



Universal Automation Center

Release Information

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Release Information

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Release Notes

Release Notes are available for the following Universal Automation Center products:

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- [Universal Controller 7.0.1.0](#)
- [Universal Controller 7.0.0.0](#)
- [Universal Controller 6.9.0.0](#)
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- [Universal Agent 6.2.0](#)
- [Opswise Universal Agent 5.2.0](#)
- [Universal Automation Center 6.2](#)
- [Opswise Automation Center 5.2](#)

Note



Besides adding new features to our Controller and Agents, we have also eliminated a number of defects.

Installation Changes

A history of changes made to installation packaging and procedures is available for:

- [Universal Agent](#)

Universal Controller 7.2.0.0 Release Notes

- [Release Notes](#)
 - [Architecture](#)
 - [Automation](#)
 - [Data Supply Chain](#)
 - [Lifecycle Management / DevOps Integration](#)
 - [Platform Support](#)
 - [Security](#)
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Release Notes

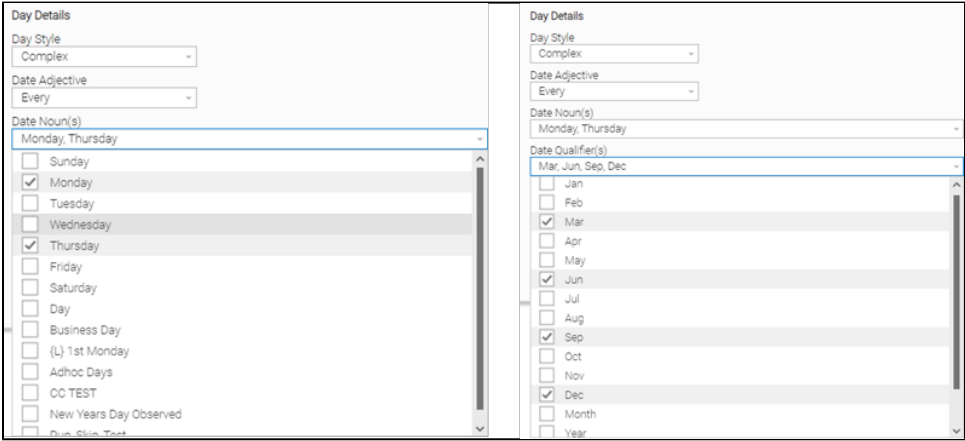
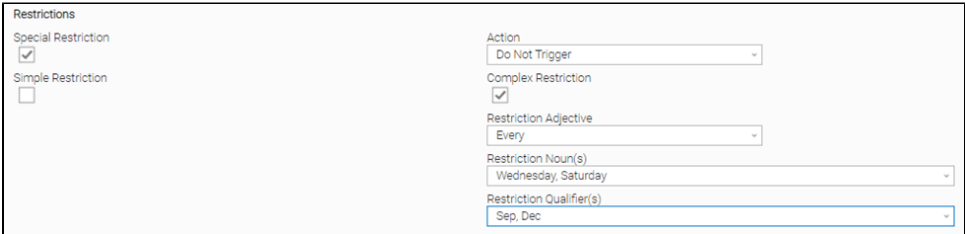
Universal Controller release 7.2.0.0 contains the following high-level features. For a complete list of all the included features and fixes, please refer to the [Universal Controller 7.2.x Maintenance list](#).

Architecture

Backlog	Title	Description
B-14318	Upgrade SmartGWT Libraries	The SmartGWT framework has been upgraded to version v12.1p_2022-01-29/Pro Deployment (built 2022-01-29).
B-14859	Replace Log4j 1 library with Reload4j library	Replace Log4j 1 library with Reload4j library.

Automation

Backlog	Title	Description
B-14636	Task Monitor for the most recent prior Instance	<p>A new Time Scope option "Relative / Last Run" has been added to handle requirements where a regularly scheduled task is not scheduled for some reason and a Task Monitor looking for Time Scope options a number of undesirable scenarios may occur. For example, if the Task Monitor looks back for 24 hours and forward for 2 hours, it will not find the non-existent task a task does not exist. Increasing the from time also has potentially undesirable consequences on days when the monitored task is scheduled as normal but has not yet completed the increase.</p> <p>In order to resolve this, the Time Scope option "Relative / Last Run" has been introduced; this changes the potential match sort order to Created Date/Time (Instead of Changed Date/Time to look into the past, the From [+/-]hh:mm value can be left unspecified for Relative / Last Run. An unspecified From [+/-]hh:mm value indicates the monitor has no limit on how far back th</p>

<p>B-13942</p>	<p>Time Trigger : Allow Multiple Select for Day Style = Complex Noun and Qualifier</p>	<p>The Time Trigger Day Style = Complex, now allows a multiple selection for the Noun and Qualifier.</p> 
<p>B-13976</p>	<p>Time Trigger Restriction : Allow Multiple Select for Complex Noun and Qualifier</p>	<p>The Time Trigger Restriction now allows a multiple selection for its Complex Noun and Qualifier.</p> 

B-03694

Date Qualifier of Quarter to Time Trigger and Run Criteria

Both Time Triggers and Run Criteria can now use a date qualifier of Quarter. The dates for the "Quarter" are defined in the associated Calendar definition where the start date for each qu

Calendar Details: System Default

Calendar Preview

Calendar Local Custom Days Custom Days Triggers Versions

Details

Name * System Default Version 6

Description Default System Calendar

Member of Business Services

Business Days

Sunday Monday Tuesday Wednesday Thursday Friday Saturday

First Day Of Week Sunday

1st Quarter Start Jan 1

2nd Quarter Start Apr 1

3rd Quarter Start Jul 1

4th Quarter Start Oct 1

Day Details

Day Style Complex

Date Adjective Last

Date Noun(s) Business Day

Date Qualifier(s) Quarter

Date Adjustment -- None --

Complex

Adjective * 1st

Noun(s) * Business Day

Qualifier(s) * Quarter

Adjustment -- None --

B-14250	Export Task Output / Results Virtual Script Data	<p>A new function is available to provide the output of a Task to a subsequent Task as a file. This new function returns a token representing the path to task output that you want to embed th temporary file containing the output.</p> <p>\$_outputPath('outputType[, 'fileExtension'])</p> <p>\$_outputPathFromTask('siblingName','outputType[, 'fileExtension'])</p> <p>For example:</p> <ul style="list-style-type: none"> • TaskA is a SQL task producing the results to an SQL query. • TaskB is a Windows task that needs the SQL result in a file in order to pass the results to a program. <p>In TaskB you can embed the SQL results as follows:</p> <pre>mysqlprogram -F \$_outputPathFromTask('TaskA', 'SQL', 'csv')</pre>
B-14697	Function to Return Total # of Lines for Specific Output Type	<p>A New Function is available to return the number of output lines for a task:</p> <p>\$_outputNumberOfLines('outputType')</p> <p>\$_outputNumberOfLinesFromTask('siblingName','outputType')</p>

Data Supply Chain

Backlog	Title	Description
B-12877	Explicit FTPS (FTPES) support to File Transfer Task From	<p>The File Transfer Task now supports the UFTP Explicit FTPS implementation for file transfers.</p> <div data-bbox="793 976 1419 1304" style="border: 1px solid black; padding: 5px;"> <p>File Transfer Details</p> <p>Transfer Protocol</p> <div style="border: 1px solid blue; padding: 2px;"> <p>FTPES</p> </div> <p>FTP</p> <p>SFTP</p> <p>UDM</p> <p>FTPS</p> <p>FTPES</p> </div>

Lifecycle Management / DevOps Integration

Backlog	Title	Description
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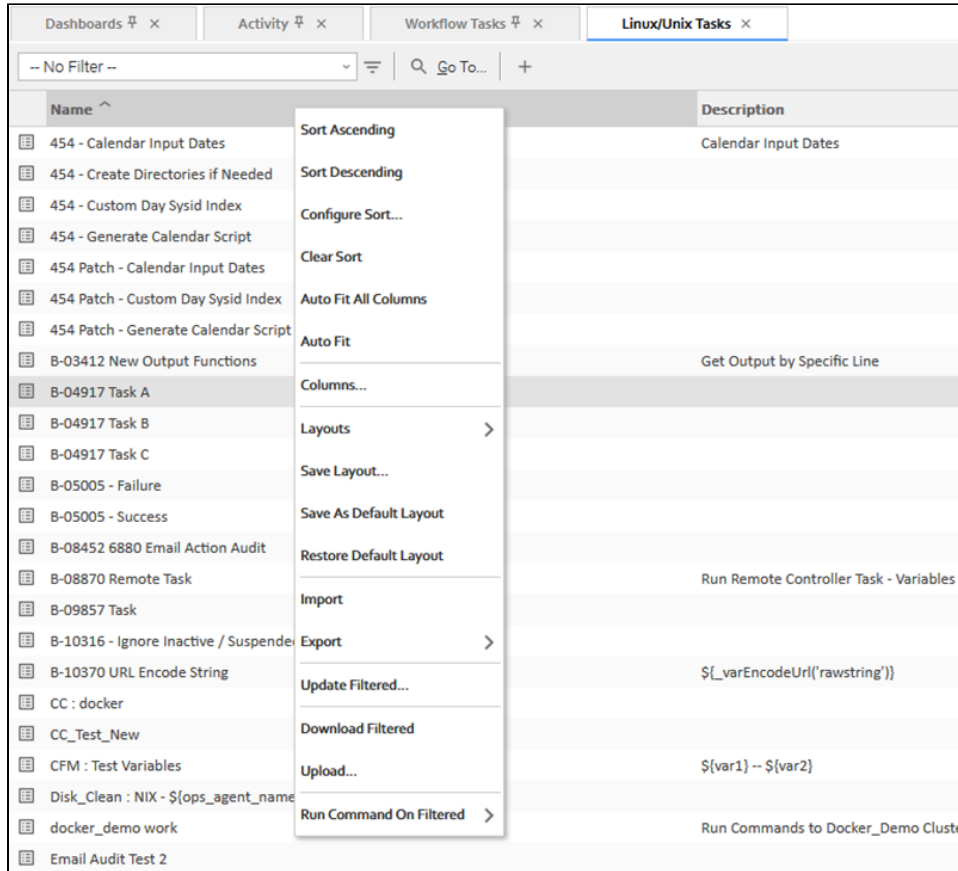
B-14143

Download / Upload Definitions

New options are available to download and upload definitions in the JSON API format. These functions are available from the right click menus in the definition lists. Download and uploads are performed to / from the browser's local filesystem.

This new function offers several advantages over the "export" / "import" functions:

- Download / upload does not require administrative access, simply the ability to read a definition for download, and update a definition for upload.
- All updates performed by the upload function are fully audited.
- Full validation of any updates is performed.

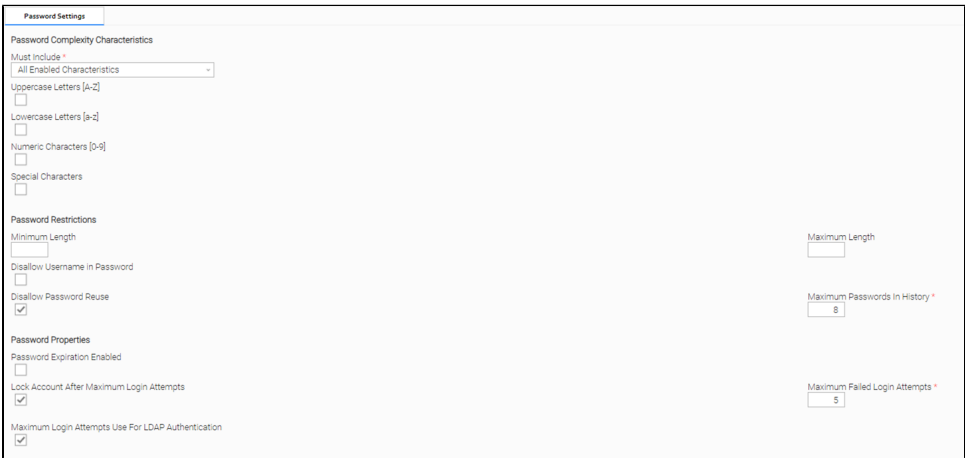


B-14646	Add additional information to Promote ... command response message	<p>Exclude on existence information has been added to the Promote response message.</p> <p>Successfully promoted 1 custom day to promotion target "DEV_RT" with Exclude on Existence {Calendars, Custom Days, Variables, Credentials, Agent Clusters}.</p> <p>Successfully promoted 1 task and 1 referenced item to promotion target "DEV_RT" with Exclude on Existence {Calendars, Custom Days, Variables, Credentials, Agent Clusters}.</p> <p>If no Exclude on Existence configuration is specified, the message will remain unchanged.</p>
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Platform Support

Backlog	Title	Description
B-14259	Validate Universal Controller Support for Oracle 21c.	Universal Controller versions 7.1.0.0 and higher have been validated with Oracle 21c.

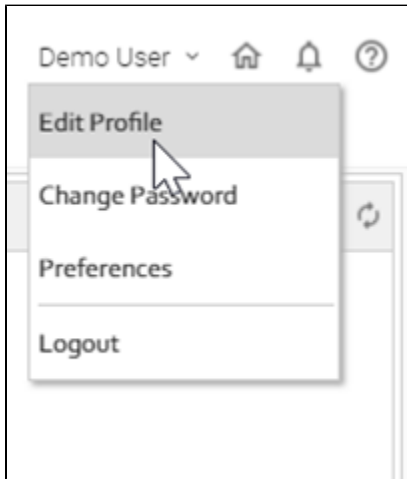
Security

Backlog	Title	Description
B-10374	Local Password Rules - Optionally Disallow Password Reuse	<p>New System Configuration to specify the number of old passwords that will be stored in order to prevent password reuse.</p>  <p>The screenshot shows the 'Password Settings' configuration page. It is divided into three main sections: 'Password Complexity Characteristics', 'Password Restrictions', and 'Password Properties'. Under 'Password Complexity Characteristics', there is a 'Must Include' dropdown menu set to 'All Enabled Characteristics' and several checkboxes for 'Uppercase Letters [A-Z]', 'Lowercase Letters [a-z]', 'Numeric Characters [0-9]', and 'Special Characters'. Under 'Password Restrictions', there are input fields for 'Minimum Length' and 'Maximum Length', a checkbox for 'Disallow Username in Password', a checked checkbox for 'Disallow Password Reuse' with a 'Maximum Passwords in History' field set to 8, and a checked checkbox for 'Look Account After Maximum Login Attempts' with a 'Maximum Failed Login Attempts' field set to 5. Under 'Password Properties', there is a checkbox for 'Password Expiration Enabled' and a checked checkbox for 'Maximum Login Attempts Use For LDAP Authentication'.</p>

B-14635

Allow users permission to edit their own user details

From the logged in user drop down user's can now edit their own user details.



A screenshot of the 'User Details: Demo User' configuration page. The page has a tabbed interface with 'User' selected. The 'Details' section contains the following fields:

- User Id (Username): demo.user
- Time Zone: Server (America/New_York)
- Password: [Redacted]
- Title: [Redacted]
- First Name: Demo
- Department: [Redacted]
- Middle Name: [Redacted]
- Manager: [Redacted]
- Last Name: User
- Business Phone: [Redacted]
- Email: [Redacted]
- Mobile Phone: [Redacted]
- Password Requires Reset:
- Web Browser Access: -- System Default --
- Locked Out:
- Command Line Access: -- System Default --
- Login Method: Standard / Single Sign-On
- Web Service Access: -- System Default --
- Active:

Note


⚠ Depending on your configuration, some of the editable fields may be overwritten via LDAP or SSO user provisioning / synchronization.

Universal Integration Platform

Backlog	Title	Description
E-01641	Universal Events, Universal Monitors and Universal Monitor Triggers	<p>New Universal Events, Monitors, and Monitor Triggers provide the infrastructure to enable “Universal” monitoring of external “events”. Like Universal Templates and Tasks, these can be created by Stonebranch and/or Customers and will be made available via the Stonebranch Integration Hub.</p> <p>In the same way that Universal Templates, Universal Tasks, and Universal Extensions allow for unlimited outbound integrations to external applications, Universal Events, Universal Monitors, and Universal Triggers allow for unlimited inbound integrations.</p> <p><u>Universal Events:</u></p> <p>There are 2 flavors of Universal Event.</p> <ul style="list-style-type: none"> • System Events These will be provided to record Universal Controller events, this will enable central monitoring and triggering to enhance automation of Universal Controller internal events. For example, updates to system configuration properties. • Universal Events (Global and Local) These can be defined to allow recording of new event types. Universal Events can be published via Universal Extensions or Web Service API. <p><u>Universal Monitors:</u></p> <p>Like other Universal Controller monitor types, Universal Monitors are used to detect published Universal Events that match specific attributes. Optionally the Universal Monitor can launch a Universal Extension that will be the event publisher. For example, if you want to monitor an external application’s webservice for a specific response you can create a Universal Extension that access the webservice, parses the output and publishes the result to a Universal Event, the Universal Monitor launches the Universal Extension and monitors the Universal Event. Once the Universal Event matches the monitor criteria the Monitor stops the Universal Extension and ends.</p> <p><u>Universal Monitor Triggers:</u></p> <p>Again like other Universal Controller Monitor Triggers, Universal Monitor Triggers allow constant monitoring of the required external event and will trigger the associated automation each time the event triggers. The attributes of each event will be passed to the Triggered automation workload.</p>
B-14535	Universal Extension - Allowing Variables Visible on Task Instance to be directly accessible within the Extension	<p>Universal Templates Type=Script always supported resolving variables directly within the template script, this update provides the same functionality for Universal Templates Type=Extension in order that they can resolve global and local scope variables directly within the extension code.</p>

User Experience

Backlog	Title	Description
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E-01640	User Experience Refresh	<p>The Universal Controller User Interface has been significantly enhanced.</p> <ul style="list-style-type: none"> • Left-hand navigation pane is now “built” by each user as they work with the product. • Access to Universal Controller services is via the new Services Menu, Global Search, or Favorites. • Workflow definitions are separated from Tasks to be more obvious as a starting point. Tasks can now be created from the Workflow Editor. • Standard Icons (i.e. New, Save, Delete, etc.) no longer have labels, product specific icons (i.e. launch, view parent, etc.) keep their labels. • Two themes are provided, Light, and Dark. • List / Detail screens are now oriented Left / Right, these were previously Top / Bottom. • New Tab Pinning Feature. Tabs can now be pinned to avoid being overwritten when a new Tab is opened. • New Auto Tab Feature. Tabs can be selected to be automatically opened when a user logs on. <p>Note </p> <p>It is highly recommended that the user interface updates are reviewed before upgrading to the 7.2.x release.</p>
B-13882	Global Search - Searching the Name, Description, and/or Member of Business Services across multiple record types.	The new Global Search allows access to definition across all record types with a simple search capability. All records matching the search are displayed in a single list from which they can be processed further. The search properties control which definition fields are searched: Name, Description, Member of Business Services. Generic searches require the '*' and '?' characters.
B-14632	View/Edit Predecessors/Successors : Allow window resize to accommodate large task names	When viewing a task's predecessors / successors in a workflow, the display window can now be resized. This applies to the workflow editor, workflow monitor, and activity list menu options.

Web Service API

Backlog	Title	Description
B-14541	Web Service API - Global Event Template CRUD	API Create, Read, Update, and Delete functions for Global Event Template Definitions.
B-14629	When using Web Services APIs that consume XML and/or JSON or Import Template, disable failing on unknown properties.	Unknown properties will no longer cause failures when using APIs to read XML / JSON or during Import Template operations.

Universal Controller 7.1.0.0 Release Notes

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Release Notes

Universal Controller release 7.1.0.0 contains the following high-level features. For a complete list of all the included features and fixes please refer to the [Universal Controller 7.1.x Maintenance list](#).

Note

 To support global filters, we had to use consistent name and description fields in the client.

This meant some automatic conversion when migrating to 7.1.x or while importing data from previous releases.

It should be noted that migrated filters, layouts, and reports that contain a description field may not be compatible with prior releases depending on the record type.

Architecture

Backlog	Title	Description
B-13955	Remove "Interact with Desktop" option from Windows Tasks	Since Windows Vista introduced the desktop isolation feature, which prevents tasks from accessing the interactive desktop session, the Interact with Desktop option for Windows Tasks has no effect. Therefore, it is being removed from the Windows Task Form.
B-04700	Upgrade to the new Log4j 2 library	
B-13993	Preserve OMS Server suspended flag on List/Bulk Import when definition does not already exist	For both List/Bulk Import/Export : The suspended field can be exported and imported: the suspended field is a unmodifiable field. <ol style="list-style-type: none"> 1. If importing an existing record, the current suspended value stays unmodified 2. If importing a new record, the suspended value in the import file is imported.
B-13804	Immediately mark all agents associated with an OMS server as Offline when the OMS Server is suspended	All Agents associated with an OMS server will immediately be marked as offline when the OMS server is Suspended.
B-14003	Increase Group Email Field Length	The User Group Email Field has been increased to match User Email Field Length.
B-13968	Combine First Time Ran and Last Time Ran update into statistics event with other statistics updates	In order to optimize performance the events to update the first and last ran times for tasks have been merged into the statistics update event.
B-13958	Change MySQL UTF8 alias to UTF8MB4	The MySQL UTF8 alias UTF8MB3 has been deprecated, therefore this has been updated to UTF8MB4.

B-13965	Always use the same Statistics Thread for a particular task definition	Improved synchronization around updating task statistic information.
B-14045	Configure database connection pool to prevent resetting auto commit when connections returned.	<p>The connection pool was setting autocommit back to true when a connection was returned to the pool.</p> <p>That meant, whenever a connection was obtained from the pool, autocommit was being set to false again.</p> <p>An option is now being used to prevent this behavior when connections are returned to the pool, which takes away that overhead.</p>

Automation

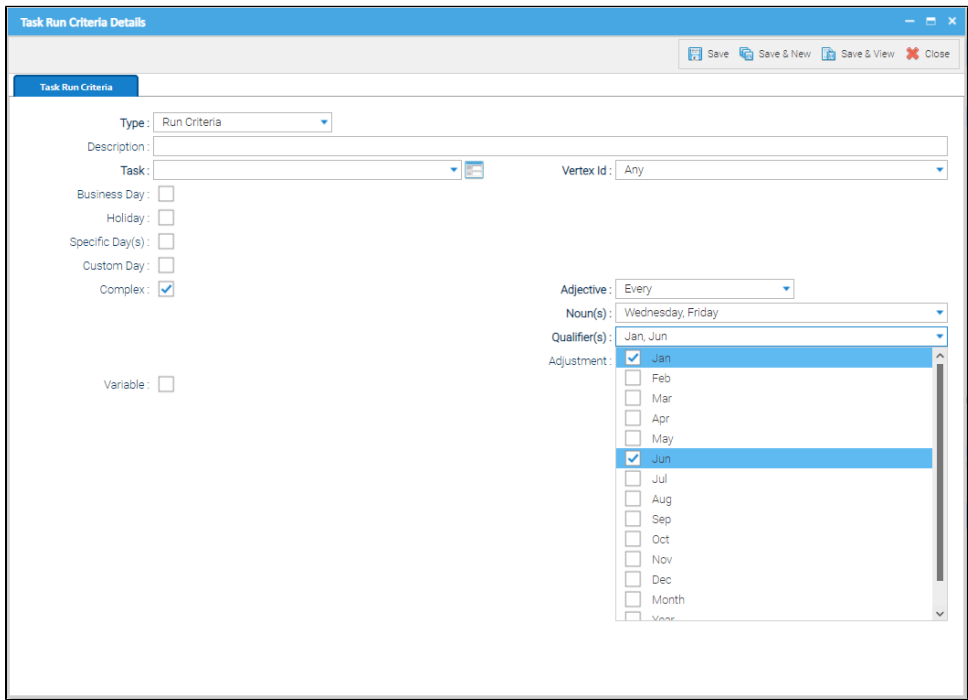
Backlog	Title	Description
B-09504	Provide an option for tasks to fail if a variable doesn't resolve.	A new system property Task Field Resolution Required (Default = False) has been introduced. When enabled, any task where a variable or a function (in a resolvable field. A field that s Parameters, Environment Variables ...) that is not resolved will transit into Start Failure at runtime.
B-13298	Allow using wildcard in selecting a task to be monitored within the Task Monitor	A New Option "Wildcard" has been added for both "Generic Task" and "Workflow Name" Conditions

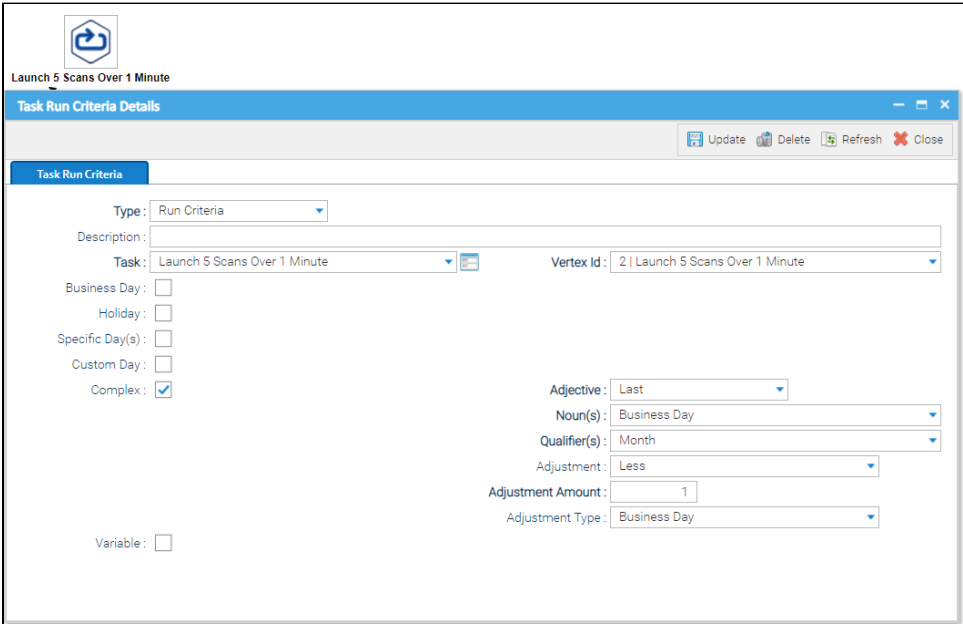
B-14077 Add Task Monitor field hints for Task Name Condition and Workflow Name Condition

Cursor hover over hints have been added for the Task Name Condition and Workflow Name Condition fields in the Task Monitor form.

B-13941 Run Criteria: Allow Multiple Select for Complex Noun and Qualifier

For Complex Run Criteria the Noun and Qualifier fields now allow a multi selection. For example you can now use a single run Criteria to skip a task on Every, Wednesday and Friday, of



<p>B-13923</p>	<p>Specify Date adjustments on the Complex and Holiday options of a Task Run Criteria</p>	<p>This enhancement allows for improved Run Criteria specification, for example such as 3rd Business Day of Month Less 1 Day.</p>  <p>The screenshot shows a window titled "Task Run Criteria Details" for the task "Launch 5 Scans Over 1 Minute". The "Task Run Criteria" section includes the following fields:</p> <ul style="list-style-type: none"> Type: Run Criteria Description: (empty) Task: Launch 5 Scans Over 1 Minute Vertex Id: 2 Launch 5 Scans Over 1 Minute Business Day: <input type="checkbox"/> Holiday: <input type="checkbox"/> Specific Day(s): <input type="checkbox"/> Custom Day: <input type="checkbox"/> Complex: <input checked="" type="checkbox"/> Variable: <input type="checkbox"/> Adjective: Last Noun(s): Business Day Qualifier(s): Month Adjustment: Less Adjustment Amount: 1 Adjustment Type: Business Day
<p>B-13977</p>	<p>Increase Variable Value Length</p>	<p>The maximum variable value length has been increased to 25,000 characters.</p>
<p>B-13296</p>	<p>Recurring Task-Block Target tasks from delete while Parent Recurring Task is Active</p>	<p>Prevent Target Task from being deleted while Recurring Task Instance is active.</p>

Data Supply Chain

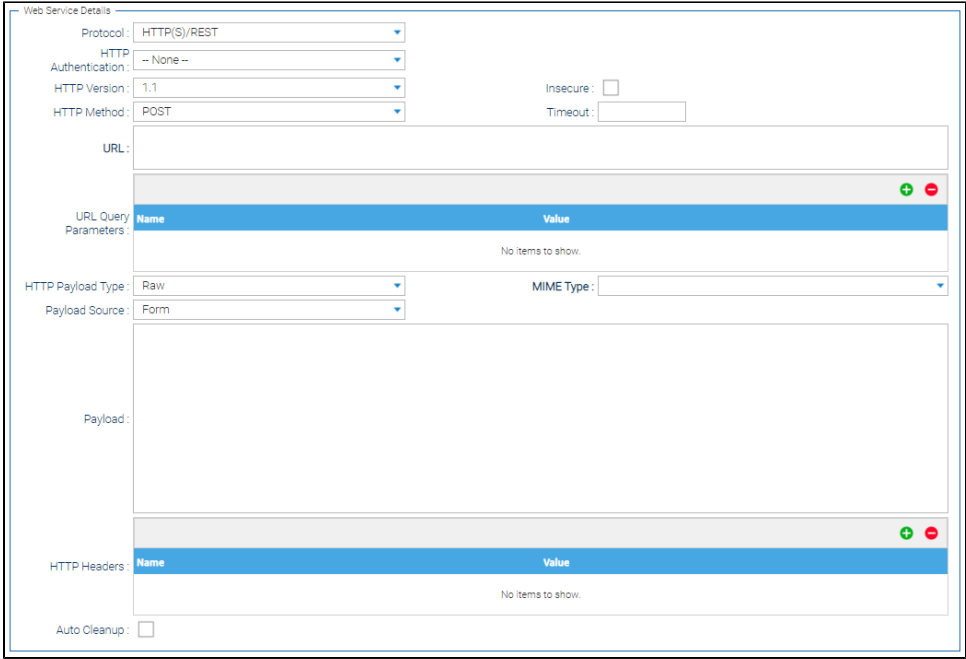
Backlog	Title	Description
B-14228	File Transfer Task Increase Local and Remote Filename Field Lengths	The field lengths for the Local and Remote Filenames in File Transfer tasks have been increased to 8,000 characters.

Lifecycle Management

Backlog	Title	Description
B-13179	Add initiating user as cc in failure notification for scheduled promote.	Promotion failure notifications now include the user who initiated to promotion.
B-09493	Ability to disable the "Promote By Business Service Membership"	A new System Property Promote By Business Service Membership (Default = True) has been introduced to allow the Promote by Business Service Feature to be Disabled. If Promote Members of Business Services or Visible To field has non-empty value for any bundle record. This property cannot change to false.
B-14020	Default Promotion Target to unspecified/blank instead of defaulting to first option	Previously if no default promotion target was specified in a bundle, or for bundle-less promotion the first promotion target in the definition list was automatically selected. In these cases the field will now remain blank.

