

# webMethods Product Suite 10.4

## Release Notes

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Using Software AG's webMethods products, you can build application integration solutions on the top-rated hybrid integration platform and integrate cloud-based apps and on-premises systems without coding, simplify with one toolset for on-premises and cloud integrations and use a microservices-style architecture to deliver and scale new integrations faster. The webMethods suite, with the Integration and API Management products, includes a broad collection of capabilities, including application and partner integration, API management, B2B integration, managed file transfer, building micro-services, high-speed messaging, and in-memory caching.

With webMethods, you have an extensible, scalable and reliable backbone running either on the cloud, on-premises or in hybrid scenarios—providing seamless integration for cloud, mobile, APIs, and Internet of Things (IoT).

Release 10.4 of the webMethods Product Suite provides significant enhancements in every functional area of the suite.

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## Release Highlights

### webMethods Integration

webMethods Integration Server is the powerful core engine behind the entire webMethods suite, spanning business process management, B2B integration, managed file transfer, API management, and more. Our hybrid integration platform is easily scalable, enabling easy integration of your on-premise applications to SaaS applications, programming-model agnostic, and multi-container capable. As a container, the platform ships with hundreds of pre-built useful APIs, services, frameworks, EDA, and in-memory data grid support to save you time. It has a full range of connectors to support the most modern standards, such as OData, REST, and the full complement of SOAP-based Web-service support. Mapping and transformation functions are built in, which is especially useful when integrating big data sources.

The key features include:

- Integration Server enables developers to create a GraphQL schema that describes various types and fields in order to develop APIs that adhere to the GraphQL standard.
- Integration Server provides native support for JSON Schema, allowing a developer to create a JSON document type based on a JSON schema.
- Software AG Designer can be used to publish REST API descriptors (Swagger) to webMethods API Gateway.
- Integration Server offers enhanced support for Swagger 2.0 standard while creating REST APIs.
- Integration Server is certified to communicate with JMS providers that support AMQP protocol using QPID JMS client libraries.
- Microservices Runtime has a decreased disk size requirement and an improved start up time.
- The new user interface in Active Transfer supports enhancements for actions, logs and proxy server settings.

- Software AG Designer Service Development supports a new view called *Deployment Status*. The view shows the cloud deployment history with deployment status and a log to debug issues.
- CloudStreams Server now supports the ability to associate one or more authentication schemes supported by SaaS applications or backend systems while creating a connection.
- CloudStreams Server now supports the Salesforce® Replay Events mechanism provided by Salesforce® for message durability to retrieve and process lost events sent by Salesforce®, within the supported retention window.
- CloudStreams Server now supports OAuth 2.0 authentication flow using JSON Web Token (JWT). A JSON Web Token (JWT) enables identity and security information to be shared across security domains.
- Software AG Designer Service Development supports a new view called *Deployment Status*. The view shows cloud deployment history with deployment status and logs to debug issues.
- Users can snoop on events on a Universal Messaging channel or queue and purge events from a channel or queue using the Command Central web user interface and command-line interface.
- Users can publish events, including Protobuf events, on a Universal Messaging channel or queue using the Command Central web user interface and command-line interface.
- Universal Messaging sessions using the "horizontal scalability" feature now support automatic (re)connection to realm servers in the scalability set that are offline or unavailable when the session is created or initialized.

### **webMethods API Management**

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

webMethods API Gateway securely exposes your APIs to consumer, third-party developers, and other partners for use on the web, mobile and IoT applications. webMethods Microgateway is an independent offering—light-weight, agile, and fast. It works with webMethods API Gateway or as a standalone solution to control API access to micro-services in a distributed environment and supports service mesh architectures offering independent and sidecar deployments.

The latest features are:

- The import and export support in API Gateway is enhanced to include all assets and configurations so that users can easily move the configurations across instances.
- Staging and promotion support in API Gateway now includes all assets and configurations so that users can easily move configurations across instances.
- Application identification is enhanced to use certificates sent through the Custom HTTP header. The Custom HTTP header can be configured as an extended setting in API Gateway administration.
- API providers can be configured to invoke multiple APIs in parallel as part of one mashup step and aggregate the response that is passed to the next step. Similarly, responses of any mashup steps can be aggregated and sent as a single output to the client.
- API Gateway can be run within a Kubernetes environment. Kubernetes provides a platform for automating deployment, scaling, and operations of services.

