

Using Digital Event Services to Communicate between Software AG Products

Version 9.12

October 2016

This document applies to Software AG Product Suite Version 9.12 and to all subsequent releases.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

Copyright © 2016 Software AG, Darmstadt, Germany and/or Software AG USA Inc., Reston, VA, USA, and/or its subsidiaries and/or its affiliates and/or their licensors.

The name Software AG and all Software AG product names are either trademarks or registered trademarks of Software AG and/or Software AG USA Inc. and/or its subsidiaries and/or its affiliates and/or their licensors. Other company and product names mentioned herein may be trademarks of their respective owners.

Detailed information on trademarks and patents owned by Software AG and/or its subsidiaries is located at <http://softwareag.com/licenses>.

Use of this software is subject to adherence to Software AG's licensing conditions and terms. These terms are part of the product documentation, located at <http://softwareag.com/licenses> and/or in the root installation directory of the licensed product(s).

This software may include portions of third-party products. For third-party copyright notices, license terms, additional rights or restrictions, please refer to "License Texts, Copyright Notices and Disclaimers of Third Party Products". For certain specific third-party license restrictions, please refer to section E of the Legal Notices available under "License Terms and Conditions for Use of Software AG Products / Copyright and Trademark Notices of Software AG Products". These documents are part of the product documentation, located at <http://softwareag.com/licenses> and/or in the root installation directory of the licensed product(s).

Table of Contents

About this Guide.....	5
Document Conventions.....	5
Online Information.....	6
Understanding Digital Event Services.....	7
Digital Event Services Overview.....	8
Support of Digital Event Services.....	8
The Digital Event Type Model.....	9
Delivery Modes for Digital Event Services.....	9
Store-and-Forward Processing.....	9
Messaging Services and Service Groups.....	10
Administering Digital Event Services.....	11
About Administering Digital Event Services.....	12
Configuring Messaging Services.....	12
Configuring Service Groups.....	13
Configuring the Default Service Group.....	13
Configuring Custom Service Groups.....	14
Configuring Event Type Associations.....	16
Configuring Storage Settings for Digital Event Services.....	18
Lifecycle Actions for Digital Event Services.....	20
Considerations for Deploying Digital Event Types.....	20
Digital Event Services Licensing.....	21
Performance Considerations on Linux.....	21
Configuring Digital Event Services Using Composite Templates.....	23
About Configuring Digital Event Services with Command Central Composite Templates.....	24
Configuring DES for a Single Runtime Instance.....	24
Configuring DES for Multiple Runtime Instances within a Single Installation.....	25
Configuring DES for a Set of Installations.....	26
Setting up a Runtime Instance and Configuring DES.....	28

About this Guide

This document gives you an overview of Digital Event Services, which is Software AG's tool for managing simple event-based interactions.

The goal of Digital Event Services is to facilitate the integration between Software AG products and applications by easily allowing them to communicate.

Document Conventions

Convention	Description
Bold	Identifies elements on a screen.
Narrowfont	Identifies storage locations for services on webMethods Integration Server, using the convention <i>folder.subfolder:service</i> .
UPPERCASE	Identifies keyboard keys. Keys you must press simultaneously are joined with a plus sign (+).
<i>Italic</i>	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 (...).

Online Information

Software AG Documentation Website

You can find documentation on the Software AG Documentation website at <http://documentation.softwareag.com>. The site requires Empower credentials. If you do not have Empower credentials, you must use the TECHcommunity website.

Software AG Empower Product Support Website

You can find product information on the Software AG Empower Product Support website at <https://empower.softwareag.com>.

To submit feature/enhancement requests, get information about product availability, and download products, go to [Products](#).

To get information about fixes and to read early warnings, technical papers, and knowledge base articles, go to the [Knowledge Center](#).

Software AG TECHcommunity

You can find documentation and other technical information on the Software AG TECHcommunity website at <http://techcommunity.softwareag.com>. You can:

- Access product documentation, if you have TECHcommunity credentials. If you do not, you will need to register and specify "Documentation" as an area of interest.
- Access articles, code samples, demos, and tutorials.
- Use the online discussion forums, moderated by Software AG professionals, to ask questions, discuss best practices, and learn how other customers are using Software AG technology.
- Link to external websites that discuss open standards and web technology.