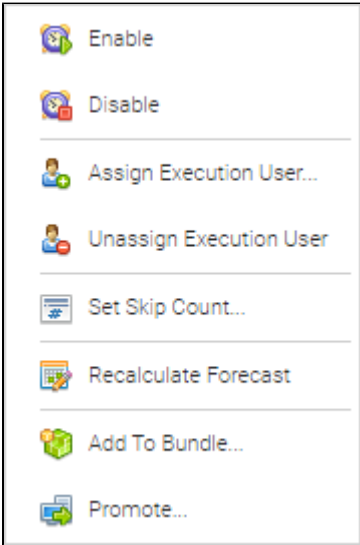
Security


Backlog	Title	Description
B-12444	Session Fixation Protection	When the login page of UC is loaded, a session ID is written to a cookie with the key "JSESSIONID". An attacker with physical access can write down or take a picture of the session ID (easily accessible via F12 function key), or set the session identifier to something he knows, and wait until the attacker can do anything in the name of this user, since the session id has not been changed during the login process.
B-13240	New resolvable credential token field for password larger tokens/keys	A new field "Token" has been added to the Resolvable Credential definition to store a token with a length of up to 8000 characters. A new Credential Function _credentialToken will resolve

<p>B-14142</p>	<p>Web Service Task : Option to ignore verifying the SSL certificate</p>	<p>A new System Property Web Service Task Insecure Permitted (HTTP) has been introduced to allow Web Service Tasks to ignore SSL certificate validation. Once the new property is set to be available and if checked will cause the SSL certificate validation to be bypassed.</p> 
<p>B-14095</p>	<p>UAC UI ability to hide IP of the agent</p>	<p>A new System Property Agent Address Info Restricted (Default = True) has been introduced to remove the IP address from the Agent detail displays for non-administrator users.</p>

Triggers

Backlog	Title	Description
<p>B-12465</p>	<p>List Trigger History</p>	<p>New "Instances" tab on the trigger definition with a time restriction (user preference controlled, "Trigger Task Instances Time Constraint") that shows tasks that were triggered by this trigger</p>

<p>B-14011</p>	<p>Add "Run Command on Filtered" support for Triggers</p>	<p>Triggers now support the Run Command on Filtered Feature. The following Commands are supported.</p>	
<p>B-06955</p>	<p>Copy a trigger of another type to a temporary or manual trigger</p>	<p>When you copy any of the following Trigger Types you now have the option to create a Temporary or Manual Trigger.</p> <ul style="list-style-type: none"> • Cron Trigger • Time Trigger • Task Monitor Trigger • Variable Monitor Trigger • Email Monitor Trigger • Application Monitor Trigger • Composite Trigger <p>Manual Triggers can now be copied to a Temporary Trigger and Temporary Triggers can now be copied to a Manual Trigger.</p>	
<p>B-13238</p>	<p>New monitor Expiration Action Implementation for Task Monitors</p>	<p>Task monitors can now ignore dependency if not found within the time scope defined. Previously Task Monitors would Fail when the Time Scope conditions caused the Task Monitor to fail.</p> <p>A new Expiration Action option has been added for Task Monitors to allow specifying a specific action during the Task Monitor timeout.</p> <p>The following Expiration Actions can be allowed to select during the task monitor creation:</p> <ul style="list-style-type: none"> • Failed (Default) • Finished • Failed If Potential Match Found Else Finished • Finished If Potential Match Found Else Failed 	

B-14075	New monitor Expiration Action Implementation for Email, Variable and Universal Monitor Types	<p>For Monitor types (other than Task Monitors) that support a Time Scope, a new Expiration Action option has been added for Task Monitors to allow specifying a specific action during the</p> <p>The following Expiration Actions can be allowed to select during the monitor creation:</p> <ul style="list-style-type: none"> • Failed (Default) • Finished 										
B-14001	Add User Defined Fields to Triggers	<p>Triggers now support their own User Defined Fields. This option is configured via the System Properties menu.</p>  <table border="1" data-bbox="338 621 1297 703"> <thead> <tr> <th>Name</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>User Defined Trigger Field 1 Label</td> <td>Trigger Field 1</td> </tr> <tr> <td>User Defined Trigger Field 1 Required</td> <td>false</td> </tr> <tr> <td>User Defined Trigger Field 2 Label</td> <td>Trigger Field 2</td> </tr> <tr> <td>User Defined Trigger Field 2 Required</td> <td>false</td> </tr> </tbody> </table>	Name	Value	User Defined Trigger Field 1 Label	Trigger Field 1	User Defined Trigger Field 1 Required	false	User Defined Trigger Field 2 Label	Trigger Field 2	User Defined Trigger Field 2 Required	false
Name	Value											
User Defined Trigger Field 1 Label	Trigger Field 1											
User Defined Trigger Field 1 Required	false											
User Defined Trigger Field 2 Label	Trigger Field 2											
User Defined Trigger Field 2 Required	false											

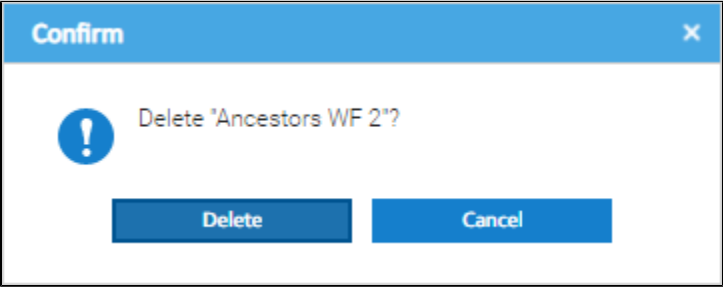
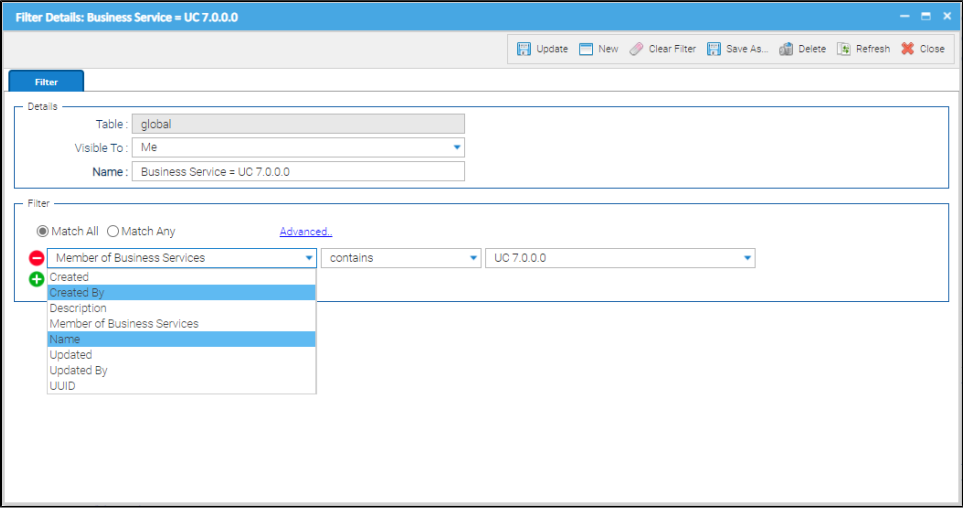
Universal Integration Platform

Backlog	Title	Description
B-14026	Universal Extension - Double (Forced) Cancel	<p>New feature that allows the controller to forcibly execute the Cancel command while already in Cancel Pending, immediately terminating the extension process and any custom cancel logic being executed.</p> <p>This feature only applies to extension-based Universal Task Instances.</p>
B-14027	UIP: Universal Extension - Dynamic Commands - Execution Option (Out Of Process, In Process)	<p>Two new options were added to the dynamic command.</p> <p>Execution Option Specification for whether the command runs out-of-process execution or in-process execution.</p> <p>Values:</p> <ul style="list-style-type: none"> Out Of Process (Default) In Process <p>Asynchronous If Execution Option is In Process; Specification for whether the command runs synchronously or asynchronously.</p>

B-14264	Universal Template - Field Default Value Enhancements	<p>Improved validation with proper messaging and prevention of SQL exception.</p> <p>In addition, the following enhancements have been made.</p> <ul style="list-style-type: none"> • Any Large Text Field will support a Default Value up to a maximum 4000 characters. • Any Large Text Field will display the Default Value as a multi-line, autofit field. • Any JSON or YAML Text field will display the Default Value as multi-line, autofit field.
B-13801	Web Service API - Upload/Download/Delete Extension Archive	Functionality to Upload, Download, and Delete the Universal Extension Archive are now available via a Web Service API.
B-10292	Web Service API - Universal Template - Icon Set/Restore	A new Web Service API is available to Set the Icon for a Universal Template
B-13802	Web Service API - Import/Export Template	A new Web Service API is available to Import / Export Universal Templates

User Experience

Backlog	Title	Description
B-13933	Make base instance or definition "buttons" available from all tabs	The buttons available in the "base" Instance and "base" Definition form tabs are now available in all tabs.
B-13936	Increase All description field lengths to 255	Description field lengths for all definitions have been increased to 255 characters.
B-12508	Change default maximum hover hint width	The default maximum hover hint width has been increased from 200 to 300.

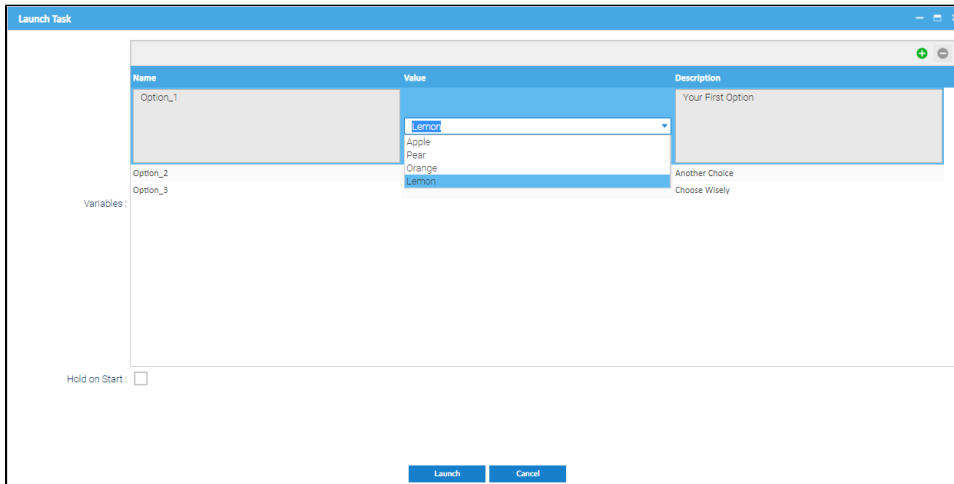
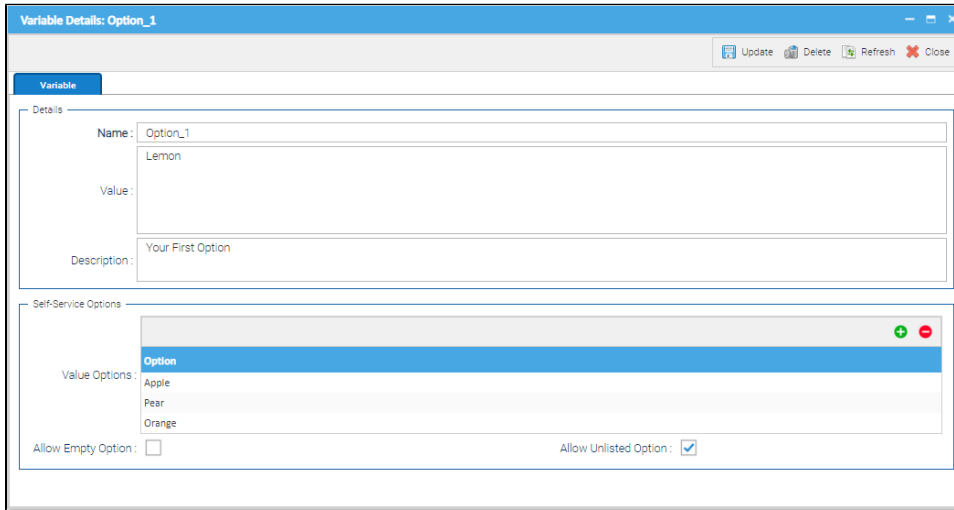
<p>B-13842</p>	<p>Customized Form tab ordering</p>	<p>“Form” Tabs can now be ordered based on a user’s preference by simply dragging tabs to the desired position.</p>
<p>B-14037</p>	<p>Make deletion message more specific</p>	<p>Definition deletion confirmation dialogs will now contain the definition name.</p> 
<p>B-12330</p>	<p>Global Filters</p>	<p>From the Administration / Filters menu you can now create filters that apply to all definition lists and can specify any of the fields that are common to all datatypes; that is:</p> <ul style="list-style-type: none"> • Name, Description, Member of Business Services, Created, and Updated fields.  <p>Once created the Global Filter will appear in all of the Definition Lists and can be selected to filter these records without the need to create the filter for each datatype individually.</p>

B-13916	Action URL to Open Workflow Monitor / Editor Directly	The workflow Monitor and Editor can now be accessed directly via an Action URL.
B-13197	Add Variable Description field to "Launch Task With Variables..." and "Trigger Now..." commands	The description defined for Tasks and Triggers is now displayed in the Launch with Variables and Trigger Now Dialogs.

B-14017

Allow specifying a fixed list of self-service variable value options for Launch Task / Trigger with Variables.

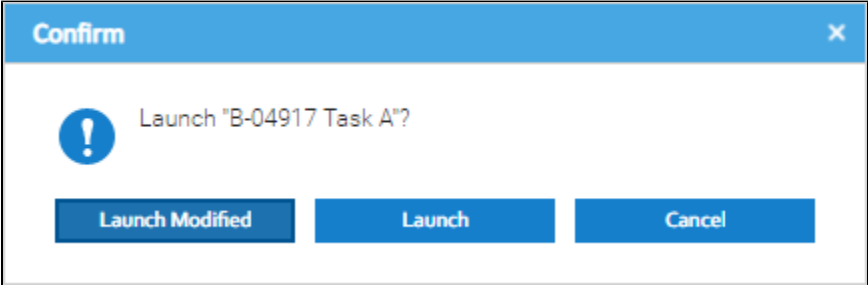
When defining Task and Trigger level Variables you can now specify "Choices" to be selected from by the user who is Launching the Task via the Launch with Variables option, or Trigger an Empty or Unlisted option is allowed.



B-13975

Configurable picker window limits

New System Property **Picker Fetch Limit** is introduced to configure the fetch limit for all picker windows (e.g. adding Virtual Resources to a Task).

B-13883	Allow Launch Task command and to use unsaved modifications on the form without saving	<p>A modified Task can now optionally be launched with changes without needing to first Update the Task Definition. Upon Launch if unsaved modifications are detected the user is presented with a confirmation dialog.</p> 
B-12459	Include new fields "Suspended On" and "Resumed On" in GUI, for Agent Clusters.	Include new fields "Suspended On" and "Resumed On" in GUI, for Agent Clusters.
B-14205	User Experience: Agent Definition - Add Description	Added a Description field to the Agent definition.

Web Service API

Backlog	Title	Description
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B-13937	Web Service API : Monitoring API (Prometheus Metrics)	<p>Universal Controller implement a new “metrics” Web Service API endpoint that can be scraped by Prometheus, an open-source systems monitoring and alerting toolkit.</p> <p>The metrics being exported through the Web Service API are as follows.</p> <ul style="list-style-type: none"> • Default Exports (provided by Prometheus Java client) <ul style="list-style-type: none"> • Standard Exports (CPU time spent and memory usage) • Memory Pool Exports (JVM memory) • Memory Allocation Exports (JVM memory) • Buffer Pools Exports (JVM buffers) • Garbage Collector Exports (JVM garbage collectors) • Thread Exports (JVM threads) • JVM Class Loading (JVM class loading) • Version Info Exports (JVM version information) • UC Build Info Exports (Universal Controller build and release information) • UC Database Connection Pool Exports (Universal Controller database connection pool)
B-12365	Web Service API : New Trigger List APIs Option to Return Full Definition	A new List Web Service API for Triggers returns the Full Trigger Definition.
B-12364	Web Service API : New Task Definition List API Option to Return Full Definition	A new List Web Service API for Tasks returns the Full Task Definition.
B-12388	Web Service API : New Agent List API Option to Return Full Definition	A new List Web Service API for Agents returns the Full Agent Definition.
B-12389	Web Service API : New Virtual Resource List API to Return Full Definition	A new List Web Service API for Virtual Resources returns the Full Virtual Resource Definition.
B-12371	Web Service API : New Variable List API Option to Return Full Definition	A new List Web Service API for Variables returns the Full Variable Definition.
B-12483	Web Service API : Server Operation Pause and Resume Cluster Node	You can now pause and resume Cluster Nodes via the Web Service API.
B-13174	Web Service API : Task Read - Add All Read Only fields	Read only fields are now returned by the Task Definition Read Web Service API.

Universal Controller 7.0.1.0 Release Notes

- [Release Notes](#)
 - [Architecture](#)
 - [Universal Extensions](#)
 - [User Experience](#)
 - [Workload Analytics](#)

Release Notes

Universal Controller release 7.0.1.0 contains the following high-level features. For a complete list of all the included features and fixes please refer to the [Universal Controller 7.0.x Maintenance list](#).


Architecture

Backlog	Title	Description
B-13855	Upgrade to Microsoft JDBC Driver 9.2 for SQL Server	The supplied JDBC driver for Microsoft Sequel Server is now at version 9.2.
B-13920	Upgrade MySQL JDBC Driver to MySQL Connector/J 8.0.24	The supplied JDBC driver for MySQL is now at 8.0.25. (2021-05-11, General Availability) MySQL Connector/J 8.0 Release Notes
B-12807	Enhance handling of database connection recovery	<p>When performing an internal restart of the Controller, the database connection pools that are currently in use will now be closed and removed to avoid the possibility of re-using any connection from those pools.</p> <p>After the current connection pools have been removed, new connection pools will be created on the restart of the Controller.</p> <p>Connection pools now incorporate the restart count as part of the pool name to guarantee new unique connection pools.</p> <p>The restart count is added as a suffix to the connection pool names:</p> <pre>2021-05-19-09:47:50:903 -0400 INFO [http-nio-7080-exec-7] Running Server Operation: Database Information 2021-05-19-09:47:50:911 -0400 INFO [http-nio-7080-exec-7] Database Information: [Type: SQLSERVER] ... [Connection Pools: Server-0 (0/3) Reserved-0 (0/1) Client-0 (0/5)]</pre> <p>After one restart:</p> <pre>2021-05-19-09:50:00:349 -0400 INFO [http-nio-7080-exec-10] Running Server Operation: Database Information 2021-05-19-09:50:00:355 -0400 INFO [http-nio-7080-exec-10] Database Information: [Type: SQLSERVER] ... [Connection Pools: Server-1 (0/3) Client-1 (0/1) Reserved-1 (0/1)]</pre> <p>This only applies to when the Controller is performing a restart.</p>
B-13805	Upgrade Apache Commons dependency DBCP (2.8.0) & Apache Commons Pool (2.9.0)	This upgrades the third party libraries for database connection pooling.

Universal Extensions

Backlog	Title	Description
B-13812	Changes to extension archive validation	Updates to the validation of the contents of the Universal Extension zip archive to provide additional packaging flexibility.

User Experience

Backlog	Title	Description
B-12927	Add Option to Make User Defined Fields Required	<p>Administrators can now enforce that the available User Defined fields are marked as input required. This option is available from the Administration System Properties menu.</p> <p>Important Note </p> <p>Use caution when setting User Defined fields to Required:</p> <ol style="list-style-type: none"> 1. Any Task/Task Instance record without a value specified for a newly required User Defined field cannot be updated until a value is provided. This includes saving changes to a workflow graph from the Workflow Editor. Users will need to update the Workflow Task definition first. 2. Any existing Task definitions that do not contain data in the newly required user defined fields will not be able to be manually Launched, the user will be prompted to update the definition with the required data. 3. Tasks or Workflow definitions that are Triggered will not be impacted regardless of whether or not these fields contain the required data.
Various	Various Definition Form Cleanup and Consistency items to ensure that the Name, Description, and Member of Business Services (where applicable) are consistently labeled and ordered as the first 3 fields.	<ul style="list-style-type: none"> • B-13307: User Experience: Scripts Form Move "Member of Business Services" to 3rd field • B-13308: User Experience: Variables Form - Description and Business Service fields should be moved as 2nd and 3rd field • B-13309: User Experience: Virtual Resources Form - Description and Business Service fields should be moved as 2nd and 3rd field • B-13310: User Experience: Credentials Form - Description and Business Service fields should be moved as 2nd and 3rd field • B-13311: User Experience: Agent Cluster Definition - Add Description • B-13312: User Experience: OMS Server Definition - Add Description • B-13313: User Experience: Data Backup / Purge Definition
B-13837	User Experience: Remove redundant buttons from bottom of forms.	<p>The relevant navigation buttons for each form are now only available at the top of the form.</p> <p>Old view with buttons at bottom of form.</p>

Timer Task Details

Save Save & New Save & View Close

Timer Task Variables Actions Virtual Resources Mutually Exclusive Instances Trigger

General

Task Name:

Task Description:

Member of Business Services:

Resolve Name Immediately: Time Zone Preference: -- System Default --

Hold on Start:

Virtual Resource Priority: 10 Hold Resources on Failure:

Support Contact:

Documentation:

Timer Details

Timer Type: Seconds

Timer Duration In Seconds:

Time Options

Late Start:

Late Finish:

Early Finish:

User Estimated Duration: Day Hour Min Sec

Critical Path Options

CP Duration: CP Duration Unit: Minutes

Workflow Execution Options

Execution Restriction: -- None --

Save Save & New Save & View Close

New view without buttons at bottom of form.

Workload Analytics

Backlog	Title	Description
B-13378	Add Definition Version info to Task Instance Detail	<p>When a Task Definition is launched it's Version Information is now stored in a new Source Version field in the Task Instance.</p>

Universal Controller 7.0.0.0 Release Notes

- [Release Notes](#)
 - [Analytics](#)
 - [Architecture](#)
 - [Automation](#)
 - [Bundle and Promote](#)
 - [Data Supply Chain](#)
 - [Security](#)
 - [Universal Extensions](#)
 - [Universal Templates](#)
 - [User Experience](#)
 - [Web Service API](#)

Release Notes

Universal Controller release 7.0.0.0 contains the following high level features. For a complete list of all the included features and fixes please refer to the [Universal Controller 7.0.x Maintenance list](#).

Analytics

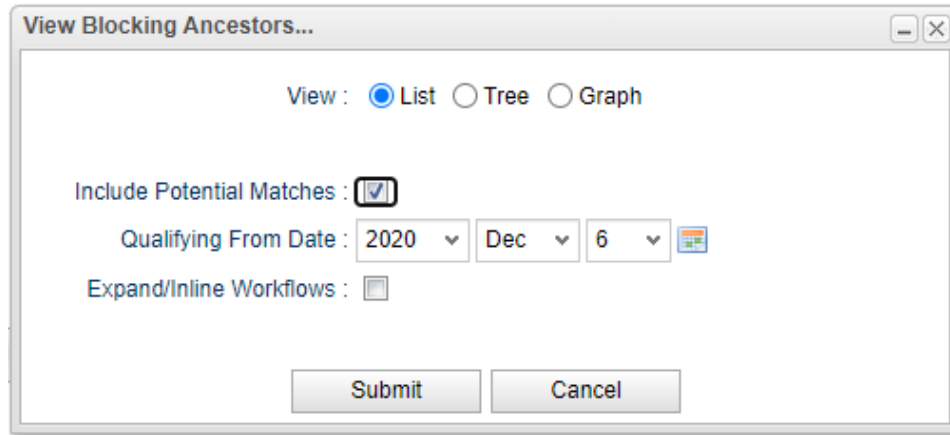
Backlog	Title	Description
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E-01495

View Blocking Ancestors (i.e. Blocking Jobs)

To assist in analysis of why a task is waiting the **Activity**, **Task Instances**, and **Workflow Monitor** displays provide a new right click option to **View Blocking Ancestors** for task instance task instance using View Predecessors/Successors, only direct predecessors within the same workflow are listed. View Blocking Ancestors traverses the workflow hierarchy to list all the t

Once selected the following dialog will be displayed:



Users can select to display the blocking ancestors in the following formats:

- List

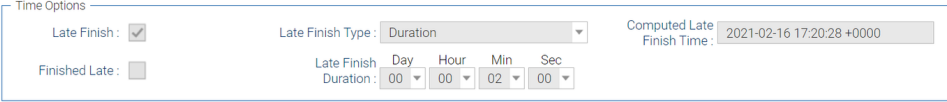
Qualifying From: 2020-12-06 00:00:00-0000			
Instance Name *	Type	Status	Started By
↳ Ancestors WF 1a	Workflow	Running	Workflow: Ancestors WF 1
↳ Manual Action Required	Manual	Action Required	Workflow: Ancestors WF 1a
↳ Monitor - Ancestors WF 1	Task Monitor	Running	Workflow: Ancestors WF 1
↳ Run Trigger Example	Manual	Waiting	Workflow: Ancestors WF 1

- Tree

Qualifying From: 2020-12-06 00:00:00-0000			
Instance Name *	Type	Status	Start Time
↳ Ancestors WF 1a	Workflow	Running	2020-12-22 19:35:53 -0000
↳ Manual Action Required	Manual	Action Required	2020-12-22 19:35:53 -0000
↳ Monitor - Ancestors WF 1	Task Monitor	Running	2020-12-22 19:35:54 -0000
↳ Run Trigger Example	Manual	Waiting	2020-12-22 19:35:54 -0000

- Graph



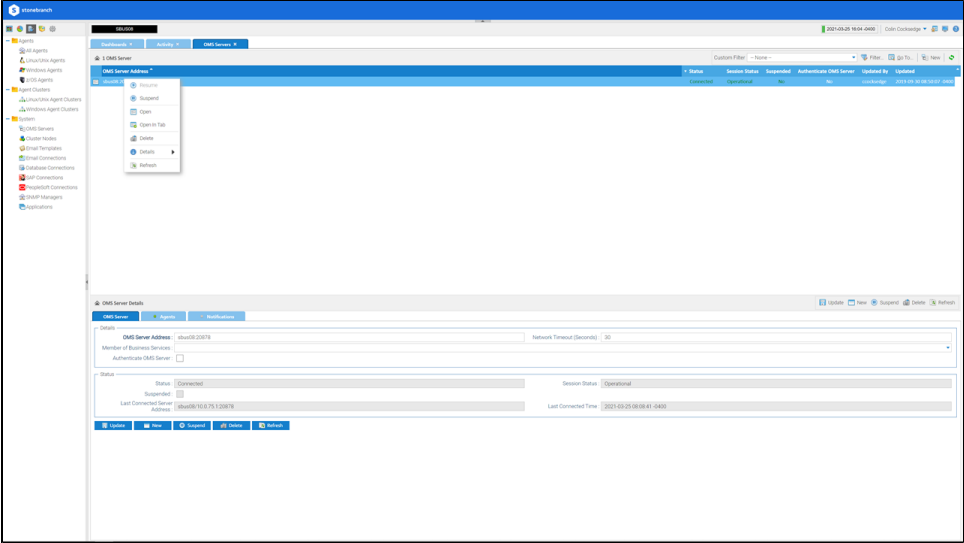
B-12896	Provide explicit Date/Time indicators for Late Finish and Late Start	<p>For Task Instances that have a Late Start or Late Finish defined a calculated value as a Date/Time for when the Task Instance will be Late Started/Finished has been added.</p> 
B-13204	Add "Process ID" field to SAP task instances	The Process ID is displayed for SAP Task instances.
B-13140	New built-in variable for the Projected End time based on critical path	<p>A new built in variable is available for task instances showing the Projected End Time based on the Critical Path calculation.</p> <p><code>\${projected_end_time}</code></p>

Architecture

Backlog	Title	Description
B-12918	Upgrade Smart GWT to current release	The SmartGWT framework has been upgraded to the latest release.

<p>B-11406</p>	<p>Provide Audit record for Report "Run" command</p>	<p>Audit records are now available for the report "run" command.</p> <div data-bbox="338 183 1295 800" style="border: 1px solid black; padding: 5px;"> <p>Details</p> <table border="0"> <tr> <td>Audit Type:</td> <td>Command</td> <td>Table Name:</td> <td>ops_report</td> </tr> <tr> <td>Source:</td> <td>User Interface</td> <td>Table Key:</td> <td>74413a05a0a642ab93bf093f19320c42</td> </tr> <tr> <td>Created:</td> <td>2021-01-22 19:44:38 +0000</td> <td>Table Record Name:</td> <td>UAC - Licensed Monthly Task Instance Executions</td> </tr> <tr> <td>Created By:</td> <td>ops.admin</td> <td>Parent Audit:</td> <td></td> </tr> <tr> <td>Node Id:</td> <td>dev-uac:8080-uc</td> <td></td> <td></td> </tr> <tr> <td>Node Mode:</td> <td>Active</td> <td></td> <td></td> </tr> <tr> <td>Status:</td> <td>Success</td> <td></td> <td></td> </tr> <tr> <td>Description:</td> <td colspan="3">Executing Command: RUN_REPORT on UAC - Licensed Monthly Task Instance Executions</td> </tr> <tr> <td>Before:</td> <td colspan="3"> <pre>ReportBean [{average_color=null} {bar_thickness=150} {chart_size=Medium} {description=null} {field_state=null} {filter={ "_constructor":"AdvancedCriteria", "operator":"and", "criteria":[{ "fieldName":"type", "operator":"notInSet", "value":[1, 2, 6, ... [TRUNCATED - LENGTH=637]} {group_by=periodEnd} {group_date_time_format=yyyy-mm} {group_id=null} {group_order=Label} {group_threshold=Unlimited} {image_height=null} {image_width=null} {interval=Year} {pdf_orientation=- System Default -} {pdf_size=- System Default -} {report_ds=licenseExecHistory} {report_table=ops_license_exec_history} {show_average=true} {show_threshold=true} {sort_state=null} {stack_by=null} {sum_field=number} {sys_created_by=ops.system} {sys_created_on=2021-01-22 19:44:38 +0000} {sys_id=74413a05a0a642ab93bf093f19320c42} {sys_updated_by=ops.system} {sys_updated_on=2021-01-22 19:44:38 +0000} {threshold_color=#FF0000} {threshold_label=Licensed} {threshold_value=25000} {title=UAC - Licensed Monthly Task Instance Executions} {trend_field=null} {type=Bar Chart/Vertical} {user_id=null}] }</pre> </td> </tr> <tr> <td>After:</td> <td colspan="3"></td> </tr> <tr> <td>Difference:</td> <td colspan="3"></td> </tr> <tr> <td>Additional Information:</td> <td colspan="3"></td> </tr> </table> </div>	Audit Type:	Command	Table Name:	ops_report	Source:	User Interface	Table Key:	74413a05a0a642ab93bf093f19320c42	Created:	2021-01-22 19:44:38 +0000	Table Record Name:	UAC - Licensed Monthly Task Instance Executions	Created By:	ops.admin	Parent Audit:		Node Id:	dev-uac:8080-uc			Node Mode:	Active			Status:	Success			Description:	Executing Command: RUN_REPORT on UAC - Licensed Monthly Task Instance Executions			Before:	<pre>ReportBean [{average_color=null} {bar_thickness=150} {chart_size=Medium} {description=null} {field_state=null} {filter={ "_constructor":"AdvancedCriteria", "operator":"and", "criteria":[{ "fieldName":"type", "operator":"notInSet", "value":[1, 2, 6, ... [TRUNCATED - LENGTH=637]} {group_by=periodEnd} {group_date_time_format=yyyy-mm} {group_id=null} {group_order=Label} {group_threshold=Unlimited} {image_height=null} {image_width=null} {interval=Year} {pdf_orientation=- System Default -} {pdf_size=- System Default -} {report_ds=licenseExecHistory} {report_table=ops_license_exec_history} {show_average=true} {show_threshold=true} {sort_state=null} {stack_by=null} {sum_field=number} {sys_created_by=ops.system} {sys_created_on=2021-01-22 19:44:38 +0000} {sys_id=74413a05a0a642ab93bf093f19320c42} {sys_updated_by=ops.system} {sys_updated_on=2021-01-22 19:44:38 +0000} {threshold_color=#FF0000} {threshold_label=Licensed} {threshold_value=25000} {title=UAC - Licensed Monthly Task Instance Executions} {trend_field=null} {type=Bar Chart/Vertical} {user_id=null}] }</pre>			After:				Difference:				Additional Information:			
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Node Id:	dev-uac:8080-uc																																																	
Node Mode:	Active																																																	
Status:	Success																																																	
Description:	Executing Command: RUN_REPORT on UAC - Licensed Monthly Task Instance Executions																																																	
Before:	<pre>ReportBean [{average_color=null} {bar_thickness=150} {chart_size=Medium} {description=null} {field_state=null} {filter={ "_constructor":"AdvancedCriteria", "operator":"and", "criteria":[{ "fieldName":"type", "operator":"notInSet", "value":[1, 2, 6, ... [TRUNCATED - LENGTH=637]} {group_by=periodEnd} {group_date_time_format=yyyy-mm} {group_id=null} {group_order=Label} {group_threshold=Unlimited} {image_height=null} {image_width=null} {interval=Year} {pdf_orientation=- System Default -} {pdf_size=- System Default -} {report_ds=licenseExecHistory} {report_table=ops_license_exec_history} {show_average=true} {show_threshold=true} {sort_state=null} {stack_by=null} {sum_field=number} {sys_created_by=ops.system} {sys_created_on=2021-01-22 19:44:38 +0000} {sys_id=74413a05a0a642ab93bf093f19320c42} {sys_updated_by=ops.system} {sys_updated_on=2021-01-22 19:44:38 +0000} {threshold_color=#FF0000} {threshold_label=Licensed} {threshold_value=25000} {title=UAC - Licensed Monthly Task Instance Executions} {trend_field=null} {type=Bar Chart/Vertical} {user_id=null}] }</pre>																																																	
After:																																																		
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Additional Information:																																																		
<p>B-06445</p>	<p>Relational Storage of Business Service Membership</p>	<p>Business Service Membership is used by many (it not most) users to control assignment of security permissions.</p> <p>Business Service Membership for a record in the Universal Controller is persisted in the opswise_groups column, as a comma-delimited list of Business Service UUIDs.</p> <p>In UC 7.0.0.0, Universal Controller introduces a mechanism whereby Business Service Membership for records in our largest tables, Activity and History, can be normalized into ops_exec respectively, allowing for optimized query performance for users restricted by Business Service Membership.</p> <p>Administrators can use Server Operations Enable Task Instance Business Service Normalization and Disable Task Instance Business Service Normalization, to toggle this behavior in UC</p> <p>When deciding on enabling Business Service normalization, it should be noted that there is trade-off between the query performance on Task Instance/History Lists and the added insertic/History record creation time.</p>																																																
<p>B-11212</p>	<p>Increase Member of Business Service Limit</p>	<p>The limit for Business Service membership has been doubled.</p>																																																

B-12310	Use MySQL multi-table delete for data backup purge of action tables	MySQL supports multi-table deletion and these has been implemented to improve performance of the Data Backup/Purge function.
B-10841	Azure SQL DB Support / Validation	Microsoft's Azure SQL DB is now a supported Universal Controller back-end database option. Azure SQL DB uses the SQL Server JDBC driver.
B-12899	Toggle to suspend Agent notifications	New System Property to specify (true or false) for whether or not Agent notifications will not be processed (true) when a suspended Agent goes active/offline.
B-12445	Prevent reverse tabnabbing control ui properties pages	Reverse tabnabbing is an attack where a page linked from the target page is able to rewrite that page, for example to replace it with a phishing site.
B-13143	Add query parameters to the Web Service Login Audit	For Web Service Task Audit records the Additional Information field now shows any URL query parameters specified in the Web Service Task.

<p>B-12488</p>	<p>Resolvable Credential Support for Web Service Task</p>	<p>Customers can now enable the use of Resolvable Credentials in Web Service Tasks. A new system Property (Web Service Task Resolvable Credentials Functions Permitted) has been added. Enabled Resolvable Credentials can be specified in the following Web Service task fields using the resolvable credential functions:</p> <ul style="list-style-type: none"> • URL Query Parameter Values • Form Data Values • Form Payload • Payload Script
<p>B-03852</p>	<p>Allow Controller OMS Server to be suspended & resumed from the UI</p>	<p>Users can now suspend and resume OMS Servers with a right click option on the OMS Servers listed in the Agents and Connections / System / OMS Servers list.</p>  <p>The screenshot shows the 'System / OMS Servers' page in the Universal Automation Center. A table lists OMS Servers with columns for Name, Status, Suspend, and Resumable. A context menu is open over one of the servers, showing options: Refresh, Suspend, Resume, Open in Tab, Details, and Refresh. Below the table, the details for a selected OMS Server are shown, including its address, member of business directory, authentication status, and current status (Connected/Operational).</p>
<p>B-05416</p>	<p>Break history purge operation into multiple, smaller, transactions</p>	<p>The History purge operation is now performed using multiple, smaller, transactions.</p>

Automation

Backlog	Title	Description
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B-11432	Allow default Definition for Automatic output retrieval option in task definition	<p>New System Property to set a system wide default for Automatic Output Retrieval in new task definitions:</p> <table border="1" data-bbox="367 183 1325 376"> <thead> <tr> <th data-bbox="367 183 772 215">Name ^</th> <th data-bbox="772 183 1325 215">Value</th> </tr> </thead> <tbody> <tr> <td data-bbox="367 215 772 248">Task Automatic Output Retrieval Default</td> <td data-bbox="772 215 1325 248">None</td> </tr> <tr> <td data-bbox="367 248 772 280"></td> <td data-bbox="772 248 1325 280">None</td> </tr> <tr> <td data-bbox="367 280 772 313"></td> <td data-bbox="772 280 1325 313">Standard Output</td> </tr> <tr> <td data-bbox="367 313 772 345"></td> <td data-bbox="772 313 1325 345">Standard Error</td> </tr> <tr> <td data-bbox="367 345 772 376"></td> <td data-bbox="772 345 1325 376">Standard Output/Error</td> </tr> </tbody> </table>	Name ^	Value	Task Automatic Output Retrieval Default	None		None		Standard Output		Standard Error		Standard Output/Error
Name ^	Value													
Task Automatic Output Retrieval Default	None													
	None													
	Standard Output													
	Standard Error													
	Standard Output/Error													
B-12487	Recurring Task : Purge by Retention Duration	Purge By Retention Duration feature is used for selectively purging instances earlier than the System Level (Days Older Than) purge defined in the Data Backup / Purge												

Bundle and Promote

Backlog	Title	Description
B-13139	Keep configuration of checkbox "Calculate Critical Path" during a Promotion	When promoting Workflows the "Calculate Critical Path" option will now be preserved on the target system.

