

webMethods Product Suite 9.9

Release Notes

webMethods 9.9 represents significant enhancements to Software AG's Digital Business Platform. This release enables the development of integration centric, event centric, decision centric, and process/task centric applications that are API-enabled and deployed across a hybrid cloud environment.

Release Highlights

Integration

This release of the webMethods suite includes many integration enhancements, such as advanced support for XML Namespaces, enhancements for Inbound Kerberos authentication for web services, and REST services, and OData enhancements.

The key features include:

- In addition to IData, Integration Server now includes a new data type to represent XML. This data type allows for enhanced support for XML.
- Software AG Designer now lets you compare packages and elements in Integration Server. Developers can use the compare capability to:
 - Compare packages and elements on the same server or on different servers.
 - Track changes to a package or element during the development process.
- Customers who want to use the API-Portal standalone or integrated with third-party environments can now leverage a simple email-based workflow to send access token requests to configured groups of users.
- Framework enhancements in CloudStreams enable support for REST metadata lookup and custom operation definition. This release also adds new connectors for MS Dynamics and Sage CRM.
- webMethods OneData's next generation user interface provides enterprise-class full-text search functionality in the new user interface.

API Management

This release of webMethods API Management platform contains significant enhancements to CentraSite, Mediator and API-Portal.

The key highlights are:

- APIs defined in Swagger or RESTful API modeling language (RAML) formats can be directly imported and managed in API-Portal.
- API-Portal provides the ability to share APIs through social networks or email and to follow APIs for updates.
- API-Portal has enhanced Self Service customization and auditing.

- CentraSite and Mediator provide full support for versioning of SOAP and REST APIs.
- The CentraSite Business user interface helps you easily navigate and visualize dependencies and relationships between assets for various use cases.

webMethods Business Process Management Suite

The webMethods Business Process Management (BPM) Suite adds more capabilities to the Business Console, the Business Rules, the Rules Management console, and the Mobile suite, to provide businesses with the visibility and performance needed to improve decision making.

The key features are:

- webMethods Business Console now supports visualization of possible paths for process estimated time of arrival (ETA).
- Enhanced process list management and task list management in webMethods Business Console.
- webMethods Business Console has the ability to escalate all pending tasks within a process through a priority event.
- Process Engine and Task Engine have adopted the Enterprise Routing Framework for emitting EDA events.
- Mobile Designer now provides integration with Service Development to browse and automatically add Integration Server services from Integration Server to the application model.
- The Rules Management Console (RMC) has been added as an endpoint for webMethods Deployer. This endpoint also supports “merge” and “hot deploy.”
- Import/export between Software AG Designer and the Rules Management Console is improved to allow locking and auditing for any Rules Content Repository API for Java (JCR) access.
- The existing “Public API” has been extended by a new RESTful API for the Rules Management Console that allows a user to import, export and deploy rule projects.

Operational Intelligence

The key enhancements for operational intelligence are:

- This release enhances the Optimize integration in Process Performance Manager (PPM) functionality by allowing PPM users to create alerts in Optimize for the intrinsic measure that is being analyzed.
- For users who are running both Optimize and PPM, the dashboard provides a “View in PPM” function to do an in-context jump to PPM. This feature allows users to explore longer-term historical data in the same process using extensive analytic capabilities.
- Optimize now offers expanded monitoring and visibility with full Apama monitoring, discovery, and KPIs. In addition, enhanced Integration Server and Presto monitoring is also introduced.

Suite Enhancements

The webMethods Suite provides several enhancements across various products. The highlights in this release include:

- Command Central has an enhanced fix installation user interface, which you can use to install fixes remotely, and also have the fix installation date displayed.
- Command Central can now be used to manage the Lightweight Directory Access Protocol (LDAP) configuration of Integration Server, Command Central itself, and other products. It also includes many enhancements to template-based provisioning.
- A smooth migration path is available from Broker to Universal Messaging.
- Enhanced support for Kerberos authentication with Representational State Transfer (REST) service inbound authentication and inbound web service authentication in Integration Server. This authentication support also extends to inbound and outbound web service authentication in Mediator, and single sign-on (SSO) using Kerberos in My webMethods Server and CentraSite.
- webMethods Deployer now supports connections to Universal Messaging servers that are configured to authenticate clients using username/password.
- Through the use of simple annotations, the Application Platform services are discoverable and callable from Composite Application Platform (CAF) and OpenCAF user interfaces, making it easy for developers to add business logic to their CAF and OpenCAF applications without the need to resort to third-party application servers or complex Java deployments

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For important updates and a list of enhancements and issues that have been addressed since the previous release of each product, see the webMethods product readme files. You can access these documents, as well as all product documentation, from the webMethods area on the [Software AG Documentation website](#).

CentraSite

Graphical Asset Navigator

The Asset Navigator provides a graphical representation of relationships between assets. The graphical asset navigator in CentraSite Business user interface helps users to easily navigate and visualize dependencies between assets for various use cases. Several use cases for navigation are provided out of the box to allow for analysis of the runtime deployment landscape, organization structure or dependencies to/from particular assets. The asset navigator can be extended through saved searches.

API Versioning

CentraSite and Mediator now provide full support for versioning of SOAP and REST APIs. The CentraSite Business user interface allows versioning of virtual services and publishing of distinct versions to Mediator. Mediator is able to host multiple versions of the same service during runtime. Versioning indicators in the URL allow Mediator to perform an automatic routing of requests to the appropriate version.

Enhanced Consumer Registration

The consumer registration functionality is enhanced to support design-time and run-time scenarios. Administrators can configure which asset types can consume instances of other asset types. Configured runtime identification criteria are automatically presented as mandatory input for consumers. Normal approval policies can be leveraged to trigger approval workflows.

Run-Time Storage Optimization

CentraSite provides an optimized data storage management for handling large volume of run-time events. Customer logging large volumes of runtime metrics and events into CentraSite should enable the new data store for heavily improved log purging and data housekeeping purposes.

Automatic Generation of Swagger API Documentation

Rest APIs, defined from scratch or imported using either RAML or Swagger importers in CentraSite, can now be used to dynamically generate a Swagger 2.0-compliant documentation using the “Download Documents” action in the CentraSite Business user interface.

Database Master-Slave Replication

CentraSite database can now be configured for master-slave replication across multiple nodes.

REST API Synchronization

Changes on the native REST API can now be re-synchronized with existing virtual REST APIs. In the improved Virtualization wizard, users are informed of the existing delta between the native REST API and virtual REST API and then allowed to skip, clone, or overwrite resources to suit their requirements.

Usability Enhancements

The handling of virtualized services has been improved. Users can now navigate back and forth between the native service and its related virtualized services using the Basic Information profile. Users can also directly update virtualization settings in the details page of the virtualized service.

Report Scheduling

CentraSite allows for scheduled execution of reports. Users can select reports and configure the reporting schedule. Reports are sent to users through email. All users can manage their scheduled reports through their User Preferences in the CentraSite Business user interface.

OData Support

CentraSite Business user interface provides support for importing OData services, which are based on Open Data Protocol (OData) version 4.0, using the Create Asset wizard. The inherent support for visualization and virtualization of the OData services will be provided in upcoming releases.

My webMethods Server

Single Sign-On Using Kerberos Authentication

My webMethods Server can now be configured to authenticate users directly based on their Windows logon. User sessions are established using Kerberos authentication, thereby removing the need for them to log in to My webMethods Server explicitly.

Single Sign-On Using SAML Identity Provider

My webMethods Server can now be configured to authenticate users through an external SAML 2.0-based identity provider. Users can log in using a central identity portal and be redirected straight into My webMethods without having to log in again.

See [Composite Application Framework](#) and *Task Engine* for details of new capabilities in the respective components.

Software AG Command Central

Fix Installation User Interface

It is now possible to install fixes remotely from the Command Central web user interface. Building on the command-line tool and API capabilities (introduced previously) and installing fixes is now easier than ever. On any installation of version 9.7 and later, users can browse, install, and revert fixes managed by Command Central directly from the Command Central web user interface.

Support Patches, provided by Software AG Global Support, while working on a support incident, can also be installed using this mechanism.

Fix Installation Date Display

The date a fix installed is now shown in Command Central. It is also returned by the fix inventory command-line tool command and API calls.

LDAP Configuration

Command Central can now be used to manage the LDAP configuration of Integration Server, Command Central itself and other products. This includes the web user interface, command-line tool, API, and support in templates.

Mirror Repositories

When installing products or fixes using Command Central, users can choose from a master repository (hosted by Software AG) or a local image repository (an image file downloaded using Installer or Update Manager). In addition, users can now create a network accessible Mirror repository within the network. This hosts a copy of installable items to provide a streamlined method of installation. It is no longer necessary to provide internet access to managed installations or move very large image files around. Mirror repositories ensure that only the modules necessary are transferred across the internal network. In this release, Mirror repositories can be used when installing products. Mirror repository support for fixes will be included in a future release.

License Management Scheduled Report

Command Central provides aggregated monthly reports of the Command Central-managed landscape, showing installed instances on an hourly/daily basis. This enables more effective management of dynamically scaling landscapes and virtualized environments.

Java System Properties Configuration

Users can now use Command Central to configure the Java system properties of various products, such as My webMethods Server (including Task Engine), Integration Server, and Command Central. These settings can be used for certain product-specific configurations that need to be set using Java virtual machine (JVM) properties.

Template-Based Provisioning Enhancements

Template-based provisioning includes these improvements:

- Composite templates now can re-use external snapshot templates in the list of templates to apply for a given layer. The improvement allows users to combine easy-to-use snapshot templates with the power of complex, multi-host composite templates. This also works for 9.7 and 9.8 installations.
- New implicit variables, `$(node.host)` and `$(node.alias)`, can now be used inside inline templates to create dynamic content that is host/alias specific. This simplifies the configuration of more advanced multi-node and clustered templates.
- Java system properties can now be referenced within the `template.yaml` definition for further customization. This allows default settings to be shared across multiple templates hosted by Command Central.
- Composite templates now perform update operation on the existing product instances when the template is reapplied. This allows additional components like Integration Server adapters to be provisioned to existing installations just by updating and reapplying the same template.
- When applying a template using the Command Central command-line tool users can now combine the use of input properties file with additional parameters on the command line. This allows better re-use of environment parameter files and simplifies template development and application.
- Composite templates can now have configuration sections without product and fix sections and do not require product and fix repositories to be defined.
- Command Central supports bootstrapping (remote Platform Manager installation) on Windows hosts running the OpenSSH service.
- The installation directory can be specified in UNIX format and work across both UNIX and Windows hosts.
- Template application is done layer by layer. This ensures that upper layers are provisioned only after lower layers (on which they may depend) are ready.
- Composite template application now displays a more accurate WARNING status instead of DONE when some phases of the template application complete with non-critical errors.

Consistent Status Reporting

Previously, the status of a component (Online, Stopped, Unresponsive, etc.) was not shown consistently throughout the Command Central web user interface, especially when a lifecycle operation (Start, Stop, etc.) had just been initiated. Now, the status reported by Command Central

is always what is reported by the component itself and is consistent between the summary and detail screens.

Command Central Bootstrap Installer

Command Central bootstrap installer is a fast, simple, and **an** easy way to get Command Central server up and running in a few minutes using a single downloadable and executable installer package. **The** Command Central bootstrap **installer is** for Windows, Linux, and OS X operating systems.

Software AG Designer

Software AG Designer now includes these enhancements:

- Software AG Designer and all its plug-ins now use the Eclipse 4.4.2 version.
 - When uninstalling Software AG Designer, the installer now removes all directories from the file system. Previously, uninstallation did not remove all Software AG Designer-related files and directories.
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Software AG Installer

Products Installable from Software AG Installer

Users can now install Apama and Integration Agent from the Software AG Installer.

Software AG Designer Uninstallation Removes All Related Directories

While uninstalling Software AG Designer, the installer removes all related directories from the file system. Previously, uninstallation did not remove all Software AG Designer-related files and directories.

Integration Server Instance Created during Installation can be Named by User

Users can now name the Integration Server instance that is created during installation. Previously, the instance was always named "default," and this name could not be changed.

Optimize Shut Down Automatically

Previously, the installer automatically shut down most products that already existed in a target installation directory before installing additional products. However, some products, including Optimize Analytic Engine, had to be must shut down manually. The installer now shuts down Optimize Analytic Engine automatically.

Software AG Presto

Freeform Dashboard Enhancements

The Freeform dashboard includes these enhancements:

- New chart types (pie/donut, gauge, and column).
- New controls for filtering (drop-down list, input field).
- New controls for placing images and text labels.
- Ability to turn on/off borders.
- Dashboard styling via CSS themes (customizing logo, color schemes, fonts, etc.).
- New XML Data source for consuming RESTful URLs including mashups.
- Parameterized XML and RAQL data sources for passing context into data sources.
- Support for Import/Export of dashboards through the administration tool.

Real-Time Analytics Query Language (RAQL) Enhancements

The RAQL enhancements for Presto include:

- Flexible data grouping with “rollup” and “cube”
- Native support for Apama data

Google Map View Enhancements

The Google Map view now allows users the ability to:

- Customize marker icons.
- Configure zoom level.

Docker Support

Presto Packaging Kit for Docker helps users "dockerize" Presto web application.

Presto Repository Databases

Presto repository databases now include support for Microsoft SQL Server 2014.

Software AG Runtime

New Software AG Infrastructure Administrator's Guide

For details, see [New Software AG Infrastructure Administrator's Guide](#).

New Software AG Infrastructure Readme

The readmes for Software AG Common Platform, Software AG Runtime, Software AG Security Infrastructure, and Software AG Web Services Stack have been combined into a single Software AG Infrastructure readme. In addition, the combined readme has been expanded to contain cumulative information for these products back to the 9.5 release.

webMethods AgileApps

New Data Centers, New Brand

New data centers are opening in the United States and Europe. Others are planned around the globe. The new data centers will be hosted on Amazon ECS, with an HTTP address that employs the new brand name, "AgileApps Cloud". For example, <http://{yourDomain}.agileappscloud.eu>.

Enhanced Case Merge

Users who merge two records can select which custom tasks and which field values to retain from the current record, while attachments, activity history, and hours-logged are automatically merged.

Session Managements

Session limits can be specified, to limit the number of concurrent sessions a user is allowed to have.

Task Assignment Notifications Controlled by Rules

When a task is created or re-assigned to someone else, an email notification is sent to the new task owner, by default. In new customer accounts, the behavior in each situation is now under the control of an Event Rule defined on the Tasks object, allowing notifications to be turned off or conditionalized, so they are sent out only for specified circumstances.

Packaging Enhancements

The packaging enhancements include:

- Application reports that are visible to everyone and those that are visible to application roles are automatically added to a package as part of an application.
- When the "Overwrite Previous Package" option is enabled:
 - Email Templates, Quick Text definitions, and Web Forms defined on an object are now overwritten when the package is installed.
 - Processes deleted from the publisher's system are deleted from the installer's system.
 - Translation Workbench entries deleted from the publisher's system are deleted from the installer's system.

Standard Installation Process

An on-premise installation of the AgileApps platform is accomplished using the standard Software AG installation procedures.

Certificate-based Platform Access

When the on-premise installation architecture is configured with a certificate-validation server, the platform can be accessed by browsers or by REST APIs without a login step, by supplying an identifying certificate.

webMethods API-Portal

Direct API Import

Users can now import and manage APIs defined in Swagger or RAML formats directly in API-Portal. This enables a standalone operation of API-Portal without the need to publish APIs from CentraSite. Parsers for additional formats can be plugged in through an extension point.

Email-Based Access Token Workflow

Customers who want to operate API-Portal as a standalone or integrated with third-party environments can leverage a simple email-based workflow to send access token requests to a configured group of users. A new REST service provides the ability to provision custom access tokens back into API-Portal.

Advanced Collaboration

API-Portal provides the ability to share APIs through social networks or email and to follow APIs for updates.

Auditing Enhancements

System events like login attempts, API deployments, and access token requests are now audited. Integrated dashboards allow visualization and filtering of audit data for diagnostic purposes.

Usability Enhancements

The menu of API-Portal for logged-in users has now been redesigned to better suit mobile device rendering. The administration section provides simpler navigation between various administration areas.

Enhanced Self Service Customization

Self Service Customization provides a simpler selection of available templates for customization. Users can customize individual templates through new in-page editors that support syntax highlighting, code completion, and reformatting.

Support for SOAP APIs Exposed as REST APIs

SOAP APIs which are enabled for automatic SOAP-to-REST transformation and exposed through webMethods Mediator are now displayed as pure REST APIs in API-Portal with the option for web service definition language (WSDL) download.

webMethods Application Platform

webMethods Application Platform Services in My webMethods Server

Users can now deploy webMethods Application Platform services into a My webMethods Server container. Through the use of simple annotations, the Application Platform services are discoverable and callable from Composite Application Framework (CAF) and OpenCAF user interfaces. This capability makes it easy for developers to add business logic to their CAF and OpenCAF applications without the need to resort to third-party application servers or complex Java deployments.

webMethods ApplinX

Comparing ApplinX Applications

Typically, users can compare two versions of the same application. The results of the comparison can then be used to perform impact analysis before deploying a new ApplinX application version.

Invoking a Procedure Using REST

In addition to SOAP, users can invoke ApplinX web services using REST from the Procedure Group Entity Editor.

Upgrade to Tomcat Server 8.0

The ApplinX internal Tomcat server is now version 8.0.

Improved Performance for Large Send Sections

Performance improvement has been done for large send sections, for example, Natural Data Transfer upload or the AS/400 save state feature.

Enter Key Recognition

ApplinX can now differentiate between the two Enter keys (on the main keyboard and the numeric keypad).

Note: This applies only to the following browsers: Mozilla Firefox 29 and above, Chrome, Internet Explorer 11.

webMethods BPMS

[Monitor, Process Engine, Task Engine (including Mobile Task Integration), and Business Console]

Task Engine Enhancements

Task Engine includes the following enhancements:

- Performance improvement of My webMethods Server scheduler service by replacing and re-implementing it. The current event algorithm no longer queries Task Engine, but keeps a persistent sorted data structure that tracks calculated “Event Times” and Task IDs.
- Scalability and high performing task search capability by implementing Reference architecture. This flexible approach enables users to:
 - Create a custom database (such as elastic search and Hadoop) to which to write task data.
 - Use the created database to:
 - Create custom indices.
 - Archive the data.
- Ability to name or rename description for tasks.
- Enterprise Routing Framework for emitting EDA events for Task Engine.

Business Console Enhancements

Business Console includes the following enhancements:

- Ability to create mandatory and non-mandatory tasks in a to-do list (group task).
- Improved process list management and task list management. Now users can:
 - View the task instances associated with a process.
 - View process diagram and process duration in the process details page.
 - Search for process instances.
 - Customize labels of tabs in task details and process details pages.

Process Engine/Monitor

Process Engine/Monitor includes the following enhancements:

- Process ETA (estimated time of arrival) visualization for each possible path.
- Ability to escalate all pending tasks within a process through a priority event.

Enterprise Routing Framework for emitting EDA events for Process Engine.

webMethods Broker

webMethods Broker 9.6 is tested and supported with webMethods 9.9.

webMethods Business Rules

Support of Data Types List, Table, and Document

Decision table results, event rule results, and service actions now support the data types list, table and document. Additionally, the Rules Development feature can perform list operations (createList, appendToList, insertIntoList, removeFromList).

webMethods Deployer Integration

The Rules Management Console (RMC) is added as an endpoint for webMethods Deployer. This endpoint also supports “merge” and “hot deploy”.

Rules Import/Export

Import/export between Software AG Designer and the Rules Management Console has been improved allowing locking and auditing for any Rules JCR access. The Rules Management Console now automatically recognizes new or modified rule projects, and enables removal of the “Welcome” page. Furthermore, a rule project users can import "from archive" without the need for the rule project to exist beforehand.

Event Routing Framework

Business Rules has adopted the new webMethods Event Routing Framework.

Extension of “Public API”

The existing “Public API” is extended by a new RESTful API for the Rules Management Console that allows users to import, export and, deploy rule projects.

Customization of the Rules Management Console

The Rules Management Console has been separated into several independent portlets. In addition, users can now customize it using CSS stylesheets.

webMethods CloudStreams

CloudStreams Framework Enhancements

CloudStreams framework has been enhanced to support two additional capabilities:

- Dynamic metadata lookup for SaaS providers exposing REST resources. This lookup provides information about available resources, their methods, and fields.
- Transformation capability for customizing requests and responses in the signature of SOAP connector services.

Additional Connectors

New connectors are available for the following SaaS applications:

- Microsoft Dynamics CRM
- Amazon SNS
- Amazon Data Pipeline
- Amazon Kinesis
- Amazon RDS
- Amazon Redshift

- Facebook
- Google Calendar
- Google Contacts
- LinkedIn
- Melissa Data Search
- Melissa Data Verifier
- Twitter

Migration Enhancements

Now, CloudStreams supports migration of cloud connector services from an existing version to a newer version of the SaaS provider.

webMethods Composite Application Framework

webMethods Application Platform Services in My webMethods Server

Users can now deploy webMethods Application Platform services into a My webMethods Server container. Through the use of simple annotations, the Application Platform services are discoverable and callable from Composite Application Platform (CAF) and OpenCAF user interfaces, making it easy for developers to add business logic to their CAF and OpenCAF applications without the need to resort to third-party application servers or complex Java deployments.

webMethods Deployer

Support Deployment of Rules Assets to Rules Management Console

Asset Build Environment and Deployer now enable users to build webMethods Business Rules assets and deploy them to:

- Rules Management Console in My webMethods Server.
- Primary Rules engine in Integration Server.

Support of Authenticated Connections for Deployment of Assets to Universal Messaging

webMethods Deployer now supports deployment of assets to Universal Messaging servers that are configured to enforce authentication using either basic authentication or certificate-based authentication.

webMethods Enterprise Gateway

Support for Custom Filters

webMethods Enterprise Gateway allows the definition and use of custom filters with Enterprise Gateway Rules. Users can define the processing that a service must perform, and then create a custom filter that invokes the service. For example, a service might perform authentication and authorization of clients or processing of payloads within the gateway. When developing the flow service that performs the custom processing, users have full access to the capabilities of the webMethods flow language and the built-in public services.

webMethods EntireX

Multiple Possible Outputs for COBOL

For COBOL integration scenarios, the concept of multiple possible outputs (MPOs) is now supported. This means that you can define a set of possible layouts for the reply structure. At runtime, one concrete layout is returned based on a selector value.

Monitoring and Administration

- A new logging exit for the monitoring scripts on Windows is available. This enables users, for example, to call their own routines and/or write to CSV files.
- A new Java Custom Callback interface is available for EntireX Application Monitoring, allowing users to implement their own actions for each KPI or error record received. Users can trigger their own actions, such as pushing KPIs to another data store and handling KPI-specific actions.
- Users can now use Command Central to administer EntireX Brokers of version 9.9 running on Linux, UNIX or Windows. A graphical user interface is available to perform tasks as starting and stopping Brokers, monitoring basic KPIs, setting ports, static trace level, and editing attribute files.

In addition, users now have the facility to create and delete the EntireX Brokers Command Central command line.

Security Enhancements

- EntireX Encryption is now deprecated, and in its place, SSL/TLS is the method of choice for Transport Layer Security.
- T-TLS is fully verified on z/OS.
- ATLS is verified on z/VSE with EntireX Fix 11.
- EntireX Adapter for Integration Server allows users to change enabled TLS protocols and cipher suites.
- OpenSSL version 1.0.1 is supported.

Enhancements in EntireX Adapter for Integration Server

- Listener statistics are provided.
- License status message is more precise.

- The EntireX Adapter documentation set has been combined with the EntireX documentation set. All references between EntireX and EntireX Adapter documentation are now clickable hyperlinks.

Improvements for Ease of Operation and Enhanced User Experience

- EntireX Mini Runtime is now installed using the Software AG Installer.
 - Multiple error messages have been reworked, in particular IDL parser messages.
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webMethods Integration Server

Enhanced Support for XML

Integration Server now includes a new data type to represent XML in addition to IData. The new data type, XML data, more faithfully represents XML content. Thereby, XML data enables support for XML Schema constructs, such as substitution groups, nested model groups, the any wildcard, and the anyAttribute wildcard. XML data also offers significant improvements in the handling of XML namespaces. XML data is surfaced in Integration Server and Designer through XML document types which are created from XML Schema definitions. Integration Server also includes public services for converting XML documents to XML data and vice-versa.

Enhancements to URL Alias

Integration Server now provides support for defining URL alias destinations based on specific incoming ports. This enables users to define a single URL alias that may resolve to different destinations based on the business partner submitting the request. In addition, users can now define the “empty path” as an alias allowing the definition of a default destination for any incoming port.

Support Inbound Kerberos Authentication for Web Services and REST Services

Integration Server now supports authentication of an inbound web services request containing a Web Services Security-based Kerberos token through incorporation of the WS-Security Kerberos policy. In addition, Integration Server can now authenticate an HTTP request that contains a Kerberos token. The authentication includes identifying ports that can accept a Kerberos token. The improved Kerberos support increases Integration Server interoperability with Microsoft .NET-based environments.

Ability to Name the Default Instance of Integration Server

During installation, administrators can now provide the name that Integration Server uses for the default instance.

Command Central Integration

Command Central can now be used to centrally administer and configure LDAP settings for a given Integration Server instance.

Enhanced OData Support

OData services hosted in Integration Server provide out-of-the-box support for handling \$expand and \$filter system query options. Users do not need to write custom code to handle these operators. The Use custom filter property of OData service allows users to choose whether or not to use custom filters instead of the built-in filters that Integration Server provides when using \$filter.

Send and Receive Events Using the Event Routing Framework

Integration Server can send events in a synchronous manner to the messaging provider using the Software AG Event Routing framework. Integration Server can also create subscriptions to or unsubscribe from event types using Software AG Event Routing.

Deprecation of WmVCS package

The WmVCS package, which provides the functionality for using the VCS Integration Feature, is deprecated.

Display Time Zone on Integration Server Administrator Scheduler Pages

The pages for working with scheduled tasks in Integration Server Administrator now display the time zone setting for the current server. This can be especially helpful for administrators when adding or modifying scheduled tasks.

webMethods Mediator

API Versioning

CentraSite and Mediator now provide full support for versioning of SOAP and REST APIs. The CentraSite Business user interface allows versioning of virtual services and publishing of distinct versions to Mediator. Mediator is able to host multiple versions of the same service during runtime. Versioning indicators in the URL allow Mediator to perform an automatic routing of requests to the appropriate version.

Enhanced Runtime Aliases

Mediator Runtime Aliases have been enhanced to allow Request/Response and Error Processing steps to be configured as Runtime Aliases.

Kerberos Authentication Support

Mediator provides inbound and outbound support for Kerberos authentication.

webMethods Mobile Suite

ARIS Mobile Services Enhancements

Mobile Designer now fully supports integration with ARIS API and creation of applications based on ARIS data. ARIS API REST services can be created automatically.

Integration Server Introspection

Mobile Designer now provides integration with Service Development to browse and automatically add services from Integration Server to the application model.

Data Modeling

The Entity Modeling Language has been introduced to define a project specific data model and its support within the application model.

Improved Data Binding Support

DataBindings can now also be added to the following elements: Entry, DateEntry, Entry, RadioButton and Checkbox.

Expanding of AML Editor

The AML Editor will now automatically expand its elements once it is opened to show the basic structure of the model.

Improved Push Notification Support for Mobile Applications

Applications can now access the full payload, receive a notification when the UID was created, and receive error messages.

ContentAdapter Support for Multiple Templates in a ListView/ListViewElement

Each ContentAdapter now supports multiple TemplateAssignment objects. A TemplateAssignment represents a template in combination with a filter expression. The ContentAdapter also supports multiple RowSelectionListener objects.

SideView Support

Mobile Designer now supports native SideViews that can be used as alternative to NavViews and can contain any control. Users can set two side views for a main window, one for the left side and one for the right side.

Performance Improvements for iOS and Windows platforms

Performance of Mobile Designer runtime has been improved significantly for iOS and Windows platforms.

Improved Project Structure in XCode

Now all Java packages are represented as folders in the project explorer of the cross-compiled XCode project instead of all files in one folder.

Improved Control for nUIDialogWindows

Users can now modify the default dimensions of a nUIDialogWindow. This allows applications to provide a more consistent style for their application.

Product Deprecation

Mobile Administrator is deprecated.

webMethods OneData

Additions to Data Steward User Interface

OneData now provides enterprise-class full text search functionality in the new user interface.

Service Layer Improvement

RESTful Application Program Interface (API) now supports explicit transactions. Developers can implement use cases in which multiple REST web service calls are wrapped within a single transaction.

Metadata Localization

Users can now localize metadata created in projects; for example, in objects or column names. OneData includes a new menu option, Metadata Localization, to define translations for metadata elements in the user's language of choice.

Archive and Purge Log Job

It is now possible to define schedules for jobs performing log archiving and purging. Administrators can also define how much log data to retain.

Security Enhancement

A number of Data Manager screens can now be protected against security vulnerability of Cross-Site Request Forgery (CSRF) using the `org.owasp.csrfguard.Enabled` and `referer-pattern` properties.

webMethods Optimize for Infrastructure

SNMP Upgrade

The SNMP version support has been upgraded to SNMP v3, enabling customers to take advantage of new capabilities in this later version.

Upgrade Improvements

webMethods has established Java Service Wrapper as a standard across the suite. In this release, migration for Java Service Wrapper customizations for Optimize has been automated so that users will no longer need to re-apply them when performing an upgrade.

Apama Monitoring

Users can now monitor Apama through Optimize for Infrastructure. In addition, users can also discover Apama instances and set KPIs set on a number of components:

- Correlator attributes
- Monitor
- Timer
- Container
- Listener
- Context
- Receiver
- Plug-in Receiver

Secure MWS Monitoring

Connections to MWS can now be established over HTTPS, enabling Optimize to monitor secured MWS installations.

Enhanced Integration Server Monitoring

Users can discover and monitor file polling ports in Integration Server.

Extended Presto Monitoring

Presto monitoring by Optimize for Infrastructure is enhanced to include the Tomee Tomcat Server.

webMethods Optimize for Process

BAM-Only Processes Show Failing Steps

Optimize for Process now supports “failing” steps for BAM-only processes. Just as with an orchestrated process, users see a red “X” on the live process model when an un-orchestrated process step fails. This visual cue enables easy recognition of issues and quicker resolution.

Enhancements to In-Context Jump to PPM

For users who run both Optimize and PPM, the dashboard provides a “View in PPM” function to enable an in-context jump to PPM. When in PPM, users can explore long-term historical data on the same process using extensive analysis capabilities.

In this release, from the KPI instance detail page, an “Investigate” button automatically opens a new browser tab and PPM is loaded with the appropriate context.

Updates for Closed Loop Analytics

Closed-Loop Analytics (CLA) includes enhancements for business users.

When a user initiates an email or a task from a CLA dashboard, the system remembers the stage selection on the return URL. This means that clicking the URL not only takes the user to the correct page, but also displays the proper stage that initiated the pre-selected action.

Additionally, there are several aesthetic improvements to the dashboards. For example, unnecessary borders have been removed in the Business Console.

Performance Improvements

Performance improvements in this release include:

- Reduced Analytic Engine start-up time
- Improved throughput of KPI readings
- Efficient means of determining the status of Stage Instances

These enhancements continue the trend of implementing performance improvements with every release to support large-scale implementations.

Ease of Operations

Optimize Analytic Engine and Web Service Data Collector shut down automatically when installing or uninstalling products. This simplifies maintenance efforts and reduces the likelihood of installation issues.

Suite Monitoring

Users can now perform basic monitoring of Analytic Engine using the Command Central user interface.

webMethods Process Performance Manager

Real-Time to Historic Visual Data Analytics

Process Performance Manager (PPM) presents and allows process analytics for the user who is directed to PPM from Optimize. When customers implement PPM templates for webMethods BPMS, PPM displays data for the original Optimize process to which the users had referred. This release enhances this functionality by allowing the PPM user to create an alert in Optimize for the currently being analyze intrinsic measure. This alert option is available from the context menu.

Data Analytics

Extraction process for data analytics now supports partial data extraction using either timestamp columns or sequence columns to determine the difference between the source and PPM data store. Users can configure which method of partial delta extractions can be use in CTK.

Process Extractors

JDBC Process Extractor was enhanced to recognize and allow the use of non-standard SQL table name and schema names. It will now be able to recognize case-sensitive names or ones using special characters.

webMethods Service Development

Support for Comparing Packages and Elements

Developers can now use the compare capability to compare packages and elements on the same server or on different servers, and thus track changes to a package or element during the development process. This support is available for the following:

- Packages
- Folders
- Flow Services
- IS Document Types

The compare editor provides a visual comparison of the items compared along with annotations that indicate the changes. Users can also use the compare capability to compare the current version of a flow service or an IS document type with their previous versions.

Support for Automatic Scrolling and Expanding of Variables during Mapping

Software AG Designer provides automatic scrolling and expanding capabilities while mapping complex data types in integration pipelines. When mapping large pipelines in Designer, developers no longer have to scroll to view the fields before being able to drag a map line from the source variable to the target variable. The pipeline editor is now able to scroll and expand automatically while the mouse is dragged from the source variables to the target, thus bringing the target variables into view. This increases the ease of use and helps reduce errors in complex mappings.

Java Compilation Enhancements

Software AG Designer automatically compiles the Java service when it is checked out of the version control system using the built-in check out facilities in Designer.

Adapter Notifications Support for Non-Default webMethods Messaging Aliases

Adapter notifications generate publishable document types which were previously bound to the default webMethods Messaging connection alias. Now, developers can select which specific messaging connection to use for each generated document type.

Testing capabilities support Universal Messaging

Developers can now use two testing features of Software AG Designer with Universal Messaging:

- Publishable document types can be sent from Software AG Designer to Universal Messaging using the Run As > Publishable Document option.
- webMethods Messaging Triggers subscribing from Universal Messaging can be tested using the Run As > webMethods Messaging Trigger option.

webMethods Trading Networks

Flexible Suspension of Document Deliveries to Partners

webMethods Trading Networks provides a flexible schedule-based ability to suspend document deliveries to partners. This enables administrators to proactively schedule document delivery suspensions based on planned outages informed by partners. Depending upon the nature of the outage, delivery suspension schedule can be setup to recur at a set interval (daily, weekly, monthly, and yearly) or can be triggered once. Administrators also have the ability to set the start time and end time of the scheduled interval in a partner's time zone, thereby avoiding errors that result from manual time zone conversions.

Support for Database Partitioning

webMethods Trading Networks provides out-of-the-box support for database partitioning for Oracle database. Database partitioning is especially useful when archiving data from production tables to archive tables and provides a significant performance improvement compared to a batch based archival process.

Customizable scripts enable:

- Partitioning of data based on time intervals.
- Deletion of data from a partitioned database.
- Archiving of runtime data to a partitioned database...
- Deletion of archived data from a partitioned database.

webMethods Universal Messaging

Automatic Creation of JNDI Entries During JMS Migration from webMethods Broker

Earlier, it was necessary to manually create JNDI destination entries for migrated queues and channels if webMethods Broker JMS connections were configured using Native webMethods API instead of JNDI Lookup. Now, the Broker-to-Universal Messaging JMS migration utility provides the option to auto-generate relevant JNDI destination entries for migrated queues and channels.

Realm Properties Configurable Using Command Central

Command Central now provides support for configuration of Universal Messaging realm properties using the Command Central web user interface, command line, or templates.

JMS Resource Adapter Pre-packaged

Universal Messaging now provides a pre-packaged JMS Resource Adapter for easy use in third-party application servers.

Enterprise Manager Enhancements

The following usability improvements are now available in Enterprise Manager:

- When creating or editing JNDI Connection Factories, users can now select, view, or change the Shared Durable flag for Connection Factory with greater ease. The Shared Durable flag for Connection Factory flag defines if multiple client connections are allowed to concurrently read from JMS Topic Durable Subscriptions.
- When viewing Named Objects (also called Durable Subscriptions) associated with a channel, Enterprise Manager now displays the number of messages pending retrieval by the subscriber.
- Removal of the login section at the top of the JNDI panel provides a more streamlined user interface for JNDI editing.

AMQP 1.0 Support

Universal Messaging now supports a significant part of the AMQP 1.0 standard wire protocol for messaging, specifically the parts that are exposed through the JMS API.

The following capabilities are supported:

- TCP and TLS (alternative NOT negotiated) transport.
- AMQP PLAIN and AMQP over Simple Authentication and Security Layer (SASL).
- Publishing to Topics and Queues (non-transactional).
- Temporary Queues.
- Keep Alives.
- Synchronous and Asynchronous consuming on topics and queues (non-transactional).
- Flow control.

- Durable subscribers.
- Interoperability with UM publishers and subscribers (using any of the available client APIs).
- Interoperability with existing AMQP JMS clients (SwiftMQ, Apache QPID and Apache Legacy QPID).
- Some interoperability with MQTT clients.

Note: AMQP support is only available with the fully-featured Universal Messaging license (NUMWF or NUMTF).

Adapter Notifications Support for Non-Default webMethods Messaging Aliases

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Support of Authenticated Connections for Deployment of Assets to Universal Messaging

webMethods Deployer now supports deployment of assets to Universal Messaging servers that are configured to enforce authentication using either basic authentication or certificate-based authentication.

Documentation

Significant changes to product documentation sets or to individual documents are described in the readmes for each product.

Cross-Product Documentation

- **New Software AG Infrastructure Administrator's Guide**
The documentation for Software AG Common Platform, Software AG Runtime, Software AG Security Infrastructure, Software AG Web Services Stack, and the Tanuki Software, Ltd. Java Server Wrapper as it is used by Software AG products has been combined into a single guide named Software AG Infrastructure Administrator's Guide.
- **Complete Installation and Upgrade Information in One Compendium**
You can now find an HTML compendium on Empower containing all installation and upgrade information under a single navigation and search. The compendium is also available for download. This is in addition to the PDF library which is published as before.
- **Renamed Guides**

The following guides have been renamed:

- Old name: webMethods and Intelligent Business Operations System Requirements
New name: System Requirements for Software AG products
- Old name: Supported Upgrade Paths for webMethods and Intelligent Business Operations Products
New name: Supported Upgrade Paths for Software AG Products
- Old name: Installing webMethods and Intelligent Business Operations Products
New name: Installing Software AG products
- Old name: Upgrading webMethods and Intelligent Business Operations Products
New name: Upgrading Software AG Products

The product brands covered by these guides are listed in the respective documents.

- Readmes contain cumulative information back to webMethods 9.5 release, and are logically combined.

Readmes have been changed to contain cumulative information from webMethods 9.5 through 9.9. Supported upgrade paths for 9.9 are from 9.0 and later, so the 9.9 readmes now contain all necessary readme information for all upgrades to 9.9.

In addition, some readmes have been logically combined for ease of use. For example, the readmes for Rules Engine, Rules Development, and Rules Console Management have now been combined into a single Business Rules readme, and the readmes for Software AG Common Platform, Software AG Runtime, Software AG Security Infrastructure, and Software AG Web Services Stack have been combined into a single Software AG Infrastructure readme.

webMethods EntireX

Documentation for EntireX Adapter is now incorporated in the EntireX documentation for ease of use. All references between EntireX and EntireX Adapter documentation are now clickable hyperlinks. The EntireX Adapter documentation is also provided as a standalone PDF file under webMethods Product Line > Adapters and eStandards Modules > Adapters on the Software AG documentation website.

Software AG Event Routing

“Communicating between Software AG Products Using Event Routing” PDF publication has been included in this release. It contains information about administering, configuring, and using Software AG Event Routing.

Upgrade

Infrastructure Data Collector Migration Utility Migrates Java Server Wrapper Customizations

The Infrastructure Data Collector migration utility now migrates JAAS, JMX, SSH, security, Java Service Wrapper custom wrapper, log, platform debug, Web Services Stack, and watchdog configurations automatically. Previously, users had to perform their migration manually.

Integration Server Migration Utility Can Migrate WmFixMessages and WmFlatFile Packages

The Integration Server migration utility now offers the ability to migrate the WmFixMessages package (webMethods Fix Module) and the WmFlatFile package. Previously, you had to migrate these packages manually.

Readmes Contain Cumulative Information Back to webMethods 9.5 Release

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Complete Installation and Upgrade Information in One Compendium

You can now find an HTML compendium on Empower containing all installation and upgrade information under a single navigation and search. The compendium is also available for download. This is in addition to the PDF library which is published as before.

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webMethods Product Suite 9.10

Release Notes

webMethods 9.10 represents significant enhancements to Software AG's Digital Business Platform.

This release includes capabilities that provide companies with an extensible, scalable and reliable integration backbone—running either in the cloud, on-premises or in hybrid scenarios. Platform provides seamless integration for technologies such as cloud, mobile, APIs and the Internet of Things.

Additionally, companies pursuing digital transformation must adapt processes end-to-end, and build better business apps on top of them. This release of webMethods streamlines process management and agile application development to help you improve your business operations and respond more quickly to changing business needs.

Release Highlights

Integration

This release of the webMethods suite includes many integration enhancements, including compare and merge functionality for Integration Server assets in Designer, the ability to expose REST resources located on Integration Server as a Swagger descriptor, and the encryption of Trading Networks data before persisting them in a database.

The key features include:

- Software AG Designer now lets you merge differences between two assets on the same server or on different servers. Merging is available for flow services and Integration Server document types. The compare editor provides a visual view of the compared items, along with annotations that indicate the differences between the items. And within the same view developers can choose to merge individual differences from one version of an asset to another.
- Integration Server provides the ability to expose REST resources located in Integration Server as a Swagger descriptor. Integration Server automatically generates a Swagger descriptor for REST APIs. This version provides support for version 2.0 of the Swagger specification.
- Integration Server supports the automatic creation of OData provider APIs. Using Software AG Designer, developers can automatically generate an OData provider API based on a user-selected database table and associated columns.
- Trading Networks provides out of the box support for encrypting payloads when the same payloads persist in the MySQL database. Encrypting payloads provide an additional layer of security that is especially valuable in the event that the database that is storing the payloads, is compromised.
- New CloudStreams community connectors provide connectivity to the following applications and interfaces: Software AG Alfabet, Magento, Zuora, Marketo, and OData version 2.0 interfaces.
- webMethods OneData's Elasticsearch functionality now allows scheduled and automatic re-indexing of data.

- In addition to Data Manager, webMethods OneData's protection against Cross-Site Request Forgery (CSRF) attacks is expanded to include the workflow, data interchange, and security modules.
- Integration of OneData with LDAP is enhanced to allow manual and scheduled resynchronization.

API Management

This release of webMethods API Management platform contains significant enhancements to CentraSite, Mediator, and API-Portal.

The key highlights are:

- Runtime API Consumption Dashboards in API Portal will help users get runtime data and graphs for APIs.
- API-Portal's collaboration functionality is enhanced to include the ability to follow and unfollow updates to APIs, as well as to include a new notification panel. The API gallery is enhanced to visually inform users about the maturity status and business terms associated with the API.
- CentraSite includes many usability enhancements, improved Swagger support, as well as improved robustness for access token enforcement configuration.
- CentraSite provides complete support for both design-time and run-time governance of OData services.
- Mediator now supports webMethods API-Portal and Elastic Search databases as additional destinations for sending API run-time events and Key Performance Indicator (KPI) metrics.
- Mediator now supports OData services at design time and runtime.

webMethods Business Process Management Suite

The webMethods Business Process Management (BPM) Suite adds more capabilities to the Business Console, Business Rules, Rules Management console, and Mobile Suite, to provide businesses with the visibility and performance needed to improve decision making.

The key features are:

- EDA event emission in Task Engine allows customers to route EDA events in an event routing framework and persist the events through the webMethods Event Persistence API to a persistence layer, such as Hadoop or Elasticsearch.
- webMethods Business Console can be customized with out-of-the-box gadgets. Additionally, custom dashboards are now provided next to the out-of-the-box CLA process dashboards.
- A ready to use mobile client for Business Console is now available in the Apple App store and Google Play app store.
- The Mobile Suite has many enhancements including Entity Modelling (EML), image caching, and the introduction of a FileDataProvider to load local or offline data into a data source.
- Decision trees, which are a new kind of decision entities, are now available in webMethods Business Rules. You can create and test decision trees in Software AG Designer.
- The actual content of a decision table that a user has entered in the Rules Management Console can now be verified with custom provided REST services before deployment.

- There is a 75% improvement in load time for large decision tables in the Rules Management Console.
- The SAML implementation in webMethods Agile Apps is extended to work with Microsoft Azure Active Directory in the cloud allowing the team and user to sync from Azure to AgileApps. This now works with all the SAMLv2 compliant identity providers.
- Users are now provided with an option to choose between the AgileApps database and an external CMS as the repository for attachments.

Operational Intelligence

The key enhancements for operational intelligence are:

- For users who are running both Optimize and PPM, the Business Console Analytics dashboard provides a “View in PPM” function to do an in-context jump to PPM. Once in PPM, the user can explore longer-term historical data on the same process and perform root cause analysis based on business process data.
- The Web Service Data Collector can now be monitored in Command Central, making it now possible for - WSDC installations to be discovered and run-time status to be displayed.
- Optimize for Infrastructure now offers added self-debugging and diagnostics, monitoring of Universal Message clusters, and additional KPIs for Presto and EntireX monitoring.
- Optimize for Process offers a number of cache usage performance improvements and provides better response on data retrieval in large scale implementations. In addition to a pre-configured analytics dashboard, users now have the option to display custom-created Mashzone NextGen dashboards in Business Console.

Suite Enhancements

The webMethods Suite provides several enhancements across various products. The highlights in this release include:

- Command Central can now migrate certain releases of Integration Server, Trading Networks, My webMethods Server, and Universal Messaging data to 9.10 using Command Central (see the Command Central readme for supported paths). This enables for the migration of single servers, clusters, or entire environments in a fully automated way.
- The Command Central bootstrap installer can be used to self-upgrade Command Central with a single command line command.
- Command Central now supports the creation of mirror repositories for fixes. This allows a user to create a local copy of a repository within their corporate network for use when provisioning fixes across their landscape.
- In silent mode, users can now migrate multiple My webMethods Server instances on a single command when using the live database, as well as migrating multiple Universal Messaging instances using a single command.
- By providing an out-of-the-box way to send a Kerberos token in the HTTP header, Integration Server can access third party services, such as REST APIs, that are protected with Kerberos.
- In continuation to the Kerberos Inbound support provided in the last release, Mediator now supports Kerberos Outbound Authentication for web services. Customers can now protect the virtual services by any web service security mechanisms and can also invoke a native backend service which requires Kerberos Authentication.

Contents

For more details about the key additions and enhancements for this release, see the product descriptions.

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For important updates and a list of enhancements and issues that have been addressed since the previous release of each product, see the webMethods product readme files. You can access these documents, as well as all product documentation, from the webMethods area on the [Software AG Documentation website](#).

Centrasite

Enhancements in Business User Interface (BUI)

CentraSite Business User Interface is enhanced to include the following functionalities.

In addition to a preconfigured set of actions, users now have the option to plug in their own custom action implementations. The custom-created actions allow users to extend the product functionality. The following rendering mechanisms are supported for a custom action:

- WithUiRendering
- WithoutUiRendering

A new action “Notify Consumer” is added to the API details page. This action allows users to send ad hoc email notifications to all of the registered consumers of an API.

Taxonomy Management

Users can now create and manage taxonomies using the CentraSite Business User Interface. Creating and managing taxonomies using the CentraSite Control User Interface, is deprecated and will be removed in the future release.

Access Token Enhancements

Access token configuration screens are now improved to display a warning message when there is a change to the API configuration, which invalidates the user access tokens. This improvisation offers a better user experience.

The configuration screen for policy actions, for example, Throttling Traffic Optimization, is simplified to display only the access tokens created for a particular API as the possible list of consumers during the virtualization process. This simplified user interface prevents the user from choosing an unknown consumer.

Previously, when an API is unpublished from webMethods API-Portal, access tokens associated with that API were ignored and deleted from the API-Portal registry. Upon republishing, only the API was published to API-Portal. Now, republishing the API also publishes the associated access tokens to API-Portal.

CentraSite Command Enhancements

Access token management using the CentraSite Command line interface is enhanced to include additional commands for purging and reactivating the access tokens. Report management using the CentraSite Command line interface is enhanced to include additional commands for execution of CRUD operations on reports. The CentraSite Command “set Authentication” to add a new LDAP authentication configuration to CentraSite, is enhanced to offer stricter validation. This validation behavior allows you to simultaneously verify the newly added LDAP configuration.

Support for Open Standards

In the previous release, CentraSite supported Open Data Protocol (OData) services in a preview mode. In this release, CentraSite provides complete support for both design-time and run-time governance of OData services.

A new policy action “Generate Swagger2.0 file” is introduced to export an API in Swagger format. This policy action is applicable for the REST services and Virtual REST services.

Optimized Infrastructure

CentraSite logs are separated from the logging containers and placed inside a dedicated log file called `centrasite.log`. This log file is available in the `<Software AG_directory>/profiles/CTP/configuration` directory, where the `wrapper.log` is available.

MashZone NextGen

MashZone NextGen (formerly known as Presto) has the following new feature enhancements. The "Freeform" editor is now referred to as "Dashboard" editor.

Data sources

Starting 9.10, MashZone NextGen has introduced new data sources including comma-separated values (CSV) file, JDBC (Java Database Connectivity) tables, and Software AG ARIS tables.

Data querying using RAQL

There are several performance and feature improvements in RAQL including support for outer-joins and improved performance while executing set operations.

Data Transformation

Several new data transformation operators are included in the Dashboard editor to facilitate data transformation.

Visualizations and Custom Look & Feel

Many enhancements are made to the existing visualizations (incl. widget refresh properties, axis properties, extensions to grid chart and column styling, and pie chart) and new visualizations such as bar chart, traffic light widget, and gauge chart are added. A "dashboard only" mode to remove the application header using URL parameters is added.

Enhancements to enable custom Look and Feel include specialized widget styling by additional configuration parameters.

Action Framework

MashZone NextGen 9.10 includes a newly designed Action Framework that supports triggering actions based on change in selection and other criteria; these actions include, changing tab for navigation within dashboards, configuring selection on other widgets, and calling a URL.

My webMethods Server

Upgrade automation is enhanced to include Java Management Extensions (JMX), JSW, cluster and `jetty.xml`. And shared security infrastructure, Security Assertion Markup Language (SAML), is now adopted to improve the invocation of Integration Server web services.

Software AG Command Central

Suite upgrade support

Command Central can now perform upgrades from previous versions of the webMethods suite. Command Central can be used for installing the new version, as well as for applying the latest fixes and orchestrating the various migration utilities needed for transferring configuration and assets from the previous version.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/command-central/release-notes/suite-upgrade-support>

Command Central self-upgrade support

The Command Central bootstrap installer can be used to self-upgrade Command Central with a single command line. Bootstrap installer is now supported on Solaris and can be used to install Platform Manager or the Command Central using command line interface.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/command-central/release-notes/self-upgrade-support>

Database configuration

Command Central now enables users to orchestrate the database configuration utility as part of the composite template application utility. The database configuration utility can create or migrate database schemas as part of a complex provisioning or migration composite template.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/command-central/release-notes/database-configuration>

Fix mirror repositories

Command Central now supports the creation of mirror repositories for fixes. A mirror repository is a granular copy of the Software AG Empower master repository containing fixes and allows a user to create a local copy of such a repository within their corporate network for use when provisioning the fixes across the landscape.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/command-central/release-notes/fix-mirror-repository>

Simplified configuration user interface

The creation of instances of configurations which have a single type or single instance is simplified and streamlined, avoiding unnecessary popups and tables.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/command-central/release-notes/simplified-configuration>

Login page and logout link

Command Central now provides form based authentication, a login page for its web user interface, and a logout link. This makes it secure and allows multiple users to share the same machine and browser.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/command-central/release-notes/login-page-logout>

License repository

Command Central now enables you to upload all product licenses into one repository and easily use them when provisioning new environments using composite templates or when configuring licenses for runtime instances using the Command Central web user interface or command line interface.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/command-central/release-notes/license-repository>

Software AG Designer

Software AG Designer and all its plug-ins are now supported on the latest service release of Eclipse 4.5. Software AG Designer is updated with the new Software AG rebrand.

Software AG Installer

Product Footprint Reduced

Previously, licenses for all third-party products used by Software AG products were installed for each product. In this release, only the licenses for third-party products used by the products you are actually installing are installed.

Required Windows System Administrator Privileges Enforced by Installer

The installer now enforces the need for system administrator privileges when installing products. If the user under which you are running the installer does not have these privileges, the installer exits.

Registration of UNIX Daemons Simplified

Previously, you registered the UNIX daemon for each product by calling a script located in each product's installation. You can now register daemons for all products using one centralized script. In addition, you can now list all registrations and remove obsolete registrations for products you have uninstalled.

Software AG Designer Local Version Control Integration Installable on Integration Server Instance of Any Name

Previously, you could only install Software AG Designer Local Version Control Integration on an Integration Server instance named "default." You can now install this component on any Integration Server instance, regardless of its name.

Ability to Name My webMethods Server Instance Created During Installation

Previously, the My webMethods Server instance you created during installation had to be named "default." You can now assign a name of your choice.

Software AG Runtime

Logging

Improvements in logging subsystems make troubleshooting much easier at customer side.

Application Platform support

Deployment endpoint for Application platform has been finalized.

Infrastructure

Tomcat engine was updated with latest features and security fixes.

webMethods AgileApps

Software AG standards adoption

AgileApps now supports JDK8 as the compilation engine as part of its integration with Software AG's standard processes. AgileApps now uses the Software AG branding across the product.

Record Visibility

The visibility of records can now be controlled for a specific set of users, teams, or roles and even by using a custom user attribute. This allows the platform user to control permissions at a more granular level.

CMS Integration

Users are now provided with an option to choose between the AgileApps database as the repository for attachments or use an external CMS. Existing customers cannot migrate their existing files from the AgileApps database repository to external CMS after changing the configuration.

SSO via SAMLv2

The SAML implementation has been extended to work with Microsoft Azure Active Directory on the cloud and allows the team and user sync from Azure to AgileApps. This now works with all the SAMLv2 compliant Identity providers.

New Datacenter

The AgileApps installation is now available on an additional data center in Europe provided by Amazon. These data centers now come with a pre-installed MySQL RDS on an encrypted file system, thereby, offering additional security to customers who have data on the cloud.

webMethods API-Portal

Usability Enhancements

API Gallery is enhanced to visually inform users about the maturity status and business terms associated with the API.

Application registration is improved to provide more information about API keys users have.

API Testing Enhancements

API testing screens are enhanced to provide and display more information while requesting API Keys or using them during testing.

Authentication and error handling during API testing is improved to remove annoyances.

API Analytics

API-Portal now provides dashboards to display runtime data and graphs for APIs.