1 Understanding Digital Event Services

■ Digital Event Services Overview	8
■ Support of Digital Event Services	8
■ The Digital Event Type Model	9
■ Delivery Modes for Digital Event Services	9
■ Store-and-Forward Processing	9
■ Messaging Services and Service Groups	10

Digital Event Services Overview

Digital Event Services (DES) enables other Software AG products to intercommunicate by exchanging *digital events*. Digital events are typed and serialized data structures that are used to convey or record information about the execution of a runtime. This information can be application information, such as the state of a business process step, including any associated business data, or it can be system information, for example, how much memory and how many threads an application is using.

Any digital event has a *digital event type*. Each digital event type has an associated *digital event type definition* that is created and stored in the digital event type repository for the installation. Digital event types are created by users in a development environment, and subsequently deployed to production installations. The format of the events is based on Google Protocol Buffers. For more information about the digital event type model, see ["The Digital Event Type Model" on page 9](#).

Digital Event Services uses the *publish-subscribe* model. Applications can both *emit* and *subscribe to* streams of events of a given event type. When publishing a digital event, the originating application *emits* the event without considering whether other applications might receive the event. On the other hand, applications that are consumers of events subscribe to digital events of a specific event type.

The destinations, also known as *destination services*, to which events are routed, are not defined at design time. Instead, a system administrator manages the destination services at run time. For more information about services, see ["Messaging Services and Service Groups" on page 10](#).

Communication using Digital Event Services can be *persistent* or *non-persistent*. With persistent communication, the delivery of a digital event is guaranteed at least once. With non-persistent communication, the delivery of a digital event is not guaranteed.

A developer may set the *delivery preference* for a given event type, but the DES administrator controls the final *delivery mode*. For more information about delivery modes for Digital Event Services, see ["Delivery Modes for Digital Event Services" on page 9](#).

Support of Digital Event Services

Digital Event Services version 9.12 is used for communication only between webMethods Integration Server and Apama. You cannot use DES with other Software AG products. For more information about how to use DES with Integration Server and Apama, see *webMethods Integration Server Administrator's Guide* and *Connecting Apama Applications to External Components*.

The Digital Event Type Model

Any digital event has a *digital event type*. A digital event type is a high-level definition of the event format that is independent of the underlying over-the-wire representation of an event. The event type model is designed to support an easy conversion of an event type into other Software AG type languages, such as Integration Server Document Type and Apama Event Processing Language.

For more information about the mapping of events from Integration Server and Apama to Digital Event Services, see *webMethods Integration Server Administrator's Guide* and *Connecting Apama Applications to External Components*, respectively.

Delivery Modes for Digital Event Services

Digital Event Services enables an administrator to set a delivery mode per event type. The delivery mode setting governs the quality of service if the DES runtime stops responding and becomes unavailable.

Digital events are stored in-memory or on-disk until their delivery is acknowledged. To ensure that at least one copy of an event is delivered, administrators can define the event type delivery mode as *Persistent*. This means that the events of an event type are stored on-disk. If the runtime where DES is embedded becomes unavailable, the events are resent the next time the runtime starts.

If the delivery mode for an event type is *Non-persistent*, events are stored in-memory. If the runtime where DES is embedded becomes unavailable events are not resent.

For information about how to configure delivery mode per event type, see "[Configuring Event Type Associations](#)" on page 16. Administrators can define on-disk and in-memory capacity globally and per event type. For more information about configuring in-memory and on-disk capacity, see "[Configuring Storage Settings for Digital Event Services](#)" on page 18.

Store-and-Forward Processing

Instead of directly delivering each event to the configured destination services and waiting for each service to acknowledge the event, Digital Event Services stores the event in an internal queue.

Depending on the delivery mode setting defined for each event type in Command Central, the queue can be held in-memory or on-disk. After an event is added to the queue, DES is ready to accept new events. In the meantime, the queued events are delivered to their destination services by a separate thread in the order in which they were added to the queue.

For more information about how to configure delivery mode per event type, see ["Configuring Event Type Associations"](#) on page 16.