Data Supply Chain

Backlog	Title	Description
E-01273	Enhanced File Transfer Task for UDM Protocol	The File Transfer Task for UDM has been visually redesigned and the following additional functionality is available via the UDM Form option:

- UDM is now the default protocol when creating new File Transfer Tasks
- UDM terminology has been changed from **Source** and **Destination** to **Primary** and **Secondary** in line with UDM's terminology.
- The UDM Primary Agent now supports and defaults to selecting the **Utility Agent** to avoid duplication in having to select the same agent for both the Utility Agent and the Primary UDM Agent in cases where these need to be the same. This option performs a 2 party UDM transfer.
- The UDM File Transfer Task form has been restructured to enhance the user's experience including a checkbox to display **Advanced UDM Options**, this is unchecked by default and when checked add the following options to the UDM file Transfer Form:
 - Trim Trailing Spaces
 - Network Fault Tolerant
 - Show Progress
 - Primary File System
 - Secondary File System
 - Append Primary Open Options
 - Append Secondary Open Options
 - Append UDM options
- The following functions have been added to the UDM File Transfer task's "Form" implementation:
 - Delete
 - Rename
 - List
 - Copy Directory
 - Create Directory
 - Delete Directory
- File Transfer Direction. For the **Copy**, **Move** and **Copy Directory** functions these now support **PUT (Primary to Secondary)** and **GET (Secondary to Primary)** functions. Previously all UDM transfers using the Form were PUT functions. This allows easier control over network port traffic direction.
- Show File Transfer Progress. For the **Copy**, **Move** and **Copy Directory** functions the Advanced UDM Options provides a **Show Progress** option when checked this adds the UDM **report progress=yes** command to the generated UDM Script.
- Both Primary and Secondary Agents now allow the Agent selection to be based on a UC Cluster definition.
- Simplified Cluster Broadcast Support for UDM Primary Agent. If the Primary Agent is set to Utility Agent, the Primary Agent inherits the Utility Agents Cluster Broadcast selected Agent.

The following enhancements are available for the UDM Script option:

- The **Primary UDM Agent** and **Secondary UDM Agent** fields now remain visible when the Script option is selected and their contents made available to the UDM Script via the following variables:
 - **Primary UDM Agent** can be accessed through **\${ops_primary_agent_hostname}**.
 - **Secondary UDM Agent** can be accessed through **\${ops_secondary_agent_hostname}**.
- The **Primary File(s)** and **Secondary File(s)** fields now remain visible when the Script option is selected and their contents made available to the UDM Script via the following variables:
 - **Primary File(s)** can be accessed either through **\${ops_primary_filename}** or **\${ops_local_filename}**.
 - **Secondary File(s)** can be accessed either through **\${ops_secondary_filename}** or **\${ops_remote_filename}**.
- The existing UDM script variables **\$(ops_src_cred_user)** **\$(ops_src_cred_pwd)** **\$(ops_dst_cred_user)** **\$(ops_dst_cred_pwd)**, can now also be specified as **\$(ops_primary_cred_user)** **\$(ops_primary_cred_pwd)** **\$(ops_secondary_cred_user)** **\$(ops_secondary_cred_pwd)**, existing scripts using the older variables will not be affected.

Backwards Compatibility Information



Upgrades or Promotion to Version 7.x or higher from older releases:

- During an upgrade or promotion to UC 7.x or higher from an older release the following UDM File Transfer Task schema changes will be performed during the upgrade. **Only Task definitions and Active Task instances will be updated.**
 - If Source / Destination UDM Agent option = Agent Variable, set Primary / Secondary UDM Agent Option to Agent and set Primary / Secondary UDM Agent Variable checkbox to true.
 - If Form or Script = Script, set Primary and Secondary UDM Agent option to None.

Promotion from Version 7.x and higher to older releases:

- During a promotion from UC 7.x or higher to an older release the following behavior should be considered:
 - If Primary / Secondary UDM Agent option = Agent and Primary / Secondary UDM Agent Variable checkbox = true, reset Source / Destination UDM Agent Option to Agent Variable.
 - If Primary / Secondary UDM Agent Option = None, reset Source / Destination UDM Agent Option to Agent.
 - UDM File Transfer Task "Transfer Direction" option "GET" requires a minimum promotion target release level of 7.0.0.0.
 - UDM File Transfer Task "Primary UDM Agent Option" option "Utility Agent" requires a minimum promotion target release level of 7.0.0.0.
 - UDM File Transfer Task "Primary UDM Agent Option" or "Secondary UDM Agent Option" option "Agent Cluster" requires a minimum promotion target release level of 7.0.0.0.
 - UDM File Transfer Task "Form or Script" option "Script" requires a minimum promotion target release level of 7.0.0.0 when Primary UDM Agent or Primary UDM Agent Cluster is not blank.
 - UDM File Transfer Task "Form or Script" option "Script" requires a minimum promotion target release level of 7.0.0.0 when Secondary UDM Agent or Secondary UDM Agent Cluster is not blank.

Web Service API

- When using the UC 6.9 and older Web Service payload format to create or update a UDM File Transfer Task in UC 7.x or higher:
 - If Source / Destination UDM Agent Option = Agent Variable, set Primary / Secondary UDM Agent Option = Agent and Primary / Secondary UDM Agent Variable checkbox = true.
 - If Form or Script option = Script, the Primary / Secondary UDM Agent Option will be set to a value of None.

Security

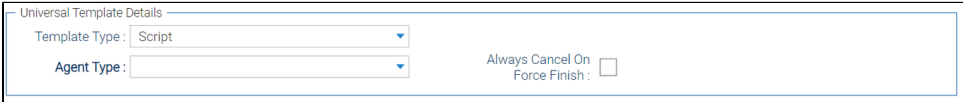
Backlog	Title	Description
B-09494	Ability to set skip count on trigger without otherwise having permission to update the trigger	New Command Permission for Set Skip Count for Triggers
B-13177	Increase limit of Group Filter in LDAP Settings to 1 MB	The Group Filter for LDAP Settings has been increased to 1MB.


Universal Extensions

Backlog	Title	Description
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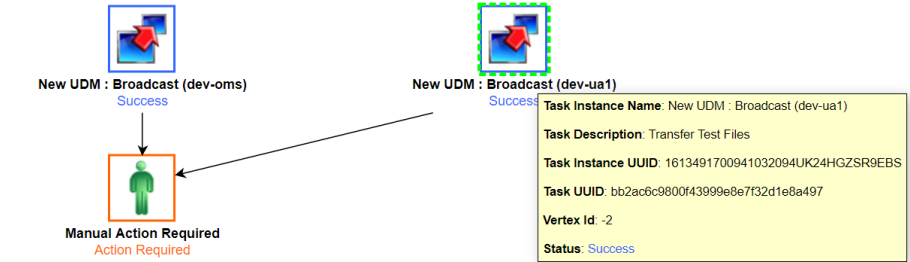
E-01117	Universal Integration Platform Universal Extension	<p>The Universal Extension is a new component that extends the Universal Integration Platform Universal Templates feature. Universal Extensions allow advanced functionality to be integrated into Universal Templates (and therefore Universal Tasks) via a scriptable API to provide 2 way interaction between Universal Agents and the Universal Controller.</p> <p>UAC 7.0.0.0 delivers the first iteration of the Universal Extension and provides the capability for the following functionality to be implemented with Universal Templates:</p> <ul style="list-style-type: none"> • Dynamic Choice Fields - Information from the target application is retrieved to populate Universal Task choice fields. • Dynamic Commands - In addition to the standard instance commands (i.e. Cancel, Re-run, Retrieve Ouptut, etc.), custom commands can be defined to extend the command capabilities of a Universal Task instance. • Output Only Fields - Fields can be defined with an Output Only restriction, appear on the task instance as read-only, and can be populated with data from the target application. • Job Completion Output – Output from target application is separated from STDOUT / STDERR with more advanced Success/Failure Output Contains conditions on EXTENSION output. • Embeds 3rd Party Dependencies (No longer needed in base UA package) • Passing of credentials in memory
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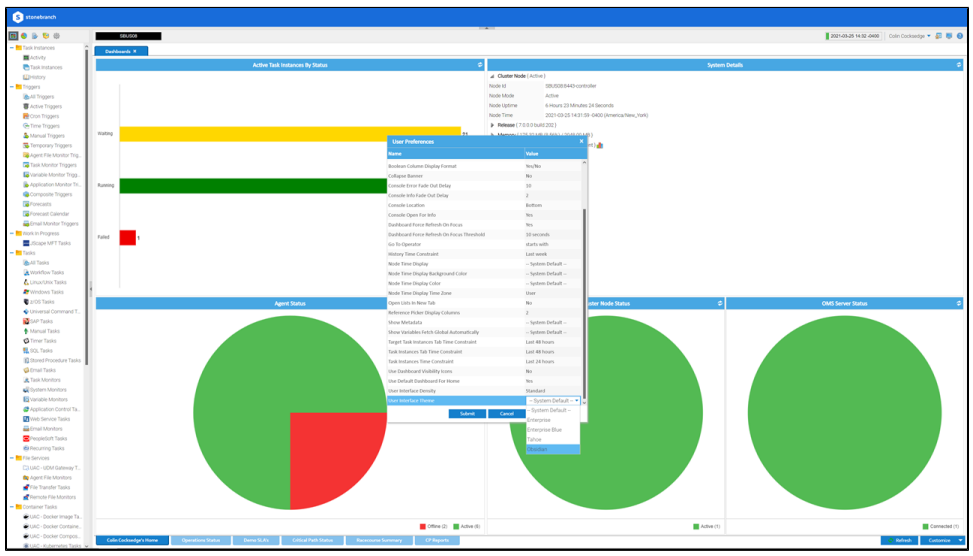
Universal Templates

Backlog	Title	Description
B-13115	Universal Template: Template-level option to enforce Cancel when the Universal Task is Force Finished	<p>A new checkbox has been added to the Universal Template definition form that allows users to enforce a Cancel when the Universal Task(s) is Force Finished.</p>  <p>The screenshot shows a form titled "Universal Template Details" with two dropdown menus: "Template Type" (set to "Script") and "Agent Type". To the right of these is a checkbox labeled "Always Cancel On Force Finish" which is currently unchecked.</p>

B-13116	Universal Template: Field-level option to Preserve When Hidden	<p>If value has been entered in a Universal Task field that is subsequently hidden customers now have the option in the Universal Template Field Definition to preserve this value which was</p> 
B-13114	Universal Template: Additional Array fields (2 More)	Two additional Array fields have been made available for Universal Templates.
B-13112	Universal Template: Add 2 credential fields	Two additional Credential fields have been made available for Universal Templates.
B-13113	Universal Template: Additional Choice fields (5 More)	File additional Credential fields have been made available for Universal Templates.
B-13121	Universal Template: Floating point field type	A new floating point type field has been made available.

User Experience

Backlog	Title	Description
B-11210	Workflow monitor - Add 'Task Description' in the Task hint	<p>The Task Description has been added to the "hint" for tasks in the Workflow Monitor:</p> 

E-01534	New Theme Implementations	<p>Users can now select their preferred User Interface theme and Font density from the User Preferences menu.</p>  <p>The default Theme has been changed and can be set via the "User Interface Theme" System property. There is also a "User Interface Density" system property to set the default Font der</p>
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Web Service API

Backlog	Title	Description
B-09407	Web Service API : Server Operation Roll Log	The Server Operation "Roll Log" is now supported via a Web Service API

B-09411	Web Service API : Server Operation Temporary Property Change	The Server Operation "Temporary Property Change" is now supported via a Web Service API
B-12485	Web Service API : Trigger Read - Add All Read Only fields	All read only fields have been added to the READ Trigger API response.
B-13152	Web Service API : CRUD for Promotion Targets	Bundle and Promote "Promotion Target" definitions are not supported by Web Service API functions for Create, Read, Update, and Delete.

Universal Controller 6.9.0.0 Release Notes

- [Release Notes](#)
 - [Product Architecture](#)
 - [Built-in Functions](#)
 - [Product Branding](#)
 - [Product Licensing](#)
 - [Recurring Task](#)
 - [Security Enhancements](#)
 - [Template Workflows](#)
 - [Triggers](#)
 - [Universal Template/Task Enhancements](#)
 - [User Experience](#)
 - [Web Service API](#)
 - [Workload Analytics](#)

Release Notes

Universal Controller release 6.9.0.0 contains the following high-level features; for a complete list of all the included features and fixes, please refer to the [Universal Controller 6.9.x Maintenance list](#).

Note



Users upgrading to Universal Controller 6.9.0.0 from any earlier Universal Controller release should take special note, as some changes in behavior have been introduced; specifically:

- B-06805: Task Monitors now only match Task Instances that Execution User has Read Permission for
- B-12009: Customers licensed for USAP and/or UPPS will need to request a new license key prior upgrading to Universal Controller 6.9 in order to continue to use the SAP and Peoplesoft tasks.

Product Architecture

Backlog	Title	Description
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B-10774 Add OMS Connection Field Showing Time Stamp for Last Connected Server Address

A new **Last Connected Time** field has been added to display the date and timestamp the Universal Controller connected to the Last Connected Server Address.

The timestamp will be updated when the Status changes from "Disconnected" to "Connected".

Authenticate OMS Server:	false
Can Copy:	false
Can Delete:	true
Can Update:	true
Created:	2019-05-16 21:36:02 +0000
Created By:	ops.admin
Is Version:	false
Last Connected Server Address:	dev-oms/172.20.0.4:7878
Last Connected Time:	2020-05-28 13:41:38 +0000
Member of Business Services:	UC 6.8.0.0
Member of Business Services:	f17a11e4c77048fea2e5e83b24fa6abe
Network Timeout (Seconds):	30
OMS Server Address:	dev-oms:7878
Session Status:	Operational
Status:	Connected
Tab Names Containing Data:	
Table Name:	ops_oms_server
Updated:	2019-11-04 15:47:12 +0000
Updated By:	ops.admin
UUID:	418b78d6ab3c4bdebc452b02cc1c0359

Built-in Functions

Backlog	Title	Description
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B-09458	Return a string encoded in base-64	A new built in function has been added that accepts a string and returns the input string encoded in base-64.	
		Description	Returns the value of the specified variable encoded using the Base64 encoding scheme.
		Syntax	<code>\${_varEncodeBase64('variableName'[, 'charset'])}</code>
		Parameters	<ul style="list-style-type: none"> <code>variableName</code> Required; Name of the variable whose value will be encoded using the Base64 encoding scheme. <code>charset</code> Optional; Name of the charset; default UTF-8.
		Example	<p>Where Variable <code>rawstring</code> contains a value of "Test String":</p> <pre><code>\${_varEncodeBase64('rawstring')} --> VGVzdCBTdHJpbmc=</code></pre>
B-12293	New Task Instance Output Functions	<p>The following new functions are available to access Task Instance Output:</p> <ul style="list-style-type: none"> Task Instance Output By XPath Sibling Task Instance Output By XPath Task Instance Output By JsonPath Sibling Task Instance Output By JsonPath Task Instance Output By JsonPath As Array Sibling Task Instance Output By JsonPath As Array 	

Product Branding

Backlog	Title	Description
B-11578	Rename deployed war file to "uc.war"	<p>The installer will copy the universal-controller-N.N.N.N-build.N.war to [tomcat-dir]/webapps/uc.war instead of [tomcat-dir]/webapps/opswise.war.</p> <p>This will change the default URL from http://hostname:8080/opswise to http://hostname:8080/uc</p>
B-11579	Rename default database name for new deployments to "uc"	<p>The Universal Controller installer will now use uc as the default database name.</p> <p>The default database name is used if a database name is not specified with the --dbname option.</p>

B-11580	Rename directories to use "uc"	<p>The following directories are being renamed for new installations:</p> <table border="1" data-bbox="495 180 1957 1065"> <thead> <tr> <th data-bbox="495 180 653 261">Pre-6.9.0.0 Installations</th> <th data-bbox="653 180 810 261">6.9.0.0 Installations</th> <th data-bbox="810 180 1957 261">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="495 261 653 350">opwise_images</td> <td data-bbox="653 261 810 350">uc_images</td> <td data-bbox="810 261 1957 350">If the legacy path <code>\$CATALINA_BASE/opwise_images</code> exists, and path <code>\$CATALINA_BASE/uc_images</code> does not exist, the Controller will look for the banner logo file under the legacy path <code>\$CATALINA_BASE/opwise_images</code>; otherwise, the Controller will look for the banner logo file under path <code>\$CATALINA_BASE/uc_images</code>.</td> </tr> <tr> <td data-bbox="495 350 653 513">opwise_backups</td> <td data-bbox="653 350 810 513">uc_backups</td> <td data-bbox="810 350 1957 513">If Data Backup/Purge Export Path Universal Controller system property is specified, it will be used. The property will remain unchanged during a maintenance update. The default value for a new installation is blank/undefined. If the legacy path <code>\$CATALINA_BASE/opwise_backups</code> exists, and path <code>\$CATALINA_BASE/uc_backups</code> does not exist, the base path will be <code>\$CATALINA_BASE/opwise_backups</code>; otherwise, the base path will be <code>\$CATALINA_BASE/uc_backups</code>.</td> </tr> <tr> <td data-bbox="495 513 653 675">opwise_import</td> <td data-bbox="653 513 810 675">uc_import</td> <td data-bbox="810 513 1957 675">For a new installation, the System Default CLI Bulk Import Path Universal Controller system property will have its default value determined by the following: If legacy path <code>\$CATALINA_BASE/opwise_import</code> exists, and path <code>\$CATALINA_BASE/uc_import</code> does not exist, the path will be <code>\$CATALINA_BASE/opwise_import</code>, otherwise, the path will be <code>\$CATALINA_BASE/uc_import</code>. 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These URIs will be deprecated; however, they still will be supported for backward compatibility. <ul style="list-style-type: none"> • Status (http://host_name/uc/reources/opwise/status) • Node Info (http://host_name/uc/reources/opwise/ops-node-info) • Change User Password (http://host_name/uc/reources/opwise/ops-change-user-password) </td> </tr> </tbody> </table>	Pre-6.9.0.0 Installations	6.9.0.0 Installations	Description	opwise_images	uc_images	If the legacy path <code>\$CATALINA_BASE/opwise_images</code> exists, and path <code>\$CATALINA_BASE/uc_images</code> does not exist, the Controller will look for the banner logo file under the legacy path <code>\$CATALINA_BASE/opwise_images</code> ; otherwise, the Controller will look for the banner logo file under path <code>\$CATALINA_BASE/uc_images</code> .	opwise_backups	uc_backups	If Data Backup/Purge Export Path Universal Controller system property is specified, it will be used. The property will remain unchanged during a maintenance update. The default value for a new installation is blank/undefined. If the legacy path <code>\$CATALINA_BASE/opwise_backups</code> exists, and path <code>\$CATALINA_BASE/uc_backups</code> does not exist, the base path will be <code>\$CATALINA_BASE/opwise_backups</code> ; otherwise, the base path will be <code>\$CATALINA_BASE/uc_backups</code> .	opwise_import	uc_import	For a new installation, the System Default CLI Bulk Import Path Universal Controller system property will have its default value determined by the following: If legacy path <code>\$CATALINA_BASE/opwise_import</code> exists, and path <code>\$CATALINA_BASE/uc_import</code> does not exist, the path will be <code>\$CATALINA_BASE/opwise_import</code> , otherwise, the path will be <code>\$CATALINA_BASE/uc_import</code> . 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B-11581	Rename files to use "uc"	<p>The following files are being renamed :</p> <table border="1" data-bbox="495 1130 821 1308"> <tbody> <tr> <td data-bbox="495 1130 684 1170">opwise.properties</td> <td data-bbox="684 1130 821 1170">uc.properties</td> </tr> <tr> <td data-bbox="495 1170 684 1211">opwise.log</td> <td data-bbox="684 1170 821 1211">uc.log</td> </tr> <tr> <td data-bbox="495 1211 684 1252">opwise.html</td> <td data-bbox="684 1211 821 1252">uc.html</td> </tr> <tr> <td data-bbox="495 1252 684 1308">opwise.css</td> <td data-bbox="684 1252 821 1308">uc.css</td> </tr> </tbody> </table>	opwise.properties	uc.properties	opwise.log	uc.log	opwise.html	uc.html	opwise.css	uc.css													
opwise.properties	uc.properties																						
opwise.log	uc.log																						
opwise.html	uc.html																						
opwise.css	uc.css																						
B-11582	Rename property name prefixes to "uc"	<p>Universal Controller properties will all be prefixed with uc rather than opwise. Old opwise properties will be migrated to uc when starting up</p>																					

Product Licensing


Backlog	Title	Description
B-12009	Connector Licensing	<p>A set number of each Connector (USAP & UPPS) will be configured in the License, which dictates the number of connections each Agent is allowed.</p> <p>All Agents will be granted the same amount of connections as defined in the License.</p> <p>Note </p> <p>Customers licensed for USAP and / or UPPS will need to request a new license key prior upgrading to Universal Connector 6.9 in order to continue to use the SAP and Peoplesoft tasks.</p>
B-12249	Agent Only Controller	With Universal Agent 6.9.0.0 and Universal Controller 6.9.0.0, customers who utilize Universal Agents with 3rd-Party Scheduling solutions can leverage Universal Controller to support centralized license management.

Recurring Task

Backlog	Title	Description
E-01455	Recurring Task	<p>The Recurring Task is a new task type that repeatedly launches a Task or Workflow (that is. performs a for or until loop).</p> <p>The Recurring Task can launch a Task or Workflow:</p> <ul style="list-style-type: none"> • A specific number of times at a certain interval (For Loop) • At a certain interval within a time band (For Loop) • Multiple specific times (For Loop) • Until a condition is met (While Loop) <p>The Recurring Task remains in RUNNING status until the Task Monitoring Condition (First Occurrence, Last Occurrence, or All Occurrences are complete with SUCCESS, FINISHED, and/or SKIPPED) or the Recurring Task itself is Force Finished.</p> <p>If a Recurring Task is used within a Workflow, the Tasks or Workflows Launched by the Recurring Task are external to the Parent Workflow and can be monitored from the Recurring Task Instance within the Workflow via the Target Task Instances tab.</p>

Security Enhancements


Backlog	Title	Description
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B-11882	Change security (authorization) properties to recommended defaults and hide them.	Variable Security Enabled=true	The property already has a default of true; however, for new installations of Universal Controller 6.9.0.0, the property will be hidden.
		Virtual Resource Security Enabled=true	The property already has a default of true; however, for new installations of Universal Controller 6.9.0.0, the property will be hidden.
		Strict Business Service Membership Read Constraints=true	For new installations of Universal Controller 6.9.0.0, the property will be hidden.
		Strict Connection Execute Constraints=true	For new installations of Universal Controller 6.9.0.0, the property will be hidden.
		Promotion Accept Bundle Create/Update Permission Required=true	For new installations of Universal Controller 6.9.0.0, the property will be hidden.
		Promotion Read Permission Required=true	For new installations of Universal Controller 6.9.0.0, the property will be hidden.
B-06805	Task Monitors now only match Task Instances that Execution User has Read Permission for	Task Monitors will now verify if the Execution User has read permission for a Task before selecting a match for that Task. Note  Customers are advised to carefully review this change in product behavior when upgrading an existing Universal Controller instance to release 6.9.0.0.	
B-12078	Increase length of User's last name (ops_user.last_name) to 255 characters	The user's last name now supports up to 255 characters.	
B-12243	Delete Permission for Agents	A new Delete permission has been added for Agents . Previously only Administrators were able to Delete Agents.	

Template Workflows

Backlog	Title	Description
B-11477	Template Workflows	A new Server Operation Template Workflow List / Load allows customers to Display and Load example template workflows which can be used by customers and templates for specific automation tasks.

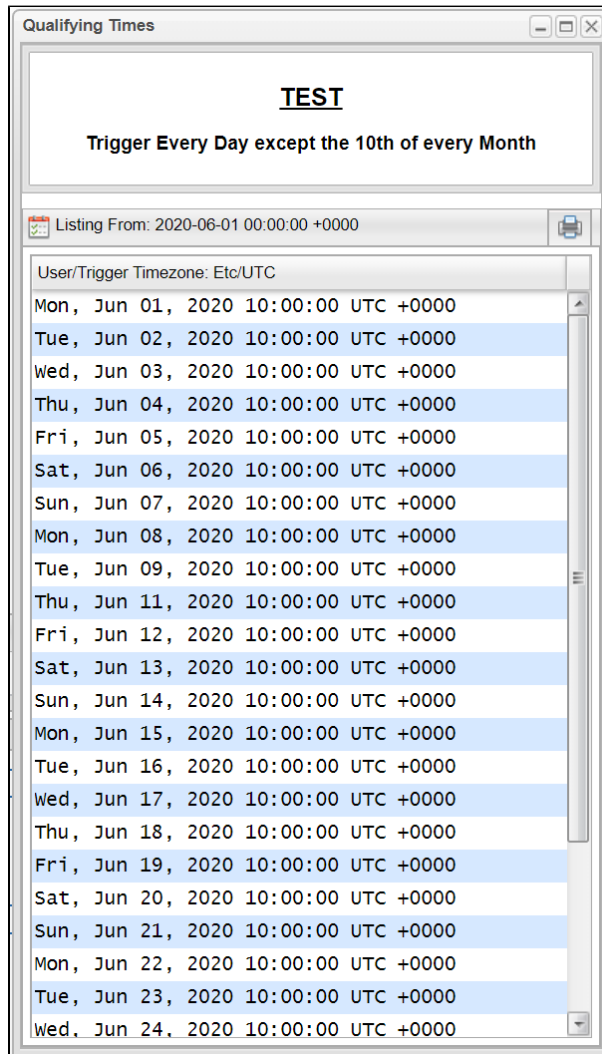
Triggers

Backlog	Title	Description																																				
B-11479	Add Time Stamp for Enabled At or Disabled At for Triggers	<p>The time that a Trigger was Enabled At or Disabled At is recorded and displayed for all triggers.</p>  <table border="1"> <thead> <tr> <th>Item</th> <th>Description</th> <th>Enabled</th> <th>Enabled Time</th> <th>Disabled Time</th> <th>Next Scheduled Time</th> <th>Time State</th> <th>Day State</th> <th>Updated By</th> </tr> </thead> <tbody> <tr> <td>B-11479-001</td> <td>Trigger Every Day except the 1st of every Month</td> <td></td> <td></td> <td></td> <td></td> <td>Time Interval</td> <td>Script</td> <td>ops-admin</td> </tr> <tr> <td>B-11479-002</td> <td></td> <td></td> <td>2020-05-04 14:08:52 -1000</td> <td></td> <td>2020-05-11 07:00:00 -1000</td> <td>Time</td> <td>Calendar</td> <td>ops-admin</td> </tr> <tr> <td>B-11479-003</td> <td></td> <td></td> <td>2020-05-04 14:08:48 -1000</td> <td></td> <td>2020-05-11 07:00:00 -1000</td> <td>Time</td> <td>Calendar</td> <td>ops-admin</td> </tr> </tbody> </table>	Item	Description	Enabled	Enabled Time	Disabled Time	Next Scheduled Time	Time State	Day State	Updated By	B-11479-001	Trigger Every Day except the 1st of every Month					Time Interval	Script	ops-admin	B-11479-002			2020-05-04 14:08:52 -1000		2020-05-11 07:00:00 -1000	Time	Calendar	ops-admin	B-11479-003			2020-05-04 14:08:48 -1000		2020-05-11 07:00:00 -1000	Time	Calendar	ops-admin
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B-11479-003			2020-05-04 14:08:48 -1000		2020-05-11 07:00:00 -1000	Time	Calendar	ops-admin																														

B-12000

Use mono-space font for List Qualifying Dates /Times

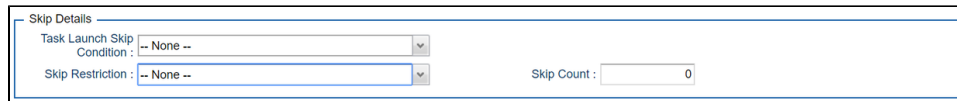
Displaying qualifying times now uses a mono-space font for improved clarity.



B-09930

Skip Restrictions for Triggers

UC 6.9.0.0 introduces a new trigger form section **Skip Details**. This section contains the **Task Launch Skip Conditions** and **Skip Count** which were previously located in the **Status** section.



Skip Restrictions are valid for the following Trigger types:

- Cron Trigger
- Time Trigger
- Agent File Monitor Trigger
- Task Monitor Trigger
- Variable Monitor Trigger
- Email Monitor Trigger
- Application Monitor Trigger
- Composite Trigger

Skip Restrictions allow users to prevent a trigger from “firing” in the following ways:

1. **Before** a specific date (and optionally a specific time).

Skip Details

Task Launch Skip Condition : -- None --

Skip Restriction : Before

Skip Before Date : 2020 Jul 13

Skip Count : 0

Skip Before Time : 09:00

2. **After** a specific date (and optionally a specific time).

Skip Details

Task Launch Skip Condition : -- None --

Skip Restriction : After

Skip After Date : 2020 Nov 1

Skip Count : 0

Skip After Time :

3. **Span**, here you can specify a skip after date (and optionally time) and a skip before date (and optionally time). This option can be used to either prevent the trigger from “firing” between

Skip Details

Task Launch Skip Condition : -- None --

Skip Restriction : Span

Skip After Date : 2020 Nov 1

Skip Before Date : 2020 Jul 13

Skip Count : 0

Skip After Time :

Skip Before Time : 09:00

In the above example the trigger will “fire” between 09:00 on July 13th 2020 and 00:00 on November 1st 2020.

Skip Details

Task Launch Skip Condition : -- None --

Skip Restriction : Span

Skip After Date : 2020 Jul 1

Skip Before Date : 2020 Aug 31

Skip Count : 0

Skip After Time : 09:00

Skip Before Time :

In the above example the trigger will NOT “fire” between 09:00 on July 1st 2020 and 00:00 on August 31st 2020.

4. **On** a specific date or a list of specific dates.

Skip Details

Task Launch Skip Condition : -- None --

Skip Restriction : On

Skip Date List : 2020-05-13
2020-05-27

Skip Count : 0

Users can use **Skip Restrictions** in combination with **Skip Count**, in this case the **Skip Count** will NOT be decremented when the trigger is already being skipped via a **Skip Restriction**

Skip Details	
Task Launch Skip Condition : -- None --	
Skip Restriction : Span	Skip Count : 10
Skip After Date : 2020 May 17	Skip After Time : Hour Min
Skip Before Date : 2020 May 24	Skip Before Time : Hour Min

When listing qualifying times in this case you will clearly see when and why the trigger is skipped.

TEST

Trigger Every Day except the 10th of every Month

Listing From: 2020-05-13 17:13:22 +0000

User/Trigger Timezone: Etc/UTC

Thu, May 14, 2020 10:00:00 UTC +0000 (Skipped by Count 10)
Fri, May 15, 2020 10:00:00 UTC +0000 (Skipped by Count 9)
Sat, May 16, 2020 10:00:00 UTC +0000 (Skipped by Count 8)
Sun, May 17, 2020 10:00:00 UTC +0000 (Skipped by Count 7)
Mon, May 18, 2020 10:00:00 UTC +0000 (Skipped by Restrictions)
Tue, May 19, 2020 10:00:00 UTC +0000 (Skipped by Restrictions)
Wed, May 20, 2020 10:00:00 UTC +0000 (Skipped by Restrictions)
Thu, May 21, 2020 10:00:00 UTC +0000 (Skipped by Restrictions)
Fri, May 22, 2020 10:00:00 UTC +0000 (Skipped by Restrictions)
Sat, May 23, 2020 10:00:00 UTC +0000 (Skipped by Restrictions)
Sun, May 24, 2020 10:00:00 UTC +0000 (Skipped by Count 6)
Mon, May 25, 2020 10:00:00 UTC +0000 (Skipped by Count 5)
Tue, May 26, 2020 10:00:00 UTC +0000 (Skipped by Count 4)
Wed, May 27, 2020 10:00:00 UTC +0000 (Skipped by Count 3)
Thu, May 28, 2020 10:00:00 UTC +0000 (Skipped by Count 2)
Fri, May 29, 2020 10:00:00 UTC +0000 (Skipped by Count 1)
Sat, May 30, 2020 10:00:00 UTC +0000
Sun, May 31, 2020 10:00:00 UTC +0000
Mon, Jun 01, 2020 10:00:00 UTC +0000
Tue, Jun 02, 2020 10:00:00 UTC +0000
Wed, Jun 03, 2020 10:00:00 UTC +0000
Thu, Jun 04, 2020 10:00:00 UTC +0000
Fri, Jun 05, 2020 10:00:00 UTC +0000

B-11912	Increase the Retention Duration limit to 366 Days	When using the Purge by Retention Duration feature in Triggers customers can now specify a Retention Duration of up to 366 days.
B-10600	Keep Temporary Trigger Option	<p>Customers now have an option for Temporary Triggers to not automatically delete.</p> <p>The new Keep Trigger field specifies that the temporary trigger should be Disabled, rather than Deleted, after the Next Scheduled Time.</p> <ul style="list-style-type: none"> • If True, the temporary trigger will be Disabled after firing. • If False, the temporary trigger will be deleted after firing. <p>The default value is False.</p>

Universal Template/Task Enhancements

Backlog	Title	Description
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B-10807

Universal Template : Choice Field, Allow Multiple Choices

Universal Templates now support the option to allow **Choice Fields** to be **Multiple Choice**.

Universal Template Choice Field Definition Screen:

Multiple Choice Field Example:

The values selected in the **Multiple Choice** field are returned to the Universal Template script as a comma separated string.

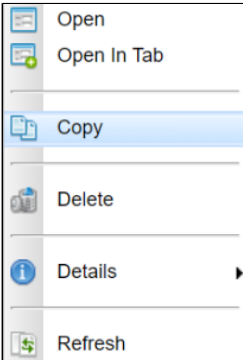
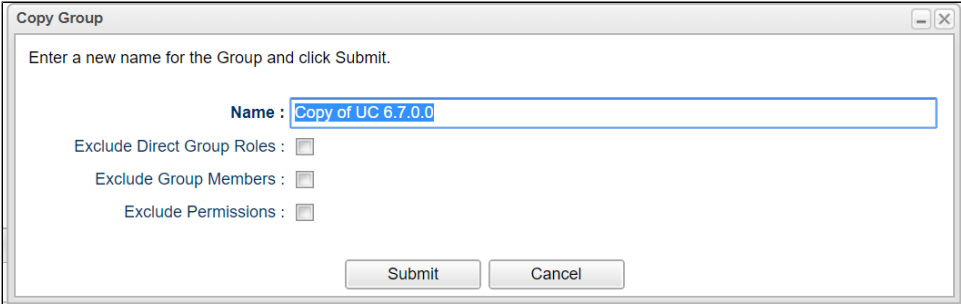
B-12266

New "Built-In" Universal Templates

The following new Universal Templates are available via the **List / Load Built-in Universal Templates** Server Operation:

UAC – Docker Image	Universal Task to manage Docker Images, Build, Remove, Pull, Push, and Tag functions.
UAC – Docker Container	Universal Task to manage Docker Containers, Run, Create, Start, Stop and Remove Functions.
UAC – Docker Compose	Universal Task for Docker Compose Functions, Build, Up, Down, Start, Stop Functions.
UAC – Powershell	Universal Task to Run Powershell Scripts.
UAC – Kubernetes	Kubernetes List (Get), Create, Delete and Replace Functions.
UAC – UA Install	Install UA via SSH Server, Download UA install.
UAC – Remote Controller	Run Task or Workflow on a Remote Universal Controller.
UAC – UC Report	Run UC report and deliver output to a specified server and file location.

