

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.
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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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