Messaging Services and Service Groups

Messaging services are endpoints where events are published. Depending on whether your application emits or subscribes to events, the messaging service is either a destination or a source. In Digital Event Services version 9.12, the messaging service type is Universal Messaging.

Services are grouped together as a set of one or more services to which events can be sent. One of the services in a service group can be tagged as the source of events for all event types associated with this service group.

Consider the following scenarios:

1. If a service group contains no source service and your application creates a subscription for this service group, no events are received. The subscription remains inactive until a source service is configured.
2. If an application emits events to a service group that has no destination service configured, then the emitted events are not received anywhere.
3. Administrators can create a service group that contains no services for troubleshooting purposes.

Each Digital Event Services runtime contains a default service group, which is sufficient for most use cases. However, you can also define a custom service group for a particular runtime.

For more information about how to configure services, see ["Configuring Messaging Services"](#) on page 12. For more information about how to group those services together, see ["Configuring Service Groups"](#) on page 13.

2 Administering Digital Event Services

■ About Administering Digital Event Services	12
■ Configuring Messaging Services	12
■ Configuring Service Groups	13
■ Configuring Event Type Associations	16
■ Configuring Storage Settings for Digital Event Services	18
■ Lifecycle Actions for Digital Event Services	20
■ Considerations for Deploying Digital Event Types	20
■ Digital Event Services Licensing	21
■ Performance Considerations on Linux	21

About Administering Digital Event Services

You can administer Digital Event Services, using the Command Central web user interface, composite templates, or command line interface.

Note: Integration Server and Apama developers can also use the Digital Event Services command line tool to configure messaging connectivity without using Command Central. Developers can open a command line prompt and type `java -jar` followed by `Software AG_directory\common\lib\events-configuration-tool.jar` to run the utility.

To administer Digital Event Services within your Software AG installation, you need to have installed the Platform Manager plug-in for:

- Digital Event Services
- Integration Server
- Apama

Using Command Central, you can perform the following operations:

- Configure messaging services and service groups.
- Configure event type associations.
- Configure storage settings for digital events.


Important: Do not edit configuration files manually.

For information about using composite templates to configure Digital Event Services, see "[Configuring Digital Event Services Using Composite Templates](#)" on page 23. For information about using Command Central CLI commands, see *Software AG Command Central Help*.

Configuring Messaging Services

Digital Event Services provides a default Universal Messaging service, which you can modify or delete. In addition, you can create, modify, and delete custom services of the Universal Messaging type, using Command Central.

To configure messaging services

1. In Command Central, navigate to **Environments > Instances > All > *instance_name* > Digital Event Services > Configuration**.
2. Select **Messaging Services** from the drop-down menu, and then click .
3. Specify values for the following fields under **Configuration Details**:

Field	Description
Service Name	Required. A unique name for the service. The service name is not case-sensitive, and must start with a character. You can use the following characters as separators: . (dot) and - (dash).
Description	Required. A description of the purpose of the service.
Provider URL	Required. The host and port of the Universal Messaging server to which the service connects. The default value is <code>nsp://localhost:9000</code> .

Important: You cannot rename existing service. If you want to modify a service name, you must delete the existing service and create a new one with a different name.

Before deleting a service, you must first remove it from any service groups to which the service belongs.

- Optionally, click **Test** to verify that your configuration is valid.

Note: The validation is done on a field level, and checks whether the specified configuration information complies with the field requirements. This action will not ping a server to verify that a connection is possible. It only checks if the port number is available.

- Save your changes.

Configuring Service Groups

A service group is a defined set of services, where each service has a specific usage. Digital Event Services allows administrators to associate event types with a custom service group during the creation of the group. You use Command Central to configure service groups.

Configuring the Default Service Group

Each product runtime where DES is used has a default service group. All event types that are not explicitly associated with a custom service group are associated with the default service group. All events of these event types are delivered to the services within the default service group.

Note: You cannot rename or delete the default service group.

You can modify the default behavior of DES by adding services to or removing services from the default service group.

Note: You must create the services before adding them to the default service group. For more information about creating services, see "[Configuring Messaging Services](#)" on page 12.