User Experience

Backlog	Title	Description
B-04103	Copy Group's Function	<p>From the Administration Security Groups menu users now have a right click option to copy an existing Group definition to create a new Group definition.</p>  <p>The Group copy function allows the user to specify which elements of the existing Group are used to create the new Group. By default all of the existing Groups elements are copied, du new Group's name and whether to exclude (not copy) Group Roles, Group Members, and or Group Permissions.</p> 

B-11475

Move Task Exit processing options to new section

For all applicable tasks the Exit and Result processing options have been move to a new **Result Processing Details** section of the task definition and instance forms.

Result Processing Details

Exit Code Processing : Success Exitcode Range

Exit Codes : 0

Automatic Output Retrieval : -- None --

Linux/Unix Task Details

Linux/Unix Task | Variables | Actions | Virtual Resources | Mutually Exclusive | Instances | Triggers | Notes | Versions

Save Save & New Save & View Close

General

Task Name :

Task Description :

Member of Business Services :

Resolve Name Immediately : Time Zone Preference : -- System Default --

Hold on Start :

Virtual Resource Priority : 10 Hold Resources on Failure :

Agent Details

Cluster :

Agent : Agent Variable :

Credentials : Credentials Variable :

Run as sudo :

Linux/Unix Details

Command or Script : Command

Command :

Parameters :

Runtime Directory :

Environment Variables

Name	Value
No items to show	

Result Processing Details

Exit Code Processing : Success Exitcode Range

Exit Codes : 0

Automatic Output Retrieval : -- None --

Retry Options

Retry Exit Codes :

Maximum Retries : 0

Retry Interval (Seconds) : 60

Retry indefinitely :

Suppress Intermediate Failures :

B-12363	Change Task Instance Virtual Resource "Currently in Use By" Label to "Currently Using"	The previous label Currently in Use By was misleading, this has been replaced by Currently Using .
B-11863	Move "Copy of" to the end of object names as " - Copy"	In order to keep objects created via the copy function next to the object being copied in the definition list views the suggested name has been changed from Copy of object to object - C

Web Service API

Backlog	Title	Description
B-11428	Web Service API : List Audit Records	A new Web Service API has been introduced to allow users to Filter and List Universal Controller Audit records.
B-11429	Web Service API : List Tasks per Agent Name	The Web Service to List Task Definitions ' resources/task/list ' now allows an Agent Name to be used as a query parameter in order to list Tasks that have a specific Agent in the Task Definition.
B-11407	Web Service API : Logs List and Download	A new Web Service API has been introduced to allow users to Filter and List Universal Controller Logs , as well as Download specific Logs as a zip file.
B-11878	Web Service API : Concurrent Request Limit	Administrators can implement application and user-level concurrent request limits to control how many web service API requests can be in progress at the same time via the following new Universal Controller system properties: <ul style="list-style-type: none"> • Web Service Application Concurrent Request Limit • Web Service User Concurrent Request Limit
B-11877	Web Service API : Resource/Load Limit	Administrators can specify a threshold for prohibiting access to the RESTful Web Service API based on a percentage of allocated memory in use via the following new Universal Controller system property: <ul style="list-style-type: none"> • Web Service Memory Utilization Threshold
B-05083	Web Service API - Create / Read / Update / Delete / List Bundle	A new Web Service APU has been introduced to allow users to List, Read, Create, Delete and Modify Bundle definitions.

B-12328	Web Service API : Trigger List new query parameters	<p>Customers can use the API functions to List Triggers based on their Description and / or Referenced Tasks.</p> <p>For example:</p> <pre> { "name": "*time*", "enabled": true, "type": "Time", "tasks": "Sleep 0, Sleep 60", "description": "manuall" } </pre>
B-12484	Web Service API : Bundle Report	A new Web Service API has been introduced that returns the result of a "Bundle Report" against a specific Bundle.

Workload Analytics

Backlog	Title	Description
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B-10814

Alerting Options for Projected End Time

If a customer has configured to allow critical path calculations, via the **Critical Path Calculations Permitted** system property, then a new feature to report on task instances that are projected to be late, or invoke an Action when a task instance is projected to be late, will be available. The **Projected End Time** for a given Task Instance is only Calculated for Tasks executed via Workflows that have the **Calculate Critical Path** option checked.


To indicate a task instance is projected to be late, a new read-only **Projected Late** field will be displayed under the **Time Options** section of the **Task Instance** form (all types), as shown below.

The screenshot shows the 'Time Options' section of a form. It contains the following elements:

- Late Finish**:
- Late Finish Type**: Time (dropdown)
- Finished Late**:
- Late Finish Time**: 15:00 (Hour/Min dropdowns)
- Late Finish Day Constraint**: Same Day (dropdown)
- Projected Late**:

Only task instances with a **Late StartTime**, **Late Start Duration**, or **Late Finish Time** time option can be **Projected Late**, therefore, if such conditions are not specified, the **Projected Late** field will not appear on the **Task Instance** form.

Note

 **Late Finish Duration** and **Late Finish Average Duration** time options are only applied from the time the task instance is started, and are concerned only with the specific instance running longer than the specified duration, relative to the start time.

Whether the task instance starts an hour late, or an hour early, based on predecessor and other dependencies, will have no impact on the task instance finishing late, and therefore, is not applicable with respect to late projections.

To configure an Action to be invoked when a task instance is projected to be late, a new **On Projected Late** criteria will be displayed under the **Action Criteria** section of the **Action** form (all types), as shown below.

The screenshot shows the 'Action Criteria' section of a form. It contains the following elements:

- Status**: (dropdown)
- Exit Codes**: (text field)
- On Late Start**:
- On Late Finish**:
- On Early Finish**:
- On Projected Late**:
- Description**: (text field)

B-03425	Task Instance "Launch Source" field	<p>To allow for more granular information about how a Task Instance was launched a new Launch Source field has been introduced:</p>																								
<p>Launch Source (launch_source) - An enumeration of launch sources.</p>																										
<table border="1"> <tr> <td data-bbox="359 224 569 272">Scheduled Trigger</td> <td data-bbox="569 224 1967 272">If the instance was directly launched by a scheduled trigger, the Trigger (trigger_id) column is assigned the UUID of the scheduled trigger.</td> </tr> <tr> <td data-bbox="359 272 569 321">Trigger Monitor</td> <td data-bbox="569 272 1967 321">If the instance is a monitor associated with monitor trigger, the Trigger (trigger_id) column is assigned the UUID of the monitor trigger.</td> </tr> <tr> <td data-bbox="359 321 569 391">Trigger Now / User Interface</td> <td data-bbox="569 321 1967 391">If the instance was directly launched by a Trigger Now command, the Trigger (trigger_id) column is assigned the UUID of the trigger.</td> </tr> <tr> <td data-bbox="359 391 569 461">Trigger Now / System Operation</td> <td data-bbox="569 391 1967 461">If the instance was directly launched by a Trigger Now command, the Trigger (trigger_id) column is assigned the UUID of the trigger and the Source Instance (source_instance) column will be assigned the UUID of the instance invoking the System Operation.</td> </tr> <tr> <td data-bbox="359 461 569 531">Trigger Now / Web Service</td> <td data-bbox="569 461 1967 531">If the instance was directly launched by a Trigger Now command, the Trigger (trigger_id) column is assigned the UUID of the trigger.</td> </tr> <tr> <td data-bbox="359 531 569 600">Trigger Now / Command Line</td> <td data-bbox="569 531 1967 600">If the instance was directly launched by a Trigger Now command, the Trigger (trigger_id) column is assigned the UUID of the trigger.</td> </tr> <tr> <td data-bbox="359 600 569 688">Workflow</td> <td data-bbox="569 600 1967 688"> <p>If the instance was launched by a workflow, the Workflow (workflow_id) column is assigned the UUID of the workflow instance.</p> <p>Likewise, the Source Instance (source_instance) column will also be assigned the UUID of the workflow instance.</p> </td> </tr> <tr> <td data-bbox="359 688 569 758">Launch Task / User Interface</td> <td data-bbox="569 688 1967 758">If the instance was directly launched by the Launch Task command, the Source Instance (source_instance) column will be null.</td> </tr> <tr> <td data-bbox="359 758 569 828">Launch Task / System Operation</td> <td data-bbox="569 758 1967 828">If the instance was directly launched by the Launch Task command, the Source Instance (source_instance) column will be assigned the UUID of the instance invoking the System Operation.</td> </tr> <tr> <td data-bbox="359 828 569 898">Launch Task / Web Service</td> <td data-bbox="569 828 1967 898">If the instance was directly launched by the Launch Task command, the Source Instance (source_instance) column will be null.</td> </tr> <tr> <td data-bbox="359 898 569 967">Launch Task / Command Line</td> <td data-bbox="569 898 1967 967">If the instance was directly launched by the Launch Task command, the Source Instance (source_instance) column will be null.</td> </tr> <tr> <td data-bbox="359 967 569 1034">Recurring</td> <td data-bbox="569 967 1967 1034">If the instance was directly launched by a Recurring Task Instance, the Source Instance (source_instance) column will be assigned the UUID of the Recurring Task Instance.</td> </tr> </table>			Scheduled Trigger	If the instance was directly launched by a scheduled trigger, the Trigger (trigger_id) column is assigned the UUID of the scheduled trigger.	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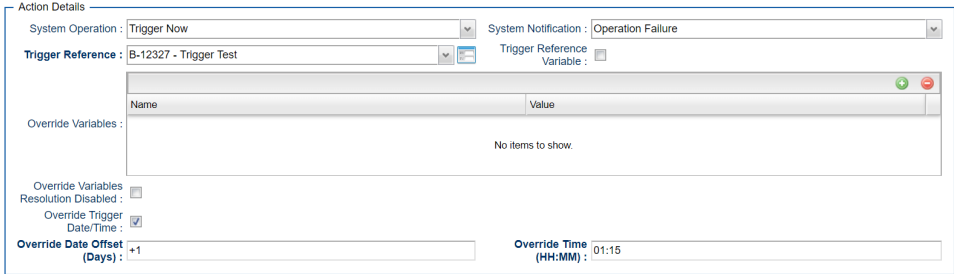
Universal Controller 6.8.1.0 Release Notes

- [Release Notes](#)
 - [Trigger Now System Operation and Web Service API Enhancements](#)

Release Notes

Universal Controller release 6.8.1.0 contains the following high-level features; for a complete list of all the included features and fixes, please refer to the [Universal Controller 6.8.x Maintenance list](#).

Trigger Now System Operation and Web Service API Enhancements

Backlog	Title	Description
B-12327	System Operation Action: Trigger Now "Override Trigger Date/Time" option	<p>The Task Action System Operation Trigger Now function has been enhanced to allow overriding the Trigger Date / Time.</p>  <p>A new Override Trigger Date/Time check box option had been added which when checked allows the Trigger Date and Time to be overridden.</p> <p>The Override Date Offset (Days) option allows you to offset the trigger date plus or minus a specific number of days from the current date. A value of 0 will use the current date, -1 would use yesterdays date, +1 would use tomorrows date, etc.</p> <p>The Override Time (HH:MM) option allows you to specify the trigger time.</p> <p>The trigger variable <code>#{ops_trigger_time}</code> returns the calculated trigger date/time in the format yyyy-MM-dd HH:MM timezone (i.e. 2020-08-10 01:15 -0400).</p> <p>The trigger variable <code>#{ops_trigger_time_tz}</code> returns the calculated trigger date/time in the timezone of the trigger.</p> <p>You can use the <code>_formatDate</code> function to access the calculated trigger date/time in different formats (i.e. <code>#{_formatDate("#{ops_trigger_time}","EEEE dd MMMM YYYY")}</code> will return Monday 10 August 2020).</p>
B-08455	Web Service API: Support Override Trigger Date / Time (Trigger Now)	<p>The Trigger Task(s) (Trigger Now) Web Service API has been enhanced to allow overriding the Trigger Date / Time.</p> <p>Refer to B-12327 for usage notes.</p>

Universal Controller 6.8.0.0 Release Notes

- [Release Notes](#)
 - [Built-In Functions](#)
 - [Built-In Variables](#)
 - [Email Action Audits](#)
 - [File Transfer Task Enhancements](#)
 - [New System Operation Enhancements](#)
 - [New Task Functions](#)
 - [Platform Support Updates](#)
 - [Product Licensing](#)
 - [Reporting Enhancements](#)
 - [Security Enhancements](#)
 - [System Property Enhancements](#)
 - [Task History Enhancements](#)
 - [Task Rerun Enhancements](#)
 - [Transient Agents](#)
 - [Universal Task Enhancements](#)
 - [User Interface Changes](#)
 - [Virtual Resource Enhancements](#)
 - [Web Service API](#)
 - [Workload Analytics Enhancements](#)

Release Notes

Universal Controller release 6.8.0.0 contains the following high-level features; for a complete list of all the included features and fixes, please refer to the [Universal Controller 6.8.x Maintenance list](#).

Built-In Functions

Backlog	Title	Description
B-10370	New Function to URL Encode a String.	A new function, <code>\$_varEncodeUrl('variable-name')</code> , takes the value of the specified variable as input and returns a URL encoded string, converting all non-alphanumeric characters their equivalent hexadecimal escape sequences.

Built-In Variables

Backlog	Title	Description
B-11284	Built-in variable for field "Virtual Resource Priority"	A new built-in variable, <code>\$_ops_resource_priority</code> , has been added to retrieve the value of task field "Virtual Resource Priority".
B-09915	Built-in variable for "Task Instance Definition ID"	A new built-in variable, <code>\$_ops_task_definition_id</code> , has been added to retrieve the SYSID of the "Task Definition of the Task Instance".
B-04717	Built-in variable for "Task Name at Instance Creation Time"	A new built-in variable, <code>\$_ops_task_security_name</code> , has been added to retrieve the value of the "Task Name at Instance Creation Time". Customers should note that if Task Name at Instance Creation Time contains a variable it may under certain circumstances resolve the variable, for example if used in an email notification.

B-10210	Built-in variable for "Top Level Workflow Name"	A new built-in variable, <code>\$(ops_top_level_workflow_name)</code> , has been added to retrieve the value of the "Top Level Workflow Name".
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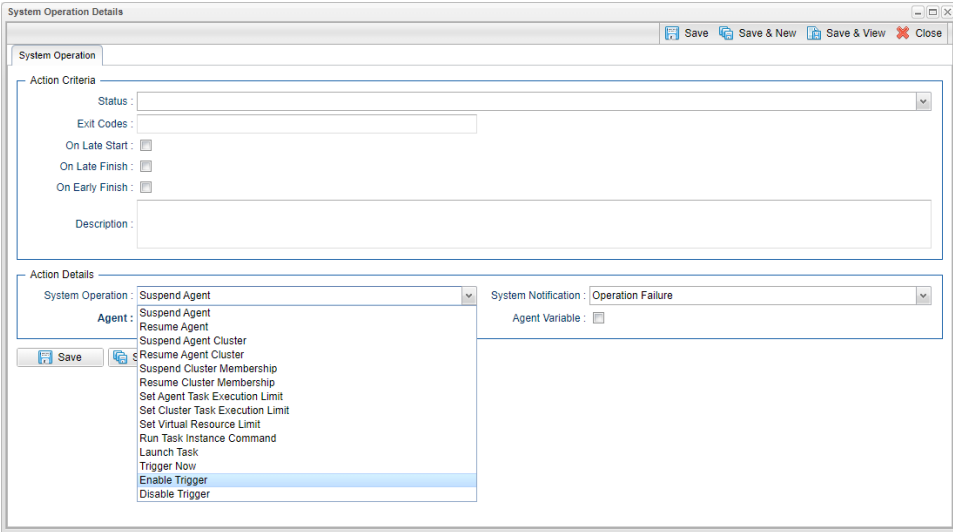
Email Action Audits

Backlog	Title	Description																																		
B-08452	Audit Email Notification Actions	<p>Customers now have the option to Audit the status of "Task Email Notification Actions" and "System Notifications". The status of emails that are sent from Task Email Notification Actions and as System Notifications were previously only visible in the "opswise.log", a new system property has been added to allow customers to audit all notifications or just failed notifications.</p> <div data-bbox="396 472 1352 662" style="border: 1px solid #ccc; padding: 5px;"> <table border="1"> <thead> <tr> <th>Name ^</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Email Notification Audit</td> <td>Success/Failed</td> </tr> <tr> <td></td> <td>Success/Failed</td> </tr> <tr> <td></td> <td>Failed</td> </tr> </tbody> </table> </div> <p>This option provides enhanced visibility in situations where these notification emails have failed to successfully send.</p> <div data-bbox="407 740 1352 1154" style="border: 1px solid #ccc; padding: 5px;"> <p>Details</p> <table border="0"> <tr> <td>Audit Type : Email</td> <td>Table Name : ops_exec_windows</td> </tr> <tr> <td>Source : Email Notification</td> <td>Table Key : 1580221337014144411K63QRQ2GNAZAM</td> </tr> <tr> <td>Created : 2020-01-28 15:39:20 +0000</td> <td>Table Record Name : Email Test</td> </tr> <tr> <td>Created By : ops.system</td> <td>Parent Audit : <input type="text"/></td> </tr> <tr> <td>Node Id : dev-uac:8080-opswise</td> <td></td> </tr> <tr> <td>Node Mode : Active</td> <td></td> </tr> <tr> <td>Status : Failed</td> <td></td> </tr> <tr> <td>Description : Email Notification</td> <td></td> </tr> <tr> <td colspan="2"> <pre>SendEmailEvent [(id=SendEmailHandler) (status=PROCESSING) (sys_created_by=ops.system) (sys_created_on=2020-01-28 15:38:57) (sys_id=15802213370141458411Y28PBZ3Q0UQDJ) (sys_updated_by=ops.system) (sys_updated_on=2020-01-28 15:38:57) (type=EVENT) { To: colin.cockledge@stonebranch.com Subject: test Body: Hi }] </pre> </td> </tr> <tr> <td>Before :</td> <td></td> </tr> <tr> <td>After :</td> <td></td> </tr> <tr> <td>Difference :</td> <td></td> </tr> <tr> <td>Additional Information : Could not send email. Couldn't connect to host, port: myserver, 25; timeout 60000</td> <td></td> </tr> </table> </div>	Name ^	Value	Email Notification Audit	Success/Failed		Success/Failed		Failed	Audit Type : Email	Table Name : ops_exec_windows	Source : Email Notification	Table Key : 1580221337014144411K63QRQ2GNAZAM	Created : 2020-01-28 15:39:20 +0000	Table Record Name : Email Test	Created By : ops.system	Parent Audit : <input type="text"/>	Node Id : dev-uac:8080-opswise		Node Mode : Active		Status : Failed		Description : Email Notification		<pre>SendEmailEvent [(id=SendEmailHandler) (status=PROCESSING) (sys_created_by=ops.system) (sys_created_on=2020-01-28 15:38:57) (sys_id=15802213370141458411Y28PBZ3Q0UQDJ) (sys_updated_by=ops.system) (sys_updated_on=2020-01-28 15:38:57) (type=EVENT) { To: colin.cockledge@stonebranch.com Subject: test Body: Hi }] </pre>		Before :		After :		Difference :		Additional Information : Could not send email. Couldn't connect to host, port: myserver, 25; timeout 60000	
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Node Mode : Active																																				
Status : Failed																																				
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File Transfer Task Enhancements

Backlog	Title	Description
B-10336	ADD UDM Move Operation to File Transfer task	<p>A new drop down selection field "UDM Operation" has been added to the UDM File Transfer tasks when using the FORM option to allow users to select between UDM COPY and MOVE functions.</p> <div data-bbox="669 1403 1451 1422" style="border: 1px solid #ccc; padding: 2px;"> Form or Script : Form UDM Operation : Move </div>

New System Operation Enhancements

Backlog	Title	Description
B-10688	Enable & Disable Trigger System Operations Actions	<p>Two new System Operation Actions have been added to allow Triggers to be Enabled and Disabled.</p>  <p>The screenshot shows the 'System Operation Details' dialog box. It has two main sections: 'Action Criteria' and 'Action Details'. Action Criteria: Includes a 'Status' dropdown, an 'Exit Codes' text field, and three checkboxes: 'On Late Start', 'On Late Finish', and 'On Early Finish'. There is also a 'Description' text area. Action Details: Features a 'System Operation' dropdown menu currently showing 'Suspend Agent'. A list of actions is displayed below it, including 'Suspend Agent', 'Resume Agent', 'Suspend Agent Cluster', 'Resume Agent Cluster', 'Suspend Cluster Membership', 'Resume Cluster Membership', 'Set Agent Task Execution Limit', 'Set Cluster Task Execution Limit', 'Set Virtual Resource Limit', 'Run Task Instance Command', 'Launch Task', 'Trigger Now', 'Enable Trigger', and 'Disable Trigger'. To the right, there is a 'System Notification' dropdown set to 'Operation Failure' and an 'Agent Variable' checkbox. Bottom Section: Shows the 'System Operation' dropdown set to 'Enable Trigger', 'System Notification' set to 'Operation Failure', and a 'Trigger Reference' dropdown.</p>


New Task Functions

Backlog	Title	Description
B-10785	Credential Key Location and Passphrase Functions for Resolvable Credentials	<p>Two new functions have been added to allow access to the Credential Key Location and Passphrase fields in Resolvable Credentials.</p> <p>Return Key Location of a Credential:</p> <p>Returns a token representing the Resolvable Credential Key Location that you want to embed in a script or Universal Task. <code>\${_credentialKeyLoc('credential-name')}</code></p> <p>Return Passphrase of a Credential:</p> <p>Returns a token representing the Resolvable Credential Passphrase that you want to embed script or Universal Task. <code>\${_credentialPassphrase('credential-name')}</code></p>

Platform Support Updates

Backlog	Title	Description
B-10642	Upgrade Packaged MySQL JDBC Driver	Upgraded MySQL JDBC driver from 8.0.12 to 8.0.18
B-11272	Upgrade Packaged Oracle JDBC Driver	Upgraded to 19.3
B-10319	Support Tomcat 9	Universal Controller version 6.7.0.0 and higher are validated to support Tomcat 9.
B-10323	Support Oracle JRE 11	Universal Controller version 6.8.0.0 and higher are validated to support Oracle JRE 11.
B-10324	Support Open JRE 11	Universal Controller version 6.8.0.0 and higher are validated to support Open JRE 11.
B-10322	Support for Microsoft SQLServer 2019	Universal Controller version 6.8.0.0 and higher are validated to support Microsoft SQLServer 2019.
B-10178	Upgrade packaged Microsoft JDBC Driver to release 8.2	Upgraded packaged Microsoft JDBC Driver to release 8.2. This required removal of support for MS SQL Server 2008.
B-10811	Validate UC Support for Oracle 19c	Universal Controller version 6.8.0.0 and higher are validated to support Oracle 19c.

Product Licensing

Backlog	Title	Description
E-01357	License Management and Reporting	<p>A number of enhancements have been made to support more flexible product licensing and improved visibility and reporting for customers.</p> <p>Note </p> <p>When upgrading from a previous release, the old License will be migrated into the new License Key Table:</p> <ul style="list-style-type: none"> • Any Trigger component will be ignored since it is no longer supported. • Days will be converted to an expiration date based upon the number of Days left in the migrated License. If Days was set to unlimited, the expiration date is set to 5 years from the upgrade. • Tasks will be the same in the new License. • If Agents were set to unlimited, both z/OS and Distributed Agents will also be set to unlimited. • If Agents had an explicit amount, the number of current z/OS Agents in the system is set as the z/OS Agent limit and the remaining amount is allocated to Distributed Agents. • Nodes will be set unlimited (-1) since it was not previously licensed. • USAP and UPPS will be set to True (allowed) since it was not previously licensed. • Customer will be set to "Migrated pre 6.8 License".

Reporting Enhancements

Backlog	Title	Description
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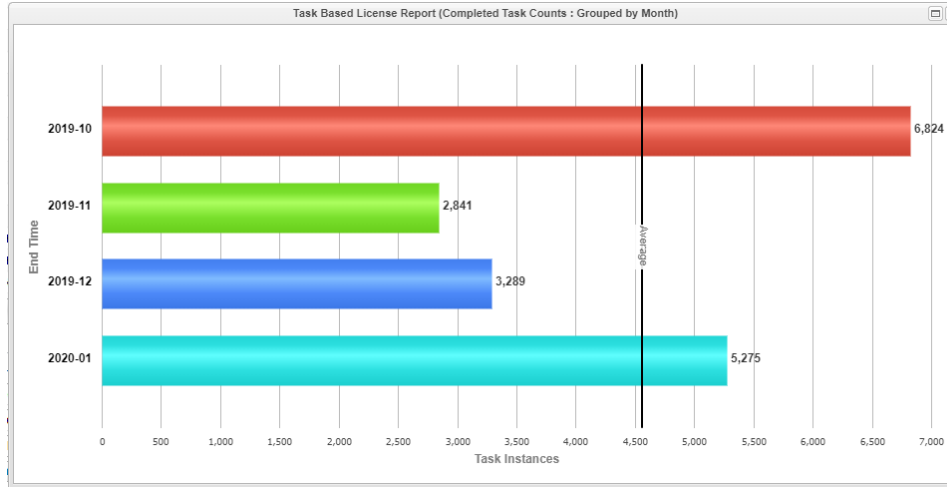
B-11292

Reports : Bar Charts - Show Average Line Option

For Bar Chart report types you can now optionally show an average line in the chart. In the Report Definition form under Chart Options, simply check the Show Average option and optionally specify the average line color.

Chart Options

Chart Size : Medium	Bar Thickness : 50
Group By : End Time	Group Threshold : -- System Default --
Stack By :	Group Order : Label
Sum Field :	Group Date/Time Format : yyyy-mm
Show Average : <input checked="" type="checkbox"/>	Average Color : #000000



B-11293

Reports : Bar Charts - Show Threshold Line Option

For Bar Chart report types you can now optionally show a threshold line in the chart. In the Report Definition form under Chart Options, simply check the Show Threshold option, specify the Threshold Integer Value and optionally specify the average line color, and Label.

Chart Options

Chart Size : Medium

Bar Thickness : 150

Group By :

Stack By :

Sum Field :

Group Threshold : -- System Default --

Group Order : Label

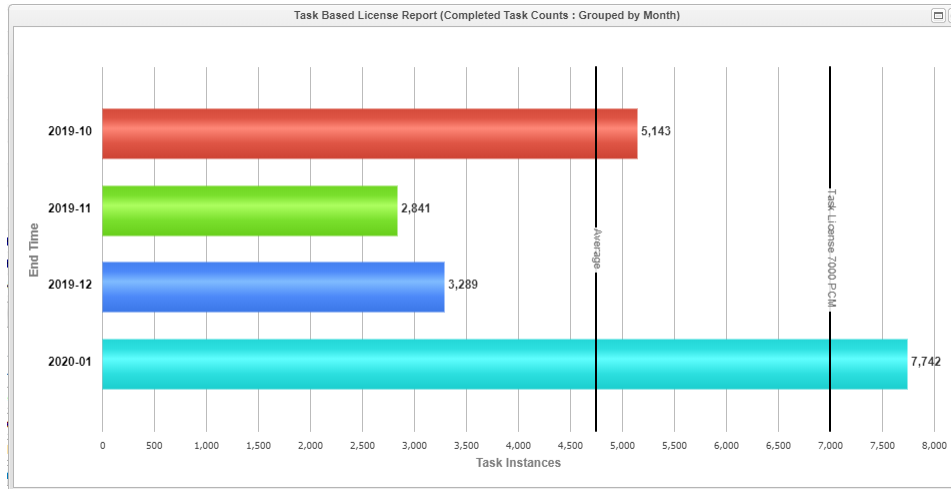
Show Average :

Show Threshold :

Threshold Value :

Threshold Color : #000000

Threshold Label : Threshold



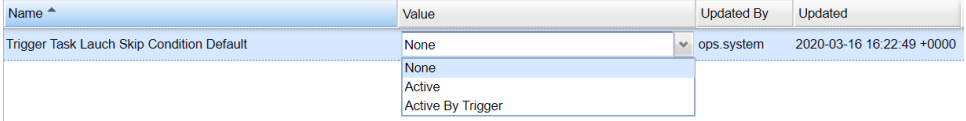
Security Enhancements

Backlog	Title	Description
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<p>B-10685</p>	<p>Restrict view of OMS servers</p>	<p>OMS Server definitions now support the following security features:</p> <div data-bbox="499 185 1444 289"> <p>Details</p> <p>OMS Server Address : <input type="text"/> Network Timeout (Seconds) : 30</p> <p>Member of Business Services : <input type="text"/></p> <p>Authenticate OMS Server : <input type="checkbox"/></p> </div> <ol style="list-style-type: none"> 1. Business Service assignment. 2. Security Permissions <div data-bbox="541 378 1488 634"> <p>Details</p> <p>Type : OMS Server</p> <p>Create : <input type="checkbox"/></p> <p>Read : <input type="checkbox"/></p> <p>Update : <input type="checkbox"/></p> <p>Delete : <input type="checkbox"/></p> <p>Commands : -- None --</p> <p>Name : *</p> <p>Member of Any Business Service or Unassigned : <input type="checkbox"/> Unassigned to Business Service : <input checked="" type="checkbox"/></p> <p>Member of Business Services : <input type="text"/></p> </div> <ol style="list-style-type: none"> 3. Visibility Restrictions <p>If the "Strict Business Service Membership Read Constraints" System Property is set to "true", OMS server definitions will not be visible to users who do not have at least read permission to the OMS server.</p> <p>OMS Server definitions are encompassed in the following Security Roles:</p> <ul style="list-style-type: none"> • ops_admin • ops_oms_admin • ops_service
<p>B-10352</p>	<p>Review accessibility of .. /sc/system/development /*.</p>	<p>During penetration testing the following Low priority item was discovered. It was possible to access certain files in the "/opwise/opwise/sc/system/development/" directory. Files such as "ISC_DeveloperConsole.js" are readable even for an unauthenticated user. Although this is not a security vulnerability, it exposes the version of the product that is used.</p> <p>This has been addressed as follows:</p> <ul style="list-style-type: none"> • A security constraint has been added to prevent access to these files by both unauthenticated and authenticated users of the web application. <ul style="list-style-type: none"> • Debug Modules are now excluded from the production war file.
<p>E-01281</p>	<p>Security Requirements for Local Logins and Passwords</p>	<p>A new Administration Configuration section for Password Settings has been added to a) group local password related properties and b) provide new options to specify requirements for locally defined passwords:</p> <div data-bbox="499 1190 1444 1438"> <p>Password Settings</p> <p>Password Complexity Characteristics</p> <p>Most Include : All Enabled Characteristics</p> <p>Uppercase Letters [A-Z] : <input type="checkbox"/></p> <p>Lowercase Letters [a-z] : <input type="checkbox"/> Lowercase Letters Minimum : 1</p> <p>Numeric Characters [0-9] : <input type="checkbox"/></p> <p>Special Characters : <input checked="" type="checkbox"/> Special Characters Minimum : 1</p> <p>Special Character Values : <input type="text"/></p> <p>Password Restrictions</p> <p>Minimum Length : <input type="text"/> Maximum Length : <input type="text"/></p> <p>Disallow Username in Password : <input type="checkbox"/></p> <p>Password Properties</p> <p>Password Expiration Enabled : <input type="checkbox"/></p> <p>Lock Account After Maximum Login Attempts : <input type="checkbox"/></p> <p><input type="button" value="Update"/> <input type="button" value="Refresh"/></p> </div>

B-10598	Reflected Cross-Site Scripting Vulnerability	In Compatibility View, IE will perform MIME-sniffing and may interpret the content as text/html even though the content type is text/plain. The anti-MIME-sniffing header has been added to all Web Service API responses. This header prevents certain browsers from interpreting the text/plain content as text/html.
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System Property Enhancements

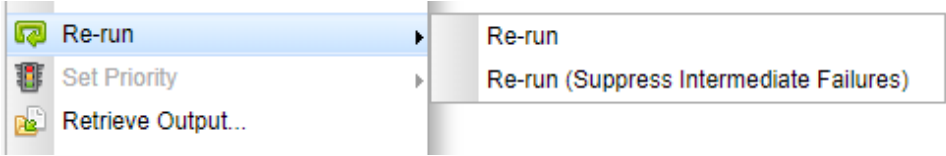
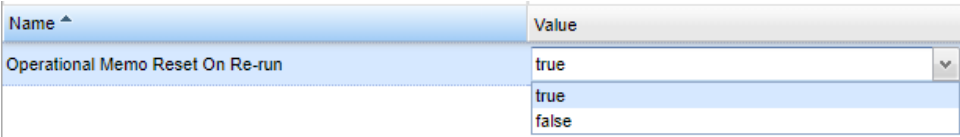
Backlog	Title	Description
B-04057	Property for default value of Task Launch Skip Condition on trigger.	<p>A new system property has been added to allow customers to change the default selection for the Task Launch Skip Condition when creating a new Trigger definition.</p> 
B-02385	Expose Agent Heartbeat Grace Period at Agent level and System Property level.	A new system property Agent Heartbeat Grace Period In Seconds has been added to allow the global default for the Agent Heartbeat Grace Period to be configured, this option is also configurable on the individual Agent Definition. this option controls the grace period in seconds that the controller will allow for a delayed heartbeat message.

Task History Enhancements

Backlog	Title	Description
B-11177	Include field Virtual Resource Priority in History table	The Virtual Resource Priority Field is now available in the Task History.

