.

The API usage reports in CentraSite show the number of requests made by all the applications for an API for a specified period of time. The reports are distributed as an email attachment, in PDF format, to the user at the email address provided at registration. The user then clicks the attachment to access the API usage data.

If you are a CentraSite user, by default, you have access to view any report in CentraSite.

If you are an API-Portal user, you must have the report shared from CentraSite in order to view it in API-Portal. For instructions on how to share a report template, see "Sharing a Report with API-Portal " on page 399.

Predefined API Usage Reports in CentraSite

Click the **Generate Reports** activity to generate the following reports that depict the usage metrics over a specified reporting period for the APIs:

- API Invocations (daily)
- API Invocations (weekly)
- API Invocations (monthly)

By default, the predefined API usage reports are shared with any instance of API-Portal that is registered in CentraSite.

API Invocations (daily)

When you generate the API Invocations report for a user over a reporting date, the report displays the number of requests made by each application of that particular user for the selected API during the specified reporting date.

API Invocations (weekly)

When you generate the API Invocations report for a user over a reporting week, the report displays the number of requests made by each application of that particular user for the selected API during the specified reporting week.

API Invocations (monthly)

When you generate the API Invocations report for a user over a reporting month, the report displays the number of requests made by each application of that particular user for the selected API during the specified reporting month.

Customized API Usage Reports

CentraSite provides some predefined reports for you to use. You can also create customized reports as needed.

To enable API-Portal users to use your custom reports for scheduling and monitoring API usage, you must first share the custom report with the required API-Portal instance. For more information, see "Sharing a Report with API-Portal " on page 399

Sharing a Report with API-Portal

You can share a report template with API-Portal by executing the following command in the command line interface `CentraSiteCommand.cmd` (Windows) or `CentraSiteCommand.sh` (UNIX) of CentraSiteCommand. The tool is located in <*CentraSiteInstallDir*> /utilities.

The syntax of the command is:

```
C:\SoftwareAG\CentraSite\utilities>CentraSiteCommand.cmd share Report [-
url <CENTRASITE-URL>] -user <USER-ID> -password<PASSWORD> -sharedReport
<REPORT-NAME>
```

The input parameters are:

Parameter	Description
`-url`	**(Optional)** The URL of the CentraSite registry. Default value is `http:/localhost:53307`.
`-user`	The user ID of a registered CentraSite user. For example, a user who has the CentraSite Administrator role.
`-password`	The password for the registered CentraSite user identified by the parameter `-user`.
`-sharedReport`	Name of the report to share. If the report name contains white spaces, enclose the name with "".

Example:

```
C:\SoftwareAG\CentraSite\utilities>CentraSiteCommand.cmd share Report -
url http://localhost:53305/CentraSite/CentraSite -user Administrator -
password manage -sharedReport “Asset Change History”
```

The response to this command could be:

```
Executing the command : share Report
Successfully executed the command : share Report
```