Collaboration

Collaboration functionality is enhanced to include an option to follow and un-follow updates to an API and a new notification panel.

Infrastructure

API-Portal bootstrapping process is improved for efficient use of resources.

Security

API-Portal is now protected against CSRF attacks.

webMethods Application Platform

Developer Friendly Tests

Application Platform now provides you with an easy, yet powerful Designer-based framework for writing and executing JUnit tests for your projects. You can confidently build complex applications and test them by using Application Platform and its runtime libraries.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/app-platform/release-notes/unit-tests>

Single Sign-on Authentication

Application Platform enables you to set up security configurations to your servlet-based web applications. You can now enable authentication and authorization in your web applications. The following security-based scenarios are now supported in Application Platform:

- Adding security to the web application layer of an Application Platform web project by using the standard Java EE approach of configuring a security filter in the web.xml file.
- Adding security to the OSGi service layer of an Application Platform Java or web project. You can protect OSGi services that are:

- Exposed as Integration Server (IS) services and invoked through HTTP(S) calls.
- Exposed as POJO OSGi services.
- Invoked from the Application Platform web layer. This layer consists of web applications that run on Tomcat and are deployed to Integration Server via HTTP(S).
- Invoked from the Composite Application Framework (CAF) web layer. This layer consists of web applications that run on Jetty and are deployed to My webMethods Server via HTTP(S).

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/app-platform/release-notes/security-forwarding>

Enhanced Application Platform Service Exposure to Integration Server

The following enhancements to the Application Platform service exposure to Integration Server are now available:

- Designer no longer displays the message “Unknown Service Type” when Application Platform services are exposed to Integration Server.
- When you un-deploy an Application Platform project, the corresponding Integration Server services that are exposed in the project are removed.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/app-platform/release-notes/ISService-consistency>

Remote Deployment from Designer

You no longer have to develop on the same machine where your development Integration Server and MWS are running. This allows you to share environment between developers.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/app-platform/release-notes/remote-deploy>

webMethods ApplinX

Usability Improvements

The ApplinX Printlet deployment process in large organizations is made easier.

Previously, only complete ApplinX applications could be published to CentraSite. Now, individual ApplinX assets can be registered, updated, or unregistered from CentraSite.

webMethods Blaze Advisor

Product Removal

Due to the contract termination with FICO, Blaze Advisor has been completely removed from webMethods 9.10. Customers who have moved to FICO maintenance can get Blaze Advisor directly from FICO.

webMethods BPMS

Task Engine

Task archival: EDA event emission in Task Engine allows the customers to route the EDA events in an event routing framework and persist the events through the webMethods Event Persistence API to a persistence layer, such as Hadoop or Elasticsearch.

Ability to schedule a task instance using either Task Engine built-in and RESTful services or Business Console.

Business Console

Ability to create gadgets for Business Console: Gadgets are independent JavaScript components that use client-side AngularJS framework, which enables you to render these gadgets in Business Console by using the metadata information of each gadget.

Workbenches can now be customized and personalized in Business Console using the custom gadgets.

Task instances can now be scheduled using either Business Console or the Task Engine services (built-in or RESTful services).

Process Engine / Monitor

- Join timer is now improved to avoid duplicates
 - Designer – Toggle for step ids is now allowed on top of steps
-

webMethods Broker

webMethods Broker 9.6 is tested and supported with webMethods 9.10.

webMethods Business Rules

Decision Trees

Decision trees, a new kind of decision entities, are now available in webMethods Business Rules. You can create and test decision trees in Software AG Designer. Currently, in the Rules Management Console, decision trees can be only displayed. Modification of decision tree content in the Rules Management Console is planned for the next release.

Business Verification in Decision Tables

The actual content of a decision table which a user enters in the Rules Management Console can now be verified with custom provided REST services before deployment. For every column, a particular REST service can be specified in Software AG Designer, which checks if the actual cell content entered in the Rules Management Console is valid from a business perspective.

Pagination of Decision Tables

In the Rules Management Console, pagination is introduced to improve the display and handling of large decision tables. Every page shows 100 lines of the decision table. Filtering functionality is supported for full decision table. The pagination speeds up the initial display of large decision tables.

webMethods CloudStreams

Community based Connectors

New CloudStreams Connectors provide connectivity to the following applications and interfaces:

- Software AG Alfabet
- Magento
- Zuora
- Marketo
- OData version 2.0 interfaces

Deprecate CloudStreams Analytics dashboard

The Software AG MashZone based CloudStreams Analytics dashboard is now deprecated.

webMethods Composite Application Framework

My webMethods Server now supports Java 8. In addition, it enables you to rename the default instance during installation or upgrade. Also, in a My webMethods Server cluster you can migrate each server instance separately.

webMethods EntireX

Compatibility with webMethods Suite

webMethods EntireX is now compatible with the following:

- Java 8 (Java 7 is no longer supported)
- Designer 9.10, Eclipse 4.5
- Microsoft Windows 10 and z/OS 2.2

Administration and Configuration

webMethods EntireX now supports Command Central to administer and configure EntireX Brokers on LUW (Linux, UNIX, and Windows).

COBOL Conversion

EntireX Adapter for Integration Server now allows you to convert binary COBOL data to Integration Server data and Integration Server data to binary COBOL.

Monitoring

Ability to get the Broker CPU time using Command and Information Services and Broker CPU time is also a KPI now in Optimize for Infrastructure (O4I).

Installation Packages Streamlined and Restructured

EntireX Broker can now run while you make runtime updates outside EntireX Broker. Administration and Monitoring functionalities are separated from runtime parts. Mini Runtime now has separate installation package compatible with Software AG Installer. Files are installed in standard EntireX directory. There are no post-installation steps required. Examples are reworked and streamlined.

webMethods Integration Server

Automatic Creation of OData Provider API Based on a User-Selected Database Table

Integration Server supports the automatic creation of OData provider API. Using Software AG Designer, a developer can automatically generate an OData provider API based on a user-selected database table and associated columns. Working in conjunction with the JDBC adapter, Integration Server generates the OData provider API using the database table related metadata provided by the adapter.

Describing REST Services Using Swagger

Integration Server provides the ability to expose REST resources located on Integration Server in a Swagger document. Users can create a REST API descriptor from existing REST resources and then add interface metadata such as response codes, supported schemes, and supported MIME type definitions. Integration Server automatically generates a Swagger document for the REST API descriptor. Integration Server provides support for version 2.0 of the Swagger specification.

OpenID Connect Standard Support

Integration Server supports the OpenID Connect standard. Integration Server can act as the OpenID Connect client and work with third party OpenID providers for delegated authorization purposes. Integration Server can expose APIs over a port protected by the OpenID client authentication policy. Salesforce users can access these APIs by supplying their credentials to salesforce.com. In this way Integration Server provides out-of-the-box, single sign-on for force.com application users.

Authentication Using Kerberos Tokens while Calling REST Services

By providing an out-of-the-box way to send a Kerberos token in the HTTP header, Integration Server can access third party services, such as REST APIs, which are protected with Kerberos.

Enhanced Integration Server Administration Screens

Integration Server provides a new look and feel for the web-based administration screens. The updated user interface is compatible with the new Software AG branding.

WmTomcat Deprecation

The WmTomcat package is deprecated in Integration Server version 9.10.

Application/xml Content Type Support

Integration Server provides out of the box content handler for the “application/xml” content type. The new content handler can easily support requests using the application/xml content type.

Utility Services for Strings and Dates

Integration Server includes additional utility services in the WmPublic package for working with dates and strings.

webMethods Mediator

API Analytics

Mediator now supports webMethods API-Portal and Elastic Search database as additional destinations for sending API run-time events and Key Performance Indicator (KPI) metrics.

Kerberos Support

In continuation to the Kerberos Inbound support provided in the last release, Mediator now supports Kerberos Outbound Authentication for web services. Customers can now protect the virtual services by any web service security mechanisms and can also invoke a native backend service which requires Kerberos Authentication.

Dynamic Routing

A new Dynamic Routing policy is introduced, that enables Mediator to compute the native endpoint URL dynamically at run-time based on the incoming request parameters or the custom logic and then route the requests to that endpoint.

OData Support

Mediator now supports OData services.

webMethods Mobile Suite

Enhancements in Entity Modelling (EML)

- A new data type “long” is introduced
- Entities can be explicitly declared as “abstract”
- Introduced two new helper methods: “updateFromJson()” and “getAppController()”
- The “<Entity>JsonTransformer” classes are extended to update values from the entity to the JSON
- Constructor arguments can now be passed to a transformer

FileDataProvider for datasources

A FileDataProvider is introduced to load local or offline data into a data source.

URL encoding for parameters in REST services

Parameters in REST services can now be set to be URL encoded. This is required for some values that are not allowed to be part of the URL (e.g. whitespace).

JPath API updates

Now a “deep path” can be defined for JPath updates into the object structure without knowing if the object tree exists up to the deepest level. All missing paths are created automatically when the data is saved.

“{SELF}” in Binding Expression fields

With the new keyword “{SELF}” in the expression property the currently selected model element can easily be referred.

Listener support for TemplateReferences

A listener can now be attached to a TemplateReference.

HTTP POST request content type “application/x-www-form-urlencoded”

A new content type for POST requests was introduced: “application/x-www-form-urlencoded”. It can be set for the content type of the request of any POST request object. It allows the request data to be form-encoded so that the query parameters are not attached to the URL but transmitted in the body of the request.

DatasourceNotifications

A DatasourceNotification is used by datasources to notify its observers about the type and the data that have changed by an operation.

DateFormat / DateTransformer

Mobile Designer now includes additional support for formatting dates.

Image Caching

Mobile Designer now uses an image cache to speed up loading images. This behavior is 100% transparent so that existing projects will automatically see a benefit from it without any additional coding. Overall image loading times will be reduced up to 60%.

Extended JavaScript to Java Bridge

The Mobile Designer API for Web Objects is extended. This allows Java code to call JavaScript methods inside a Web Object, and for JavaScript to trigger a callback with a message body in compiled Java code.

Registering MIME-Types and URLs for Applications

Mobile Designer now provides a way to easily define two types of data sharing that are supported by mobile operating systems:

- File associations
- Certain URLs

Improved “nUISearchBar” for Android

Mobile Designer now makes use of the native Android “android.widget.SearchView” class for handsets that support API 14 or greater (Android 4.0.x, Ice Cream Sandwich). This leads to a better and familiar user experience on those devices and can be customized much better.

HTTP Response body for failed requests

Mobile Designer now listens to server error responses (usually in the 4xx or 5xx range) and passes them back to the developer. In case of an error such as a "page not found" or a "not authorized" the developer will now get both the HTTP error code number (e.g. 403, Forbidden), and any potential textual message that the server sends ("This page is only accessible by employees on Tuesday, Thursday and Saturday").

URLConnectionHandler - Support HTTP POST with DELETE

Mobile Designer can now send HTTP DELETE requests with an optional POST style body.

Improved PPI detection for Android

The PPI detection on Android is improved for Mobile Designer.

Product Deprecation

All Mobile Device Management capabilities in Mobile Administrator are deprecated.

Mobile Task Inbox is deprecated. The provided functionality will be replaced by Mobile Business Console.

webMethods OneData

Metadata Transfer

The metadata transfer functionality is enhanced to check dependencies during the creation of transfer files. Users can now decide which dependent metadata elements to include in the transfer file.

New UI Enhancement

The next-generation user interface screens introduced in previous releases have been enhanced to include the following features:

- Breadcrumbs
- Tooltips
- Descriptive messages panel and error panel
- Data explorer browse mode

ApplicationWide Search

The Elasticsearch functionality now allows scheduled and automatic reindexing of data.

SQL Server Support

The OneData support of SQL Server support is enhanced to include system objects.

Security

In addition to Data Manager, OneData protection against CSRF is expanded to include the workflow, data interchange, and security modules.

LDAP Integration

Integration of OneData with LDAP is enhanced to allow manual and scheduled resynchronization. During synchronization, OneData user data is updated to reflect changes in the LDAP system—new, modified, and deleted users. Also, administrator users can now to map LDAP roles and groups to OneData roles and groups.

webMethods Optimize for Infrastructure

Self-Diagnostics

Optimize for Infrastructure can now identify issues with its own functionality. In the 9.10 release, the following self-diagnostics functionality has been added. A mechanism now exists which can identify when the communication between the Infrastructure Data Collector and the Analytic Engine is broken. The diagnosis has been enhanced by exposing the internal configuration attributes as part of Infrastructure Data Collector. And the logging functionality has been enhanced for discovery and monitoring of assets through Infrastructure Data Collector.

Universal Messaging Cluster Monitoring

Most customers deploy Universal Messaging servers in a cluster in their production environment. Optimize for Infrastructure has now been enhanced to enable monitoring of Universal Messaging clusters.

Enhanced EntireX Broker Monitoring

Additional KPIs are now available for EntireX Broker Monitoring around CPU time, which is of special importance on the mainframe.

- EntireX CPU Time (delta)
- EntireX CPU Time Percentage (average)

Extended Presto Monitoring

Presto monitoring by Optimize for Infrastructure has been enhanced to include additional delta KPIs for the Presto TomEE Tomcat server. A list of over 20 new KPIs is now available.

webMethods Optimize for Process

Enhancements to In-Context Jump to PPM

For users who are running both Optimize and PPM, the dashboard provides a “View in PPM” function to do an in-context jump to PPM. Once in PPM, the user can explore longer-term historical data on the same process using extensive analysis capabilities.

Building on the ability to do root cause analysis based on the intrinsic process information, business users can now also perform deeper investigation based on business process data. Custom data associated with a business process is now included in events generated by Optimize. These events are collected by PPM and included in the PPM database. In this way users who wish to do deeper investigation can logon to PPM and do dimensional analysis and design dashboards based on business process data.

Possibility to Add Custom-Created Analytics Dashboard

In addition to a preconfigured analytics dashboard, users now have the option to display custom-created Mashzone NextGen dashboards in Business Console.

Performance Improvements

A number of cache usage performance improvements now provide better response on data retrieval in large scale implementations. These enhancements continue a trend of implementing performance improvements with every release to support large-scale usage of Optimize for Process.

Suite Monitoring

Users can now perform basic monitoring of Web Service Data Collector using the Command Central user interface. Web Service Data Collector installations are discovered and runtime status is displayed in Command Central. Users can also review logs for the Analytic Engine, Infrastructure Data Collector, and Web Service Data Collector from Command Central.

webMethods Process Performance Manager

Real-Time to Historic Visual Data Analytics

Building on ability to do root cause analysis on intrinsic process information, business users can now perform deeper investigation on business process data. Custom data associated with a business process is included in events generated by Optimize. Process Performance Manager (PPM) collects the events and includes them in the PPM database. Users who wish to do deep analysis can logon to PPM and do dimensional analysis and dashboarding using business data.

More Flexible Migration

Users can now selectively migrate some reports to the new reporting engine whilst, continuing to use the old engine for others. This makes migration easier as it doesn't have to take place all at once.

Java Web Start

Modern browsers prohibit Java applets for security reasons. PPM can now be launched directly using Java web start.

webMethods Service Development

Automatic Creation of OData Provider APIs Based on a User-Selected Database Table

The Service Development plug-in for Software AG Designer includes a wizard for generating an OData provider API based on a user-selected database table and associated columns. Designer and Integration Server work in conjunction with the JDBC adapter to generate the OData provider API using the database table related metadata provided by the JDBC adapter.

Describing REST Services Using Swagger

Using the Service Development perspective, users can create a REST API descriptor based on the Swagger specification. A REST API descriptor includes existing REST resources within the Integration Server and specifies interface metadata such as response codes, supported schemes, and supported MIME type definitions. Integration Server automatically generates a Swagger document for the REST API. Integration Server provides support for version 2.0 of the Swagger specification.

Local Version Control Integration Server Improvements

Multiple local instances of Integration Server local instances can now be used as Local Version Control Integration Server (LCVI). Additionally, the Integration Server instance no longer needs to be named "default".

Merge Capability added for Flow Service and Integration Server Document Types

Developers can use the new merge capability to merge the differences between two assets on the same server or on different servers. Merging is available for flow services and Integration Server document types. The compare editor provides a visual view of the compared items along with annotations that indicate the differences between the items. In the same view, developers can then choose to merge individual differences from one version of an asset to another.

webMethods Trading Networks

Reuse of partner profile related information

webMethods Trading Networks provides an ability to reuse a partner profile's attributes related to contacts, addresses, and delivery methods across other partner profiles. Administrators, when creating or editing partner profiles will have the ability to either copy or share another partner profile's attribute. This avoids the need to recreate the same information especially when the same attributes are shared across multiple partner profiles.

Support for payload encryption

Trading Networks provides out of the box support for encrypting payloads when the same payloads persist in the MySQL database. When an end user views the encrypted payload details through the Trading Networks Transactions screen, the payload gets automatically decrypted. Encrypting payloads provide an additional layer of security that is, especially valuable in the event, the database that is storing the payloads, is compromised.

webMethods Universal Messaging

Docker support

A Universal Messaging Packaging Kit for Docker is now part of the standard Universal Messaging installation on Linux. The kit was previously available only on TECHcommunity.

The Universal Messaging Packaging Kit can be found here:

<SAG Install Folder>/UniversalMessaging/server/<UM Server Name>/bin/docker.

The kit includes the following Docker tools:

- Dockerfile for creating a Docker image from the Universal Messaging installation on Linux.
- Samples showing how to start the Universal Messaging server from the Docker image and run the sample applications of Universal Messaging within the image.
- The Tradespace demo application shows how to use 'docker-compose' to set up and run TradeSpace demo of Universal Messaging.

Optimized persistent store

There is a new form of persistent store, enabled by setting the spindle size to a value greater than zero. This store format uses multiple files for each channel or queue and removes the overhead of Universal Messaging which has to "perform maintenance" on them. This new mechanism also allows stores to grow without any restriction on the JVM heap. The standard persistent store mechanism keeps an in-memory index which grows each time a message is added.

Improved handling of maximum message size

In previous releases, Universal Messaging restricted the maximum message size that the server will read in by the MaxBufferSize configuration property. Exceeding this value would cause the connection to be disconnected, but the message had already been sent over the network and the reason for the disconnection was not obvious to the client. This check by the server remains but

Universal Messaging now has a client side check so that the message is rejected before it is sent over the network and the user can handle the exception.

Clients can “follow the master node”

Clients can now be enabled to “follow the master” in a cluster. The client will initially connect to a server in the cluster but if that server is not the master, the client will be redirected to the master node. Connecting to the master node can provide better performance in some use cases.

Transactions over AMQP

The AMQP specification defines a number of transactional operations. Universal Messaging now supports AMQP transacted operations so that client applications can perform transactional work when communicating with the realm server over AMQP. For example, if an application communicates to the realm server using a JMS AMQP client library (e.g. Apache Qpid JMS client) it can take advantage of the local transaction functionalities defined in the JMS specification.

Universal Messaging does not currently support the AMQP Transactional Acquisition operation. However, this sets no limitations on using JMS transactions over AMQP.

Configuration profiles in Installer

It is now possible to select different configuration profiles using the Software AG Installer. We have provided two configurations: one tuned for typical webMethods use cases and one tuned for standalone use cases.

JNDI asset configuration in Command Central

Command Central now supports the creation and maintenance of JNDI connection factories, queues, and topics for Universal Messaging. These assets can be managed through the Command Central web user interface, command line interface, REST API, and within templates.

Stand-alone Installer removal

Universal Messaging can no longer be installed using its own standalone Installer. It can now only be installed using the standard Software AG Installer or Command Central.

Enterprise Manager handles realm name conflicts more gracefully

You can no longer connect to a realm with the same name as the realm to which you are already connected. Enterprise Manager now shows the host and port in the realm tree to make it clear which realm is being referenced.

Additional sample applications

New sample applications are included that can be used to:

- Create clustersf
- Create server interfaces
- Manage security groups

Additional documentation

The documentation has been updated with a guide helping you configure your JVM in order to be compliant with FIPS 140-2.

The documentation now includes best practice guidelines helping you to configure Universal Messaging to have separate interfaces for client and cluster communication. The guide describes how to restrict regular client communication but allow administrators to connect when a cluster is forming.

Documentation is also provided which describes the API's `setMessageType()` method that allows a client to convert a JMS message back to its original type.

Documentation

webMethods Application Platform

A new webhelp, webMethods Application Platform Webhelp, is available on the Software AG Documentation website. The webMethods Application Platform Webhelp includes information about how to configure Application Platform, develop projects in Application Platform, deploy your Application Platform projects, diagnose and troubleshoot Application Platform issues, and use the Application Platform API.

The webMethods Application Platform Help in Designer now features native content. It no longer redirects the user to the Application Platform guides on the Documentation website.

The webMethods Application Platform Tutorial is no longer available on the Documentation website. The webMethods Application Platform Tutorial, together with code samples, can be downloaded from the Software AG TECHcommunity website.

Upgrade

Added New Application Platform Migration Utility

Previously, you had to copy configuration properties from Application Platform projects manually from the old installation to the new installation. You can now run the Application Platform migration utility, which migrates the properties automatically.

Added Event Routing to EDA Migration Utility

Automated migrations of Event Routing configurations and event types have been added to the EDA migration utility.

Ability to Migrate Multiple My webMethods Server Instances on a Single Command

In silent mode, you can now migrate multiple My webMethods Server instances on a single command when using the live database.

Ability to Migrate Multiple Universal Messaging Instances on a Single Command

In silent mode, you can now migrate multiple Universal Messaging instances using a single command.

All Migration Utilities Use Software AG Directory as Source Installation

Previously, all product migration utilities used the Software AG directory as the source installation except Integration Server and Universal Messaging, which used their product directories as the

source. Now, Integration Server and Universal Messaging also use the Software AG directory as their source. This change standardizes migration utility prompts for the source and creation of zip files containing the source.

Increased My webMethods Server Migration Automation

The My webMethods Server migration utility now automates migration of JMX port configurations, Java Service Wrapper customization, The Universal Messaging URL, and Jetty load balancer additions.

Simplified Universal Messaging Migration

The Universal Messaging migration utility has been simplified and streamlined. For example, it no longer prompts for a license, and it uses the Software AG directory as the source installation for consistency with the rest of the webMethods products.

Ability to Configure Platform Manager from Command Central Instead of Migrating Using a Migration Utility

Previously, you had to run a migration utility to migrate Platform Manager. You now configure Platform Manager from Command Central.

Migrate Integration Server, Trading Networks, My webMethods Server, and Universal Messaging from Command Central

You can migrate certain releases of Integration Server, Trading Networks, My webMethods Server, and Universal Messaging data to 9.10 using Command Central (see the Command Central readme for supported paths). You can migrate single servers, clusters, or entire environments in a fully automated way.

New webMethods Upgrade Area on TECHCommunity

You can find a new webMethods Upgrade area on TECHCommunity. The area offers presentations made by webMethods upgrade experts, and tips, tricks, and workarounds from webMethods upgrade experts who test the upgrade procedure and work with customers. We welcome feedback, comments, and suggestions for content. You can find the area here <http://techcommunity.softwareag.com/pwiki/-/wiki/Main/webMethods+Upgrade>

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webMethods Product Suite 9.12

Release Notes

Software AG's Digital Business Platform powers digital transformation and enables any organization to become a Digital Enterprise. And the webMethods Product Suite, a core component of the Digital Business Platform, helps you achieve this transformation.

webMethods Product Suite includes a broad collection of capabilities including application and partner integration, API management, agile process development, master data management, and operational intelligence.

With webMethods, you have an extensible, scalable and reliable backbone - running either in the cloud, on-premises or in hybrid scenarios – providing seamless integration for cloud, mobile, APIs, and Internet of Things, and streamlining process management and agile application development.

Release 9.12 of the webMethods Product Suite provides significant enhancements in every functional area of the suite.

Release Highlights

Integration

Software AG's webMethods Integration Platform is a proven, pre-integrated software suite that enables enterprises to rapidly integrate systems, services, devices, processes, business partners, and data to provide new business value and improve business performance.

The key features include:

- Integration Server and the Software AG Designer Service Development plug-in now support an enhanced mapping construct that allows a business analyst to map an array of input documents (source) to a target using a single mapping step, simplifying the mapping process.
- Software AG Designer and Integration Server now support the ability to search for individual variables and identify all references to those variables in the code base, improving dependency management tasks.
- Software AG Designer lets you visually compare and merge Integration Server assets such as JMS triggers, adapter services and connections, for improved development and debugging.
- Digital Event Services (DES) is the new mechanism for event-based integration between Software AG and other Software AG components.
- Integration Server now supports out-of-the-box integration with Apama using DES.
- The Unit Test Framework (WmTestSuite) is now available via the Software AG Installer as part of webMethods DevOps Edition and allows developers to run automated unit tests for continuous development and continuous integration.
- Integration Server provides out-of-the-box scripts to create Docker Integration Server images, and is supported on RedHat Linux OS.
- Integration Server now supports an enhanced distributed caching functionality.

- Universal Messaging adds supports for round-robin message publishing using JMS connection factories for horizontal scalability, as well as improved handling of low memory situations to improve reliability.
- webMethods Trading Networks is now tightly integrated with webMethods ActiveTransfer for better management and monitoring of files that traverse these two components. Additionally, Trading Networks can now deliver documents via ActiveTransfer.
- Trading Networks and ActiveTransfer no longer need to run on the same Integration Server in order for ActiveTransfer and Trading Networks to communicate with each other.
- webMethods Application Platform now provides service browser capabilities that provides information of services exposed to Integration Server.
- A new graphical view in the App Platform perspective named Visual Navigator, allows developers to easily see dependencies in their Application Platform projects.
- A generic OData connector is now available with full support for the 2.0 specification, as well as limited support for the 4.0 specification.
- The CloudStreams engine now supports Transport Layer Security (TLS) 1.1 and 1.2 for improved security.

API Management

Software AG's API Management Platform enables companies to unlock the business value of their unique data and services, while also supporting open API, mobile first, improved customer experience, Internet of Things, as well as service governance initiatives.

webMethods 9.12 includes the first release of the unified webMethods API Gateway, which is a solution that combines the mediation and security capabilities from webMethods Enterprise Gateway and webMethods Mediator as a single, easily installable and configurable product.

The key features include:

- webMethods API Gateway provides a first-level threat protection for APIs in the DMZ as well as service mediation, API lifecycle management and API policy definition, while removing the dependency on CentraSite. It also provides a new, dedicated web-based user interface for performing all API management related tasks, including creating APIs, defining policies, and publishing APIs to the API Portal.
- API Portal provides public APIs for use by external solutions, enabling the automation of API Management tasks such as publishing APIs to the portal.
- API Portal provides enhanced support for API monetization, including the definition and management of API plans and packages, enabling users to more easily publish and support API subscription and charge back services.
- API Portal provides public APIs for publishing package and plan information from external sources, enabling automated ways to define packages and plans in addition to the standard API Portal user interface.
- CentraSite now supports the HTTP PATCH verb in native and virtual services.
- Integration between CentraSite and ARIS has been enhanced to support the creation and retrieval of REST services. Also, this release includes several Business UI enhancements.
- Mediator now supports the HTTP PATCH verb, enhanced Kerberos support for inbound and outbound transactions, as well as support for the mediation of REST services without the need for the Axis framework.

webMethods Agile Process

Software AG's webMethods Agile Process Platform is a unified offering designed to create business applications that are based on orchestrated, managed and monitored end-to-end business processes or workflows. The offering improves process speed, visibility, consistency and agility, while reducing costs and driving standardization across all critical components of effective business operations.

The key features include:

- Tight integration between Process Engine and AgileApps allows for the invocation of an AgileApps case from a BPM process.
- Users can now do complete monitoring of a webMethods BPM process that includes an AgileApps case and its related activity (case tasks) and workflow (case process) status via the Business Console.
- My webMethods Server now supports a SAMLv2.0 compliant SSO provider to enable seamless data flow between Business Console and AgileApps.
- webMethods AgileApps now supports Terracotta Ehcache as an option for storing object metadata in the cache.
- webMethods AgileApps now supports delegation through proxies, allowing users the flexibility to delegate their access profiles and role access to other users.
- Customers can now monitor performance statistics for Rest services provided by MWS and Business Console.
- The My webMethods Server migration utility now enables you to clone a server node in the same cluster after the first node has been migrated successfully.
- The Rules Management console now allows user to edit decision trees.
- The Mobile Suite has many enhancements including certification with Android 6, preview of the gadget in a browser view, and addition of a new user interface Control TabView.

Operational Intelligence

Based on a consistent event-driven architecture, Operational Intelligence integrates best-of-breed technologies from existing Software AG products for process and data analytics into a single offering with a novel business-user interface.

The key features include:

- The dynamic ant farm process analytics view in Optimize for Process can now be configured to a specific date or time range.
- Optimize for Infrastructure can now monitor named objects, or durable subscribers, for Universal Messaging.
- MashZone NextGen Visual Analytics 9.12 is a new product that provides exploratory, ad hoc analysis of streaming and historical data from multiple sources. The product has a particular focus on Internet of Things (IoT) use cases, also providing the capabilities to support other use cases in retail, financial services – anywhere you have large amounts of data in motion.
- Command Central, the centralized monitoring tool for the webMethods Suite, can now be used to monitor, stop, start, and pause Process Performance Manager (PPM) remotely.
- New expanded search functionality in PPM makes it possible for users to select from all available dimensions and measures in the Analysis UI, independent of process type.

- PPM now provides a simplified process flow visualization that can be used along with the classic process flow capability to reduce complexity.

Suite Enhancements

The webMethods Suite includes enhancements that improve functionality across multiple products.

The key features include:

- Command Central provides a web user interface for product installation for releases 9.8 or later.
- Command Central now allows creating, updating and deleting instances of Integration Server, My webMethods Server, Universal Messaging and Apama, directly from the web user interface.
- The Command Central product and fix repository management web user interface is now streamlined and enhanced to support the browsing and searching of the repositories, making the creation and maintenance of mirror repositories easier and more robust.
- Troubleshooting of template-based provisioning and other operations is now easier with cleaner, more readable and fewer logs on Command Central.
- Command Central can now be used to monitor shared durables. A single table in the user interface now shows all durable subscribers in Universal Messaging.
- Asset Build Environment and Deployer now allow webMethods AgileApps assets to be built and deployed to AgileApps on-premises servers.

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For more details about the key additions and enhancements for this release, see the product descriptions.

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For important updates and a list of enhancements and issues that have been addressed since the previous release of each product, see the webMethods product readme files. You can access these documents, as well as all product documentation, from the webMethods area on the [Software AG Documentation website](#).

Centrasite

HTTP Verbs Support

CentraSite supports HTTP PATCH verb in native and virtual services.

ARIS Integration

In addition to SOAP services, Integration with ARIS supports the creation and retrieval of REST services.

Business UI Enhancements

- Report template owners can assign permissions to allow only the authorized users to execute a report.

- Report template supports JDBC.
- Consumption request initiators can see the list of consumption requests that are pending for approval.
- CentraSite Business UI performance is improved for search functionality and asset details page rendering.

http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/centrasite_mediator/release-notes/BusinessUIenhancements

Administration

- CentraSite installation and administration is simplified by removing unused ports.

Security

- Security libraries that CentraSite uses are updated to recent versions.

Infrastructure

Obsolete libraries are removed to make the CentraSite architecture simple.

MashZone NextGen Business Analytics

Data Sources

Starting 9.12, MashZone NextGen introduces new data sources including Excel and webMethods Process Performance Manager (PPM). These datasources can be leveraged to build dashboards based on .x/sx files and PPM (URL based) respectively.

Visualizations and Filtering Enhancements

This release introduces new visualizations and filtering enhancements. These include new bubble chart, ability to have threshold colors/values in charts, filtering columns, and multi-tab filtering.

Graphical Feed Editor

A new graphical feed editor that can be used to create and edit feed definitions without any programming knowledge is introduced in 9.12.

Migration Toolkit

MashZone NextGen 9.12 includes a newly designed workflow to migrate data feeds from (legacy) MashZone to MashZone NextGen. The workflow includes documentation and tools to be able to export (legacy) MashZone feeds and then import them into MashZone NextGen. Once these feeds are imported, they can be used like any other data source to build dashboards using Dashboard Editor.

MashZone NextGen Visual Analytics

MashZone NextGen Visual Analytics 9.12 is a new product that provides exploratory, ad hoc analysis of streaming and historical data from multiple sources. The product has a particular focus on Internet of Things (IoT) use cases, also providing the capabilities to support other use cases in retail, financial services – anywhere you have large amounts of data in motion. Visual Analytics allows operations analysts, maintenance specialists, researchers, developers, and data scientists to perform their job more effectively.

Following are the capabilities:

- Explore, visualize, and analyze real-time data streams
- Explore, visualize, and analyze historic data
- Auto-discover and deploy new data sets
 - Timestamps
 - Dimensions
 - Measures
- Quickly discover new data insights through automatic statistical profiles
 - Dimensions
 - Number of unique values
 - Distribution of values
 - Measures
 - Number of instances
 - Distribution
 - Sum
 - Mean/min/max
 - Standard deviation
- Explore real-time and historic data sets using interactive visualizations
 - Line
 - Bar
 - Area
 - Scatter
 - Bubble
 - Contour
 - Stacked/grouped
 - Split
 - Groups
- Filter data as you explore
 - Dimensions

- Include
 - Exclude
 - Measures
 - Thresholds
 - Min/max
 - Mean
 - Statistical range (mean +/- standard deviation)
 - Custom ranges
 - Capture, save, and share data explorations
 - Individual analyses
 - Multi-analysis projects
 - Highlight and color measure visualizations using dimensions and other measures
-

My webMethods Server

My webMethods Server offers the following new features:

Support for Universally Unique Identifier (UUID) Mechanism

Support for Active Directory alternative UUID mechanism. By default, My webMethods Server uses distinguished names (DNs) to identify users and groups. In this case, if a user moves from one division of an organization to another division, the user's DN changes, and My webMethods Server is unable to recognize users with changed DNs. To enable identification when a user is moved between divisions in an organization, the server now provides an option to use unique user identification operational attributes, such as GUID or entryUUID, depending on the user directory. If the DN does not match, the server checks the UUID to locate the user.

Other Supported Features

- Compliance with 508 accessibility standards. Images now have alternative text, and input fields have titles or labels.
- Support for Microsoft Edge browser.
- Connectivity with external directory services through services instead of direct access by JDBC.
- Functionality in migration utility to clone a server node in the same cluster after the first node is migrated successfully.
- Support for fix uninstallation.
- Command Central plugin to create and delete server instances.

Software AG Command Central

Product Installation Web User Interface

Command Central provides web user interface for product installation for releases 9.8 or later. Language pack installation is also supported for 9.12 installations only.

Instance Creation Web User Interface

Command Central now allows creating, updating, and deleting instances of Integration Server, My webMethods Server, Universal Messaging and Apama for installations of release 9.12, directly from the web user interface.

Repository Management Web User Interface

Product and fix repository management web user interface is streamlined and enhanced to support browsing and searching the repositories. Creating and maintaining mirror repositories is easier and more robust.

Readable Logs in Command Central

Troubleshooting of template based provisioning and other operations is now easier with cleaner, more readable and fewer logs on Command Central.

Bootstrap Installer is Now Available for HP-UX and AIX

The Command Central bootstrap installer is now available for HP-UX and AIX, which provides support for all supported operating systems. The bootstrap installer is the main option for installing Command Central, Platform Manager or the command line tools on any operating system.

Cross-Site-Request-Forgery Prevention

The Command Central web user interface is now protected against cross-site-request-forgery attacks.

Cross-Site-Request-Forgery Prevention

The Command Central web user interface is now protected against cross-site-request-forgery attacks.

Easier to Use Online Help and Web User Interface Instructions

Command Central online help is now reorganized and streamlined, and much of information is moved to the Command Central web user interface where it appears in the form of instructions and tooltips. Product-specific information is moved from the Command Central help into the appropriate product documentation. With this change, all information for each product is in one all-inclusive location, and the Command Central online help is now product neutral.

New Comprehensive Feature Support Matrix

A comprehensive feature support matrix for Command Central is now available as a separate document titled Software AG Command Central Feature Support Matrix, available on the Empower website. The matrix lists the products you can manage using Command Central and the features that are supported for each release of those products.

Software AG Designer

Software AG Designer supports Eclipse version 4.5.2.

Software AG Digital Event Services

Software AG Digital Event Services (DES) is a new mechanism for event-based integration between Software AG components. The 9.12 release provides out-of-the box integration between Integration Server and Apama. As part of this integration, you can send events from Integration Server as digital events by switching the native messaging transport for the Integration Server document type to the new DES transport. Apama can then listen to these digital events as native Apama events and can take actions based on business logic and rules.

webMethods API Gateway

This release (9.12) is the first release of webMethods API Gateway. It is a solution that combines current webMethods Enterprise Gateway and webMethods Mediator capabilities in a single product. API Gateway offers the same capabilities within a simplified architecture and removes the dependency on CentraSite for policy definition. Also, for all the functions, API Gateway provides a new, dedicated, web-based user interface to perform API-related tasks, from creating an API, defining a policy, to publishing the API to API Portal.

Simplified Architecture

There is no dependency on CentraSite to manage APIs and policies and does not require a dedicated Enterprise Gateway to protect the APIs.

Two Editions

webMethods API Gateway combines the current webMethods Enterprise Gateway and webMethods Mediator capabilities in a single product. API Gateway provides a first level threat protection for APIs in DMZ (Standard Edition) and another instance of API Gateway in green zone manages the rest.

Modern Web Interface

webMethods API Gateway has a dedicated simplified web application to manage APIs, policies, consumer applications, and administrative activities.

Informative Dashboards

webMethods API Gateway comes with rich dashboarding capabilities for API Analytics.

Developers Engagement

APIs can be published to API Portal from API Gateway for developers to discover them. Organizations can group APIs and define policy enforcements on them as a single unit, which can then be subscribed by the developers.

webMethods AgileApps

Ehcache as an Option to Memcached

AgileApps now supports Terracotta Ehcache as an option to Memcached for storing object metadata in the cache. This option is available when the user chooses to install AgileApps on an on-premise environment.

Delegation through Proxies

When a user is unavailable, the user has the flexibility to delegate the access profile and role to another user.

AgileApps Migration Utility

On-premise users are now provided with an upgrade utility to migrate from 10.5 to 10.6 and upwards in a side-by-side setup.

MySQL5.7 Certification

AgileApps is now certified with MySQL v5.7 Community Edition.

RHEL7 Certification

AgileApps is now certified on RHEL7 environment.

webMethods Agile Process

Universal Messaging as a Communication Mechanism

Universal Messaging (UM) as a communication mechanism between Process Engine (PE) and AgileApps enables invocation of an AgileApps Case from a BPM process. Any terminal status changes on the Case are relayed back to PE through UM and are reflected on Process Monitor as well.

Monitoring AgileApps Cases on Business Console

A user now has the complete view of a webMethods BPM process that includes an AgileApps Case and its related Activity (Case Tasks), and Workflow (Case Process) status through the Business Console.

webMethods Deployer for AgileApps

webMethods Deployer can now be used to deploy the application packages of AgileApps from one environment to the other.

MWS as an SSO Provider

My webMethods Server now supports a SAMLv2.0 compliant SSO provider to enable seamless data flow between Business Console and AgileApps, thereby preventing the user to be authenticated again by the AgileApps platform if the user is already logged into MWS.

Common Asset Registry or Repository for Case, Process, Tasks and Analytics

The user now has a GIT-based registry/repository to allow designers to choose assets shared by other developers to design processes and case workflows.

webMethods API-Portal

API Monetization Support

API Portal provides enhanced support for API monetization. This is in the form of API Packages being displayed next to the API Gallery with API Plans defined for those packages. User can view the details of the package, such as included APIs and associated plans. Plans provide information about pricing and quality of service terms defined within them. Consumers can subscribe to any plan available under the package, based on their business needs. This initiates the subscription token process and an access token is delivered to the consumer. This subscription token can be utilized to access the list of APIs available under the package.

API Packages and Plans are normally defined in API Gateway and published to API Portal. However, API Portal also provides public APIs for publishing packages and plans information from other sources.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/api-portal/release-notes/APImonetization-support>

Extension Points

API Portal provides public APIs as extension points for use by external solutions. Enhancements in this release include:

- An API for publishing APIs to API Portal and un-publishing them from API Portal. It supports both REST and SOAP APIs.

<http://techcommunity.softwareag.com/ecosystem/communities/protected/webmethods/products/api-portal/detail/videos/Extension-points-Basic/>

- APIs for API provider and access token management:

- Provider registration API that can be used by the API providers to register themselves as providers for a particular API. They can also register a URL, which API Portal connects to in case someone requests an access to the API.
- An API for API providers to query API Portal for any pending API access requests.
- An API for API providers to send information about access tokens being approved, denied, renewed, or revoked.
- An API provider can update some of the basic information of an API, such as name, description, categorization, and icon of an API.

<http://techcommunity.softwareag.com/ecosystem/communities/protected/webmethods/products/api-portal/.detail/videos/Extension-points-API-Metadata/>

<http://techcommunity.softwareag.com/ecosystem/communities/protected/webmethods/products/api-portal/.detail/videos/Extension-points-Provider-Reg-APIs/>

<http://techcommunity.softwareag.com/ecosystem/communities/protected/webmethods/products/api-portal/.detail/videos/Extension-points-Related-Events-APIs/>

<http://techcommunity.softwareag.com/ecosystem/communities/protected/webmethods/products/api-portal/.detail/videos/Extension-points-Packages-and-Plans-APIs/>

HTTP Verbs Support

API Portal supports HTTP PATCH verb.

Advanced Dashboards

API Portal dashboard is enhanced with the API trends dashboard. Administrator can now view the trending of APIs by success, failure, and response.

webMethods Application Platform

Service Browser

Provides the following information about services, deployed in Application Platform:

- services exposed to Integration Server
- common services
- system services

You can filter the services by name and attributes.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/app-platform/release-notes/ServiceBrowser>

Application Platform Graphical Viewer

A new view is now supported in the Application Platform perspective, named Visual Navigator. In Designer, Developers can use this view to improve comprehension of the dependencies in their Application Platform projects.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/app-platform/release-notes/VisualNavigator>

Application Platform Bundle Manager Enhancement

The Bundle Manager view is enhanced to support Bnd templates and provide customers with more flexibility when creating bundles out of native jar files.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/app-platform/release-notes/BundleManager>

webMethods ApplinX

Start and Stop Connection Pools from Designer

In Software AG Designer, you can now start and stop connection pools from the context menu of the selected pool.

Replacement for Print Applet

An alternative for host printing is provided using Java Web Start technology as the Applet technology will soon be deprecated and will not be supported in new browser versions.

Usability

The new list of entities displays the created and last modified date and time of the entity. You can filter by entity name, and use the timestamp to sort the content.

webMethods BPMS

Task Engine

Communication between Task Engine and Process Engine: The wmTaskClient package uses Universal Messaging as transportation. The architecture change enhances the wmTaskClient performance.

Business Console

Business Console gadgets were introduced in Version 9.10. The current version adds the following enhancements:

- Preview the gadgets on a browser view in the Designer user interface Development perspective.
- Renamed Dashboard to AppSpace in Business Console.
- Grouping and sharing of AppSpaces in Business Console.
- Creating custom layouts for AppSpaces in Business Console.

- Adding gadgets to each container in an AppSpace.
- Expanding or collapsing all gadgets in an AppSpace while editing the AppSpace. This action enables you to view all gadgets in an AppSpace without having to scroll down to the end of the page.
- Viewing an AppSpace using a URL in a web browser outside of Business Console.
- Configuring the maximum number of gadgets allowed in an AppSpace.
- Accessing AppSpaces and gadgets directly through a URL displays the My webMethods Server login page if a user is not logged on.
- Generating to-do lists sequentially.
- Searching for gadgets in the Add New Gadget dialog box.
- Newly deployed gadgets appear in the Add New Gadget dialog box without having to refresh your web browser or clearing cache.
- New framework to resolve potential conflicts between similarly named JavaScript functions.
- Auto-generation of gadget code using drag-and-drop RESTful services.
- Enhanced these built-in gadgets: Task Calendar, Instance List Management, Work Stream, and Task Charts.

Process Engine

- Queue an AgileApps Case instance from Process Designer and eventually return control back to Process Engine.
- View a running case instance from Process Monitor.
- Migration: Removed the dependency of the ISCoreAudit db component during ProcessAudit db migration.

webMethods Broker

webMethods Broker 9.6 is tested and supported with webMethods 9.12.

webMethods Business Rules

Edit Decision Trees in Rules Management Console

Decision trees can now be locked, unlocked, edited, and hot deployed in the Rules Management Console.

http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/bpm_suite/release-notes/edit-decision-trees

Change Order of Decision Tree Elements in Designer

The order of decision tree elements can now easily be modified in Software AG Designer to change the evaluation order.

http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/bpm_suite/release-notes/change-order

Dynamic Data Providers in Decision Tables

For every column of a decision table, a particular REST service can be specified in Software AG Designer that provides a list of valid values for this column in the Rules Management Console. Only the provided values can be selected in all cells of this column; free entry is prevented.

http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/bpm_suite/release-notes/dynamic-data-providers

webMethods CloudStreams

Generic OData Connector

A generic OData connector is now available with support for 2.0 specification and limited support for 4.0 specification. All CRUD operations and BATCH operation services for a single entity with OData 4.0 can be created on webMethods CloudStreams version 9.10 and later.

New and Updated Connectors

- New connector for Avalara AvaTax, version 15.4, is now available for download on Software AG TECHcommunity.
- ServiceNow connector is updated with support for Geneva version.

TLS 1.1 and TLS 1.2

CloudStreams engine now supports Transport Layer Security (TLS) version 1.1 and version 1.2 for higher security.

webMethods Content Service Platform

New set of Integration Server Content Adapters

A new set of Integration Server Content Adapters is released to easily access the content from several Enterprise Content Management repositories, including:

- webMethods Adapter 9.12 for Documentum
- webMethods Adapter 9.12 for FileNet
- webMethods Adapter 9.12 for SharePoint
- webMethods Adapter 9.12 for Alfresco

- webMethods Adapter 9.12 for Content Management Interoperability Services (CMIS)

Note: You can use the webMethods Adapter 9.12 for CMIS to access all the repositories that support the CMIS standard content management protocol.

webMethods Deployer

Support for Deployment of AgileApps Assets

Asset Build Environment and Deployer now allow webMethods AgileApps assets to be built and deployed to AgileApps on-premises servers.

webMethods EntireX

Enhanced Flexibility with Your COBOL Endpoints

If you use Multiple Possible Output (MPO), you now have maximum flexibility to place the selector of the MPO case within your COBOL code: before, within, or after the MPO group.

Also, you can now compile the EntireX-generated COBOL assets with version 4.2 or 5.1 COBOL compilers on z/OS.

Manage Your EntireX Assets with Command Central

Create and delete EntireX brokers using the Command Central graphical user interface. Additionally, display and stop services and server instances that are attached to the EntireX broker now.

Internationalize your Integration Scenarios

Safely extract your Natural source comments also when using Arabic shaping and/or multibyte character sets. Define your favorite custom conversion now on z/OS as was previously possible on other platforms.

Profit from Enhanced Usability

Description of feature or enhancement:

- Work with user-defined date and time formats in the EntireX Adapter for IS
- Use mixed-case passwords for CICS® ECI
- Find a date field when generating a .CSV file with the EntireX Trace Utility
- Get clear error messages when starting your EntireX broker in case of an inconsistent attribute file

webMethods Integration Server

Mapping Enhancements

Integration Server, in conjunction with Designer, provides an enhanced mapping construct that allows a business analyst to map an array of input documents (source) to the target using a single mapping step.

Additionally, the mapping enhancement (Data Mapper) allows the developer or mapping analyst to test the map step without executing the entire flow service.

Event-Based Integration between Integration Server and APAMA

Digital Event Services (DES) is the new mechanism for event-based integration between Software AG components. The 9.12 release provides out-of-the box integration between Integration Server and APAMA. As part of this integration, you send the events to digital event services by switching the native messaging transport to the new DES transport. APAMA can listen to these events and can take actions based on business logic and rules within APAMA.

Search and Refactor Support

In conjunction with Designer, Integration Server supports the ability to search for a particular variable and identify all references to that variable in other assets, such as flow services, document types, specifications, and triggers. Users can selectively or globally replace a particular variable with another variable. This kind of global search and refactor increases developer productivity and enables easier maintenance of the code base thereby reducing costs.

Docker Scripts for Integration Server

Integration Server provides out of the box scripts to create Docker Integration Server images. While tested on the Red Hat Linux operating system, the feature can be used on a non-Windows operating system on which Integration Server is supported and Docker has native support.

Publish REST API Descriptor to API Portal

Using the Designer tool, developers can publish the Swagger document for a particular REST API descriptor to the API portal.

Kerberos Delegation Support

Integration Server provides out of the box support for Kerberos delegation at transport level for HTTP/REST protocols.

Distributed Caching Enhancements for Integration Server

Integration Server provides enhanced service results caching functionality. This includes the ability to:

- Use a distributed cache for service results caching.
- Pre-fetch and fill data into the service results cache at startup time.

- Return a list of all cached values from service results cache.
 - Delete an entry for the distributed service results cache.
-

webMethods Mediator

HTTP Verbs Support

Mediator supports the HTTP PATCH verb:

http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/centrasite_mediator/release-notes/HTTPverb-support

API Protection and Security

- Mediator supports Kerberos over transport in inbound and outbound (including delegation) scenarios.
- SAML feature is enhanced to provide support for the following:
 - Holder Of Key Symmetric binding in Inbound
 - Holder Of Key Symmetric and Asymmetric binding in Outbound
 - Bearer Token in Outbound
 - ActAs delegation in Outbound

http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/centrasite_mediator/release-notes/Kerberos-and-SAML

Architecture

Mediation of REST services is supported with or without the Axis framework. This is controlled by a CentraSite configuration parameter. Once this parameter is set to not use Axis for REST services, all newly deployed services do not use it. Existing services continue using Axis until it is manually changed by publishing and republishing the service.

webMethods Mobile Suite

New User Interface Control TabView

A TabView provides a high level navigation pattern, where a user can switch between different Views using a swipe gesture. A Tab provides content grouped in a View. A label or icon describes the content of the Tab. To support this pattern with Mobile Suite, nUITabView is introduced. nUITabView is a UINavigationController and can be used in the same way as a regular UINavigationController. Together with tabs, you can add other user interface elements to nUITabView to be displayed between view header and tab elements (not supported for Windows phone).

The AML Outline Editor also supports modeling of nUITabViews. An element named TabView is now available to be added to the Views node within the Outline Editor.

<http://techcommunity.softwareag.com/public/webmethods/products/mobile/release-notes/%20MobileSuite-TabView>

Styles

The AML Outline Editor now allows customers to group their user interface properties in reusable elements, named Styles. Each user interface element can be linked to a Style and so every user interface property related to this element will be taken from the Style. Also, Styles can build an inheritance relation.

The ApplicationStyle now offers a capability to define Styles and Themes for Android projects. According to Android, a Style is a collection of properties that specify the look and format for a View. In the AML Outline Editor, the ApplicationStyle node provides a child called Android Theme.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/mobile/release-notes/Styles>

New Wizard to Import Sample Projects

A new wizard is added to import example projects in Mobile Designer.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/mobile/release-notes/NewSampleWizard>

ARIS Picture-to-Model App as Sample Project

The ARIS Picture-to-Model app is now added as a sample project with full source code. This can be used as a basis for the development of similar apps using the same technology.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/mobile/release-notes/ARISpicture-to-ModelApp>

CredentialStore and IsolatedKeyValueStore Classes Added

Storing sensitive data such as usernames, passwords, and settings, require more data security than the record store may be able to provide on a given platform. To overcome this, Mobile Designer 9.12 provides a com.softwareag.mobile.md.io package with CredentialStore and IsolatedKeyValueStore classes. These classes make a best-effort attempt to isolate the data from other applications and casual snooping.

Mobile operating systems differ in how this isolation occurs, but Mobile Designer attempts to use features such as the Keychain Services (iOS), and/or mark files as private/protected, and excluded from backups.

A sample application, `_NativeUICredentialStore_`, is shipped with Mobile Designer to demonstrate the use of both classes.

Definition of Colors/Sizes/Font Sizes

The AML Outline Editor offers the capability to define colors, sizes, and font sizes within the UserInterface - Values section. Each of these is identified by a name and can be chosen as value for correspondent properties.

New User Interface Templates in the Editor Palette

Following new templates are added to the Palette view in the Templates->List Items category:

- Avatar with Text and Icon
 - Two-line item
- These templates are frequently used user interface patterns and can now easily be dragged into the Templates section of the application model.

New APIs and AML Outline Editor Properties

Following user interface APIs and corresponding properties are now supported in AML Outline Editor:

- `nUITabView`
- `nUIWebViewElement#bgColor`
- `nUIWebViewElement#scaleToFitEnabled`
- `nUIWebViewElement#overscrollingEnabled`
- `nUIDateEntry#halign`
- `nUIDateEntry#fallbackText`
- `nUIDateEntry#fontColor`
- `nUITextfieldElement#clipType`
- `nUIDropdownListEntry#halign`
- `nUIDisplayObject#tag`
- `nUIDisplayObject#backgroundDrawable`

Support for new union type *dp* in AML

The AML Outline Editor now supports density independent pixels for dimensional properties, like "x", "y", "innerX", and "innerY". A *dp* represents a virtual pixel unit to express dimensions or position in a density-independent way. In addition to specifying *dp* values in the AML Editor, users can programmatically set dimensions or position. Therefore, the API method `com.softwareag.mobile.runtime.toolkit.util.AppUtility.convertDpToPixel(int)` is added to calculate a pixel value based from the passed *dp* value.

New property Tag to `nUIObjects`

For `nUIObjects` a new property tag is added. Tags contain some context information about the `nUIObject` instance that can be used in callbacks and delegates.

Custom Resources in Android Project

The Android platform build is extended to take custom resource folders into account, as this is a common source for native code injections. Specified resources are copied to the `<project>/res` directory and thus, must follow Android resources guidelines.

EML Support for Operations

EML is extended to allow method definitions. Those are generated as an abstract method and must be implemented in the entity implementation.

EML Support for Defining Opposite References

Sometimes, data models declare a bi-directional relationship between entities, which have to be maintained manually by writing code. EML will now take care of bi-directional synchronization and maintains such relations automatically.

Configuration of ANT Target Executed After Code Generation

Previously, the code generation was always followed by the ANT target Re-Activate-Handset. Now it is possible to select the ANT target, which is executed after code generation. Possible candidates can be selected within the Mobile Development preferences page.

Cancel Button in iOS Keyboard Removed

In iOS, the **Cancel** button that appeared at the top-left corner when you open the keyboard or any of the pickers is removed.