Task Rerun Enhancements

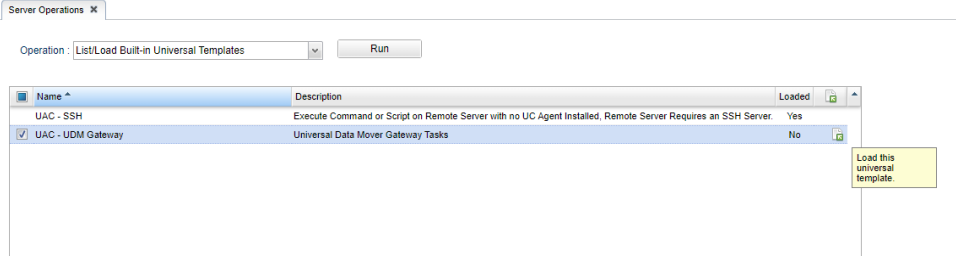
Backlog	Title	Description
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<p>B-08956</p>	<p>Allow Suppress Intermediate Failures for manual re-runs</p>	<p>A new "Re-run (Suppress Intermediate Failures) Permitted" System Property has been added (Default = true). When set to true specifies that in addition to the Re-run command, a Re-run (Suppress Intermediate Failures) command will be available in the client.</p>  <p>The Re-run (Suppress Intermediate Failures) command is only applicable for task instances that qualify for Re-run and do not already have automatic Retry Options enabled.</p> <p>The Re-run (Suppress Intermediate Failures) option result in the following:</p> <ul style="list-style-type: none"> • All Actions (Abort, Email Notification, Set Variable, SNMP Notification, and System Operation) defined for the task instance on a Failed status will not be processed. • Workflow conditional path processing; any Successors waiting on a failure path will not be released. • Task Monitors will not be notified of the Failed status. Also, any Task Monitor task that has a Time Scope in the past will disqualify any matching task instance in the past with a Failed status if the task instance is scheduled for automatic retry and for which Suppress Intermediate Failures has been enabled. • Any Workflow containing the Failed task instance will not transition to the Running/Problems status.
<p>B-10749</p>	<p>Allow resetting of Operational Memo on Re-run to be optional through property configuration.</p>	<p>A new "Operational Memo Reset On Re-run" System Property has been added (Default = true). When set to false the Task Instance Operational Memo field will no longer be reset when the task is re-run.</p> 

Transient Agents

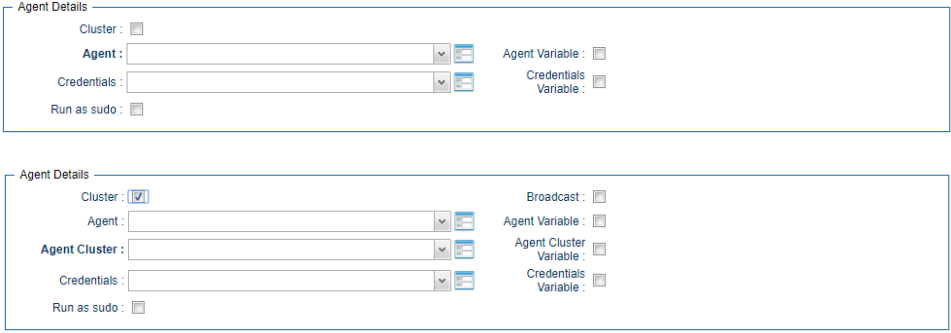
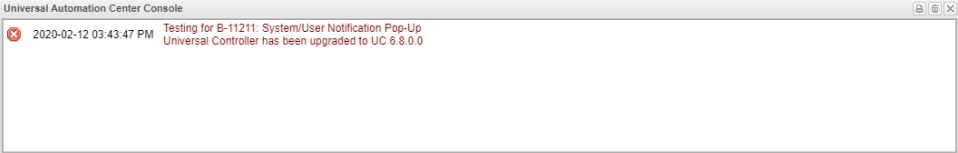
Backlog	Title	Description
<p>B-10805</p>	<p>Transient Agent Support</p>	<p>In order to better support scenarios where an agent is deployed in a Docker (or other) containerized environment and is therefore is dynamic in nature, a new universal Agent UAG option was introduced with UA 6.8.0.0 to mark an agent as Transient. When a Transient agent is shutdown (i.e. goes offline) it will be deleted from the Universal controller.</p> <p>If the agent is reference in any task definitions the dynamic delete will fail. It should be understood that Transient agents should never be specified directly in any task definition, they are designed to accept work via an Agent Cluster, so when configuring a Universal Agent to operate in a containerized environment you should ensure that the agent registers with one or more Agent Clusters via the agent_cluster uags.conf configuration option. Optionally you may want to consider using the netname uags.conf configuration option to provide a consistent identification for the agent each time it registers.</p>

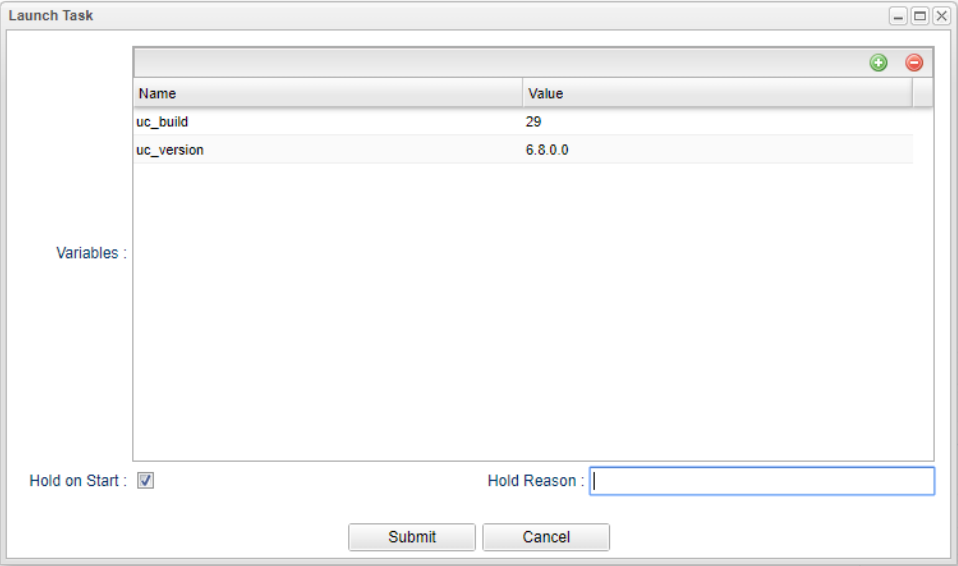
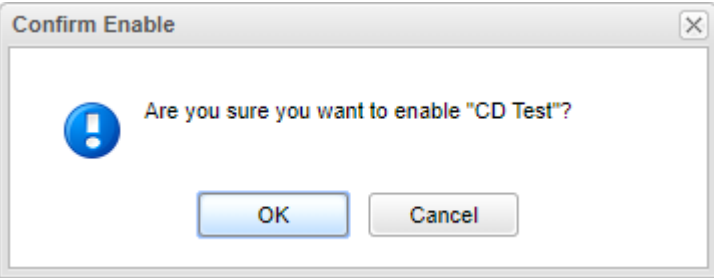
Universal Task Enhancements

Backlog	Title	Description
B-10773	Built-in Universal Templates	<p>Certain Universal Templates created and maintained by Stonebranch are now available directly within the Universal Controller product package. A new Administration, Server Operation called List/Load Built-in Universal Templates has been added to allow customer to activate these Universal templates. Listing and Loading the Built-in Universal Templates will require the ops_admin role or the ops_server_operation_admin role.</p>  <p>After activating a Built-in Universal Template user's with active sessions can Refresh their Navigation Tree to display the new Universal Task under the Automation Center tree menu. Documentation for the Built-in Universal Templates is available here.</p> <p>Built-in Universal Templates are READ only. If you require to make changes or use the template as a basis for your own Universal Task you will need to first copy the Built-in Universal Template to create your own Universal Template, Stonebranch will not provide support for any templates you create.</p> <p>Built-in Universal Templates cannot be promoted as they may be Universal Controller version specific, however tasks created from a Built-in Universal Template can be promoted to a Universal Controller instance that is at the same or higher version. When promoting a Universal Task that references a built-in Universal Template, the Universal Template will be included in the promotion payload to ensure that the Universal Task is compliant with the built-in Universal Template on the Promotion Target as well as for auditing and reconciling differences between the incoming built-in Universal Template and the original built-in Universal Template. Note, however, the original built-in Universal Template will <u>never</u> updated via promotion.</p> <p>Bulk export and import considerations, the bulk export and import of Universal Controller artifacts is designed for use when applying upgrades to a Universal Controller instance, the importer will fail if a Universal Template exists with the same name or SYSID as the built-in Universal Template being imported.</p>
B-09772	Universal Template - Role for Universal Template View only	<p>A new role, ops_universal_template_view, has been introduced to authorize read-only access to Universal Templates.</p> <p>The following changes are expected if a user without the ops_template_admin role is granted the ops_universal_template_view role.</p> <ul style="list-style-type: none"> • Create, Update, and Delete operations will remain prohibited for Universal Template records. • Read authorization for a Universal Template record will be granted. <ul style="list-style-type: none"> • This includes related data such as Universal Template Field and Universal Template Field Choice records. <p>The ops_universal_template_admin role will contain the new ops_universal_template_view role.</p>

User Interface Changes

Backlog	Title	Description
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B-11189	Relabel File Monitor and FTP File Monitor Tasks and Triggers	<p>The following definition types have been relabeled:</p> <ul style="list-style-type: none"> • File Monitor Tasks = Agent File Monitor Tasks • File Monitor Triggers = Agent File Monitor Triggers • FTP File Monitor = Remote File Monitor Tasks • FTP File Monitor Triggers = Remote File Monitor Triggers 								
B-11178	Address behavior change in Chrome with respect to icons appearing as "..."	<p>Users using Chrome may have noticed issues displaying icons in the Universal Controller interface when not using a zoom level of 100%. This issue was introduced in Chrome Version 77.0.3865.75 (Official Build). This has been resolved so that icons now display correctly at all zoom levels.</p>								
B-10812	Task Agent & Agent Cluster User Interface Enhancements	<p>The definition of Agent, Agent Cluster, Agent Cluster Broadcast, Agent Credential, and related options for all tasks has been moved to it's own section in the task definition form.</p> 								
B-11211	System wide user notifications	<p>System Administrators now have the ability to send system wide notifications to users when they login. A new System Property "Login Notification" has been added to allow the system admins to define a message that will be displayed when a users completes a successful login to the Universal Controller.</p> <table border="1" data-bbox="737 935 1688 1052"> <thead> <tr> <th>Name ^</th> <th>Value</th> <th>Updated By</th> <th>Updated</th> </tr> </thead> <tbody> <tr> <td>Login Notification</td> <td>Testing for B-11211: System/User Notification Pop-Up Universal Controller has been upgraded to UC 6.8.0.0</td> <td>ops.admin</td> <td>2020-02-12 20:27:25 +0000</td> </tr> </tbody> </table> <p>When a user logs into the Universal Controller the defined message will be displayed in the "Console" window, the console window will need to be manually closed by the user.</p> 	Name ^	Value	Updated By	Updated	Login Notification	Testing for B-11211: System/User Notification Pop-Up Universal Controller has been upgraded to UC 6.8.0.0	ops.admin	2020-02-12 20:27:25 +0000
Name ^	Value	Updated By	Updated							
Login Notification	Testing for B-11211: System/User Notification Pop-Up Universal Controller has been upgraded to UC 6.8.0.0	ops.admin	2020-02-12 20:27:25 +0000							
B-10743	Add multi-update support for Scripts.	<p>Scripts now support the "Update" and "Update Filtered" options for multi-update. The following fields are supported:</p> <ul style="list-style-type: none"> • Description • Member of business services • Resolve UAC variables 								

<p>B-11394</p>	<p>Show Variables: Add agent name not just id in variables section of a task instance and make it available by API call</p>	<p>The following variables have been added to the Show Variables option and will also be returned by the "List Task Instance Variables" Web Service API:</p> <ul style="list-style-type: none"> • ops_agent_ip • ops_agent_mode • ops_agent_name • ops_agent_queue_name
<p>B-10741</p>	<p>Add Hold Reason to Launch Task with Variable when Hold on Start is enabled</p>	<p>When Launching a Task With Variables and specifying the Hold on Stat option users can now optionally enter the Hold Reason.</p> 
<p>B-11230</p>	<p>Confirmation Prompt on Trigger Enable/Disable</p>	<p>A new System Property Confirm Enable/Disable Trigger Command has been added to control whether a confirmation prompt issued when Enabling or Disabling a Trigger, the default value of this new property is yes.</p> 

B-10817	Support Assign/Unassign of Trigger Execution Users when selecting multiple triggers and then right-click.	<p>Assign Execution User</p> <p>For this command, multi-selection is now supported.</p> <p>Unassign Execution User</p> <p>As long as all selected records have an assigned execution user, multi-selection is allowed.</p>
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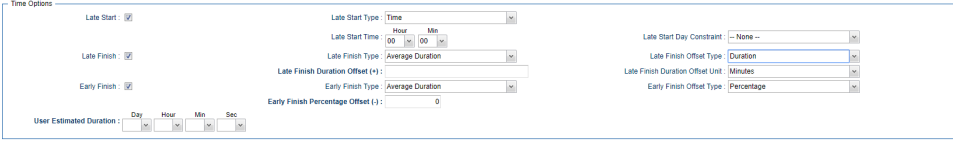
Virtual Resource Enhancements

Backlog	Title	Description
B-10315	Increase the "volume" of Virtual Resource Priority to 1-100	Virtual Resource Priorities can now be specified in the range 1 to 100 (previously 1 to 10).

Web Service API

Backlog	Title	Description
B-10742	Web Service API : Task Instance Update Operational Memo	This feature supports updates to the Operational Memo field of a failed task instance automatically via an API call.
B-05250	Web Service API : Bundleless Promotion	<p>The new Promote Web Service API supports directly promoting (i.e. without a bundle) one or more items of a specific type to a promotion target.</p> <p>The existing List Web Service APIs can be used to query for definitions based on specific criteria (e.g. Member of Business Services); the output can now be used to promote the matching items using the new Promote Web Service API.</p>

Workload Analytics Enhancements

Backlog	Title	Description
B-09726	Late finish Enhancements	<p>Late Finish and Early Finish options can now be set to compare against the Tasks Average Duration. The User Estimated Duration field will be required for Early Finish Type Average Duration or Late Finish Type Average Duration. The User Estimated Duration will be used when the Average Duration is not available; for example, on the first launch of a task.</p>  <p>When selecting the Average Duration, you have the option to use the Average Duration as is or specify a duration or percentage offset, for example Late Finish based on average Duration plus 1 minute, or Late finish based on average Duration plus 20%.</p>

B-05280	Additional logging information in Controller log (late start/finish)	Late Start or Finish events now create log entries for cases where log file monitoring is used for integration with external tools.
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Universal Controller 6.7.0.0 Release Notes

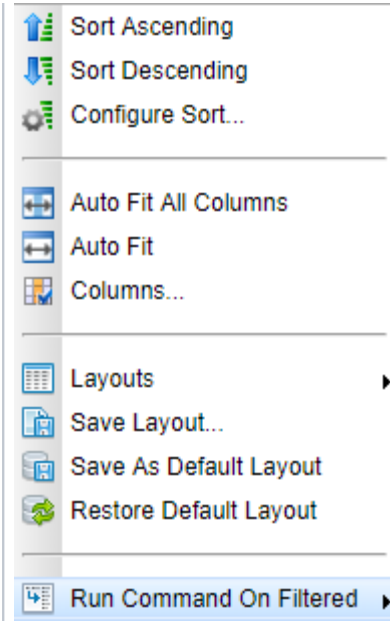
- [Release Notes](#)
 - [Activity Enhancements](#)
 - [Agent Cluster Broadcast Enhancements](#)
 - [File Transfer Task / FTP File Monitor Enhancements](#)
 - [Platform Support Updates](#)
 - [Reporting Enhancements](#)
 - [SAP Task Enhancements](#)
 - [Security Updates](#)
 - [Universal Task Enhancements](#)
 - [Virtual Resource Enhancements](#)
 - [Workflow Task Operational Enhancements](#)
 - [Web Service API Enhancements](#)

Release Notes

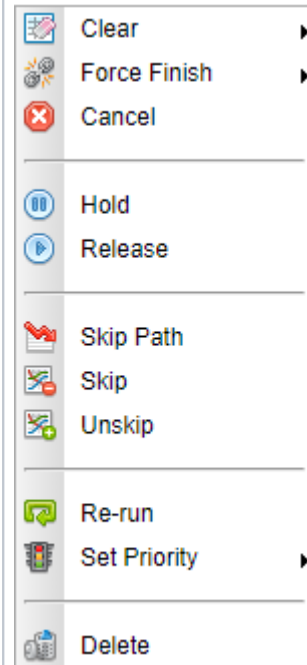
Universal Controller release 6.7.0.0 contains the following high-level features; for a complete list of all the included features and fixes, please refer to the [Universal Controller 6.7.x Maintenance list](#).

Activity Enhancements

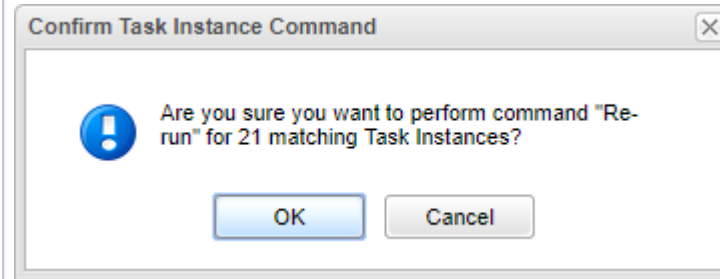
Backlog	Title	Description
B-05326	Activity - Ability to issue commands (that support multiple selection) from a list based on current filter.	<p>The Activity Monitor supports a maximum of 50 results per display page. This has previously impeded the ability to issue concurrent commands to more than 50 active tasks at once. The Activity Monitor now supports the ability to issue commands against all task instances in the current filtered activity list.</p> <p>Once you have filtered the Activity Monitor to contain the tasks that you want to issue a command against, simply right click on the List Header and select the Run Command on Filtered option:</p>



You will be presented with a list of available commands to execute against all tasks in the filtered list:



Once you select a command, you will see a confirmation dialog box where you can confirm or cancel this action:



B-10601	Task Lists - Ability to issue commands (that support multiple selection) from a list based on current filter.	Similar to B-05326, the various Task lists now supports the "Run Command On Filtered" option to issue commands against all task instances in the current filtered task list.
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Agent Cluster Broadcast Enhancements

Backlog	Title	Description
B-04367	Add Cluster Broadcast for UDM File Transfer Tasks Utility Agent	

File Transfer Tasks using the UDM Transfer Protocol now support the Agent Cluster Broadcast functionality for the Tasks Utility Agent.

For Example, a Linux/Unix Agent Cluster contains the following three Agents:

Linux/Unix Agent Cluster Details: B-04367 Cluster

Linux/Unix Agent Cluster Agents In Cluster Notifications Tasks Versions

3 Agents In Cluster Edit

Agent	Status	Membership Suspended	Agent Cluster Last Resolution	Updated By	Updated
uaucdev03 - uaucdev03	Active	No		ops.admin	2019-05-08 19:49:34 +0000
uaucdev02 - uaucdev02	Active	No		ops.admin	2019-05-08 19:49:34 +0000
uaucdev01 - uaucdev01	Active	No		ops.admin	2019-05-08 19:49:34 +0000

In order to configure a UDM file Transfer Task to transfer files from agent UCDDKR001 - UCDDKR001 to each of the Agents in this Agent Cluster, you would configure the UDM file Transfer Task as follows:

File Transfer Details

Transfer Protocol: UDM

Utility Agent: [] Transfer Type: Binary

Utility Agent Variable: [] Encrypt: NO

Utility Agent Cluster: [] Compress: NO

Utility Agent Cluster Variable: [] Codepage: -- None --

Utility Cluster Broadcast: B-04367 Cluster File Creation Option: REPLACE

Utility Credentials: [] Trim Trailing Spaces: []

Utility Credentials Variable: [] Network Fault Tolerant: [x]

Runtime Directory: []

Form or Script: Form

Source Filename(s): /tmp/ops_user.xml Destination Filename(s): /tmp

Use Regular Expression: []

Source File System: -- None -- Destination File System: -- None --

Source UDM Agent: UCDDKR001 - UCDDKR001 Destination UDM Agent: \${ops_agent_name}

Source UDM Agent Option: UDM Agent Destination UDM Agent Option: UDM Agent Variable

Source Credentials: [] Destination Credentials: []


Source Credentials Variable: [] Destination Credentials Variable: []

Append Source Open Options: [] Append Destination Open Options: []

Append UDM Options: []

Exit Code Processing: Success Exitcode Range

Exit Codes: 0

		<ul style="list-style-type: none"> • Utility Cluster Broadcast This will Launch an Instance of the UDM File Transfer Task on each of the three Agents in the Agent Cluster Definition. • Source UDM Agent This specifies the single Agent where the file is being transferred from. • Source File Name This specifies the file to be transferred to each of the three agents in the Agent Cluster Definition. • Destination UDM Agent Option = UDM Agent Variable This allows the specification of a variable in place of a hard coded destination agent name. • Destination UDM Agent The built in variable <code>#{ops_agent_name}</code> will resolve to the agent assigned to each task spawned by the Cluster Broadcast function, one task for each of the three agents in the Agent Cluster Definition. • Destination File Name Specifies the location to transfer the file(s) to on each of the destination agents. <p>When you Launch a UDM File Transfer Task, the Controller will create a unique instance of the Task for each of the three agents in the Agent Cluster Definition. Consequently, the <code>/tmp/ops_user.xml</code> file on UCD-DKR001 will be transferred to <code>/tmp/ops_user.xml</code> on each of the three agents in the Agent Cluster Definition.</p> <p>Tip </p> <p>If you also include the <code>#{ops_agent_name}</code> variable in the UDM File Transfer Task Name, each of the spawned task instances will contain the name of the agent that it is associated with.</p> <p>For Example:</p> <table border="1" data-bbox="556 738 1501 803"> <tr> <td>B-04367 -- uaucdev03 - uaucdev03</td> <td>File Transfer</td> <td>Success</td> </tr> <tr> <td>B-04367 -- uaucdev02 - uaucdev02</td> <td>File Transfer</td> <td>Success</td> </tr> <tr> <td>B-04367 -- uaucdev01 - uaucdev01</td> <td>File Transfer</td> <td>Success</td> </tr> </table>	B-04367 -- uaucdev03 - uaucdev03	File Transfer	Success	B-04367 -- uaucdev02 - uaucdev02	File Transfer	Success	B-04367 -- uaucdev01 - uaucdev01	File Transfer	Success
B-04367 -- uaucdev03 - uaucdev03	File Transfer	Success									
B-04367 -- uaucdev02 - uaucdev02	File Transfer	Success									
B-04367 -- uaucdev01 - uaucdev01	File Transfer	Success									
B-10316	Ignore Inactive or Suspended Agents for Cluster Broadcast	<p>When you create or update an Agent Cluster definition, you now have the option to prevent agents from being used by the Cluster Broadcast function if an agent, or its membership in the Cluster, is either Suspended or Inactive. Two new check-boxes in the Agent Cluster Details have been provided to facilitate this new functionality. By default, these options are unchecked; to use the new functionality, you must check the required option(s).</p> <div data-bbox="556 933 1501 982"> <p>Broadcast Options</p> <p>Ignore Inactive Agents : <input checked="" type="checkbox"/> Ignore Suspended Agents : <input checked="" type="checkbox"/></p> </div>									
B-05576	Add capability for Cluster Broadcast Variable in tasks where Cluster Broadcast is used.	All tasks that can use the Cluster Broadcast functionality now support selection of the Agent Cluster for Cluster Broadcast via a variable.									

File Transfer Task / FTP File Monitor Enhancements

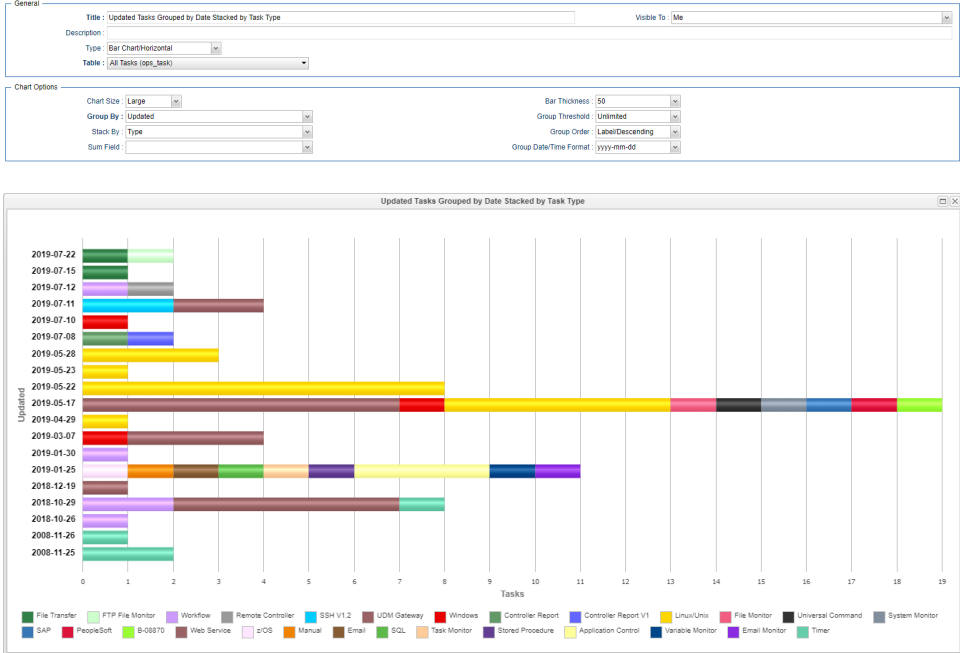
Backlog	Title	Description
B-10763	System configuration of allowable protocols for File Transfer and FTP File Monitor Tasks	System administrators now can optionally restrict which protocols are available for File Transfer and FTP File Monitor tasks. Two new system properties - "File Transfer Task Exclude Protocols" and "FTP File Monitor Task Exclude Protocols" - allow the administrator to select which file transfer protocol(s) (FTP, SFTP, FTPS) should be unavailable for selection within the corresponding task type.

Platform Support Updates

Backlog	Title	Description
B-10223	Upgrade packaged Oracle JDBC Driver to ojdbc8	Universal Controller is now shipped with the Oracle JDBC Driver ojdbc8 version 18.3.
B-10314	Validated Support for Open JRE 8	Universal Controller versions 6.6.0.0 and higher are validated to support Open JRE 8.
B-10318	Validated Support for MySQL 8.0	Universal Controller versions 6.6.0.0 and higher are validated to support MySQL 8.0.
B-10320	Validated Support for Oracle 18c	Universal Controller versions 6.6.0.0 and higher are validated to support Oracle 18c.
B-10321	Validated Support for SQL Server 2017	Universal Controller versions 6.6.0.0 and higher are validated to support SQL Server 2017.

Reporting Enhancements

Backlog	Title	Description
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<p>B-10376</p>	<p>Report Chart Group by for Date/Time fields to specify Range of Grouping</p>	<p>Previously report charts that grouped data by any of the available date/time fields based the grouping on the way the date/time field is stored in the database (typically at the millisecond level).</p> <p>This enhancement allows for the creation of more meaningful reports that can group chart data with the following levels of granularity:</p> <ul style="list-style-type: none"> • Group by Year : yyyy ? YYYY • Group by Month : yyyy-mm ? YYYY-MM • Group by Day : yyyy-mm-dd ? YYYY-MM-DD • Group by Hour : yyyy-mm-dd hh ? YYYY-MM-DD HH24 • Group by Minute : yyyy-mm-dd hh:mm ? YYYY-MM-DD HH24:MI <p>For example, the following report shows the number of Task Definitions updated each day stacked by the Task Type:</p> 
<p>B-10828</p>	<p>New Example Reports</p>	<p>The following build in reports have been added:</p> <ul style="list-style-type: none"> • UAC - Task Based License Report (Completed Task Counts : Grouped by Month / Stacked by Type) • UAC - Task Based License Report (Completed Task Counts : Grouped by Month) • UAC - Hourly Completed Task Throughput Last 24 Hours • UAC - Hourly Completed Task Throughput Last 24 Hours (Stacked by Type)

SAP Task Enhancements

Backlog	Title	Description
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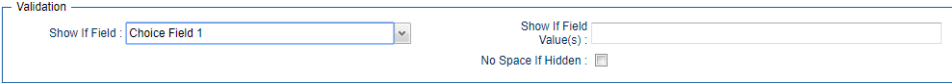
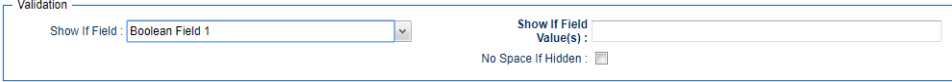
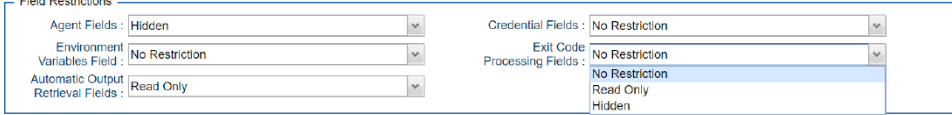
B-10695	SAP Load balanced Connection in UC should support the client parameter.	The SAP Connection definition for Connection Type = Load Balanced now supports the SAP Client parameter.
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Security Updates

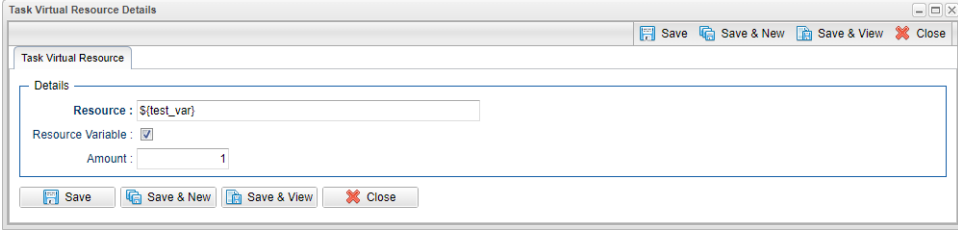
Backlog	Title	Description
B-10351	Review & Fix @Consumes and @Produces annotations for all Web Service APIs.	<p>During PEN (penetration testing), it was noted that some of the Universal Controller Restful Web Services APIs did not perform adequate HTTP Content Type Validation.</p> <p><i>When POSTing or PUTting new data, the client will specify the Content-Type (for example, application/xml or application/json) of the incoming data. The server should never assume the Content-Type; it should always check that the Content-Type header and the content are the same type. A lack of Content-Type header or an unexpected Content-Type header should result in the server rejecting the content with a 406 Not Acceptable response.</i></p> <p>Note  Deprecated APIs have not been addressed with this change. It is recommended to use the newer API that replaces the depreciated API function.</p>
B-09908	Allow configuration of the system property "jdk.xml.entityExpansionLimit"	<p>During PEN (penetration testing), it was noted that vulnerability to XML Expansion Attacks was controlled based on the Java Environment configuration. We have decided to a) remove the possibility of such an attack, and b) provide configuration in Universal Controller to override the Java configuration.</p> <p>An administrator will now be able to specify the Entity Expansion Limit property jdk.xml.entityExpansionLimit in the opswise.properties.</p> <p>Universal Controller will initialize the system property to a default value of 1 if the property is not specified in the opswise.properties or on start-up with -Djdk.xml.entityExpansionLimit=<limit>. Therefore, for a default deployment, Universal Controller will now limit the number of entity expansions to 1.</p>
B-10597	Restrict Access to Database Information	<p>The System Details Widget can be accessed by all users, and, by default, it displays information about the Universal Controller Database Connection.</p> <p>A new Administration Property (System Details Database Information Restricted) has been introduced to restrict the Database Connection information to users with the ops_admin role and/or the ops_server_operation_admin role. The default value of False preserves the behavior of previous Universal Controller releases. Setting a value of True will restrict the visibility of this information.</p>
B-10276	Allow users to see or display only those Business Services they have permissions for	<p>A new System Property has been introduced to change the product behavior regarding how Business Services are displayed. Default Behavior is that all users can see all Business Services in all definitions. By setting the "Business Service Visibility Restricted" property to true, users will only see Business Services that they have explicit permission to at least read. It should be noted that this is based on any permission and is not granular to specific definition types; for example, a user who has Update permission to Tasks for Business Service "ABC" will also see Business Service "ABC" when browsing Agent Definitions even if the user have not been granted explicit read access.</p>

Universal Task Enhancements

Backlog	Title	Description
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<p>B-06219</p>	<p>Choice Field Dependency - Show If Field/Show If Field Value</p>	<p>For Universal Tasks when creating a new Universal Template, you now can specify to Show or Hide certain user-defined fields depending on the value of a choice field.</p> <p>Firstly, create the Choice Field and Choice Values you want to use to decide if other fields are displayed.</p> <p>When Creating a Field that you want to be shown only if specific choices are selected from the Universal Task Details drop-down, you now can select a choice field in the Validation section of the Universal Task Field definition and specify which values would display this new field in the Universal Task Details. You additionally can control whether blank space is reserved in the Universal Task Details when this field is hidden.</p> 
<p>B-06293</p>	<p>Boolean Field Dependency - Show If Field/Show If Field Value</p>	<p>For Universal Tasks, when creating a new Universal Template, you now can specify to Show or Hide certain user-defined fields depending on the value of a Boolean field.</p> <p>Firstly, create the Boolean Field you want to use to decide if other fields are displayed.</p> <p>When Creating a Field that you want to be shown only if a specific selection is specified from the Universal Task Details drop-down, you now can select a Boolean field in the Validation section of the Universal Task Field definition and specify which value would display this new field in the Universal Task Details. You can additionally control whether blank space is reserved on the Universal Task Details when this field is hidden.</p> 
<p>B-09484 and B-09507</p>	<p>Read Only & Hide options for Universal Template Fields</p>	<p>Customers now have the ability to deliver Universal Tasks that have certain defaulted fields marked as Read Only or completely Hidden from the end user. For example, if a specific Universal Task can run only on a Specific Server with a Specific Credential, the Universal Template Administrator now can Hide these fields in the Universal Task or mark these fields as Read Only.</p> <p>The default fields will be grouped at a high level for visibility purposes; each group can be restricted only as a whole:</p> <ul style="list-style-type: none"> • Agent Fields (Agent, Agent Variable, Agent Cluster, Agent cluster Variable, Cluster Broadcast) • Credential Fields (Credentials, Credentials Variable, Run with Highest Privileges, Runtime Directory, Interact with Desktop, Create Console) • Environment Variables Fields (Environment Variables) • Exit Code Processing Fields (Exit Code Processing, Exit Codes, Output Type, Scan Output for, Output File) • Automatic Output Retrieval Fields (Automatic Output Retrieval, Wait For Output, Failure Only, Start Line, Number of Lines, Scan Text, Automatic Output File) <p>The following options are available for each of the above Field Groupings:</p> <ul style="list-style-type: none"> • No Restriction: This is the Default value whereby no restriction is in place. This is the same behavior as prior to these new restrictions. • Read Only: Makes all the fields in the group appear as Read Only on the Task Universal form with respect to this Universal Template. • Hidden: Makes all the fields in the group Hidden on the Task Universal form with respect to this Universal Template. 
<p>B-10609</p>	<p>Universal Template - Copy</p>	<p>Universal Template Administrators can now copy an existing Universal Template from the Universal Templates list. The new copy option has been implemented as a right-click option in line with the copy capability for other definition types.</p>

Virtual Resource Enhancements

Backlog	Title	Description
B-04017	Task Virtual Resource Variable Support	<p>When specifying Task Virtual Resources, you now can use a variable instead of having to select a specific Virtual Resource. If the variable does not resolve to a valid Virtual Resource when the task is launched, the task will go to a Start Failure Status with an appropriate message indicating the error.</p> 

Workflow Task Operational Enhancements

Backlog	Title	Description
B-05590	Allow the running of commands that make sense for task instances even if their workflow container is complete.	<p>Universal Controller now supports the following commands for task instances (excluding sub-workflows) in a completed Workflow task instance.</p> <ul style="list-style-type: none"> • Re-run • Force Finish • Force Finish/Cancel • Cancel <p>By completed, we mean that the Workflow task instance is in an Inactive end state (SKIPPED, FINISHED, or SUCCESS).</p> <p>Re-running a task instance in a completed Workflow will not re-run successor task instances, since the dependencies have already been satisfied. If a task instance is re-run in a completed Workflow and the task instance fails, conditional processing will not force finish the task instance; it will remain in Failed status.</p>

Web Service API Enhancements

Backlog	Title	Description
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B-09736	Web Service API - New Task Instance Status Query and Display Information	<p>The following new fields have been added as query parameters and added to the response payload of the Task Instance Query API:</p> <ul style="list-style-type: none">• Instance Number• Task Definition Name (Name Returns Alias)• Task Definition ID• Custom Field 1• Custom Field 2• Trigger ID• Trigger Name• Workflow Definition ID• Workflow Definition Name• Business Service (Already exists for Query but was not returned in the response)• Status Description
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Universal Controller 6.6.0.0 Release Notes

- [Release Notes](#)
 - [Attach Local Files to an Email](#)
 - [Bundle and Promote Security](#)
 - [Calendar and Trigger Enhancements](#)
 - [File Monitor Task Enhancements](#)
 - [New Output Functions and Out Retrieval Enhancements](#)
 - [New Security Roles](#)
 - [On Delete Validation for Credentials](#)
 - [Results Set Processing \(*Change in Default Behavior*\)](#)
 - [SAP Connection Enhancements](#)
 - [Server Operations](#)
 - [UI Changes / Enhancements](#)
 - [Universal Task Enhancements](#)
 - [Variables](#)
 - [Virtual Resource Enhancements](#)
 - [Web Service API Enhancements](#)

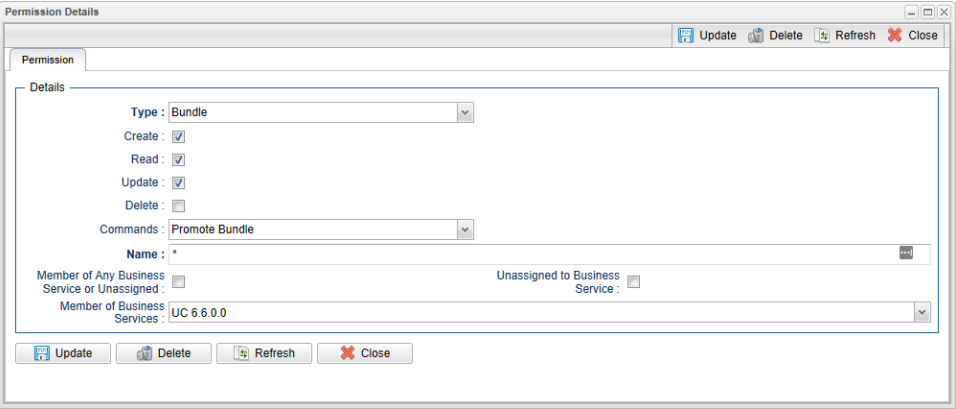
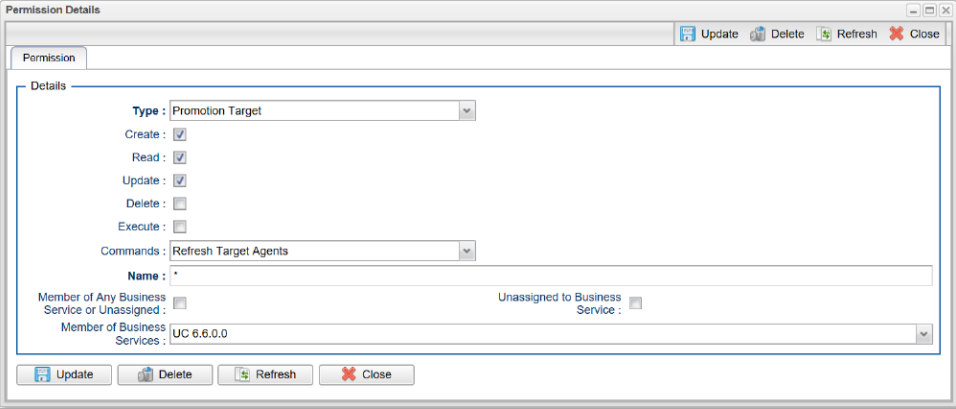
Release Notes

Universal Controller release 6.6.0.0 contains the following high-level features; for a complete list of all the included features and fixes, please refer to the [Universal Controller 6.6.x Maintenance list](#).