- API Gateway provides a dedicated screen to display groups of Microgateways registered to it. API Gateway users are now able to retrieve details about Microgateways available within a group as well as retrieve the list of assets and configurations of each Microgateway.
- User on-boarding with approval flow is enhanced to include a multi-level approval process.
- The API gallery page in API Portal is enhanced to display API groupings based on the community to which they are published. API Portal also now allows users to share their registered applications with a specific list of users or teams.
- webMethods Microgateway provides support for Kubernetes with health and readiness checks and Prometheus metrics support amongst others.
- webMethods Microgateway configuration capabilities allow for provisioning an instance using a single YAML settings file.
- webMethods Microgateway supports API scoping as well as resource- and method- level policy enforcement.
- Centrasite users can now trigger promotion of APIs from an API Gateway instance to another.

## **Big Memory**

The latest key feature is:

- Improvements and new options for Terracotta server start/stop commands to facilitate safer automation of operations.

## **webMethods Suite Enhancements**

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

The key features include:

- Software AG Command Central allows the option to only restart run-time instances if they require a restart for the updates to be applied.
- With Software AG Command Central, you can set template application to fail when configuration settings are not applied. To ensure backward compatibility, the old behavior is the default one.
- Software AG Command Central 10.4 enables you to generate a template for a product instance that is hosted on Platform Manager 10.0 or higher by using a CLI command.
- Default templates for installation and basic configuration of Analytic Engine and Web Service Data Collector using Command Central are now available on GitHub.
- Task Engine now supports the archiving of task instance data in a separate data store.
- Integration of Business Console with co-located Task Engine running on Integration Server has been stabilized.
- Database Component Configurator is rewritten in release 10.4 to improve reliability and performance.

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For 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](#).

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## CentraSite

### **Governed API Staging Enhancement**

Centrasite users can now trigger promotion of APIs from an API Gateway instance to another. When there is more than one API Gateway instance available in the environment, users can select the required instance to which the API must be promoted.

### **Governed API Development**

CentraSite provides the option to ensure that CentraSite can only be used for design-time features and cannot be used to configure and publish runtime metadata to API Gateway.

### **Adding Initial External Users**

CentraSite provides a command line tool using which the initial administrator user can be created for an external domain like LDAP.

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## My webMethods Server

My webMethods Server has the following new feature and enhancements:

### **Database Support**

My webMethods Server now supports PostgreSQL.

### **Task Engine Enhancement**

Task Engine now supports the archiving of task instance data in a separate data store.

### **Common Directory Services Enhancement**

The Common Directory Services (CDS) component in Integration Server can now use REST calls to synchronize user cache updates between Integration Server and a single My webMethods Server instance, instead of using Universal Messaging as a JMS provider.

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## Terracotta

### **Terracotta BigMemory 4.3.7**

This release includes improvements and new options for Terracotta server start/stop commands to facilitate safer automation of operations.

## Terracotta Cache and Operational Store 10.3.1

The key features include:

- Additional deployment and configuration options for High Availability and Consistency features provide more flexibility to best meet use case requirements.
  - Users must now also explicitly specify a failover tuning priority to favor availability or data consistency in Terracotta server configurations.
  - Improvements and new options for Terracotta server start/stop commands to facilitate safer automation of operations.
  - Significant performance improvements in most CRUD (create, read, update, and delete) and search operations.
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## Software AG Command Central

### Template Restart Optimization

Before version 10.4 Command Central restarted all run - time instances and related Platform Manager installations after applying all configuration changes. This behavior is updated when you use Command Central version 10.4 together with Platform Manager version 10.3 or higher. Currently, you can set Command Central to only restart run-time instances if they require a restart for the updates to be applied. For example, updates in the following configurations require a restart:

- Java Setting
- Wrapper
- Ports

To ensure backward compatibility, the old behavior of restarting all run-time instances is the default behavior, so customers do not have to update their existing templates if they upgrade to Command Central 10.4. The new behavior can be enabled by updating the templates to use DSL version 1.2 and adding the required option.

### Template Configuration Failures

Previously, Command Central 10.4 template application jobs did not fail due to failed configuration settings and the configuration failures were reported as errors only in the log files. This behavior is updated when you use Command Central 10.4 together with Platform Manager 10.4. You can set template application to fail when configuration settings are not applied. To ensure backward compatibility, the old behavior is the default one. You can enable template application jobs to fail by using DSL version 1.2 and the required option in the beginning of your templates.

### Save Product Instance as Template

Command Central 10.4 enables you to generate a template for a product instance that is hosted on Platform Manager 10.0 or higher by using the following CLI command:

```
sagcc exec templates composite generat e
```

The command creates a template containing all product codes and configurations for the specified product instance and its layered products.

The limitation is that fixes are not exported. As a workaround, use ALL fixes and re-apply everything from the existing fix repository.