New Events in Date/Time Picker

You can now click **Done** button to trigger a `nUIConstants.EVT_PICKER_OK` event and click **Cancel** button to trigger a `nUIConstants.EVT_PICKER_CANCEL` event.

Native Code Injection Support for Phoney

Using native code injection in Phoney allows using J2SE feature set for Phoney platform. This can be useful by testing native libraries such as Tesseract, direct in simulator.

Android Header Implementation Refactored to Use Toolbar

In Android, view header is replaced by Android's native Toolbar class. Together with improved native look and feel, it is now possible to customize view header as well.

Introducing setTag/getTag Methods in nUIObject

In some cases, it is very useful to store some data in UI objects. The methods are defined in the `nUIObject`, the top most parent in user interface hierarchy.

New onRemoved() method in UI Hierarchy

When you subclass a UI class, you can now overwrite the `onRemoved()` method to clean up references that are stored in the class, to avoid cyclic references on iOS platform.

urlDecode Added

A new method `urlDecode` is now added to `HttpConnectionHandler`. The method decodes bytes into UTF-8 string.

Improved urlEncode Performance and Support for UTF-8

URLConnectionHandler.urlEncode now supports UTF-8 strings. Performance is improved by using lookup table for checking for valid characters.

mageScaler Class To Use Native Methods for Scaling Images

To improve quality of scaled images, an ImageScaler is now introduced. It uses native platform methods to scale images. The class is used internally in ImageHandler as well, so that old projects can automatically benefit from new functionality after the new Multi-Build with MD 9.12

syncUI Method Added

A new blocking method syncUI is introduced to force UI flushing. Since the method is CPU-intensive, this method should be used with care.

New API to Request Permissions at Runtime

Mobile Designer now supports a new API to request permissions at runtime. This is a mandatory requirement of Android 6. For certain features, it used in iOS 8 and later versions.

New Background Concept: IBackgroundDrawable

WIn previous versions of Mobile Designer, it was only possible to set background colours and Images on very few NativeUI Objects. Now, all NativeUI Objects inheriting from nUIDisplayObject have a common method to set or get their background.

- `public void setBackgroundDrawable(IBackgroundDrawable background)`
- `public IBackgroundDrawable getBackgroundDrawable()`

Additionally, there is now a `com.softwareag.mobile.runtime.nui.background` package that manages the following types of IBackgroundDrawable that can be set:

- `ColorBackground` describes a single colour for the element's background
- `DefaultBackground` is used to give the standard behaviour for that handset and OS combination, and
- `PatternImage`, which can be used to draw an Image into the background of an element (OS and element permitting).

`PatternImage` is the most complex among these, and it supports several different modes of operations such as tiling, scaling proportionally, and stretch to fit. When tiling, you can specify vertical and horizontal tiling independently, or to have both enabled.

Support for Self-Signed SSL Certificates (iOS and Android only)

Self-signed certificates are now allowed for each URL on Android and iOS. Android and iOS uses the following API function for checking Self-signed certificates:

```
public boolean allowUnsecureSSLConnectionForURL(String url)
```

For each web page (`https://...`), the operating system uses this API to verify if the associated URL is valid (even if a certifying authority has not verified the URL).By default, this API function returns false for all URLs (rejecting all self-signed certificates).

Android 6 Certification

Mobile Suite is now certified for Android 6.

Improved Build Job Details in Mobile Administrator

Build jobs now link directly to the build configuration used for the build. Further, build jobs now provide information about the client application version on the build node used to execute the build. The build job now also contains build logs, which helps developers troubleshoot issues during the build.

Removed Deprecated Mobile Device Management Capabilities from Mobile Administrator

Mobile Administrator does not support Mobile Device Management as of 9.12 release. All corresponding features are removed or disabled.

webMethods OneData

User Interface Improvements

The new user interface for OneData is enhanced in the following areas:

- In data entry screens, improved display of errors and new customization options for data display.
- In the data grid for search results, improved user experience in the display of dates, sorting of data columns, and resizing of the left panel.
- In the audit data screen, more filter options are introduced.
- Searching and browsing of data, which now includes remote objects.

API Layer Enhancements

New public data quality APIs is now exposed:

- Data cleanser APIs, which include:
 - A generic cleanser.
 - A cleanser that uses OneData-defined cleansing projects.
 - A cleanser that uses OneData-defined cleansing projects for a given data object.
- <http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/onedata/release-notes/CleanserAPI>
- Data matcher APIs, which include:
 - A generic matcher.
 - A matcher that uses OneData-defined matching projects.
 - A matcher that uses OneData-defined matching rules.
 - A matcher that uses OneData-defined matching projects for a given data object.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/onedata/release-notes/GenericMatcher-RuleBased>

OneData objects now support JSON schema:

- You can use JSON as the payload format in HTTP POST calls to OneData REST data.
- The object definition allows you to generate a JSON schema for such calls. You can then retrieve this schema in an API call with “/JSONSchema” appended to the REST API exposed by the object.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/onedata/release-notes/JSON>

Security Improvements:

In addition to the previously available protection of input validation against cross-site script (XSS) attacks, OneData now provides enhanced protection against security vulnerabilities of XSS through responding encoding. API methods are also now protected against XSS attacks.

Infrastructure Improvements:

The search functionality in OneData is now configured to use Software AG Event Data Store by default. This change does not affect the previously available option to use a separate instance of Elasticsearch as the search engine.

webMethods Optimize for Infrastructure

New Monitoring Capabilities

- Optimize for Infrastructure can now monitor named objects, or durable subscribers for Universal Messaging.
- Optimize for Infrastructure can now monitor the event routing runtime.
- My webMethods Server deployments that are configured with a custom root context can now be monitored by O4I.
- Terracotta Server Array (TSA) can now be monitored over SSL (HTTPS).

webMethods Optimize for Process

508 Compliance - Tables and Forms

508 compliance is implemented for tables and input fields in forms, thus improving the accessibility for Optimize portlets.

Custom Range and Auto-Refresh for Process Analytics

The dynamic ant farm process analytics view can now be configured to a specific date or time range. In addition, you set the refresh rate to automatically refresh on a user-defined interval.

webMethods Process Performance Manager

Ease of Use

New expanded search functionality makes it possible for users to select from all available dimensions and measures in the Analysis UI independent of process type.

Core PPM components now have less restrictive locking defined so more activities can be performed simultaneously. For example, when a user is editing a user-defined measure, imports can proceed in parallel.

Reports can now be issued using the XLSX report output format. Tables can be exported using this format as well.

There is improved consistency checking and error handling for Microsoft SQL Server.

Improved User Interface

A new simplified process flow visualization is available that can be used along with the classic process flow. This view provides reduced complexity. Users have the ability to drag and drop steps to arrange the discovered process in a clearer pattern and save the preferred view.

PPM can now be used as a data source for MashZone NextGen Business Analytics dashboards. Users can now create MashZone NextGen charts that consume data from PPM and filter those charts using business dimensions from the process.

The Microsoft Edge browser is now supported.

Monitoring and Administration

Command Central, the centralized monitoring tool for the webMethods suite, can now be used to monitor, stop, start, and pause the PPM remotely. Administrators can see CPU and memory utilization, and have remote access to logs for analysis. All Command Central capabilities are fully automatable through command line scripting or REST services. More granular permissions can now be defined for reporting.

The report automation authorization is now separate from the report definition authorization.

SAP Support

Using SAP SNC, it is now possible to configure a secure connection to SAP for data extraction.

PPM supports SAP for process discovery. This includes any SAP-supported database such as HANA.

Cloud Support

Old protocols used to communicate across runtimes are replaced with HTTP-based communication to enable cloud deployment.

PPM now allows administrators to define a separate public server name from internal server names for intra-server communication. This addresses some cloud deployment scenarios where the name used to externally access the webserver is different from the server name of the running hardware.

webMethods Service Development

Mapping Enhancements

Service Development provides an enhanced mapping construct that allows a business analyst to map an array of input documents (source) to the target, using a single mapping step. Service Development offers improved debugging of data mapping by introducing the Data Mapper view. While in this new view, developers or mapping analysts can test the map step without executing the entire flow service. Furthermore, users can execute, modify, and then re-execute a mapping without saving the changes in between test executions.

Search and Refactor Support

Service Development now supports the ability to search for a particular variable and identify all references to that variable in other assets, such as flow services, document types, specifications, and triggers. Users can selectively or globally replace a particular variable with another variable. This kind of global search and refactor increases developer productivity and enables easier maintenance of the code base thereby reducing costs.

Publish REST API Descriptor to API Portal

Users can now publish the Swagger document for a particular REST API descriptor to the API portal.

Improved Debugging for Flow Services

To improve debugging capability, Service Development includes a Debug to Here option, which allows a developer to debug a flow service up to a specific flow step.

Visual Comparison and Merge for JMS Triggers, Adapter Services, and Adapter Connections

Service Development now provides support for visually comparing versions of JMS triggers, adapter services, and adapter connections and merging any differences between versions.

webMethods Trading Networks

Tight Integration with ActiveTransfer

webMethods Trading Networks is now tightly integrated with webMethods ActiveTransfer for better management and monitoring of files or documents exchanged. Trading Networks now provides an ability to deliver documents through ActiveTransfer. Administrators can explicitly select ActiveTransfer as the delivery method in Trading Networks and set the end points that

ActiveTransfer connects with to transfer the documents. Documents delivered through ActiveTransfer are monitored directly in the Transactions page that includes the transaction ID for the document as an attribute.

Eliminate Co-Dependency Between ActiveTransfer and Trading Networks

Trading Networks and ActiveTransfer instances no longer need to run on the same Integration Server instance for ActiveTransfer to communicate with Trading Networks and Trading Networks to communicate with ActiveTransfer. ActiveTransfer can now route inbound files to any Trading Networks instance without any intermediate storage. Similarly, Trading Networks can deliver files through any ActiveTransfer instance for outbound file transfers.

Configure User Status

Administrators can now optionally configure user status and allow it to be set only from a predefined set of values. Using this option, users can set a user status to one of the values from the pre-defined list. This eliminates users from making typographical errors while specifying the user status values in a free form setting.

View Transport Status

Trading Networks now lists the transport status as a column in the Tasks lists to view the transport status messages for delivery tasks.

webMethods Universal Messaging

Durable Subscribers Monitoring and API Improvements

Enterprise Manager has improved monitoring of durable subscribers and is now able to display more details for the durable subscribers, including details about the connections currently being used, the EIDs and the number of events outstanding in the queues. This information can now also be accessed via the administration API.

The client API for durable subscribers and named objects are redesigned to improve performance, robustness, and usability. The new durable subscribers API, available from the client API, maps to the existing durable functionality of subscriber functionality.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/messaging/release-notes/enhanced-monitoring>

New and Enhanced Command Central Capabilities

You can now use Command Central to add, edit, delete, administer, and monitor channels (topics) and queues. In addition, you can monitor durable subscribers to easily detect and identify issues such as stalled triggers or processing backlogs.

These capabilities can be accessed using Command Central web user interface, Command Central command-line interface, and REST API.

The Command Central web user interface now provides the following capabilities:

- Create and delete Universal Messaging server instances.
- Search for JNDI entries, channels, and queues.

- View, create, edit, and delete access control lists (ACLs).
- View create, edit, and delete joins for a channel or a queue.
- Delete durable subscribers.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/messaging/release-notes/CommandCentral-support>

Improved Handling of Low Memory Situations

New methods for protecting against out-of-memory situations have been introduced to increase the robustness of Universal Messaging under heavy load.

The “event usage” metric provides information on memory currently in use by on-heap events. This includes current on-heap event memory usage, the maximum memory currently available to the JVM, and the percentage of on-heap memory currently in use. These statistics enable monitoring of the current memory usage, allowing action to be taken accordingly.

Universal Messaging servers can now throttle producing connections while processing their events. At predefined, configurable thresholds of on-heap event memory usage, producer connections are throttled, enabling consumers to reduce the number of events on the connections while they are throttled. Connections are more strictly throttled as memory usage rises, helping to prevent out-of-memory situations.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/messaging/release-notes/low-memory-handling>

Round-Robin Message Publishing Using JMS Connection Factories

Horizontal scalability improvements are introduced with the API for JMS now allowing the configuration of round-robin connection factories. These factories allow clients to publish messages in a round-robin fashion, so that one message or transaction gets published to the first realm node or cluster, the next message to the next realm node or cluster, and so on.

These JMS connection factories have the following limitations:

1. Event consumption is not supported through these factories so, for example, message listeners cannot be registered and consumers cannot be created through the sessions created from these connection factories.
2. The sessions created through these connections factories do not support distributed (XA) transactions.

For more information consult the JMS section of the product documentation.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/messaging/release-notes/JMS-publishing>

Logging Capabilities Enhancements

Support has been added for utilizing the third party logging frameworks Logback and Log4J 2. Both of these testing frameworks offer improved throughput performance when compared to the existing Flogger engine.

Log file entries are now categorized by the component which generated the entry, for example Cluster Communications and Joins.

Note: Changes have been made to the logging configuration items stored in the data/RealmSpecific/Logging Config.cfg file. When you migrate a realm data directory from an older version to the 9.12 installation, remove this file. The server then loads only the new

configurations items on initialization. The logging configuration then needs to be reset through Enterprise Manager or the administration API. For more details on how to reset the configuration, see the Realm Configuration section in the Universal Messaging user documentation.

Improved Futureproofing for Universal Messaging Clients

The client API is now officially supported for use with newer versions of the Universal Messaging server. That is, the 9.12 client API will be supported for use with future versions of the Universal Messaging server.

The client API is extended in this release with features that were previously only in the administration API (which is not supported for use with newer versions of the server).

Access Control List (ACL) can now be set at store-creation time through the Java and C++ client APIs. This allows basic ACL control for stores without needing to use the administration API.

Setting ACLs at store creation time has been a typical use for the administration API. These changes allow the client API to be used in a greater number of use cases. The client API is lighter-weight than the administration API, and therefore switching to the client API can increase overall system performance and consumed bandwidth.

<http://techcommunity.softwareag.com/ecosystem/communities/public/webmethods/products/messaging/release-notes/other-features>

HTTP Drivers Support Checking of Origin Headers

The HTTP/WebSocket drivers are updated to process the Origin header field according to standards proposed in RFC-6454, RFC-6455 and the W3C Cross Origin Resource Sharing document (<https://www.w3.org/TR/cors>).

The nhp/nhps interfaces should have the CORS Allowed Origins (located under the nhp/nhps Interface -> Javascript tab in Enterprise Manager) altered if an HTTP request has the Origin header field set. Previous versions of Universal Messaging had default values of "localhost, 127.0.0.1" assigned to the CORS Allowed origins field, and would process only host names as values to this field. The current W3C standards now expect any origin to be of the form `<scheme>://<host>:<port>`; for example, *localhost* is an incorrect value, while *http://localhost:11000* is a properly formatted value. The exception is a single value of "*", which indicates that all hosts are permitted access; note that the processing of this value has not changed with the update, and is now the default value in the CORS Allowed origins field whenever an nhp/nhps interface is created.

In addition, support for matching *http://example.com* and *http://example.com:80* as origins (as documented in RFC-6454) is currently not supported. You will need to explicitly white list hosts with *:80 as potential origins (if needed) in addition to others.

Warning of the Effects of Editing Stores

When stores are edited, Universal Messaging deletes and recreates the store and this can disrupt active subscriptions. Enterprise Manager is updated to display a warning message that the store will be recreated, before a channel edit is performed.

nInterfaceTool Extended to Allow Editing of Additional Interface Settings

The nInterfaceTool is extended to provide additional capabilities. For example, it now allows you to set interfaces to automatically start when the server starts.

Support for Docker 1.10

The Universal Messaging Docker kit now supports Docker 1.10.

Inclusion of Python and iOS Client Libraries in Installation

The client libraries for Python and iOS are now included as part of the installation.

UM-Tools Runner Installed with Template Applications Module

The um-tools runner is now part of the installer the *Template applications* module and not the *Server* module. This allows you to install the um-tools runner without installing the server.

Updated Version of OpenSSL

Universal Messaging now uses OpenSSL 1.0.2 instead of the previous version 1.0.1.

Unit Test Framework

With webMethods 9.12, the Unit Test Framework, which is popularly known as WmTestSuite, is available as a product. It is officially supported and made available through Software AG Installer 9.12.

Documentation

Command Central

- **Easier to Use Online Help and User Interface Instructions for Command Central**
Command Central online help has been reorganized and streamlined, and much information has been moved to the Command Central GUI where it appears in the form of instructions and tooltips. Product-specific information is moved from the Command Central help into the appropriate product documentation. With this change, all information for each product is in one all-inclusive location, and the Command Central online help is now product neutral.
- **New Comprehensive Feature Support Matrix for Command Central**
A comprehensive feature support matrix for Command Central is now available as a separate document titled Software AG Command Central Feature Support Matrix, available on the Empower website. The matrix lists the products you can manage using Command Central and the features that are supported for each release of those products.

Trading Network

From this release onwards, the Trading Networks Webhelp is not available as a standalone document on the Empower website. The content of the Trading Networks Webhelp is available in the B2B Integration compendium.

Upgrade

Integration Server Migration Utility Offers Separate Prompts for JDBC Pools in Prompt Mode and Options in Command Line Mode

Previously, JDBC pools were included as part of the prompt for configuration files, and you had to prompt through configuration files one at a time to prevent the migration of JDBC pools when using a cloned database. With this release, the JDBC pools prompt is separate, and asks whether you are using a cloned database. In addition, you can now specify the connection information for a cloned database in command line mode, which enhances the automation of migration.

My webMethods Server Cluster Migration is More Efficient.

My webMethods Server migration utility now performs faster and efficient cluster migration.

My webMethods Server Migration Utility Command Line Mode Offers the Ability to Migrate When Using Cloned Database.

Previously, you could use the My webMethods Server migration utility's prompt mode to migrate when using a cloned database. You can now specify connection parameters for a cloned database on the migration utility command line mode, which enhances migration automation.

Ability to Migrate All Universal Messaging Instances Simultaneously.

Previously, you could use the Universal Messaging migration utility to migrate multiple instances you specified explicitly by name. You can now migrate all instances at the same time without specifying instance names.

webMethods Adapter for SAP Migration is More Automated.

Another manual step in the webMethods Adapter for SAP migration has been automated. You no longer have to manually copy the *node.ndf* files from the old installation to the new installation.

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webMethods Product Suite 10.0

Release Notes

Software AG's Digital Business Platform powers digital transformation and enables any organization to become a Digital Enterprise. And the webMethods Product Suite, a core component of the Digital Business Platform, helps you achieve this transformation.

webMethods Product Suite includes a broad collection of capabilities including application and partner integration, API management, agile process development, master data management, and operational intelligence. With webMethods, you have an extensible, scalable and reliable backbone - running either in the cloud, on-premises or in hybrid scenarios – providing seamless integration for cloud, mobile, APIs, and Internet of Things, and streamlining process management and agile application development.

Release 10.0 of the webMethods Product Suite provides significant enhancements in every functional area of the suite.

This is an Innovation Release. Innovation releases have a much shorter support cycle than standard releases. To learn more, please visit <http://empower.softwareag.com/innovationrelease/>.

Release Highlights

Integration

Software AG's webMethods Integration Platform is a proven, pre-integrated software suite that enables enterprises to rapidly integrate systems, services, devices, processes, business partners, and data to provide new business value and improve business performance.

The key features include:

- Integration Server supports mapping as a first-class citizen. The new mapping service allows developers to build all of the mapping logic including links, assigning values, and inserting data transformation logic in a single, re-usable entity.
- Microservices is a new architectural style for developing a single application as a suite of small services, each running in its own process and communicating with lightweight mechanisms, often an HTTP resource API. Software AG is now offering a light weight container called the Microservices container to host these small services. The Microservices container is fully compatible with the Integration Server and can host all services developed on the Integration Server.
- Microservices container provides out-of-the-box support for dynamic lookup of service endpoints using the Consul service registry.
- Integration Server with Service Development now provides the ability to get and set HTTP request and response headers easily. Integration Server supports the HTTP PATCH method, which is used for partial updates.
- In conjunction with Service Development, Integration Server provides the ability to specify the HTTP methods supported per service. This flexibility is needed to create robust REST APIs. Integration Server now provides a flexible way to define resource URLs for REST APIs.

- The REST Resource Configuration feature provides options to configure, edit, and delete REST resources for a selected service.
- Software AG Designer now adds Java nature to local service development projects for use when using the Unit Test Framework in local service development.
- webMethods ActiveTransfer now allows you to specify file transfer access rights such as upload, download, and delete for My webMethods (MWS) roles and groups.
- Support for HTTP based outbound transfers is now available in webMethods Active Transfer, which enables upload and download of files with third party HTTP servers.
- webMethods Active Transfer supports SMB protocol that enables file transfers with remote
- Software AG Digital Event Services (DES) is the new mechanism for event-based integration between Software AG products. This release adds out-of-the-box support for digital events for products such as MashZone NextGen Business Analytics and webMethods Event Persistence. As part of this integration, events can be sent easily from publishing products as digital events using native tools for the products. Subscribing products can listen to these digital events as native events, and can visualize them or take actions based on business logic and rules.
- webMethods Application Platform now allows Application Platform service developers to use an exact set of public APIs, included in the design-time SDK of the Application Platform.
- The Integration Service Wizard is enhanced to support the creation of Application Platform Java Service Skeletons, based on the Integration Server specifications (Integration Server service interface definitions).
- The Data Steward UI in OneData has been enhanced to provide a consolidated hierarchy management view when working with leveled (non-recursive) object hierarchies.
- Terracotta is now available as an additional option for metadata caching when clustering is enabled for OneData.

API Management

webMethods API Gateway is a solution that combines webMethods Enterprise Gateway and webMethods Mediator capabilities in a single product. API Gateway offers the same capabilities within a simplified architecture and removes the dependency on CentraSite for policy definition. Also, for all the functions, API Gateway provides a new, dedicated, web-based user interface to perform API-related tasks, from creating an API, defining a policy, to publishing the API to API Portal.

webMethods API Management enables the deployment and management of APIs for external and internal use. API Management includes design-time developer tools for discovering, learning about, testing and registering for access to APIs, as well as runtime security and policy management to ensure proper and secure access to runtime services.

The key features include:

- API Gateway now supports all OAuth grants: authorization code grant, implicit code grant and client credentials (formerly available in Mediator).
- API Gateway now offers XML Threat protection and JSON Threat protection policies.
- API Portal provides API users the ability to generate and download a client SDK for REST APIs.
- API Gateway now features a scoping mechanism that allows users to decide which resource or operations of an API are exposed to API users.

- API definition and configuration screens now allow REST enablement of SOAP APIs.
- API Gateway introduces support for Websockets and allows for defining WebSocket APIs.
- API Portal analytics dashboards have been restructured and enhanced. The dashboards now include a global dashboard, API audit log, user audit log, runtime dashboard, and an API trends dashboard.

webMethods Agile Process

webMethods Agile Process Platform is a unified offering designed to create business applications that are based on orchestrated, managed, and monitored end-to-end business processes or workflows. The offering improves process, speed, visibility, consistency, and agility, while reducing costs and driving standardization across all critical components of effective business operations.

The key features include:

- The ability to leverage the Agile Apps forms metadata and generate a working OpenCAF project with gadgets that you can customize and deploy to the Business Console as a gadget.
- An Agile Apps case can now call a classic BPM process. It is enhanced to provide a list of start documents to initiate the BPM process and a map that you can use to map the case document to the process start document.
- Agile Apps now has a mass view print feature that allows you to print multiple record details of the object as per a document template.
- Agile Apps allows you to digitally sign emails and confirm the authenticity of the sender. Digital signature is available only for on premise customers.
- You can now import AgileApps forms into Business Console, and Rules Management console is available as a customizable gadget in Business console.
- AgileApps is now certified with MySQL v5.7 Enterprise Edition and supports clustering for on-premises installation.
- You can now use Integration Server REST API descriptors to generate user interfaces (UI) for Business Console gadgets using the drag and drop feature in the Software AG Designer UI Development perspective.
- In the context of a process instance in Business Console, all the decision tables used in this process instance are now displayed in a list. When you click a particular decision table in the list, the decision table is displayed directly in Business Console.
- You can now edit the description, missing value strategy, and processing mode of a decision tree in the Rules Management Console and also view the save status of a decision tree.
- Task Engine now supports an out-of-the-box HPTSRA implementation for task searches in Business Console.
- My webMethods Server has improved handling of transient errors when connecting to an LDAP server.
- My webMethods Server can be configured to send push notifications to Business Console users on mobile devices when a task has been assigned or delegated to a user.

Operational Intelligence

Based on a consistent event-driven architecture, Operational Intelligence integrates best-of-breed technologies from existing Software AG products for process and data analytics into a single offering with a novel business-user interface.

The key features include:

- When monitoring UM queues, Optimize can report and alert on the age of messages in the queue, enabling users to detect whether a message has been in the queue for more than a specified amount of time.
- Optimize allows users to monitor DES server in the same way as they monitor event routing.
- Optimize for Infrastructure (the Infrastructure Data Collector) can now be configured via Command Central.
- Command Central enables automation and centralization of configurations, provides a common representation of configuration and simpler navigation, making it possible to compare configurations, and enables easier management of large installations.
- When a user modifies the root context URL of MWS, all Optimize portlets recognize the new root context.
- Optimize (the Analytic Engine and the Web Service Data Collector) can now be configured through Command Central.

Suite Enhancements

The webMethods Suite includes enhancements that improve functionality across multiple products.

The key features include:

- The logs of Platform Manager are streamlined and simplified. The new correlation ID enables you to easily follow the operations in the log and is helpful when tracing the Composite Templates workflow.
- Command Central ensures Integration Server and My webMethods Server instance creation with the latest fixes – when a new instance is created through Command Central web user interface, the user is prompted to apply the latest fixes.
- Command Central can set Java system properties in the Tanuki wrapper configuration as part of a composite template and the Command Central web user interface can be used to view and modify the system properties in the Tanuki wrapper.
- Command Central provides a common LDAP configuration validator that connects to the specified server and checks the LDAP settings against it.
- Command Central can now be used to browse individual messages in durable subscribers in a Universal Messaging server instance, including messages waiting to be received by Integration Server triggers.
- Command Central can now be used to configure realm ACLs for Universal Messaging, allowing you to control which users can perform what actions at the realm level.
- In order to ease the migration of Broker territories and gateways, there is a new utility that can read the gateway configuration from webMethods Broker and automatically establish the same remote joins in Universal Messaging.

- When you install products from Software AG Command Central Bootstrappers using the Software Download Center, Software AG Update Manager is automatically installed in managed installations.
- The footprint of the standalone installation of Software AG Update Manager is drastically reduced and therefore the installation time is significantly reduced.

Contents

For more details about the key additions and enhancements for this release, see the product descriptions.

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For important updates and a list of enhancements and issues that have been addressed since the previous release of each product, see the webMethods product readme files. You can access these documents, as well as all product documentation, from the webMethods area on the [Software AG Documentation website](#).

CentraSite

Reporting Enhancements

CentraSite has a variety of predefined reports. You can now execute predefined runtime reports against the CentraSite Registry Repository (CRR) as the source of data or against an external JDBC-compliant Oracle database. You can also execute custom runtime reports against an external JDBC-compliant database such as DB2, Microsoft SQL Server, Oracle and Sybase.

API Portal Publish Enhancement

CentraSite supports versioning of APIs. When versioning an API, the access tokens associated to the old version of the API are cloned and associated to the new version of the API. Each cloned access token has its own expiration time within the API.

You can now publish the versioned APIs to API Portal. When publishing the old version of the API to API Portal, CentraSite automatically associates and publishes the new version of the API to API Portal.

UDDI Federation

The UDDI-based federation that provides the functionality to federate data between two UDDI v3 compliant registries is removed from the product. There is no replacement for the UDDI federation.

MashZone NextGen Business Analytics

New Data Sources

MashZone NextGen introduces two new data sources for JSON files and Digital Event Services (DES). These data sources can be leveraged to build dashboards based on JSON sources and DES events.

Visualizations Enhancements

Following are the visualization enhancements introduced in 10.0:

- New Dashboard centric landing page has replaced the 'Presto' hub.
- Ability to create a responsive Dashboard has been introduced in MashZone 10.0. Dashboards built in this mode fluidly responds to changes in browser size.
- Other enhancements:

- Ability to open a dashboard on a specific tab and setting a default tab for a dashboard
- New positioning options for chart legends
- Additional threshold coloring options
- Ability to specify different styles per widget within the same dashboard
- Custom Widget tutorial is now available on TechCommunity - <http://techcommunity.softwareag.com/pwiki/-/wiki/Main/Creating%20a%20simple%20custom%20widget>

Other Changes

The URL for MashZone Business Analytics has changed from machine name: *8080/presto* to *8080/mashzone*

Presto Deprecation

- Starting with MashZone NextGen Business Analytics 10.0, the following Presto features have been hidden in the user interface:
 - Wires
 - App Editor
 - Mashables
 - Mashups
 - Mashboards
 - App Depot
- The EMMML editor is now hidden and has been renamed Mashup Editor.

These features can be manually enabled, if required. For details, refer the product documentation.

MashZone NextGen Visual Analytics

MashZone NextGen Visual Analytics 10.0 provides exploratory, ad hoc analysis of streaming and historical data from multiple sources. The product has a particular focus on Internet of Things (IoT) use cases, but the capabilities provided also support other use cases in retail, financial services – anywhere you have large amounts of data in motion. Visual Analytics allows operations analysts, maintenance specialists, researchers, developers, and data scientists to do their job more effectively.

New Capabilities

- Visualization enhancements:
 - Analysis thumbnails
 - Partitioning and pattern highlighting

- Zoom
 - User interface (UI) based auto deployment tweaking
 - Trend lines for historical and streaming data
 - Basic time manipulation of streaming data sources
 - Improved performance and scalability for historical data
-

My webMethods Server

High Performance Task Search Reference Architecture

Task Engine now supports an out-of-the-box HPTSRA implementation for task searches in Business Console.

Improved Handling of Transient Errors

- My webMethods Server needs to maintain static connectivity between an application and an LDAP server. When the connection to the LDAP server is lost, My webMethods Server makes a fixed number of reconnection attempts. The number of reconnection attempts to LDAP is now configurable.
- My webMethods Server provides settings for auto reconnect and minimum pool connections.

Support for push notifications

You can configure My webMethods Server to send push notifications to Business Console users on mobile devices. You can send notifications when a task has been assigned or delegated to a user.

Other Supported Features

- Removal of the internal database JMS provider. My webMethods Server now uses Universal Messaging as a JMS provider.
 - Changing the password as a My webMethods user requires specifying your current password on the My Profile page.
 - Ability to run in Mobile Business Console any Business Console appspace provided for a user (based on the user's credentials) and flagged for mobile devices
-

Software AG Command Central

Simplified Platform Manager Logging

The logs of Platform Manager 10.0 are streamlined and simplified. The new correlation ID enables you to follow operations in the log with ease and is especially helpful when tracing the Composite Templates workflow.

Integration Server/My webMethods Server Instance Creation with the Latest Fixes

When a new product instance is created through the Command Central web user interface, you are prompted to apply the latest fixes available in the installation on this particular instance.

LDAP Configuration Validation

Command Central provides a common LDAP configuration validator. The validator connects to the specified server and checks the LDAP settings against it. The validation is currently applied for the Command Central LDAP configuration.

Java System Properties Configuration in Tanuki Wrapper

- Command Central can set Java system properties in the Tanuki wrapper configuration as part of a composite template.
- You can use the Command Central web user interface to view and modify the system properties in the Tanuki wrapper.

FIX ID Display in Command Central Web User Interface

You can view the Fix ID for fixes at the following sections of Command Central Web User Interface:

- master, mirror and image repositories
- product and fixes installation wizard
- installed fixes inventory

Command Central Adoption

Beginning with release 10.0, you can configure Optimize from Command Central.

Cross-Site-Request-Forgery Prevention

The Command Central web user interface is now protected against cross-site-request-forgery attacks.

Software AG Digital Event Services

Software AG Digital Event Services (DES) is the new mechanism for event-based integration between Software AG products. The 10.0 release adds out-of-the-box support for digital events for more products. As part of this integration, events can be sent easily from publishing products as digital events using native tools for the products. Subscribing products can listen for these digital events as native events, and can visualize them or take actions based on business logic and rules.

New Capabilities

- Adoption by MashZone NextGen Business Analytics

- Adoption by webMethods Event Persistence
 - Monitoring API and integration in webMethods Optimize for Infrastructure
 - A new **any** field type
 - Performance improvements and extended support for reliable communication
-

webMethods API Gateway

Unified Gateway

WebMethods API Gateway is a solution that combines webMethods Enterprise Gateway and webMethods Mediator capabilities in a single product. API Gateway offers the same capabilities within a simplified architecture and removes the dependency on CentraSite for policy definition. Also, for all the functions, API Gateway provides a new, dedicated, web-based user interface to perform API-related tasks, from creating an API, defining a policy, to publishing the API to API Portal.

All the current Mediator and Enterprise Gateway capabilities are available in the API Gateway, except for OData support, JMS support and the following event destinations for events generated by API Gateway: CentraSite, Console Log, Audit log, SNMP, Elasticsearch, EDA/ERF.

API Protection and Security

API Gateway now supports all OAuth grants: authorization code grant, implicit code grant and client credentials (available in Mediator before)

APIs Gateway now offers XML Threat protection and JSON Threat protection policies.

Inbound and outbound web service security (WSS) has been enhanced to:

- Perform outbound routing with WSS without coding.
- Specify custom token assertions for inbound WSS policy.

API Gateway now has capability to perform XML schema validation.

SAML policies now support:

- SAML Inbound:
 - Bearer
 - Holder of Key Symmetric
 - Holder of Key Asymmetric
- SAML Outbound:
 - Sender Vouches (Bearer)
 - Holder of Key Symmetric
 - The SAML token is fetched in all the scenarios using custom WSS User name and Kerberos credentials.
 - An option to define a custom issuer policy.
- Kerberos:
 - Inbound, Outbound, Delegation

- Host-based and User-based SPN

API Scoping

API Gateway now features a scoping mechanism that allows:

- Deciding which resource or operations of an API are exposed to API users.
- Defining and enforcing policies on API resource and method level.
- Grouping resources and operations into logical groups called scopes and then defining and enforcing policies on these scopes.

Policies

API providers can now define Global Policies, which are logical groups of policies that are dynamically enforced on API conforming to global policy filter criteria. These filter criteria allows selecting API Type, HTTP method (for REST APIs only), and specifying a text-based filter for API Name, API description, and API version.

API Gateway features a concept of Policy Templates, which are pre-defined configurations of one or more policies. Such templates simplify the process of applying a policy to multiple APIs that require complex configuration.

API Gateway can cache API responses. This policy is configured for each API independently. It allows you to specify criteria that have to be met for results to be cached. These criteria include HTTP header values and query parameter values. API Providers can also set up a time-to-live to cache results and maximum payload size to be cached. This policy can be a part of global policies and policy templates.

API Definition and Configuration

API definition and configuration screens now allow REST enablement of SOAP APIs. API Providers can define a REST resource structure and map it to existing SOAP operations. API Providers can also configure and map input parameters between the REST and SOAP APIs and provide request or response schema definitions with samples.

API Versioning function allows creating versions of existing APIs. Multiple versions may exist at the same time. Additionally each API and each version might have a maturity status defined according to pre-defined but configurable list of states.

API publish and re-publish function has been enhanced to allow selecting the available API endpoints that have to be published or re-published to the available API Portal communities selected.

API Gateway provides capability of updating an existing API by importing a file or from URL similar to functions available for creating an API.

API Gateway now automatically generates API specifications and makes them available in API Details page. For REST APIs, Swagger and RAML descriptors are generated. For SOAP APIs, WSDL is generated.

API Providers can select the APIs for a bulk export, which creates an archive file that includes API and policies definitions, and, optionally, applications associated with the selected APIs. This archive file can be imported to another instance of API Gateway.

API Policies tab is revamped to provide greater visibility into available and applied policies and support the new concepts of global policies, policy templates and scopes.

Protocol Support

This version of API Gateway introduces support for Websocket and allows for defining Websocket APIs.

The functionalities supported are:

- WS protocol support
 - API Key protection for connection establishment
 - Client message transformation through webMethods Integration Server service invocation
 - Server message transformation through webMethods Integration Server service invocation
 - Log invocation of both Client and Server messages: API Gateway destination
 - Throttling: Concurrent connection establishment restriction
-

webMethods AgileApps

Mass View Print

The mass view print feature allows you to print multiple record details of the object as per a document template.

Digital Signature

The digital signature feature allows you to digitally sign the email and confirms the authenticity of the sender. Digital signature is available only for on-premises customers.

Error Notification Framework for Forms

Error messages appear at the mandatory fields when the information is missing.

Task Ownership Settings

When the record owner is changed, changes in the ownership of open tasks or incomplete tasks can be assigned to the new record owner.

MySQL v5.7 Enterprise Edition and Clustering Certification

AgileApps is now certified with MySQL v5.7 Enterprise Edition and supports Clustering for on-premises installation.

Improved Job Scheduling

The scheduling of scheduled jobs has been enhanced so that the job type is equally prioritized such that long running jobs do not stall or delay short running jobs.

Tomcat8 and Microsoft Edge Browser Certification

Tomcat 8 is now certified with the AgileApps Cloud platform. AgileApps Cloud platform now supports Microsoft Edge. But, the process modeling functionality is not supported on Microsoft Edge.

webMethods Agile Process

Access to the Agile Apps user interface in Designer to extend and customize it:

You can leverage the Agile Apps forms metadata and generate a working OpenCAF project with gadgets that you can customize and deploy to the Business Console as a gadget.

Supported Features:

- An Agile Apps case can now call a classic BPM process and provides the following:
 - a list of start documents to initiate the BPM process
 - a map that you use to map the case document to the process start document
 - update of the case status with the correct process execution status
 - Renamed **tasks** to **activities** and **processes** to **workflows** in Agile Apps.
 - Robust error handling of communication between case and process.
 - Support for client-side queueing in Agile Apps.
-

webMethods API Portal

API Documentation

API Portal allows API users to generate and download a client SDK for REST APIs. The following languages are supported for generating client SDK: Akka-Scala, Android, ASP.NET5, Async-Scala, Clojure, Cwiki, C#, Csharpdotnet2, C++ Rest, Dart, Flash, Python-Flask, Go, Go-Server, Groovy, Haskell, Java, Jaxrs, Jaxrs-Cxf, Jaxrs-Resteasy, Jaxrs-Spec, Inflector, Javascript, Javascript-Closure-Angular, JMeter, Lumen, Nancyfx, Nodejs-Server, Objective C, Perl, Php, Python, Qt5cpp, Ruby, Scala, Scalatra, Silex-Php, Sinatra, Rails5, Slim, Spring, Dynamic-Html, Html, Html2, Swagger, Swagger-Yaml, Swift, Tizen, Typescript-Angular2, Typescript-Angular, Typescript-Node, Typescript-Fetch.

API resource listing on API details page is aligned with resource display of API Gateway.

API Gallery now shows if an API is versioned and the API details page allows easy switching between versions. Multiple versions of the same API can exist at the same time in API Portal but access request can be done only for the most recent version.

API Portal Analytics

API Portal analytics dashboards have been restructured and enhanced and, now include:

- Global dashboard: for general API Portal usage statistics
- API audit log: for API-related Portal activity numbers
- User audit log: for user-related Portal activity numbers
- Runtime dashboard: for runtime statistics of APIs
- API trends dashboard: for runtime trend statistics of APIs
- Consumer dashboard: for statistics related to APIs consumed by API Portal user

API Portal Customization

API Portal customization now allows adding an arbitrary page and linking it to the top menu on the home page.

API Portal Integration

API Portal user interface now allows specifying the API Provider when API is imported directly to the Portal.

webMethods Application Platform

Application Platform SDK

webMethods Application Platform now allows Application Platform service developers to use an exact set of public APIs, included in the design-time SDK of the Application Platform.

Document-Type-First Design Pattern

webMethods Application Platform supports the creation of Java POJOs from Integration Server document types, and reuse of document type POJOs in Application Platform Java Services.

Application Platform Java Service Skeleton from Integration Server Specification

The Integration Service Wizard is enhanced to support the creation of Application Platform Java Service Skeletons, based on Integration Server specifications (Integration Server service interface definitions).

webMethods ActiveTransfer Server

Role-Based Access

webMethods ActiveTransfer now allows you to specify file transfer access rights such as upload, download, and delete for My webMethods (MWS) roles and groups. If My webMethods Server is configured to use the roles and groups from an external system (for example, LDAP), ActiveTransfer offers the ability to use the My webMethods Server roles or groups as well. In addition, you can define general server settings such as throttling, encryption, decryption, acceleration, and login threshold directly at the role or group level.

SMB Protocol Support

ActiveTransfer now supports Server Message Block (SMB) protocol. This protocol allows ActiveTransfer to read, create, and update files on a network file share or a remote server that supports SMB. You can use the SMB protocol while defining a virtual folder or an event action.

HTTP(S) Support for Outbound Transfers

ActiveTransfer now provides the ability to connect with third-party HTTP(S) servers to either upload or download files. For large file transfers, ActiveTransfer also supports streaming (chunking) of file data to remote servers and the ability to resume file transfers from the point of interruption.

webMethods ApplinX

Better Transition from Development to Test and Production Environments

A new option is provided in the Import Entities wizard. You can now import an application without its connection information sets.

Enhanced Search Options in Software AG Designer

In the earlier ApplinX versions, you could search for entity names and referring entities, but it was not possible to search inside the entities themselves. Starting 10.0, you can search for the following components of each entity: screens and screen groups; session data and date structure; path and flow procedures.

Support of Visual Studio Version 2012 and 2015

ApplinX now supports Visual Studio versions 2012 and 2015. For now, Visual Studio versions 2008 and 2010 supported, but support for these older versions will be dropped from next release.

webMethods BPMS

Business Console

The following capabilities are introduced in Business Console:

- Import AgileApps forms into the Business Console gadgets.
- Use Integration Server REST API descriptors to generate user interface (UI) for the Business Console gadgets using the drag and drop feature in the Software AG Designer UI Development perspective.
- Access AppSpaces as a standalone application using the <http://localhost:8585/appspaces> URL.
- Mobile Business Console features include:

- Access AppSpaces that are enabled with mobile view using Mobile Business Console.
- Send offline updates to tasks.
- Trigger Mobile Task notifications when a task is accepted or delegated.
- View AgileApps cases using Mobile Business Console.

Process Engine

- MySQL support for Process Engine
-

webMethods Broker

webMethods Broker 9.6 is tested and supported with webMethods 10.0.

webMethods Business Rules

Display of Business Rules Decision Tables in Business Console

In the context of a process instance in Business Console, all the Decision Tables used in this process instance are now displayed in a list. When you click a particular Decision Table in the list, the Decision Table is displayed directly in Business Console.

Enhancements in the Rules Management Console

You can now edit the description, missing value strategy, and processing mode of a Decision Tree in the Rules Management Console.

While editing, the Rules Management Console now displays the save status of a Decision Tree.

Enhancements in Designer

Designer allows you to edit the in effect dates of Decision Tables.

Enhancements of the Business Rules Public REST API

The Public REST API now respects functional and access privileges defined in the My webMethods Server.

Additionally, a new service to get the decision tables is also available.

Enhancements to Design Time Auditing

Design time auditing events can now be routed to Event Persistence with Command Central.

webMethods Integration Server

Support for Mapping Service

In conjunction with Service Development, Integration Server supports mapping as a first-class citizen. The new mapping service allows developers to build all of the mapping logic including links, assigning values, inserting data transformation logic, in a single, re-usable entity.

Support for HTTP Patch Verb for REST Resources

Integration Server offers support for HTTP PATCH method, which is used for partial updates. In Service Development, a developer can specify PATCH support when defining REST resources, Integration Server also supports the PATCH methods in the *pub.client:http* service as well as with CORS (Cross Origin Resource Sharing) requests.

Support for Defining Custom REST Resource URLs

Integration Server provides a flexible way to define resource URLs for REST APIs. The new capability allows a developer to define a URL format for the service that does not adhere to the folder structure within the package. Additionally, you can define multiple REST resources for a single service with the HTTP methods of your choice.

Enhanced Support for Retrieving and Setting HTTP Headers

In conjunction with Service Development, Integration Server provides the ability to get and set HTTP request and response headers easily. This is accomplished by introducing variables for HTTP request and response headers that reference built-in document types provided by Integration Server. Integration Server affords unique handling to these variables to allow easy retrieval of HTTP request heads and simplified creation of HTTP response headers.

Enhancement to Configure Allowed HTTP Methods per Service

In conjunction with Service Development, Integration Server provides the ability to specify the HTTP methods supported per service. This flexibility is needed to create robust REST APIs.

Support for Session Caching with JMS Transactions

Integration Server supports session caching on transacted JMS connections with Universal Messaging 10.0 and WebSphere MQ 7.5.

Certification for WebSphere Application Server 8.5 as a JMS provider

Integration Server is now certified to work with WebSphere Application Server 8.5 as a JMS provider.

Security Enhancement for Securing Session IDs in Logs

Session IDs in the session and server logs can now be secured by making the ID. When you enable the option for securing Session IDs, Integration Server uses the asterisk (*) character to

mask the Session ID strings in the logs. Therefore, no user accessing the log entries can view the actual Session IDs.

Support for Reconfiguring JDBC pools in Offline Mode

In conjunction with Command Central, Integration Server makes it possible for administrators to change the configuration of JDBC pools when Integration Server is offline.

Enhancements for Setting Web Service Endpoints in WSDL Documents

In conjunction with Service Development, Integration Server provides the ability to set a default provider alias. This allows the soap address in a WSDL for a provider web service descriptor to reflect a load balancer URL. This is particularly useful when multiple Integration Servers are behind a load balancer.

Improvement for Managing File-Based Audit Logs

For file-based audit logs, Integration Server provides the ability to specify the size at which Integration Server rotates the log file and to limit the number of log files kept by Integration Server

webMethods OneData

Enhanced Data Steward User Interface

The user interface is enhanced to provide a new consolidated hierarchy view when working with leveled (non-recursive) object hierarchies. This configurable view allows users to navigate the hierarchy using a tree-like list while viewing the full hierarchy data in the data grid. The hierarchy data is also rendered in hierarchy.

Additionally, the user interface now includes an improved application-wide search to:

- Allow users to set a higher weightage for the description column than other columns so that the relevant search from the description column show up at the top of the results in both the autocomplete suggestions and the search results in the display grid.
- Display the reason for any particular search result.

Application Infrastructure Improvements

The following improvements are introduced to the OneData infrastructure:

- Cross-site scripting (XSS) protection covers the hooks module.
- OneData specifies necessary backward compatibility settings for the metadata, work area, and release area database schemas out-of-the-box. These settings enable the use of the default database drivers at all times.
- Terracotta is now available as an additional option for metadata caching when clustering is enabled for OneData.
- Single sign-on is now possible using Security Assertion Markup Language (SAML).

Data Interchange Enhancements

Data interchange now includes the following enhancements:

- REST APIs provide more filtering options when reading data from OneData. The additional filter operators now supported are: =, !=, <, <=, >, >=, LIKE, NOT_LIKE/NOT LIKE, IN, NOT_IN / NOT IN, IS_NULL/IS NULL, IS_NOT_NULL/IS NOT NULL.
- Explicit interchange mapping for data load using REST APIs supports JSON as payload format.
- OneData can generate a Swagger-compliant file listing and specification of the REST APIs available on top of user-created objects in OneData.

Data Quality Enhancements

The following improvements are introduced to Data Quality processing:

- Users can now compose a data quality project can for cleansing without the need to specify matchers as well.
- OneData installation now includes a Swagger-compliant file listing and specification of the public OneData REST APIs.

webMethods Optimize for Infrastructure

Stale Message Detection on Universal Messaging Queues

When monitoring UM queues, Optimize can report on and alert on the age of messages in the queue, enabling users to detect whether a message has been in a queue for more than a specified amount of time.

Monitor DES Server

Monitor DES server in the same way we are able to monitor event routing today. Following components are supported.

- DES Server
- DES Event type Info
- DES In memory Queue
- DES On disk Queue
- DES IP Service
- DES UM Service
- DES Subscriber

Command Central Configuration

Optimize for Infrastructure (the Infrastructure Data Collector) can now be configured via Command Central. Available configurations include:

- Endpoints

- JNDI
- Collector Settings
- Adabas SOA Gateway Settings
- Apama Settings
- Complete Settings
- Digital Event Services Settings
- ETS Settings
- EntireX Settings
- Event Routing Framework Settings
- Integration Server Settings
- Mashzone NexGen Settings
- My webMethods Server Settings
- Presto Settings
- Terracotta Settings
- Universal Messaging Server Settings
- Universal Messaging Cluster Settings
- webMethods Broker Settings

Command Central enables automation and centralization of configurations, provides a common representation of configuration and simpler navigation, making it possible to compare configurations, and enables easier management of large installations.

webMethods Optimize for Process

MWS Root Context Change Support

When a user modifies the root context URL of MWS, all Optimize portlets recognize the new root context.

User Accessibility

To comply with 508 accessibility guidelines, Optimize provides you descriptive frame titles. This allows third party screen readers to understand the content of the page.

Command Central Configuration

Optimize (the Analytic Engine and the Web Service Data Collector) can now be configured through Command Central. Available configurations include:

- Clustering
- Databases
- Email

- Endpoints
- Functional Aliases
- JNDI
- Logging
- Properties

Command Central enables automation and centralization of configurations, provides a common representation of configuration and simpler navigation, making it possible to compare configurations, and enables easier management of large installations.

webMethods Process Performance Manager

Improved User Interface

A new custom widget visualizes function flows in MashZone NextGen Business Analytics dashboards. This custom widget also allows an interactive filtering of less relevant paths (such as, based on the process/transition frequency) in the function flow. In addition, single sign-on for PPM data sources in the embedded MashZone NextGen Business Analytics dashboards is available.

A transport is now available that provides an easy way to include the necessary configuration of the "function follows" relation, which is required for the function flow in running systems. In the course of providing the function flow, the organizational analysis has been renamed to interaction analysis.

The process visualization in PPM is improved by introducing a modernized color scheme. In addition, the visualization emphasizes stronger the actual process flow.

Close Integration with ARIS Aware

In ARIS Aware, the function flow widget and PPM as a data source is natively supported. This allows you to create integrated dashboards providing process performance information (such as Key Performance Indicators and actual sequences of process executions) from PPM in relation to modeled-to-be processes in ARIS. In ARIS Aware, single sign-on for PPM data sources in the embedded dashboards is available.

Renaming of Process Types

Process types can now be renamed without impacting existing favorites.

Ad-hoc Reports

Based on charts and analyses placed in clipboard, ad-hoc reports can be created.

Support for BLOB Data Type

In Oracle 12, BLOB, in contrast to LONG RAW, can be used to store binary data.

webMethods Service Development

Mapping as a Service

In conjunction with Integration Server, Service Development supports mapping as a service. This new mapping service allows you to build the entire mapping logic such as links, assigning values, inserting data transformation logic, in a single, re-usable entity.

Rest Resource Configuration

The REST Resource Configuration feature provides you with options to configure, edit, and delete REST resources for a selected service.

Support for Java Nature for Local Service Development Projects

webMethods Designer now adds Java nature to local service development projects. This is necessary when using Unit Test Framework in local service development.

Support Subversion 1.9 with Local Service Development

webMethods Designer local service development now supports subversion 1.9.

ForEach Debugging

Designer now allows you to debug a ForEach mapping.

webMethods Universal Messaging

Browsing durable subscribers using Command Central

Command Central can now be used to browse individual messages in durable subscribers in a Universal Messaging server instance, including messages waiting to be received by Integration Server triggers. You can view the size of individual messages and some properties of each message. You can also view the payload of string messages. All or individual messages can be deleted from the durable subscriber (for some durable subscriber types).

New and Enhanced Command Central Capabilities

Command Central can now be used to configure realm ACLs for Universal Messaging, allowing you to control which users can perform what actions at the realm level. You can also use Command Central to configure Java system properties for Universal Messaging. For Universal Messaging clusters, Command Central now displays whether each running instance is a master or slave in the cluster.

These capabilities can be accessed using the Command Central web user interface, command-line interface, REST API, and composite templates.

Migration of webMethods Broker Gateway Configurations

For webMethods Broker users who have configured territories and gateways and have large numbers of document types (topics) configured in the gateway connections, migrating these to equivalent remote joins in Universal Messaging previously involved a lot of manual effort. Now, you can use a new utility that can read the gateway configuration from webMethods Broker and automatically establish the same remote joins in Universal Messaging.

Bypassing Low-Memory Throttling

A client session can request to bypass the existing server-side low-memory throttling. This is intended to allow administrators or administrative services to continue to be able to connect in order to resolve the low-memory situation.

Storing JNDI Assets

Users who wish to use a JNDI provider for binding JNDI assets such as Connection Factories and Destinations can now store their Universal Messaging JNDI assets in a JNDI provider of their choice. This capability is only available through the respective API.

Cluster Side-By-Side Upgrades to New Machines

You can now use a migration utility to migrate cluster configurations to machines that are on different hosts from the original cluster.

Shared Durables Re-Architected

The implementation of shared durables is re-written to improve efficiency. The new implementation performs tracking of durable objects in-place on the channel, rather than relying on additional internal stores. This approach saves memory and reduces the complexity of the solution, improving robustness. A new API has been developed to manage durable objects through the Universal Messaging native API. The Universal Messaging JMS library has also been updated to utilize the new durable implementation.

Simplified Configuration in Enterprise Manager

Enterprise Manager hides a number of configuration settings behind an **Advanced** button. These hidden settings are ones that are rarely recommended to be modified.

New API Usage Tools

Tools are provided that allow management of data groups and illustrate how to use publish and subscribe.

Improved Out-of-the-box Configuration

The default configuration for new installations has been reviewed and tested to ensure Universal Messaging is robust.

Named Object IDs

Named objects IDs are now a concatenation of the client ID and the durable subscriber ID. Previously Universal Messaging just used the durable subscriber ID provided by the client.

webMethods Update Manager

Installation Changes

Software AG Update Manager 10.0 will not be delivered through the Software AG Installer. You can install it through a standalone download from the Software Download Center. It is accessible by all customers with a valid SDC credentials.