To configure the default service group

1. In Command Central, navigate to **Environments > Instances > All > *instance_name* > Digital Event Services > Configuration**.
2. Select **Service Groups** from the drop-down menu, and then click **Default** in the **Service Group Name** column.
3. Click **+** to add services to the group.
4. Select the services from the drop-down menu in the **Service Name** field.
5. For each service that you add to the default service group, define the **Usage** property:

Usage	Description
Source Only	Specify this option if your application subscribes to digital events. Note: Your service group must contain at most one source service. You cannot include the same service twice in the same service group.
Destination Only	Specify this option if your application emits events. This is the default value.
Source and Destination	Specify this option if your application both emits and subscribes to events.

6. Optionally, click **Test** to verify that your configuration is valid.

Note: The validation is done on a field level, and checks whether the specified information complies with the field requirements.


7. Save your changes.


Configuring Custom Service Groups

By default, Digital Event Services provides a default service group that contains a preconfigured Universal Messaging service. You can create one or more custom service groups and associate a set of event types with them.

When events of those particular event types are sent or received, they go to all services within the service group. One of the services in the group can be defined as source and/or destination of events for all event types associated with the service group.

To configure a custom service group

1. In Command Central, navigate to **Environments > Instances > All > *instance_name* > Digital Event Services > Configuration**.
2. Select **Service Groups** from the drop-down menu.
3. Click  to add a new custom group.
4. Specify values for the following fields under **Configuration Details**:

Field	Description
Group Name	<p>Required. Specify a unique name for the service group. The name is not case-sensitive, and must start with a character. You can use the following characters as separators: .(dot) and - (dash).</p> <div style="background-color: #f0f0f0; padding: 5px; margin-top: 10px;"> <p>Note: You cannot rename a service group. If you want to modify a service group name, you must delete the existing service group and recreate the group with a different name.</p> </div>
Description	<p>Required. Specify a description of the purpose of the service group.</p>
Services	<p>Optional. Click  to add services to the group and then do the following:</p> <ul style="list-style-type: none"> ■ In the Service Name column, select a service. ■ In the Usage column, select one of the following options: <ul style="list-style-type: none"> ■ Source Only - if your application subscribes to digital events. ■ Destination Only - if your application emits events. ■ Source and Destination - if your application both emits and subscribes to events. This is the default value.

Field	Description
	<p>Note: Your service group must contain at most one source service. You cannot include the same service twice in the same service group.</p>
<p>Event Types</p>	<p>Optional. Use the dual list box to manage the digital event types assigned to a service group.</p> <p>The box on the left shows event types that are not associated with any service group. The box on the right shows the event types currently assigned to this service group. Use the arrows to move event types between the two boxes.</p> <p>Tip: Use the search box to filter the list of available digital event types. You can also select multiple event types by holding down the CTRL button and clicking specific entries, or by holding down SHIFT and clicking the first and last entry of a range.</p> <p>You can also manage the association of event types with service groups on the Digital Event Services > Configuration > Event Types page in Command Central.</p> <p>For more information about event type management, see "Configuring Event Type Associations" on page 16.</p> <p>Important: An event type can only be associated with a single service group. If you want to change the service group with which an event type is associated, you must first dis-associate the event type from its original service group, so that the event type shows in the dual list box.</p>
	<p>Note: You cannot delete a custom service group that has event types associated with it.</p>

5. Optionally, click **Test** to verify that your configuration is consistent.
6. Save your changes.

Configuring Event Type Associations

When events of a particular event type are sent or received, Digital Event Services delivers them to the services within a service group. To configure to where events are sent you need to associate event types with their respective service groups.

In Digital Event Services version 9.12, applications cannot subscribe for digital event types that are not present in the DES event type repository. For more information about adding event types to the event type repository, see "[Considerations for Deploying Digital Event Types](#)" on page 20.