### **LDAP Validation with End User in the Command Central Web User Interface**

The LDAP configuration in the Command Central server provides a quick test of the configurations with an arbitrary user of the LDAP server. This emulates a real login into the system in the configuration window and allows you to quickly update the configurations, if required. Command Central saves the test user.

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## **webMethods AgileApps**

The key features are:

### **Reversal of Deprecation Action for Signavio Process Modeler and Activiti Engine Plugins**

AgileApps reverts the deprecation action for Signavio Process modeler and Activiti Engine plugins announced in the 2018 October release.

### **AgileApps in Installer Tree**

AgileApps is once again visible in the Installer tree.

### **AgileApps Runtime User Interface Enhancements**

With the upgrade to Angular 7, AgileApps Runtime user interface is now more responsive for viewing on mobile devices.

Users can now choose to Preview or Activate the new Runtime user interface permanently, and avoid users from switching between the old and new user interfaces.

### **CMIS User Interface Enhancements**

- In the Content Management Interoperability Services (CMIS) user interface, you can now:
  - Create documents of any custom type that is configured in CMIS and also update the properties of the custom type.
  - Store additional data for any attachment. Examples for additional data include the document type, expiry date, issue date, and so on.
  - Use the additional document metadata to search for a document in any supported CMIS tool like Filenet and Alfresco.
  - Map objects from AgileApps to any custom document type in CMIS.
- A new field, **Default Document Type**, is available in the CMIS configuration screen for configuring External Document Storage on the AgileApps platform.

### **Index-Based Text Search**

- Users can now perform faster user interface search using full-text indexing. A new option is available in **Object Properties** to enable full-text indexing. This functionality is available only with MySQL version 5.7 or later.

## Enhancements to Record Count Handling in Case Views

- On the **Company Information** page, a new setting, **Record Count**, is introduced. A user with the required account management permissions can enable or disable this record count option for a tenant.
  - Disabling the record count option reduces the response time to load a list view resulting in improved browser performance.
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## webMethods ApplinX

### Font Size Determination

You can now determine the font size to use in the web application for each screen resolution. You can create a map for font size per resolution and the number of columns of the screen.

### Usability

Multiple usability enhancements have been implemented across the product.

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## webMethods BPMS <includes Monitor, Process Engine, Task Engine (including Mobile Task Integration), and Business Console>

The key features are:

### Database Support

My webMethods Server now supports PostgreSQL.

### Task Engine

Task Engine now supports the archiving of task instance data in a separate data store.

### Common Directory Services (CDS)

The Common Directory Services component in Integration Server can now use REST calls to synchronize user cache updates between Integration Server and a single My webMethods Server instance instead of using Universal Messaging as a JMS provider.

### Business Console

Integration of Business Console with Co-located Task Engine running on Integration Server has been stabilized.



## Rules Auditing

Rules Auditing now uses database tables instead of Event Persistence.

## webMethods Content Adapters

Security API has been implemented for CMIS and Alfresco adapters.

## webMethods Optimize for Process

Default templates are now available on GitHub for installation and basic configuration of Analytic Engine and Web Service Data Collector using Command Central.

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# webMethods ActiveTransfer Server

## New User Interface Additional Features

The following features are added to the new user interface that was introduced in the 10.3 version:

- Actions (previously known as 'Events'):
  - Scheduled Actions
  - Post-Processing Actions
- Logs
  - Transaction log
  - Action Log (previously known as 'Event log')
  - Audit Log
  - Analytics
- Proxy Servers
- Settings
- Listener preferences
  - Acceleration
  - Audit settings
  - File share

## Password Encryption

Passwords for remote servers are no longer stored within the database as Base64 encoded only.

## Protocol Support

ActiveTransfer now supports SMB 1.0, SMB 2.0, and SMB 3.0 versions.

## **Copy/Move Enhancement**

Files can now be copied or moved with a temporary file name from the source location and then renamed to the original file name after the copy or move operation is completed. This helps avoid accidental pick up of a partially written file by an application on the target system.

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# **webMethods API Gateway**

## **Import and Export Enhancements**

Import and export support that was limited to a subset of assets is now enhanced to include all assets and configurations so that users can easily move the configurations across instances.

## **Staging and Promotion Enhancements**

Staging and promotion support that was limited to a subset of assets is now enhanced to include all assets and configurations so that users can easily move the configurations across instances. Stage specific configuration can be done using Aliases configured within stage details.

## **Support Certificates in Custom Headers**

Application identification is enhanced to use certificates sent through Custom HTTP header. The Custom header name can be configured as an extended setting in the API Gateway administration section.