Changes for 10.0:

- When you install products from Software AG Command Central Bootstrappers using the Software Download Center, Software AG Update Manager is automatically installed in managed installations.
 - The footprint of the standalone installation of Software AG Update Manager is drastically reduced and hence, the installation time is significantly reduced.
 - Software AG Update Manager 9.8 no longer works with the webMethods Suite 10.0 and higher. If you have an existing Software AG Update Manager that you installed before April 2015, and you are upgrading to a version between 9.8 and 9.12, you should uninstall the existing Software AG Update Manager 8.2.
 - The default installation path is different than the Software AG suite installation path.
 - Software AG Update Manager will no longer share a Java runtime with the Software AG suite, even if installed inside the same folder as it has its own JRE.
 - Software AG Update Manager 10.0 is self-updating whereby the SUM infrastructure components – Java runtime, SUMLauncher, and OSGI are updated automatically.
-

Documentation

CentraSite

Beginning with version 10.0, the old CentraSite documentation set has been replaced with the following PDF deliverables on the Documentation website:

- CentraSite Administrator's Guide - This guide describes the various configurations required for the proper functioning of CentraSite and the administration-level tasks that you can perform in the CentraSite environment.
- CentraSite User's Guide - This guide describes how to use CentraSite once it is installed and configured in your environment. It describes various CentraSite features and how these features can be used.

CentraSite Developer's Guide - This guide describes how you can use programming interfaces to access and modify the CentraSite Registry Repository. Additionally, it describes how you can customize the CentraSite graphical user interfaces to suit the requirements or standards of your organization.

Upgrade

Automation of More Steps for Active Transfer

In previous releases, ActiveTransfer upgrade required you to perform manual steps to copy keystore files and update keystore file paths. In this release, this step is automated on the Integration Server migration utility.

Decrease in API Portal Fix Sizes

The size of API Portal fixes have been reduced by more than half, improving the speed with which you can install fixes during an upgrade.

Command Central Support for Application Platform Upgrade/Migration

You can now upgrade/migrate Application Platform from Command Central.

Automation of Digital Event Services Migration

You can now upgrade/migrate Optimize infrastructure Data Collector from Command Central.

Command Central support for Optimize Infrastructure Data Collector Upgrade/Migration

You can now upgrade/migrate Optimize infrastructure Data Collector from Command Central.

Automation, Test, and Documentation of Universal Messaging Cluster Upgrade Process

Previously, significant manual intervention was necessary to get a migrated Universal Messaging cluster running, especially if the new cluster is on different machines than the old cluster, and the migration steps were not documented. With this release, Universal Messaging cluster migrated has been automated, tested, and documented (see *Upgrading Software AG Products*).

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webMethods Product Suite 10.1

Release Notes

Software AG's Digital Business Platform powers digital transformation and enables any organization to become a Digital Enterprise. And the webMethods Product Suite, a core component of the Digital Business Platform, helps you achieve this transformation.

webMethods Product Suite includes a broad collection of capabilities including application and partner integration, API management, agile process development, master data management, and operational intelligence. With webMethods, you have an extensible, scalable and reliable backbone - running either in the cloud, on-premises or in hybrid scenarios – providing seamless integration for cloud, mobile, APIs, and Internet of Things, and streamlining process management and agile application development.

Release 10.1 of the webMethods Product Suite provides significant enhancements in every functional area of the suite.

Release Highlights

Integration

Software AG's webMethods Integration Platform is a proven, pre-integrated software suite that enables enterprises to rapidly integrate systems, services, devices, processes, business partners, and data to provide new business value and improve business performance.

The key features include:

- Integration Server, in conjunction with webMethods Designer, supports the ability to read a Swagger specification and automatically generate a REST API descriptor as per the specification. Integration Server creates flow services, document types, and REST V2 resources in which each resource operation lists a defined URL template, the supported HTTP methods, and an associated flow service. A REST API descriptor created from a Swagger document can be refreshed using an updated Swagger document.
- Integration Server provides support for an updated REST resource called REST v2. The REST v2 resource enables developers to define the REST resource and flexible resource URLs.
- Integration Server OAuth 2.0 provider now supports the OAuth 2.0 Introspection specification. Integration Server provides the ability for the resource server to query the webMethods Integration Server OAuth 2.0 authorization provider to determine the active state of the OAuth token issued by the provider.
- Integration Server now allows developers to intercept raw HTTP transport inputs and outputs for a particular service. Integration Server provides a registration framework to register a Java class that can process the intercepted input and output documents. The Java interceptor class can then accept or reject the request.
- Integration Server now provides the ability to authorize OAuth token issues by third-party identity providers Ping Identity and Okta using the OAuth 2.0 Introspection. webMethods ActiveTransfer Server now supports the deployment of ActiveTransfer assets including server configurations, virtual folders, scheduled events, and post-processing events using webMethods Deployer.

- webMethods Active Transfer Server now provides the ability to specify decryption and encryption settings at the Virtual file system level. This enables both decryption and encryption to be performed as part of a single file stream.
- ActiveTransfer Gateway now enables virus scanning for all file uploads. This is supported through integration with a third-party virus scanning tool using the ICAP protocol.
- The Data Steward User Interface in OneData has been enhanced to provide support for browsing as well as data management actions for Data Objects. The new browsing capability includes the standard features of basic filtering, sorting and pagination.
- The Data Interchange capabilities in OneData have been enhanced to enable connectivity with Big Data sources such as Hadoop, in order to send and receive master data.
- The Unit Test Framework now has better integration with Integration Server. This enhancement provides the ability to create unit tests from the run/debug view and out-of-the-box automation to execute Jenkins tasks.
- The CloudStreams Connector Development Plugin for REST has been completely redesigned for better ease-of-use, and to provide additional features. Additionally, it supports quick connector creation from Swagger definitions. The CloudStreams Connector Development Plugin for SOAP has also been redesigned, and a beta version is available with this release.
- CloudStreams Server now allows connector developers to define the operations and resources that can work with multiple operations and multiple business objects within a single web service (SOAP/REST) call.
- CloudStreams server now supports the deployment of cloud connector services, connections and configurations such as Consumer, Database Settings, OAuth tokens, Streaming Providers, and Streaming Subscribers using webMethods Deployer.
- The new Terracotta DB Adapter enables simple point and click functionality to expose data from Terracotta DB, and also provides wizard-driven, code-free development of data services.
- A new and enhanced version of Integration Server Content Adapters has been released, including adapters for Documentum, FileNet, SharePoint, Alfresco, and CMIS. Enhanced Content Adapters and enhancements to the HDFS and HBASE Adapters are also available now.
- New connectors for many SaaS applications are now available for download on the Software AG TECHCommunity website.

API Management

Software AG's webMethods API Portal provides a comprehensive solution that allows the developer community to find, learn about, discuss and test your APIs. This API portal not only exposes API documentation to developers inside and outside of your organization but also manages the developer on-boarding process and lets developers use exposed APIs for new and creative uses.

webMethods API Gateway enables you to securely expose your APIs to third-party developers, partners and other consumers for use in web, mobile and Internet of Things (IoT) applications. With webMethods API Gateway you can easily create APIs, define Service Level Agreement (SLA) policies, and seamlessly publish your APIs to webMethods API Portal. webMethods API Gateway provides enhanced API monetization features, including defining and managing API plans and packages, for easily supporting API subscriptions and charge-back services.

The key features include:

- API Gateway now supports the promotion of assets across different environments (such as, DEV, TEST, STAGE, and PROD). Additionally, API Gateway enables continuous integration (CI) and continuous delivery (CD) practices to be used for development, deployment, and promotion of APIs, applications and other related assets in support of DevOps tooling.
- API Gateway now offers the ability to integrate with any OAuth2 Authorization servers including Ping Identity and Okta.
- API providers can now integrate API Gateway with any OpenId providers for authentication of both REST and SOAP APIs. JWT tokens that are generated from an OpenID Connect IdP can be validated by API Gateway and can also be used for application identification.
- API Gateway now supports Digital Event Services (DES), Email, SNMP, CentraSite, Elastic Search, Local Log, and Audit Log as additional destinations for sending the API run-time events and Key Performance Indicator (KPI) metrics.
- API Gateway now supports JSON Web Token (JWT) authentication for both REST and SOAP APIs.
- All content published to API Portal are now searchable.
- The API try-out page now allows testing of APIs protected with OAuth.
- Administrators can now set up API Portal to require a one-time password in addition to basic authentication.
- API Portal can now run inside Docker containers.
- API Portal now supports an application marketplace where API users can upload, describe and promote applications built using APIs published in the API Portal.
- The CentraSite Business User Interface has been extended to allow LDAP user synchronization (individual users) and the synchronization of consumer applications data.

webMethods Dynamic Apps

Software AG's Digital Business platform capabilities includes all the capabilities required for Dynamic Process Automation, and enables the development of *next gen* digital apps that enhance your user experience, improve operational efficiencies, and extend your business. webMethods Dynamic Apps allows you to build apps on the fly, embrace Citizen Developers from the business-side of the house and, when your needs change, use the same platform to scale and build more complex apps as part of your overall digital transformation initiatives.

The key features include:

- Adoption of webMethods Business Console AppSpaces and OpenUI gadgets in webMethods Mobile Business Console.
- Modularized My webMethods Server: server provides the option to install the portal and business administration user interface separately.
- webMethods Event Persistence (EVP) has been renamed to Digital Event Persistence to reflect its focus on support for DES (Digital Event Services) events, and now provides a persistence framework for the Digital Business Platform.
- A new JDBC-compliant driver is available which provides a query API. With this driver, users can now leverage standard JDBC queries to easily connect to the event persistence store and retrieve events.
- A new Business Rules action type called Predictive Analytics Action, provides integration with Software AG Predictive Analytics. Predictive Analytics can now be used in decision tables and decision trees as a condition or result.

- Users can now speed up the hot deployment of large rules projects by utilizing the new option to disable the verification of a rules project when hot deploying it from the My webMethods Server to Integration Server. Mobile Suite 10.1 introduces a new visual outline preview, giving developers instant visual feedback about the view or template being modeled. This ability provides an improvement to support a what you see is what you get type of modelling experience.
- The new visual icon editor allows easy setup of icons and splash screens within the project. A new editor has been added to greatly improve the creation and management of image assets. Assets can be used from an integrated library or defined from SVG, customized and optimized for all platforms.

Operational Intelligence

Based on a consistent event-driven architecture, Operational Intelligence integrates best-of-breed technologies from existing Software AG products for process and data analytics into a single offering with a novel business-user interface.

The key features include:

- Optimize for Infrastructure now has a KPI and a rule for monitoring long-running threads, reducing the risk of costly outages due to services running longer than expected.
- Users can now leverage Java Management Extensions (JMX) to monitor applications, system objects, devices and more with the new JMX monitoring capability.
- Optimize for Infrastructure (the Infrastructure Data Collector) now has a Command Central template which is preconfigured with all Optimize for Infrastructure defaults. This template is available for Command Central-based installations, and can easily be edited and customized for individual installations.
- Optimize for Process users now have more flexibility in configuring email alerts. Alert emails can display not only the email of the addressee, but the email addresses of others who are on the same notification. All users can then coordinate a response to the alert.
- In addition to core MashZone NextGen features, this release also introduces the MashZone PPM edition for process analytics.
- MashZone NextGen 10.1 introduces a new data source that can be used to build dashboards based on data that is stored within Terracotta DB.
- MashZone NextGen Explorer Add-on 10.1 provides exploratory, ad hoc analysis of streaming and historical data from multiple sources. The product supports Internet of Things (IoT) use cases, as well as additional use cases in retail, financial services or anywhere you have large amounts of data in motion.

Suite Enhancements

The webMethods Suite includes enhancements that improve functionality across multiple products.

The key features include:

- Composite template validation is now supported with Command Central. To ease the development of composite templates, template is now validated at the beginning of each template application.
- Product configuration can now be exported as a composite template snippet in Command Central. Combining those snippets can ease the development of the custom product configurations.

- Alongside the old jobs view, Command Central has a new view that can better show the dependencies between jobs, in cases of a composite template execution, and can provide better job details.
- Command Central now provides repository-based asset deployment capabilities.
- A new public interface has been added in Universal Messaging to for committing and rolling back events.
- Universal Messaging now supports pause publishing, which allows all publishing of all clients publishing to the server to be paused across channels, queues and data groups, without affecting the administration API, inter-cluster communication or joins.
- Serial durable subscriptions in Universal Messaging are now supported in the client API for Java, as well as in an extension to the API for JMS.
- Serial and shared durable subscriptions in Universal Messaging are also now supported in the client API for C#, which provides new public methods for interaction.
- Software AG Designer and its plugins are supported on Eclipse version 4.6.3.
- When migrating silently, the Integration Server migration utility now lets you specify new names for migrated instances in the migration utility command.
- When you install products from Software AG Command Central Bootstrappers using the Software Download Center, Software AG Update Manager is now automatically installed in managed installations.
- The installation time and footprint of the standalone installation of Software AG Update Manager is drastically reduced

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For more details about the key additions and enhancements for this release, see the product descriptions.

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For important updates and a list of enhancements and issues that have been addressed since the previous release of each product, see the webMethods product readme files. You can access these documents, as well as all product documentation, from the webMethods area on the [Software AG Documentation website](#).

CentraSite

CentraSite Business User Interface

CentraSite Business User Interface has been extended to allow:

- Synchronization of individual LDAP users
- Synchronization of consumer applications data
- Management of asset types

Command Line Interface

CentraSite Command line utility has been enhanced to allow:

- Management of design-time policy actions
- Synchronization of LDAP users through LDAP groups

Reports

Predefined reports can now work on aggregated run-time data that queries large databases and provides faster access to frequently-accessed data and queries, and helps generate reports at a much faster speed.

MashZone NextGen

MashZone NextGen has the following new feature and enhancements. In addition to core MashZone NextGen features, this release also introduces MashZone PPM edition for process analytics.

New Data Source

MashZone NextGen 10.1 introduces a new data source for Terracotta DB. This data source can be leveraged to build dashboards based on data stored within Terracotta DB.

Visualizations Enhancements

Following are the visualization enhancements introduced in 10.1:

- It is now possible to have multiple y-axis in bar and line charts. Improvements to chart legends.
- A new method of filtering between Dashboard tabs has been introduced for both fixed and smart (responsive) dashboards
- A new Action Button has been added allowing a button to be placed on a Dashboard that can trigger an action (change tab, set selection, call URL, Post data, Send Apama Event).
- A new operator has been added to Data Feeds that allow RAQL Statements (a SQL like dialect) to be used directly against any and multiple data sources.
- It is now possible to generate Apama events and send these to an Apama correlator for further processing.
- A new Post Data API has been introduced that allows MashZone NextGen dashboards to bi-directionally communicate with other iframes when MashZone NextGen is embedded within another application. An example WebMethods Business Console Gadget is included within the WebMethods 10.1 release.
- Additional changes including file browsing for file based data sources, improved SQL highlighting for SQL based data sources, and re-use a widget data assignment in a full data feed has been introduced.

Other Changes

- MashZone NextGen has been migrated from Apache Tomee to Apache Tomcat to allow faster security updates to be deployed.
- Universal Messaging (previously used internally in MashZone NextGen) has been removed and replaced by websocket communication. MashZone NextGen no longer requires the UM port 9009 to be open on the MashZone NextGen server firewall.

- Security improvements include ACLs on aliases (File resources, JDBC, PPM, EDA/DES/Apama, URL)
 - MashZone NextGen is now certified for Microsoft Edge browser and Microsoft SQL Server 2016.
 - MashZone NextGen now support the following functions in Command Central - installation, product fixes, lifecycle (start, stop), logs, KPI's, and configuration.
-

MashZone NextGen Explorer Add-on

MashZone NextGen Explorer Add-on 10.1 provides exploratory, ad hoc analysis of streaming and historical data from multiple sources. The product has a particular focus on Internet of Things (IoT) use cases, but the capabilities provided also support other use cases in retail, financial services – anywhere you have large amounts of data in motion. Explorer allows operations analysts, maintenance specialists, developers, and data scientists to do their job more effectively.

New Capabilities

- The ability to publish an Explorer analysis to a MashZone NextGen dashboard (data-at-rest sources only) for further sharing of insights.
 - Automatic recommendation of appropriate visualization type based on selected dimensions and measures.
 - Line approximation for large datasets.
 - Digital Event Services' (DES) Integration - A new streaming architecture now supports DES streaming data sources and enables advanced time manipulation capabilities, allowing users to play/pause live data streams, jump back in time to replay certain observations, fast forward and even slow down live streams.
 - Simplified start mode for Apache Spark with `—embeddedSpark` flag.
 - Explorer Add-On uses common MashZone NextGen identity management system and supports single sign on (SSO).
-

My webMethods Server

My webMethods Server has the following new feature and enhancements:

- Adoption of webMethods Business Console AppSpaces and OpenUI gadgets in webMethods Mobile Business Console.
- Modularized My webMethods Server: server provides the option to install the portal and business administration user interface separately.
- Common directory service (CDS) support for webMethods Integration Server truststores, providing better operational experience.

Software AG Command Central

Composite Template Validation

To ease the development of composite templates, the template is now validated at the beginning of each template application.

The following checks are now executed at the start of every composite template execution:

- if product repositories exists
- if the products and all their dependencies are available in the repository
- if the fix repository exists
- if the fixes and their dependencies are available in the fix repository
- if SSH access is possible in case the Platform Managers are not running on the target node
- if the OS user can create the installation directory

The validation is executed by default when applying the composite template. It can also be triggered without executing the template (for example, without performing the installation or applying the fixes).

Configuration Export for Composite Templates Development

Products configuration can now be exported as a composite template snippet. Combining those snippets can ease the development of the custom product configurations.

New Jobs View with Tree of Dependent Jobs

Along with the old jobs view, we introduce a new one that can better show the dependencies between the jobs, in case of a composite template execution, and can provide better job details. Currently the old and the new jobs views will co-exist and will be opened based on the current context.

Stacks and Layers User Interface (BETA)

A new user interface representation of your environments that enable you to group your runtimes into layers, for example a group of Integrations Servers into ESB layers, a group of Universal Messaging servers into Messaging layers, a group of My webMethods servers into Presentation layers. This enables you to control the lifecycle of all servers in a layer and compare their binaries, fixes and configurations.

A stack (a term for a server cluster of the same release version) consists of products layers. They can either be created manually and then grouped together, or created through layer templates. These are micro versions of the composite templates, related only to a particular runtime that describe how to install the runtime.

Asset Deployment (BETA)

Command Central now provides repository-based asset deployment capabilities. In the Repository screen of the Command Central web user interface, you can add a flat file ABE

repository or an ABE repository uploaded on a GIT server. You can then browse and search the registered asset repositories. You can install product assets only through the Command Central CLI.

Command Central currently supports deployment of IS / MCS 10.1 packages. Other composite packages are currently not certified with Command Central.

Security Improvement: Encrypted Proxy Authentication

The proxy authentication for Command Central and Platform Manager is now encrypted.

webMethods API Gateway

Staging, Promotion, and DevOps

API Gateway now supports promotion of assets across different environments (DEV, TEST, STAGE, PROD and so on). In addition API Gateway enables continuous integration (CI) and continuous delivery (CD) practices to be used for development, deployment, and promotion of an API, Applications and other related assets, and supports the use of DevOps tooling.

Support for JWT

API Gateway now supports JSON Web Token authentication for both REST and SOAP APIs. API Gateway can generate a JWT token itself or validate the JWT token generated by a trusted third-party server. The JWT claims can be used for Application Identification.

Support for OpenID

API providers can now integrate any OpenID providers with API Gateway for authentication of both REST and SOAP APIs. The JWT tokens that are generated from an OpenID Connect Id can be validated by API Gateway and also be used for Application Identification.

Support for Third Party OAuth Providers

API Gateway can now integrate with any OAuth2 Authorization servers, like Ping and Okta, for Authorization.

Approval Configurations

API Gateway allows API providers to configure an approval process to control the Application requests and API Registrations. The approval workflow can be configured for creating or updating an application, registering applications to the APIs, and managing subscriptions to the API Package.

User Management and Access Controls

API Gateway now allows creation of users, groups, and access control permissions. An Administrator can now create a much fine-grained access control for different user groups.

API Analytics

API Gateway now supports Digital Event Services (DES), Email, SNMP, CentraSite, Elastic Search, and Local Log and Audit Log as additional destinations for sending API run-time events and Key Performance Indicator (KPI) metrics.

Backup and Restore

API Providers can now perform a periodic back up of all the assets in API Gateway through a command line utility. The backup location can be configured from local, network file system, or Amazon S3. The same utility can be used to restore the assets into API Gateway.

Transaction-Based License

API Gateway now supports transaction-based licensing model. Here, every service invocation is considered as a transaction and API Gateway keeps a track of these transactions. In addition, a notification function is supported for license-based alerts.

API Mocking

In API Gateway, you can mock an API implementation. API Gateway lets you mock an API by simulating the native service, for instance in an API first approach. With this, the provider may choose to expose the mocked API to the consumers when the actual API does not exist or is not complete.

Search

API Gateway now provides a global search that allows the API providers to search across different assets such as Services, Applications, Aliases, and so on.

Docker

API Gateway provides scripts that allow the users to create API Gateway docker images.

SOAP over JMS

API Gateway now supports JMS as a protocol for SOAP APIs. API Providers can use the API Gateway to provide HTTP <-> JMS protocol bridging between the clients and native endpoints.

CentraSite and API Gateway Integration

API Gateway provides integration with CentraSite, where in an API provider can publish the APIs, Applications, and Aliases from CentraSite and manage the runtime policy enforcements in API Gateway.

Migration

Mediator customers can migrate their APIs, policy enforcements, applications, and other assets to API Gateway. Customers who use Mediator 9.7 and higher versions can migrate to API Gateway.

webMethods API Portal

Search Functionality

API Portal now provides a global search that allows a user to search across all content published to API Portal.

Multifactor Authentication Support

Administrations can now set up API Portal to require a one-time password in addition to the basic authentication.

OAuth Support Enhancements

API try-out page now allows testing APIs that are protected with OAuth.

API Editing

API Portal users can edit some API details from the API Portal user interface. Such edits are Portal-specific and subsequent API publishes (from API Gateway) do not affect the incorporated changes. API Portal also allows a single-click reset of such edits.

Docker Support

API Portal can now run inside a docker container.

API Marketplace

API Portal now provides a place for API users to upload, describe, and promote the application built using an API published in the Portal.

Additional Languages support

API Portal can now be displayed in Arabic language.

Backup and Restore Support for Consumer Analytical Data

An Administrator can now perform a backup and restore the consumer analytical data stored in API Portal data store.

webMethods Mediator

There are no changes in webMethods Mediator for 10.1.

webMethods Mediator will reach its end-of-life in October 2017. In the coming years, implementations need to be migrated to use API Gateway instead. Software AG has invested significantly in ensuring maximum compatibility and making this migration as smooth as possible.

webMethods ActiveTransfer Server

Support for webMethods Deployer

ActiveTransfer server now supports deployment of ActiveTransfer assets including server configurations, virtual folders, scheduled events, and post-processing events through Deployer.

Encryption and Decryption at VFS Level

ActiveTransfer server now supports the ability to specify decryption and encryption settings at the virtual file system (VFS) level. This enables both decryption and encryption to be performed as part of a single file stream. For example, files can be decrypted as they are uploaded and then stored in a file system encrypted using a different set of keys. ActiveTransfer supports this functionality for downloads as well.

Delete Original Files after Encryption and Decryption

ActiveTransfer now supports deletion of original files as part of encrypt or decrypt event actions. A new field, Delete Original File, in the event encrypt and decrypt actions explicitly specifies the deletion of the original file in the actions. This option ensures that only the desired set of files is carried over in the pipeline for subsequent file operations.

Usability Enhancements

ActiveTransfer now supports the ability to activate, deactivate, or delete more than one post-processing event or scheduled event through a single click in the Post-Processing Events or Scheduled Events tabs of the Event Management page.

webMethods ActiveTransfer Gateway

Support for Virus Scanning

ActiveTransfer Gateway now supports virus scanning for all file uploads. Virus scanning is supported through integration with a third-party virus scanning tool using the Internet Content Adaptation Protocol (ICAP). The antivirus scan filter in ActiveTransfer Gateway passes the file stream to the virus scanning tool and terminates the file transfer if a virus is found. You can configure the scan size of the file passed to ICAP server, the total scan size across sessions, and the ICAP server settings in ActiveTransfer Gateway.

webMethods Broker

webMethods Broker 9.6 is tested and supported with webMethods 10.1.

webMethods Business Rules

Integration with Software AG Predictive Analytics

The new Business Rules action type Predictive Analytics Action, provides integration with Software AG Predictive Analytics. Predictive Analytics can now be used in decision tables and decision trees as a condition or result.

Option to Disable Verification When Hot Deploying a Rule Project

There is a new option available to disable the verification of a rule project when hot deploying it from My webMethods Server to Integration Server. This can significantly speed up the hot deployment of large rule projects.

webMethods Mobile Suite

Visual Outline Editor

With Mobile Suite 10.1 an all new visual outline preview has been introduced, giving the developer instant visual feedback of the view or template being modeled. This is the first step towards real what you see is what you get like modelling experience. The new Outline comes with all new property views to change colors, alignments, etc.

Visual Icon Editor

The new visual icon editor allows to easily setup icons and splash screens within the project. It allows automatic scaling for all icon dimensions required per platform and updates the project to use the correct icons.

Visual Asset Editor

Working with Assets (images) has been greatly improved. A new editor has been added to create and manage image assets and use those in the project. Assets can be used from an integrated library or defined from SVG, customized and optimized for all platforms.

Added New UI Control `nUIListView` and `nUIListElement`

The new `nUIListView` and `nUIListElement` controls (`ListView`) allow to efficiently manage an endless number of any kind of `nUIDisplayObjects` in a single column. `ListsViews` only load and render the `nUIDisplayObjects` visible on screen. As the user scrolls the `ListView` vertically, the managed `nUIDisplayObjects` are (lazy) loaded and rendered to provide best performance and user experience.

This first version of `nUIListView` and `nUIListViewElements` supports pull-to-refresh and endless scrolling events to allow loading of data to be displayed on demand.

Added New UI Control nUISwitch

With nUISwitch, an alternative to nUICheckbox has been introduced for a better native experience for on and off states in your applications.

New Sample Project

A new sample app Cocktails has been added to show loading and parsing of JSON data using EML modeling, feeding a Datasource and providing the data into a ListView without coding. It also features a navigation drawer and shows how to use the all new Asset & App Icon Editors for icons and images and how to use styling to define global UI properties. The whole app comes with almost zero custom code.

New File Management API

A new File Management API has been introduced. It allows the user to read and write files and folders on the filesystem of the device at runtime. To access files across all platforms, virtual root folders for documents, cache, resources and external storage are provided by the File Management API.

New Asset Loading API

Picking the correct assets for a handset can be quite a tricky task for developers. Image sizes can depend on screen resolution, pixel density, and handset rotation, as well as any number of application-specific concerns. Most handsets have a concept of an Asset Catalog - that is, multiple Images targeting the possible resolution/density setups are registered with one common name, and the Mobile OS selects the correct file to return for that name based on the information it has about the display. With the new AssetImageLoader, a new API has been introduced to provide access to Asset Catalog functionality at design and runtime.

New RuntimeInfo and SystemInfo API

With RuntimeInfo and SystemInfo classes a new API has been introduced to provide easy access to device specific runtime properties, such as screen dimension, ppi value, form factor, location enabled, system info, and so on.

Enhanced Connection API

A new Connection API has been introduced to simplify working with HTTP connections. The new API supports synchronous and asynchronous connections and makes HttpURLConnectionHandler obsolete.

Enhanced Push Notification API

Push Notification API has been enhanced. It allows the developer to implement different workflows depending if the app was started from push notification.

New Online Connectivity Status Change Notifications

For monitoring and polling the connectivity state of the device at runtime, a new API has been introduced. It allows to receive notifications when the device's network adapters change state and to find out about the connection type, such as Wifi, cellular, etc.

Operation Queues

With introduction of OperationQueues it is now possible to manage instances of IOperation more conveniently. Using queues it is now easy to run operations in parallel or sequentially, pause and resume. Queues even help to execute operations in when online or offline.

Enhancements to Phoney Simulator

Phoney has been greatly improved to support the new features described. It now also has an option to start with screen rotated and will now listen to mouse wheel events to simplify scrolling experience. Along with the new Online Connectivity status change notifications, Phoney can now simulate no-connectivity situations. In the drop-down menus, there are options for simulated Wi-Fi and Cellular connections.

Native Runtime Performance Optimization

A new runtime has been introduced to remove Mobile Designer Midlet Thread from applications. The new runtime application does not spawn a new thread for UI operations and utilizes instead the main thread provided by the particular native platform. This is very important for multi-threaded applications and enables great performance optimization for all platforms, including Phoney. Read more in the documentation.

Enhanced Performance for JSON Processing On Android

Android now makes use of the internal, native JSON APIs by default, resulting in a great speedup in org.json.JSONTokener performance. This is very important when processing really large JSON files on Android platform with lots of update operations.

Deprecation of Mobile Administrator

Mobile Administrator is now deprecated.

webMethods Microservices Container

Microservices is a new architectural style for developing a single application as a suite of small services, each running in its own process and communicating with light weight mechanisms, such as an HTTP resource API. Software AG is now offering a light weight container called the Microservices Container to host these small services. Microservices Container is fully compatible with Integration Server and can host all services developed on Integration Server. Microservices Container is optimized to have a reduced disk and memory footprint.

webMethods Microservices Container provides a superset of the functionality available in webMethods Integration Server. Review the webMethods Integration Server 10.1 release notes for information about functionality available in webMethods Integration Server 10.1.

Support for Consul Service Registry

Microservices Container supports dynamic lookup of service endpoints using the Consul service registry. Each individual package (containing multiple services) can be registered in the Consul service registry. This registration process is automated by adding the package endpoint during

the package loading process and by removing the package endpoint during the package unloading process. Microservices Container provides facilities to look up the endpoint information, which can be used to call the service at run time.

Support for Docker

Microservices Container supports Docker. Microservices Container provides out of the box scripts to create Docker images.

Support for Pluggable Framework for Service Registries

Microservices Container provides a pluggable framework for working with third-party registries. Developers can make use of this framework to add support for third-party registries.

Support for Circuit Breaker

Microservices Container supports the ability to add a circuit breaker construct to any flow service. Using a circuit breaker allows the service to handle errors gracefully and provides a consistent response to the end user. Circuit breaker is a common pattern for a microservices-based architecture.

webMethods Integration Server

Support for Creating a REST API Descriptor Using a Swagger First Approach

In conjunction with Software AG Designer, Integration Server provides the ability to generate a REST API descriptor from a Swagger document. Using the Swagger document, Integration Server creates flow services, document types, and REST V2 resources in which each resource operation lists a defined URL template, the supported HTTP methods, and an associated flow service. A REST API descriptor created from a Swagger document can be refreshed using an updated Swagger document.

Support for REST v2 resource

Integration Server provides support for an updated type of REST resource called REST V2. The REST V2 resource allows a developer to define operations with flexible resource URLs. A developer can define a resource URL irrespective of the folder structure within the package that contains the REST resource to invoke.

Support for JSON Schema Validation

Integration Server provides support for validating a JSON payload against a JSON schema.

Support for using JWT for Authentication

Integration Server provides support for authenticating incoming requests with JSON Web Tokens (JWT).

Support for OAuth 2.0 Token Introspection and Revocation

Integration Server provides support for RFC 7662, OAuth 2.0 Token Introspection. Access tokens generated by an Integration Server authorization server can be used to access resources in a resource sever that is not an Integration Server. Additionally, access tokens generated by an external authorization server such as PingFederate and Okta, can be used to access resources in Integration Server. In providing support for RFC 7009, OAuth 2.0 Token Revocation, Integration Server allows revocation of access tokens generated by Integration Server.

Support for HTTP Interceptor

Integration Server provides a framework for creating and registering an HTTP interceptor. An HTTP interceptor intercepts all received HTTP requests and outbound HTTP responses. Integration Server makes the raw HTTP request and response, including the HTTP header information, accessible to the HTTP interceptor. For HTTP requests, the HTTP interceptor can perform a check of the request and then, if necessary, reject the request.

Support for Sending Multiple JMS Messages at Once

Integration Server can send a batch of JMS messages to Universal Messaging as part of one call.

Support for Creating Administered Objects on Universal Messaging on Demand

Integration Server can create JMS administered objects on demand. Using Integration Server to create administered objects on demand provides convenience and possible time savings during the development cycle.

Support for Serial JMS Triggers with Universal Messaging

Integration Server supports using a serial JMS trigger with Universal Messaging.

Enhanced Support for Defining REST Resources

Integration Server provides improved support for defining REST resources. Integration Server now permits identically named resources that are created in different Integration Server namespaces. The base path of the Rest API Descriptor can be edited while defining resources using the resource first implementation style.

Enhanced Support for Swagger-First REST APIs

Integration Server provides enhanced support for created REST APIs from Swagger files, offering support for resources with a base path (/) and allowing the grouping of resources based on paths and tags.

Server Log Written to stdout

Integration Server can send the server.log to multiple destinations including stdout. This is useful when the Microservices Container is used with container orchestration tools such as OpenShift and Kubernetes.

webMethods CloudStreams

CloudStreams Development Plug-in Enhancements

- **Enhanced CloudStreams Connector Development Plug-in**
CloudStreams Connector Development Plug-in is now completely redesigned for better usability. Support for developing SOAP based connectors is currently in Beta.
- **Support for Creating REST Connectors using a Swagger first approach**
CloudStreams Connector Development Plug-in for REST supports the ability to read a Swagger definition and automatically generate a connector.

CloudStreams Server Enhancements

- **Support for Multiple Operations in a Connector Service**
CloudStreams server now allows connector developers to define operations/resources, which can work with multiple operations and multiple business objects within a single web service (SOAP/REST) call. For example, OData change set operation allows you to send the mime part containing multiple operations (create, update, delete, and so on) on multiple business objects (account, contact, and so on) in a single invocation.
- **Support for Multiple Objects in a Connector Service**
CloudStreams server now allows connector developers to define the operations/resources, which can work on multiple business objects within a single web service (SOAP/REST) call. For example, SaaS providers like Salesforce.com allow you to create multiple business objects (Account, Contact, and so on) in a single create operation.
- **Support for Complex Nested Service Signature Structures**
CloudStreams server now allows you to create services having complex and deep nested signature structures in an optimized way. In earlier releases, CloudStreams always used to clone and create concrete copies of the referred document in the signature itself, which resulted in very large service nodes. This led to out of memory errors and service creation issues.
- **Enhanced Custom Fields Support**
CloudStreams server now allows cloud connector services to define the custom fields during service configuration. This feature allows defining nested custom fields, and supports most of the data types and field constraints.
- **Support for Nested Business Objects in a Connector Service**
CloudStreams server now allows connector developers to list nested business objects based on objects relationship. Now a connector end user can navigate to the desired business objects during the cloud service configuration. For example, OData connector can support querying the derived entity types.
- **Support for REST Parameters within POST Body**
CloudStreams server now allows you to send simple key value parameters embedded in the request body for POST or PUT requests in REST connector services. This uses the default web form encoding, which is application/x-www-form-urlencoded .

- **NTLM Basic Authentication Support**
CloudStreams server now supports the NT LAN Manager (NTLM) authentication protocol. CloudStreams provides basic support for NTLM authentication protocol using the credentials connection group.
- **webMethods Deployer Support**
CloudStreams server now supports deployment of cloud connector services, connections, and configurations such as Consumer, Database Settings, OAuth tokens, Streaming Providers, and Streaming Subscribers using webMethods Deployer.
- **Migrating CloudStreams Analytics Dashboard from MashZone Legacy to MashZone NextGen**
CloudStreams Analytics dashboard is updated and migrated from MashZone Legacy to the MashZone NextGen.
- **New and Updated Connectors**
New and updated connectors for the following SaaS Applications can now be downloaded from the Software AG TECHcommunity website at <http://techcommunity.softwareag.com>.
- **New Connectors**
 - Apache Solr, version 6.1.
 - OData, version 4.0
 - SAP Cloud for Customer (C4C) OData, version 2.0
 - Marketo REST API, version 1.0
 - Google Admin, version 1.0
 - Google Big Query, version 2.0
 - Google Cloud Storage, version 1.0
 - Google Drive, version 3.0
 - Google Pub/Sub, version 1.0
 - Google Sheets, version 4.0
 - Google Analytics, version 3.0 and 4.0
 - Google Prediction, version 1.6
 - IBM Watson, version 3.0
 - Microsoft Azure Storage, version 2016-05-31
 - Slack, version 1.0
 - Sugar CRM, version 10.0
 - Zendesk, version 3.0
- **Updated Connectors**
 - Amazon Simple Queue Service (SQS) connector is updated with support for version 4.
 - Salesforce CRM and Bulk Data Loader connectors are updated with support for version 37.
 - ServiceNOW REST connector is updated with support for the Istanbul version.

- OData version 2.0 connector is updated with support for additional functionalities.

webMethods OneData

Enhanced Data Steward User Interface

The New UI interface has been enhanced to provide support for browsing as well as data management actions for data objects as follows:

- Browsing of data objects includes the standard features of basic filtering on individual columns, sorting of individual columns, and pagination.
- All data management actions for data objects include insert, update, delete, restore, and purge.
- Users can navigate through different objects more easily by using individual tabs instead of opening new browser windows.
- In the data grid display, inline editing is now possible for the standard data types such as numeric, character, date and Boolean columns.
- The data entry screens support complex configurations such as, supertype, subtype, temporal, and time bound objects.

Data Interchange Enhancements

The data interchange capabilities have been enhanced to provide the following:

- Enable OneData connectivity with big data sources such as Hadoop to send and receive master data by using Data Interchange Export and Import Jobs for the Database type.
- Support for JSON payload format in REST GET-based data retrieval service APIs. With this capability, OneData now supports JSON as a payload format for both data loading and data retrieval through REST APIs.

Data Quality Enhancements

- The data quality module now features improved address cleansing capability with the upgrade to the latest address datasets associated with webMethods Locate.

webMethods Content Adapters

New Version of Integration Server Content Adapters

A new and enhanced version of the Integration Server Content Adapters has been released, including:

- webMethods Adapter 10.1 for Documentum
- webMethods Adapter 10.1 for FileNet
- webMethods Adapter 10.1 for SharePoint

- webMethods Adapter 10.1 for Alfresco
- webMethods Adapter 10.1 for CMIS (CMIS = Content Management Interoperability Services)

All adapters now provide an *update document* functionality. Sharepoint, Documentum, and Alfresco adapters support notifications.

Deprecation of FileNet 3.0 support

Support of FileNet 3.0 is deprecated in webMethods Adapter for FileNet.

New version of WebReader for Content Adapters

Rendering of Microsoft office documents has been improved on Windows operating systems.

webMethods Optimize for Infrastructure

Monitor Long-Running Threads

Optimize for Infrastructure now has a KPI and a rule for monitoring long-running threads. This reduces the risk of costly outages due to services that are running longer than expected.

JMX Monitoring

Leverage Java Management Extensions (JMX) to monitor applications, system objects, and devices with the JMX monitoring capability. Create KPIs, rules and alerts to understand behavior and trends in system-level metrics for Java applications that implement JMX.

Prebuilt JVM-Based KPIs using JMX

It is now possible to leverage the JMX agent to analyze key information related to the performance of Integration Server and Infrastructure Data Collector. The following can be monitored:

- CPU usage
- JVM statistics
- Garbage collection activity

Template-Based Configuration in Command Central

A new template which is preconfigured with all Optimize for Infrastructure default values is available for Command Central-based installations. You can easily edit and customize this YAML file for individual installations.

webMethods Optimize for Process

E-mail Alert Configuration for User Groups

Users now have more flexibility in configuring e-mail alerts about rule violations. E-mail alerts can be configured to display not only the e-mail of the addressee, but the e-mail addresses of the other users who receive the same notification. In that way the users can coordinate the response to the alert.

Digital Event Persistence

Renaming webMethods Event Persistence to Digital Event Persistence

webMethods Event Persistence (EVP) has been renamed to webMethods Digital Event Persistence (DEP) to reflect its focus on supporting Digital Event Services (DES) events and on providing a persistence framework for the Digital Business Platform.

JDBC Driver

A new JDBC-compliant driver that provides a query API is available. With the driver, users can leverage standard JDBC queries to easily connect to the event persistence store and retrieve events.

DES Support

Digital Event Persistence supports persisting 'any' and 'map' fields in DES events. In addition, the @timestamp annotation in DES event type definitions has been removed and is replaced by a 'Time' data type. There is no migration needed for DEP configurations or previously persisted data.

Securing Connections to Elasticsearch via SSL

Digital Event Persistence now supports certificates for user ID and password when connecting to Elasticsearch over SSL.

Easier Default Configuration

Digital Event Persistence offers a pre-configured service that connects to a local installation of webMethods Event Data Store for easier demonstrations and development. The service is not part of a DES service group by default and must be added manually.

Command Central Templates

Digital Event Persistence supports installation and configuration using Command Central templates.

webMethods EntireX

More Options to Interpret Fixed-Length COBOL Arrays in Variable Manner

You can now choose from more options for interpreting fixed-length COBOL arrays in a variable manner. In addition to the existing approach, you can use the contents of a COBOL data item to calculate the current number of array elements. This COBOL data item can contain the message length, array length or the number of array elements directly.

New COBOL Converter Interface Type

A new interface type COBOL Converter has been introduced in the IDL Extractor for COBOL. This interface type is used together with the COBOL Converter connection type of the EntireX Adapter to convert Integration Server data structures from/to a byte array representing COBOL binary data.

IBM Enterprise COBOL for z/OS Support

You can compile your EntireX RPC client and server components with IBM Enterprise COBOL for z/OS V6.1. Versions 4.2 and 5.1 are also supported as before.

IBM i (AS/400) COBOL Extraction

COBOL computational data items, extracted for AS/400, are mapped to IDL type P (packed decimal) instead of IDL type I (integer).

Zero AS/400 Footprint

You now connect to your AS/400 COBOL programs directly from the EntireX Adapter for Integration Server without any AS/400 footprint. For this you can use both simple and fast COBOL mapping, as well as sophisticated COBOL mappings of EntireX for more advanced use cases.

Command Central Enhancements

- You can install EntireX using Command Central.
- You can use template-based provisioning.
- You can create, start, stop, delete and configure multiple EntireX RPC servers.

CVM/SVM Handling

Client-side mapping files (CVM) are now default in the EntireX Workbench. As server-side mapping files (SVM) will be dropped in a future version, we strongly recommend using client-side mapping files. These are easier to use and do not require any deployment on your server. Support for CVM files for platforms z/VSE and BS2000 will be introduced in a future version.

Alternative Mapping of IDL Data Types to Integration Server Data Types

IDL data types can now be mapped to non-string Integration Server data types. The main use case is to support JSON document types in Integration Server. See Integration Server Data Types to IDL Mapping in the EntireX Adapter documentation and Mapping IDL Data Types to IS Data Types in the Integration Server Wrapper documentation.

Automatic Character Conversion

EntireX Broker has a reworked mechanism for character conversion. Incorrect configurations (e.g. RPC communication without character conversion configured) are detected. In these cases the configuration defined in the broker attribute file is not used and a warning message is written to the broker's log file. Adapt your broker attribute file to avoid the message.

For details, see the Release Notes in the EntireX product documentation.

ARIS Process Performance Manager

New Variant Dimension

A new dimension type *Variant* allows filtering of process flows, which are structurally identical or similar. This helps the business analyst to identify process flow patterns which are very common. The new variants filter control shows the probability of the found pattern. The variant filter can be used in conjunction with all existing analytical capabilities.

Enhanced Function Flow Diagram

PPM provides a widget for MashZone NextGen to visualize process structure in a dashboard. This function flow widget supports now the visualization of PPM function measures.

MashZone NextGen/Aware Integration

A new widget, which can be added to MashZone NextGen or is part of ARIS Aware allows the jump from a dashboard into PPM user interface for further drill-down analysis. Single sign-on is supported.

Software AG Designer

Software AG Designer and all its plug-ins are supported with Eclipse version 4.6.3

webMethods Service Development

Support for Swagger-First REST API provider

In conjunction with Integration Server, Service Development supports mapping as a service. This new mapping service allows you to build the entire mapping logic such as links, assigning values, inserting data transformation logic, in a single, re-usable entity.

Support for REST v2 Resource

webMethods Designer provides the ability to define the REST v2 resource. The REST V2 resource allows a developer to define operations with flexible resource URLs. A developer can define a resource URL irrespective of the folder structure within the package that contains the REST resource to invoke.

Support Microservices Container with Local Service Development

Designer local service development now supports Microservices container.

Support Team Foundation Server (TFS) v14 Plug-In with Local Service Development

Designer local service development supports Team Foundation Server (TFS) v14 plug-in.

Unit Test Framework

Unit Test Framework offers the following new and enhanced capabilities:

- In Software AG Designer, the configuration of Integration Server and Unit Test Framework is now combined in one Preferences page.
- With this release, Unit Test Framework provides the ability to create unit tests from the run/debug view of WmTestSuite plug-in Software AG Designer.
- Unit Test Framework now provides the ability to add automation of build deployment and execution of Jenkins tasks from WmTestSuite plug-in.

webMethods Universal Messaging

New and Enhanced Command Central Capabilities

Command Central offers the following new and enhanced capabilities:

- Configure Universal Messaging zones and security groups.
- Support for enhanced port configuration options.
- Configure round-robin JMS Connection Factories using Command Central, allowing messages to be distributed evenly across multiple Universal Messaging realms or clusters.

These capabilities can be accessed using the Command Central web user interface, command-line interface, REST API, and composite templates.

For more information, see the Universal Messaging Administration Guide.

New And Updated Functionality in The Client API For C#

Shared durable subscriptions now supported in client API for C# :

The client API for C# now supports shared durable subscriptions. The client API for C# functionality used in previous product releases for creating named objects and named objects with priority has now been deprecated.

The new API provides different public methods for interaction. For operations like creating, retrieving, deleting or unbinding a durable, the `nDurableManager` must be used. Every channel has a durable manager associated with it.

For information on how to use the new functionality, refer to the topic *Using Durable Objects* in the C# section of the Developer Guide. See also the section Named Objects, Shared Named Objects and Serial Named Objects in the Concepts guide.

Serial durable subscriptions now supported in client API for C#

The client API for C# now supports serial durable subscriptions.

With a serial durable subscription, multiple subscribers can hold a subscription to the same named object and all the subscribers will process events in a serial manner.

For information about the new functionality, refer to the topic *Using Durable Objects* in the C# section of the Developer Guide. See also the section Named Objects, Shared Named Objects and Serial Named Objects in the Concepts guide.

New public interface for committing and rolling back events

A new public interface has been added for committing and rolling back events. The methods are defined for the `nDurable` instance and the usage of the old API, e.g. calling `ack()` or `rollback()` on the received event's `nConsumeEvent` object, is not recommended since it does not fully support individual acknowledging and rolling back. To be able to apply these operations on a single event and not only on consecutive event IDs is a significant importance for the shared types.

Basic Authentication now supported in C# client API

It is now possible to use SASL (e.g. plain text) authentication for the client API for C#. Previously, this functionality was only available using the client API for Java.

For details, refer to the section Basic Authentication in the C# section of the Developer Guide.

Serial Durable Subscriptions Now Supported In Client API for Java And As An Extension to The API For JMS

The client API for Java now supports serial durable subscriptions. The same functionality has been added as an extension to the Universal Messaging API for JMS.

With a serial durable subscription, multiple subscribers can hold a subscription to the same named object, and all the subscribers will process events in a serial manner.

For information about the new functionality, refer to the topic *Durable channel consumers and named objects* in the Java section of the Developer Guide. Also refer the Named Objects, Shared Named Objects and Serial Named Objects in the Concepts guide.

Periodic Logging of The Realm Server Status

The logging feature has been extended to allow the status of the realm server to be reported in the server log at regular intervals. The status includes metrics such as the amount of memory currently in use for active events, the amount of disk space in use, CPU load, and number of active connections, total bytes sent and received.

For details, see the section *Periodic Logging of Server Status* in the *Concepts guide*.

Changed Handling of Missing Operator In Filter Expression

In v10.0 it was permissible to omit a logical operator between two selector clauses in a filter expression. In such cases, the omitted operator was treated implicitly as an AND operator. For example, instead of the correct form:

```
(Item1 = 'ABC') AND (Item2 in ('Invoicing', 'Pending'))
```

it was possible to state:

```
(Item1 = 'ABC') (Item2 in ('Invoicing', 'Pending'))
```

In 10.1, omitting the logical operator will be flagged as an error. Therefore, when you upgrade to 10.1, ensure that you modify your filter expressions accordingly.

Pause Publishing

The new pause publishing feature allows all client publishing to the server to be paused, across channels, queues and data groups. This pause will not affect the administration API, inter-cluster communication or joins.

The feature is activated by setting the server configuration property `PauseServerPublishing` to true. Then, clients trying to publish or commit will receive `nPublishPausedException`. Exception handlers from prior to the current product version will handle this as `nSessionPausedException`, which the new `nPublishPausedException` extends.

Information about this feature is available in the section *Pause Publishing* section in the Concepts guide.

If client applications using APIs from previous product versions are used to publish events to a v10.1 server, the following changes will be observed:

Old API (prior to 10.1)	Behavior when publishing to a v10.1 server
Native API for Java	If a client API from a previous product version is used to connect to a 10.1 server, Java native clients will receive <code>nBaseClientException</code> instead of <code>nPublishPausedException</code> .
API for JMS	The behavior here is the same as for 10.1, with the difference that the root <code>JMSEException</code> will be <code>nBaseClientException</code> instead of <code>nPublishPausedException</code> .
API for C++/C#	The APIs for C++ and C# will throw <code>nUnexpectedResponseException</code> when publishing is paused.

Updates for MQTT

Configuration Properties for MQTT

A new set of realm configuration properties for MQTT has been added.

For the list of MQTT configuration properties see the *Realm Configuration* section in the Enterprise Manager section of the Administration Guide.

Support for clustered channels

MQTT support for clustered channels has been added.

General improvements

Non-functional aspects such as performance, availability and scalability have been improved.

Configuring Universal Messaging For Use with IBM Websphere

The Universal Messaging installation contains a product-specific generic resource adapter for JMS. Universal Messaging can be configured to work with IBM WebSphere via this adapter.

For details, see the *Resource Adapter for JMS* section in the Developer Guide

Microsoft Edge is a Supported Web Browser for Javascript Communication Drivers

The list of web browsers that are supported for the JavaScript communication drivers has been extended to include Microsoft Edge for several of the drivers.

For details, see the *Communication Drivers* section in the Developer Guide.

Corrected DLL Names in the Product Documentation

Some sections of the documentation referred to the DLL files *Nirvana DotNet.dll* and *Nirvana Silverlight.dll* by the wrong names *Universal Messaging DotNet.dll* and *Universal Messaging Silverlight.dll* respectively. These have been corrected.

These DLLs are mentioned in the C# and VBA sections of the Developer Guide.

New Java System Property *Nirvana.sasl.client.enablePrehash*

The new Java system property *Nirvana.sasl.client.enablePrehash* specifies whether to prehash the supplied password when using the CRAM-MD5 or Digest-MD5 mechanisms.

For details, see the *Client-side Authentication* section in the Java section of the Developer Guide.

webMethods Update Manager

Software AG Update Manager has been removed from the Software AG Installer and is now available for download from the Software Download Center on Software AG Empower. For Windows system, Software AG provides a wizard for installing the Update Manager.

Documentation

New Design for Documentation Portal

Software AG's product documentation portal has been redesigned to give you an improved user experience of finding, reading and downloading the information you need. The portal is intuitive, and a link to a tutorial video is provided in case of doubt.

Renamed webMethods CAF and OpenCAF Development Help

webMethods CAF and OpenCAF Development Help has been renamed to webMethods CAF and OpenUI Development Help.

Deprecated Web Applications Developer's Guide

The Web Applications Developer's Guide is no longer available. This guide explained how to use the WmTomcat package to incorporate web applications into the Integration Server environment. As of Integration Server 10.1, the WmTomcat package has been removed from the product.

Upgrade

Migrate Passwords, JSW Customizations, and JAAS Configurations for Integration Server

The Integration Server migration utility now offers options to migrate passwords, JAAS configurations, and JSW customizations (including `#include` directives and comments).

Specify New Names for Migrated Instances in Silent Mode

The Integration Server migration utility now lets you specify new names for migrated instances on the migration utility command when migrating silently.

Migrate `#include` Directives and Comments for Software AG Runtime, My webMethods Server, and Infrastructure Data Collector

The Software AG Runtime, My webMethods Server and Infrastructure Data Collector now migrate Java Service Wrapper `#include` directives and comments.

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webMethods Product Suite 10.2

Release Notes

Software AG's Digital Business Platform powers digital transformation and enables any organization to become a Digital Enterprise. And the webMethods Product Suite, a core component of the Digital Business Platform, helps you achieve this transformation.

webMethods Product Suite includes a broad collection of capabilities including application and partner integration, API management, dynamic application development, master data management, and operational intelligence. With webMethods, you have an extensible, scalable and reliable backbone - running either in the cloud, on-premises or in hybrid scenarios – providing seamless integration for cloud, mobile, APIs, and Internet of Things, and streamlining process management and dynamic application development.

Release 10.2 of the webMethods Product Suite provides significant enhancements in every functional area of the suite.

This is an Innovation Release. Innovation releases have a much shorter support cycle than standard releases. To learn more, please visit <http://empower.softwareag.com/innovationrelease/>.

Release Highlights

webMethods Integration

Software AG's webMethods Integration Platform is a proven, pre-integrated software suite that enables enterprises to rapidly integrate systems, services, devices, processes, business partners, and data to provide new business value and improve business performance.

The key features include:

- Integration Server provides support for the WebSocket protocol whereby developers can create a WebSocket provider service and can communicate with a client using the WebSockets protocol.
- Integration Server provides support for pause and publishing of messages provided by Universal Messaging.
- Integration Server provides enhanced support for HTTP security headers. Users can configure the Integration Server to send HTTP security headers in the response.
- Integration Server supports the Swagger format for describing REST APIs. Software AG Designer displays REST API descriptors (Swagger documents) using an embedded Swagger UI.
- webMethods ActiveTransfer agent is a new component that can be installed directly on a remote system. It can be installed within an organization's firewall or outside the firewall using Command Central.
- webMethods ActiveTransfer agents can be centrally managed and monitored through the webMethods ActiveTransfer server. All configurations related to file transfers are managed through events that can be pushed directly to one or more agents.
- webMethods ActiveTransfer supports database-level partitioning of file transfer related data and includes server enhancements for file sharing capabilities.