To configure digital event type associations

1. In Command Central, navigate to **Environments > Instances > All > *instance_name* > Digital Event Services > Configuration**.
2. Select **Event Types** from the drop-down menu.
3. In the **Name** column, click **Event Types**, and then click **Edit**.
4. For each digital event type in the **Event Types** table, specify the following information:

Field	Description
Delivery Mode	<p>The quality of service per event type, if the runtime in which DES is embedded stops responding and becomes unavailable. Values are:</p> <ul style="list-style-type: none"> ■ Follow Preference - events are delivered according to the delivery mode preference set in the event type definition. This is the default value. ■ Persistent - events are stored on-disk and resent after the runtime becomes available again. ■ Non-persistent - events are stored in-memory and are not resent after the runtime becomes available. <p>Important Changing the delivery mode preference for an event type in the digital event type definition requires a restart of the runtime in which DES is embedded for the changes to take effect.</p> <p>To avoid restarting the runtime, instead of Follow Preference, you can select either Persistent or Non-Persistent in the Delivery Mode field to reflect the change in the event type.</p> <p>For more information about the quality of service setting, see "Delivery Modes for Digital Event Services" on page 9.</p>
In-Memory Capacity	<p>The maximum number of events that are kept in-memory for an event type. You can specify any positive integer, or you can specify 1K (1024), 1M (1024K), or 1G (1024M).</p>

Field	Description
	<p>Alternatively, you can leave an empty string or specify <code>Default</code> to use the global default setting of the In-Memory Capacity property.</p> <p>For more information about configuring the global default value for In-Memory Capacity, see "Configuring Storage Settings for Digital Event Services" on page 18.</p>
On-Disk Capacity	<p>The maximum number of events that are kept on-disk for an event type. You can specify any positive integer, or you can specify 1K (1024), 1M (1024K), or 1G (1024M).</p> <p>Alternatively, you can leave an empty string or specify <code>Default</code> to use the global default setting of the On-Disk Capacity property.</p> <p>For more information about configuring the global default value for On-Disk Capacity, see "Configuring Storage Settings for Digital Event Services" on page 18.</p>
Service Group	<p>Select a service group from the drop-down menu with which to associate the event type.</p> <p>Note: Digital event types that are not explicitly associated with a custom service group are associated with the default service group.</p> <p>You can also associate event types with service groups during the configuration of a service group. For more information, see "Configuring Custom Service Groups" on page 14.</p>

- Optionally, click **Test** to verify that your configuration is consistent.
- Save your changes.

Configuring Storage Settings for Digital Event Services

Depending on the delivery mode configured for an event type, all events sent to Digital Event Services are stored on-disk or in-memory. For more information about how the delivery preference you set affects DES, see "[Delivery Modes for Digital Event Services](#)" on page 9.

To configure the storage settings for Digital Event Services

1. In Command Central, navigate to **Environments > Instances > All > *instance_name* > Digital Event Services > Configuration**.
2. Select **Runtime Configuration** from the drop-down menu.
3. In the **Name** column, select **Runtime Configuration**, and then click **Edit**.
4. Specify values for the following fields:

Field	Description
Storage Location	<p>Optional. Defines the location where events are stored on-disk. Specify an existing folder in your file system.</p> <div style="background-color: #f0f0f0; padding: 5px; margin: 5px 0;"> <p>Important: Before you specify a new storage location, if the existing storage location is in use, you must copy any existing files manually to the new storage location.</p> </div> <p>If you do not specify a value, events are stored in the same directory as the configuration.</p>
Storage Batch Size	<p>Required. Defines the number of events that must be added to the on-disk store-and-forward queue before the queue is persisted to disk.</p> <p>The default value is 100 events.</p>
Sync Timeout	<p>Required. Defines the timeout in milliseconds that the on-disk store-and-forward queue waits before the events in the queue are persisted, in case the batch size has not been reached.</p> <p>The default value is 500 milliseconds.</p>
Default On-Disk Capacity	<p>Required. Defines the maximum number of events of each event type that can be stored on disk. The default value is 1000000.</p> <div style="background-color: #f0f0f0; padding: 5px; margin: 5px 0;"> <p>Note: You can override the setting by specifying On-Disk Capacity per event type. For more information about configuring the On-Disk Capacity property, see "Configuring Event Type Associations" on page 16.</p> </div>

Field	Description
Default In-Memory Capacity	Required. Defines the maximum number of events of each event type that can be stored in the memory. The default value is 1000.

Note: You can override the setting by specifying **In-Memory Capacity** per event type. For more information about configuring the **In-Memory Capacity** property, see ["Configuring Event Type Associations"](#) on page 16.