## **Support API Composition in API Mashups**

API providers can configure to invoke multiple APIs in parallel as part of a single mashup step and aggregate the response that is passed to the next step. Similarly, responses of any mashup steps can be aggregated and sent as single output to the client.

## **Microgateway Management in API Gateway**

API Gateway provides a dedicated screen to display groups of Microgateways registered to it. API Gateway users are now able to retrieve details about the Microgateways available within a group, as well as the list of assets (APIs, Applications, Policies) and configurations of each Microgateway.

## **Kubernetes Support**

API Gateway can be run within a Kubernetes environment. Kubernetes provides a platform for automating deployment, scaling and operations of services. The API Gateway Kubernetes support provides the following:

- Liveness check (under/health endpoint) to support Kubernetes pod lifecycle. This helps in verifying that the API Gateway container is up and responding.
- Readiness check (under/health endpoint) to support Kubernetes pod lifecycle. This helps in verifying that the API Gateway container is ready to serve requests.

- Prometheus metrics to support the monitoring of API Gateway pods. API Gateway support is based on the Microservices Runtime Prometheus support available under Integration Server /metrics endpoint to gather the required metrics.

### **Docker Support Enhancements**

Existing Docker support has been enhanced in the following areas:

- When creating Docker images, it is now possible to decide whether Elasticsearch should be included. Not including Elasticsearch renders the API Gateway image non-persistent.
- API Gateway logs are now also routed to *stdout* and *stderr*, which makes them accessible without having to execute commands inside a running container.
- Elasticsearch and cluster configuration has been externalized and can be injected into existing images when starting a new container.
- Docker health checks are available on *{host}/rest/apigateway/health*.
- Docker stop command issues a *SIGTERM* to the running API Gateway for a graceful shutdown.

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## **webMethods API Portal**

### **API Gallery and Communities**

API gallery page is enhanced to display APIs groups based on the community to which they are published.

API packages published from API Gateway can be published to a specific community in API Portal. Such packages are visible only to the members of the community.

### **Application Sharing**

API Portal now allows users to share their registered applications with a specific list of users or teams. To achieve this, users can create teams and associate the required users as members.

### **API Tryout Enhancement**

Try API page now includes some usability enhancements.

### **User Onboarding**

User onboarding with approval flow is enhanced to include a multi-level approval process. Administrators can also configure the default community to which a new user will be assigned.

API Portal now also allows for delegating user onboarding approvals to an external solution. To achieve this, a public API is made available. External solutions can use the public API to retrieve pending user registration requests and send back the approval decision.

The user registration page can be customized to include additional fields to be filled in during the signup process.

## Payment Gateways

It is now possible to use external payment gateways and configure them to be part of the user onboarding process to capture credit card information of the user during the signup. API Portal comes preconfigured for Worldpay and Stripe payment gateways, but others can also be configured.

## API Staging Support

API Portal supports publishing of APIs from different stages of API Gateway instances. An API published from different stages is visible as a single API in API Gallery. You can navigate through the stages in the API Details page to understand the differences.

## Command Central Support

You can now start and stop API Portal through Command Central.

## Secure Access to Elasticsearch

The Elasticsearch runnable bundled as part of API Portal product is secured by default. Credentials are required to access the Elasticsearch data outside API Portal.

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## webMethods Broker

webMethods Broker is now replaced by Software AG Universal Messaging. The use of webMethods Broker with this release of webMethods is deprecated.

You can connect webMethods 10.4 products to an existing webMethods Broker 9.6 instance. This use is supported until the webMethods Broker 9.6 support lasts.

You can also use webMethods 10.4 to administer webMethods Broker 9.6. Software AG strongly recommends the use of Universal Messaging for any new developments. To migrate existing assets, use Universal Messaging before webMethods Broker reaches end of support.

For more details, see <https://empower.softwareag.com/brokerendoflife/>.

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## webMethods Business Rules

### Rules Auditing

Rules Auditing, as of 10.4, uses database tables instead of Event Persistence.

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## webMethods CloudStreams

### CloudStreams Server Enhancements

#### *Multi Authentication Support*

CloudStreams Server now supports the ability to associate one or more authentication schemes supported by SaaS applications or back end systems while creating a connection. This allows

users to leverage different authentication schemes while connecting to or integrating with various SaaS applications or back end systems.

For example, users can now use any of the Salesforce® supported Basic and OAuth 2.0 authentication schemes to connect to or integrate with Salesforce®, with the same connector.

#### ***Salesforce® Replay Events Support***

CloudStreams Server now supports the Salesforce® Replay Events mechanism provided by Salesforce® for message durability to retrieve and process the lost events sent by Salesforce®, within the supported retention window.