- Software AG Designer provides the ability to search assets or variables based on an asset name, field/variable name or both.
- webMethods Trading Networks is now tightly integrated with API Gateway to selectively expose the APIs available in API Gateway and manage access for each partner .
- webMethods Trading Networks now supports delivery of documents using the SFTP protocol.
- Data object REST APIs have been enhanced in OneData to support multiple description columns for foreign key descriptions. Object-related schema definitions will also reflect this addition.
- Data stewards now can change the data in a record in OneData that is pending approval for an insert transaction.
- The Data Steward user interface in OneData has been enhanced to support leveled hierarchies utilizing the consolidated hierarchy view, which was also enhanced by adding support for child object utilizing the n-level Supertype or Subtype concept.
- The Data Steward user interface now provides support for all data manipulation actions in data objects utilizing the Supertype - Subtype concept.
- Unit Test Framework allows you to record and analyze which Flow steps and map actions of your flow service(s) are executed during a particular test launch. It provides user friendly reporting with coverage reports for Suite Coverage, Execution Model and Service Coverage.
- Unit Test Framework allows multiple Test Suite Executions in a single server session. And it also supports standard Junit reporting to the custom Junit Runner.
- CloudStreams server now supports Message Transmission Optimization Mechanism (MTOM) method of exchanging binary data with web service providers.
- CloudStreams server provides support for efficient handling of large payloads exchanged with web service providers. It also handles concurrent executions of cloud connector services in a more efficient way. This improves how parallel requests are handled without running into concurrency issues.
- There are many enhancements to the CloudStreams Development Plug-in as well as new and updated connectors for Cumocity and Coupa, among others.
- Universal Messaging supports horizontal scalability where users can specify a set of servers or clusters to connect to within a single logical session allowing the user to publish or subscribe to the same queue or topic across multiple servers or clusters.
- The HealthChecker tool has been extended with many available checks and the syntax for running the tool now allows custom values to be specified by using additional parameters.
- The Realm Information Collector is a new command-line diagnostic tool that gathers files and live data from one or more Universal Messaging realm servers.
- Universal Messaging now automatically generates a heap dump file when an OutOfMemoryError occurs in the Java Virtual Machine (JVM).
- Starting from v10.2, the Universal Messaging server includes a version check that rejects connection requests from administration API clients whose protocol version differs from that of the server.
- Universal Messaging now supports authenticating users through the Software AG Security Infrastructure component (SIN) with a client X.509 certificate chain.
- The Command Central command-line interface can now be used to register a Windows service when creating a Universal Messaging server instance.

- webMethods Broker is now replaced by Software AG Universal Messaging. The use of webMethods Broker with webMethods 10.2 is deprecated. You can connect webMethods 10.2 products to an existing webMethods Broker 9.6 instance. This usage will be supported for as long as webMethods Broker 9.6 is supported.

webMethods API Management

Software AG's webMethods API Portal provides a comprehensive solution that allows the developer community to find, learn about, discuss and test your APIs. The API Portal not only exposes API documentation to developers inside and outside of your organization, but also manages the developer on-boarding process and lets developers use exposed APIs for new and creative uses.

webMethods API Gateway enables you to securely expose your APIs to third-party developers, partners and other consumers for use in web, mobile and Internet of Things (IoT) applications. With webMethods API Gateway you can easily create APIs, define Service Level Agreement (SLA) policies, and seamlessly publish your APIs to webMethods API Portal. webMethods API Gateway provides enhanced API monetization features, including defining and managing API plans and packages, for easily supporting API subscriptions and charge-back services.

The key features include:

- In API Gateway, API providers have more options now when defining their service plans for use with API Monetization. It is possible to separately define rate and quota limits.
- API Gateway now provides a facility to define stages by supplying connection information to other API Gateways.
- API Gateway now allows suspending an application, which results in rejecting calls made to APIs using the application's identifiers with an HTTP 403 Forbidden status code and appropriate message.
- Users can now manage their profile information in a dedicated screen provided in the API Gateway user interface.
- API Gateway now provides a facility to define stages by supplying connection information to other API Gateways.
- API Gateway provides an audit logging facility that let's user turn on audit logging for certain functional modules.
- API Gateway administrators can choose the destinations where audit data can be logged and can manage local cache configurations.
- This release includes new API Policies such as Data Masking, CORS, and the Request and Response, as well as enhancements to existing policies.
- JSON payloads are natively supported by API Gateway, and this release provides support for JSON schema and JSONPath in multiple places that access the application.
- CentraSite's Business UI now provides the capability to manage Lifecycle Models and Stages. Users can create and modify lifecycle models using a new graphical tool.

webMethods Dynamic Apps

Software AG's Digital Business platform capabilities includes all the capabilities required for Dynamic Process Automation, and enables the development of "next gen" digital apps that enhance your user experience, improve operational efficiencies and extend your business.

This is the first integrated release of the new Dynamic App Platform including dynamic processes, tasks, case management, business rules, mobile, analytics, and web app UI.

The key features include:

- AgileApps can now invoke DBO processes in-proc on the same Integration Server where it is co-hosted with Integration Server in the same OSGi runtime.
- An AgileApps case can now call a DBO process. It provides a list of start documents to initiate the DBO process as well as a map for mapping the case document to the process start document.
- AgileApps installations can now be achieved using a non-root user in MySQL provided he has the required privileges.
- With improvements in the Master Scheduler in AgileApps, all the failed and unprocessed scheduled jobs can now be monitored by the user.
- Business Rules now sends design-time auditing events for decision tables via Digital Event Services.
- Business Rules now supports the process actions “start process” and “join process” for DBO processes.
- Optimize for Infrastructure and Optimize for Process now support MySQL Community Edition and MySQL Enterprise Edition as a relational database selection.
- Dynamic Business Orchestrator can be monitored with Optimize for Process. KPIs can be created against DBO processes, and the Optimize dashboard will show both Process Engine and DBO process statistics.

webMethods Suite Enhancements

The webMethods Suite includes enhancements that improve functionality across multiple products.

The key features include:

- webMethods products are in compliance with the General Data Protection Regulation (GDPR) proposed by the European Commission for strengthening protection of personal data.
- Command Central supports host and instance renaming during product migration which allows cross-host migration and datacenter moves where old hosts used in product configuration need to be replaced with new hosts.
- Command Central node alias has been enhanced to host mapping in composite templates which used to rely only on auto mapping of node alias to host name as default behavior when no explicit mapping is done.
- The Command Central composite templates are now enhanced to handle support patches. You can automatically uninstall all necessary support patches before installing official fixes and install specific support patches on top of standard fixes.
- Command Central supports HTTPS connection to Empower for downloading products/fixes during installation from master (Empower) repositories managed by CCE 10.2, hosted on SPM 10.2, targeting SPM 10.2 only.
- Software AG Command Central now supports management of Trading Networks configurations including management of Trading Networks instances and properties related to Trading Networks servers. It also enables template based provisioning of Trading Networks instances.
- MashZone NextGen now offers a migration utility for migration from 10.1 to 10.2. Migration from pre-10.1 release still requires manual steps for migration.

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For more details about the key additions and enhancements for this release, see the product descriptions.

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For important updates and a list of enhancements and issues that have been addressed since the previous release of each product, see the webMethods product readme files. You can access these documents, as well as all product documentation, from the webMethods area on the [Software AG Documentation website](#).

CentraSite

Lifecycle Management

CentraSite Business user interface is now extended to allow management of lifecycle models and stages through an enhanced interactive interface.

Forced Deregistration of Gateways

CentraSite users can now deregister gateways which are no longer available along with the APIs published to them.

MashZone NextGen

MashZone NextGen v10.2 has the following new features and enhancements:

Multiple selection in Dashboards

It is now possible to select multiple values in certain dashboard widgets to use as filters for other multiple selection-enabled widgets, these includes the Grid , Pie , Bar and Column widgets, and the new List widget. Data feeds have been extended to support lists of values and these lists of values can be pushed-down to JDBC, BigMemory and Terracotta DB data sources as necessary. The custom widgets API has been extended to support multiple selections.

Visualizations Enhancements

New visualization and enhancements have been introduced in MashZone NextGen v10.2:

- A new List widget, as mentioned above, designed to enable easy, intuitive, multiple selection within dashboards.
- A new Date filter widget enabling the easy selection of time periods (Years and Quarters or Years and Months).
- A new Slider widget to allow graphical selection of numeric values or value ranges.
- A new Rich text editor widget, enabling greater control of formatting and layout and allowing blending of static and dynamic values within a dashboard.
- Export data from a widget to csv, this can be enabled or disabled on an individual widget as required.

Other Changes

- It is now possible to enable anonymous access to a dashboard.
 - Enhanced audit logging of users and actions, including create, update, delete of MashZone NextGen assets, and user login – failed and successful and logoff activities.
 - A new highly available, scalable and resilient architecture for streaming data from Apama and Digital Event Services – please review the documentation for further details.
 - Additional Command Central support for managing licenses, ports, and certificates for MashZone NextGen.
-

My webMethods Server

My webMethods Server has the following new feature and enhancements:

Compliance with GDPR Regulation

My webMethods Server now provides My webMethods users with the ability to export their profile data or delete their own user profiles. My webMethods administrators can export and delete user data, using the administrative interfaces or REST APIs. In addition, administrators can configure e-mail notifications and inform users of any modifications of their profile data.

Section 508 Compliance for HTML Tables

To comply with the Section 508 accessibility guidelines, the table column and row headers now use markup in My webMethods Server. A screen reader software can use the column and row headers to assist users with data comprehension in tables.

Enhanced Cache Configuration

My webMethods Server system administrators can configure cache settings globally for a cluster or individually per cache types and components, using configuration files or administrative interfaces.

Extended My webMethods Server Instance Update

In addition to changing the database connection configuration and adding an instance to a cluster, My webMethods Server administrators can modify the cluster node name of a server instance when updating the instance using Command Central and the My webMethods Server command line utility, or during migration.

Directory Services Configuration in Command Central

You can create and configure LDAP, ADAM, and ADSI directory services for My webMethods Server, using the Command Central web user interface.

Axis Framework Upgrade

The Axis framework for web services in My webMethods Server is upgraded to version 1.7.

Software AG Command Central

Support for Renaming Hosts and Instances during Product Migration

For cross-host migration and datacenter move, the old hosts used in product configuration are replaced with new hosts. It is also useful to rename instances during migration.

Enhance Node Alias to Host Mapping in Composite Templates

Command Central composite templates used to rely only on auto mapping of node alias to host name as default behavior when no explicit mapping is done. However, explicit mapping is not dynamic enough to be externalized for any number of nodes. With 10.2, this limitation is resolved as the hostname, node name, and instance ID are dynamically provided by enhancing the composite template DSL.

Support for HTTPS Connection to Empower

Command Central now supports connecting over HTTPS to master (Empower) repositories, which are managed by Command Central 10.2 and hosted on Platform Manager 10.2, when downloading products and fixes to install in an environment.

Declarative Management of Support Patches in Composite Templates

The composite templates are now enhanced to handle support patches. You can automatically uninstall any support patches that prevent the installation of official fixes, and install specific support patches listed in an inline template in addition to the official fixes.

Command Central CLI Support for Simple Synchronous Calls and Retry Options

The Command Central CLI client now natively supports the monitoring of a returned job as follows:

- Allows 'synchronous' job execution/monitoring with a single, simple command
- Handles Command Central restarts and implements a retry function, for example if the server shuts down, the client will wait for the server to come back and will retry the job for which it did not receive an online status.

webMethods Agile Apps

GDPR Compliance

As part of the compliance requirements for GDPR, whenever a user or a tenant is deleted, all their personal contact and address information is deleted from the system permanently.

Suse Linux 12

AgileApps is now certified with Suse Linux v12.

Non-Root user on MySQL

AgileApps installation can now be achieved using a non-root user in MySQL provided that the user has the required privileges.

Improvements in Master Scheduler

All the failed and unprocessed scheduled jobs can now be monitored by the user.

Deprecate Notice for Signavio Modeler

The Signavio process modeler plugin used to design process models in AgileApps will be deprecated in the upcoming releases to use the new DBO Process Web Modeler. Until then, it will be supported for all existing customers and there is no impact for any application in production.

webMethods Dynamic Apps Platform

AgileApps co-hosted with Dynamic Business Orchestrator on Integration Server

AgileApps can now invoke Dynamic Business Orchestrator (DBO) processes in-proc on the same Integration Server (IS), on which AgileApps is co-hosted with DBO in the same OSGi runtime.

First Integrated Release of the New Dynamic Apps Platform

Dynamic Apps Platform now includes dynamic processes, tasks, case management, business rules, mobile, analytics, and a web app user interface.

AgileApps Cases Can Now Call DBO Processes

AgileApps cases now provide:

- a list of start documents to initiate the DBO process
- a map that you use to map the case object to the process start document
- update of the case status with the correct process execution status

webMethods ApplinX

Sort Function for List of Field Mappings

You can sort the contents of a List of Field Mappings table by field name or by any other column. The contents can be sorted in ascending or descending order. This feature is useful when detecting duplicate field entries.

Single Sign-on under AS/400

ApplinX now supports Single Sign-on using a Kerberos ticket on the platform AS/400.

webMethods BPMS <includes Monitor, Process Engine, Dynamic Business Orchestrator, Task Engine (including Mobile Task Integration), and Business Console>

- Support for SQL Server 2016 for all BPMS components.
- Support for MySQL (Community and Enterprise) for all BPMS components.
- Lifecycle test support using Command Central.
- Compliance with the GDPR regulation.
- webMethods Broker is deprecated for use with webMethods BPMS 10.2.

Dynamic Business Orchestrator

- Design time migration scripts and assists for all Process Engine-based processes.
- Removal of the dependency on Universal Messaging Admin API.

webMethods API Gateway

API Monetization

API providers have more options now when defining their service plans for use with API Monetization. It is possible to separately define rate and quota limits. For quota limits API providers can choose whether users should be blocked on reaching the specified limit (hard limit) or not (soft limit). They can also specify a warning threshold at which API consumers are notified on reaching it.

DevOps

API Gateway now provides a facility to define stages by supplying connection information to other API Gateways. Once configured, API Gateway allows defining promotion sets and executing promotions across stages. Additionally, API Gateway allows rolling back previously executed promotions.

API Documentation

API editing is enhanced by providing an option to upload files for APIs and define searchable tags on API, resource, and operation level.
API Gateway now supports OData APIs.

API Management

API Gateway now allows suspending an application, which results in rejecting calls made to APIs using application's identifiers with HTTP 403 Forbidden status code and appropriate message. Transactional data logged by API Gateway has been enhanced to include transport headers and query parameters for both request and response payloads. Additionally, with the Invoke webMethods IS policy, API providers can log custom data along with the data logged automatically by API Gateway.
API Gateway now allows defining Trusted External JWT issuers including their truststore, certificate and JWKS URI information.

API Gateway Application

Users can now manage their profile information in a dedicated screen provided in API Gateway user interface.

API Gateway now provides an audit logging facility that allows turning on audit logging for the following functional modules:

- API management
- Approval management
- Application management
- Alias management
- Access profile management
- Analytics management
- Group management
- Policy management
- Package management
- Plan management
- Promotion management
- User management

API Gateway administrators can choose the destinations where the audit data can be logged. API Gateway administrator can now manage local cache configurations. For all locally managed caches administrators can specify how much of data (in %) should be stored in memory and whether the cache statistics should be collected. Collected statistics is displayed in a dedicated dashboard within API Gateway analytics page.

Internal Data Store (also known as Event Data Store) now uses Elasticsearch 5.6.4.

API Policies

This release includes new policies and enhancements in existing policies.

New data masking policy - Allows masking or filtering out parts of the request and response payload using XPath, JSONPath or RegEx. Optionally, the same rules can be applied to data being logged to selected destinations. Data masking policy can be used in request processing, response processing and error handling stages.

New request and response transformation policy - Allows configuring the HTTP method, transport headers, query and path parameters, and payload transformations from API Gateway user interface. These transformations can be configured to be triggered in reaction to specific transport or message level data. Advanced and more complex transformations can also be done by using XSLT transformations or invoking an IS service from the same policy. These policies are available in request processing and response processing stages.

New CORS policy – Allows setting of allowed origins, allowed headers, exposed headers, allowed HTTP methods as well as an option to allow credentials and setting maximum age for API call at an API level. The new CORS policy is available in response processing stage.

Changed and enhanced validation policy – Schema Validation policy is renamed to Validate API Specification policy and enhanced to validate schemas, query parameters, path parameters, allowed content types and HTTP headers as well. It is available in the request processing and response processing stages.

Improved Invoke webMethods Integration Server policy – From this release, webMethods Integration Server services invoked by API Gateway can be implemented using graphical FLOW language as well. API Gateway provides a clear input and output structure for such services in the form of Integration Server specifications.

Improved content handling – API Gateway is enhanced to recognize incoming content types and outgoing content types and to react accordingly by applying an appropriate conversion or transformation mechanism like XPath or JSONPath. API Providers can also register their own custom content types within API Gateway and specify the base type for their custom type, so that API Gateway handles it properly.

JSONPath and JSON schema support – JSON payload are natively supported by API Gateway and this release provides support for JSON schema and JSONPath in multiple places that access the application.

webMethods API Portal

API Documentation

SOAP services that were REST-enabled and published to API Portal with both SOAP and REST details, are now displayed in API Portal as Hybrid APIs. Developers can now browse and view both SOAP and REST details from one API details screen.

APIs now display the information about API scopes defined by providers in API Gateway.

API details now show tags defined for the API in the API Gateway and tags defined in swagger file being imported. API level tags can also be edited in API Portal.

API try-out functionality has been enhanced to allow test invocations of API protected with JSON Web Tokens. The Try API screen has been improved to provide clearer view of API resources and to support syntax highlighting for JSON and XML request and response payloads.

API Usage Reporting

API Portal users who registered their applications to use APIs available in the portal are now able to schedule periodic reports with data about their applications activity and API usage. These

reports can be scheduled to run daily, weekly or monthly and are sent to users' registered email address. The data includes a summary section with API invocation counts per application and a detailed section with more granular data about API usage.

API Portal Customization

API Portal customization has been simplified by making font and color theming configurable through customization user interface.

API Gallery view can be switched from grid to list or block view by selecting one of the available layouts.

API Portal Sizing

API Portal configuration is simplified by allowing administrators to select one of the pre-configured set-ups at installation time. The available selections are:

Small (demo usage)

Medium (standard installation)

Large (production server installation)

webMethods ActiveTransfer Server

Support for DB Partitioning

ActiveTransfer supports database level partitioning of file transfers related data. Partitioning offers multiple advantages including better query performance and enables easy archival and purge of historical data.

Support for Enhanced File Sharing

ActiveTransfer offers several enhancements to the file sharing capability available through the ActiveTransfer web client. Files can now be shared with external users through ActiveTransfer Gateway without compromising security. In addition, more granular access levels can be configured for an external user to limit access to the range of actions that can be performed. They include actions such as Upload, Download, Rename, Delete, Create Folder and Delete folder.

webMethods ActiveTransfer Agent

Automate Remote File Transfers through Agents

ActiveTransfer agent is a new component that can be installed directly on a remote system. The agent can connect to the central ActiveTransfer server and perform file transfers between the remote system that hosts the agent and the central hub where ActiveTransfer server is located.

Remote Installation of Agents

ActiveTransfer agents can be installed remotely on any system within an organization's firewall or outside the firewall using Command Central. Fixes associated with agents for periodic maintenance can also be installed using Command Central.

Centralized Management/Monitoring of Agents

ActiveTransfer agents can be centrally managed and monitored through ActiveTransfer server. All configurations related to file transfers are managed through events that can be pushed directly to one or more agents. Agents that have the same file transfer characteristics can be grouped together for the event to apply across multiple agents simplifying setup.

All activities related to file transfer involving an agent is tracked. This includes authentication, file transfer actions performed and the status of each of the actions.

Agent Event/Actions

Agents deployed on remote systems can either upload or download files with the central ActiveTransfer server. For file uploads, agents can not only access files from the file system it has access to but it also can connect to a remote server to fetch files. Event definitions include a variety of options including the ability to rename files at source or destination, delete original files, compress files and verify checksum to maintain file integrity during transfers.

webMethods Broker

webMethods Broker is now replaced by Software AG Universal Messaging. The use of webMethods Broker with this release of webMethods is deprecated. You can connect webMethods 10.2 products to an existing webMethods Broker 9.6 instance and that use is supported for as long as webMethods Broker 9.6 is supported. It is strongly recommended to use Universal Messaging for any new developments. For migrating existing assets, use Universal Messaging before webMethods Broker reaches its end of support.

webMethods Business Rules

Design Time Auditing

Business Rules now sends design time auditing events for decision tables via Digital Event Services. These events can be stored in an Elasticsearch data store. The routing of the design time events to the data store can be configured in Command Central.

A new design time auditing user interface in Business Console helps to analyze the changes that have been made to a decision table.

Support of Digital Business Orchestrator

Business Rules now supports the process actions "start process" and "join process" for DBO processes.

In Business Console, decision tables contained in a DBO process can also be viewed.

Deprecation of EDA

Sending design time events via Event Driven Architecture (EDA) is deprecated.

webMethods Mobile Suite

Mobile Designer

Support for Windows Mobile Platform is now deprecated.

Mobile Task Inbox

Mobile Task Inbox has been removed.

webMethods Integration Server

Enhanced Support for Defining REST Resources

Integration Server provides improved support for defining REST resources. Integration Server now permits identically named resources that are created in different Integration Server namespaces. The base path of the Rest API Descriptor can be edited while defining resources using the resource first implementation style.

Enhanced Support for Swagger-First REST APIs

Integration Server provides enhanced support for created REST APIs from Swagger files, offering support for resources with a base path (/) and allowing the grouping of resources based on paths and tags.

WebSocket Protocol Support

Integration Server provides support for the WebSocket protocol. Developers can create client and server WebSocket endpoints that facilitate the two-way communication between the client and server via the WebSocket protocol. Integration Server supports basic authentication and SSL/TLS with the WebSocket protocol.

Enhanced Logging for Messaging

Enhanced logging for messaging is a configurable feature that instructs Integration Server to write detailed log entries when sending or receiving and processing messages. The detailed logging makes it possible to track an individual message across your Integration Servers from the time the message is published through the time a trigger receives, processes, and acknowledges the message.

Support for Pause and Publish using Universal Messaging

Universal Messaging (UM) introduced a new feature to pause publishing of messages. Integration Server provides support for this new feature and is able to pause publishing of messages if UM is configured to pause message publishing.

Support for HTTP Security Response Headers

Integration Server provides enhanced support for HTTP security headers. Users can configure the Integration Server to send the following HTTP security headers in the response: X-Content-Type-Options, X-XSS-Protection and Strict-Transport-Security.

Improved Support for REST Multipart Messages

Integration Server provides support for registering custom handler for REST APIs. The custom handler can process multi-part messages coming from the client.

Enhanced Support for Strong Password and Password Policy Settings

To enhance security, Integration Server now supports stronger password policies for user accounts. Integration Server achieves this through additional password requirements, password expiry control, and account locking on failed logins.

webMethods Microservices Runtime

Microservices is an architectural style for developing a single application as a suite of small services, each running in its own process and communicating with light-weight mechanisms, such as an HTTP resource API. Software AG is now offering a light-weight container called the Microservices Runtime to host these small services.

webMethods Microservices Runtime provides a superset of the functionality available in webMethods Integration Server. Review the webMethods Integration Server 10.2 release notes for information about functionality available in webMethods Integration Server 10.2.

Rename Microservices Container to Microservices Runtime

webMethods Microservices Runtime is the new name for webMethods Microservices Container.

webMethods CloudStreams

CloudStreams Server Enhancements

- **MTOM Support**

CloudStreams Server now supports Message Transmission Optimization Mechanism (MTOM) method of exchanging binary data with Web service providers. MTOM is used in conjunction with XOP (XML-binary Optimized Packaging) specification. You can now send binary data as a Base64 encoded format, using the MTOM specification.

- Large Payload Handling Support**

CloudStreams Server now supports efficient handling of large payloads exchanged with Web service providers. These large data configurations enable you to send and receive large binary streams over HTTP/HTTPS without storing them as a whole in the memory. Along with HTTP chunking, this capability provides more efficient exchange of large data without running into memory issues.
- Enhanced Concurrency Support**

CloudStreams Server now handles concurrent executions of cloud connector services in a more efficient way. This improves parallel request handling, without running into concurrency issues.
- Enhanced CloudStreams Server Redirection Capabilities**

CloudStreams Server now supports redirection capabilities with other HTTP methods, for example, PUT and DELETE. This allows you to interact with back ends like AWS S3 for redirected data transfers across different regions and geographies.
- GDPR Compliance**

CloudStreams Server is now compliant with General Data Protection Regulation (GDPR) for removing the personal data of a user.
- Comet D library 3.1.3 Certification for Salesforce**

For streaming notification services, Salesforce is now supporting CometD version 3.1.0 or later. CloudStreams Server is now certified to work with Salesforce for this version of CometD library.
- Command Central Support**

CloudStreams Server installation and fix management is now supported using Command Central.

CloudStreams Development Plug-in Enhancements

- Support for Cut, Copy, and Paste at Resource Level for REST Plug-in**

CloudStreams now allows you to cut, copy, and paste request parameters, request headers, and response headers for REST-based connectors. For SOAP-based connectors, only request parameters can be currently moved or copied.
- Support for Refresh Functionality at Provider and Connector Level**

Refresh button has now been added for enhanced usability to sync assets between the Plug-in and Server for providers and connectors.
- Support for Assignment Ordering**

You can now change the sequence of both local and global assignments. Assignments are then applied in the sequence they appear in the Order pane.
- Support for Parameter Formatter**

You can now add record type parameter formatters. A new parameter style Record (as Query) has been added, which is a complex record structure representation, split into one or more query string parameters.
- Support for Start and Stop Sequence in REST-based and SOAP-based Providers**

You can define optional Start and Stop sequences, which allow you to manage the connection behavior for both REST-based and SOAP-based providers.

- **Import Published Provider Package Support**

The import functionality has been enhanced and allows you to import a provider package as an archive file or import the package from a workspace.

- **Enhanced Connector Creation using a Swagger file**

While creating a connector using a Swagger file, you can now import request and response references and global parameters from the Swagger file.

CloudStreams Connectors

- **New and Updated Connectors**

New and updated connectors for the following SaaS Applications can now be downloaded from the Software AG TECHcommunity website at <http://techcommunity.softwareag.com> .

- **New Connectors**

- Cumulocity, Version 0.9
- Coupa API, Versions 17 and 19
- ServiceNow, API Versions Istanbul and Helsinki
- Concur, Version 3
- JIRA, Version 2

- **Updated Connectors**

- NetSuite API, Version 2016_2
- Amazon S3 Connector – Large Payload Upload support
- Microsoft Dynamics CRM, Version 2013
- OData, Version 4 – Batch, Change Set, and Enhanced Query support
- OData, Version 2 – Navigation/Relationship Queries support

webMethods OneData

Enhancements in Data Steward User Interface

The Data Steward user interface is enhanced with the following new capabilities:

- Leveled hierarchies in the consolidated hierarchy view, which now also includes support for child objects utilizing the n-level Supertype/Subtype concept.
- Data filtering and sorting capabilities now allow the use of quick and easy inline filters as well as complex, multi-column filters.
- Data objects that utilize the Supertype/Subtype concept support all data manipulation actions.

REST APIs Improvements

Data object REST APIs have been enhanced to support multiple description columns for foreign keys. Object-related schema definition also reflects this enhancement.

Additionally, REST APIs now support implicit filters.

Data Quality Enhancements

Locate-based address cleansing projects now have the option to use more cleanser engine output information including address verification codes (AVCs), address quality index (AQI), and column-level field status (FS) parameters. Users can use this information to configure minimum thresholds for the address records to be considered cleansed. Address records that fall below this threshold are sent to the data steward for verification.

OneData now uses the latest version of Locate datasets.

Enhanced Workflow Transactions

Data stewards now can change data in a record that is pending approval for an insert transaction.

In case of multi-record workflow transactions, OneData now provides a new option that allows users to enable commit of successful approvals in a batch even when other approvals in the same batch fail. This capability makes the Data Governance process more efficient by saving users the effort of reapproving successfully approved records along with the failed approvals.

OneData now provides a consolidated view of the workflow comments across multiple reject actions for the same transaction.

SQL Server Support

When using SQL Server as a repository database, OneData functionalities have been enhanced to include:

- Data Notification Job
- Job Step tab in Define Objects
- Usage tab in Define Objects

Infrastructure Improvements

OneData search now uses the latest version of Elasticsearch.

webMethods Content Adapters

FileNet Adapter

- The FileNet Adapter now supports FileNet 5.2 and notifications.
 - Support for FileNet 3.0 is has been removed.
-

webMethods Optimize for Infrastructure

Support for MySQL

Optimize for Infrastructure can now be configured to use MySQL Community Edition and MySQL Enterprise Edition database

webMethods Optimize for Process

Support for MySQL

Optimize for Process can now be configured to use MySQL Community Edition and MySQL Enterprise Edition database types.

Monitor Dynamic Business Orchestrator (DBO) Processes

Dynamic Business Orchestrator Processes can be monitored with Optimize for Process. You can create KPIs against DBO processes, and the Optimize dashboard will show both Process Engine and DBO process statistics.

Digital Event Persistence

Configuration Migration

webMethods Digital Event Persistence configurations can be migrated to new environments using the Digital Event Services Migration Utility.

webMethods Service Development

Support for Swagger UI in Designer

Integration Server supports Swagger format for describing REST API s . webMethods Designer displays REST API descriptors (Swagger documents) using an embedded Swagger UI. The Swagger UI provides an interactive UI for viewing and interacting with Swagger descriptors. Users can execute REST resource methods using the 'Try it out'option .

Enhanced support for Search UI in Designer

webMethods Designer provides the ability to search assets or variables based on an asset name, field or variable name, or both. The new scope options in the search dialog enable users to search quickly and efficiently within Integration Server.

Support WebSocket Provider

WebMethods Designer allows developers to create and host WebSocket provider services in the Integration Server.

Unit Test Framework

Unit Test Framework 10.2 includes following features and enhancements:

- Allows recording and analyzing flow steps and map actions of your flow service(s) executed during a particular test launch. It helps to identify untested steps and improve the corresponding tests.
 - Allows Multiple Test Suite Executions in a single server session.
 - Supports standard Junit reporting over the Custom Junit runner.
 - Includes following Designer Coverage reports: Suite Coverage, Execution Model , and Service Coverage.
 - Unit Test Framework libraries are not separated from the Designer and can be separately installed for headless or script execution. This option is especially useful for continuous Integration scenarios.
-

webMethods Universal Messaging

Horizontal Scalability

Users can specify a set of servers or clusters to connect to within a single logical session allowing the user to publish or subscribe to the same queue or topic across multiple servers or clusters.

- Supported for both Java Native and JMS APIs
- Events may be received out of order
- Publish capability replaces earlier JMS Round Robin Publication (see deprecation notes)
- Enabled by using a horizontal scaling (HS) URL in place of the standard RNAME URL

Updates for the HealthChecker tool

- New checks

The set of available checks provided by the HealthChecker tool has been extended.

New checks are:

- ServerProtectionConsistencyCheck
- XMLServerProtectionConsistencyCheck
- DurableSubscriberLargeStoreCheck

Extended syntax allowing custom values

The syntax for running the HealthChecker has been extended to allow custom values to be specified by using additional parameters. For example, the DurableSubscriberLargeStoreCheck check examines the number of remaining events to be consumed in a shared durable, and if the number is greater than a certain threshold a warning will be displayed. The default value for the threshold is 1000, but the additional parameter “-threshold” allows you to specify a different value for the threshold.

For information about the new functionality, refer to *Running a Configuration Health Check* in the *Administration Guide*.

New Diagnostic Tool - Realm Information Collector

The Realm Information Collector is a new command-line diagnostic tool that gathers files and live data from one or more Universal Messaging realm servers. The tool makes it easier for you to collect information that Software AG support may require to diagnose issues with Universal Messaging, but the information collected may also be useful for internal support within your organization.

For information about the new functionality, refer to *The Realm Information Collector Diagnostic Tool* in the *Administration Guide*.

Heap Dump Following a JVM "Out of Memory Error"

Universal Messaging now automatically generates a heap dump file when an OutOfMemoryError occurs in the Java Virtual Machine (JVM).

For information about the new functionality, refer to *The Dump file for Out-of-Memory Errors (OOM)* in the *Installation Guide*.

Documentation of Command Line Tools

For several product versions, Universal Messaging has provided a set of command line administration tools that display online help when called on the command line. The product documentation set has now been extended to include this online help.

To access information about command line tools, see *Command Line Administration Tools* in the *Administrator Guide*.

Use of terms "named object" and "Durable Subscription"

In previous product releases, we used the terms “named object” and “durable subscription” as synonyms. As of v10.2, we are phasing out the term “named object” and focusing on using the term “durable subscription” or its abbreviated form “durable”.

Check for Version Compatibility of Universal Messaging Server and Administration API client

In previous product versions, there was no explicit version compatibility check between the Universal Messaging server and administration API clients connecting to the server, so for example an administration API client v9.12 could connect to a v10.1 server. In general, this

resulted in an undefined behavior, but usually in a stream corruption, since cross-version administration API compatibility is not supported.

Starting from v10.2, the Universal Messaging server includes a version check that rejects connection requests from administration API clients whose protocol version differs from that of the server. The Universal Messaging server adds an entry in the log file `nirvana.log`, clearly describing the protocol mismatch.

If the Universal Messaging server detects a version mismatch, the server replies to the client with a security exception that is intended to be compatible across Universal Messaging protocol versions. If, however, the security exception is not compatible with the protocol version of the administration API client, the client re-throws the received security exception.

Changed Behavior Following the File System I/O Exceptions

In previous product versions, the Universal Messaging server would keep running even after experiencing serious file system I/O exceptions, such as being unable to create a file for channel persistence due to using an invalid filename. In such situations, the application would not be made aware that these exceptions had been received, and so would continue processing without the expected persistence guarantees being in place.

This issue has been resolved by modifying the server to shut down when a non-recoverable I/O exception is received. This fail-fast behavior may impact server availability but will avoid the worse situation where an application incorrectly assumes that it has persistence guarantees that are not in fact provided.

Client API for C++

- **New functionality**
In the client API for C++, you can now get the header of an `nConsumeEvent` and iterate through its values. This functionality is already available in the client API for Java. This can be achieved by getting the header from the event and then getting an iterator from the header.

Important: You have to dispose of the iterator after you have finished using it.

Support for JAAS Login with a Client X.509 Certificate Chain

Universal Messaging now supports authenticating users through the Software AG Security Infrastructure component (SIN) with a client X.509 certificate chain. This allows users to access a Universal Messaging server that requires authentication, over an SSL/TLS enabled interface with a client certificate.

For further information, refer to the section *Server JAAS Authentication with Software AG Security infrastructure component* in the *Concepts guide*.

Support for Registering a Windows Service Using Command Central CLI

Command Central command-line interface can now be used to register a Windows service when creating a Universal Messaging server instance.

For further information, refer to the section *Universal Messaging Commands* in the *Administrator Guide*.

Support for Configuring JVM Options using Command Central

Command Central web user interface and command-line interface can now be used to configure JVM options.

For further information, refer to the *section JVM Options* in the *Administrator Guide*.

Enterprise Manager Enhancements

The Enterprise Manager now offers an option to convert clustered transient channels and queues to mixed channels and queues when you import a realm configuration from an XML file.

For more information, refer to the *section Importing a Realm Configuration from an XML File* in the *Administrator Guide*.

The Named Objects tab for a channel has been renamed to Durables tab, and the Get button has been removed. Now, the Enterprise Manager updates the durables table automatically when a durable is added or removed, or the attributes of a durable are changed.

For more information, refer to the *section Viewing and Managing Durables for a Channel* in the *Administrator Guide*.

Client API for Java

The Java client API provides a new option, “-autoconvert” , to convert clustered transient channels and queues to mixed channels and queues when you import a realm configuration from an XML file.

For more information, refer to the *section Java Client: Import a realm's configuration information* in the *Developer Guide*.

Documentation Corrections

MQTT Quality of Service (QoS) Level Support

In previous product releases, the documentation stated that Universal Messaging supports MQTT QoS levels 0, 1 and 2.

However, support is only provided for QoS levels 0 and 1. Connections requesting QoS level 2 will be downgraded to QoS level 1 at connection time, as allowed by the MQTT specification.

For further information, refer to the *section MQTT: An Overview* in the *Concepts Guide*.

Deprecated Features in v10.2

The following Universal Messaging features are now deprecated in Universal Messaging 10.2. Features listed as deprecated are still available in the product, but will be removed in a future release.

- XML document type
Currently it is possible to publish and consume messages that are stored in XML format. This functionality is now deprecated.

Note that this deprecation notice only applies if the entire message is in XML format. It does not apply if only the event payload is in XML format.

- Simple, Paged and Offheap store types
The following store types (i.e. channel types and queues types) are now deprecated:
 - Simple
 - Paged
 - Offheap
 - SSL certificate generator

The Certificate Generator utility, that can be used to generate a self-signed server certificate, a self-signed client certificate and a trust store, is now deprecated.
- Client API for Python
The Client API for Python is now deprecated.
- Server plugins
The following server plugins are now deprecated:
 - Graphics
 - XML
 - SOAP
 - Proxy passthrough
 - Servlet
- Round Robin publication through JMS
All APIs and classes under the package `com.pcbsys.nirvana.nJMS.roundRobin` are deprecated and the functionality has been placed into the package `com.pcbsys.nirvana.nJMS` using the Horizontal Scalability feature of Universal Messaging introduced in v10.2.
Any existing JMS Round Robin scenarios will need to recreate or modify their JNDI environments to not use these classes but to use their equivalent in the package `com.pcbsys.nirvana.nJMS`.

Removed Features in v10.2

The following Universal Messaging features have been removed Universal Messaging 10.2.

- TradeSpace demo
The TradeSpace demo that was available in previous versions has been removed from the product.

webMethods Trading Networks

Enable Partner Access to APIs

Trading Networks is tightly integrated with API Gateway to selectively expose the APIs available in API Gateway. This capability enables you to manage API access for each partner. Partner developers can directly browse through the accessible APIs through the My webMethods Server partner self-service screens. The API sub-tab in a Partner Profile includes basic details, specification, access policy tabs that can be used for API invocation, and to view the tokens details for accessing the API. For partners to gain access to APIs, administrators can either add the APIs to an individual partner or to a partner group.

Support for Command Central

Command Central supports management of Trading Networks configurations including management of Trading Networks instances and properties related to Trading Networks servers. It also enables template-based provisioning of Trading Networks instances.

SFTP Document Delivery

Trading Networks supports document delivery using the SFTP protocol.

Software AG Installer

Download Speed Improved

Download of jar files has been re-worked in order to improve download speed.

Documentation

Installing Software AG Products and Upgrade Software AG Products Restructured

The Installing Software AG Products and Upgrade Software AG Products guides have been restructured to apply to installation and upgrade using either the Software AG Installer or Software AG Command Central.

webMethods Broker Documentation is Removed

The use of webMethods Broker with this release of webMethods is deprecated. The webMethods Broker documentation is not updated or published for this release.

New Web Help for Administering Software AG Products with Command Central

Administering Software AG Products with Command Central is a new web help that includes details about performing administration and configuration tasks in Command Central specific to a product, such as creating a product instance or updating configuration settings.

webMethods BPM and CAF CentraSite Metadata Help Discontinued

webMethods BPM and CAF CentraSite Metadata Help has been discontinued for 10.2. The information about Integration Server and Trading Networks assets is now available in webMethods Service Development Help. The information about BPM assets is available in webMethods BPM Process Development Help.

API Portal

Beginning with release 10.2 the online help content is also available in PDF format on Empower.

- API Portal Administrator's Guide (includes the online help content)

- API Portal Provider's Guide
- API Portal Consumer's Guide

Upgrade

New MashZone NextGen Migration Utility

MashZone NextGen now offers a migration utility for migration from 10.1 to 10.2. However, migration from pre-10.1 release still requires manual steps for migration.

My webMethods Server Migration Utility Allows New Node Names

You can now assign new node names to My webMethods Server nodes when migrating the nodes using the My webMethods Server migration utility.

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webMethods Product Suite 10.3

Release Notes

Software AG's Digital Business Platform powers digital transformation and enables any organization to become a Digital Enterprise. And the webMethods Product Suite, a core component of the Digital Business Platform, helps you achieve this transformation.

webMethods Product Suite includes a broad collection of capabilities including application and partner integration, API management, dynamic application development, master data management, and operational intelligence. With webMethods, you have an extensible, scalable and reliable backbone - running either in the cloud, on-premises or in hybrid scenarios – providing seamless integration for cloud, mobile, APIs, and Internet of Things, and streamlining process management and dynamic application development.

Release 10.3 of the webMethods Product Suite provides significant enhancements in every functional area of the suite.

Release Highlights

webMethods Integration

Software AG's webMethods Integration Platform is a proven, pre-integrated software suite that enables enterprises to rapidly integrate systems, services, devices, processes, business partners, and data to provide new business value and improve business performance.

The key features include:

- Integration Server allows developers to develop REST APIs that adhere to the JSON API standard. The JSON API allows developers to take advantage of shared conventions that increase developer productivity.
- Software AG provides a sample Kubernetes script for Integration Server. This script can be customized to meet user's needs, allows users to create Integration Server pods and orchestrate those using Kubernetes.
- Integration Server Administrator is now WCAG compliant. Web Content Accessibility Guidelines (WCAG) help make web content more accessible to people with disabilities.
- Integration Server, in conjunction with Designer, supports a try-catch-finally flow construct in webMethods flow language. This construct allows flow service developers to handle errors in a standardized way, which simplifies the handling of complex error situations and increases the readability of the code.
- Integration Server now supports the Resource Owner Password Credentials and Client Credentials OAuth grant types.
- Integration Server, in conjunction with Universal Messaging, supports the ordered delivery of messages by webMethods messaging triggers.
- Integration Server has the ability to expose a REST API descriptor in Swagger format. With this release, Integration Server can now expose the Swagger descriptor over a URL for easy access by development tools. This allows for easy consumption of the API.

- The Service Development perspective in Software AG Designer provides a separate view for displaying on-premises recipes and browsing recipes stored in the Integration Cloud recipe store.
- Software AG Designer Service Development provides the ability to connect and deploy custom packages and configuration assets to Integration Cloud. Developers can select any custom package and upload it to a solution instance defined on Integration Cloud.
- Software AG Designer, in conjunction with Integration Server supports the Try-Catch-Finally flow construct in webMethods flow language.
- A new user interface to perform administrative tasks in ActiveTransfer is available with this release. The new ActiveTransfer user interface supports the following features--Listeners, Gateways, Users, Roles, Groups, and Templates and Folders
- ActiveTransfer Agent now supports error handling in case of event failures. The error handling mechanisms include executing events on ActiveTransfer Server, sending email notifications, and executing Integration Server services.
- ActiveTransfer Agent now supports certificate-based authentication to communicate with ActiveTransfer Server.
- ActiveTransfer Agent now supports additional configurations for agent events and has a reduced installation footprint of 450 MB.
- Trading Networks now supports usage monitoring of API Gateway APIs. It provides administrators the ability to view and monitor API invocations of the APIs granted to trading partners. As an administrator, you can query API invocations by using partner name, API name, duration, and time interval filters.
- Trading Networks delivery of large documents through ActiveTransfer is enhanced to support document sizes up to 2 GB.
- Trading Networks now supports document delivery by using SFTP.
- Command Central supports both installation and uninstallation of Trading Network assets. It lists the installed assets with versions that allows for easy automation and enablement of new features to support Ops and DevOps use cases.
- Enhancements in the OneData Data Steward user interface include data object workflow and browsing of recursive hierarchy.
- OneData operations are enhanced and the Data Quality module includes the latest version of the Locate cleansing engine.
- CloudStreams connector services now support the ability to dynamically provide authentication details during service execution. This allows users to invoke the existing service without depending on a pre-existing or predefined CloudStreams connection.
- CloudStreams framework supports inbound streaming at the connector level. A connector developer can implement backend-specific inbound streaming.
- CloudStreams server now supports creation of Docker image for a Microservices Runtime, which can be used across multiple environments.
- Microservices Runtime supports the ability to externalize Microservices Runtime configuration for Docker containers.
- Microservices Runtime supports a health check pattern that is used to determine the overall health of a Docker container. Microservices Runtime exposes a "/health" endpoint, which can be utilized by container orchestration tools like Kubernetes to restart the pod in case of health issues with the original pod. Microservices Runtime supports a number of out-of-the-box health indicators.

- Microservices Runtime supports a “/metrics” endpoint. The metrics endpoint provides the current Microservices Runtime metrics in a Prometheus format.
- Unit Test Framework allows you to record and analyze which flow steps and map actions of your flow services are executed during a particular test launch. It provides user-friendly reporting with coverage reports for Suite Coverage, Execution Model and Service Coverage. The code coverage feature is available in the version 10.1 as well.

webMethods API Management

Software AG’s webMethods API Portal provides a comprehensive solution that allows the developer community to find, learn about, discuss, and test your organization’s APIs. The API Portal not only exposes API documentation to developers inside and outside of your organization, but also manages the developer on-boarding process, and lets developers use exposed APIs for new and creative uses.

webMethods API Gateway enables you to securely expose your APIs to third-party developers, partners and other consumers for use in web, mobile and Internet of Things (IoT) applications. With API Gateway you can easily create APIs, define Service Level Agreement (SLA) policies, and seamlessly publish your APIs to webMethods API Portal.

This is the first release of the API Microgateway. It is a standalone, independent product with the capability to federate with API Gateway. Microgateway supports microservices and service mesh architectures, offering independent and sidecar deployments.

The key features in this release include:

- API Gateway now allows configuring multiple authorization servers that can be active concurrently. API Gateway also supports external OAuth2 authorization servers that do not allow dynamic client registration.
- API Gateway implements the relying party role in OpenID Connect authorization flow. API Gateway can now fully act as an OpenID token consumer, supporting both ID tokens, and access tokens with all OpenID Connect - (OIDC) supported authorization flows.
- API Gateway supports the HMAC with SHA (HS) signing algorithm.
- API Gateway allows including custom claims in generated JWTs and it supports all JWT claim types.
- API Gateway offers support for runtime service registries. This includes the discovery of backend service URLs and the publishing of API endpoints.
- API Gateway allows configuring of Mashup APIs. You can configure them as API chains that allow invocation of APIs sequentially or as API compositions.
- API Microgateway 10.3 comes with a self-contained Java application flavor with options to generate Docker images for independent and sidecar deployments.
- You can provision Microgateway using a command-line utility and provide configuration options by either reading it from a running API Gateway instance or reading it from API Gateway archive. All configurations can also be passed using YAML files for better support in DevOps scripting.
- API Portal is now shipped with two new, additional customization themes built solely using API Portal customization features.
- API Portal now provides the capability to set up and use multiple LDAP configurations. You can link these configurations to communities allowing for easy user on - boarding to API Portal communities.
- API Portal now supports OData APIs published from API Gateway.

- API Portal can be installed and uninstalled using Command Central.

webMethods Dynamic Apps

Software AG's Digital Business platform capabilities includes all the capabilities required for Dynamic Process Automation, and enables the development of "next gen" digital apps that enhance your user experience, improve operational efficiencies and extend your business.

This is the first integrated release of the new Dynamic App Platform including dynamic processes, tasks, case management, business rules, mobile, analytics, and web app user management.

The key features include:

- The process-to-case integration scenario is supported by the new Dynamic Business Orchestrator (DBO) engine. DBO calls the case in-proc mode. At design time, you can define a user task as either a webMethods task, or a case.
- As part of the accessibility compliance for Europe, the AgileApps Runtime user interface is refreshed using the Angular technology and is now in sync with the other products of the Software AG suite. On-premise customers have the option to switch to the new user interface and verify if their applications are working as before.
- The files and images currently stored in the AgileApps File System continue to be accessible even after the user enables the External Directory Storage option.
- Task Engine is decoupled from My webMethods Server and resides in Integration Server.
- Business Console is enhanced to adopt Task Engine instances running on Integration Server.
- All rules projects stored on My webMethods Server are automatically updated without manual intervention when the webMethods version is updated.
- Dynamic Business Orchestrator and Task Engine communicate in-proc.
- Software AG Installer, Deployer, and Command Central include support for Task Engine instances running on Integration Server.
- Dynamic Business Orchestrator supports the migration of classic Process Engine 9.x models to Dynamic Business Orchestrator 10.x models and batch import of 9.x Process Engine models.
- In Command Central, in addition to the start, stop, and restart lifecycle actions, DBO supports the pause and resume actions when you want to troubleshoot DBO in safe mode.
- Robotic Process Discovery can collect data on user actions and workflows with silent discovery robots, automatically identify which robotic processes to automate, and directly create the respective wizards in RPA Studio.
- The new Workflow View is introduced to allow users to view the overall flow of wizards along with all the details, including the actions taken in each step, logical operations (such as Loop and If/Else), and Fallbacks.
- A new Kryon Connector Chrome Extension is introduced to support functionalities previously available only in Internet Explorer, like window detection using HTML objects and advanced commands.
- Digital Event persistence uses Elasticsearch 5.6 as a store. The Dynamic Application Platform (DAP) events are persisted to this Elasticsearch store.

Operational Intelligence

Based on a consistent event-driven architecture, Operational Intelligence integrates best-of-breed technologies from existing Software AG products for process and data analytics into a single offering with a novel business-user interface.

The key features include:

- Optimize for Infrastructure now monitors the cache health in Integration Server as well as the Integration Server CSQ count for JMS maintenance mode for Devops.
- Users can easily enable and disable for monitoring component instances, depending on your business needs.
- The Business Process Dashboards are now visible in Business Console.
- The export KPI readings functionality is more flexible and provides options for extraction of all KPI readings for a selected time range.
- Optimize now collects and displays min, max, and average statistics.

webMethods Suite Enhancements

The webMethods Suite includes enhancements that improve functionality across multiple products.

The key features include:

- webMethods 10.3 is shipped with the Azul Zulu JDK 8. Software AG delivers the JDK with its products. Software AG products are only tested and supported with this shipped version of JDK.
- webMethods products are now compliant with General Data Protection Regulation (GDPR) guidelines to strengthen and unify data protection for our users.
- Software AG Command Central provides a single executable file for its Windows bootstrap installer.
- Since Software AG Command Central 10.1 has two Jobs views and their co-existence is confusing to the users. In 10.3 the modern hierarchical Jobs view has been improved to provide all of the useful capabilities of the older view.
- To ease product license distribution through Command Central, license keys can now be embedded in the License Manifests. After applying a License Manifest to Command Central users will automatically see the corresponding license key entries in the License Keys view or in the command-line interface.
- Software AG Command Central connects automatically to a Universal Messaging server that listens only on a Universal Messaging HTTPS (nhps) or a Universal Messaging SSL (nsp) interface.
- A new functionality in MashZone NextGen supports enterprises needing to deliver dashboards to users in multiple languages, substantially reducing the maintenance cost of multi-lingual MashZone NextGen deployments.
- Store the results of complex and long-running data feeds into Terracotta database (separate license required for the database) for reuse within your dashboards, enabling the push-down of complex queries from MashZone NextGen to Terracotta database.
- Two new geo-mapping widgets, maps with markers, and maps with vector overlay are available, enabling native mapping in MashZone NextGen either based on latitude and

longitude or geographic areas defined through a GeoJSON file. Mapping is based on OpenStreetMap maps.

- The default Software AG Installer.exe for Windows that is provided on Software AG Empower is now the 64-bit version. This version must be used to install 10.3 and higher releases

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For more details about the key additions and enhancements for this release, see the product descriptions.

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For important updates and a list of enhancements and issues that have been addressed since the previous release of each product, see the webMethods product readme files. You can access these documents, as well as all product documentation, from the webMethods area on the [Software AG Documentation website](#).

CentraSite

Business User Interface Enhancement

The CentraSite Business user interface has been enhanced for the management of design-time policies.

My webMethods Server

My webMethods Server has the following new feature and enhancements:

Task Engine Decoupled from My webMethods Server

- Task Engine is decoupled from My webMethods Server and resides in webMethods Integration Server.
- Dynamic Business Orchestrator and Task Engine communicate InProc.
- Software AG Installer, Deployer, and Command Central include support for Task Engine instances, running on Integration Server.

Software AG Command Central

Executable Windows Bootstrap Installer

Instead of providing a zip archive file that has to be unzipped, Command Central provides a single executable file for its Windows bootstrap installer. This executable file can be directly called to bootstrap Command Central or Platform Manager without any additional tasks.

Improved Jobs View

Since 10.1 Command Central has two Jobs views and their co-existence is confusing to the users. In 10.3 the modern hierarchical Jobs view has been improved to provide all of the useful capabilities of the older view.

Fix ID Support

Fix IDs in a format similar to “CCE_WebUI_9.7_Fix7” are now officially supported in Command Central templates and command line interfaces. Such fix IDs can be used for applying fixes on version 10.3 and higher. The fix ID can be obtained from Empower, from the Command Central web user interface by browsing in the fix repository, or by listing a fix repository with the command line interface.

Embedded License Keys in a License Manifest

To ease the product license distribution through Command Central, license keys can now be embedded in the License Manifests. After applying a License Manifest to Command Central the user will automatically see the corresponding license key entries in the License Keys view or in the command line interface. These license keys can then be used within Command Central in the same manner as license keys that have been added manually. License keys are required during product installation through Command Central, during license key replacement in an instance configuration, or in the License Key view when downloading on disc. When the License Manifest is removed from Command Central, the related license keys are also removed automatically.

Cloud Deployment

Cloud deployment is a “develop on premise, deploy to cloud” scenario for version 10.3 that depends on Command Central. If you want to leverage the scenario capabilities, be sure to have Command Central 10.3 installed and configured for your environment.

Software AG Common Platform

Support for Encryption Algorithm AES128-GCM

Software AG Web Services Stack now supports the encryption algorithm AES128-GCM.

Audit of All Important Operations in Software AG Runtime

Software AG Runtime audits all successful and unsuccessful logins. Auditing is provided when you log in using SAML, basic authentication, and JMX.

Security configurations are not audited.

Diagnostic Information Collector Tool for Platform Products

The Software AG Diagnostic Information Collector is a tool that enables you to easily collect diagnostic information about the Software AG Common Platform and the OSGi profiles of Software AG products.

Software AG Designer

Software AG Designer 10.3 is supported with Eclipse version 4.7.3.

Software AG EntireX

COBOL Integration Enhancements

- You can now use IDL unbounded groups and arrays without maximum (no upper bound) with COBOL RPC clients with COBOL 6 on z/OS. They are mapped to the COBOL OCCURS DEPENDING ON clause with the UNBOUNDED keyword.
- In the COBOL Mapping Editor you can now map COBOL data items to IDL binary data. This allows you to access, for example, image data provided by a COBOL server.

Command Central Enhancements

Using Command Central, you can now perform the following operations on EntireX Brokers running on mainframe platforms:

- Monitor runtime status, KPIs (key performance indicators), and alerts of EntireX Broker instances
- Display services and server instances of a service
- Configure KPI monitoring

EntireX Adapter Enhancements

- **REST support**

You can now generate REST resources using the EntireX Adapter.

- **Integration Server data type mapping**

The mapping from Integration Server data types to IDL data types has been enhanced. There are no more restrictions on the data types used in the Integration Server service. Data types which cannot be mapped to an IDL data type are either mapped to a string type or, if this is not possible, the parameter is ignored.