5. Save your changes.

Digital Event Services detects that the configuration has been updated, and starts to use the new settings for **Default On-Disk Capacity** and **Default In-Memory Capacity** automatically.

Important: If you modify the **Storage Batch Size**, **Sync Timeout**, and **Storage Location** properties, you must restart the runtime where the DES component is embedded for the changes to take effect.

For 9.12, this means restarting the Integration Server or Apama runtime. For more information about shutting down and starting Integration Server and Apama, see *webMethods Integration Server Administrator's Guide* and *Deploying and Managing Apama Applications*, respectively.

Lifecycle Actions for Digital Event Services

Digital Event Services does not support any lifecycle actions, such as start, stop, or restart. Although the **Lifecycle Actions** setting for DES is active in the Command Central web user interface, administrators should not use this functionality.

For more information about shutting down and starting Integration Server and Apama, see *webMethods Integration Server Administrator's Guide* and *Deploying and Managing Apama Applications*, respectively.

Considerations for Deploying Digital Event Types

You should consider the following information when deploying digital event types from your local environment to other instances of Integration Server or Apama:

- In Digital Event Services 9.12, applications cannot subscribe for digital event types that are not present in the DES event type repository.

- To deploy event types from your local environment to other instances of Integration Server or Apama, copy the event type manually from *Software AG_directory/common/DigitalEventServices/TypeRepository/eventtypes/event type name* .
- The relative paths in the source and destination event type repositories must be the same.

Note: Do not rename the file name of a digital event type.

-
- A digital event type can refer to other event types. When copying a digital event type, ensure that all referenced types are included.

Digital Event Services Licensing

If you do not have a valid license for Digital Event Services, you cannot create events, and your applications cannot emit and subscribe to digital events.

By default, Digital Event Services comes with a 30-day trial license. The original DES license can be overwritten by another license at any time. The DES license is located in the following file: *Software AG_directory/common/DigitalEventServices/license/license.xml*.

Important: A missing license file is regarded as an invalid license.

For more information about licensing, see *Installing Software AG Products*.

Performance Considerations on Linux

For deployments on a Linux operating system where performance is a concern, use an XFS file system for the Digital Event Services store-and-forward queue. If the throughput is high, XFS file systems perform better compared to the default ext4 file systems.

3 Configuring Digital Event Services Using Composite Templates

■ About Configuring Digital Event Services with Command Central Composite Templates	24
■ Configuring DES for a Single Runtime Instance	24
■ Configuring DES for Multiple Runtime Instances within a Single Installation	25
■ Configuring DES for a Set of Installations	26
■ Setting up a Runtime Instance and Configuring DES	28

About Configuring Digital Event Services with Command Central Composite Templates

You can use a composite template and the Command Central Command Line Interface to configure Digital Event Services for one or more runtime components in new or existing installations.

For more information about composite templates and scripting, see *Software AG Command Central Help*.

The following sections contain examples of how composite templates can be used with Digital Event Services.

Configuring DES for a Single Runtime Instance

The template snippet in this example creates and configures a Digital Event Services messaging service of type Universal Messaging for the default Integration Server instance.

The template defines a single layer, with alias `is1`. The `is1` layer includes the `is1-des-messaging-configuration` inline template, which is defined in the templates section. The `is1` layer maps to the local node in the provision section.

In the configuration section of the Integration Server instance template, the runtime component `OSGI-IS_default-DigitalEventServices` refers to `DES-MESSAGING-CONFIG`, which defines the parameters for the `COMMON-WMMESSAGING-DES` configuration type.

`OSGI-IS_default-DigitalEventServices` is the runtime component ID, which you can obtain by using the `sagcc list inventory components CLI` command.

`COMMON-WMMESSAGING-DES` is the configuration type ID, and `MyUM` is the configuration instance ID. The value of the "`@alias`" parameter should be the same as the configuration instance ID, in this case: "`@alias`": `MyUM`.

Command Central applies `DES-MESSAGING-CONFIG` to the `OSGI-IS_default-DigitalEventServices` runtime component, thus creating and setting up a Universal Messaging service for Digital Event Services.