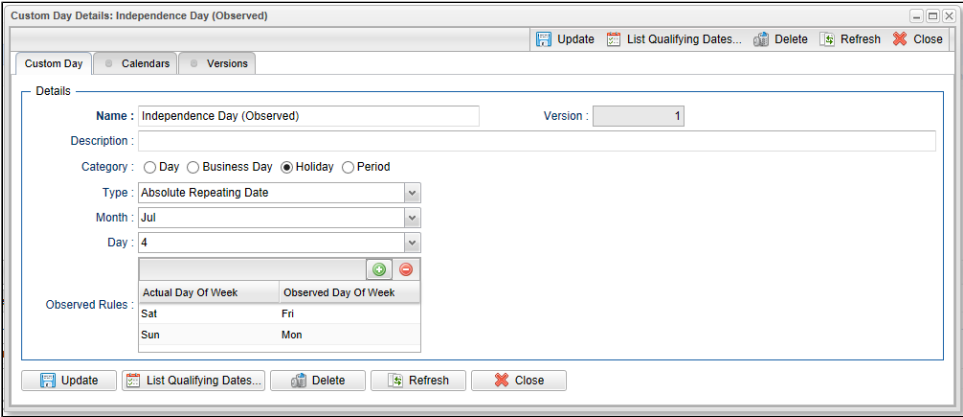
Attach Local Files to an Email


Backlog	Title	Description
B-03133	Ability to attach local files as email attachment	<p>This addresses the requirement to allow file attachments for Email tasks and also now supports binary files (such as pdfs) as attachments for Email Tasks and Email Notifications.</p> <p>Previously restrictions existed because file attachments to Email Notifications were treated as output objects which did not support binary file types. Similarly email Tasks do not have a relationship with an agent and so were unable to fetch a remote file to attach.</p> <p>To allow these capabilities customers can drop the required file attachments into a directory defined by a New opswise property to define a "single" directory location where files can be attached from. This is not configurable from the UI for security reasons, this should be enabled by the system admin rather than the UC admin. Every 10 minutes the opswise.properties will be read and if the opswise.email.attachments.local.path has changed, the new value in the opswise.properties will then be used within the Controller.</p> <p>The files to be attached would need to be on a file system accessible to all Universal Controller cluster nodes within the HA configuration so that regardless of which cluster node is Active, the file can still be accessed.</p> <p>Customers will be responsible for delivering files to the specified local email directory, and for maintaining (i.e. deleting) files in this directory. Customers should also be aware that all Email tasks (and potentially other types of tasks) will be able to access files in this directory.</p> <p>Once the opswise.email.attachments.local.path has been set, the option to "Attach Local File" will be available in the Email Notifications and Email Tasks.</p>

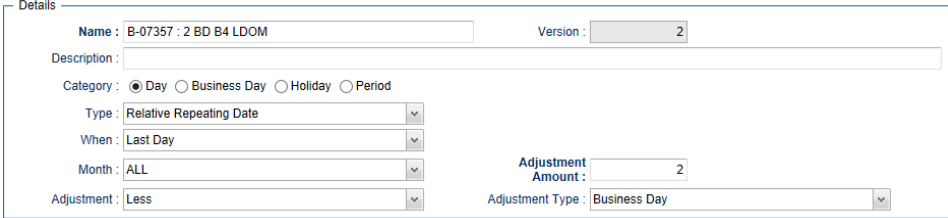
Bundle and Promote Security

Backlog	Title	Description
B-09939	Business Services Security and Visibility for Bundles	<p>In order to allow more granular administration bundles can now be assigned to business services and a new user / group permission type for "Bundle" has been added to control how users can interact with Bundles. The existing "ops_bundle_admin" remains to provide global access to the bundle feature.</p> 
B-09938	Business Services Security and Visibility for Promotion Targets	<p>In order to allow more granular administration promotion targets can now be assigned to business services and a new user / group permission type for "Promotion Target" has been added to control how users can interact with promotion targets. The existing "ops_promotion_admin" remains to provide global access to the promotion targets.</p> 
B-10286	Optionally allow bundle-less promotion for users without ops_promotion_admin role	<p>To augment the features delivered in B-09938 and B-09939 a new system property "Bundleless Promotion With Execute Permission Permitted" has been added to optionally allow promotion of definitions outside of a bundle without requiring the ops_promotion_admin role.</p> <p>By default this property is "false", meaning that the Promote... action is disabled unless a user has the ops_promotion_admin role. For a user with the ops_promotion_admin role, the Promote... dialog allows selection of any pre-existing promotion target.</p> <p>When the property is set to "true", the Promote... action will be available to users who have "execute" permission to at least one promotion target. Again, for a user with the ops_promotion_admin role, the Promote... dialog allows selection of any pre-existing promotion target.</p>

Calendar and Trigger Enhancements

Backlog	Title	Description						
B-06728	Calculate Observed Public Holidays	<p>This provides the ability to support "observed" public holidays without the need for a custom day list of dates. For example if July 4th falls on a Saturday the observed July 4th would be Friday July 3rd and if July 4th falls on a Sunday the observed July 4th would be Monday July 5th.</p>  <p>The screenshot shows a dialog box titled "Custom Day Details: Independence Day (Observed)". It has tabs for "Custom Day", "Calendars", and "Versions". The "Details" section contains the following fields and options:</p> <ul style="list-style-type: none"> Name: Independence Day (Observed) Version: 1 Description: (empty text box) Category: <input type="radio"/> Day <input type="radio"/> Business Day <input checked="" type="radio"/> Holiday <input type="radio"/> Period Type: Absolute Repeating Date (dropdown) Month: Jul (dropdown) Day: 4 (dropdown) Observed Rules table: <table border="1" data-bbox="661 560 1039 625"> <thead> <tr> <th>Actual Day Of Week</th> <th>Observed Day Of Week</th> </tr> </thead> <tbody> <tr> <td>Sat</td> <td>Fri</td> </tr> <tr> <td>Sun</td> <td>Mon</td> </tr> </tbody> </table> <p>Buttons at the bottom include Update, List Qualifying Dates..., Delete, Refresh, and Close.</p>	Actual Day Of Week	Observed Day Of Week	Sat	Fri	Sun	Mon
Actual Day Of Week	Observed Day Of Week							
Sat	Fri							
Sun	Mon							


<p>B-09506</p>	<p>Time Trigger expanded to include "Week" as a Complex Qualifier</p>	<p>For Example "Run on 1st Business Day of week".</p> <div data-bbox="625 191 1570 344" style="border: 1px solid #ccc; padding: 5px;"> <p>Day Details</p> <p>Day Style : Complex</p> <p>Date Adjective : 1st</p> <p>Date Noun : Business Day</p> <p>Date Qualifier : Week</p> <p>Date Adjustment : -- None --</p> </div> <p>IMPORTANT!</p> <p> A Time Trigger using "Week" Date Qualifier may skip qualifying times when using certain complex restrictions.</p> <ol style="list-style-type: none"> Create a Time Trigger with "Complex" Day Style using the following: <ul style="list-style-type: none"> Day Adjective: Every Date Noun: Day Date Qualifier: Week Date Adjustment: None List Qualifying Times for trigger. This should should list times for every day of the week. Add Complex Restriction to Time Trigger from step 1 using the following: <ul style="list-style-type: none"> Action: Do Not TriggerRestriction Adjective: Every Restriction Noun: Sunday Restriction Qualifier: Week* List Qualifying Times for trigger. This should list times for every day except Sunday; however, the List will only show times until the next Sunday. <p>* Month, Year also exhibit the problem. The work-around is to use "Simple" Day Style if possible instead of "Complex" Day Style. For example, Daily instead of Every Day of Week.</p>
<p>B-03218</p>	<p>Run Criteria expanded to include "Week" as a Complex Qualifier</p>	<p>For Example "Skip on 1st Business Day of Week".</p> <div data-bbox="667 998 1564 1286" style="border: 1px solid #ccc; padding: 5px;"> <p>Type : Skip Criteria</p> <p>Description :</p> <p>Task : Sleep 0</p> <p>Vertex Id : 2 1st BD of Week</p> <p>Business Day : <input type="checkbox"/></p> <p>Holiday : <input type="checkbox"/></p> <p>Specific Day(s) : <input type="checkbox"/></p> <p>Custom Day : <input type="checkbox"/></p> <p>Complex : <input checked="" type="checkbox"/></p> <p>Variable : <input type="checkbox"/></p> <p>Adjective : 1st</p> <p>Noun : Business Day</p> <p>Qualifier : Week</p> </div>

B-07357	Custom Days (Relative Repeating Date) Add "Last Day" & "Last Business Day" to the When Clause	<p>For Example "Run 2 Business Days before the Last Day of the Month".</p> 
B-04047	Automatic purging of old Custom Day dates from Date List	<p>A new System Property has been added to allow customers to automatically purge old dates in a Custom Day of type Date List. If the System Property "Purge Dates From Custom Day List Older Than" is set, then after midnight when the log is rolled over, part of the post log rollover will now purge any dates out of Custom Day (Date List) that are older than the number of days set as the System Property value.</p> <p>For example, if the System Property is set to 7, then any dates older than 7 days will be automatically removed from Date List – Custom Days.</p>
B-07148	Add Nth and Nth Amount to Time Trigger Restrictions - Complex Restriction - Adjective	<p>In the Restrictions section of the Time Trigger Definition you could previously specify 1st, 2nd, 3rd, 4th, First and Last. Support has been added for Nth and Nth amount.</p> <p>For example, this will enable restrictions for 10th Day of Month.</p>
B-09498	New System Property to Control the Minimum Frequency in Seconds for a Time Interval on a Time Trigger	<p>New System Property "Time Trigger Minimum Frequency in Seconds". This allows customers to restrict the creation of new Time Triggers with a time Interval less than the value specified in this property.</p>

File Monitor Task Enhancements

Backlog	Title	Description
B-03621	Be able to specify a minimum file size for Monitor Type = Create	When monitoring for new files with the File Monitor Task you can now optionally also specify "Minimum File Size" and the "Minimum File Scale" (i.e.Bytes, KB, or MB) as an additional filter criteria. This means that when a new file matching the "Monitor Files" criteria is found, the File Monitor will wait until the file also meets the Minimum File Size" specification is met.

New Output Functions and Out Retrieval Enhancements

Backlog	Title	Description
B-03412	Add function to retrieve predecessor task output by specific line.	<p>Two new functions have been added to allow access to specific lines from a task's output. As with the existing task output functions you will need to both Retrieve the output automatically and check the Wait for Output option to ensure that the task's output is available for processing.</p>  <p>These functions can be used in task set variable actions to allow access to specific lines from the output of a task.</p> <p><code>\${_outputLines('outputType', startLine, numberOfLines[, 'defaultValue', 'resultDelimiter'])}</code> or for sibling tasks <code>\${_outputLinesFromTask('siblingName', 'outputType', startLine, numberOfLines[, 'defaultValue', 'resultDelimiter'])}</code></p> <p>For Example STDOUT Contains:</p>

```
License_OS_Type UNIX
License_Type DEMO
License_Expiration_Date 2020.04.30 YYYY.MM.DD
License_NT_Servers 10000
License_UNIX_Servers 10000
License_OS400_Servers 10000
License_OS390_Servers 10000
License_OS390_Unix_Servers 10000
License_Key B1E9-AABD-E59A-8079-30BF-3B17-2E67-8D21
```

A set Variable Action For Status Success uses the new function:

Action Details

Variable Scope: Global System Notification: Operation Failure

Name: B03412_LastLine

Value: `${_outputLines('STDOUT',-1,1,'Not Found')}`

And the Global Variable is set as follows:

Details

Name: B03412_LastLine Version: 2

Value: License_Key B1E9-AABD-E59A-8079-30BF-3B17-2E67-8D21

`${_outputLinesByRegex('outputType', 'regexPattern', maxCount, numberOfLinesBefore, numberOfLinesAfter, 'defaultValue', 'resultDelimiter')}` or for sibling tasks `${_outputLinesByRegexFromTask('siblingName', 'outputType', 'regexPattern', maxCount, numberOfLinesBefore, numberOfLinesAfter, 'defaultValue', 'resultDelimiter')}`

For Example STDOUT Contains:

```
License_OS_Type UNIX
License_Type DEMO
License_Expiration_Date 2020.04.30 YYYY.MM.DD
License_NT_Servers 10000
License_UNIX_Servers 10000
License_OS400_Servers 10000
License_OS390_Servers 10000
License_OS390_Unix_Servers 10000
License_Key B1E9-AABD-E59A-8079-30BF-3B17-2E67-8D21
```

A set Variable Action For Status Success uses the new function:

Action Details

Variable Scope: Global System Notification: Operation Failure

Name: B03412_UCMD_License_Expiration

Value: `${_outputLinesByRegex('STDOUT','*YYYY.MM.DD')}`

And the Global Variable is set as follows:

		<div style="border: 1px solid #ccc; padding: 5px;"> <p>Details</p> <p>Name : <input type="text" value="B03412_UCMD_License_Expiration"/> Version : <input type="text" value="8"/></p> <p>License_Expiration_Date 2020.04.30 YYYY.MM.DD</p> <p>Value :</p> </div>
B-05005	Automatic output retrieval only on task failure	<p>This enhancement introduces a new check box "Failure Only" for task types that support automatic output retrieval. If the Failure Only option is checked the automatic output retrieval will only occur if the task status is FAILED (or transitions through a FAILED status).</p> <div style="border: 1px solid #ccc; padding: 5px;"> <p>Automatic Output Retrieval : <input type="text" value="Standard Output/Error"/> <input type="button" value="v"/></p> <p>Start Line : <input type="text" value="1"/> Failure Only : <input checked="" type="checkbox"/></p> <p>Scan Text : <input type="text"/> Number of Lines : <input type="text" value="100"/></p> </div>

New Security Roles

Backlog	Title	Description
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<p>B-09347</p>	<p>Service Role and Complementing Administration Roles</p>	<p>New security roles have been added to facilitate the setup of a "service" user who can be enabled to administrate and maintain the UC product to perform tasks such as upgrading, applying maintenance, configuration of system properties, etc. without needing the ops.admin role and consequently without access to workload definitions and task instance data.</p> <p>ops_service</p> <ul style="list-style-type: none"> • The user will be able to log in and view their home (default) dashboard, which contains a System Details widget, a Cluster Node Status widget, an OMS Server Status widget, and an Active Task Instances By Status widget. However the Active Task Instances By Status widget will remain blank unless the user the assigned Task Instance Read permission, as the Service role does not include access to such data. • The user will have Agent Read permission. • All users have OMS Server Read permission, therefore, no changes are necessary for granting Read permission. • All users have Cluster Node Read permission, therefore, no changes are necessary for granting Read permission. • The user will have Properties Read permission. • The user will have LDAP Settings Read permission and the user will be permitted to run the Test Connection command. • The user will have Single Sign-On Settings Read permission. • The user will have Universal Template Read permission, including all Universal Template related data, such as Universal Template Fields and Universal Template Field Choices. • The user will have Data Backup/Purge Read permission. • The user will have User Read permission, including all User related data, such as User Roles, Group Membership, and Permissions. • The user will have Group Read permission, including all User related data, such as Group Roles, Group Membership, Child Groups, and Permissions. <p>ops_ldap_admin</p> <ul style="list-style-type: none"> • The LDAP Settings administration role, when assigned, will give a user Read, and Update permission for the LDAP Settings configuration. This role is incorporated into the ops.admin role. <p>ops_oms_admin</p> <ul style="list-style-type: none"> • The OMS Servers administration role, when assigned, will give a user Create, Update, and Delete permission for OMS Servers. This role is incorporated into the ops.admin role. <p>ops_property_admin</p> <ul style="list-style-type: none"> • The Properties administration role, when assigned, will give a user Read, Update and Delete permission for the Properties configuration. This role is incorporated into the ops.admin role. <p>ops_server_operation_admin</p> <ul style="list-style-type: none"> • The Server Operations administration role, when assigned, will permit a user to Run any Server Operation. This role is incorporated into the ops.admin role. <p>ops_sso_admin</p> <ul style="list-style-type: none"> • The Single Sign-On Settings administration role, when assigned, will give a user Read, and Update permission for the Single Sign-On Settings configuration. This role is incorporated into the ops.admin role. <p>Other existing Roles that may be relevant to the ops_service function:</p> <ul style="list-style-type: none"> • ops_audit_view • ops_universal_template_admin
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On Delete Validation for Credentials

Backlog	Title	Description
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B-09385	Add on-delete validation for credentials	Deleting a Credential is now prohibited if any references exist for the Credential.
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Results Set Processing (*Change in Default Behavior*)

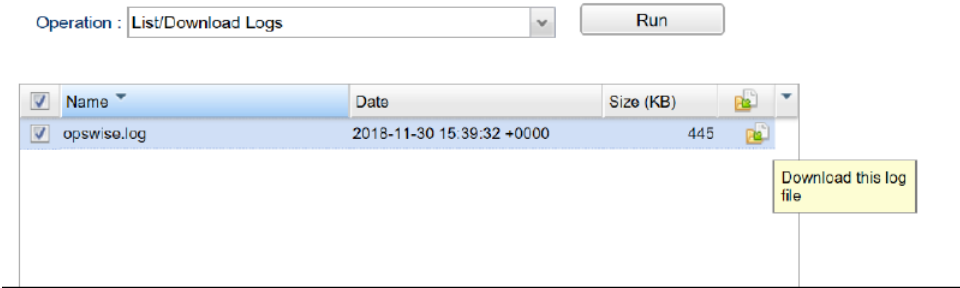
Backlog	Title	Description
B-09427	Add support for decimals to Task "Result Set Processing" comparison operators (>, >=, <, <=).	<p>For the greater than (>), greater than or equal (>=), less than (<), and less than or equal (<=) operators, the Universal Controller, by default, will now attempt to parse the String values as floating point values, rather than integer values, allowing proper numerical comparison when the values being compared are both floating point values, or a combination of integer and floating point values.</p> <p>While this is a behavior change from previous releases, we believe this would be the expected behavior and have made it the default.</p> <p>The following functionality in the Universal Controller relies on this functionality and should be regression tested. The regression testing should not be limited to the above operators, but all supported operators for the specific feature being regression tested.</p> <ul style="list-style-type: none"> • Email Monitor Task Instance > Content Processing • SQL Task Instance > Result Processing • Stored Procedure Task Instance > Result Processing • Variable Monitor Instance > Value Condition • Web Service Task Instance > Response Processing • Run Criteria > Variable

SAP Connection Enhancements

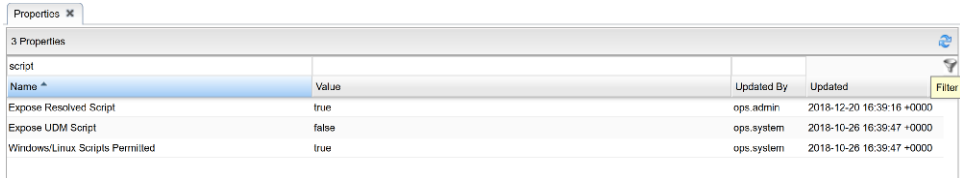
Backlog	Title	Description
B-09940	SAP Connection Enhancement - New Options added to SAP Connection Form	<p>The SAP Connection form has been enhanced to include the following SAP Connection Parameters, so that customers no longer have to use the RFC configuration file (sapnrwfc.ini) to specify these parameters.</p> <ul style="list-style-type: none"> • SAPROUTER • SNC_LIB • SNC_MODE • SNC_MYNAME • SNC_PARTNERNAME • SNC_QOP • SNC_SSO • MYSAPSSO2 • X509CERT • USE_SYMBOLIC_NAMES

Server Operations

Backlog	Title	Description
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B-10115	List/Download Opwise log files via the Client GUI	<p>New Server Operation that lists the available "opwise log" files for the current cluster node and allows the user to select one or more logs for download to their local machine for viewing.</p> 
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UI Changes / Enhancements

Backlog	Title	Description
B-10224	Relabeling of the Shorted Estimated End Time, and Longest Estimated End Time, for consistency.	In the Task Instance the computed estimated end times were previously displayed as Shortest Estimated End Time, and Longest Estimated End Time. For consistency with the Task Definition these have been relabeled to Lowest Estimated End Time and Highest Estimated End Time.
B-10217	Add simple search to Configuration – Properties List Grid	<p>The Configuration Properties List has been enhance to provide a "simple search" filtering option.</p> 

Universal Task Enhancements

Backlog	Title	Description
B-08870	Array Field Support	<p>New Universal Template Field Type to support input of name value pairs in Universal Tasks. Also includes the following new functions:</p> <p><i>convertArrayFieldFieldVariable</i> Provides formatting options for the array string.</p> <p><i>getArrayFieldVariableValue</i> Returns the value from a specific name.</p>

B-06366	Choice Field, Allow Empty	<p>When using the Choice Fields in a Universal Template you can now allow an empty choice. The Universal Template Field form will display a new Allow Empty Choice checkbox when the Choice field type is selected.</p> <p>When using this option users of the generated Universal Task will be able to clear this field in the form, also a blank selection will be available from the choice drop down.</p> <p>The variable associated with this field will return a null value if blank is selected.</p>
B-06294	Conditionally Required Fields	<p>When defining Fields in the Universal Template you can now make the fields conditionally required based on the specific value of a Boolean field now as well as the previously available Choice field.</p>

Variables

Backlog	Title	Description
B-05636	Increase supported variable value length from 1024 to 4000.	The maximum size for a variable value can now be specified up to 4000 characters in length.
B-10166	New Task Instance Variables for Task Statistics	<p>We have introduced four new built-in variables for a task instance, specifically, <code>ops_user_estimated_end_time</code>, <code>ops_avg_estimated_end_time</code>, <code>ops_highest_estimated_end_time</code>, and <code>ops_lowest_estimated_end_time</code>, which resolve to the task instance User Estimated End Time, Average Estimated End Time, Highest Estimated End Time, and Lowest Estimated End Time, respectively, in the server's time zone.</p> <p>For example,</p> <pre> \${ops_user_estimated_end_time} > 2018-10-16 15:01:54 -0400 \${ops_avg_estimated_end_time} > 2018-10-16 15:01:45 -0400 \${ops_highest_estimated_end_time} > 2018-10-16 15:01:45 -0400 \${ops_lowest_estimated_end_time} > 2018-10-16 15:01:44 -0400 </pre> <p>If the date/time value for any of the above is NULL, the variable will remain unresolved, consistent with other date/time built-in variables.</p> <p>You can use the <code>\$_resolve(...)</code> function to force resolution, for example.</p> <pre> \$_resolve("ops_user_estimated_end_time", "") \$_resolve("ops_avg_estimated_end_time", "") \$_resolve("ops_highest_estimated_end_time", "") \$_resolve("ops_lowest_estimated_end_time", "") </pre>

Virtual Resource Enhancements

Backlog	Title	Description
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B-09853	Virtual resource order processing optimizations	<p>A number of optimizations have been implemented to improve the performance for Virtual Resource Processing where tasks are associated with large numbers of Virtual Resources:</p> <ul style="list-style-type: none"> • Creation of virtual resource events consolidated into VirtualResourceEvent helper methods for easier maintainability and better visibility. • Additional logging for debugging purposes. • Number of queries invoked by order check event handling reduced. • Queuing enhanced to allow avoiding duplicate events to be added, specifically, the virtual resource order check events, allowing a single check to be executed for multiple order requests and return events. • De-coupling of order request event processing thread(s) from other virtual resource event handling to allow for improved order creation throughput. • Dispatching of Resource Wait event immediately in order check event handling rather than after event completion.
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Web Service API Enhancements

Backlog	Title	Description
B-10167	Support 'inheritance' property for Actions in the Create Workflow RESTful API request	Supports creation of Workflows with Workflow Level Actions via the Web Service Create Workflow API
B-09857	List Task Instance Variables (Show Variables)	New Web Service RESTful API to return task instance variables. Provides API access to the "Show Variables" feature in the user interface.
B-09771	Delete Scheduled Bundle Promotion	New Web Service RESTful API to delete a currently scheduled bundle promotion.
B-10124	Cancel Scheduled Bundle Promotion	New Web Service RESTful API to cancel a currently scheduled bundle promotion.
B-08515	API CRUD & List for Universal Task Templates	New Web Service RESTful API to Create, Read, Update, Delete, and List Universal Task Templates.

Universal Controller 6.5.0.0 Release Notes

- [Agent Cluster Distribution via Network Alias Resolution](#)
- [Agent Cluster Notifications](#)
- [Output Processing Enhancements](#)
- [Calendar Enhancements](#)
- [LDAP Enhancements](#)
- [Web Service APIs](#)
- [Security Enhancements](#)
- [Product End of Life Notification](#)

Agent Cluster Distribution via Network Alias Resolution

This new feature allows the user to specify an "alias" (or VIP) as a task destination for Windows or Linux/Unix tasks in order to support workload execution on Windows or UNIX/Linux Universal Agents via external load balancing and clustering mechanisms such as Reverse Proxy Load balancers, Virtual IP Addresses, MS Clusters, IBM HACMP, etc.

Customers who want to leverage load balancing for Windows and Linux/Unix workloads (including Universal Tasks) via reverse proxy load balancers (such as F5 devices), or direct workloads to a VIP (virtual IP address), now can do so by configuring agent clusters with the new Network Alias distribution.

The Network Alias distribution type will specify the network alias or VIP and will initiate a UQuery, which will be directed to the target agent based on the load balancers criteria (or to the server assigned to the VIP). The server (if an active Universal Agent is available) will return the Universal Agent QName and associate that agent with the Agent Cluster.

Agent Cluster Notifications

Notifications now are available for agent clusters, supporting notification states "Agents Unavailable," "Agents Available," "Suspended," and "Resumed."

Output Processing Enhancements

- A new "Wait for Output" option when retrieving output automatically is provided to prevent a task's completion until the task's output has been returned from its Universal Agent. This feature is intended to support a new function for making output available to successor tasks by ensuring that the Universal Controller has the output available when this new function is used in either a task action or successor task.
 - New function to retrieve predecessor output.
- Task output can now be retrieved directly from the task instance Output tab.

Calendar Enhancements

- Custom Days (Relative Repeating Date) added Nth and Nth Amount to When Clause.

LDAP Enhancements

- Universal Controller has added support for LDAP user and group synchronization from Open LDAP.
- LDAP group and user filter field size extended.

Web Service APIs

- List Workflows a Task belongs to.
- Enhanced information returned from the List Task Instances API.

- Agent Cluster Resolve Command

Security Enhancements

OMS Client SSL Authentication. Connections between the OMS Server and the OMS Clients (Universal Agents and Universal Controller) now can be configured to require the OMS Clients to be validated via a Certificate (OMS Clients can already validate the OMS server via this method). This additional layer of security allows Universal Controller customers to ensure that no "rogue" Universal Agents can be configured to connect to a Universal Controller instance.

Product End of Life Notification

With the release of Universal Controller 6.5.0.0, we are providing advanced notification for the withdrawal of support for the Universal Controller 6.4.x product releases, effective September 30, 2019. Information regarding supported product releases and end of support dates can be found [here](#).

Universal Controller 6.4.7.0 Release Notes

Upgrade of Packaged MySQL JDBC Connector to 8.0.x

This update affects users using MySQL as the Universal Controller Database, or have SQL / Stored Procedure Tasks that run against MySQL databases.

If you use MySQL as the Universal Controller Database, or have SQL / Stored Procedure Tasks that run against MySQL databases, you should review the MySQL JDBC Connector 8.0 upgrade information before upgrading to UC 6.4.7.0.

<https://dev.mysql.com/doc/connector-j/8.0/en/connector-j-upgrading-to-8.0.html>

It is important to note that we have observed the following changes in behavior with the new MySQL JDBC Connector:

Change 1

If the SQL Task Instance or Stored Procedure Task Instance is currently processing the SLEEP(n) function at the time a cancel is attempted, depending on the SQL statement, a `MySQLStatementCancelledException` may no longer be thrown, meaning the SQL Task Instance or Stored Procedure Task Instance will immediately transition to Success from Cancel Pending, rather than transitioning to Cancelled.

For example:

If cancelled, the following SQL Task Instance SQL Command would complete with status Success.

```
SELECT SLEEP(1000);
```

If cancelled, the following SQL Task Instance SQL Command would complete with status Cancelled.

```
SELECT column-name FROM table-name WHERE SLEEP(1000);
```

For more information on the SLEEP function, please see the MySQL documentation here: https://dev.mysql.com/doc/refman/5.6/en/miscellaneous-functions.html#function_sleep

Change 2

If the server time zone value is unrecognized or represents more than one time zone, you must configure either the server or JDBC driver (via the `serverTimezone` configuration property) to use a more specific time zone value if you want to utilize time zone support.

We recommended adding the following parameter to the Connection URL: `&serverTimezone=UTC` (or alternatively, a preferred timezone, such as `&serverTimezone=America/New_York`).

Universal Controller 6.4.6.0 Release Notes

- [PeopleSoft Task](#)
- [SAML Support for SSO Authentication](#)

PeopleSoft Task

A new task type for Oracle's PeopleSoft allows customers to seamlessly integrate their PeopleSoft Process Scheduler processes into their Universal Controller workloads.

The PeopleSoft Tasks allows customers to define tasks to run and Manage PeopleSoft Processes, PeopleSoft Jobs, and PeopleSoft Jobsets. Using this task requires the purchase of UPPS (the Universal Connector for the PeopleSoft Process Scheduler); full documentation for UPPS is available [here](#).

Universal Connector for PeopleSoft supports PeopleSoft 8.4.2 and later.

SAML Support for SSO Authentication

Universal Controller provides support for third-party SSO (Single Sign-On) applications using the SAML format for exchanging authentication data.

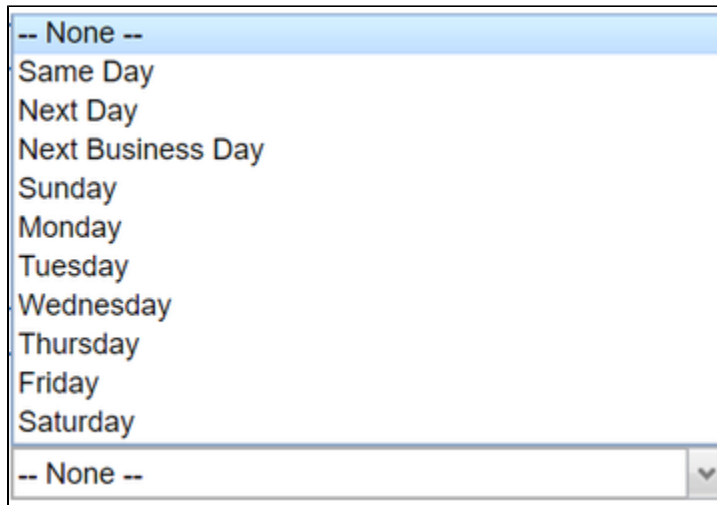
Universal Controller supports both SP (Service Provider) and/or IdP (Identity Provider) initiated authentication requests for the purposes of supporting user authentication to the UAC application via a web browser. Universal Controller users still need to be defined and granted permissions within the Universal Controller or via LDAP synchronization.

Universal Controller 6.4.5.0 Release Notes

- Ability to specify "Late Start", "Late Finish", and "Early Finish" Time greater than 24 hours.
- Remove Required from SAP JOB ID field

Ability to specify "Late Start", "Late Finish", and "Early Finish" Time greater than 24 hours.