#### ***OAuth 2.0 JWT Bearer Token Support***

CloudStreams Server now supports OAuth 2.0 authentication flow using JSON Web Token (JWT). A JSON Web Token (JWT) enables identity and security information to be shared across security domains.

#### ***Seamless OAuth 2.0 Token Flow Generation Support***

CloudStreams Server now supports generating OAuth 2.0 tokens seamlessly while creating or configuring a connection, to connect to or integrate with a SaaS application or a back end system, which uses the OAuth 2.0 based authentication and authorization mechanisms.

The following OAuth 2.0 authentication and authorization flows are supported:

- Authorization Code Flow
- JSON Web Token (JWT) Flow

#### ***Clustering Support for Connector Listeners***

CloudStreams Server now supports cluster aware connector listeners, thus guaranteeing exactly once processing of events across a cluster of nodes.

#### ***Update and Upgrade Services Enhancements***

CloudStreams Server update utility services are further enhanced to support update of cloud connector services from a lower version of the connector/SaaS API version to a higher connector/SaaS API version, which leverages the latest features of CloudStreams, like Dynamic/In-Line authentication support and MIME/Multi-part support.

CloudStreams Server now provides a brand new *batchUpgrade* service to update batches of cloud connector services and cloud connector listener services in one go or from a lower version of the connector/SaaS API version to a higher connector/SaaS API version. This capability leverages the latest features of CloudStreams, like Dynamic/In-Line authentication support and MIME/Multi-part support.

#### ***Migrate Services Enhancements***

The CloudStreams server migrate utility service is further enhanced to support migration of connections, cloud connector services, and cloud connector listeners in user-defined packages from a lower version of the CloudStreams Server to a newer version. The migration ensures compatibility with the newer CloudStreams Server version and leverages the latest features of CloudStreams, like Dynamic/In-Line authentication support and MIME/Multi-part support with cloud connector services.

## **CloudStreams Connectors**

### ***New and Updated Connectors***

New and updated connectors for the following SaaS Applications can now be downloaded from the Software AG TECHCommunity website at <http://techcommunity.softwareag.com>.

### ***New Connectors***

Salesforce Bulk API, Version 2 is now supported.

### ***Updated Connectors***

- Salesforce Partner API, SOAP Version V44 along with Replay Events Support
  - Coupa API, Version 23
  - Service Now, Kingston Version
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## **webMethods Database Component Configurator**

### **Improved Reliability and Performance**

Database Component Configurator was rewritten in release 10.4 to improve reliability and performance. In release 10.4, the configurator supports command line mode only; no GUI is available.

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## **webMethods Integration Server**

### **Support for GraphQL Provider**

Integration Server allows developers to develop APIs that adhere to the GraphQL standard. GraphQL is a query language for APIs and a runtime for fulfilling those queries with your existing data. GraphQL provides a complete and understandable description of the data in your API, gives clients the power to ask for exactly what they need and nothing more. Developers can create a GraphQL schema that describes the various types and fields. Using this schema, a developer can create a GraphQL descriptor using the Service Development perspective in Designer.

### **Support for JSON Schema**

Integration Server provides native support for JSON Schema. Using Designer, a developer can create a JSON document type based on a JSON schema, and then use the JSON document type to validate a JSON payload.

### **Support for Publishing REST API descriptors (Swagger) to API Gateway**

In conjunction with Integration Server, Designer can be used to publish REST API descriptors (Swagger) to webMethods API Gateway.

### **Support for Publishing Messages Using the AMQP Protocol**

Integration Server is certified to communicate with JMS providers that support AMQP protocol using QPID JMS client libraries. Integration Server supports the Qpid JMS AMQP 0-x 6.3.3 JMS client libraries.

## Enhanced support for Swagger 2.0

Integration Server offers enhanced support for Swagger 2.0 standard while creating REST APIs. Integration Server supports Swagger constructs like tags, external docs and basic security definitions while creating APIs using resource first or Swagger first approaches. Integration Server supports Swagger files that reference other files.

## Removal of WmVCS package

The WmVCS package supports integration with version control systems like Subversion. In this release, the WmVCS package has been removed but is now available on the Software AG GitHub website.

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# webMethods Microgateway

## Administration Configuration Enhancements

Microgateway configuration capabilities have been improved. This allows for provisioning an instance using a single YAML settings file.

## Microgateway Management in API Gateway

While provisioning Microgateways, they can be registered, assigned to groups, and made visible in the API Gateway user interface. The user interface can now display the APIs and the runtime enforcements for each registered Microgateway.

## Runtime Policies Enforcements

Microgateway now supports API scoping and resource and method level policy enforcement.