For more information about working with composite templates and the `sagcc list inventory components` command, see *Software AG Command Central Help*.

```
alias: single-des-config-single-install
description: Configure DES for a single instance
version: 0.1

layers:
  is1:
    templates: [is1-des-messaging-configuration]

DES-MESSAGING-CONFIG: &DES-MESSAGING-CONFIG
```



```

COMMON-WMMESSAGING-DES:
  MyUM:
    Messaging:
      "@alias": MyUM
      Description: NewUM
      Enabled: true
      Provider:
        "@type": UM
        URL: nsp://localhost:1234

templates:
  isl-des-messaging-configuration:
    products:
      integrationServer:
        default:
          configuration:
            OSGI-IS_default-DigitalEventServices: *DES-MESSAGING-CONFIG

provision:
  default:
    isl: local

```

Configuring DES for Multiple Runtime Instances within a Single Installation

The composite template in this example creates and configures a Digital Event Services messaging service of type Universal Messaging for two Integration Server instances named `IS_default` and `IS_default2`.

The template defines two layers, with aliases `isl` and `is2`. Both layers map to the local node in the provision section.

The inline template applied to the `isl` layer is `isl-des-messaging-configuration`. The template configures the runtime component `OSGI-IS_default-DigitalEventServices` by referring to `DES-MESSAGING-CONFIG`, which defines the parameters for the `COMMON-WMMESSAGING-DES` configuration type.

The inline template applied to the `is2` layer is `is2-des-messaging-configuration`. The template configures the runtime component `OSGI-IS_default2-DigitalEventServices` by referring to `DES-MESSAGING-CONFIG`, which defines the parameters for the `COMMON-WMMESSAGING-DES` configuration type.

`OSGI-IS_default-DigitalEventServices` and `OSGI-IS_default2-DigitalEventServices` are the IDs of the runtime components to be configured. You can obtain the component ID of a runtime by using the `sagcc list inventory components` CLI command.

`COMMON-WMMESSAGING-DES` is the configuration type ID, and `MyUM` is the configuration instance ID. The alias parameter should be the same as the configuration instance ID, in this case: `"@alias": MyUM`.

Command Central applies the `DES-MESSAGING-CONFIG` configuration to the runtime components `OSGI-IS_default-DigitalEventServices` and `OSGI-IS_default2-`

DigitalEventServices. Applying `DES-MESSAGING-CONFIG` creates and configures a Universal Messaging service for both components.

For more information about working with composite templates and the `sagcc list inventory components` command, see *Software AG Command Central Help*.

```
alias: multiple-des-config-single-install
description: Configure DES for multiple instances in a single installation
version: 0.1

layers:
  is1:
    templates:
      - is1-des-messaging-configuration

  is2:
    templates:
      - is2-des-messaging-configuration

DES-MESSAGING-CONFIG: &DES-MESSAGING-CONFIG
COMMON-WMMESSAGING-DES:
  MyUM:
    Messaging:
      "@alias": MyUM
      Description: NewUM
      Enabled: true
      Provider:
        "@type": UM
        URL: nsp://localhost:1234

templates:
  is1-des-messaging-configuration:
    products:
      integrationServer:
        default:
          configuration:
            OSGI-IS_default-DigitalEventServices: *DES-MESSAGING-CONFIG

  is2-des-messaging-configuration:
    products:
      integrationServer:
        default2:
          configuration:
            OSGI-IS_default2-DigitalEventServices: *DES-MESSAGING-CONFIG

provision:
  default:
    is1: local
    is2: local
```

Configuring DES for a Set of Installations

The composite template in this example configures Digital Event Services for the Integration Server instance `IS_Default` in two different installations.

This template defines two layers, with aliases `is1` and `is2`, which in the provision section map to the nodes `local` and `local2`, respectively.

The templates applied to the `is1` and `is2` layers are `is1-des-messaging-configuration` and `is2-des-messaging-configuration`, respectively. The templates configure the runtime component `OSGI-IS_default-DigitalEventServices` by referring to `DES-MESSAGING-CONFIG`, which defines the parameters for the `COMMON-WMMESSAGING-DES` configuration type.

`OSGI-IS_default-DigitalEventServices` is the ID of the runtime component to be configured. You can obtain the component ID of a runtime by using the `sagcc list inventory components` CLI command.