- **CICS Socket Listener Connection**

The new connection type CICS Socket Listener Connection supports all CICS interface types: (DFHCOMMAREA, Channel Container and Large Buffer). CICS Socket Listener Connections use the CICS Socket Listener, a remote connector on z/OS to call CICS mainframe programs.

- **Direct Reliable RPC Listener Connection**

The new Direct Reliable Listener Connection type supports inbound reliable connections using the Direct RPC component.

- **Listener enhancements**

When you create or update a listener, missing or necessary services are now generated automatically.

- **Service to generate a RACF PassTicket**

With the new built-in service `pub.wmentirex.RACFPassTicket:generate`, you can generate a RACF PassTicket.

- **Support for the new product "Adabas Replication Service for webMethods Integration Server"**

The EntireX Adapter provides support for this product with two new connection types and additional screens in the Integration Server Administration Console.

Security Enhancements

- **Long Broker Password Support**

The new ACI Version 12 of Broker supports long passwords and password phrases. You are no longer limited to 32 bytes for password and new password in the ACI.

- **Long RPC User ID/Password Support**

You can now use long RPC user IDs and passwords.

- **RACF password phrases**

You can now use RACF password phrases with EntireX Broker and RPC servers under z/OS running with impersonation.

- **OpenSSL**

EntireX now uses OpenSSL 1.1.0 instead of OpenSSL 1.0.2.

EntireX RPC Server Enhancements

Using the EntireX RPC Server for CICS Socket Listener, your standard RPC clients can communicate with CICS programs running on IBM CICS®. All CICS interface types are supported: (DFHCOMMAREA, Channel Container and Large Buffer). The RPC server uses the CICS Socket Listener, a remote connector on z/OS to call CICS mainframe programs.

REST Support

EntireX now offers REST enablement for any EntireX Adapter connection. The following scenarios have been added or expanded in the EntireX documentation:

- Calling COBOL from REST
- Calling Natural from REST
- Connecting Integration Server

Application Monitoring

- The following connection types of the EntireX Adapter now support application monitoring:
 - AS/400 Connection
 - CICS Socket Listener Connection
- All EntireX RPC servers now support Application Monitoring.

Docker Support

You have a choice of two methods of building a Docker image and running the Docker container: using scripts provided by EntireX, or using Command Central. This functionality is available for the components EntireX Broker, EntireX RPC Server for Java and EntireX RPC Server for XML/SOAP.

Software AG MashZone NextGen

MashZone NextGen 10.3 has the following new features and enhancements:

Multi-Lingual Dashboards

A new functionality has been added to MashZone NextGen to support enterprises needing to deliver dashboards to users in multiple languages, substantially reducing the maintenance cost of multi-lingual MashZone NextGen deployments. A dashboards static content (dashboard title & tabs, widget labels, headings, and so on) can now be translated at design time into multiple languages and displayed to users appropriately based on either the users browser language, a URL parameter, or a user choices.

New Mapping Widgets

Two new geo mapping widgets, maps with markers and maps with vector overlay are available enabling native mapping in MashZone NextGen either based on latitude and longitude or geographic areas defined through a GeoJSON file. Mapping is based on OpenStreetMap maps.

Materialized Feeds in Terracotta DB

Store the results of complex and long running data feeds into Terracotta DB (separate license required for Terracotta DB) for reuse within your dashboards, enabling the push-down of complex queries from MashZone NextGen to Terracotta DB. By using a separate instance of Terracotta DB the results of data feeds can be shared across multiple MashZone NextGen servers. Materialization of feeds can be triggered either manually by an administrator or externally through a REST API call.

Visualization Enhancements

Visualization enhancements have been made in MashZone NextGen 10.3:

- Hide axes and labels on charts (bar, column and line).
- The image widget now supports dynamic, data driven display of images.
- It is now possible to set exact values in the slider widget.

Other Notable Changes

- A new MashZone Event Service (previously called RTBS) buffer strategy – ‘Scenario’ enabling the support for deleted events from Apama.
- Previously deprecated Presto functionality is removed from this release.

- The MashZone NextGen repository is now certified on MySQL 5.7 Community and Enterprise edition.

webMethods Agile Apps

The webMethods AgileApps 10.11 release (October 2018) is available for on-premise customers only.

The following features are available with this release:

New Runtime User Interface

As part of the accessibility compliance for Europe, the AgileApps Runtime user interface is refreshed using the Angular technology and is now in sync with the other products of the Software AG suite.

On-premise customers have the option to switch to the new user interface and verify if their applications are working like before. If yes, they can continue to use the New UI for all their day-to-day runtime needs. The design time remains as is and customers can continue to access it as usual.

Support for RedHat Linux 7

AgileApps is now certified with RedHat Linux version 7.

CMIS Enhancements

The files and images currently stored in the AgileApps File System continue to be accessible even after the user enables the External Directory Storage option.

SSO/LDAP without Sub-Domain

Users in webMethods Business Console were unable to check Cases, as SSO used to be denied if the sub-domain flag was enabled. This limitation is now removed for both the SSO and LDAP configurations.

webMethods Application Platform

Migration Path from WmTomcat to Application Platform

Application Platform provides a way for existing customers of the WmTomcat package to move their web applications to the Application Platform web application format. WmTomcat is officially deprecated since the 10.1 release.

webMethods ApplinX

Docker Support

You can now build an ApplinX Docker image and run the Docker container using scripts provided with ApplinX.

Customizing the Application to Pass Natural Parameters Dynamically

You can specify different parameters at runtime (for example, NATPARM) depending on the business rule you choose.

License Metering using Command Central

ApplinX now supports the license metering functionality provided by Command Central. License metering depends on license manifest files. Each license manifest file issued by Software AG contains all contracts for one location of your organization. If you received license manifest files from Software AG, you can generate or view a report of the current state of your landscape.

webMethods BPMS <includes Monitor, Process Engine, Dynamic Business Orchestrator, Task Engine (including Mobile Task Integration), and Business Console>

The following features are available with this release:

Task Engine is collocated with Integration Server

- Task Engine is decoupled from My webMethods Server and can run on Integration Server.
- Business Console is enhanced to adopt Task Engine instances, running on Integration Server.
- Deployer and Command Central include support for Task Engine instances, running on Integration Server.

Command Central Enhancements

- In Command Central, in addition to the start, stop, and restart lifecycle actions, Dynamic Business Orchestrator (DBO) supports the pause and resume actions when you want to troubleshoot DBO in safe mode.
- The Dynamic Business Orchestrator configuration currently stored in `IntegrationServer/instances/<name>/packages/WmDBO/config/config.prop` is now exposed in Command Central.

Migration Support

- Dynamic Business Orchestrator supports the migration of classic Process Engine 9.x models to Dynamic Business Orchestrator 10.x models.

- Batch import of 9.x Process Engine models is now supported.

Other Enhancements

- **Mapping:** In addition to allowing mapping to/from referenced documents that are part of a step or service signature, Designer allows mapping to and from *in-line* documents that are not created as separate document types.
 - **Step Notification:** Dynamic processes support a step failure "notification" pattern that doesn't alter the control flow.
-

webMethods ActiveTransfer Agent

Support for Error Handling

ActiveTransfer Agent now supports error handling in case of event failures. The error handling mechanisms include executing events on ActiveTransfer Server, sending email notifications, and executing Integration Server services.

ActiveTransfer Agent Event Configuration Enhancements

The following additional configurations are supported for agent events:

- **Find filter** to filter files that require processing.
- **Max items** to find, to limit the number of files for processing.
- **File stability** to check file stability before processing.
- **Fail if no file found** to indicate the availability of files.

Certificate-based Authentication

ActiveTransfer Agent now supports certificate-based authentication to communicate with ActiveTransfer Server.

Reduced ActiveTransfer Agent Installation Footprint

The installation footprint of ActiveTransfer Agent is now reduced to 450 MB.

webMethods ActiveTransfer Gateway

New User Interface for ActiveTransfer

A new user interface to perform administrative tasks for ActiveTransfer Gateway is available with this release.

webMethods ActiveTransfer Server

New User Interface for ActiveTransfer

A new user interface to perform administrative tasks in ActiveTransfer is available with this release. The new ActiveTransfer user interface supports Listeners, Gateways, Users, Roles, Groups, Templates, and Folders.

webMethods API Gateway

OAuth2 Enhancements

- API Gateway now allows configuring multiple authorization servers that can be active concurrently.
- API Gateway also supports external OAuth2 authorization servers that do not allow dynamic client registration. Application developers can simply link applications created in the authorization server with the one in the API Gateway by using the client identifier (Client_ID).
- API Gateway can now perform only introspection--locally or on an authorization server.
- It is now possible to configure mapping between external authorization server scopes and API Gateway scopes.
- API Gateway also allows revoking of OAuth tokens.

OpenID Connect Enhancements

- API Gateway implements the relying party role in OpenID Connect authorization flow. API Gateway can now fully act as an OpenID token consumer supporting both ID tokens, and access tokens with all OpenID Connect- (OIDC-) supported authorization flows.
- API Gateway now supports the HMAC with SHA (HS) signing algorithm.
- API Gateway has been certified to conform to Proof Key for Code Exchange (PKCE) and Proof of Possession (PoP) security enhancements in OIDC authorization flows.

JSON Web Token (JWT) Enhancements

- API Gateway now allows including custom claims in generated JWTs.
- API Gateway now supports all JWT claim types.
- API Gateway now supports Keyed-Hash Message Authentication Code (HMAC) algorithm for signing and verifying JWTs using a secret.

Runtime Policies Enhancements

Data masking policy configuration has been enhanced to allow selecting whether masking should be applied to an API request payload, an API response payload, or data stored in the transactional log or both.

API Management Enhancements

- API Gateway now supports OpenAPI 3.0 specification with all its features.
- API Gateway supports asynchronous APIs. When the native service has been implemented in an asynchronous way, API Gateway is able to receive calls to it and route responses back by using the provided callback URL.
- API Gateway now allows event-enabling synchronous APIs by enabling protocol, bridging between HTTP and JMS/AMQP in both incoming and outgoing calls.

Runtime Service Registries

API Gateway offers support for runtime service registries. This includes the discovery of backend service URLs and the publishing of API endpoints. The API Gateway installation comes with a Consul and a Eureka configuration. Other runtime service registries are also supported.

Mashup APIs

API Gateway now allows configuring Mashup APIs. You can configure them as API chains that allow invocation of APIs one after another or as API compositions. This allows for parallel invocations of APIs. Mashup APIs let you expose multiple APIs as one to API users.

Administration and Operations Enhancements

- API Gateway's public APIs and export archives are now backward compatible.
- The public APIs have been enhanced by the addition of an API to retrieve information about API usage when API Gateway is licensed using transaction volumes.
- Administrators now have a dedicated user interface in API Gateway to configure logging details and log aggregation to a single location from which the logs can be viewed.

webMethods API Microgateway

Version 10.3 is the first release of Microgateway. It is a standalone, independent product with the capability to federate with API Gateway. Microgateway supports micro-services and service mesh architectures offering independent and sidecar deployments.

Microgateway 10.3 comes with a self-contained Java application flavor, with options to generate Docker images for independent and sidecar deployments.

You can provision Microgateway using a command-line utility and providing configuration options by either reading it from a running API Gateway instance or reading it from API Gateway archive. All configurations can also be passed using YAML files for better support in DevOps scripting.

Microgateway also provides a REST interface supporting basic operations and status checks. It also supports service runtime registries.

This first release of Microgateway comes with support for basic identity and access management (IAM) policies (API Key, Basic Authentication--internal or delegated) and logging policy.

webMethods API Portal

Additional Customizations

API Portal is now shipped with two new customization themes built solely using API Portal customization features. You can use them as is or adapt them to your liking.

User Onboarding

API Portal now provides the capability to set up and use multiple LDAP configurations. You can link these configurations to communities allowing for easy user on - boarding to API Portal communities.

API Management Enhancements

API Portal now supports OData APIs published from API Gateway.

Additionally, API Portal supports OpenAPI specification 3.0 for APIs published from API Gateway and imported directly to API Portal.

Administration and DevOps

API Portal can now be installed and uninstalled using Command Central.

webMethods Broker

webMethods Broker 9.6 is tested and supported with webMethods 10.3.

For details on Broker End-of-life, see <https://empower.softwareag.com/brokerendoflife/>.

webMethods Business Rules

Automated Migration of Rule Projects on webMethods Update

All rules projects stored on My webMethods Server will be automatically updated without manual intervention when the webMethods version is updated.

webMethods CloudStreams

CloudStreams Server Enhancements

- **Dynamic/Inline Authentication Support**

CloudStreams connector services now support the ability to dynamically provide authentication details during service execution.

This allows users to invoke the existing service without depending on a pre-existing or pre-defined CloudStreams connection.

- **Streaming Support at Connector Level**

CloudStreams framework now supports inbound streaming at the connector level. Now a connector developer can implement back end specific inbound streaming. Earlier this capability was available only at the server level and not at the connector level.

Using this feature, a connector end user will be able to create a CloudStreams Listener, select a subscription channel for a given endpoint, and take action for each incoming events in a user friendly way.

- **MIME/Multi-Part Support**

CloudStreams server now supports MIME/Multi-Part payload requests.

A connector developer can now define a resource that supports the MIME/Multi-Part content type. Using this feature, a connector end user will be able to configure a REST resource which supports MIME/Multi-Part data. This allows users to connect to a SaaS provider which deals with MIME/Multi-Part data.

- **Externalize Configurations Support with MSR/Docker for CloudStreams**

CloudStreams server now supports creation of Docker image for a Micro-Services Runtime which can be used across multiple environments. This is achieved by externalizing the configuration information in a property file.

A configuration variables template contains configuration properties that maps to properties on the Micro-Services Runtime configuration.

- **Deployer Support for CloudStreams Large Payload Handling and Listeners**

Deployer now supports deploying large payload handling configurations and connector level listeners.

CloudStreams Development Plug-in Enhancements

- **Support for Service Context, Cookies, and Assignments at Resource Group Level.**

CloudStreams Connector Development plug-in now supports Service Context, Cookies, and Assignments at the Resource Group level.

CloudStreams Connectors

New and updated connectors for the following SaaS Applications can now be downloaded from the Software AG TECHCommunity website at <http://techcommunity.softwareag.com>.

- **New Connectors**

- Anaplan, Version 1.3
- Coupa API, Version 20 and Version 21
- Microsoft Dynamics 365 CRM, Version 9.0

- **Updated Connectors**

- Amazon Kinesis (JSON support enhancement)

webMethods Content Adapters

CMIS Adapter

The Security API has been implemented.

Alfresco Adapter

The Security API has been implemented.

webMethods Digital Event Persistence

Digital Event Persistence (DEP) 10.3 includes the following enhancements:

- Support for Elasticsearch 5.6 as a DEP persistence store
 - Persisting Dynamic Application Platform (DAP) events to Elasticsearch
 - Query API for free text search of events
-

webMethods Dynamic Apps Platform

Dynamic Business Orchestrator Process and Case integration

- The process-to-case integration scenario is supported by the new Dynamic Business Orchestrator (DBO) engine. DBO calls the case in-proc mode.
 - At design time, you can define a user task as either a webMethods task or case.
-

webMethods Integration Server

JSON API Standard Support

Integration Server allows developers to develop REST APIs that adhere to the JSON API standard. JSON API allows developers to take advantage of shared conventions that increase developer productivity. Integration Server supports a new media type (application/vnd.api+json) for exchanging data using this standard.

Enhanced Administration of Integration Server using Command Central

Administrators can use Command Central to administer Integration Server access control lists (ACLs) and Groups.

WCAG Compliance for Integration Sever Administrator

Web Content Accessibility Guidelines (WCAG) is developed with a goal to make web content more accessible to people with disabilities. The WCAG standard includes items that provide for Section 508 compliance. With this release, the screens in Integration Server Administrator screens are WCAG compliant.

Kubernetes Support

Software AG provides a sample Kubernetes script for Integration Server. This script, which can be customized to meet user's needs, allows users to create Integration Server pods and orchestrate those using Kubernetes. The script will be available as a recipe on the Integration Cloud recipe store.

Try-Catch-Finally Flow Construct Support

Integration Server, in conjunction with Designer, supports a try-catch-finally flow construct in webMethods flow language. This construct allows flow service developers to handle errors in a standardized way, which simplifies the handling of complex error situations and increases the readability of the code.

Expanded Support for OAuth Grant Types

Integration Server now supports the Resource Owner Password Credentials and Client Credentials OAuth grant types.

Ordered Delivery of Messages Using Universal Messaging Serial Durable Subscribers

Integration Server, in conjunction with Universal Messaging, supports the ordered delivery of messages by webMethods messaging triggers. This feature enables serial triggers to provide ordered processing of messages from all publishers across a cluster of Integration Servers.

Public API to Add Custom Entries to Integration Server Security Log

Integration Server supports a new public method in the Java API that allows developers to add custom messages to the Integration Server security log file.

Send Log Files to Standard Output

Integration Server provides additional options for logging. In this release, Integration Server provides support for standard output (stdout) as a logging destination for audit logs. This builds on earlier support for sending the server log to stdout. Users can configure Integration Server to send log files to multiple destinations such as a database or file and stdout. This is useful for supporting container-based deployment involving tools like Kubernetes, OpenShift, and so on.

Support for Exposing a Swagger Definition over a URL

Integration Server has the ability to expose a REST API descriptor in Swagger format. With this release, Integration Server can now expose the Swagger descriptor over a URL for easy access by development tools. This allows for easy consumption of the API.

webMethods Microservices Runtime

Microservices is an architectural style for developing a single application as a suite of small services, each running in its own process and communicating with light weight mechanisms, such as an HTTP resource API. Software AG is offers a light weight container called the Microservices Runtime to host these small services.

Dynamic Configuration Variables for Docker Containers

Microservices Runtime (MSR) supports the ability to externalize MSR configuration for Docker containers. Using an external configuration file, environment-specific configuration is applied to the container at startup. This feature allows DevOps engineers to utilize a single Docker image across all environments (development, test, and production). DevOps engineers can maintain a separate configuration file for each environment.

Health Checks for Docker Containers

Microservices Runtime (MSR) supports a health check pattern that is used to determine the overall health of the Docker container. MSR exposes a /health endpoint which can be utilized by container orchestration tools like Kubernetes to restart the pod in-case of any health issues with the original pod. MSR supports a number of out of the box health indicators. DevOps engineers can combine multiple health indicators to provide a consolidated health status for each running Docker container.

Prometheus-Based Metric Generation for Microservices Runtime

Prometheus is an open-source systems monitoring and alerting toolkit that has become the de-facto standard for microservices. In this release, Microservices Runtime (MSR) supports a "/metrics" endpoint. The metrics endpoint provides the current MSR metrics in a Prometheus format.

Simplified Deployment for Docker Containers

Microservices Runtime provides the ability to dynamically load custom packages containing microservices while starting a container. This feature enables developers to use a single Docker image for running multiple microservices containers. This reduces the workload on the DevOps team by reducing the amount of Docker images to be created and maintained on an ongoing basis.

Log Files to Standard Output

Microservices Runtime (MSR) provides additional options for logging. In this release, MSR provides support for standard output (stdout) as a logging destination for audit logs. This builds on earlier support for sending the server log to stdout. Users can configure MSR to send log files to multiple destinations such as a database or file and stdout. This is useful for supporting container-based deployment involving tools like Kubernetes, OpenShift, and so on.

Support for Kubernetes

Software AG provides a sample Kubernetes script for Integration Server. This script, which can be customized to meet user's needs, allows users to create Integration Server pods and orchestrate those using Kubernetes. The script will be available as a recipe on the Integration Cloud recipe store.

webMethods Mobile Suite

Removal of Mobile Administrator

Mobile Administrator is removed from Mobile Suite.

Jenkins Plug-in for Building Mobile Designer Projects

Mobile Administrator build functionality is replaced by a plug-in for Jenkins that understands Mobile Designer's project format. It enables the creation of flexible build pipelines supporting migration from Mobile Administrator and easy tailoring to any use case.

Mobile Run Configurations

Configure and run Multi-Build, Jenkins Build and Phoney simulator with new run configurations in Software AG Designer's Mobile Development perspective.

Run in Native Simulators

Run .apk and .app bundles through the new Run in Simulator and Run in Emulator context menu actions in Software AG Designer's Mobile Development perspective.

Multi-Build Enhancement

Multi-Build has been improved with the automatic detection of Xcode and Android Studio installations. For iOS builds, Xcode up to the latest version (currently 9.4) is now supported.

System Properties

Default system properties can be defined in the md.system.properties file located in the installation directory to control the default behavior of Mobile Designer. The properties are also available at run time and can be accessed through the System.getProperty() method.

Refactored Constructors in the UI Layer

nUIDisplayObject and all its subclasses now have additional constructors which take Hashtable as parameter. The nuuid parameter has been removed. Constructors with nuuid parameters have been marked as deprecated and will be removed in the next release.

WKWebView as Default Browser Engine for nUIWebView

UIWebView has been deprecated by the iOS SDK. The new WKWebView is now the default browser engine for nUIWebView and nUIWebiewElement on iOS.

Endless Scrolling, Pull To Refresh and Swipe Gestures in ListView

A ListView now has advanced features such as Endless Scrolling and Pull To Refresh. Endless Scrolling replaces the pagination pattern: When a large amount of elements is to be displayed in a ListView, only the first few elements are loaded to increase performance and usability. Once the

user scrolls down to the end of the displayed elements, the next elements are loaded automatically without refreshing the view or list. The **Pull To Refresh** option enables reloading of the ListView content by dragging the first rows of the ListView downwards.

A ListView can now also have a set of swipe gestures to handle the typical behavior when moving an element from left to right or right to left.

Floating Text Entry

Mobile Designer now supports floating text entries. Rather than allowing the normal "hint text" to be obscured by anything the user enters, the hint will "float" above the entry when the user interacts with the element. It is also possible to specify an optional error message that can be shown if the text entered by the user is not appropriate, and to set permanent prefix and postfix hints to the floating entry, either as text or image.

Search Field in Header

A search button can now be added and expanded into a search field within the header of a view.

Pop-Up Menus

A light-weight pop-up UI element can be opened to allow a few choices based on the last action.

New Camera API

A new camera API was devised to improve the camera workflow. It is now possible to take into account that applications--including the one that started the camera-capture process in the first place--may be backgrounded or closed entirely by the operating system during this process.

Headless Code Generation

With the headless code generation it is now possible to generate all assets (java, .xml, and so on) of a mobile project from the command line without the need to explicitly start Software AG Designer or do any manual steps.

This can be used to automatically build mobile projects within a build server, for example, Jenkins.

UI Element Identifiers

To support developers who wish to automate their application testing, Mobile Designer now provides a new "Element Identifier" API. This allows developers to annotate their NativeUI Objects with a unique name in a way that can be detected by UI automation tools.

Removed Functionality

Support for Windows Phone and Windows 8 Tablet (Windows RT) has been completely removed from Mobile Suite.

webMethods OneData

Enhancements in Data Steward User Interface

The Data Steward user interface now supports the following:

- Data object workflow
- Browsing of recursive hierarchy conceptual objects in read-only mode
- Data Explorer enhancements for better usability and performance

Operations Enhancements

OneData operations are now enhanced to include:

- Support for Docker-based deployment
- Software lifecycle enhancements like a user interface to manage the OneData properties file and purge log capability improvements for enhanced GDPR compliance

webMethods Optimize

Optimize for Infrastructure

- **Enhanced monitoring capabilities**

Optimize for Infrastructure now monitors:

- The cache health in Integration Server
- The Integration Server CSQ count for JMS

- **“Maintenance mode” for DevOps**

You can easily enable and disable for monitoring component instances, depending on your business needs.

Optimize for Process

- **Business Process Dashboards**

The Business Process Dashboards are now visible in Business Console. (The Presto-based dashboards are now deprecated.)

- **Export of KPI Readings**

The export KPI readings functionality is now more flexible and provides options for extraction of all KPI readings for a selected time range.

- **Support for Min/Max/Average calculation types**

Optimize now collects and displays min/max/average statistics.

- **Deprecated integration with ARIS Process Performance Manager (PPM)**

The integration between Optimize and ARIS Process Performance Manager (PPM) has been removed.

webMethods Robotic Process Automation & Discovery

New Capability: Robotic Process Discovery

Robotic Process Discovery can collect data on user actions and workflows with silent discovery robots, automatically identify which robotic processes to automate and directly create the respective wizards in RPA Studio.

Studio Enhancements

- The new Workflow View has been introduced to see the overall flow of wizards along with all the details including the actions taken in each step, logical operations (such as Loop and If/Else), Fallbacks, and more.
- A new Kryon Connector Chrome Extension has been introduced to support functionality previously available only in Internet Explorer, like window detection using HTML objects and advanced commands.
- Advanced commands have been extended and improved.

Server Enhancement

Expanded Support for TLS/SSL protocols to secure all communications between server and clients when using username & password authentication.

Console Enhancement

New time-based triggers allow for easier and more flexible scheduling of recurring tasks than previously available with Scheduler.

webMethods Service Development

Adding Recipes from Integration Cloud to the On-Premise Integration Server

The Service Development perspective in Software AG Designer provides a separate view for displaying on-premises recipes and browsing recipes stored in the Integration Cloud recipe store. Designer connects to Integration Cloud and shows a list of available recipes. Users can browse the recipes using Designer and then download or install the recipes locally.

Deployment of Packages and Assets to Integration Cloud

Designer Service Development provides the ability to connect and deploy custom packages and configuration assets to Integration Cloud. Developers can select any custom package and upload it to a solution instance defined on Integration Cloud. Designer Service development works in conjunction with the local Integration Server instance and Platform Manager to publish the

package and the associated configuration to the Integration Cloud. The developer can modify configuration parameters as part of the publishing process.

Support for Try-Catch-Finally Flow Construct

Designer, in conjunction with Integration Server supports the Try-Catch-Finally flow construct in webMethods flow language. This construct allows flow service developers to handle errors in a standardized way, which simplifies the handling of complex error situations and increases the readability of the code.

JSON API Standard Support

Designer Service Development allows developers to develop JSON API provider services in the Integration Server.

Support for Local Service Development on macOS

Designer Local Service Development is certified to work on the macOS platform.

webMethods Trading Networks

API Gateway Usage Monitoring

The API Gateway usage monitoring feature provides administrators the ability to view and monitor API invocations of trading partners. As an administrator you can query API invocations of the APIs you granted to partners by using partner name, API name, duration, and time interval.

The metrics used to monitor the runtime execution of APIs include invocation time, operation name, method, response code, status, provider time, response time, and total data size.

Improved Large Document Delivery

Trading Networks provides supports for sending large document (maximum allowable size of the document is less than 2GB) by using Active Transfer delivery in the following scenarios:

- Trading Networks and ActiveTransfer are on different Integration Server instances.
- Trading Networks and ActiveTransfer co-exist in same Integration Server instance.

Microsoft SQL Server 2016 Support

Trading Networks provides support for Microsoft SQL Server 2016 database.

Deployment of Assets through Command Central

Command Central supports both installation and uninstallation of assets. It lists the installed assets with versions. This provides easy automation and enablement of new features to support Ops and DevOps use cases which is not possible using Deployer.

webMethods Universal Messaging

Client System Properties for Secure Communication

The following Universal Messaging client system properties have been added:

- `com.softwareag.um.client.ssl.certificate_alias`
- `com.softwareag.um.client.ssl.enabled_ciphers`
- `com.softwareag.um.client.ssl.keystore_password`
- `com.softwareag.um.client.ssl.keystore_path`
- `com.softwareag.um.client.ssl.ssl_protocol`
- `com.softwareag.um.client.ssl.truststore_password`
- `com.softwareag.um.client.ssl.truststore_path`

The properties are described in the section “Using the Universal Messaging Client System Properties for Secure Communication” in the *Concepts* guide.

Client Configuration Properties

The following client configuration parameters have been added:

- `com.softwareag.um.client.follow_the_master`
- `com.softwareag.um.client.network_io_buffer_size`
- `com.softwareag.um.client.session_disable_reconnect`
- `com.softwareag.um.client.write_handler`

The parameters are described in the section “Client Parameters” in the *Concepts* guide.

Realm Configuration Properties for Disk Free Space

The following realm server startup parameters are now documented. They allow the Universal Messaging server to take action if the amount of free disk space drops below a threshold level.

- `DISK_USAGE_FREE_THRESHOLD`
- `DISK_USAGE_SCAN_ENABLE`
- `DISK_USAGE_SCAN_INTERVAL`
- `EXIT_ON_FREE_SPACE_ERROR`

The parameters are described in the section “Server Parameters” in the *Concepts* guide.

Support for Secure Communication between Command Central and Universal Messaging

Command Central now connects automatically to a Universal Messaging server that listens only on an `nhps` or `nsps` interface. Command Central uses this interface to establish the connection, as well as the truststore and keystore configured in the interface.

In addition, you can provide custom truststore and keystore files by configuring JSSE system properties or Universal Messaging client system properties.

For information, see the section “Securing Communication between Command Central and Universal Messaging”.

Cleanup of Shared Durable Stores at Server Startup

Occasionally, a shared durable store of type *Shared-Queued* can continue to exist after the shared durable subscription for which the store was created has been deleted. To ensure that such "orphaned" stores are removed, the Universal Messaging realm server checks for orphaned stores at each restart and deletes them. This can cause a short delay during the startup procedure of the realm server.

Editing JNDI Settings for Connection Factories

The method for editing JNDI settings for a Universal Messaging realm has changed. Now, the JNDI tab for a selected realm in the Enterprise Manager allows you to view and edit existing JNDI settings of connection factories. You can also add your own optional JNDI key, value and data type settings.

For related information on the new feature, see the section “Integration with JNDI” in the *Administration Guide*.

Format of Timestamp Field in Log File Entries

The format of the timestamp in log file entries has been changed. Previously, the time of day was shown as hours, minutes, seconds, in the format *hh:mm:ss*. Now, the time is shown as *hh:mm:ss.ttt*, where *ttt* represents thousandths of a second.

See the section “Universal Messaging Enterprise Manager: Logs Panel” for examples.

Google Protocol Buffers

The Google Protocol Buffer library that Universal Messaging 10.3 uses has been updated from version 2.5.0 to version 3.6.0. The 3.6.0 version of Google protocol buffers supports both the proto2 language syntax and the new proto3 language syntax. The use of the new version brings Universal Messaging into line with other Software AG products that use Google Protocol Buffers.

Client Configuration Properties

The following client configuration properties are deprecated:

- CAKEystore
- CAKEystorePASSWD
- CKEystore
- CKEystorePASSWD

The parameters are described in the section “Client Parameters” in the *Concepts* guide.

Creating Non-Clustered Resources on Clustered Realm Servers

The ability to create and use non-clustered resources on realm servers that are part of a cluster is deprecated.

Priority and Shared-Queued Durable Subscriptions

The durable subscription types *Priority* and *Shared-Queued* are deprecated.

Realm Configuration Properties

The following realm configuration properties are deprecated:

- PriorityReadSpinLockMaxConnections
- PriorityReadSpinLockTime
- PriorityReadType

The realm configuration properties are described in the section “Realm Configuration” in the *Administration Guide*.

Storage Properties of Channels and Queues

The following storage properties of channels and queues are deprecated:

- Enable Read Buffering
- Read Buffer Size

The storage properties are described in the section “Storage Properties of Channels and Queues” in the *Concepts* guide.

Removal of Client Configuration Parameter

The StopJVMonOOM client configuration parameter has been removed. The parameters are described in the section “Client Parameters” in the *Concepts* guide.

Legacy (Global) Protocol Buffers

Support for configuring "legacy" (that is, global) Google protocol buffers has been removed. In previous product versions, protobuf descriptors could be kept in a global directory, rather than setting them on each channel. Now, support for using a global directory has been removed, and only channel-level protocol buffers are supported.

For this reason, several realm configuration parameters relating to protocol buffers have also been removed.

The option Protobuf Config: FilterProtobufEvents has been removed, since filtering of protobuf events is the most natural behavior and now always occurs (previously, filtering was optional). If you do not want filtering, you should not configure protobuf descriptors for the channel.

Realm Configuration Properties

Many seldom used realm configuration properties have been removed.

SOAP Server Plugin

The SOAP server plugin has been removed.

Software AG Installer

Default Software AG Installer.exe for Windows is Now 64-bit

The default Software AG Installer.exe for Windows that is provided on Software AG Empower is now the 64-bit version. This version must be used to install 10.3 and higher releases.

Empower still offers the 32-bit version for installing 10.1 and earlier releases.

Documentation

New Version Interoperability Document

A version interoperability document named Supported Version Interoperability for Software AG Products is now available on Empower. The document lists different releases of products that are able to work together.

webMethods ActiveTransfer Context-Sensitive Help

The new ActiveTransfer user interface includes context-sensitive help.

Consolidated webMethods CloudStreams Release Readmes

The webMethods CloudStreams Server Release Readme and the webMethods CloudStreams Development Release Readme have been consolidated in this release.

New Integrated Web Help for webMethods and ARIS product families

Documentation for each product in the webMethods and ARIS product families is now available as HTML in an integrated web help. The web help allows you to access and search the whole documentation set of a selected product. This is in addition to the existing PDF libraries.

Upgrade

Software AG Update Manager

Software AG Update Manager has an inventory file which provides a virtual representation of an installed product and its Update Manager related data. It has JSON format and contains only the metadata of the installation directory. The inventory file takes a virtual snapshot of a given Update Manager node and a product installed and collocated with it. When created, the inventory file could be loaded within another Update Manager instance (at a different physical machine).

With this file, the user will be able to execute given Update Manager functions that are not possible to be executed on a given node--for example, when a user has no Internet connection and access to the Fix repositories. By using the Inventory file, it is possible to do these functions on another Update Manager node that has Internet connection.

A user can load an inventory file into Software AG Update Manager and create an inventory-based image with it.

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webMethods Product Suite 10.4

Release Notes

Using Software AG's webMethods products, you can build application integration solutions on the top-rated hybrid integration platform and integrate cloud-based apps and on-premises systems without coding, simplify with one toolset for on-premises and cloud integrations and use a microservices-style architecture to deliver and scale new integrations faster. The webMethods suite, with the Integration and API Management products, includes a broad collection of capabilities, including application and partner integration, API management, B2B integration, managed file transfer, building micro-services, high-speed messaging, and in-memory caching.

With webMethods, you have an extensible, scalable and reliable backbone running either on the cloud, on-premises or in hybrid scenarios—providing seamless integration for cloud, mobile, APIs, and Internet of Things (IoT).

Release 10.4 of the webMethods Product Suite provides significant enhancements in every functional area of the suite.

Release Highlights

webMethods Integration

webMethods Integration Server is the powerful core engine behind the entire webMethods suite, spanning business process management, B2B integration, managed file transfer, API management, and more. Our hybrid integration platform is easily scalable, enabling easy integration of your on-premise applications to SaaS applications, programming-model agnostic, and multi-container capable. As a container, the platform ships with hundreds of pre-built useful APIs, services, frameworks, EDA, and in-memory data grid support to save you time. It has a full range of connectors to support the most modern standards, such as OData, REST, and the full complement of SOAP-based Web-service support. Mapping and transformation functions are built in, which is especially useful when integrating big data sources.

The key features include:

- Integration Server enables developers to create a GraphQL schema that describes various types and fields in order to develop APIs that adhere to the GraphQL standard.
- Integration Server provides native support for JSON Schema, allowing a developer to create a JSON document type based on a JSON schema.
- Software AG Designer can be used to publish REST API descriptors (Swagger) to webMethods API Gateway.
- Integration Server offers enhanced support for Swagger 2.0 standard while creating REST APIs.
- Integration Server is certified to communicate with JMS providers that support AMQP protocol using QPID JMS client libraries.
- Microservices Runtime has a decreased disk size requirement and an improved start up time.
- The new user interface in Active Transfer supports enhancements for actions, logs and proxy server settings.

- Software AG Designer Service Development supports a new view called *Deployment Status*. The view shows the cloud deployment history with deployment status and a log to debug issues.
- CloudStreams Server now supports the ability to associate one or more authentication schemes supported by SaaS applications or backend systems while creating a connection.
- CloudStreams Server now supports the Salesforce® Replay Events mechanism provided by Salesforce® for message durability to retrieve and process lost events sent by Salesforce®, within the supported retention window.
- CloudStreams Server now supports OAuth 2.0 authentication flow using JSON Web Token (JWT). A JSON Web Token (JWT) enables identity and security information to be shared across security domains.
- Software AG Designer Service Development supports a new view called *Deployment Status*. The view shows cloud deployment history with deployment status and logs to debug issues.
- Users can snoop on events on a Universal Messaging channel or queue and purge events from a channel or queue using the Command Central web user interface and command-line interface.
- Users can publish events, including Protobuf events, on a Universal Messaging channel or queue using the Command Central web user interface and command-line interface.
- Universal Messaging sessions using the "horizontal scalability" feature now support automatic (re)connection to realm servers in the scalability set that are offline or unavailable when the session is created or initialized.

webMethods API Management

Software AG's webMethods API Portal provides a comprehensive solution that allows the developer community to find, learn about, discuss, and test your organization's APIs. API Portal not only exposes API documentation to developers inside and outside your organization, but also manages the developer on-boarding process, and lets the developers use the exposed APIs for new and creative uses.

webMethods API Gateway securely exposes your APIs to consumer, third-party developers, and other partners for use on the web, mobile and IoT applications. webMethods Microgateway is an independent offering—light-weight, agile, and fast. It works with webMethods API Gateway or as a standalone solution to control API access to micro-services in a distributed environment and supports service mesh architectures offering independent and sidecar deployments.

The latest features are:

- The import and export support in API Gateway is enhanced to include all assets and configurations so that users can easily move the configurations across instances.
- Staging and promotion support in API Gateway now includes all assets and configurations so that users can easily move configurations across instances.
- Application identification is enhanced to use certificates sent through the Custom HTTP header. The Custom HTTP header can be configured as an extended setting in API Gateway administration.
- API providers can be configured to invoke multiple APIs in parallel as part of one mashup step and aggregate the response that is passed to the next step. Similarly, responses of any mashup steps can be aggregated and sent as a single output to the client.
- API Gateway can be run within a Kubernetes environment. Kubernetes provides a platform for automating deployment, scaling, and operations of services.

- API Gateway provides a dedicated screen to display groups of Microgateways registered to it. API Gateway users are now able to retrieve details about Microgateways available within a group as well as retrieve the list of assets and configurations of each Microgateway.
- User on-boarding with approval flow is enhanced to include a multi-level approval process.
- The API gallery page in API Portal is enhanced to display API groupings based on the community to which they are published. API Portal also now allows users to share their registered applications with a specific list of users or teams.
- webMethods Microgateway provides support for Kubernetes with health and readiness checks and Prometheus metrics support amongst others.
- webMethods Microgateway configuration capabilities allow for provisioning an instance using a single YAML settings file.
- webMethods Microgateway supports API scoping as well as resource- and method- level policy enforcement.
- Centrasite users can now trigger promotion of APIs from an API Gateway instance to another.

Big Memory

The latest key feature is:

- Improvements and new options for Terracotta server start/stop commands to facilitate safer automation of operations.

webMethods Suite Enhancements

The webMethods Suite includes enhancements that improve functionality across multiple products.

The key features include:

- Software AG Command Central allows the option to only restart run-time instances if they require a restart for the updates to be applied.
- With Software AG Command Central, you can set template application to fail when configuration settings are not applied. To ensure backward compatibility, the old behavior is the default one.
- Software AG Command Central 10.4 enables you to generate a template for a product instance that is hosted on Platform Manager 10.0 or higher by using a CLI command.
- Default templates for installation and basic configuration of Analytic Engine and Web Service Data Collector using Command Central are now available on GitHub.
- Task Engine now supports the archiving of task instance data in a separate data store.
- Integration of Business Console with co-located Task Engine running on Integration Server has been stabilized.
- Database Component Configurator is rewritten in release 10.4 to improve reliability and performance.

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For more details about the key additions and enhancements for this release, see the product descriptions.

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For important updates and a list of enhancements and issues that have been addressed since the previous release of each product, see the webMethods product readme files. You can access these documents, as well as all product documentation, from the webMethods area on the [Software AG Documentation website](#).

CentraSite

Governed API Staging Enhancement

Centrasite users can now trigger promotion of APIs from an API Gateway instance to another. When there is more than one API Gateway instance available in the environment, users can select the required instance to which the API must be promoted.

Governed API Development

CentraSite provides the option to ensure that CentraSite can only be used for design-time features and cannot be used to configure and publish runtime metadata to API Gateway.

Adding Initial External Users

CentraSite provides a command line tool using which the initial administrator user can be created for an external domain like LDAP.

My webMethods Server

My webMethods Server has the following new feature and enhancements:

Database Support

My webMethods Server now supports PostgreSQL.

Task Engine Enhancement

Task Engine now supports the archiving of task instance data in a separate data store.

Common Directory Services Enhancement

The Common Directory Services (CDS) component in Integration Server can now use REST calls to synchronize user cache updates between Integration Server and a single My webMethods Server instance, instead of using Universal Messaging as a JMS provider.

Terracotta

Terracotta BigMemory 4.3.7

This release includes improvements and new options for Terracotta server start/stop commands to facilitate safer automation of operations.

Terracotta Cache and Operational Store 10.3.1

The key features include:

- Additional deployment and configuration options for High Availability and Consistency features provide more flexibility to best meet use case requirements.
 - Users must now also explicitly specify a failover tuning priority to favor availability or data consistency in Terracotta server configurations.
 - Improvements and new options for Terracotta server start/stop commands to facilitate safer automation of operations.
 - Significant performance improvements in most CRUD (create, read, update, and delete) and search operations.
-

Software AG Command Central

Template Restart Optimization

Before version 10.4 Command Central restarted all run - time instances and related Platform Manager installations after applying all configuration changes. This behavior is updated when you use Command Central version 10.4 together with Platform Manager version 10.3 or higher. Currently, you can set Command Central to only restart run-time instances if they require a restart for the updates to be applied. For example, updates in the following configurations require a restart:

- Java Setting
- Wrapper
- Ports

To ensure backward compatibility, the old behavior of restarting all run-time instances is the default behavior, so customers do not have to update their existing templates if they upgrade to Command Central 10.4. The new behavior can be enabled by updating the templates to use DSL version 1.2 and adding the required option.

Template Configuration Failures

Previously, Command Central 10.4 template application jobs did not fail due to failed configuration settings and the configuration failures were reported as errors only in the log files. This behavior is updated when you use Command Central 10.4 together with Platform Manager 10.4. You can set template application to fail when configuration settings are not applied. To ensure backward compatibility, the old behavior is the default one. You can enable template application jobs to fail by using DSL version 1.2 and the required option in the beginning of your templates.

Save Product Instance as Template

Command Central 10.4 enables you to generate a template for a product instance that is hosted on Platform Manager 10.0 or higher by using the following CLI command:

```
sagcc exec templates composite generate
```

The command creates a template containing all product codes and configurations for the specified product instance and its layered products.

The limitation is that fixes are not exported. As a workaround, use ALL fixes and re-apply everything from the existing fix repository.

LDAP Validation with End User in the Command Central Web User Interface

The LDAP configuration in the Command Central server provides a quick test of the configurations with an arbitrary user of the LDAP server. This emulates a real login into the system in the configuration window and allows you to quickly update the configurations, if required. Command Central saves the test user.

webMethods AgileApps

The key features are:

Reversal of Deprecation Action for Signavio Process Modeler and Activiti Engine Plugins

AgileApps reverts the deprecation action for Signavio Process modeler and Activiti Engine plugins announced in the 2018 October release.

AgileApps in Installer Tree

AgileApps is once again visible in the Installer tree.

AgileApps Runtime User Interface Enhancements

With the upgrade to Angular 7, AgileApps Runtime user interface is now more responsive for viewing on mobile devices.

Users can now choose to Preview or Activate the new Runtime user interface permanently, and avoid users from switching between the old and new user interfaces.

CMIS User Interface Enhancements

- In the Content Management Interoperability Services (CMIS) user interface, you can now:
 - Create documents of any custom type that is configured in CMIS and also update the properties of the custom type.
 - Store additional data for any attachment. Examples for additional data include the document type, expiry date, issue date, and so on.
 - Use the additional document metadata to search for a document in any supported CMIS tool like Filenet and Alfresco.
 - Map objects from AgileApps to any custom document type in CMIS.
- A new field, **Default Document Type**, is available in the CMIS configuration screen for configuring External Document Storage on the AgileApps platform.

Index-Based Text Search

- Users can now perform faster user interface search using full-text indexing. A new option is available in **Object Properties** to enable full-text indexing. This functionality is available only with MySQL version 5.7 or later.

Enhancements to Record Count Handling in Case Views

- On the **Company Information** page, a new setting, **Record Count**, is introduced. A user with the required account management permissions can enable or disable this record count option for a tenant.
 - Disabling the record count option reduces the response time to load a list view resulting in improved browser performance.
-

webMethods ApplinX

Font Size Determination

You can now determine the font size to use in the web application for each screen resolution. You can create a map for font size per resolution and the number of columns of the screen.

Usability

Multiple usability enhancements have been implemented across the product.

webMethods BPMS <includes Monitor, Process Engine, Task Engine (including Mobile Task Integration), and Business Console>

The key features are:

Database Support

My webMethods Server now supports PostgreSQL.

Task Engine

Task Engine now supports the archiving of task instance data in a separate data store.

Common Directory Services (CDS)

The Common Directory Services component in Integration Server can now use REST calls to synchronize user cache updates between Integration Server and a single My webMethods Server instance instead of using Universal Messaging as a JMS provider.

Business Console

Integration of Business Console with Co-located Task Engine running on Integration Server has been stabilized.

Rules Auditing

Rules Auditing now uses database tables instead of Event Persistence.

webMethods Content Adapters

Security API has been implemented for CMIS and Alfresco adapters.

webMethods Optimize for Process

Default templates are now available on GitHub for installation and basic configuration of Analytic Engine and Web Service Data Collector using Command Central.

webMethods ActiveTransfer Server

New User Interface Additional Features

The following features are added to the new user interface that was introduced in the 10.3 version:

- Actions (previously known as 'Events'):
 - Scheduled Actions
 - Post-Processing Actions
- Logs
 - Transaction log
 - Action Log (previously known as 'Event log')
 - Audit Log
 - Analytics
- Proxy Servers
- Settings
- Listener preferences
 - Acceleration
 - Audit settings
 - File share

Password Encryption

Passwords for remote servers are no longer stored within the database as Base64 encoded only.

Protocol Support

ActiveTransfer now supports SMB 1.0, SMB 2.0, and SMB 3.0 versions.

Copy/Move Enhancement

Files can now be copied or moved with a temporary file name from the source location and then renamed to the original file name after the copy or move operation is completed. This helps avoid accidental pick up of a partially written file by an application on the target system.

webMethods API Gateway

Import and Export Enhancements

Import and export support that was limited to a subset of assets is now enhanced to include all assets and configurations so that users can easily move the configurations across instances.

Staging and Promotion Enhancements

Staging and promotion support that was limited to a subset of assets is now enhanced to include all assets and configurations so that users can easily move the configurations across instances. Stage specific configuration can be done using Aliases configured within stage details.

Support Certificates in Custom Headers

Application identification is enhanced to use certificates sent through Custom HTTP header. The Custom header name can be configured as an extended setting in the API Gateway administration section.

Support API Composition in API Mashups

API providers can configure to invoke multiple APIs in parallel as part of a single mashup step and aggregate the response that is passed to the next step. Similarly, responses of any mashup steps can be aggregated and sent as single output to the client.

Microgateway Management in API Gateway

API Gateway provides a dedicated screen to display groups of Microgateways registered to it. API Gateway users are now able to retrieve details about the Microgateways available within a group, as well as the list of assets (APIs, Applications, Policies) and configurations of each Microgateway.

Kubernetes Support

API Gateway can be run within a Kubernetes environment. Kubernetes provides a platform for automating deployment, scaling and operations of services. The API Gateway Kubernetes support provides the following:

- Liveness check (under/health endpoint) to support Kubernetes pod lifecycle. This helps in verifying that the API Gateway container is up and responding.
- Readiness check (under/health endpoint) to support Kubernetes pod lifecycle. This helps in verifying that the API Gateway container is ready to serve requests.

- Prometheus metrics to support the monitoring of API Gateway pods. API Gateway support is based on the Microservices Runtime Prometheus support available under Integration Server /metrics endpoint to gather the required metrics.

Docker Support Enhancements

Existing Docker support has been enhanced in the following areas:

- When creating Docker images, it is now possible to decide whether Elasticsearch should be included. Not including Elasticsearch renders the API Gateway image non-persistent.
- API Gateway logs are now also routed to *stdout* and *stderr*, which makes them accessible without having to execute commands inside a running container.
- Elasticsearch and cluster configuration has been externalized and can be injected into existing images when starting a new container.
- Docker health checks are available on *{host}/rest/apigateway/health*.
- Docker stop command issues a *SIGTERM* to the running API Gateway for a graceful shutdown.

webMethods API Portal

API Gallery and Communities

API gallery page is enhanced to display APIs groups based on the community to which they are published.

API packages published from API Gateway can be published to a specific community in API Portal. Such packages are visible only to the members of the community.

Application Sharing

API Portal now allows users to share their registered applications with a specific list of users or teams. To achieve this, users can create teams and associate the required users as members.

API Tryout Enhancement

Try API page now includes some usability enhancements.

User Onboarding

User onboarding with approval flow is enhanced to include a multi-level approval process. Administrators can also configure the default community to which a new user will be assigned.

API Portal now also allows for delegating user onboarding approvals to an external solution. To achieve this, a public API is made available. External solutions can use the public API to retrieve pending user registration requests and send back the approval decision.

The user registration page can be customized to include additional fields to be filled in during the signup process.

Payment Gateways

It is now possible to use external payment gateways and configure them to be part of the user onboarding process to capture credit card information of the user during the signup. API Portal comes preconfigured for Worldpay and Stripe payment gateways, but others can also be configured.

API Staging Support

API Portal supports publishing of APIs from different stages of API Gateway instances. An API published from different stages is visible as a single API in API Gallery. You can navigate through the stages in the API Details page to understand the differences.

Command Central Support

You can now start and stop API Portal through Command Central.

Secure Access to Elasticsearch

The Elasticsearch runnable bundled as part of API Portal product is secured by default. Credentials are required to access the Elasticsearch data outside API Portal.

webMethods Broker

webMethods Broker is now replaced by Software AG Universal Messaging. The use of webMethods Broker with this release of webMethods is deprecated.

You can connect webMethods 10.4 products to an existing webMethods Broker 9.6 instance. This use is supported until the webMethods Broker 9.6 support lasts.

You can also use webMethods 10.4 to administer webMethods Broker 9.6. Software AG strongly recommends the use of Universal Messaging for any new developments. To migrate existing assets, use Universal Messaging before webMethods Broker reaches end of support.

For more details, see <https://empower.softwareag.com/brokerendoflife/>.

webMethods Business Rules

Rules Auditing

Rules Auditing, as of 10.4, uses database tables instead of Event Persistence.

webMethods CloudStreams

CloudStreams Server Enhancements

Multi Authentication Support

CloudStreams Server now supports the ability to associate one or more authentication schemes supported by SaaS applications or back end systems while creating a connection. This allows

users to leverage different authentication schemes while connecting to or integrating with various SaaS applications or back end systems.

For example, users can now use any of the Salesforce® supported Basic and OAuth 2.0 authentication schemes to connect to or integrate with Salesforce®, with the same connector.

Salesforce® Replay Events Support

CloudStreams Server now supports the Salesforce® Replay Events mechanism provided by Salesforce® for message durability to retrieve and process the lost events sent by Salesforce®, within the supported retention window.

OAuth 2.0 JWT Bearer Token Support

CloudStreams Server now supports OAuth 2.0 authentication flow using JSON Web Token (JWT). A JSON Web Token (JWT) enables identity and security information to be shared across security domains.

Seamless OAuth 2.0 Token Flow Generation Support

CloudStreams Server now supports generating OAuth 2.0 tokens seamlessly while creating or configuring a connection, to connect to or integrate with a SaaS application or a back end system, which uses the OAuth 2.0 based authentication and authorization mechanisms.

The following OAuth 2.0 authentication and authorization flows are supported:

- Authorization Code Flow
- JSON Web Token (JWT) Flow

Clustering Support for Connector Listeners

CloudStreams Server now supports cluster aware connector listeners, thus guaranteeing exactly once processing of events across a cluster of nodes.

Update and Upgrade Services Enhancements

CloudStreams Server update utility services are further enhanced to support update of cloud connector services from a lower version of the connector/SaaS API version to a higher connector/SaaS API version, which leverages the latest features of CloudStreams, like Dynamic/In-Line authentication support and MIME/Multi-part support.

CloudStreams Server now provides a brand new *batchUpgrade* service to update batches of cloud connector services and cloud connector listener services in one go or from a lower version of the connector/SaaS API version to a higher connector/SaaS API version. This capability leverages the latest features of CloudStreams, like Dynamic/In-Line authentication support and MIME/Multi-part support.

Migrate Services Enhancements

The CloudStreams server migrate utility service is further enhanced to support migration of connections, cloud connector services, and cloud connector listeners in user-defined packages from a lower version of the CloudStreams Server to a newer version. The migration ensures compatibility with the newer CloudStreams Server version and leverages the latest features of CloudStreams, like Dynamic/In-Line authentication support and MIME/Multi-part support with cloud connector services.

CloudStreams Connectors

New and Updated Connectors

New and updated connectors for the following SaaS Applications can now be downloaded from the Software AG TECHCommunity website at <http://techcommunity.softwareag.com>.

New Connectors

Salesforce Bulk API, Version 2 is now supported.

Updated Connectors

- Salesforce Partner API, SOAP Version V44 along with Replay Events Support
 - Coupa API, Version 23
 - Service Now, Kingston Version
-

webMethods Database Component Configurator

Improved Reliability and Performance

Database Component Configurator was rewritten in release 10.4 to improve reliability and performance. In release 10.4, the configurator supports command line mode only; no GUI is available.

webMethods Integration Server

Support for GraphQL Provider

Integration Server allows developers to develop APIs that adhere to the GraphQL standard. GraphQL is a query language for APIs and a runtime for fulfilling those queries with your existing data. GraphQL provides a complete and understandable description of the data in your API, gives clients the power to ask for exactly what they need and nothing more. Developers can create a GraphQL schema that describes the various types and fields. Using this schema, a developer can create a GraphQL descriptor using the Service Development perspective in Designer.

Support for JSON Schema

Integration Server provides native support for JSON Schema. Using Designer, a developer can create a JSON document type based on a JSON schema, and then use the JSON document type to validate a JSON payload.

Support for Publishing REST API descriptors (Swagger) to API Gateway

In conjunction with Integration Server, Designer can be used to publish REST API descriptors (Swagger) to webMethods API Gateway.