Microgateway provisioning can now include runtime Alias configurations.

Microgateway support for runtime policies has been enhanced to include:

- Additional IAM policies:
  - OAuth2
  - JWT
  - OpenID
- Additional request processing policies:
  - Request transformation
  - Data masking
- Additional routing policies:
  - Content-based routing
  - Context-based routing
  - Outbound Authentication (Basic, OAuth2, JWT, Anonymous)
  - Service registry support (in all supported routing policies)
- Additional response transformation policies:

- Response transformation
- Data masking
- CORS
- Additional error handling policies:
  - Data masking

### **Docker support enhancements**

Microgateway Docker support has been improved to:

- Allow dynamic configuration of Docker images using environment variables
- Provide health checks (on /health endpoint)
- Support graceful shutdown in case of Docker container stop
- Provide more options for sidecar deployment including dedicated support for Software AG Microservices Runtime

### **Kubernetes Support**

Microgateway provides support for Kubernetes including:

- Health and readiness checks (on/health endpoint)
- Prometheus metrics (on/metrics endpoint).
- Scripting support for Kubernetes deployment: Microgateway CLI utility provides an option to generate a YAML configuration file for Kubernetes deployment.

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## **webMethods Microservices Runtime**

### **Optimizations for Microservices Runtime**

Reductions in disk size requirements and startup time for Microservices Runtime. In comparison to previous releases, Microservices Runtime has a decreased disk size requirement and an improved startup time. These optimizations translate to a smaller Docker image for a Microservices Runtime.

### **Support for OpenShift Recipes for Microservices Runtime**

Software AG provides a sample OpenShift script for Microservices Runtime. This script, which can be customized to meet user's needs, allows users to create Microservices Runtime pods and orchestrate them using OpenShift. The script will be available as a recipe on the Integration Cloud recipe store.

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## **webMethods OneData**

### **Data Quality Enhancements**

The Data Quality module includes the following improvements:



- The Locate cleansing engine has been upgraded to the latest version.
- Now, the DQ Inbox also displays records pending manual cleanse. Previously, the DQ Inbox only displayed the records pending manual match and manual merge.

### **Data Interchange Enhancements**

The Data Interchange module includes REST-based service layer capability for executing or stopping jobs and viewing the job results of data interchange export and import jobs.

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## **webMethods Optimize for Infrastructure**

### **Complete Adoption of Command Central**

You can use Command Central to:

- Map the Configuration Agent and the Primary Listener endpoints
  - Migrate your environment to the same version
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## **webMethods Optimize for Process**

### **Default Templates for Installation and Configuration using Command Central**

Default templates for installation and basic configuration of Analytic Engine and Web Service Data Collector using Command Central are now available on GitHub.

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## **webMethods Service Development**

### **Support for GraphQL Provider**

Integration Server allows developers to develop APIs that adhere to the GraphQL standard. GraphQL is a query language for APIs and a runtime for fulfilling those queries with your existing data. GraphQL provides a complete and understandable description of the data in your API, gives clients the power to ask for exactly what they need and nothing more. Developers can create a GraphQL schema that describes the various types and fields. Using this schema, a developer can create a GraphQL descriptor using the Service Development perspective in Designer.

### **Support for JSON Schema**

Integration Server provides native support for JSON Schema. Using Designer, a developer can create a JSON document type based on a JSON schema and then use the JSON document type to validate a JSON payload.

## **Support Graphical Development of Flat File Schemas**

Service Development provides developers with a graphical wizard for defining a flat file schema. Developers use the wizard to upload a sample flat file and then identify the fields using a graphical click-and-configure interface. This feature provides an easy-to-use mechanism for defining complex flat file schemas.

## **Support Rich Editor for YAML Configurations**

Editor for Runtime Configuration Template now supports syntactical and static validations of the content.

## **Support for Publishing API Descriptors (Swagger) to API Gateway**

In conjunction with Integration Server, you can use Designer to publish REST API descriptors (Swagger) to webMethods API Gateway.

## **Provide support for Cloud Deployment Status Tracking**

Service Development supports a new view called Deployment Status. The view shows cloud deployment history with deployment status and log. The new view will assist developers in debugging package deployment issues.

## **Enhanced Support for Swagger 2.0**

Integration Server offers enhanced support for Swagger 2.0 standard while creating REST APIs. Integration Server supports Swagger constructs like tags, external docs, and basic security definitions while creating APIs using resource-first or Swagger-first approaches. Integration Server supports Swagger files that reference other files.

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# **webMethods Trading Networks**

## **Special Character Search Functionality**

Trading Networks search has an additional capability to let you search for transactional data that includes special characters such as % (percentage) and \_ (underscore).