A new "Day Constraint" option has been added when Late Start/Late Finish/Early Finish Type = Time. Day Constraint is a drop down menu providing the following options:



Currently if you have a late finish time of 18:00 and the task launches at 18:30 the task is late, as the late finish time is passed; this new option will allow more granular control over the specification of these options.

Remove Required from SAP JOB ID field

Customers using the Universal Connector for SAP version 6.2.2.2 and higher are no longer required to provide the SAP JOB ID for the following operations Start Model Job, Run Model Job, Submit Model Job, and Generate Job Definition.

Specifying a JOB ID of the target SAP JOB will ensure that it can always be uniquely identified.

If you do not specify a Job ID, one of the following applies:

1. If the target SAP system has only one job with the specified name for the specified user in a status of scheduled it is uniquely identified.
2. If The target SAP system has multiple jobs with the specified name for the specified user:
 - a. By default, we select the scheduled job if only one exists.
 - b. You can optionally add an SAP Command Option `-model_status <scheduled | finished | any>` to control which SAP Job status is used if only one job with the specified status exists
 - c. You can optionally also add an SAP Command Option `-resolve_multi_model yes` to select the latest SAP Job if more than one exists.

Universal Controller 6.4.4.0 Release Notes

- [LDAP Integration Enhancements](#)
- [Mandatory Credentials Option for Agent based Tasks](#)
- [Additional Credentials Fields Added for Universal Task Templates](#)
- [Increase the maximum credential password length](#)
- [New String Formatting Functions](#)

LDAP Integration Enhancements

The following enhancements have been made available for the LDAP integration feature:

B-05949: Refactor [LDAP refresh](#) to process each user/group record as a separate transaction.

B-08859: Add ability to filter users based on [group membership](#) for directory servers that do not support the group membership attribute for users.

B-09089: Add Group Email field to [Group Details](#) and provide default LDAP Mapping.

B-09099: Add start-up property to always [process LDAP groups](#) when logging in.

Mandatory Credentials Option for Agent based Tasks

B-08918: Add Agent Credentials Required Universal Controller system property to allow making agent-based task credentials mandatory.

A new system property, [Agent Credentials Required](#), has been introduced to allow customers to enforce the use of credentials for Agent based Tasks. For backwards compatibility, the default value of this new property is "false"; you will only be allowed to change the value to "true" if all credential fields affected by this property contain valid credentials or a default credential for the agent referenced by the task exists.

Additional Credentials Fields Added for Universal Task Templates

B-08958: Add two additional Universal Template/Task credential field mappings.

The number of credentials fields available for a [Universal Task Template](#) (and, therefore, a Universal Task) has been increased from 2 to 4.

Increase the maximum credential password length

B-09028 : Modify the controller to increase the maximum password size that can be sent to the agent to 512 characters.

The maximum password length supported by [Credentials](#) and credential functions for Universal Agents has been increased to 512 characters.

New String Formatting Functions

B-09116: Add functions for escaping Strings for insertion into XML ([_varEscapeXml](#)), JSON ([_varEscapeJson](#)), JavaScript ([_varEscapeJavaScript](#)), HTML ([_varEscapeHtml](#)) and regular expressions ([_varLiteralPattern](#)) and a function for generating a random String ([_randomString](#)).

The following new [Functions](#) have been made available to assist with formatting strings for Web Service Tasks:

- [_varEscapeXml](#)
- [_varEscapeJson](#)
- [_varEscapeJavaScript](#)
- [_varEscapeHtml](#)
- [_varLiteralPattern](#)

And the following [Function](#) has been made available for generating random strings:

- `_randomString`

Universal Controller 6.4.3.0 Release Notes

- [Security Updates](#)
- [Workflow "Tree" View](#)
- [Task Execution Restrictions](#)
- [Dashboard Visibility](#)
- [FTP Key File PassPhrase](#)
- [User Defined Login Disclaimer](#)
- [JSON Support for Web Service APIs](#)

Security Updates

B-06182 : Modify the Universal java networking component to support TLS v1.2.

Communication between the Universal Controller and its OMS servers now provides configurations that support the TLS v1.2 protocol. The [opswise.trustmanager.ssl.protocols](#) property in the opswise.properties configuration file supports a comma separated list of allowed SSL protocols.

For example:

```
opswise.trustmanager.ssl.protocols=TLSv1,TLSv1.1,TLSv1.2
```

or

```
opswise.trustmanager.ssl.protocols=TLSv1.2
```

If the [opswise.trustmanager.ssl.protocols](#) property is used, only those protocols will be enabled for the Controller/OMS session.

If the [opswise.trustmanager.ssl.protocols](#) property is not used, only the protocols specified in currently configured default SSLContext's default SSL protocol list will be enabled for the Controller/OMS session.

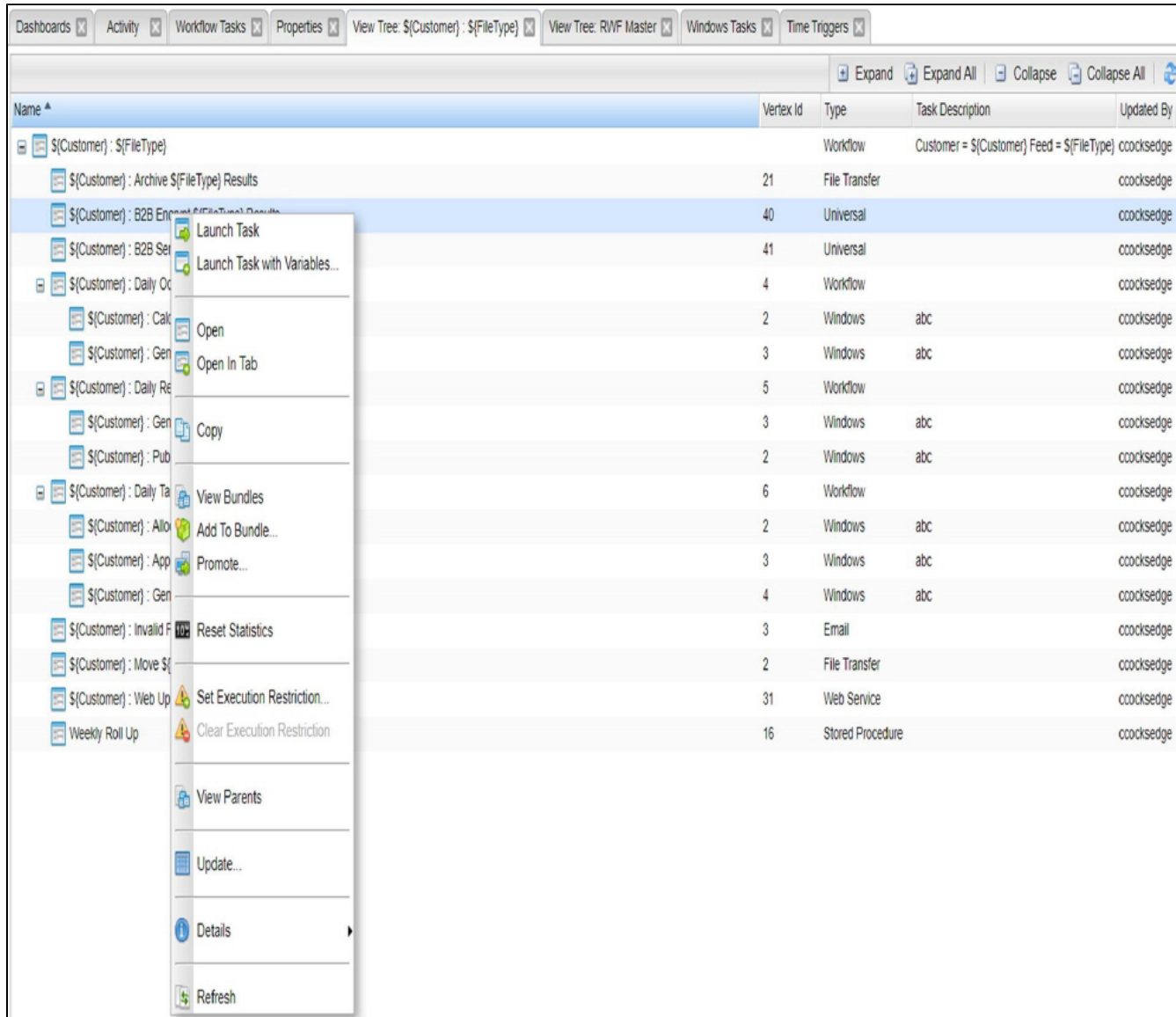
Workflow "Tree" View

B-08806 : Workflow Tree View (Monitoring Scalability for Larger Workflows) / Workflow Task Instance.

In order to support managing, viewing, and monitoring large and complex nested workflow structures a new [Tree view](#) option has been introduced. Both the Activity display and the Workflow Task definition display support a new option for viewing and working with Workflow Task definitions and Workflow Task instances. The Tree view can be accessed via the right click menu, Workflow Task Commands / View Tree.

363 Task Instances							
Instance Name	Type	Status	Start Time	End Time	Progress	Invoked By	
PRD-DKR#001	Windows	Success	2017-12-13 09:02:59 -0500	2017-12-13 09:03:00 -0500		Workflow: Docker - Start Prod Agents	
SFTP TEST	File Transfer	Success	2017-12-13 09:02:47 -0500	2017-12-13 09:02:48 -0500		Workflow: Docker - Start Prod Agents	
Start_SSH_Server	Linux/Unix	Success	2017-12-13 09:02:46 -0500	2017-12-13 09:02:47 -0500		Workflow: Docker - Start Prod Agents	
SSH-...	Windows	Success	2017-12-13 09:02:44 -0500	2017-12-13 09:02:46 -0500		Workflow: Docker - Start Prod Agents	
Run @	er	Running	2017-12-13 09:00:01 -0500			Workflow: RWF Master	
Run @	er	Running	2017-12-13 09:00:01 -0500			Workflow: RWF Master	
Run @	er	Running	2017-12-13 09:00:01 -0500			Workflow: RWF Master	
Run @	er	Running	2017-12-13 09:00:01 -0500			Workflow: RWF Master	
RWF	Workflow	Running	2017-12-13 09:00:01 -0500		0/8	Trigger: DAILY @ 09:00	
CC : S	Workflow	Success	2017-12-13 09:00:00 -0500	2017-12-13 09:00:00 -0500		Trigger: DAILY @ 09:00	
Docke	Workflow	Success	2017-12-13 08:56:56 -0500	2017-12-13 09:03:00 -0500	4/4	Manually Launched	
Docke	Windows	Success	2017-12-12 16:28:53 -0500	2017-12-12 16:29:05 -0500		Workflow: Docker - Stop Prod Agents	
Docke	Windows	Success	2017-12-12 16:28:53 -0500	2017-12-12 16:29:05 -0500		Workflow: Docker - Stop Prod Agents	
Docke	Workflow	Success	2017-12-12 16:28:53 -0500	2017-12-12 16:29:05 -0500	2/2	Manually Launched	
Ascot	File Transfer	Success	2017-12-12 14:57:52 -0500	2017-12-12 14:57:54 -0500		Workflow: \${Customer} : \${FileType}	
Ascot	Universal	Success	2017-12-12 14:57:40 -0500	2017-12-12 14:57:51 -0500		Workflow: \${Customer} : \${FileType}	
Ascot	Universal	Success	2017-12-12 14:57:29 -0500	2017-12-12 14:57:39 -0500		Workflow: \${Customer} : \${FileType}	
Ascot	Web Service	Success	2017-12-12 14:57:29 -0500	2017-12-12 14:57:29 -0500		Workflow: \${Customer} : \${FileType}	
Ascot	Windows	Success	2017-12-12 14:57:29 -0500	2017-12-12 14:57:29 -0500		Workflow: Daily Takings : \${Customer}	
Ascot	Windows	Success	2017-12-12 14:56:15 -0500	2017-12-12 14:57:29 -0500		Workflow: Daily Takings : \${Customer}	
Ascot	Windows	Success	2017-12-12 14:55:15 -0500	2017-12-12 14:56:14 -0500		Workflow: Daily Takings : \${Customer}	
Ascot	Workflow	Success	2017-12-12 14:55:15 -0500	2017-12-12 14:57:29 -0500	3/3	Workflow: \${Customer} : \${FileType}	
Ascot	File Transfer	Success	2017-12-12 14:55:12 -0500	2017-12-12 14:55:15 -0500		Workflow: \${Customer} : \${FileType}	
Ascot	Workflow	Success	2017-12-12 14:55:12 -0500	2017-12-12 14:57:55 -0500	10/10	Trigger: Client - Inputs	
Gener	File Transfer	Success	2017-12-12 14:55:07 -0500	2017-12-12 14:55:09 -0500		Workflow: Generate : Customer Demo Data	
Ascot	File Transfer	Success	2017-12-12 14:50:59 -0500	2017-12-12 14:51:01 -0500		Workflow: \${Customer} : \${FileType}	
Ascot	Universal	Success	2017-12-12 14:50:47 -0500	2017-12-12 14:50:58 -0500		Workflow: \${Customer} : \${FileType}	
Ascot	Universal	Success	2017-12-12 14:50:40 -0500	2017-12-12 14:50:46 -0500		Workflow: \${Customer} : \${FileType}	
Ascot	Web Service	Success	2017-12-12 14:50:39 -0500	2017-12-12 14:50:39 -0500		Workflow: \${Customer} : \${FileType}	
Ascot	Windows	Success	2017-12-12 14:50:39 -0500	2017-12-12 14:50:39 -0500		Workflow: Daily Results : \${Customer}	
Ascot	Windows	Success	2017-12-12 14:50:10 -0500	2017-12-12 14:50:39 -0500		Workflow: Daily Results : \${Customer}	
Ascot	Workflow	Success	2017-12-12 14:50:10 -0500	2017-12-12 14:50:39 -0500	2/2	Workflow: \${Customer} : \${FileType}	

Once selected a new Tab is opened displaying an indented Tree view of the Workflow hierarchy expanded to the first level. Options are provided to expand the next level or expand all levels, similarly you can collapse a single level or all levels. Right click commands relevant to Workflow Task definitions and Workflow Task Instances are available from the respective Tree views.



Task Execution Restrictions

B-03459 : Provide Ability to Activate / Inactivate a Task (Skip or Hold).

B-08964 : Integrate Execution Restrictions into Forecasting.

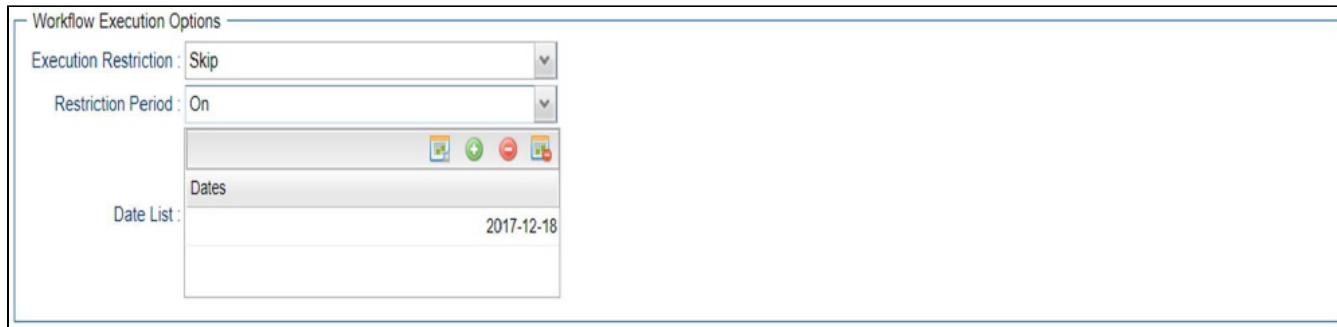
All task definitions now support the ability to specify Execution Restrictions.

Execution Restrictions are only relevant for Tasks or Workflows that are contained within a Workflow.

Execution Restrictions are available on the task's right-click menu from the Task list views.

Execution Restrictions allow tasks to be Run, Skipped, or Held based on the following criteria:

On	On a specific Date
Before	Before a specific Date
After	After a specific Date
Span	Between two specific dates



If Execution Restrictions have been specified for a task, these will be indicated in the Forecast views.

The ability to set [Execution Restrictions](#) can be secured in a User's or Group's permissions.

Dashboard Visibility

B-06494 : Dashboard Inheritance and Visibility.

Global- or Group-Level [dashboards](#) are now supported. Two new security roles control which user's can create and share Group or Global dashboards:

- ops_dashboard_group
- ops_dashboard_global

New dashboards visibility icons allow users can determine which dashboards are private, group, or global. These can be disabled by a new [Use Dashboard Visibility Icons](#) system property or individually by users in their User Preference settings.

Each Group or Global dashboard can have a default visibility of show or hide, users can decide to override this if they choose via a new visibility menu in the Customize Dashboard option.

FTP Key File PassPhrase

B-08889 : Add ability to specify [passphrase](#) for SSH key file for SFTP tasks.

Credential Definitions now support the ability to specify a Pass Phrase for the user's SSL private key file used by the File Transfer Tasks.

The image shows a 'Details' form for a credential definition. The form contains the following fields:

- Name :** A text input field.
- Type :** A dropdown menu with 'Standard' selected.
- Runtime User :** A text input field.
- Runtime Password :** A text input field.
- Description :** A text input field.
- Key Location (FTP only) :** A text input field.
- Pass Phrase (FTP only) :** A text input field.
- Member of Business Services :** A dropdown menu.

User Defined Login Disclaimer

B-08615 : Display **User Defined Text on the Login Screen.**

A new system property, [Login Disclaimer](#) allows customers to optionally specify a disclaimer or legal notice that will be displayed on the Universal Controller login screen.

Username:

Password:

This computer system is the property of the XYZ Co. As such, it may be accessed only by authorized users. Unauthorized use of this system is strictly prohibited and may be subject to criminal prosecution. The XYZ Co. may monitor any activity or communication on the system and retrieve any information stored within the system. By accessing and using this computer, you are consenting to such monitoring and information retrieval by law enforcement and for other purposes.

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JSON Support for Web Service APIs

Existing [Web Service APIs](#) now support JSON. All future Web Service APIs will support both XML and JSON.

Universal Controller 6.4.2.0 Release Notes

- [Security Enhancements](#)
- [Event Monitoring Enhancements](#)
- [Workload Definition Enhancements](#)
- [Workload Monitoring Enhancements](#)
- [User Experience Enhancements](#)
- [Bundle and Promotion Enhancements](#)
- [Web Service APIs](#)

Security Enhancements

Changes have been introduced to honor Business Service Security and Visibility for all Workload Automation definitions.

B-05281: [Agent](#) – Restrict visibility (“Read” Permission).

B-05283: [Agent Clusters](#) – Business Service Association & Security.

B-05998: [Credential Definitions](#) – Restrict visibility (“Read” Permission).

B-04260: [Database Connection](#) – Business Service Association & Security.

B-06213: [SAP Connections](#) – Business Service Association & Security.

B-06161: [Email Connections](#) – Business Service Association & Security.

B-04546: [Email Template](#) – Business Service Association & Security.

B-06160: [SNMP Managers](#) – Business Service Association & Security.

B-06159: Remove Global Read for [Virtual Resource](#) Objects.

B-06162: Remove Global Read for [Calendar](#) Objects.

B-06158: [Forecast](#) view based on Business Service security.

Two new system properties have been introduced to enable this new behavior; they are both set to "false" by default to ensure consistent operation for existing customers.

- [Strict Business Service Membership Read Constraints](#)
- [Strict Connection Execute Constraints](#)

B-02947: Add support to Calendars for specifying [Local Custom Days](#) and **B-07093: To allow for disabling global Custom Days, add Custom Day Global Permitted Universal Controller system property.**

To support B-06162: Add ability to revoke implicit Read permission for Calendars using the new [Strict Business Service Membership Read Constraints](#) Universal Controller system property, a new Local custom day type has been introduced. Existing Custom Day Definitions will continue to be visible to all users and will inherit the security of the Calendar definitions that they are associated with. [Local Custom Days](#) will be associated with a single, specific Calendar and will have the same security and visibility attributes as the Calendar definition. Customers can prevent the use of "Global" custom days via a [new system property](#).

B-07096: Add ability to disable output retrieval at the Agent level with a new [Retrieve Output Prohibited](#) option.

Customers that execute workloads in geographically dispersed regions that have data domain requirements, or have certain servers that run sensitive or confidential workloads, can now [prevent](#) users from retrieving or viewing any [output](#) from specific Universal Agents.

B-04760: Add [ops_audit_view](#) role to allow users without the [ops_admin](#) role to view (read-only) Audits.

Customers can now grant certain users [read access](#) to the Universal Controller [audit](#) tables.

Event Monitoring Enhancements

B-03073: Facilitate email monitoring and triggering by adding an Email Monitor Task and an Email Monitor Trigger and **B-08478: Add Email Monitor component to the Composite Trigger.**

Incoming [Email Connections](#) can be configured to support IMAP connections to email accounts for the purpose of monitoring and triggering based on inbound emails. A new [Email Monitor Task](#) and [Email Monitor Trigger](#) have been introduced. This new Monitor type is also available for the [Composite Trigger](#).

Workload Definition Enhancements

B-05154: Add Workflow connector (dependency) hover enhancements, along with ability to navigate to the source vertex and the target vertex using the Go To Source and the Go To Target actions, respectively.

In both the [Workflow Editor](#) and [Workflow Monitor](#)[UC64:Monitoring Workflows#Connector Details] views, hovering the mouse over a connecting line will provide information about the source and target definitions for that connection. Additionally a right click on the connecting line will now offer the option to [navigate the view](#) to either the source or the target definition.

B-04991: Add ability to copy a Task vertex or a group of Task vertices (including dependencies) between Workflow Editors.

In the Workflow Editor, the right-click copy and paste options will now work [between different workflows](#). This allows customers to highlight and copy one or more tasks and their connections from one workflow to another.

B-07054: Add capability to clone a Workflow.

A new right-click option to [clone a workflow](#) is available from the Workflow List view. This option will create a new new version of the selected workflow and all of its tasks, run criteria, etc.; the new definitions will be named based on a prefix and/or suffix provided by the user.

B-05679: Add Copy action for Scripts.

Script definitions can now be [copied](#).

B-06884: Allow a calendar in a (child) workflow to overwrite the calendar of the trigger or parent workflow.

For customers who run workflows for different regions or organizations units that require different calendars, we now support the ability for a child workflow to use a different calendar than the trigger, or in the case of manually launched workflows, the parent workflow. This is implemented in the workflow definition via a new check box [Override Inherited Calendar](#).

B-08523: Add Business Day category to Custom Day Details to complement Business Days of a Calendar.

A new Business Day category has been added to [Custom Day](#) definitions. This allows the custom day to specify days as business days regardless of whether they meet the Calendar's definition of business day. Note: If the [Exclude Holidays For Business Days](#) property is set to true, then dates for "Business Day" Custom Days will not be considered business days if a holiday exists for the same date.

Workload Monitoring Enhancements

B-04531: Add Resolve Name Immediately field to all Task Details to allow for immediate resolution of task instance name at launch/trigger time.

Task names that contain variables can now be resolved immediately when launched or triggered. This is implemented in the task definition via a new check box, [Resolve Name Immediately](#). This option is a mass updatable field.

B-04684: Add Show Variables task instance action for displaying variables of a task instance, including variables inherited from a workflow, a trigger, or defined globally.

From the Activity or Task Instances lists, you can [display all of the resolved variables](#) for a task instance from the right-click Details menu.

B-04468: Add View Potential Matches action for running Task Monitor instances to allow for displaying potential qualifying task instances.

From the Activity or Task Instances lists you can display the all of the [potential matches](#) for a task monitor instance from the right click Task Monitor Instance Commands menu.

User Experience Enhancements

B-05385: Add ability to customize (and persist) the order of Dashboard tabs.

Customers can now right-click and drag the dashboard tabs in order to customize the [order of the dashboard tabs](#).

B-05158: Add tab navigation improvement; specifically, return to last visible tab on tab close.

When closing a tab, the display now displays the tab that was [last visible](#).

Bundle and Promotion Enhancements

B-05380: New Exclude on Existence Bundles and Promotion feature to allow for excluding specific types of definitions from the promotion if they already exist on the target server.

Customers can now choose to exclude certain definition types from a promotion if they are found to already exist on the target system. This can be useful, for example, if customers want to avoid overwriting a production credential with the test version. A new system property, [Bundle Exclude on Existence Picker Default](#), allows system administrators to pre-populate which definition types are excluded from promotion.

A new Exclude On Existence field in [Bundle Details](#) will now also appear in the [Bundle Report](#) along with the other Bundle Details fields.

Web Service APIs

The following new Web Service APIs have been made available:

B-06131: Web Service API - [List Qualifying Dates by Custom Day](#)

B-06906: Web Service API - [List Qualifying Times by Trigger](#)

B-07268: Web Service API - [List / Get / Update Properties](#)

Universal Controller 6.4.1.0 Release Notes

- [Web Services Tasks](#)
- [Script Data Functionality](#)
- [User Administration Function](#)
- [Automation / Workflow Control Enhancements](#)
- [Calendar Updates](#)
- [Bulk Export Enhancements](#)
- [Backup and Purge Enhancements](#)
- [New User Password Encryption](#)
- [Listing Agent Referenced Tasks](#)
- [File Transfer Task Updates](#)
- [API Enhancements](#)

Web Services Tasks

A new task type for Web Services has been introduced to provide support for HTTP(S)/REST and SOAP web service calls. XML and JSON input can be specified in the Web Service Task Details or referenced as a new script library object type, Web Service Payload. New functions are provided to allow access to Web Service results using XML path and JSON Path queries.

Script Data Functionality

A new script library object type, Data, has been introduced to allow script library objects to be referenced as data files by commands and from within Scripts and Universal Tasks. For example, this new feature allows powershell scripts to be stored in the Universal Controller database and used as input to Windows tasks executing the powershell command. A new `_scriptPath` function is used to reference the script data object within the desired command, script, or Universal Task.

Assuming that a Script Data object called `myscript.ps1` is created and contains a valid powershell script it then can be executed in a windows task command as follows:

```
powershell -F "${_scriptPath('myscript.ps1')}}"
```

In this case, the `myscript.ps1` script object is copied to the file system on the agent server and referenced as an input file to the command that is executed on the agent server.

Note



`_scriptPath` requires Agent 6.4.0.0 or later.

User Administration Function

Users with the `ops.admin` role can view logged on users, send messages to logged on users, and manually expire their sessions.

Automation / Workflow Control Enhancements

New System Operation Task Actions have been provided to support Launch, Trigger, and Re-run. This significantly extends the automation possibilities from the Task Actions feature.

Users are now able to initiate a manual re-run for tasks that are awaiting an automatic retry.

Users can now insert a sub-workflow into an active workflow instance.

Calendar Updates

Custom Day definitions with relative repeating dates now support less and plus offsets. This makes certain types of special days easier to define, for example Black Friday = 4th Thursday in November plus one day.

Bulk Export Enhancements

New Server Operations have been added to support bulk export of History, Audit, and Activity records. These exports are of course supported for bulk import.

Backup and Purge Enhancements

A new option, Purge by Retention Duration, is available for Trigger definitions. If Purge By Retention Duration has been specified for a trigger, and the Purge By Retention Duration checkbox has been selected in the Data Backup / Purge Details, all task instances launched by the trigger are eligible to be purged from the database as soon as the retention duration time specified in the trigger has been met.

This allows a more aggressive purge strategy to be implemented for tasks that are frequently triggered.

New User Password Encryption

Following previous improvements for credential passwords stored in the Universal Controller database delivered in 6.4.0.0, improved password hashing and salting using SHA-256 has been delivered for any user passwords stored in the Universal Controller database. Note that this does not impact passwords that are checked against an LDAP / AD database, as these are not stored in the Universal Controller database. Also note that the new password hashing will only be implemented when an existing users change their password. The user mass update functions can be used to set the Password Requires Reset flag to force users to set a new password.

Listing Agent Referenced Tasks

A new tab in the Agent details, Tasks, is provided to give visibility to all tasks that reference a specific agent.

File Transfer Task Updates

In conjunction with the new UFTP (Universal Agent FTP Client), updates have been made to the File Transfer Task in order to support additional protocols (for example, FTP) and new functionality (for example, Move).

API Enhancements

The RESTful Web Services API of the Universal Controller was extended with additional functionality:

Reports	Run Report Definition and Return Output
Groups	Create / Modify / Delete / Read / List
Users	Create / Modify / Delete / Read / List
Trigger Now	Response SYSID in its own XML TAG
Task Instance	List Task Instance by Specific SYSID
Agent Clusters	Create / Modify / Delete / Read / List
System	Get System Status Information

Agents	Add agent suspended status to List Results
Agents	Read / Update Agent Properties
OMS Servers	Create / Modify / Delete / Read / List
Credentials	Create / Modify / Delete / Read / List
Scripts	Create / Modify / Delete / Read / List

Universal Controller 6.4.0.0 Release Notes

- [Universal Tasks](#)
- [Script Credentials & New Resolvable Credential Type](#)
- [Credential Encryption Changes](#)
- [Automation Center Navigation Tree Customization](#)
- [Control Group Navigation Visibility](#)
- [Action URLs](#)
- [User Definable Fields](#)
- [API Enhancements](#)

Universal Tasks

The Universal Task allows Universal Controller users to implement new task types that are specific to their own in house applications, utilities, or third party vendor applications.

In cases where customers are using a generic script with a Windows or Unix/Linux Universal Agent-based task, they can now create a customized task form that encapsulates the specific input needed for that command or script.

Firstly, an administrator creates a Universal Template, defining the template command or script along with all of the required input fields used to map the task form input fields to variables that are used with the template command or script.

This new Universal Task type will appear under the "Universal Tasks" folder in the "Automation Center" menu. Authorized users can use the new task type to create and work with these tasks.

Script Credentials & New Resolvable Credential Type

For Distributed tasks and Universal Tasks that support Scripts stored in the Script Library or Universal Template definitions, you can now provide access to Credential information (that is, Username and Password) without needing to hardcode these values in the Script definition.

To support this functionality, a new "resolvable" credential type has been introduced. Pre-existing credentials are now referred to as "standard" credentials.

Credential Encryption Changes

Encryption of credentials has been strengthened (AES with 128-bit keys). Standard and Resolvable credentials use different keys; therefore, an encrypted password for a Standard credential cannot be decrypted by the Resolvable credential framework.

Automation Center Navigation Tree Customization

Each User can now customize their Automation Center Navigation Tree by right clicking from anywhere in the Automation Center Navigation Tree and selecting "Configure Navigation Tree."

Control Group Navigation Visibility

For users of a particular Group, the visibility of specific navigation tree "nodes" can be controlled through a new option, "Control Navigation Visibility," on the Group definition (form). By default, the "Control Navigation Visibility" option is unchecked, which implies users in the Group have visibility to everything as per the behavior today (backwards compatible).

Action URLs

Action URLs let you automatically perform actions in the user interface.

There are two action URLs:

Name	Action
open	Navigates to a specific record in the user interface.
run_report	Runs a Report and displays the report output without navigating to the Report record.

If you do not have an authenticated browser session, regardless of the URL that you specify, you will be redirected to the login page to authenticate. Once authenticated, the action URL will proceed.

User Definable Fields

Two new System Properties allow you to add up to two new “user-defined” fields to all tasks.

Each field is a 255 bytes text field, and...

- Can contain a click-able URL
- Is reportable
- Is Filterable
- Available to add to your task views (Columns)

API Enhancements

The RESTful Web Services API of the Universal Controller was extended with additional functionality:

- Task Instance Cancel
- Task Instance Hold / Release
- Task Instance Force Finish
- Task Instance Force Finish Halt
- Task Instance Force Finish Cancel
- Task Instance Force Finish Cancel Halt
- Task Instance Rerun
- Assign / Unassign Trigger Execution User
- List Workflow Task Instances
- List Task Instances
- Create / Modify / Delete / List - Universal Tasks
- Create / Modify / Delete / List - Task Monitor Trigger
- Create / Modify / Delete / List - Variable Monitor Trigger
- Create / Modify / Delete / List - Manual Task
- Create / Modify / Delete / List - Application Monitor
- Manual Tasks Set Started
- Manual Tasks Set Complete
- List Business Services
- List Calendars
- List Custom Days
- Task Instance in Workflow - Skip
- Task Instance in Workflow - Skip Path
- Task Instance in Workflow - Unskip
- Task Instance in Workflow - Set Priority

Universal Controller 6.3.0.0 Release Notes

- [JRE Support](#)
- [New Variable Monitor Task and Variable Monitor Trigger](#)
- [Ability to promote between Universal Controller product versions](#)
- [Workflow Reporting Enhancements](#)
- [API Enhancements](#)
- [Copy Tasks Enhancement](#)
- [Dashboard refresh when dashboard is being re-focused](#)
- [New System Property, "System Default Confirm Task Instance Commands"](#)
- [Suppress Intermediate Failures for Automatic Task Retries](#)
- [Miscellaneous Enhancements](#)

JRE Support

Product changes require that an Oracle Java Runtime Environment (JRE) level 8 is required; customers planning to upgrade from an older Universal Controller version should review their environment accordingly.

New Variable Monitor Task and Variable Monitor Trigger

This new capability monitors the value of a global variable. The current value, a change in value, or both can be monitored for the following conditions:

– None --, =, !=, >, >=, <, <=, regex, undefined. One of many use cases for this new capability could be: At some point in a workflow a task needs to be paused until an external task / command / api sets a variable to a specific value.

Ability to promote between Universal Controller product versions

This new capability allows Universal Controller customers who run multiple instances and leverage the Bundles and Promotion feature to roll out new upgrades to their environments in a staged manner.

Workflow Reporting Enhancements

Four new features have been added to assist customers working with larger Workflows.

- Number of Tasks column has been added to the Workflow Tasks list
- View Children option for active Workflow Task instances to display an expandable list of the Tasks within a Workflow showing the Task's predecessors and successors. This list is printable.
- View Children option for Workflow Task definitions to display an expandable list of the Tasks within a Workflow showing the Task's run criteria, predecessors, and successors. This list is printable and can be downloaded as a text report.
- Improved 'Find In Graph' now called 'Find in Workflow' with better handling of multiple matches and adding support for match operators "Start With" and "Contains".

API Enhancements

The RESTful Web Services API of the Universal Controller was extended with additional functionality.

- Task Instance Retrieve / Display Output
- Create / Modify / Delete / List - Business Service
- Create / Delete / Modify / List - Universal Command Task
- Create / Delete / Modify / List - SAP Task
- Create / Delete / Modify / List - SQL Task
- Create / Delete / Modify / List - Stored Procedure Task

- Create / Delete / Modify / List - Email Task
- Create / Delete / Modify / List - Composite Trigger
- Create / Delete / Modify / List - Virtual Resource
- Create / Delete / Modify / List - Global Variables
- Create / Delete / Modify / List - Application Control Task
- Create / Delete / Modify / List - Calendar to Custom Day References
- Create / Delete / Modify / List - Variable Monitor Task
- Create / Delete / Modify / List - Workflow Task

Over the next few releases, we plan to further expand the RESTful Web Services API capabilities.