Support for Publishing Messages Using the AMQP Protocol

Integration Server is certified to communicate with JMS providers that support AMQP protocol using QPID JMS client libraries. Integration Server supports the Qpid JMS AMQP 0-x 6.3.3 JMS client libraries.

Enhanced support for Swagger 2.0

Integration Server offers enhanced support for Swagger 2.0 standard while creating REST APIs. Integration Server supports Swagger constructs like tags, external docs and basic security definitions while creating APIs using resource first or Swagger first approaches. Integration Server supports Swagger files that reference other files.

Removal of WmVCS package

The WmVCS package supports integration with version control systems like Subversion. In this release, the WmVCS package has been removed but is now available on the Software AG GitHub website.

webMethods Microgateway

Administration Configuration Enhancements

Microgateway configuration capabilities have been improved. This allows for provisioning an instance using a single YAML settings file.

Microgateway Management in API Gateway

While provisioning Microgateways, they can be registered, assigned to groups, and made visible in the API Gateway user interface. The user interface can now display the APIs and the runtime enforcements for each registered Microgateway.

Runtime Policies Enforcements

Microgateway now supports API scoping and resource and method level policy enforcement.

Microgateway provisioning can now include runtime Alias configurations.

Microgateway support for runtime policies has been enhanced to include:

- Additional IAM policies:
 - OAuth2
 - JWT
 - OpenID
- Additional request processing policies:
 - Request transformation
 - Data masking
- Additional routing policies:
 - Content-based routing
 - Context-based routing
 - Outbound Authentication (Basic, OAuth2, JWT, Anonymous)
 - Service registry support (in all supported routing policies)
- Additional response transformation policies:

- Response transformation
- Data masking
- CORS
- Additional error handling policies:
 - Data masking

Docker support enhancements

Microgateway Docker support has been improved to:

- Allow dynamic configuration of Docker images using environment variables
- Provide health checks (on /health endpoint)
- Support graceful shutdown in case of Docker container stop
- Provide more options for sidecar deployment including dedicated support for Software AG Microservices Runtime

Kubernetes Support

Microgateway provides support for Kubernetes including:

- Health and readiness checks (on/health endpoint)
- Prometheus metrics (on/metrics endpoint).
- Scripting support for Kubernetes deployment: Microgateway CLI utility provides an option to generate a YAML configuration file for Kubernetes deployment.

webMethods Microservices Runtime

Optimizations for Microservices Runtime

Reductions in disk size requirements and startup time for Microservices Runtime. In comparison to previous releases, Microservices Runtime has a decreased disk size requirement and an improved startup time. These optimizations translate to a smaller Docker image for a Microservices Runtime.

Support for OpenShift Recipes for Microservices Runtime

Software AG provides a sample OpenShift script for Microservices Runtime. This script, which can be customized to meet user's needs, allows users to create Microservices Runtime pods and orchestrate them using OpenShift. The script will be available as a recipe on the Integration Cloud recipe store.

webMethods OneData

Data Quality Enhancements

The Data Quality module includes the following improvements:

- The Locate cleansing engine has been upgraded to the latest version.
- Now, the DQ Inbox also displays records pending manual cleanse. Previously, the DQ Inbox only displayed the records pending manual match and manual merge.

Data Interchange Enhancements

The Data Interchange module includes REST-based service layer capability for executing or stopping jobs and viewing the job results of data interchange export and import jobs.

webMethods Optimize for Infrastructure

Complete Adoption of Command Central

You can use Command Central to:

- Map the Configuration Agent and the Primary Listener endpoints
 - Migrate your environment to the same version
-

webMethods Optimize for Process

Default Templates for Installation and Configuration using Command Central

Default templates for installation and basic configuration of Analytic Engine and Web Service Data Collector using Command Central are now available on GitHub.

webMethods Service Development

Support for GraphQL Provider

Integration Server allows developers to develop APIs that adhere to the GraphQL standard. GraphQL is a query language for APIs and a runtime for fulfilling those queries with your existing data. GraphQL provides a complete and understandable description of the data in your API, gives clients the power to ask for exactly what they need and nothing more. Developers can create a GraphQL schema that describes the various types and fields. Using this schema, a developer can create a GraphQL descriptor using the Service Development perspective in Designer.

Support for JSON Schema

Integration Server provides native support for JSON Schema. Using Designer, a developer can create a JSON document type based on a JSON schema and then use the JSON document type to validate a JSON payload.

Support Graphical Development of Flat File Schemas

Service Development provides developers with a graphical wizard for defining a flat file schema. Developers use the wizard to upload a sample flat file and then identify the fields using a graphical click-and-configure interface. This feature provides an easy-to-use mechanism for defining complex flat file schemas.

Support Rich Editor for YAML Configurations

Editor for Runtime Configuration Template now supports syntactical and static validations of the content.

Support for Publishing API Descriptors (Swagger) to API Gateway

In conjunction with Integration Server, you can use Designer to publish REST API descriptors (Swagger) to webMethods API Gateway.

Provide support for Cloud Deployment Status Tracking

Service Development supports a new view called Deployment Status. The view shows cloud deployment history with deployment status and log. The new view will assist developers in debugging package deployment issues.

Enhanced Support for Swagger 2.0

Integration Server offers enhanced support for Swagger 2.0 standard while creating REST APIs. Integration Server supports Swagger constructs like tags, external docs, and basic security definitions while creating APIs using resource-first or Swagger-first approaches. Integration Server supports Swagger files that reference other files.

webMethods Trading Networks

Special Character Search Functionality

Trading Networks search has an additional capability to let you search for transactional data that includes special characters such as % (percentage) and _ (underscore).

Software MashZone NextGen

Bookmarks for Dashboards

Doing analyses in complex dashboards might require several filters and selections. Replicating or sharing actual findings can be quite challenging. The new bookmarking functionality allows you to persist filter states of a dashboard for later use and share these filter states with colleagues or anyone else who might need them. Bookmarks can further be managed centrally and rolled out to all users.

Open Intervals for Sliders

The data range that should be applied to a slider is not always known. However, if required, you can set the interval to open, which also allows null values.

Display Data Value on Columns or Bar in Charts

As a configuration option of the chart, the data value per column or bar can be now displayed.

Logarithmic Axes Scaling

The scaling of axes in column, bar, column and bubble charts can now be switched between logarithmic and linear scales.

Display of axis labeling

A new mode *Alternate* allows the display of x-axis values in two rows, which provides better readability.

Visually scalable labels

The font size of textual labels can now be automatically reduced depending on the screen resolution. The corresponding factors can be configured through the Aware styles (.less).

Enhanced Preview in Feed-Editor

The preview of calculations in feed-editor provides different modes (Quick, Full). Mode Statistics displays a column based statistics of the calculated data.

User Interface for Import and Export of Assets

The Admin Console has been extended to import and export dashboard, feeds and aliases.

Cross-Edition Import of Dashboards and Data Feeds

Dashboards, feeds and aliases created with a different edition (MashZone NextGen, Aware) can be imported. The padmin tool supports an option for a test run to check that imported objects only use features supported in the target edition.

Improved Layout of Function Flows

By improving the layout of function flows, a clear representation of reconstructed process flows is ensured, which offers significantly improved analysis capabilities based on the function flow widget.

Visualization of Start and End nodes in Function Flows

Start and end nodes are added to the function flow widget for better analysis of the discovered process flow.

BPMN-like Representation of Function Flow

In addition to the EPC-like visualization of the function flow, a BPMN-like representation is added to adapt the model visualization to the BPMN process models in ARIS.

Distribution Chart

As a new widget, the distribution chart visualizes the distribution of KPIs and measures from the Process Mining context.

Multi-select in Lists

The preview of calculations in feed-editor provides different modes (Quick, Full). Mode Statistics displays a column based statistics of the calculated data.

Enhanced Preview in Feed-Editor

Multiple selection is supported for lists of texts, numbers, or data from the PPM data source.

Software AG Universal Messaging

Support for Channel and Queue Snoop in Command Central

You can snoop on events on a Universal Messaging channel or queue and purge events from a channel or queue using the Command Central web user interface and command-line interface.

For information, see the sections “Snooping on Channels, Snooping on Queues, Commands for Snooping on Channels,” and “Commands for Snooping on Queues” in the *Administration Guide*.

Support for Publishing Events on Channels and Queues in Command Central

You can publish events, including Protobuf events, on a Universal Messaging channel or queue using the Command Central web user interface and command-line interface.

For information, see the sections “Publishing Events” and “Event Publishing Commands” in the *Administration Guide*.

Support for .NET Standard 2.0

The APIs Nirvana DotNet.dll, Nirvana nAdminAPI.dll and Nirvana.Reactive.dll have been tested to be compatible with .NET Standard 2.0. For the verification, the *.NET Portability Analyze* tool from Microsoft is used.

For information see the section “Using UM API libraries for .NET in .NET Standard projects” in the *Developer Guide*.

Support for Deleting Clusters Using the Tools Runner Application

The Tools Runner application (runUMTool) has been extended with a new command DeleteCluster. This command allows you to delete an existing cluster.

For information, see the topic “Syntax: Cluster Tools” in the section “Command Line Administration Tools” of the *Administration Guide*.

Multiplex Session Authentication

There is a change in the way user names are handled for client authentication in a multiplex session.

For details, refer to the topic “Multiplex session authentication” in the *Concepts* guide.

Horizontal Scalability

Universal Messaging sessions using the *horizontal scalability* feature now support automatic (re)connection to realm servers in the scalability set that are offline or unavailable when the session is created or initialized.

Also, HS sessions support connecting to various connection interfaces (for example, NHP/NHPS/NSP/NSPS) and you can use a combination of these in a single HS RNAME.

For details, refer to the topic “Usage Notes for Horizontal Scalability” in the *Concepts* guide.

Updated System.Reactive Libraries for .Net Reactive Samples

The .Net Reactive Extensions (Rx) sample programs have been updated to use System.Reactive libraries v3.1.1. In the previous product release, version 1.0 of these libraries was used.

The sample programs are located under in folder
<InstallDir>UniversalMessaging\docnet\examples.

Using AMQP in Clustered Environments

Universal Messaging now supports AMQP 1.0 in clustered environments.

At the moment, automatic failover of AMQP clients is not supported. If the AMQP connection fails it is the responsibility of the AMQP client application to reconnect to another node in the cluster.

Note: For the initial release of V10.4, the new functionality is provided as a software fix that you need to install after the standard product installation procedure is completed. To install the fix, you can use either Command Central or Software AG Update Manager. If you wish to use Update Manager, general instructions are provided in the document *Using Software AG Update Manager* that you can find on the Software AG documentation web site.

Store Type "transient"

The channel/queue type "transient" is deprecated in 10.4, and will be removed in a future version of the product.

Realm Configuration Properties

The realm configuration property *SyncPingSize* is deprecated.

The realm configuration properties are described in the section “Realm Configuration” in the *Administration Guide*.

Dead Event Store

The description of how the dead event store is used for channel processing has been updated.

For details, refer to the topic “Dead Event Store restrictions for durable subscriptions” in the section “Channel Attributes” in the *Concepts* guide.

Java Service Wrapper

Several components of Universal Messaging make use of *Java Service Wrapper*, an application provided by developed by Tanuki Software, Ltd. Information about the Universal Messaging components that use the Java Service Wrapper and the Java Service Wrapper configuration have been added to the documentation.

For details, refer to the section “Configuring the Java Service Wrapper” in the *Administration Guide*.

Removal of Some Client JAR files

In previous product versions, some client Jar files were removed by design from the product delivery, but this was not stated clearly. The following table indicates Jar files that were delivered with previous product versions, but which are not delivered as Jar files any more. Their classes have now either been folded into other Jar files, or have been removed from the product altogether.

Previously available JAR File	Description	Status
nJ2EE.jar	Provided Universal Messaging support for interacting with Application servers that support J2EE.	The Jar file is no longer available. The Universal Messaging product now contains a resource adapter for use with application servers. See the topic “Resource Adapter for JMS” in the “Java” section of the <i>Developer Guide</i> for related information.
nAdminXMLAPI.jar	Provided Universal Messaging Configuration XML Import / Export functionality.	The Jar file is no longer available, but the contents have been folded into nAdminAPI.jar.
nP2P.jar	Provided Universal Messaging Peer-to-Peer functionality.	The P2P functionality was removed from the product in version 9.12. The Jar file is no longer available, and the contents have not been folded into any other Jar file.
nJ2EE.jar	Provided Universal Messaging support for interacting with Application servers that support J2EE.	The Jar file is no longer available. The Universal Messaging product now contains a resource adapter for use with application servers. See the topic “Resource Adapter for

		JMS” in the “Java” section of the <i>Developer Guide</i> for related information.
nAdminXMLAPI.jar	Provided Universal Messaging Configuration XML Import / Export functionality.	The Jar file is no longer available, but the contents have been folded into nAdminAPI.jar.

For the list of currently delivered client JAR files, refer to the section “Client Jars” in the Concepts guide.

Software AG Installer

New Software AG Installer Client Available for UNIX and Linux

In previous releases, when you wanted to install on UNIX or Linux systems, you had to first install a specific JDK to run the installer client. In this release, Software AG delivers a *bin* file for UNIX and Linux that includes the JDK needed to run the installer client.

Documentation

WmVCS Package Information Removed from Integration Server Documentation

The Configuring the VCS Integration Feature guide is no longer available and the chapter entitled “Using the VCS Integration Feature to Check Elements in and Out of a VCS” is no longer part of the Service Development Help. The guide and related chapter explained how to use the functionality delivered in the (now removed) WmVCS package to integrate Integration Server elements with a version control system.

New Operations Guide for Software AG Universal Messaging

The product documentation set has been extended to include a new *Operations Guide*. This guide gives guidance on how to perform day-to-day operation and maintenance tasks, and includes suggestions on how to deal with standard questions in the areas of troubleshooting and maintenance.

Upgrade

API Gateway Migration Simplified and Easier to Use

Migration of API Gateway has been simplified and streamlined, and is now easier to understand and use.

Software MashZone NextGen Prompts Clarified and Corrected

Some Software MashZone NextGen migration utility prompts were unclear or incorrect. These prompts have now been clarified and corrected.

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webMethods Product Suite 10.5

Release Notes

Using Software AG's webMethods products, you can build application integration solutions on the top-rated hybrid integration platform and integrate cloud-based apps and on-premises systems without coding, simplify with one toolset for on-premises and cloud integrations and use a microservices-style architecture to deliver and scale new integrations faster. The webMethods suite, with the Integration and API Management products, includes a broad collection of capabilities, including application and partner integration, API management, B2B integration, managed file transfer, building micro-services, high-speed messaging, and in-memory caching.

With webMethods, you have an extensible, scalable and reliable backbone running either on the cloud, on-premises or in hybrid scenarios—providing seamless integration for cloud, mobile, APIs, and Internet of Things (IoT).

Release 10.5 of the webMethods Product Suite provides significant enhancements in every functional area of the suite.

Release Highlights

webMethods Integration Server is the powerful core engine behind the entire webMethods suite, spanning process management, B2B integration, managed file transfer, API management, and more. Our hybrid integration platform is easily scalable, enabling easy integration of your on-premises applications to SaaS applications, programming-model agnostic, and multi-container capable. As a container, the platform ships with hundreds of pre-built useful APIs, services, frameworks, EDA, and in-memory data grid support to save you time. It has a full range of connectors to support the most modern standards, such as OData, REST, and the full complement of SOAP-based Web-service support.

Integration, B2B, and Process Engine

- Integration Server allows developers to create the REST consumer from a given Swagger v2.0 API descriptor. The REST consumer provides support for consumer APIs for all resources and operations defined within the Swagger file.
- Integration Server provides native support for MQTT by allowing developers to define an MQTT-based trigger and provides public services for MQTT-based pub/sub messaging with an MQTT server.
- Integration Server provides support for a new REST-based API for administration purposes. This API enhances the DevOps capabilities of Integration Server. Integration Server can authenticate incoming Webservice requests using Kerberos credentials at the transport layer.
- When publishing SOAP or REST-based APIs to webMethods API Gateway, developers can now specify the API name and version.
- Integration Server supports Solace as a JMS provider and can send and receive data using Solace messaging infrastructure.
- Integration Server provides support for developers to write an interceptor that intercepts outbound HTTP and SOAP consumer calls. Developers can then capture raw outgoing requests and responses in XML/JSON format using this outbound interceptor function.

- Integration Server provides the ability to establish time setting for different JWT token providers which allows Integration Server to factor the time difference between the token issuer and the verifier.
- Designer Service Development allows developers to develop a REST consumer by providing the Swagger v2.0 interface document for a REST API provider.
- Software AG has launched a new lightweight development tool called webMethods Service Designer. The Service Designer combines the Service Development plugin from Designer with Microservices Runtime and the Unit Test Framework. Service Designer can be downloaded from the Software AG Tech Community website.
- Software AG Designer Service Development allows developers to define flat file schema using a graphical wizard. This feature provides an easy to use mechanism for defining complex flat file schemas.
- In collaboration with Integration Server, Software AG Designer enhances the performance of data fetching for GraphQL by providing support for GraphQL dataloaders.
- CloudStreams Server now supports Server Name Indication (SNI) for Applications/Platforms websites. SNI allows multiple websites to exist on the same IP address.
- CloudStreams Server now provides the ability to handle listener runtime errors to recover from unwarranted error events for each SaaS application/provider at the CloudStreams Connector listener level.
- CloudStreams Connector Development plug-in now supports authentication type "OAuth V2.0 (Authorization Code Flow)" and "OAuth V2.0 (JWT Flow)" as part of the authentications type dropdown. The connector developer can use this new authentication type while developing connectors for a SaaS application that supports the same authentication mechanism.
- The full-text search support in webMethods OneData (which was used by many customers in the New Data Steward UI) is now available with the Current Nova UI which will benefit many existing implementations.
- webMethods OneData now supports the REST JSON-based data load capability to accommodate the same data object in different levels of hierarchy in a non-recursive conceptual object.
- Universal Messaging now allows a user to purge a range of event IDs or a single event ID on a queue. This means that purging of events on queues is possible through Enterprise Manager, Command Central and the client API, in the same way as for purging events on channels.
- In Universal Messaging, it is possible to monitor both asynchronous and synchronous subscription to a specific queue similar to the monitoring of connections to durable subscribers.
- The JMS Engine of Universal Messaging can automatically purge individual events from channels whose consumers are exclusively using durable subscriptions of type Shared or Serial.
- With Command Central, it is easy to import composite and micro templates from your own repository or from the default Software AG's GitHub repository. The default templates can be found at: <https://github.com/SoftwareAG/sagdevops-templates-repo>
- Stacks and layers are now available out of the beta state. This includes functionality such as creating stacks and layers based on micro templates, CRUD operations and control the database schemas for the products by using the database layer in a stack.

- Universal Messaging and Digital Event Services have removed the deprecated priority durable which is replaced with the serial durable.
- Delegated administration rights are now available for both external and internal users in webMethods Active Transfer.
- Monitoring and Agents features are available in the new Active Transfer interface.
- webMethods Active Transfer Server can now archive transaction data with the following databases – Oracle, MS SQL, and MySQL.
- The AgileApps platform can now send SAML assertions to MashZone to render MashZone dashboards on the AgileApps user interface.
- Users can customize the number of columns when viewing records in the new AgileApps UI. It applies to all views including custom object views, system object views, and system created views.
- Users can invoke Integration Server services from business rules using the new action Invoke IS Service which is available in the Actions to Perform option under Event Rules. Application Designers can configure invocation of Integration Server services on execution of the business rules with which it is associated.
- The classical Process Engine supports hosting on a Docker container, and can also be initialized in the Microservices Runtime.
- The process archiving feature of Process Engine is enhanced to include the parent-child relationship between the parent process and sub processes.
- webMethods Monitor is compliant with GDPR regulations and customers can choose to remove user information from the Monitor database. It is also supported on Docker as well as Microservices Runtime.
- Task Engine now provides archival of all the Task data. Terracotta Ehcache now supports Write Behind: the asynchronous writing of data to systems of record. Cache and systems of record are kept in sync without impacting responsiveness to the user.
- Terracotta 10.5 clients for both cache and store can co-exist with any BigMemory Max 4.3. x client.
- A single application can now use both BigMemory Max, Terracotta Ehcache and Terracotta Store, allowing gradual migration to Terracotta.

API Management and Microservices

The API Engagement Platform is a new product added to our Software AG API Management Stack. It is a developer outreach platform for API businesses. This is a cloud-native and cloud-only platform for all the API brands to reach the right developers and partners. It helps them with the growth of their API business and revenues.

Software AG's webMethods API Portal provides a comprehensive solution that allows the developer community to find, learn about, discuss, and test an organization's APIs. webMethods API Gateway securely exposes APIs to consumers, third-party developers, and other partners for use on web, mobile and IoT applications. webMethods Microgateway is an independent offering which is light-weight, agile, and fast. It works with webMethods API Gateway or as a standalone solution to control API access to microservices in a distributed environment. It supports service mesh architectures offering independent and sidecar deployments.

- API engagement platform allows you to build an eco-system around the APIs you want to offer as products. With this, you can manage APIs as products, proactively promote, market and launch APIs as well as engage the developer community and foster

collaboration and run campaigns and evangelize API usage and adoption. API Engagement platform allows users to create, manage and judge API Hackathons.

- API Engagement platform enables an organization to conduct customized beta-programs to test APIs in a beta state.
- API providers can now use custom extensions (also known as custom runtime policies) in the following API policy stages: Identify and access, request processing, routing, response processing and error handling.
- Support for API First implementation approach has been enhanced to allow for sending provider-side API specification to the selected Integration Server when an implementation stub is created. It enables pulling provider-side API specification from third-party service runtimes and programmatically notifying API Gateway about implementation being completed in the backend to disable mocking in API Gateway.
- Team work support in API Gateway provides isolation for multiple teams working in single API Gateway.
- API gateway now provides isolation for multiple teams working in one API Gateway instance.
- Externalization of configurations in API Gateway to allow configurations to be read from a file or provided via an API.
- If CentraSite destination is configured within API Gateway, then the essential details of APIs provided by CentraSite are now considered read-only.
- API Portal configuration now allows for using tenant-specific domain names and the ability to configure SMTP servers specific for a tenant
- CentraSite can synchronize and store consumer applications that are created in the API Gateways and registered with the APIs deployed from CentraSite.
- To ensure API Gateway being source of truth, CentraSite now has the capability to publish the APIs to API Portals through the API Gateways where it is deployed. This allows the API Provider to choose which endpoints and stages must be exposed in the API Portal.
- Microservices Runtime supports OpenShift. The Software AG github website provides the sample openshift scripts.
- webMethods Microgateway introduces support for a few additional policies in the following stages: Identify and access policies, Identify and authorize application, Hostname address, IP address range, and SSL enhancements.
- Microgateway now supports configuration of SSL truststore and keystores based on API Gateway configuration.
- Microgateway now supports configuration of all aliases using environment variables which simplifies the configuration of Microgateway containers in Kubernetes deployment files. Microservices Runtime supports OpenShift. The Software AG github website provides the sample openshift scripts.

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For more details about the key additions and enhancements for this release, see the product descriptions.

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For important updates and a list of enhancements and issues that have been addressed since the previous release of each product, see the webMethods product readme files. You can access these documents, as well as all product documentation, from the webMethods area on the

API Engagement Platform

API Engagement Platform is a new product added to SoftwareAG's API Management Stack. It is a developer outreach platform for API businesses. This is a cloud-native and cloud-only platform for all the API brands to reach the right developers and partners, and engage them with the growth of their API business and revenues.

Manage API Hackathon

API Hackathon is the foundation for an organization or brands to have better engagements with the developer communities. Developers are the organic evangelists for an organization to spread the word and make the organization more popular. A hackathon (also known as a hack day, hackfest or codefest) is a design sprint-like event in which computer programmers and others involved in software development, including graphic designers, interface designers, project managers, and others, often including domain experts, collaborate intensively on software projects. The goal of a hackathon is to create usable software or hardware by creating a functioning product by the end of the event. Hackathons tend to have a specific focus, which can include the programming language used, the operating system, an application, an API, or the subject and the demographic group of programmers. In other cases, there is no restriction on the type of software being created.

Salient Features

- An organization admin can create hackathons
- An organization admin can add judging jury for the API hackathon created.
- An organization admin can provide the judgment criteria for each hackathon being created.
- An organization admin or a program manager can design questionnaires for the user feedback on the hackathon.
- Any registered user or developer can view the available list of public API hackathons that can be added to participate.
- Any registered user or developer can see all the details of an API hackathon.
- Any registered user or developer can invite outside users to participate in the hackathon by providing the email ID.
- Hackathon participants can submit their application information developed based on the API hackathon details.
- Any hackathon participant can submit the feedback for hackathon participated, which directly provides an early feedback for the business API's.
- Judgment panel rates the participant application based on the judgment criteria decided and announce the winning participant of a hackathon.
- Organization Stakeholder or API Program Manager can view the analytic dashboard and generate the summary report for an API hackathon.

CentraSite

Governed API Portal publish using Gateways

Previously, users were able to publish the APIs to API Portal directly from Centrasite. To ensure API Gateway being source of truth, CentraSite now has the capability to publish the APIs to API Portals through the API Gateways where it is deployed. This allows the API Provider to choose which endpoints and stages must be exposed in the API Portal.

- In CentraSite, you can now trigger multiple API Gateways to publish deployed Virtual Services to API Portal.
- The publishing API Gateways become the API (Virtual Service) owner in API Portal.

Improved Governed Consumer Registration

- Now, CentraSite can synchronize and store the consumer applications that are created in the API Gateways and registered with the APIs deployed from CentraSite.
- The asset navigator visualization and runtime reporting now provides a landscape of the consumption of APIs by all applications that originated in CentraSite, API Gateway, and API Portal.

Improved runtime policy rendering from APIs deployed to Gateway

- CentraSite now provides enhanced rendering of the runtime policies configured for an API in the various API Gateways where it is deployed.
- CentraSite now allows a detailed view of the granular policy definitions for the API at the parent level, and the resource and method or operation scope levels.
- A user can now filter APIs based on methods, hierarchy, as well as based on active or inactive state.

My webMethods Server

For details, see the [webMethods BPMS](#) section.

Terracotta

Ehcache Write Behind Support

Terracotta Ehcache now supports write behind:

- Asynchronous writing of data to system of record
- Cache and system of record kept in sync without impacting responsiveness to the user.

Client Co-existence with BigMemory Max

Terracotta 10.5 clients for both cache and store can co-exist with any BigMemory Max 4.3.x client:

- A single application can use both BigMemory Max, Terracotta Ehcache and Terracotta Store allowing gradual migration to Terracotta

Embeddable Usage Monitor

Migration assistant that can be embedded in your application to monitor the API use of BigMemory. The assistant then provides a report on the usage with suggestions on the Terracotta API to use to aid migration from BigMemory to Terracotta.

- Removes some of the pain of a migration from one product to another with suggestions and code to aid with the required alterations.

Software AG Command Central

Template Repository

You can easily import composite and micro templates from your own repository or from the default SoftwareAG's GitHub repository.

The default templates can be found at:

<https://github.com/SoftwareAG/sagdevops-templates-repo>

Which is a tested and qualified build of:

<https://github.com/SoftwareAG/sagdevops-templates>

Stacks and Layers New Functionality

Stacks and layers are now out of the beta state. The following functionality is included:

- Creating stacks and layers based on micro templates. When a template requires many properties, the properties can be exported and imported in consecutive templates executions.
- CRUD operations on the stacks and layers. Removing a layer or a whole stack does not remove the installation, just the metadata in Command Central.
- Control the database schemas for the products by using the database layer in a stack.

Save Products as Micro Template from UI

From release 10.5 you can save a product instance as a template using the Command Central user interface. In Command Central 10.5 you can save a product instance from the instance view of an installed product. This template will contain all configurations that are default and/or applied to the product. The following functionality is included:

- Save an instance as template action can be triggered from the user interface.
- The saved template will contain all default and applied configurations. Note that configuration filtering is available only through the CLI by using an XML file for filtering. For more information, see the official Software AG documentation.
- Saved templates can be directly reused in stacks and layers for creating new product installations based on the generated template.

Composite Template Database Fix Handling

If you use a composite template to apply fixes, you should no longer take special care of the database fixes. When database connectivity and authentication information is available, those fixes will be automatically applied without any further template modifications. The following functionality is included:

- Applying database fixes without composite template modification.

Support for Encrypted Passwords in Composite Templates

You are no longer required to add an environment password in plain text in your composite template or property files. The values can be encrypted with the following Command Central CLI command:

```
sagcc exec security encrypt password=MyPassword sharedsecret=manage
```

This results in an output that is the encrypted variant of MyPassword in the form of an {AES-128}encryptedvalue

Afterwards you can use this value in a template, for example:

templates:

```
<myConfig>:
```

```
products:
```

```
  CCE:
```

```
    default:
```

```
      configuration:
```

```
        OSGI-CCE:
```

```
          COMMON-PROXY:
```

```
            COMMON-PROXY-HTTP:
```

```
              '@alias': HTTP
```

```
              Enabled: 'true'
```

```
              Protocol: HTTP
```

```
              Host: host123
```

```
              Port: '12313'
```

```
              Username: user
```

```
              Password: '{AES-128}encryptedvalue'
```

```
              NonProxyHosts: localhost|.local
```

Software AG Digital Event Services

Priority Durable replaced with Serial Durable

Universal Messaging has removed the deprecated priority durable which is replaced with the serial durable. Digital Event Services has removed the priority durable and replaced it with the serial durable.

In addition:

- Events are still delivered in strict order.
- Multiple subscribers are supported.
- Events are delivered to the next subscriber only when the current subscriber has acknowledged all events.

Software AG Universal Messaging

Support for Purging Events on a Queue Using Command Central

It is now possible to purge a range of event IDs or a single event ID on a queue.

This means that purging of events on queues is possible through Enterprise Manager, Command Central and the client API, in the same way as for purging events on channels.

Monitoring Queue-Level Connections

It is now possible to monitor both asynchronous and synchronous subscription to a specific queue similar to the monitoring of connections to durable subscribers. This is available programmatically through *nQueueNode*, similar to *nDurableNode*. Both Enterprise Manager and the Command Central UI have been updated to show these statistics; they are almost identical to how connections for durable subscribers are shown.

In Enterprise Manager they can be seen under a specific queue in the **Consumer Info** tab. In Command Central they are under in the **Administration** tab when you click on a specific queue and go to **Consumer Info** tab. Additionally there are few new queue properties present in the **Status** tab of the queue under Consumer Status.

Individual Purging of Events on Shared/Serial Durables

The JMS Engine of Universal Messaging now can automatically purge individual events from channels whose consumers are exclusively using durable subscriptions of type *Shared* or *Serial*.

Changed Features in 10.5

The following Universal Messaging features already available in the previous product release have been changed in Universal Messaging 10.5:

Health Checker Error and Warning messages

Some messages which were previously reported as error messages during a health check of a live cluster have now been changed to warning messages. This is because small synchronization delays across the live cluster can occur that cause the health checker to detect discrepancies, although the cluster is working correctly. Such discrepancies are therefore now classified as warnings rather than errors.

Re-worked queue implementation

In v10.5 the queue implementation in Universal Messaging has been reworked. This was done in order to reduce internal complexity regarding queue usage, and to increase their stability and maintainability.

Queue subscriber filtering

In previous product versions, queue subscriber filtering was always enabled, which led to a certain amount of processing overhead. In v10.5 this has been changed, so that the feature can be activated or deactivated by using the new realm property *QueueSubscriberFiltering* in the Event Storage configuration group.

By default, this property is set to false, meaning that queue subscriber filtering is deactivated. If you set this property to true, this activates the feature whereby events published to a queue can be read by selected subscribers only.

Removed Features in 10.5

To continue the simplification of the product the following Universal Messaging features have been removed in Universal Messaging 10.5:

API for Microsoft Silverlight

The Universal Messaging client API for Microsoft Silverlight has been removed.

API for Windows Phone

The Universal Messaging client API for Windows Phone has been removed.

Removal of Store Types

Support for the channel/queue types Simple, Paged, Transient and Offheap has been removed.

If a Universal Messaging client from an earlier product version connects to the version 10.5 server, the client might wish to create a store (channel or queue) that has a store type of Simple, Paged, Transient or Offheap. In this case, these store types will be remapped to one of the existing ones as follows:

- Simple -> Reliable
- Transient -> Reliable with a TTL (time to live) of 1 millisecond
- Off-heap -> Reliable
- Paged -> Mixed

Also, log message will be visible in the nirvana.log file.

For further information on the migration of store types that have been removed, see the section Migration Notes in these Release Notes.

Removal of Durable Types "Priority" and "Shared-Queued"

The durable types "Priority" and "Shared-Queued" have been removed.

Clients connections from previous product versions that use these durable types will be automatically mapped to other types if they connect to a v10.5 server:

- "Priority" will be mapped to "Serial".
- "Shared-Queued" will be mapped to "Shared".

Removal of *nNamedObject* -based API from the *nChannel* API

The previously deprecated *nNamedObject* -based API has been removed from the *nChannel* public API. If you have client applications that use *nNamedObject*, you will need to change them to use the *nDurable* API instead.

For further information on the migration of applications that use *nNamedObject*, see the section Migration Notes in these Release Notes.

Client API for Java

The option *-autoconvert* has been removed from the Java client API. This option converted clustered transient channels and queues to mixed channels and queues when you imported a realm configuration from an XML file. The option has also been removed from the sample program *nimportrealmxml* that is delivered with the product.

Realm Configuration Properties

The following list shows the realm configuration properties that are no longer available. The names are given in the form *<category>: <property>*, where *<category>* is the category to which the property belongs, and *<property>* is the property name.

- Event Storage: *QueueDeliveryPersistencePolicy*
- Fanout Values: *SyncQueueDelay*
- Fanout Values: *SyncQueuePublisher*

If you exported a realm configuration containing any of these removed properties to an XML file in a previous product version, the XML file can still be imported into a newer realm, but in this case the properties will be ignored, regardless of the value that they were set to.

Transient Queue Events

The transient event flag of an *nConsumeEvent(setTransient())* for events published to a queue is no longer supported and will be ignored. Consequently, transient events will always be stored on the queue, even if there are no active subscribers.

webMethods ActiveTransfer Server

Additional Features Supported in ActiveTransfer New User Interface

The following features are added to the new user interface that was introduced in 10.3:

- **Delegated administration**

The delegated administration rights are now available for both external and internal users.

- **Archiving**

Support for archiving transaction data is now available for the Oracle and MS SQL databases.

- **Monitoring and Agents**

Monitoring and Agents features are now available in the new user interface.

Localization

ActiveTransfer now supports the languages added to the new user interface and the ActiveTransfer web client.

webMethods AgileApps

The webMethods AgileApps 10.13 release (October 2019) is available for on-premise customers only. The Cloud update will follow subsequently.

Following features are available with this release:

Single Sign on Between AgileApps and Mashzone

AgileApps platform is now able to send SAML assertions to Mashzone to render Mashzone dashboards on AgileApps user interface.

Customize the Number of Columns When Viewing Records in the New UI

- User can now configure the record views to show any number of columns.
- It applies to all views including custom object views, system object views, and system created views.
- This customization is available with the new AgileApps user interface only.

Invoke IS Service from Business Rules

- Users can now invoke Integration Server services from business rules.
- A new action Invoke IS Service is now available in the Actions to Perform option under Event Rules.
- Application Designers can configure invocation of Integration Server services on execution of the business rules with which it is associated.
- This will be extended to all rule types (Timer Rules, Rule Sets, Scheduled Rules) in an upcoming patch. Once available in Rule Sets, application designers can configure invocation of IS services from process models.

Record Pinning

- Users can now store their last visited records as favorites in the new UI.
- The user can access these favorites anytime.
- The bookmarked records are available from any screen of AgileApps.

Multi-select Picklist

User can make multiple selections from a list of values in a global picklist for a record field.

Record Views

- Record views provide the user with options to activate and retain specific user-selected views as display tabs in the new UI.
- The user can also toggle the views list.

AgileApps Runtime UI Upgrade to Angular 7

The AgileApps Runtime UI is upgraded to Angular 7 along with all the dependent packages.

webMethods ApplinX

ApplinX Web Emulator as Part of the ApplinX Docker Image

The ApplinX Docker image now contains an ApplinX web emulation. Here you can configure host connectivity and various application settings within the browser.

Administration Improvements for the Natural-UNIX Host

- It is now easier to track the ApplinX session ID for a NATAPX process within the Natural environment, and the Natural user used by an ApplinX session within the ApplinX Administrator.
- A Health Check utility is provided to check that all components (ApplinX server, ApplinX Natural daemon, Natural, Adabas) are functioning in a Docker environment.
- You can now customize the startup of a Natural application in ApplinX by specifying additional information with the CUSTOM argument.
- In a Natural for UNIX environment you can specify system security, or you can now configure PAM authentication (for LDAP/Kerberos integration) within the ApplinX Natural daemon.

ApplinX Session ID

The ApplinX session ID is visible in the Administrator session view. You can copy this ID to your clipboard with CTRL+C, the context menu or by pressing the Copy icon.

webMethods API Gateway

Custom Policies Enhancements

API providers can now use custom extensions (also known as custom policies) in the following API policy stages:

- Identify & Access
- Request Processing
- Routing
- Response Processing
- Error Handling

Custom extensions can be configured as:

- Calls to remote Integration Server services
- Calls to external HTTP URI
- Messages being sent to or from messaging providers using JMS/AMQP
- Calls to AWS Lambda functions

Team Support

API Gateway now provides isolation for multiple teams working in one API Gateway instance. It provides access control based on team-specific privileges. Assets like APIs, Applications, Packages, and Plans can be configured as team-specific, that is, belonging to specific teams.

Teams feature can be disabled using API Gateway extended setting.

API First implementation Approach Enhancements

Support for API First implementation approach has been enhanced to allow for:

- Sending provider-side API specification to the selected Integration Server when an implementation stub is created.
- Pulling provider-side API specification from third-party service runtimes.
- Programmatically notifying API Gateway about implementation being completed in the backend to disable mocking in API Gateway.

Support for Changing Ownership of Assets

API Gateway now allows transferring ownership of assets to different users or teams. Ownership change can be configured to require approval or not.

Externalization of Configurations

From this release, the following configurations have been externalized and centralized for easier operations:

- API Gateway, Kibana, and filebeat connections to Elasticsearch
- API Gateway, Elasticsearch, and Terracotta cluster configurations

These configurations can be applied in API Gateway either by API Gateway reading a configuration file or by making calls to API Gateway public APIs.

Enhanced Centrasite integration for Governed API Development

From this release, essential details of APIs provided by CentraSite are considered read-only if CentraSite destination is configured within API Gateway. API Gateway provides visual clues to differentiate such APIs from the ones not published from CentraSite.

Command Central Support Enhancements

API Gateway integration with Command Central is enhanced for managing API Gateway instances through Command Central for the following configurations:

- Logs
- Ports
- Licensing
- Clustering

These configurations are now also supported through Command Central templates.

webMethods API Portal

Tenant-Specific Sub-domain

API Portal configuration now allows for using tenant specific domain names.

Tenant-Specific SMTP Server Configuration

It is now possible to configure SMTP servers specific for a tenant.

webMethods BPMS

Process Engine

- The classical Process Engine now supports hosting on a Docker container and can also be initialized on an MSR.
- The Process Archiving feature of Process Engine is now enhanced to include the parent child relationship between the parent process and sub-processes.

Monitor

- Monitor is now compliant with GDPR regulations and customers can now choose to remove any user information from the Monitor database.
- Monitor is also supported on Docker as well as MSR.

My webMethods Server

- **SP initiated SSO with a third-party identity provider**
You can configure My webMethods Server for a service provider-initiated single sign-on authentication flow with SAML2 and a third-party identity provider.
- **Database JMS for CDS**
My webMethods Server now supports using the database as a JMS provider for synchronization with the CDS component in Integration Server and in small My webMethods Server clusters.
- **Enhanced support for upgrading with Command Central**
The migration utility for MWS now provides options to skip the deletion of existing instances when run for a second time over the same installation. The option is enabled by default when the migration utility is used through Command Central templates.

Task Engine

- **New collaborative task workflow with votable tasks**
You can create and configure votable task types that allow assigning the task instances to multiple users who vote to make a collaborative decision for setting the task status. The minimum number of user votes required to update the task status can be configured as a number or percentage.
- **New administration interface for Task Engine on Integration Server**
In addition to the built-in services in the wmTaskEngine package, Task Engine instances,

running on Integration Server now provide a new graphical administration interface for task monitoring and administration.

- **Enhanced UI support for searching task instance data in archived data sources**
In addition to the ability to archive task instance data in a separate data source, Task Engine instances, running on My webMethods Server now provide enhanced UI support for searching for archived data from different archive data sources.

Composite Application Framework

- **Default support for JSF2.x in CAF application**
All CAF and task portlets, pages, and views are created using xhtml files with support for JSF 2.x support by default. The .view format is deprecated. You can create legacy .view files for CAF applications and tasks for backward compatibility, or use the built-in project migration functionality to migrate your projects to JSF2.x.

Mobile Business Console (MBC)

- **Discontinued support**
MBC is no more supported and has been removed from all app stores and play stores.

webMethods Broker

webMethods Broker is now replaced by Software AG Universal Messaging. webMethods Broker 10.5 is a refresh of the product to update some third-party libraries and incorporate fixes. It is strongly recommended to use Universal Messaging for any new developments.

For more details, see <https://empower.softwareag.com/brokerendoflife/>.

webMethods Business Rules

SSL for Rule Connections

SSL is now enabled when rule projects are deployed from Software AG Designer to My webMethods Server and when hot deployment is executed from the Rules Management Console.

Containerization Support for Rules Engine

The Rules Engine is now supported both on Docker and as a Microservice Runtime.

Import CSV Files into Decision Tables via Rules Management Console

Business analysts or production support users can now import rules defined in CSV files into a decision table using the Rules Management Console.

Edit Decision Tables via Rules Management Console

It is now possible for a user to insert a row at any given place in the decision table using the Rules Management Console.

webMethods Content Adapters

CMIS Adapter

The CMIS Adapter is now based on REST APIs

Alfresco Adapter

The Alfresco Adapter is now based on REST APIs keeping in mind the latest versions of Alfresco being released which also includes Alfresco Cloud.

Sharepoint Adapter

The Sharepoint Adapter is now based on REST APIs keeping in mind the latest versions of Sharepoint being released by Microsoft which includes Sharepoint Online.

Documentum Adapter

The Documentum Adapter is now based on REST APIs keeping in mind the latest versions of Documentum being released by OpenText.

webMethods CloudStreams

CloudStreams Server Enhancements

Server Name Indication (SNI) Support

CloudStreams Server now supports Server Name Indication (SNI) for Applications/Platforms websites. SNI allows multiple websites to exist on the same IP address. Without SNI, each hostname would require its IP address for an SSL certificate to be installed. However, SNI solves this problem. CloudStreams now provides SNI supported connection with configurable parameters such as 'Enable SNI' and 'SNI Server Name'.

Connector Listener's Runtime Error Handling Support

CloudStreams Server now provides the ability to handle listener runtime errors to recover and/or notify from unwarranted error events which can be handled specifically for each SaaS application/provider at the CloudStreams Connector listener level.

CloudStreams OAuth 1.0a Authentication Scheme Enhancements

CloudStreams OAuth 1.0a authentication scheme is now enhanced to provide support for realm and user specified signing algorithm.

Field Lookup Support in CloudStreams Connectors

CloudStreams Server now provides the ability to configure lookup for any field with a possible list of values from respective SaaS application, which is available in the header, parameter and input

signature of a Cloud Connector Service. The field lookup provides the ease of use for end users to choose a value for a field rather than manually entering the same.

CloudStreams Server support for MySQL CE 5.7 on Amazon RDS

CloudStreams Server now supports MySQL CE 5.7 on Amazon RDS instance, for persisting governance and analytics data.

CloudStreams Development Plugin

OAuth and JWT Token Support

CloudStreams Connector Development plugin now supports the authentication type "OAuth V2.0 (JWT Flow)" as part of the **Authentication Type** drop-down list. The connector developer can use this new authentication type while developing a connector for a SaaS application supporting the same authentication mechanism.

OAuth with Token Flow Credentials Support

CloudStreams Connector Development plugin now supports the authentication type "OAuth V2.0 (Authorization Code Flow)" as part of the **Authentication Type** drop-down list. The connector developer can use this new authentication type while developing a connector for a SaaS application supporting the same authentication mechanism to provide the capability to generate access tokens.

Cloudstreams Connectors

New and Updated Connectors

New and updated connectors for the following SaaS applications can now be downloaded from the Software AG TECHcommunity website at <http://techcommunity.softwareag.com>.

- **New Connectors**

- Workday® HCM, SOAP Version 31.1
- Salesforce® CRM REST Version 45
- DocuSign®, Version 2
- Microsoft® Azure Data Lake, Version 1
- Zuora®, REST Version 1
- Shopify®, Version v2019-04

- **Updated Connectors**

- NetSuite®, SOAP Version 2018_2
 - Cumulocity, Version 0.9, Streaming Listeners Support
 - Salesforce® CRM and Bulk, SOAP Version 44, Multi Authentication Support
 - Google Cloud Pub/Sub, Version 1 – Multi Authentication Support
-

webMethods Deployer

Deprecations of Runtime Deployment

The runtime deployment mechanism will be deprecated from the 10.5 release on. We recommend that all customers start using Asset Build Environment and the repository base deployment mechanism.

webMethods EntireX

REST API Enablement

EntireX now supports scenarios where you have a REST API and want to call this from a COBOL or Natural application.

Application Monitoring Enhancements

- The Application Monitoring Data Collector is now available as a component running inside an Integration Server using the EntireX Adapter.
- Dynamic configuration of Application Monitoring is now possible while the EntireX Broker is running.
- The message ID and correlation ID of a message are now available as new Application Monitoring KPIs.
- CIS version 11 provides commands to enable/disable the Application Monitoring feature and to define the collector Broker ID for Application Monitoring.

The information reply structure BROKER was enhanced to return the current status of Application Monitoring and the collector Broker ID.

- Broker supports new operator commands DISPLAY APPMON, APPMON=NO|YES and COLLECTOR=host:portr.
- Using Command Central you can now change Data Collector settings dynamically. The change is effective immediately; there is no need to restart the broker.

High Availability

- An additional ping command is now available for all EntireX RPC servers to test the server's availability. This command is particularly useful in a clustering scenario. You do not need a running Broker to execute this command.
 - Container orchestration, which allows automated deployment, scaling and management of EntireX Brokers and EntireX RPC Servers running in Docker containers, is now described in the EntireX documentation.
-

webMethods Integration Server

Support for REST Consumer

Integration Server allows developers to develop REST consumer from a given Swagger v2.0 API descriptor. The REST consumer provides support for consumer APIs for all resources and operations defined within the Swagger file. The REST consumer supports SSL connections while calling the provider API. The REST Consumer can authenticate with the API provider by passing the correct HTTP basic based credentials.

Support for MQTT Trigger and Publisher

MQTT is one of the most commonly used protocols in IoT projects. MQTT exchanges data between clients and a broker using the publish/subscribe model. Integration Server provides native support for MQTT version 3.1.1 by allowing developers to create subscriptions to MQTT topics using an MQTT trigger and providing public services to publish MQTT messages to a 3rd party MQTT provider.

Enhanced Support for Publishing APIs to API Gateway

When publishing SOAP or REST based APIs to webMethods API Gateway, developers can now specify the API name and version.

Support for Admin API

Integration Server provides support for a new REST-based API for administration purposes. This API enhances the DevOps capabilities of Integration Server. DevOps personnel can create scripts that make use of these APIs to automate the administration tasks associated with Integration Server. In the v10.5 release of Integration Server, administrative APIs are supported for the following: -

- Server resource
- License resource
- Package

Enhanced Command Central support for Integration Server

Command Central can manage additional Integration Server configuration related to the scheduled task configuration.

Enhanced GraphQL Support

Integration Server enhances support for GraphQL by providing support GraphQL data loaders which improve the performance of data fetching. Integration Server allows developers to create dataloader services that will provide caching of data and improved performance.

Record SSL handshake details in a File

Integration Server supports the ability to log protocol details during the SSL handshake process for inbound connections. The details are logged in a separate file in json format.

Provide Support for Kerberos Credentials at Transport Level for Web Services

Support for Kerberos authentication at the HTTP/S transport level for consumer web services

Enhanced Support for JSON Schema

Integration Server provides enhanced support for JSON Schema. Integration Server supports advanced JSON Schema constructs like \$id, readOnly, writeOnly, and if-then-else.

Enhanced Support for Clock Skew in JWT Token Verification

Integration Server provides the ability to set time setting for different JWT token providers. This setting allows Integration Server to factor the time difference between the token issuer and the verifier (Integration Server in this case). This reduces the errors associated with JWT token validation.

Provide Support for Outbound Interceptor

Integration Server provides support for developers to write an outbound interceptor that intercepts outbound http and soap consumer calls. Developers can capture raw outgoing requests, responses in XML / JSON format using the outbound interceptor function.

Support Compressing Content in HTTP-based Services

Integration Server supports gzip-based content encoding functions like compress and deflate. Clients can send compressed content to Integration Server and the content handler will automatically decompress the request. Integration Server can send compressed content in the response and the clients can decompress that content.

Deprecate Legacy REST Support

Integration Server legacy REST support is deprecated. The new REST capabilities are exposed by the REST v2 feature.

Certify Solace as JMS Provider

Integration Server supports Solace as a JMS provider. Integration Server can send and receive data using Solace messaging infrastructure.

Provide SSL Support between IS and JMS Provider Communication

Integration Server supports connectivity to 3rd party JMS providers using SSL-based connectivity. Integration Server supports both one-way and two-way SSL connectivity with JMS providers.

Support PostgreSQL for Integration Server

Integration Server supports PostgreSQL database for storing audit data and other related information.

Enhanced support for OAuth2

Integration Server OAuth2 tokens can be used to authenticate access to REST v2 APIs.

Enhanced hybrid integration with webMethods Integration Cloud

Integration Server now supports concurrent execution of requests sent from webMethods Integration Cloud.

webMethods Microgateway

Additional Policies Support

This release introduces support for a few additional policies in the following stages:

- Identify and Access policies
 - Identify and Authorize Application - The following additional identification types are supported:
 - Hostname Address
 - IP Address Range
 - Payload element
 - SSL Certificate
 - Authorize User
- Request Processing policies
 - Validate API Specification
- Response Processing policies
 - Validate API Specification
- Traffic Monitoring policies
 - Monitor Service Performance
 - Monitor Service Level Agreement
- Routing policies
 - Support for transport security aliases across all routing policies

SSL Enhancements

Microgateway now supports configuration of SSL truststore and keystores based on API Gateway configuration.

Kubernetes Support

Microgateway now supports configuration of all aliases using environment variables. This simplifies the configuration of Microgateway containers in Kubernetes deployment files.

Prometheus Support

Prometheus metrics have been enhanced to include Microgateway JVM runtime data.

Runtime Service Registry Support

Configuration of service registries has changed to enable configuration of service registries using environment variables. Microgateway now uses maps holding service registry configurations. Each entry in the map is identified by the name of the service registry configuration and provides the configuration itself. From this release, API registration within the service registry must be configured explicitly.

Aliases Support

Configuration of aliases has been enhanced to enable configuring them using environment variables. Microgateway now uses maps holding alias configurations. Each map entry is identified by the alias name and holds the alias configuration itself.

webMethods Microservices Runtime

Enhanced support for OpenShift

Microservices Runtime enhances support for OpenShift by providing sample OpenShift scripts in the Software AG repository on GitHub (<https://github.com/SoftwareAG/>). The updated scripts allow user to run, scale, and manage Microservices Runtime using the OpenShift container platform.

webMethods OneData

Support for full-text search in the OneData Search Capabilities

The full-text search support that was used by customers was part of the New Data Steward UI. The same is now available with the Current Nova UI that will benefit lot of existing implementations.

Following are the enhancements:

- The menu option in OneData (**Home > View > Search**) has been enhanced to support full-text search in addition to the existing database search capabilities on the Nova UI.
- The full-text search option was previously available only in the New Data Steward UI, now it is available on Nova UI.
- The elasticsearch-based full-text search capabilities will return search results even if there are typos in the search criterion etc.

Data Quality Enhancements

The Data Quality capabilities in OneData has been enhanced with the following:

- Skipping the cleansing process for those records that have been already cleansed outside of the DQ process so that redundant cleansing as part of the OneData DQ process can be avoided. For the same, the data records should already be marked in Cleansed status.
- The Manual Match Screen showing the list of candidate gold records has been enhanced to display more columns than only the columns used in the matching process. This additional information will allow the users to better identify the gold record to be matched against, A new column qualifier **Show In DQ Manual Match** Screen is introduced.
- Processing of columns of CLOB datatype as part of the DQ survivorship process. (If enabled by a OneData property: onedata.dataquality.enableCLOBColumnProcessing).

Data Interchange Enhancements

Support in REST JSON-based data load capability to accommodate the same data object in different levels of hierarchy in a non-recursive conceptual object.

webMethods Service Development

Introduction of Lightweight webMethods Service Designer

Software AG has launched a new lightweight development tool called webMethods Service Designer. The Service Designer combines the Service Development plugin from Designer with Microservices Runtime and the Unit Test Framework. Service Designer can be downloaded from the Software AG Tech Community website.

Support for building REST Consumers

Designer allows developers to build a REST consumer by providing the Swagger v2.0 interface document for a REST API provider. The REST consumer wizard takes the name or URL of the Swagger document and generates client operations for each resource / method combination in the Swagger document.

Support for easy to use flat file schema generation

Designer provides a graphical click-and-configure wizard for defining a flat file schema. Developers upload a sample flat file to the wizard and then click the fields to define and configure the schema. This feature provides an easy to use mechanism for defining complex flat file schemas.

Support for Sending and Receiving MQTT Messages

MQTT messages can now be received and processed via an MQTT trigger. The MQTT trigger establishes subscriptions to topics on a third party MQTT provider and then invokes a service to process messages from the topic. Services can also publish messages to an MQTT provider.

Enhancements for Publishing APIs to API Gateway

When publishing SOAP or REST based APIs to webMethods API Gateway, users can now specify the API name and version.

Support for GraphQL Dataloaders

In collaboration with Integration Server, Designer enhances the performance of data fetching for GraphQL by providing support for GraphQL dataloaders.

Deprecate legacy REST support

Integration Server legacy REST support is deprecated. The new REST capabilities are exposed by the REST v2 feature.

Enhanced support for JSON Schema

In collaboration with Integration Server, Designer provides enhanced support for JSON Schema. The new Read only and Write only properties in Designer provide support for the “readOnly” and “writeOnly” JSON schema annotations.