`COMMON-WMMESSAGING-DES` is the configuration type ID, and `MyUM` is the configuration instance ID. The alias parameter should be the same as the configuration instance ID, in this case: `"@alias": MyUM`.

Command Central applies the `DES-MESSAGING-CONFIG` configuration to the runtime component `OSGI-IS_default-DigitalEventServices`, thus creating and configuring Universal Messaging for multiple instances in multiple installations.

For more information about working with composite templates and the `sagcc list inventory components` command, see *Software AG Command Central Help*.

```
alias: multiple-des-config-multi-install
description: Configure DES for multiple instances in multiple installations
version: 0.1

layers:
  is1:
    templates:
      - is1-des-messaging-configuration

  is2:
    templates:
      - is2-des-messaging-configuration

DES-MESSAGING-CONFIG: &DES-MESSAGING-CONFIG
COMMON-WMMESSAGING-DES:
  MyUM:
    Messaging:
      "@alias": MyUM
      Description: NewUM
      Enabled: true
      Provider:
        "@type": UM
        URL: nsp://localhost:1234

templates:
  is1-des-messaging-configuration:
    products:
      integrationServer:
        default:
          configuration:
            OSGI-IS_default-DigitalEventServices: *DES-MESSAGING-CONFIG

  is2-des-messaging-configuration:
    products:
      integrationServer:
        default:
          configuration:
            OSGI-IS_default-DigitalEventServices: *DES-MESSAGING-CONFIG
```

```

nodes:
  default:
    default:
      secure: true
      credentials:
        username: Administrator
        password: manage
    local:
      host: localhost
      port: 8093
    local2:
      host: localhost
      port: 9815

provision:
  default:
    is1: local
    is2: local2

```

Setting up a Runtime Instance and Configuring DES

The composite template in this example sets up a new installation on the node with alias `local2`, with an Integration Server instance called `IS_default2`, and also configures Digital Event Services.

The template defines the layer `new-is`, which is mapped to the node `local2`, as per the details in specified under `provision`. Integration Server will be installed from the repository called `webMethods-9.12_912oct2016_SIC` to the directory `C:/SoftwareAG2`.

The template applied to the `new-is` layer is `[create-and-configure-is]` and configures Digital Event Services and the Integration Server instance `IS_default2`. The template configures the runtime component `OSGI-IS_default-DigitalEventServices` by referring to `DES-MESSAGING-CONFIG`, which defines the parameters for the `COMMON-WMMESSAGING-DES` configuration type.

`COMMON-WMMESSAGING-DES` is the configuration type ID, and `MyUM` is the configuration instance ID. The alias parameter should be the same as the configuration instance ID, in this case: `"@alias": MyUM`.

When applying the template, Command Central applies the `new-is` layer on the `local2` node and installs Digital Event Services and Integration Server with the instance defined in the `[create-and-configure-is]` template. When `IS_default2` is up and running, Command Central applies the `DES-MESSAGING-CONFIG` configuration on the `OSGI-IS_default2-DigitalEventServices` runtime component.

For more information about working with composite templates, see *Software AG Command Central Help*.

```

alias: setup-installation-configure-instance
description: Create a new installation with an IS instance and configure DES
version: 0.1

layers:
  new-is:
    productRepo: webMethods-9.12_912oct2016_SIC

```

```
templates: [create-and-configure-is]
DES-MESSAGING-CONFIG: &DES-MESSAGING-CONFIG
COMMON-WMMESSAGING-DES:
  MyUM:
    Messaging:
      "@alias": MyUM
      Description: NewUM
      Enabled: true
      Provider:
        "@type": UM
        URL: nsp://localhost:1234
templates:
  create-and-configure-is:
    products:
      DEV:
        integrationServer:
          default2:
            primary.port: 5805
            diagnostic.port: 5806
            jmx.port: 5807
            configuration:
              OSGI-IS_default2-DigitalEventServices: *DES-MESSAGING-CONFIG
nodes:
  default:
    local2:
      host: localhost
      port: 9815
      secure: true
      bootstrapInfo:
        installDir: C:/SoftwareAG2
provision:
  default:
    new-is: local2
```