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# **Software MashZone NextGen**

## **Bookmarks for Dashboards**

Doing analyses in complex dashboards might require several filters and selections. Replicating or sharing actual findings can be quite challenging. The new bookmarking functionality allows you to persist filter states of a dashboard for later use and share these filter states with colleagues or anyone else who might need them. Bookmarks can further be managed centrally and rolled out to all users.

## **Open Intervals for Sliders**

The data range that should be applied to a slider is not always known. However, if required, you can set the interval to open, which also allows null values.

## **Display Data Value on Columns or Bar in Charts**

As a configuration option of the chart, the data value per column or bar can be now displayed.

## **Logarithmic Axes Scaling**

The scaling of axes in column, bar, column and bubble charts can now be switched between logarithmic and linear scales.

## **Display of axis labeling**

A new mode *Alternate* allows the display of x-axis values in two rows, which provides better readability.

## **Visually scalable labels**

The font size of textual labels can now be automatically reduced depending on the screen resolution. The corresponding factors can be configured through the Aware styles (.less).

## **Enhanced Preview in Feed-Editor**

The preview of calculations in feed-editor provides different modes (Quick, Full). Mode Statistics displays a column based statistics of the calculated data.

## **User Interface for Import and Export of Assets**

The Admin Console has been extended to import and export dashboard, feeds and aliases.

## **Cross-Edition Import of Dashboards and Data Feeds**

Dashboards, feeds and aliases created with a different edition (MashZone NextGen, Aware) can be imported. The padmin tool supports an option for a test run to check that imported objects only use features supported in the target edition.

## **Improved Layout of Function Flows**

By improving the layout of function flows, a clear representation of reconstructed process flows is ensured, which offers significantly improved analysis capabilities based on the function flow widget.

## **Visualization of Start and End nodes in Function Flows**

Start and end nodes are added to the function flow widget for better analysis of the discovered process flow.

### **BPMN-like Representation of Function Flow**

In addition to the EPC-like visualization of the function flow, a BPMN-like representation is added to adapt the model visualization to the BPMN process models in ARIS.

### **Distribution Chart**

As a new widget, the distribution chart visualizes the distribution of KPIs and measures from the Process Mining context.

### **Multi-select in Lists**

The preview of calculations in feed-editor provides different modes (Quick, Full). Mode Statistics displays a column based statistics of the calculated data.

### **Enhanced Preview in Feed-Editor**

Multiple selection is supported for lists of texts, numbers, or data from the PPM data source.

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## **Software AG Universal Messaging**

### **Support for Channel and Queue Snoop in Command Central**

You can snoop on events on a Universal Messaging channel or queue and purge events from a channel or queue using the Command Central web user interface and command-line interface.

For information, see the sections “Snooping on Channels, Snooping on Queues, Commands for Snooping on Channels,” and “Commands for Snooping on Queues” in the *Administration Guide*.

### **Support for Publishing Events on Channels and Queues in Command Central**

You can publish events, including Protobuf events, on a Universal Messaging channel or queue using the Command Central web user interface and command-line interface.

For information, see the sections “Publishing Events” and “Event Publishing Commands” in the *Administration Guide*.

### **Support for .NET Standard 2.0**

The APIs Nirvana DotNet.dll, Nirvana nAdminAPI.dll and Nirvana.Reactive.dll have been tested to be compatible with .NET Standard 2.0. For the verification, the *.NET Portability Analyze* tool from Microsoft is used.

For information see the section “Using UM API libraries for .NET in .NET Standard projects” in the *Developer Guide*.

### **Support for Deleting Clusters Using the Tools Runner Application**

The Tools Runner application (runUMTool) has been extended with a new command DeleteCluster. This command allows you to delete an existing cluster.

For information, see the topic “Syntax: Cluster Tools” in the section “Command Line Administration Tools” of the *Administration Guide*.

### **Multiplex Session Authentication**

There is a change in the way user names are handled for client authentication in a multiplex session.

For details, refer to the topic “Multiplex session authentication” in the *Concepts* guide.

### **Horizontal Scalability**

Universal Messaging sessions using the *horizontal scalability* feature now support automatic (re)connection to realm servers in the scalability set that are offline or unavailable when the session is created or initialized.

Also, HS sessions support connecting to various connection interfaces (for example, NHP/NHPS/NSP/NSPS) and you can use a combination of these in a single HS RNAME.

For details, refer to the topic “Usage Notes for Horizontal Scalability” in the *Concepts* guide.