Enhanced support for OAuth2

Designer supports the creation of security definitions based on OAuth security schemes. You can add these security definitions to REST resources and REST operations.

webMethods Update Manager

The key features are:

- Software AG Update Manager has a new user interface and architecture in this latest version v11.
 - The new 'Service' menu (in the top left corner) is intuitive and provides convenience, information, and configurational services.
 - Software AG Update Manager has an improved and simplified workflow and user experience. It introduces the concept of Focus Paths (Workflow Directions) at the home page of Software AG Update Manager and has integrated some new features that optimize the user experience in both online and offline mode.
-

Software AG Installer

New Software AG Installer Client Available for UNIX and Linux

In previous releases, when you wanted to install on UNIX or Linux systems, you had to first install a specific JDK to run the installer client. In this release, Software AG delivers a *bin* file for UNIX and Linux that includes the JDK needed to run the installer client.

Documentation

The “Using Terracotta with webMethods Products” guide is renamed

The “Using Terracotta with webMethods Products” guide is now renamed to “Using BigMemory with webMethods Products”

New Installing and Upgrading Guide for webMethods Broker

webMethods Broker now contains a new document, Installing and Upgrading webMethods Broker.

New Integrated web help for webMethods Broker

Documentation for webMethods Broker is now available as HTML in an integrated web help format. The web help allows you to access and search the whole documentation set.

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webMethods Product Suite 10.7

Release Notes

Software AG's webMethods hybrid integration platform enables you to build application integration solutions and integrate cloud-based apps and on-premises systems without coding. This top-rated platform simplifies development with one toolset for on-premises and cloud integrations and uses a microservices-style architecture to deliver and scale new integrations faster. The webMethods suite, with integration and API management products, includes a broad collection of capabilities, including application and partner integration, API management, B2B integration, managed file transfer, building micro-services, high-speed messaging, and in-memory caching.

With webMethods, you have an extensible, scalable, and reliable backbone running either in the cloud, on-premises or in hybrid scenarios—providing seamless integration for cloud, mobile, APIs, and Internet of Things (IoT).

Release 10.7 of the webMethods Product Suite provides significant enhancements in every functional area of the suite.

Release Highlights

Integration and Microservices

webMethods Integration Server is the powerful core engine behind the entire webMethods suite, spanning business process management, B2B integration, managed file transfer, API management, and more. Our hybrid integration platform is easily scalable, enabling easy integration of your on-premise applications to SaaS applications, is programming-model agnostic and multi-container capable. As a container, the platform ships with hundreds of pre-built useful APIs, services, frameworks, EDA, and in-memory data grid support to save you time. It has a full range of connectors to support the most modern standards, such as OData, REST, and the full complement of SOAP-based Web-service support.

The key new features include:

- Support for an OpenAPI v3.0-based REST API provider. The REST provider can now be developed using the OpenAPI-first approach.
- SFTP server alias support is now enhanced with new configuration properties and supports additional Key Exchange Algorithms, Machine Access Code (MAC) algorithms, and Ciphers.
- Support for a REST-based Administrator API which allows developers to automate deployment and support continuous integration and deployment scripts.
- Support for TLS (Transport Layer Security) v1.1 and v1.2 while configuring email ports.
- Enhanced ease of use while working with JSON Schemas.
- Integration Server Administrator provides access to all administrative tasks through a brand new, simplified, graphically rich, tab-based interface with improved accessibility, simpler debugging tools, and server controls.
- The new Admin UI enables users to see all key Integration Server Administrator metrics via an interactive dashboard that provides visual details of monitoring system status,

health, usage patterns and overall performance of Integration Server including JVM, usage, services, and API-related metrics.

- Microservices Runtime now provides support to inject new configuration assets into an existing Microservices Runtime Docker image, which will be updated every three months on Docker Hub.
- Microservices Runtime is now certified to work with Istio Service Mesh. The Microservices hosted on the Microservices Runtime can be managed by the Istio Service Mesh control plane and can work with Istio components such as Envoy.
- webMethods Service Development allows developers to define flat file schema using a graphical wizard and to create a schema from a sample file that has multiple nested definitions.
- webMethods Service Development plugin can now work with Cloud Container, allowing developers to browse Integration Server packages, services, and APIs hosted in Cloud Container.
- The *Trading Networks Built-In Services* guide is now integrated with Software AG Designer in service development mode to help you create custom flows for business use cases.
- Universal Messaging now provides liveness/readiness probes that can be leveraged by Kubernetes to determine the state of the software and native Prometheus support with additional new metrics.
- Fixes can now be applied on an Active/Active UM cluster without cluster shutdown, with the intention of providing zero-downtime updates of the servers. Functionality is available also in 10.3 after fix 16.
- Universal Messaging now has a server-side setting that causes non-master nodes in the cluster to reject client connections, so that client connections are only accepted on the master node.
- Universal Messaging has also added many Health Checker improvements in the health checker tool.
- CloudStreams Server now supports additional options for replaying Salesforce streaming events, such as a CloudStreams connector listener for Salesforce Streaming API can replay events from the last received event, and a CloudStreams connector listener can now attempt recovery for errors configured as recoverable in the associated CloudStreams Connector.
- CloudStreams Server now supports the ability to create a connector by consuming an OpenAPI 3.0 definition of a webservice.
- Defining version specific connectors for Workday is now possible as well as defining a single generic connector connecting to any version of the Workday backend.
- CloudStreams Server now provides the ability to test connectivity with the respective SaaS application, while configuring a connection or post enabling a connection.
- CloudStreams Server can now configure JWT or Service Account Authentication with Adobe Experience Platform.
- New and updated connectors for the following SaaS Applications can now be downloaded from the Software AG TECHCommunity website at <http://techcommunity.softwareag.com>.
- webMethods OneData has added Data Interchange Enhancements including granular control on the visibility of columns of a data object in the service layer APIs.

- Terracotta has added features for supporting Java 11 runtimes for both client and server side (and continued Java 8 support) as well as an improved configuration system, which is more friendly to cloud/container environments.
- Users can now customize the look and feel of the run-time user interface of the AgileApps platform using Custom User Interface (CUI) templates.
- The new runtime UI is enabled by default now for all new tenants that are created in the AgileApps Cloud platform.
- AgileApps now provides an additional security layer in content loading and cross origin resource sharing policies with Content Security Policy (CSP) and Cross-Origin Resource Sharing (CORS) mechanisms.

API Management

Software AG's webMethods API Portal provides a comprehensive solution that allows the developer community to find, learn about, discuss, and test your organization's APIs. API Portal not only exposes API documentation to developers inside and outside your organization, but also manages the developer on-boarding process, and lets the developers use the exposed APIs for new and creative uses. webMethods API Gateway securely exposes your APIs to consumer, third-party developers, and other partners for use on the web, mobile and IoT applications. webMethods Microgateway is an independent offering—lightweight, agile, and fast. It works with webMethods API Gateway or as a standalone solution to control API access to micro-services in a distributed environment and supports service mesh architectures offering independent and sidecar deployments.

- API Management in the Software AG hosted cloud now offers an Azure hosting option in addition to AWS and allows switching between tenants used as different development stages.
- API Gateway now supports OpenShift and in addition to standard swagger descriptors, users can get Postman collection documentation with examples on how public APIs of the API Gateway can be used.
- Major and minor version upgrades can now be performed without requiring API Gateway instances to be shut down. This approach is used in Software AG hosted cloud and can be used by customers deploying API Gateway on premises or in private clouds, regardless of how API Gateway is deployed.
- The events for applications (consumers) being registered to use APIs in API Gateway can now be automatically synchronized with other gateways (even if they are not clustered) across multiple data centers (including geographically distributed ones).
- API Gateway now provides support for AppMesh, in which API Gateway acts as the controlling and monitoring body. Microgateway acts as the body enforcing policies defined in API Gateway, acting as a sidecar to microservices. Users can now configure connection to Kubernetes clusters where service mesh resides. API Gateway also supports Istio-enabled service meshes as well as plain Kubernetes. API Gateway also displays all the subscriptions made (along with plans and packages) and their status which includes data on package, plan, the current usage, and the percentage of time and quota used.
- API Gateway now features a user interface for users with accessibility needs. This UI has been simplified and caters only to a small subset of API Gateway functionality such as searching and browsing APIs.
- API Gateway now displays all the subscriptions made (along with plans and packages) and their status which includes data on package, plan, the current usage, and the percentage of time and quota used.

- API Gateway captures all the data flowing through it with API calls. Additionally, it captures “design-time” events data about actions performed by users or others.
- API Gateway’s public API for retrieving transactional events data now offers bucket aggregation to support grouping based on multiple fields and date histogram aggregation to support time series data in an interval-based count.
- Conditional error processing has been enhanced with variable-based error processing and transformation where multiple fault cases can be grouped based on conditions.
- API Gateway administrators can now configure the account locking mechanism by specifying the maximum number of failed authentications within API calls.
- API Providers can now edit the API Gateway endpoint URL per API from the API details page.
- API Gateway is now able to handle streaming (responses sent as stream and byte) in API responses.
- CentraSite users can now import APIs from OpenAPI 3 compliant descriptors. It is also possible to create OpenAPI Specification (OAS3) compliant APIs from scratch.
- API Portal deployment now allows for using Postgres as external database, provides the availability API for monitoring the health of an API Portal application, and is Prometheus compliant for monitoring runtime aspects of the API Portal application.

Suite Enhancements

The webMethods Suite includes enhancements that improve functionality across multiple products.

- Customers can now leverage the new automatic creation of stacks to build a view of their environments in the Stacks view of the Command Central web user interface. They can then manage their landscape using the entire set of functions supported by the stacks.
- Command Central now provides the ability to upgrade a set of installations grouped as a stack through the web user interface. This will enable customers to easily upgrade to a major version, for example, from 10.3 to 10.5. After upgrading a stack, the stack has the same name and configurations, but an upgraded release version and applied fixes (if available).
- Enhanced Command Central templates and documentation are available on GitHub for better on-premise infrastructure automation.
- Software AG Designer now supports the new Eclipse version 4.15.
- The stored procedure for archiving process instances now retains the relationship between parent and child process instances after completing the archiving.
- All components of the BPMS platform (except Optimize) have been certified to run on docker containers. My webMethods Server now supports running Business Rules and Process Engine/Monitor separately.
- A REST based adapter available for OpenText Document Management System and a Sharepoint Adapter is available for various platforms.
- You can now use the Software AG Installer to install your products and the latest or selected updates. You can use this feature when installing the 10.7 or 10.5 release.
- Using the Software AG Installer command line interface, you can now build Docker images for the combination of Microservices Runtime, layered products such as API

Gateway, and Universal Messaging. One use of such images is to aid in the move from on-premises to private cloud.

- Code coverage functionality is now enhanced in Unit Test Framework to ensure that the validated information about mocked services is accurately depicted in the report.

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For more details about the key additions and enhancements for this release, see the product descriptions.

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For important updates and a list of enhancements and issues that have been addressed since the previous release of each product, see the webMethods product readme files. You can access these documents, as well as all product documentation, from the webMethods area on the [Software AG Documentation website](#).

CentraSite

OpenAPI 3 support

CentraSite users can now import APIs from OpenAPI 3 compliant descriptors. It is also possible to create OpenAPI Specification (OAS3) compliant APIs from scratch.

Rest API for Metrics from API Gateway

CentraSite now exposes a REST API for receiving runtime metrics data from API Gateways. (Coming early 2021)

Docker

CentraSite can now be deployed on Docker. It is now possible to create and run docker containers for registry and repository as well as the application layer separately.

Terracotta

Terracotta

Terracotta has the following features and enhancements for this release:

- Support for Java 11 runtimes both client and server side (and continued Java 8 support)
- Improved configuration system, more friendly to cloud/container environments
- Improvements to scaling out or up without downtime
- Improvements to backup and restore functionalities
- Many new administrative features in the Terracotta Management Console

Terracotta BigMemory

Terracotta BigMemory has the following features and enhancements for this release:

- Support for Java 11 runtimes for both client and server side (and continued Java 8 support)
 - Improvements to LDAP authentication support
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Software AG Command Central

Automatic Creation of Stacks

Customers that have an existing landscape in Command Central, but no stacks can now leverage the new automatic creation of stacks to build a new view of their environments in the Stacks view. They can then manage their landscape using the entire set of functionalities provided by the stacks.

Examples of CLI commands for automatic stack creation:

To automatically create stacks based on all nodes in the landscape:

```
$ SAGCC CREATE STACKS AUTO
```

To automatically create stacks only for the nodes in the QA environment:

```
$ SAGCC CREATE STACKS AUTO ENVIRONMENT=QA
```

Command Central groups the existing nodes in a single stack if they:

- run on the same operating system.
- have the same release version.
- are in the same installation directory.
- are managed by the same Platform Manager, based on port number and protocol (HTTP/HTTPS).

Based on these four criteria, Command Central creates different stacks, where: each stack contains nodes that have an equal operating system, release version, and installation directory. The nodes contained in each stack are further grouped into layers that include only process-category components, and each layer contains components with equal same run-time component IDs.

Additional notes when automatically creating stacks:

- Command Central does not consider nodes that are part of an existing stack.
- Command Central excludes the local node from automatically created stacks, because Command Central should function independently from the suite.
- Command Central does not automatically add database layers to stacks. You must add the database layers manually after the automatic creation.

One-Click Stack Upgrade

Command Central provides the ability to upgrade a set of installations grouped as a stack through the web user interface. This will enable customers to easily upgrade to a major version, for example from 10.3 to 10.5. As a prerequisite, you must add in Command Central the product and fix repositories for the new version.

After upgrading a stack, the stack has the same name and configurations, but an upgraded release version and applied fixes (if available).

The upgrade can be performed using a dedicated wizard in the Stacks view of the user interface, which provides three flavors

- Same host upgrade with over-install. This upgrade works over the same installation directory.
- Same host upgrade with side-by-side installation. This upgrade installs the new version in a side directory and makes it easy to revert the upgrade.
- Cross host upgrade – the installation can be performed on a remote host. All configurations are migrated, but the hosts are not automatically adjusted. You must adjust manually the configuration to the new physical address after the upgrade.

The following products can leverage this feature:

- webMethods Integration Server
- SoftwareAG Universal Messaging

- My WebMethods Server

Command Line Interface – version parameter

After upgrading Command Central customers often don't adjust their PATH variable and use the old Command Central CLI client to communicate with the server. Now customers can easily check whether they are accidentally using the old version of the CLI, by leveraging the new --version parameter that displays the version, client path, and *cc.properties* file path of the CLI client.

New Algorithm Support for SSH connectivity

Command Central 10.7 supports diffie-hellman-group14-sha256 for its SSH connectivity.

Support for Substitute User During Bootstrap and Migration

The bootstrap and migration process can now be performed with two users - a user that establishes the SSH connection and a user that executes all runtime activities after the SSH connection is established. For example:

bootstrapInfo:

installDir: \${install.dir}

port: \${os.port}

installer: cc-def-10.7-release-lnxamd64.sh

substituteUserCredentials:

userName: vmtest

password: vmtest

credentials:

userName: \${os.username}

password: \${os.password}

authenticationMethod: \${os.auth.method}

privateKey: \${os.auth.key}

Deprecation of License Manifest Files and Reports

The license manifest is deprecated as of release 10.7 and will be removed in the next version of Command Central. Our legal department will soon stop generating license manifests. The report that maps the manifest against the actual environment will be replaced with a report that just shows the inventory of an installation.

Software AG Designer

Software AG Designer now supports the new Eclipse version 4.15.

Software AG Installer

Install Updates on Products as Part of Product Installation

In previous releases, you installed your products using the Software AG Installer, and then had to immediately install the latest updates (fixes) separately using the Software AG Update Manager.

In this release, when you are installing into a new, empty directory, you can install your products AND the latest or selected updates, all using the Software AG Installer. You can use this feature when installing the 10.7 or 10.5 release.

Note: As time goes on and other updates are released by Software AG for your 10.7 or 10.5 products, you must use Software AG Update Manager as usual to install those updates.

Build Custom Docker Images

Until now, Software AG Docker images were predefined, and included a single product.

In this release, you can use the Software AG Installer command line interface to build Docker images for the combination of Microservices Runtime, layered products such as API Gateway, and Universal Messaging. One use of such images is to aid in the move from on prem to private cloud.

webMethods ActiveTransfer Gateway

User permissions

Any user permission changes to a Virtual File System (VFS) are applied within the active user session.

webMethods ActiveTransfer Server

Post-processing event configuration changes for active user sessions

Any configuration changes in a post-processing action get applied to all active user sessions.

Virtual File System (VFS) configuration changes

Any configuration changes in any VFS get applied to all active user sessions.

Event trigger based on folder monitoring

ActiveTransfer now recognizes new files or folders created through the user interface, and as a result, ActiveTransfer initiates downstream processing.

Amazon S3 and Azure file storage

Support file transfers between ActiveTransfer and Amazon S3 or Azure service. Administrators can configure Amazon S3 or Azure as the source or destination of files. Also, can specify folders on these services like how local file system or remote folders are specified today.

Copy/move task enhancements

Ability to fail the Copy/Move task, if the file with the same filename exists at the destination.

Transactions table enhancements

Capability to export transaction tables to a local file in CSV format based on the applied filter.

MySQL version compatibility

webMethods ActiveTransfer 10.7 is certified with MySQL version 8.x community edition.

Server properties user interface

A new screen for configuring the server properties is added with field property verifications.

User permissions

Any user permission changes to a VFS are applied within the active user session.

Two-factor authentication

Support for two-factor authentication is added using both client certificates and user password for SSL connections. For example, FTPS.

webMethods AgileApps

Custom UI Templates

User can now customize the look and feel of the run-time user interface of the AgileApps platform using Custom User Interface (CUI) templates. Using this feature, user can design and deploy a CUI to an AgileApps application.

Support for Guest Access

Data stored in AgileApps is secure and only authenticated users can create and view records. This feature allows a guest user to perform CRUD operations on an object without any authentication or login to AgileApps.

New Runtime UI Enablement

The new runtime UI is now enabled by default for all new tenants that are created in the AgileApps Cloud platform.

In the mobile access, the default login page is the new runtime UI login page.

Additional Security Layer in Content Loading and Cross-origin Resource Sharing Policies

AgileApps now provides an additional security layer in content loading and cross origin resource sharing policies with Content Security Policy (CSP) and Cross-Origin Resource Sharing (CORS) mechanisms.

It resolves possible security attacks related to cross-origin by supporting additional HTTP headers for CSP and CORS.

AgileApps Installation in New Format Documentation

AgileApps installation instructions are now available as part of the new documentation format. This documentation site provides a different look and feel as compared to the previous documentation in Mediawiki. See <https://docs.webmethods.io/AgileApps> for details.

Support for Chinese Language

Chinese language is now added to the list of supported languages on the AgileApps platform.

3 and 4 Column Layouts for Forms in the New UI

User can now configure up to 4 columns when designing a form layout. This is applicable only for viewing via the new AgileApps Runtime UI.

Default Mailbox Support

The default mailbox support is now removed from the platform. This is applicable only for cloud customers.

webMethods ApplinX

Natural-IO Protocol Support

ApplinX support of the Natural-IO protocol enables you to create an SSL connection to a Natural UNIX host without the need of a third-party component.

Natural Screen Tester is part of ApplinX

The product Natural Screen Tester has now been incorporated in ApplinX.

Administration using Batch Commands

You can now perform various administration tasks from a command line using the tool `gxadminconsole.sh` (UNIX) or `gxadminconsole.bat` (Windows) in the ApplinX utilities folder.

ApplinX REST API

You can now create and disconnect a session, and get and update a screen, using the ApplinX REST API.

Printing with BaseObject API

New classes in the ApplinX BaseObject API provide an additional means of activating a mainframe or AS/400 printer session.

webMethods API Gateway

Software as a Service

API Management in the Software AG hosted cloud is extended:

- To allow Azure hosting option in addition to AWS.
- To allow switching between tenants used as different development stages (for example, DEV, TEST, PROD) from the product user interface.
- To allow configuring Enterprise Disaster Recovery across cloud hosting regions.
- To allow configuring geo-based routing rules in cases where multiple API Gateways are used and there is a need to route the incoming API call to the nearest API Gateway. This enhancement is currently available in case of Azure cloud hosting.

Infrastructure, architecture, operations

API Gateway now offers the Availability API for monitoring the health of API Gateway instance. The following endpoints are available:

- [api-gateway-url]/rest/apigateway/health – basic health probe returning HTTP 200 or 400 status depending on the health of the API Gateway instance.
- [api-gateway-url]/rest/apigateway/health/admin – health probe reporting the status of API Gateway components used for administrative and design-time purposes (that is, user interface and analytical dashboards engine).
- [api-gateway-url]/rest/apigateway/health/engine – health probe reporting the status of API Gateway components used in runtime (that is, API Gateway runtime container (Integration Server), persistence store (Elasticsearch), caching engine (Terracotta)).
- [api-gateway-url]/rest/apigateway/health/externalServices – health probe reporting the status of connectivity to external systems configured in API Gateway (that is, destinations) and connectivity to external accounts configured in API Gateway (that is, service registries, AWS Lambda, and so on).

[api-gateway-url]/rest/apigateway/health/all – health probe combining all the information from other probes in one call.

OpenShift

API Gateway now supports OpenShift.

In addition to standard swagger descriptors, users can now get Postman collection documentation with examples how public APIs of the API Gateway can be used. This collection is

available on Software AG GitHub repository under <https://github.com/SoftwareAG/webmethods-api-gateway/tree/master/apigateway/services/postmancollections>.

Elasticsearch used by API Gateway has been upgraded to version 7.7.1. Additionally, API Gateway does not use the Search Guard component anymore.

The externalized configurations of API Gateways have been extended to also include:

- Master password
- Default passwords
- UI ports
- Aliases
- User creation

Zero downtime upgrades

Major and minor version upgrades can now be performed without requiring API Gateway instances to be shut down. This approach is used in Software AG hosted cloud and can be used by customers deploying API Gateway on premises or in private clouds, regardless of how API Gateway is deployed (installable software, Docker, Kubernetes).

Cross Data Center synchronization

The events for Applications (consumers) being registered to use APIs in API Gateway can now be automatically synchronized with other gateways (even if they are not clustered) across multiple data centers (including geographically distributed ones).

The mechanism uses consistent hashing ring and gRPC-based gossip protocol – thus avoiding additional component in the architecture.

API Gateway has been enhanced to be aware of other API Gateways in a different data center and establish a channel using gRPC protocol. API Gateway nodes could be combined in a group to form a consistent hash ring. This consistent hash ring is maintained in correct state using a gossip protocol. Whenever a write request is sent to a server, based on the hash API Gateway stores it in the hashed node. Whenever a read request is received, API Gateway would try to read from cache. If that fails, (cache not present) API Gateway would hash it and read it from the node it is present in.

DevOps and CI/CD

In addition to the staging and promotion features documented in previous versions, users can now use the sample DevOps project set up documented with samples and utilities on Software AG GitHub repository under <https://github.com/SoftwareAG/webmethods-api-gateway-devops/>.

AppMesh

This version of API Gateway provides support for AppMesh, in which API Gateway acts as the controlling and monitoring body. Users now can:

- Configure connection to Kubernetes cluster where service mesh resides. API Gateway supports Istio-enabled service meshes as well as plain Kubernetes.
- Configure the location of Microgateway vanilla Docker image, which will be injected by API Gateway into service mesh as a sidecar proxy to enforce policies defined in API Gateway.
- Configure the connectivity details for the Microgateways injected to the service mesh to communicate back with this API Gateway.
- See the services available in the service mesh in the dedicated AppMesh page.

- View the details of these service deployments.
- APIfy selected services, that is, define the API contract for them.
- Deploy the Microgateway into the service mesh to enforce policies defined on APIs.
- See the deployed Microgateways (in the Microgateways page) and analytics they gather in runtime.

User Interface

Accessibility

API Gateway now features a user interface for users with accessibility needs. This UI has been simplified and caters only for a small subset of API Gateway functionality like searching and browsing APIs.

Usability improvements

API Gateway's UI usability has been improved in the following areas:

- Sorting in the API listing page now considers the version indicator and the time of creation of the API.
- Publish and Export action buttons are now also available from within the API Details page.
- API listing now includes the date column to show when the API was created.
- OAuth2, Applications, and Policies screen have been enhanced to include pagination.
- API calls' payloads are now searchable in Audit Logs available within the gateway-wide analytics.
- Configuration page for API Portal destination now allows testing the connection before saving it.

API Monetization and Analytics

API Monetization

API Gateway now displays all the subscriptions made (along with plans and packages) and their status (for which package, which plan, what's the current usage, how much left (time and quota)).

Calendar week and calendar month metrics are now added to quota definitions (in addition to existing metrics).

Custom destinations

API Gateway captures all the data flowing through it with API calls. Additionally, it captures "design-time" events data about things done by users or happening any other way. This data is used by API Gateway itself (to notify users, to provide analytical dashboards, and so on.)

The same data can be made available to other solutions using the concept of destinations (send the data to the configured destination). Until now, API Gateway had support for destinations such as Software AG's products (API Gateway, API Portal, CentraSite), external solutions like Elasticsearch or relational database or files, and so on.

In this release, API Gateway has been enhanced with the capability to define custom destination (using existing custom extensions feature available in policies) through:

- Custom HTTP URL
- Messaging
- Amazon Lambda

- webMethods IS

When defined, these custom destinations can be used the same way as the built-in ones.

Additionally, custom extension allows for filtering what is be sent to them.

Analytical dashboards improvements

- Functional
 - Filters defined by users on the dashboards are now persisted for the duration of user session.
 - User can now build and save custom dashboards – both global and API-specific
 - New widgets:
 - Gateway vs Provider time comparison line chart
 - API Invocations number based on status.
- Non-functional: Improved performance and rendering time of dashboard screens.

API transactions REST API

API Gateway's public API for retrieving transactional events data has been enhanced in the following areas:

- Bucket aggregation to support grouping based on multiple fields.
- Date histogram aggregation to support time series data - interval-based count.
- Metrics aggregation to support sum, min, max, and avg.
- Allow range as request criteria to filter.
- Enhance the search functionality to support all 7 event types.

There is a Postman collection available of Software AG GitHub repository under <https://github.com/SoftwareAG/webmethods-api-gateway/tree/master/apigateway/services/postmancollections/apis/search-service>.

Policies framework

Conditional error processing policy

Conditional Error Processing has been enhanced with variable-based error processing and transformation where multiple fault cases can be grouped based on conditions.

Additionally, response headers and status codes can now be transformed as per the defined policy conditions.

Conditional Error Processing configuration capabilities are now aligned with options available in Response Transformation policy.

Account locking

API Gateway administrators can now configure the account locking mechanism by specifying the maximum number of failed authentications within API calls (calls resulting with HTTP status codes of 401, 402, 403) after which the caller's IP is blocked permanently or for a specified time period.

Variable framework enhancements

Variable framework is the capability of API Gateway to declaratively manipulate data and metadata while handling API calls, for example, if you say “parse this JWT, extract the user name and put it in the path parameter of outgoing backend call”; in most platforms, it requires coding. In API Gateway, it is a single line declaration: `${request.authorization.claims.user} = ${request.path.user}`

This framework has been enhanced to additionally include:

- Access to aliases (for example, env specific values for URLs, and so on). Additionally, aliases are available across all (API call) stages.
- Make the variables available across all the (API call) stages.
- Context variables - system and custom.
- Custom variables (ability to define and initialize a custom variable for any use).
- Enhance the Request and Response transformation policies for payload like the custom policy or mashups.
- Route based on a specified condition.
- Ability to use the custom variables that are defined in Mashups and custom extension in Request and Response transformation steps.
- Access to all application details (for example, Partner Id, and so on).
- Access to more data from transaction events like `${providerTime}`, `${packageId}`, `${planId}`.

Additionally, there are some usability improvements made for better readability and syntax highlighting.

Global policies

Global policies functionality has been enhanced to use tags on multiple levels of the API as well as allow multiple filter criteria groups in one policy.

2-way SSL

The routing policies and endpoint aliases have been enhanced to handle SSL/TLS connections between API Gateway and the native endpoint.

During the SSL handshake between API Gateway and the native service, the server certificate, which is sent by the native service, must be validated against a truststore in API Gateway. API Gateway UI has been enhanced to make configuration of the verification possible. This setting is also now saved in Elasticsearch and synchronized between the cluster nodes if needed.

API Management

API Gateway endpoint URL

API Providers can now edit API Gateway endpoint URL per API from the API Details page. When editing, you can use static values and predefined keys for `${apiName}`, `${apiVersion}` and `${defaultPrefix}`.

Additionally, it is possible to configure a global custom URL, which would be applied to all APIs in the API Gateway. Globally defined custom URLs can coexist with the local ones and API Gateway responds to calls made on all of them at the same time.

Bind APIs to API Gateway ports

API Gateway's port configurations now allow adding specific APIs to allow or deny list for the port.

Improvements to the passman imports

In the export functionality, all the password imports now honor the overwrite option of the corresponding parent entity. For example, alias password gets imported if the overwrite option of alias is selected. API Gateway skips the import of it, if the alias overwrite is set to false.

Streaming

API Gateway is now able to handle streaming (responses sent as stream and byte[]) in API responses.

Tagging

The use of tags in API Gateway is now enhanced in the following areas:

- Tagging APIs in API Details page has been enhanced for type-ahead support in all drop-down lists that allow selecting and adding tags.
- Global policies now use tags on all levels in APIs (API-level, resource-level, and method-level).
- With Teams concept enabled, it is possible to define global team assignment rules (ownership of assets) using API level tags.

webMethods API Portal

Support for external Postgres

API Portal deployment now allows for using Postgres as external database.

Azure certification

API Portal has been certified to run on Azure cloud platform.

Monitoring

API Portal now provides:

- The Availability API for monitoring the health of API Portal application
- Prometheus compliant Metrics API for monitoring runtime aspects of API Portal application

Documentation

API Portal documentation has been enhanced to cover in more detail the following topics:

- HA configuration
- HA configuration with external database
- Configuration for LDAP integration for SSO using SAML
- External database configuration for Oracle 12c
- LDAP configuration in UMC
- Load Balancer configuration and administration

webMethods BPMS (Process, Rules, MWS, Optimize and Content Adapters)

Process Archiving

The stored procedure for archiving process instances now retains the relationship between parent and child process instances after the archival is completed.

Containerization

- All components of the BPMS platform (except Optimize) have been certified to run on docker containers.
- MWS is now aware of Rules and Process/Monitor running separately

Business Rules Management Console enhancements

There have been multiple enhancements made in the RMC UI to improve the customer experience:

- It is now possible to shift-select decision table rows in the RMC UI
- It is also possible to display more than 5 decision entities in the RMC UI
- There is now a configuration setting available in the RMC UI to toggle the full function display
- It is now possible to use constants in the RMC UI instead of exporting them from the Designer UI.

Easing Business Rules Licensing restrictions

There have been multiple enhancements made to the WOK and WOKAA Rules licenses to increase usage for Integration only use cases:

- Rules now exposes a REST API available by default in the **WmBusinessRules** package to help invocation of Rules from non-webMethods applications.
- Rules can now be invoked from an IS Flow service or from MWS with an existing WOK license itself.
- WOK license is completely removed from the 10.7 release. Hence, there is now only one license for Rules (WOKAA) which will be available to be sold to customers.

My webMethods Server

- MWS now supports the latest stable Jetty version (9.4.28)
- Central User Management of an old version of MWS is now interoperable with the latest version of Integration Server
- CDS UI has been deprecated from MWS and is now available as part of the newly designed IS Admin UI itself.
- There is now an option to suspend all task instances of a given task type using one REST API call.

Optimize Enhancements

- There is a new migration utility which provides better customer experience when upgrading Optimize environments.
- Since Adobe Flash will stop working on all browsers in December 2020, webMethods Optimize now uses JavaScript to display the graphics and charts.
- There is now a custom solution for detecting rule violations based on the standard deviation. This custom solution provides the option to exclude the zero-value KPI readings from the rule calculation.

Content Adapters

- A REST-based adapter is now available for OpenText Document Management System.
- Sharepoint Adapter is now available for various platforms such as Solaris, HP-UX, AIX, and zLinux.

Deprecation Notice

- All Business Rules functionalities related to the creation, display, and use of external event rules are deprecated, as the underlying Event Driven Architecture (EDA) has been deprecated since April 2018.
- Use of all EDA event types in BPMN message events in a Process model is also deprecated.
- Process-specific predefined EDA event types or any custom EDA event types developed using the Software AG Designer EDA event type editor in the Events Development perspective are also deprecated.
- Process Simulation functionality and perspective in Software AG Designer has been deprecated with immediate effect. Similar functionality is now available through the ARIS Suite of products. This functionality will be completely removed from Software AG Designer by December 2022.

webMethods CloudStreams

CloudStreams Server Enhancements

Listener Extended Replay Events Support in CloudStreams Salesforce Connectors

CloudStreams Server now supports additional options for replaying Salesforce streaming events. A CloudStreams connector listener for Salesforce Streaming API can now replay events from the last received event. Additionally, the connector listener can be configured to leverage a custom implementation to resolve the replay id for replaying events. If both these options do not meet the user requirement, then there is an additional option to manually specify the exact replay id while enabling the connector listener. The additional replay option offers a better control over replaying events besides the earlier options and their effective usage can reduce the inflow of duplicate events as well as reduce the risk of exceeding Salesforce event limits.

Listener Error Handling and Callback Support for CloudStreams Connectors

CloudStreams Server now provides the ability for a CloudStreams connector listener to attempt recovery for errors configured as recoverable in the associated CloudStreams Connector.

Additionally, CloudStreams Server provides the ability to configure a callback service that is invoked with the error details in case of any errors. The error recovery support attempts to offer a seamless real-time integration experience for the user. The error callback support allows the user to take any desired action such as (disable connector listener, send email) based on the error reported.

OpenAPI 3.0 Support

CloudStreams Server now supports the ability to create a connector by consuming OpenAPI 3.0 definition of a webservice.

Workday - Multi Version Support

CloudStreams Server now supports defining version specific connectors for Workday besides defining a single generic connector connecting to any version of the Workday backend. Multi-version support is required for Workday because the Workday backend does not guarantee backward compatibility for its API interfaces.

Connection JWT (Service Account) Authentication Support in CloudStreams Adobe Experience Platform Connector

CloudStreams Server now provides the ability to configure JWT or Service Account Authentication with Adobe Experience Platform. Additionally, it also maintains the validity of the authentication tokens by periodically refreshing the underlying tokens. The JWT authentication support provides a seamless connectivity experience with Adobe Experience Platform for the user.

Connection Field Lookup Support in CloudStreams Connectors

CloudStreams Server now provides the ability to configure lookup for any connection field with a possible list of values from respective SaaS applications. The field lookup support provides ease of use for end users to choose a value for a field rather than manually entering the same.

Connection Test Support in CloudStreams Connectors

CloudStreams Server now provides the ability to test connectivity with the respective SaaS application, while configuring a connection or post enabling a connection. The test connection support allows a user to quickly validate the connection configuration before saving a connection. Additionally, it allows a user to check the status of the connection once the connection is enabled.

Connection Enhanced Logging Support for OAuth Refresh

CloudStreams Server now supports enhanced logging and a separate logger facility for session management. A separate logger facility would allow a better control over the logs related to session management. A user can increase the logging level for this facility to capture additional logs while debugging session expiry issues besides turning on CloudStreams wire logging that requires an Integration Server restart to take effect.

CloudStreams Server Support for MySQL version 8.x Community edition

CloudStreams Server now supports MySQL version 8.x Community edition, for persisting governance and analytics data.

CloudStreams Server Support for PostgreSQL 10.11

CloudStreams Server now supports PostgreSQL 10.11, for persisting governance and analytics data.

CloudStreams Server Support for MS SQL Server 2019

CloudStreams Server now supports MS SQL Server 2019 , for persisting governance and analytics data.

CloudStreams Server Support for Oracle 19c

CloudStreams Server now supports Oracle 19c, for persisting governance and analytics data.

CloudStreams Service Development Plugin

Support for Dynamic Operation Signature for WSDL based SOAP Connectors

CloudStreams Service Development now provides support for generating a cloud connector service operation signature dynamically for a WSDL based SOAP connector. The WSDL is retrieved from the backend while configuring the operation, based on the endpoint configured in the connection. In case CloudStreams Server fails to resolve the WSDL endpoint from the connection, CloudStreams Service Development provides alternative options to the user. The user can directly specify the alternate WSDL endpoint or upload the WSDL file from a local path.

CloudStreams Development Plugin

OpenAPI 3.0 Support

CloudStreams Connector Development Plug-in for REST now supports the ability to read an OpenAPI 3.0 definition and automatically generate a connector.

CloudStreams Connectors

New and Updated Connectors

New and updated connectors for the following SaaS Applications can now be downloaded from the Software AG TECHCommunity website at <http://techcommunity.softwareag.com>.

New Connectors

- SAP S/4 HANA Cloud Edition OData v2, Version 1
- Adobe Experience Platform, Version 1
- Microsoft Dynamics 365 Business Central OData v4, Version 1
- Amazon Aurora DB, Version 1
- Adobe E-Sign, Version 6
- Alibaba Cloud Object Storage Service, Version 1.0
- Gainsight NXT, Version 1
- Loqate, Version 1
- FreshSales, Version 1
- FreshDesk, Version 2
- Aha, Version 1
- Egnyte, Version 1
- ChargeBee, Version 2
- Recurly, Version 2
- SalesLoft, Version 2
- ABBY, Version 1
- Acuity Scheduling, Version 1

Updated Connectors

- Salesforce® CRM REST, Version 48
 - Salesforce Bulk V2, REST Version 44, OAuth Support
 - ServiceNow, Version Orlando, OAuth 2 Support
 - Coupa, Version R27
 - Magento, Version 2.3, 2.4
 - Marketo, Version 1, Bulk API Support
 - NetSuite®, SOAP Version 2018_2, Token Based OAuth Support
 - Amazon Simple Notification Service (SNS), Version 2010-03 -31, AWS Signature v4 support
 - Microsoft Azure Data Lake Store, Version 2
 - Google Cloud Storage, Version 1, OAuth + JWT Support
 - Atlassian Jira, Version 2, OAuth Support
 - IBM Watson Tone Analyzer, Version 2017-09-21
-

webMethods EntireX

FIPS Support

EntireX now supports FIPS-140 compliant SSL communication. This is available for:

- EntireX Adapter
- Multiple EntireX RPC Servers and Listeners
- EntireX Adapter

SSL Client Certificates on z/OS

EntireX Broker on z/OS supports authentication of participants with their SSL certificate.

Generating Adapter Assets via REST

A REST API is now provided for the following actions:

- Creating and updating adapter connections, adapter services, and adapter listeners
 - Extracting IDL and creating a listener connection service
-

webMethods Integration Server

Support OpenAPI v3.0 Standard

Integration Server offers support for an OpenAPI v3.0 based REST API provider. The REST provider can be developed using the OpenAPI-first approach. For OpenAPI, Integration Server

supports authentication mechanisms such as OAuth, JWT, and Digest along with Basic. There is also support for media types with JSON/XML/multipart. The feature has support for complete OpenAPI defined extended JSON Schema. Support for servers, callbacks, and links provide more capability for users to define their APIs as per their business needs.

Enhanced Support for SFTP

SFTP server alias support in Integration Server is enhanced with new configuration properties and supports additional Key Exchange Algorithms, Machine Access Code (MAC) algorithms, and Ciphers. The preferred key exchange algorithms, ciphers, and MAC algorithms are now configurable from Integration Server Administrator.

Integration Server provides public services for connecting and communicating with SFTP server. These services are also now enhanced to accept additional parameters like server name, username and password. This reduces the need for customers to maintain multiple SFTP server aliases.

Support for Integration Server Administrator API

Integration Server provides support for a REST-based Administrator API. This API allows developers to automate deployment and support continuous integration and deployment scripts. In this release, Integration Server is supporting the following resources in the Admin API: global variables, CSRF configuration, Kerberos settings, job deployment, JWT, quiesce, proxy server, JDBC resources, health gauge, audit log, journal (server) log, package management, server certificates, client certificates, WebSocket port, LDAP, email port, SFTP server alias, SFTP user alias, Enterprise Gateway ports, IMAP ports, file access control, scheduled tasks, extended settings, HTTP ports, HTTPS ports, messaging configuration, trigger management, cache managers, caches, email notifications, threadpool, sessions, server memory, outbound HTTP, single sign-on, keystore, truststore, license, and remote servers.

Enhanced User Management APIs in Integration Server

Integration Server now includes user management APIs to identify if a user is part of an LDAP group, access users belonging to a certain LDAP group, and retrieve user attributes (e.g. email address) from the user profile.

Support Command Line interface (CLI) for the Administrator API

Integration Server provides a command line utility to access Administrator API operations via the command line interface. This utility will assist developers in creating advanced devops scripts and automate deployment and management of Integration Server environments.

Support TLS v1.1 and v1.2 with Email Ports

Integration Server supports TLS (Transport Layer Security) v1.1 and v1.2 while configuring email ports.

Support OAuth 2.0 Token Authentication for Email ports Configured with IMAP Protocol

Integration Server supports OAuth v2.0-based authentication for email ports configured with IMAP protocol. This allows users to integrate with 3rd party SMTP providers like Microsoft Outlook using OAuth v2.0 token. The SMTP public service has also been enhanced to support OAuth token authentication.

Enhanced Support for Integration Server Configuration via Command Central

Administrator can use Command Central to centrally configure and manage SFTP server and user alias configuration for the Integration Server.

Alert and Notification Framework

Integration Server now includes an alerting and notification framework that is used by the new Integration Server Administration to notify users about alerts generated in the Integration Server such as password expiry, certificate expiry, and configuration changes that require a server restart.

Support SHA2 in SMIME Services

Integration Server supports SHA2 standard when using SMIME public services. Integration Server now includes a security library Server that supports various algorithms for signing and verification including SHA1, SHA224, SHA256, SHA384, SHA512 and MD5.

Enhanced Support for JSON Schema

Integration Server offers enhanced ease of use while working with JSON Schemas. The enhanced JSON Schema feature provides lucid and easy to understand messages while creating and validating JSON documents using the built-in json schema services. With the enhanced support, JSON document types can be validated when used in the flow service signature at runtime.

Support for Parquet File Format

Integration Server supports the Parquet file format. Integration Server can read, parse, and convert Parquet files to IData format. Integration Server also provides the ability to convert IData format to Parquet. Integration Server includes a batch iterator function for reading large Parquet files. Integration Server can convert an IS document type (IData) to Parquet schema.

Support for HEAD HTTP method in REST resources

Integration Server supports HTTP HEAD method while creating REST resources. Developers can send HEAD HTTP requests and they will be handled by the corresponding REST resource implementation.

Support for 2-Way SSL while Connecting to webMethods.io Integration

Integration Server supports 2-way SSL while configuring the hybrid integration connection between the on-premises hosted Integration Server and Cloud hosted wM.io Integration.

Enhanced Support for Swagger-Based REST Consumer

Integration Server provides enhanced support for the Swagger consumer. Integration Server enables the user to select one or more operations from operation list defined in the swagger descriptor and generates consumer operations for the selected operations only. This reduces the size and the complexity of the consumer code.

Support for SSL/TLS with MQTT Connection

Integration Server provides one-way and two-way SSL support while connecting to a MQTT server. This feature enhances the security of MQTT support.

Enhanced Interaction between Integration Server and Universal Messaging

Enhancements to the connectivity between Integration Server and Universal Messaging offer improved performance and ease of use.

- Universal Messaging provides a new API to consume multiple messages with a single request. Integration Server supports this API and JMS triggers can now consume multiple messages more efficiently.
- Integration Server uses a new pause subscription API provided by Universal Messaging. This API allows the suspending of message retrieval for a webMethods messaging trigger to be a pause in the subscription instead of a stopping and closing the subscription as in previous releases. This reduces the processing of duplicate events or messages.

Enable TLS 1.3

Integration Server supports TLS v1.3 for secure inbound and outbound connections that use JSSE.

Statistics Related Improvements

Integration Server now captures and displays timeseries data for different statistics in the Dashboard available in the new Integration Server Administrator. In addition, the format for the statistics logs is changed to CSV format to more easily operate with tools such as Microsoft Excel.

SSL Improvements

Integration Server now allows specifying secondary truststore as part of the truststore alias definition. In addition, Integration Server now creates default truststore pointing to JVM provided truststore.

Default HTTPS Port

Integration Server creates default HTTPS port 5543 that can be used for HTTPS-based communication.

Improvements for Integration Server Administrator

Enhanced Graphical Interface

Integration Server Administrator provides access to all administrative tasks through a brand new, simplified, graphically rich, tab-based interface with improved accessibility, simpler debugging tools, and server controls. All key points of navigation are now accessible from a collapsible menu structure that allows a user to maximize page real estate and ensure a clutter-free layout.

Dashboard

Users can now see all key Integration Server Administrator metrics via an interactive Dashboard that provides visually detailed monitor system status, health, usage patterns and overall performance of Integration Server including JVM, Usage, Services, and API-related metrics.

Monitoring

Users can now monitor flow services and coded services such as Java services as well as documents data including key metrics around failure, trigger retries, and error details, via a graphically rich, user-definable interface that features a simple-to-use, custom date/time filtering component.

Archiving

To ensure peak performance of service monitoring, users can archive or delete monitored data for user-selected periods via the Archiving component in Integration Server Administrator.

Bundled Common Directory Services (CDS)

The bundled CDS component provides a unified mechanism within Integration Server Administrator to connect to various user directories and provides the ability to manage users, groups and roles.

webMethods Microgateway

AppMesh

This version of Microgateway provides support for AppMesh, in which Microgateway acts as the body enforcing policies defined in API Gateway, acting as a sidecar to microservices. Users now can:

Deploy the Microgateway into the service mesh to enforce policies defined on APIs.

See the deployed Microgateways (in the Microgateways page in the API Gateway user interface) and analytics they gather in runtime.

webMethods Microservices Runtime

Ability to Inject Configuration into Microservices Runtime Docker Images

Microservices Runtime provides support to inject new configuration assets into an existing Microservices Runtime Docker image. This feature allows the developer to create a single Microservices Runtime Docker image and use the same image to host multiple different microservices having a unique configuration asset for each microservice.

Provide Latest Microservices Runtime Docker image on Docker Hub

Microservices Runtime Docker image will now be updated every 3 months on Docker Hub.

Support Istio Service Mesh with Microservices Runtime

Istio is a leading service mesh offering. Microservices Runtime is certified to work with Istio. Microservices hosted on the Microservices Runtime can be managed by the Istio control plane and can work with Istio components like Envoy.

webMethods OneData

Data Interchange Enhancements

There is more granular control on the visibility of columns of a data object in the service layer APIs.

A new column level property **Hide In Service Layer** is now introduced to control the visibility of columns in a data object in the service layer APIs for data retrieval and data load. Previously, the visibility of columns in a data object, for both the Manage Data UI screen and service layer API was controlled by the same column level property **Hide In Display Screen?** whereby the column was visible in both places or none. With the addition of this new property, administrators can now control the visibility of the columns in the service layer API.

This functionality is applicable for both REST and JMS based service layer APIs.

The documentation around REST-based service layer capabilities is also enhanced in the OneData Developer Guide.

Data Quality Enhancements

The Locate cleansing engine is now upgraded to the latest version.

The documentation is also enhanced to include more use-case specific steps to enable the ease of data quality project configuration.

Platform Enhancements

OneData is now certified to work with the following:

- Azure Cloud Platform
- Oracle 19c database
- ElasticSearch 7.7.1

webMethods Service Development

Enhanced support for graphical development of flat file schemas

webMethods Service Development allows developers to define flat file schema using a graphical wizard. The new enhancements allow the developer to create a schema from a sample file that has multiple nested definitions. The new enhancements offer a better way to handle whitespaces and support different file formats.

Support for OpenAPI v3.0 provider

webMethods Service Development enables developers to create REST provider based on the webMethods Service Development provides support for an OpenAPI v3.0 based REST API descriptor. The REST descriptor can be developed using the OpenAPI-first approach. For OpenAPI, Integration Server supports authentication mechanisms such as OAuth, JWT, and Digest along with Basic. There is also support for media types with JSON/XML/multipart. The feature has support for complete OpenAPIdefined extended JSON Schema. Support for servers,

callbacks, and links provide more capability for users to define their APIs as per their business needs.

Support to browse and debug Flow services in Cloud Container

webMethods Service Development plugin can work with Cloud Container. Developers can browse Integration Server packages, services, and APIs hosted in Cloud Container. Developers can run these services and debug them using the capabilities of webMethods Service Development plug-in.

Support for HEAD HTTP method in REST resources

webMethods Service Development in conjunction with Integration Server supports HTTP HEAD method while creating REST resources. Developers can send HEAD HTTP requests and they will be handled by the corresponding REST resource implementation.

Enhanced Support for Swagger-Based REST Consumer

webMethods Service Development in conjunction with Integration Server provides enhanced support for the Swagger consumer. Developer can select one or more operations from operation list defined in the swagger descriptor and generates consumer operations for the selected operations only. This reduces the size and the complexity of the consumer code.

webMethods Trading Networks

Built-In Guide for WmTN Public Services

The Trading Networks Built-In Services Guide is now integrated with Software AG Designer in Service Development mode to help you develop custom flows for business use cases. The input and output parameters of each service appears on the UI of Software AG Designer.

Software AG Universal Messaging

Release of fixes on Docker hub

Fixes are released as minor versions of the product.

- 10.3 Fix 17 is released as 10.3.0.17
- 10.5 Fix 7 is released as 10.5.0.7

Liveness/Readiness probes for Kubernetes

Universal Messaging 10.7 provides liveness/readiness probes that Kubernetes can leverage to determine the state of the software.

Support for Native Prometheus

Universal Messaging 10.7 provides Prometheus support with the following metrics:

- Number of performed requests - to monitor overall user traffic/load.
- Number of request errors - to calculate error rates. Important!
- Response time - to measure performance. Important!
- Number of logged errors - to measure the rate of errors that are not visible at the request level.

Live Update of an A/A Cluster

Fixes can now be applied on an Active/Active cluster without cluster shutdown, with the intention of providing zero-downtime updates of the servers. This functionality is also available in 10.3 after fix 16.

Enhanced Command Central

Enhanced Command Central templates and documentation are available on GitHub for better on-premise infrastructure automation.

Event lifecycle logging

All state changes and movements of an event in and out of the server can be logged for better traceability.

Server-side setting enforcing follow-the-master (Replication Mode)

Universal Messaging has added a server-side setting that causes non-master nodes in the cluster to reject client connections, so that client connections are only accepted on the master node. All nodes should be present in the connection URL list, so that the customer can eventually connect to the only node that accepts the connection – the primary one on the cluster. Since it is server-side, this will force all client implementations to only connect to the master of the cluster, whereas currently we only have the “follow the master” feature in Java/JMS clients. This is valuable for customers using .Net, C++, and MQTT clients.

Health Checker Improvements

Following are the improvements available on the health checker tool:

- Check if Connection factory has the *syncSendPersistent* property set.
- Check JNDI if an XA connection factory exists - and WARN if it does.
- ACLs - warn if any ACL group has full access.
- For channel and realm:
 - Issue a warning for higher memory usages if store caching at the realm is enabled.
 - Check a channel with subscriber for the JMS engine.
 - Ignore the JNDI properties check for a store with proto buffer.
 - Fix honor capacity warning; when capacity is set to 0 ignore warning.
 - Check for any configuration changes from the default – the report should give the current and the default value.

- Check that the system properties set in realms within a cluster agree. Check languishing durables - configurable as to how long languishing constitutes.
 - Check languishing join.
-

webMethods Update Manager

Revert Product Installations to an Earlier Fix State

You can select an earlier fix state to which to revert your product installation. Software AG Update Manager will remove fixes or add earlier fixes as necessary to return you to the selected state.:

webMethods Upgrade

Pre-Upgrade Analyzer

You can now use a tool called the Pre-Upgrade Analyzer to compare your old Integration Server product installation to the new Integration Server release, and generate a report that indicates how changes in the new release affect your custom assets, so you can adjust those assets. For example, if a built-in service has been deprecated in the new Integration Server release, the Pre-Upgrade Analyzer will generate a report that lists the custom services in your old installation that are affected by the deprecation.

Upgrade Assessment and Readiness Guide

The new Upgrade Assessment and Readiness Guide helps you plan your upgrade. It explains such topics as the major phases involved in upgrade and an estimate of the amount of time for each, assessing your upgrade (for example, your objectives, interfaces to other systems, version management, code deployment, testing, and project timelines), and how to prepare a checklist to help you work through the upgrade project with full visibility. The guide is available in the Installation and Upgrade webhelp on the Software AG documentation website.

Testing Documents

The installation and Upgrade webhelp on the Software AG documentation website now includes testing guidelines created by a webMethods Architect and the webMethods suite testing team. You can use these guidelines to create the testing strategy for your upgrade, and beyond.

Automated webMethods Optimize Upgrade

Many steps in the webMethods Optimize upgrade have now been automated and can be run using a migration utility.

One-click Upgrade from Command Central

You can use Command Central software stacks to simplify upgrade now and in the future. A software stack is a set of product runtimes and related database components that serve one or more purposes, such as application integration, API management, or business process management. Software stacks enable you to use Command Central to create, monitor, and maintain multiple product installations using bulk operations. The stack upgrade feature is

available in the Command Central GUI and lets you automatically generate composite templates that you can then use to upgrade a single environment or automate the upgrade of multiple environments.

Unit Test Framework

Enhancement to code coverage functionality

The code coverage functionality is now enhanced in Unit Test Framework to ensure that the validated information about mocked services is accurately depicted in the report.

Documentation

webMethods ActiveTransfer Quick Start Guide is no longer available to users

The webMethods ActiveTransfer Quick Start Guide is no longer part of ActiveTransfer product documentation.

REST Developer's Guide is no longer delivered with the webMethods Integration Server documentation set

The REST Developer's Guide is no longer delivered with the webMethods Integration Server documentation set as the contents of the guide are now available in the webMethods Service Development Help.

A new guide titled Service Monitoring in Integration Server is now part of Integration Server documentation set

Service Monitoring in Integration Server is a new guide that describes how to monitor flow services, coded services (such as JAVA services), and documents through the new Integration Server Administrator.

A new guide titled Managing Users with Common Directory Services is now available

A new guide titled *Managing Users with Common Directory Services* is now available for the Common Directory Services component in the new Integration Server Administrator.

Installation and Upgrade webhelp offers upgrade assessment/readiness guide and testing guidelines

The Complete Installation and Upgrade Information for Software AG Products webhelp now offers two new guides:

- Software AG Upgrade Assessment and Readiness Guide to help you prepare for and plan your upgrade
- Upgrade Testing Guidelines to help you design your testing strategy

The webhelp is available on the Software AG Empower documentation web site.

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