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 handing 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 (nsps) 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:
 - o 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 handing 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 predefined 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

- o 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 defacto 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 nuiid parameter has been removed. Constructors with nuiid 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 object s 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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