### **Updated System.Reactive Libraries for .Net Reactive Samples**

The .Net Reactive Extensions (Rx) sample programs have been updated to use System.Reactive libraries v3.1.1. In the previous product release, version 1.0 of these libraries was used.

The sample programs are located under in folder  
<InstallDir>UniversalMessaging\docnet\examples.

### **Using AMQP in Clustered Environments**

Universal Messaging now supports AMQP 1.0 in clustered environments.

At the moment, automatic failover of AMQP clients is not supported. If the AMQP connection fails it is the responsibility of the AMQP client application to reconnect to another node in the cluster.

**Note:** For the initial release of V10.4, the new functionality is provided as a software fix that you need to install after the standard product installation procedure is completed. To install the fix, you can use either Command Central or Software AG Update Manager. If you wish to use Update Manager, general instructions are provided in the document *Using Software AG Update Manager* that you can find on the Software AG documentation web site.

### **Store Type "transient"**

The channel/queue type "transient" is deprecated in 10.4, and will be removed in a future version of the product.

### **Realm Configuration Properties**

The realm configuration property *SyncPingSize* is deprecated.

The realm configuration properties are described in the section “Realm Configuration” in the *Administration Guide*.

## Dead Event Store

The description of how the dead event store is used for channel processing has been updated.

For details, refer to the topic “Dead Event Store restrictions for durable subscriptions” in the section “Channel Attributes” in the *Concepts* guide.

## Java Service Wrapper

Several components of Universal Messaging make use of *Java Service Wrapper*, an application provided by developed by Tanuki Software, Ltd. Information about the Universal Messaging components that use the Java Service Wrapper and the Java Service Wrapper configuration have been added to the documentation.

For details, refer to the section “Configuring the Java Service Wrapper” in the *Administration Guide*.

## Removal of Some Client JAR files

In previous product versions, some client Jar files were removed by design from the product delivery, but this was not stated clearly. The following table indicates Jar files that were delivered with previous product versions, but which are not delivered as Jar files any more. Their classes have now either been folded into other Jar files, or have been removed from the product altogether.

Previously available JAR File	Description	Status
<b>nJ2EE.jar</b>	Provided Universal Messaging support for interacting with Application servers that support J2EE.	The Jar file is no longer available. The Universal Messaging product now contains a resource adapter for use with application servers.  See the topic “Resource Adapter for JMS” in the “Java” section of the <i>Developer Guide</i> for related information.
<b>nAdminXMLAPI.jar</b>	Provided Universal Messaging Configuration XML Import / Export functionality.	The Jar file is no longer available, but the contents have been folded into nAdminAPI.jar.
<b>nP2P.jar</b>	Provided Universal Messaging Peer-to-Peer functionality.	The P2P functionality was removed from the product in version 9.12. The Jar file is no longer available, and the contents have not been folded into any other Jar file.
<b>nJ2EE.jar</b>	Provided Universal Messaging support for interacting with Application servers that support J2EE.	The Jar file is no longer available. The Universal Messaging product now contains a resource adapter for use with application servers.  See the topic “Resource Adapter for

		JMS” in the “Java” section of the <i>Developer Guide</i> for related information.
<b>nAdminXMLAPI.jar</b>	Provided Universal Messaging Configuration XML Import / Export functionality.	The Jar file is no longer available, but the contents have been folded into nAdminAPI.jar.

For the list of currently delivered client JAR files, refer to the section “Client Jars” in the Concepts guide.

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## Software AG Installer

### New Software AG Installer Client Available for UNIX and Linux

In previous releases, when you wanted to install on UNIX or Linux systems, you had to first install a specific JDK to run the installer client. In this release, Software AG delivers a *bin* file for UNIX and Linux that includes the JDK needed to run the installer client.

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## Documentation

### WmVCS Package Information Removed from Integration Server Documentation

The Configuring the VCS Integration Feature guide is no longer available and the chapter entitled “Using the VCS Integration Feature to Check Elements in and Out of a VCS” is no longer part of the Service Development Help. The guide and related chapter explained how to use the functionality delivered in the (now removed) WmVCS package to integrate Integration Server elements with a version control system.

### New Operations Guide for Software AG Universal Messaging

The product documentation set has been extended to include a new *Operations Guide*. This guide gives guidance on how to perform day-to-day operation and maintenance tasks, and includes suggestions on how to deal with standard questions in the areas of troubleshooting and maintenance.

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## Upgrade

### API Gateway Migration Simplified and Easier to Use

Migration of API Gateway has been simplified and streamlined, and is now easier to understand and use.

## **Software MashZone NextGen Prompts Clarified and Corrected**

Some Software MashZone NextGen migration utility prompts were unclear or incorrect. These prompts have now been clarified and corrected.

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