Copy Tasks Enhancement

When copying a task customers now have the ability to change the Member of Business Services, before the copy. This allows customers to implement read only "templates" for any Task type that can be copied for use for specific applications.

Dashboard refresh when dashboard is being re-focused

A new user preference enables an automatic dashboard refresh when a dashboard comes into focus and has not been refreshed based on a user specified threshold (i.e. in the last 20 seconds). The refresh threshold also stops unnecessary refreshes if you are tabbing back and forth between dashboards. Additional enhancements were also made to address situations where manual refreshes (and now the forced refreshes) might build up if the server is taking excessively long to service a refresh requests. If the client is still waiting for a response from a previous refresh request, any manual refresh (or forced refresh) for that widget will be ignored and the following message will be displayed in the UAC Console: Dashboard widget refresh was not performed for widget 'widget-name' because the widget is still waiting for a previous refresh attempt to complete.

New System Property, "System Default Confirm Task Instance Commands"

If set to yes (default is the current behavior of no) the user will be asked to confirm any task instance commands before they are performed. This will help to reduce occurrences of accidentally clicking the wrong command for a task instance from the drop down of available commands for the task instance.

Suppress Intermediate Failures for Automatic Task Retries

This new Task Retry Option prevents actions (such as alerting) or failure paths being taken until all automatic retries are exhausted. Additionally a new display field for "Next Retry Time" has been added for Activity List displays and reporting. The Next Retry Time is also displayed in the Workflow Monitor mouse over.

Miscellaneous Enhancements

- Make Cluster Node variables available to Task Instances
- Add ability to multi-update global variables.
- Add mass update functionality for additional credential definition fields.
- Use "x-ua-compatible"<meta> tag to force standards mode in Internet Explorer.

Universal Controller 6.2.1.0 (October 31, 2015) Release Notes

- [Enhancement of Web Service API](#)
- [Scheduled Reports](#)
- [Usability Improvements](#)
- [Built-in Function Enhancements](#)
- [Bundle and Promote Features](#)
- [Additional Timer Task and Task Delay Options](#)

Enhancement of Web Service API

The RESTful Web Services API of the Universal Controller was extended with additional functionality. It now supports create, read, update, and delete functionality for more task types, calendars, and custom day definitions. Over the next few releases, we plan to further expand the RESTful Web Services API capabilities.

Scheduled Reports

To allow delivery of Universal Controller reports via email, you can now attach a report to an email task or email action. This allows delivery of reports based on a schedule or event. Reports are delivered as email attachments in pdf or image format.

Usability Improvements

Some small but nonetheless positive changes are visible in this product release. For instance, opening a list from the Navigator results, by default in a new tab. Moreover, we have included the System Identifier for the browser tab title in order to easily differentiate between Universal Controller instances (for example, production and test environment). Configuration options for this feature have been added to the system and user properties. Also, Record Details data tabs now display an indicator when the tab contains data.

Built-in Function Enhancements

Built-in functions now allow nesting to two levels. That is, a function can be an argument to another function, which itself can be an argument to another function. In addition, this release supports new Conditional and Date functions.

Bundle and Promote Features

Bundles can now be created by Business Service. This enables users to create and promote bundles for a specific business service. For instance, the IT department can manage promotion of scheduling objects related to the accounting department of their organization.

Additional Timer Task and Task Delay Options

We have enhanced our Timer Task and Task Delay options to include a Timer Day Constraint. This removes the constraint of only honoring the next occurrence of the specified time.

Available options are:

- None: Waits for the next occurrence of the specified time.
- Same Day: Specifies that if the time has already passed, the delay condition is met.
- Next Day / Next Business Day / Specific Day of Week: Will meet the delay condition at the specified time on the relevant day.

Universal Controller 6.2.0 Release Notes

- [Workflow Improvements](#)
 - [Ability to Insert a Task into an Active Workflow](#)
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Workflow Improvements

Ability to Insert a Task into an Active Workflow

While workload is active you sometimes need to make ad hoc changes and [insert additional tasks](#). This improvement gives you graphical ability to select the predecessors and successors within the Workflow and graphically insert the task, resulting in a new rendering of the workflow graphic. Loop prevention avoids negative impacts to insertions.

You can also right click on a single task to insert successor(s) or predecessor(s) and the line will be drawn automatically.

Ability to Hide Skipped Tasks

Having the ability to view tasks that are NOT eligible to run during that instance can help you visualize the entire workflow. But, in the cases of extremely large workflows, with various run criteria, the picture can seem too cluttered.

So in 5.1.1, you have the option to [“hide” skipped jobs](#) and have the graphical display redrawn with only selected tasks to run in that instance.

Ability To “Unskip” a Task

There are times when a task that is typically “skipped” may need to actually run during that instance, possibly the run criteria was interpreted incorrectly. You can now select the [UNSKIP](#) command to actually select the job to run. If the predecessors have already been met, the task will execute immediately when unskipped.

Added a “Find in Graph” function within the Workflow

You may be running some large workflows and sometimes it can be difficult to locate the task quickly. The [“Find”](#) function will take you immediately to the desired task.

Expanded Forecasting Ability

Include Tasks within Workflows

Previously, all task types could be forecasted, but if the task type was a Workflow, only the Workflow task itself appeared on the [Forecast Calendar](#), not the tasks within the Workflow. In 5.1.1, you can choose between the Forecast Calendar view, which will just list the Workflow name, and the Forecast List view, which will show the tasks within the Workflow as well. The Forecast Calendar View will now allow you to drill down into the workflow and see the list of all the child tasks within the workflow.

Forecasting has also been updated to include new built-in [reports](#). These reports can display the task run criteria information and only show the tasks that are actually expected to run during that particular workflow instance. For example, you can omit any task being "skipped" for that instance.

For tasks within a triggered workflow, the estimated launch time of those tasks will likely not be the same as the trigger time of the workflow. Therefore, we have added a new column to the forecast record; specifically, Trigger Time. This allows you to create a report for tasks that are triggered in during a specific time window but do not necessarily start running within that same time window.

With Tasks within Workflows included in the Forecast, we have added an additional action of [Recalculate Forecast](#) when you right-click a Trigger or a Workflow. If you change Run Criteria or add/remove tasks within a Workflow you might want to Recalculate the Forecast. The Forecasts are recalculated each day at midnight anyway.

Forecast data now includes agent-related information. For example, you can add the Agent for which the task will run on to the list. Then you can forecast what impact taking an agent offline will have so you can find a good window where no tasks are scheduled to run on that agent.

Expanded Date/Time Functions

Expanded Time Triggers

Added DAY STYLE of 'EVERY', allowing you to set a [trigger](#) to occur every nth days, starting on a certain date. You can also enable an offset of the time, specified in hours and minutes, to give you even more robust capabilities in a single trigger definition.

Expanded Calendar Functionality

We have added the ability to define Custom 'Periods' in addition to [Custom Days](#). This can allow you further definition simplification by using a series of dates in one Custom Day .

[Calendars](#) will now associate which triggers are referencing a particular calendar, allowing you to more effectively manage calendar definitions, eliminating obsolete calendars safely.

Additional Changes

Ability to Prioritize Workload When Tasks are in Resource Wait Status

Many times you know which tasks could compete for [resources](#) and already have a prioritization order. Now you can define this in advance so that the correct tasks will have preference when resources are constrained. This can prevent a long-running, low-priority task from grabbing a resource instead of the higher priority task.

New Bundle Option

"[Follow References](#)" option, similar to "Export with References" will gather all related artifacts, i.e. tasks, connections (email, database, SAP), email templates, credentials, and virtual resources. All related items will be reflected in the Bundle Report.

Expanded SAP Functionality

We have extended the [SAP](#) capability to include SAP Business Warehouse to allow for Process Chains and Infopackages to be managed using Opwise.

Changes in Opwise Controller Properties

New [Properties](#) have been added to control behavior in certain product areas:

- Enable Trigger Simulation - If you enable this option, the launching of tasks when a trigger fires is simulated. All other aspects of the trigger execution, including generation of forecast data, are enabled. Trigger Now and Launch commands are not impacted by this property.
- Exclude Holidays for Business Days – If you enable this option, defined Holidays will change Business Day to a “non-business” day. Before changing this property be sure you know the affect on current workload behavior.
- Workflow Search Result Limit - By default, query results from the Task Find/Open Workflow pop-up dialogs in the Workflow Editor now will be limited to a maximum 200 records to improve performance within the editor in cases where a user does specify an appropriate name/type filter. If the query results exceed the maximum, only the initial 200 results will be returned, along with a message in the Console indicating that you have exceeded the limit and that you should use a more specific filter.

“Opswise Mode” and “Use Logic for Opswise Groups” are no longer in the Properties.

New UI Properties

Added “Items per Page” property to [UI Properties](#) Automation Center Administration.

Improvements to File Transfer Task for Opswise MFT (Infitran) Customers

Added MFT code page to Infitran [File Transfer Task](#).

Two already were provided – extended list of support code types available with Opswise MFT.

Miscellaneous Changes

- Allow [List Import/Export](#) of a sys_user_group’s Opswise Permission.
- Rebranded Opswise Groups to [Business Services](#) – to avoid ambiguity with Security Groups.
- New command that combines “Cancel” and “Force Finish” -->[Force Finish/Cancel](#).
- Provide a bundled Opswise Controller installation package for [AIX](#).
- HTTP mechanism to determine the [status](#) of a cluster node.
 - More for Load Balancing.
- Sort variable by name on [Launch/Trigger](#) with variables dialog.
- New ops-update-resource-limit [CLI](#) support in the Opswise Controller (will require a future outboard release).

Opswise Controller 5.2.0 Release Notes

- [Opswise Message Service \(OMS\)](#)
- [Security](#)
 - [New Permissions](#)
 - [Business Services](#)
 - [New Properties](#)
- [Workflow Improvements](#)
- [Trigger on Existence](#)
- [User Mode Install](#)
- [Simulated Trigger](#)

Opswise Message Service (OMS)

For Opswise Automation Center 5.2.0, Opswise Message Service (OMS) replaces the Message Hub and Transporter components of the 5.1.0 Outboard as the network communications provider between Opswise Controller and Opswise Universal Agent.

OMS uses similar, message-based communications protocol as the Message Hub and Transporter. It provides fault tolerant, reliable, secure messaging.

OMS is packaged as a component of Opswise Universal Agent, and it is installed and configured just like any other Opswise Universal Agent component.

Security

New Permissions

Added a Virtual resources permission.

Added a Variable permission.

Business Services

Added Member of Business Services to Virtual Resources.

Added Member of Business Services to User-Defined Variables.

New Properties

Added a Virtual Resources Security Enabled property.

Added a Variable Security Enabled property.

Workflow Improvements

Two new commands have been added - Force Finish (Halt) and Force Finish/Cancel (Halt) - that let you:

- Force finish task being monitored by a File Monitor task or FTP File Monitor task without completing the monitoring process.
- Force finish a task without releasing successor tasks in a workflow.

Force finishing a command that does not notify the task monitors would help in cases where you need to force finish the task but you don't want the task monitors to complete; for example, if the task was launched in error.

Force finishing a task without releasing successor tasks in a workflow would help in cases where a task instance - due to a number of possibilities - is stuck in Queued status, and you want to force finish and re-run the task without impacting workflow dependencies.

Trigger on Existence

Added a Trigger on Existence option to Create File Monitor type.

User Mode Install

For UNIX, you can now select the directories where everything gets installed.

Simulated Trigger

The Forecast Information screen indicates if the forecast information is for a simulated trigger.

Universal Agent 7.2.0.0 Release Notes

- [Release Notes](#)
 - [Data Pipeline](#)
 - [Sysplex Failover](#)
 - [UAG](#)
 - [Universal Integration Platform](#)
 - [z/OS Enhancements](#)

Release Notes

Universal Agent release 7.2.0.0 contains the following high-level features. For a complete list of all the included features and fixes please refer to the [Universal Agent 7.2.x Maintenance list](#).

Data Pipeline


Backlog	Title	Description
B-14036	UFTP : Establish Connection before processing other options	<p>Establish a connection to the (S)FTP Server before attempting the requested transfer operation. This will allow connection-specific failures to be isolated and reported.</p> <p>To support this change, the following message:</p> <pre>UNV3707E cURL reports could not connect.</pre> <p>was replaced with:</p> <pre>UNV6955E Unable to establish an FTP server connection (curl_rc): curl_msg</pre> <p>where curl_rc and curl_msg are the return code and error message, respectively, that identify the problem.</p> <p>In addition, UFTP now displays the entire connection conversation between it and the Server without requiring the -verbose option.</p>
B-14630	Add support for new FTPES fields available from UC task form	Universal Agent 7.1.0.0 added FTPES support for UFTP; this adds Universal Agent support for the new Universal Controller FTPES file Transfer Task.

Sysplex Failover

Backlog	Title	Description
B-13286	Allow a Primary to be re-started and become a Secondary	Extends the AUTOMATIC_FAILOVER option to support the primary_secondary value, which will instruct a Universal Agent configured with a SYSPLEX_ROLE of primary to start as a secondary Agent if another primary Agent is already running.
B-13287	Allow a Primary to be restarted and become a Primary	Extends the AUTOMATIC_FAILOVER option to support the secondary_primary[n] value, where n is an optional numeric value that sets a priority to determine which secondary Agent (among several active secondary Agents) will take over as primary.

B-13292	A new Primary should remain a Primary	Extends the AUTOMATIC_FAILOVER option to support the always_primary value, which will force an Agent whose SYSPLEX_ROLE is primary to always start as a Primary Agent. Any other Agent running as a Primary Agent will become a Secondary Agent when this Agent starts.
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UAG

Backlog	Title	Description
B-14071	Wait for process tree to complete after cancel before reporting to Universal Controller	<p>Add the KILL_PROCESS_TREE option to control how UAG Server responds to a Cancel task command from Universal Controller. When yes, the entire process tree is terminated via SIGTERM. Any process within the tree that is still running after 10 seconds is terminated with a SIGKILL. UAG Server will confirm that all processes in the process tree are terminated before it notifies the Controller of the termination.</p> <p>To preserve compatibility with existing behavior, the default value for this option is no, which can prevent the termination of a process in the tree that ignores the SIGTERM signal. This may cause the task's status in the Universal Controller to show Cancelled although the (now orphaned) process continues to run.</p> <p>Note </p> <p>This new option has no effect on tasks running with sudo authority. Such tasks will not receive a SIGTERM signal and are always terminated immediately with a SIGKILL.</p>

Universal Integration Platform

Bac klog	Title	Description
B-14270	Add additional logging level to separate debug and trace level statements	<p>Remove internal DEBUG-level messages that are generated by the Universal Extension base class when the extension task's log level is DEBUG.</p> <p>Only DEBUG messages issued by the extension developer should be shown.</p>
B-14271	Add ability to launch extension tasks from UIP-CLI	<p>Adds the following commands/options to the UIP-CLI utility:</p> <p>task launch - launch a Universal Extension task</p> <p>task status - obtain the status of a Universal Extension task</p> <p>task output - obtain the output generated by a Universal Extension task</p>
B-14720	Add ability to launch extension tasks from UIP-CLI	Visual Code support for new UIP-CLI commands implemented by B-14271.
B-14544	Accept task instance variables for direct access within an extension	<p>Make all all Task Instance variables set by the Controller for a Universal Extension task available to the Extension.</p> <p>An extension can access these variables via the <code>self.uip.task_variables</code> dictionary property (for example, <code>self.uip.task_variables['ops_task_id']</code>).</p>

B-14724	Accept new parameters in extension launch message to signal when extension is launched as trigger	<p>To support integration with Universal Monitor tasks, receive information from the Controller that can be used to identify an Extension task launched via a Universal Monitor Trigger.</p> <p>Values received from the Controller are saved in the following properties:</p> <ul style="list-style-type: none"> • <code>self.uip.trigger_id</code> Trigger UUID value set by the Controller that uniquely identifies the trigger instance. This will be undefined if the extension task was not launched by a Universal Monitor Trigger. • <code>self.uip.instance_id</code> EXECID set by the Controller that uniquely identifies the Extension task instance. • <code>self.uip.monitor_id</code> Universal Monitor UUID that uniquely identifies the Universal Monitor instance. This will be undefined if the extension task was not launched by a Universal Monitor. <p>The Universal Extension base class sets the following property when a Trigger ID is received:</p> <ul style="list-style-type: none"> • <code>self.uip.is_triggered</code> If the Extension task was executed via a Universal Monitor Trigger, this property will be True. Otherwise, it is False.
B-14725	Add ability for agent to reconnect to extension task upon agent restart	Adds support for Universal Monitor tasks, including the ability to reconnect to Universal Extension tasks (executed on behalf of the Monitor task) that continue to run when an Agent is restarted.

z/OS Enhancements

Backlog	Title	Description
B-13288	Configure which systems are eligible to execute a job	Added the (mutually-exclusive) ZOS_JOB_SYSAFF and ZOS_JOB_SYSTEM configuration options that can manage a z/OS task's execution via a SYSAFF or SYSTEM JOB card parameter, respectively.

Universal Agent 7.1.0.0 Release Notes

- [Release Notes](#)
 - [Application Integration](#)
 - [Universal Integration Platform](#)
 - [Architecture](#)
 - [Sysplex Failover](#)
 - [Data Pipeline](#)
 - [Development](#)

Release Notes

Universal Agent release 7.1.0.0 contains the following high-level features. For a complete list of all the included features and fixes please refer to the [Universal Agent 7.1.x Maintenance list](#).

Application Integration

Backlog	Title	Description
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B-12809

Update SAP LOW and HIGH data types to support up to 255 characters.

Note



Please make sure you are using the **RFC 7.5 Library** alongside with the **Universal Agent 7.1.0.0 when using this Feature**. Any combination other than that might lead to situations where the unavailability of the High option will not be detected and USAP will not identify truncating the field length as SAP enhancements are not present to support the exceeded Length of the Variant Field.

USAP has been modified to support the enhanced variant structures when available. For NW RFC, this is relatively easy. We can check for the existence of the enhanced structures prior to calling the function module and act accordingly.


For classic RFC, it is more difficult. We have no way to determine ahead of time whether the function module in question has been updated with the enhanced variant structures. Therefore, for classic RFC, we will have to assume the enhanced structures are available on an initial call and automatically downgrade to non-enhanced structures on failure.

If the user specifies a variant HIGH/LOW field that exceeds the maximum size supported by the function module involved in an operation, USAP will terminate with exit code 202.

- Error on exceeding size limit will be the expected behavior regardless of the variant structure being used (enhanced or original).
- The HIGH/LOW size-limit changes based on function module, and whether enhanced structures are supported (see table below for system/function module /size limit expectations).

System	Function Module	Supports larger structure	HIGH/LOW Size
C65	BAPI_XBP_VARIANT_CREATE	No	45
	RS_CREATE_VARIANT_RFC	No	45
	BAPI_XBP_VARIANT_CHANGE	No	45
	RS_CHANGE_CREATED_VARIANT_RFC	No	45
	BAPI_XBP_VARINFO	No	45
	RS_VARIANT_CONTENTS_RFC	No	45
	BAPI_XBP_JOB_ADD_ABAP_STEP	No	45
	BAPI_XBP_JOB_ADD_ABAP_STEP	No	45
CB7	BAPI_XBP_VARIANT_CREATE	Yes	132
	RS_CREATE_VARIANT_RFC	Yes	132
	BAPI_XBP_VARIANT_CHANGE	Yes	132
	RS_CHANGE_CREATED_VARIANT_RFC	Yes	132
	BAPI_XBP_VARINFO	Yes	132
	RS_VARIANT_CONTENTS_RFC	Yes	132
	BAPI_XBP_JOB_ADD_ABAP_STEP	Yes	255
	BAPI_XBP_JOB_ADD_ABAP_STEP	Yes	255
E16	BAPI_XBP_VARIANT_CREATE	Yes	132
	RS_CREATE_VARIANT_RFC	Yes	132
	BAPI_XBP_VARIANT_CHANGE	Yes	132
	RS_CHANGE_CREATED_VARIANT_RFC	Yes	132
	BAPI_XBP_VARINFO	Yes	132
	RS_VARIANT_CONTENTS_RFC	Yes	132
	BAPI_XBP_JOB_ADD_ABAP_STEP	No	45
	BAPI_XBP_JOB_ADD_ABAP_STEP	No	45

Backlog	Title	Description
B-13831	UIP: Add support for Cancel command within Universal Extension framework	<p>The Universal Integration platform has been enhanced to all cancelling Extension based processes within UIP. The current behavior for cancelling an Extension instance (or any agent based task instance) is as follows:</p> <ul style="list-style-type: none"> • Cancel is initiated at the Controller. • Controller sends JSS-CANCEL message to UAG and transitions the task instance in the Controller to "Cancel Pending". • UAG receives the JSS-CANCEL message and attempts to terminate process with CSK API function CSProcessCancel(). • If the process has not terminated within 10 seconds, UAG calls CSK API function CSProcessTerminate(). • If the cancel process completes successfully, UAG sends JSS-STATUS(JOB CANCELLED) back to Controller. • Upon receiving the JSS-STATUS(JOB CANCELLED) message, the Controller transitions the task instance to "Cancelled". <p>The result is that the Extension instance is terminated without any knowledge of the termination.</p> <p>In order to give the Extension process a chance to respond to the cancel command, a new extension_cancel() method has been added to the Universal Extension API. This is an optional method that can be implemented by the Extension developer. If implemented, extension_cancel() will be called by the UniversalExtension base class when UAG receives a Cancel command from the Controller.</p> <p>Within the extension_cancel() method, the Extension developer can perform whatever actions are needed or appropriate before the process is cancelled. However, Extension will not have unlimited time to perform these actions. The specific amount of time available for the cancel operation will be controlled by a UAG configuration option: Cancel Timeout (see below).</p> <p>With the implementation of this backlog, the cancel behavior for Extension instances changes to the following:</p> <ul style="list-style-type: none"> • Cancel is initiated at the Controller. • Controller sends a JSS-CANCEL message to UAG and transitions the task instance in the Controller to "Cancel Pending". • UAG receives the JSS-CANCEL message from the Controller and passes an ESS-CANCEL message to the UniversalExtension base class running in the Extension Worker process. • The UniversalExtension base class calls the extension_cancel() method allowing the Extension to perform cleanup. • The cancel operation is initiated with the call to extension_cancel() but, does not necessarily end when extension_cancel() completes. • If the cancel operation does not complete within the available time, the Extension instance will be forcibly cancelled by UAG. • When the cancel process completes, UAG sends JSS-STATUS(JOB CANCELLED) back to Controller. • Upon receiving the JSS-STATUS(JOB CANCELLED) message, the Controller transitions the task instance to "Cancelled".

<p>B - 1 3 9 08</p>	<p>UIP: Add support for in-process Dynamic Commands</p>	<p>This backlog adds the ability to run a Dynamic Command within the running process of the task instance on which the command is called.</p> <p>Currently, Dynamic Commands always run in a separate process.</p> <p>Dynamic Commands support custom functionality and it cannot be known what use cases will be implemented. However, there are three general scenarios that must be considered.</p> <ol style="list-style-type: none"> 1. Dynamic Command must run in separate process (current functionality). 2. Dynamic Command must run within the process of the associated Extension task instance. 3. It does not matter if the Dynamic Command runs in-process or not. Run in-process if available. Otherwise, create new process. <p>The Dynamic Command functionality was enhanced to support two main execution options that can be selected by the Extension developer:</p> <ol style="list-style-type: none"> 1. Dynamic Command runs in a separate dedicated process (current functionality): out-of-process. 2. Dynamic Command runs within the process of the associated Extension task instance: in-process. <ol style="list-style-type: none"> a. In-process Dynamic Commands also support the option to be run synchronously or asynchronously. <p>The Extension developer specifies the execution options at the Universal Template level in the Controller.</p>
<p>B - 1 3 8 21</p>	<p>UIP: Enhance "requires_python" logic to support '*' wildcard in clauses</p>	<p>UIP Extensions now allow usage of Wildcard in clause to implement a simpler way of identifying specific Python requirements.</p> <p>UIP Extensions allow extension developers to specify if a certain version of Python is required using the <code>requires_python</code> option in the <code>extension.yml</code> file. Currently, the option does not support wildcards which results in unnecessary complexity.</p> <p>For example, to target all Python 2.7.x binaries, the developer would have to specify the following <code>requires_python</code>: <code>">=2.7.0,<=2.7.9"</code>. With wildcards, it is simple as <code>requires_python</code>: <code>"==2.7.*"</code></p> <p>The solution allows wildcards for the <code>==</code> and <code>!=</code> operators only.</p>
<p>B - 1 3 8 60</p>	<p>UIP: Refactor logging API</p>	<p>The Universal Extension repository contains a <code>ExtensionLogger</code> class that allows users to easily log data. The <code>UniversalExtension</code> class in <code>universal_extension.py</code> internally creates an instance of <code>ExtensionLogger</code> which can be accessed by users using <code>self.log</code> in their implementation of the <code>Extension</code> class. If the user calls a method, <code>foo()</code> from another module called <code>test.py</code>, and wants to log some messages in that method, the only way to do so currently is to pass in an instance of <code>ExtensionLogger</code>.</p> <p>Instead of passing instances, the user is now able to import the logger in <code>test.py</code> and use it in <code>foo()</code>.</p> <p>The solution allows users to get access to the logger using the following import: <code>from universal_extension import logger</code>. Once imported, the user is able to perform calls such as <code>logger.info('msg')</code>, <code>logger.error('msg')</code> etc.</p> <p>Note  To preserve compatibility, passing in an instance of the logger still works.</p>

<p>B - 1 3 8 20</p>	<p>UIP: Allow Extension configuration options to be set at install time or via Broker start-up</p>	<p>Enhanced UIP to allow certain configuration Options as part of the Install or Broker start-up process.</p> <p>Three configuration options are available to control Universal Extension behavior:</p> <ul style="list-style-type: none"> • <code>extension_accept_list</code> • <code>extension_python_list</code> • <code>extension_deploy_on_registration</code> <p>Currently, the only way to set these options is by updating the UAG Server configuration file and then refreshing or restarting the Agent. Because a static configuration is not necessarily desirable for an option like this, providing ways to override the configuration on an ad-hoc or dynamic basis is needed. The ways in which such requirements were satisfied for similar features was to allow them to be set at install time and at Agent startup time, via options in the <code>ubrokerd</code> script and/or the <code>ubroker</code> application's command line interface..</p> <p>To satisfy the requirement above, the following enhancements are provided in this release:</p> <ul style="list-style-type: none"> • An ability to set the option's value is provided using the following methods: <ul style="list-style-type: none"> • Setting an environment variable that is inherited by the Universal Broker at start-up. • Passing an argument to the Universal Broker script and forwarding that option via the Broker command line. • Setting a property during the Universal Agent installation.
<p>B - 1 3 8 22</p>	<p>UIP: Allow usermode installs to discover the Python distribution provided by a system mode-installed Agent</p>	<p>Enhanced UIP to allow a user Mode Agent to take advantage of an, already installed, Python environment provided by a System-install Agent.</p> <p>During Python discovery (i.e., the process by which UAG Server looks for a Python interpreter that satisfies a Universal Extension's version requirements), UAG Server always looks for the Python distribution provided by the system-mode Universal Agent install. UAG Server looks for this Python in a file system location that is relative to UAG Server's installation directory. Because usermode installs do not provide the Python distribution, any Agent-supplied distribution will not be found.</p> <p>While this problem exists for Linux/Unix usermode installs a change in the UAG Server discovery implementation is only necessary for Windows. If someone wishes to use the Agent's Python distribution, they can simply take the tarball from the Agent distribution file and extract it under the usermode installation directory. A similar solution is not available for Windows.</p> <p>Note that the user can also configure the <code>extension_python_list</code> option to look for an Agent-supplied Python distribution in any location. This means that making the change for Windows is simply a change for convenience.</p> <p>The system mode Universal Agent install for Windows records has its install location in the Windows system registry, via the <code>installation_directory</code> value under <code>HKLM\SOFTWARE\Stonebranch</code>. That is a highly-reliable value that system-mode and usermode installs may use to locate the Agent's Python distribution.</p>
<p>B - 1 3 8 46</p>	<p>UIP: New Credential "Token" Universal Extension Support</p>	<p>Implemented a new "Credential token" to better support large tokens provided by certain applications.</p> <p>Some web/cloud services require authentication tokens that may be 3-4 Kb in length. The requirement is to implement support of token fields in Resolvable Credentials with maximum length at least 4096 bytes. The Credential Token must be passed to Universal Extension and its value must be scrubbed from any visible output of a task instance.</p> <p>The 'fields' dictionary of a Universal Extension Task is populated with the new credential variable "[credential variable name].token" along with previously supported <code>**user</code>, <code>**password</code>, <code>**passphrase</code> and <code>**keyLocation</code>. Total cumulative length of all encrypted fields passed to the task (password + passphrase + token) cannot exceed 65535 characters. The previous limit was 2052 bytes. The limit if used in the command of a regular task is 4096 characters of command length.</p>

<p>B - 1 3 8 19</p>	<p>UIP: Expose configuration options that allow custom Python discovery paths</p>	<p>A new configuration option for UAG Server was implemented for the UA 7.0.0.0 release. This option, <code>extension_python_list</code>, is currently recognized by UAG Server but no information about its use was made available. This was done to reduce the development and testing complexities around exposing any configurable option. However, providing users with the ability to configure this option is needed for usability and flexibility.</p> <p>Information about this option must be made public and the ability to configure the option in a flexible, secure way must be provided.</p> <p>To satisfy the requirement above, the following enhancements are provided:</p> <ul style="list-style-type: none"> • Information about the option is available in the comments section of the UAG Server configuration file. • Information about the option is available in the UAG Server template file. • Information about the option is available in the user documentation. • An ability to set the option's value is provided using the following methods: <ul style="list-style-type: none"> • Directly editing the UAG Server configuration file • Allowing the option to be refreshed via <code>ucl</code> without requiring a restart of the Agent
<p>B - 1 3 9 89</p>	<p>UIP: Provide access to Extension APIs at install time</p>	<p>Simplification of uploading an Extension to the Controller.</p> <p>So far, with every change, the process of manually building and uploading the Extension has to be repeated.</p> <p>A tool has been created to make this process faster and convenient.</p> <p>In addition to building and uploading the Extension, the tool should offer functionality that allows users to:</p> <ul style="list-style-type: none"> • Quickly prototype Extensions using starter Extension Templates • Pull the latest Universal Template source files from the Controller • Download the full Universal Template package <p>The Solution is a CLI Utility called <code>uip-cli</code> with a list of parameters associated:</p> <ul style="list-style-type: none"> • Quickly prototype Extensions using starter Extension templates: <ul style="list-style-type: none"> • <code>init</code> command is used to initialize the selected Extension template. Additionally, the command has logic to accept variables that are used to configure the selected Extension template. • <code>template-list</code> command is used to list all the available starter Extension templates as well as the variables that can be used to configure a given Extension template. • Build and upload Extensions and/or Universal Templates: <ul style="list-style-type: none"> • <code>build</code> command is used to build the Extension or the full package (Universal Template + Extension) depending on which one is specified. • <code>upload</code> command is used to upload the Extension or the full package to the Controller. The Extension/full package must already be built before calling <code>upload</code>. • <code>push</code> command is a combination of <code>build</code> and <code>upload</code>. Each time it is called, the Extension or full package is built AND uploaded. • Pull the latest Universal Template source files from the Controller <ul style="list-style-type: none"> • <code>pull</code> command is used to pull the Universal Template source files from the Controller. The source files include <code>template.json</code> (and <code>template_icon.png</code>, if present). The CLI prints a message indicating what was updated, newly downloaded, or not changed at all. • Download the full Universal Template package <ul style="list-style-type: none"> • <code>download</code> command is used to download the full Universal Template package. The CLI prints a message indicating what was updated, newly downloaded, or not changed at all.
<p>B - 1 4 2 55</p>	<p>UIP: Implement <code>init</code> command support for CLI</p>	

Architecture

B a c k l o g	Title	Description
B - 1 3 7 68	Move stability checks for file monitor tasks to ops_mo nitor	Pre-7.1.0.0 implementation of stability checks for Agent File Monitors required requesting updates about current file information from ops_monitor process by uagsrv every second once a matching file was created. The request was implemented as the STAT command sent to the ops_monitor's STDIN. Handling the response from ops_monitor involved additional internal message exchange between uagsrv process threads. This design resulted in critical performance degradation in case if there are many matching files get created at the same time and uagsrv initiates file stability monitoring for every files. Depending on the number of files there may be long delays in handling the regular tasks execution. In order to improve performance in such conditions, the file stability check functionality was moved to the ops_monitor process entirely, which eliminated most of the IPC message exchange and decreased load on the LSNR thread. That gives more CPU slots for LSNR for handling regular tasks.
B - 1 3 8 85	Suppres s ICH408I messag es in RACF log	Even though considered as a Warning message only, this enhancement ensures that the warning message is no longer shown on the RACF Log as it only describes the wanted effect that a user does not have the authority he is not supposed to have.
B - 1 3 9 31	OMS Java Client - Add support of service timeout	
B - 1 4 0 49	Universa l Extensio n Passwor d Exposed in Agent Cache	

Sysplex Failover


B a c k l o g	Title	Description

Please make sure that ALL Sysplex agent components (Primary or Secondary) use the SAME UAG NETNAME definition!		
B - 1 3 1 86	Allow a Primary to switch to Secondary	<p>Perform the steps necessary to re-configure a Primary into a Secondary without restarting UAG. This ability can be triggered programmatically and by direct user action through a z/OS console command. If a serious error occurs during the switch-over process, UAG will shut down, as the process' state will be unknown.</p> <p>Command: F <ubroker>,APPL=UAG,SECONDARY</p>
B - 1 3 1 84	Allow a Secondary to switch to Primary	<p>Perform the steps necessary to re-configure a Secondary into a Primary without restarting UAG. This ability can be triggered programmatically and by direct user action through a z/OS console command. If a Primary agent already exists, the command will fail. If a serious error occurs during the switch-over process, UAG will shut down, as the process' state will be unknown.</p> <p>Command: F <ubroker>,APPL=UAG,PRIMARY</p>
B - 1 3 2 82	Automatic fail-over	<p>The automatic fail-over process is triggered when a Primary disconnects from the XCF structure and fail-over is configured. The active Secondary with the highest priority in the fail-over hierarchy becomes the new Primary. The fail-over hierarchy is known by all members. Whenever a member connects to the UAG XCF group, it broadcasts its relative standing in the hierarchy to all members. If two or more members have the same standing in the hierarchy, the member that connected to the structure the earliest is granted the higher standing.</p> <p>Currently, the sysplex_role configuration statement in UBRCFG00 controls the Sysplex mode (none, primary, secondary) for an agent.</p> <p>Since fail-over is a UAG feature, a new configuration statement was added in UAGCFG00. This parameter is used to configure the fail-over behavior of an agent.</p> <p>The automatic_failover statement has two valid values:</p> <ul style="list-style-type: none"> • never - Indicates no automatic fail-over will occur. This is the default. • secondary_primary - For Secondary agents only. Indicates this agent is eligible for automatic fail-over.
B - 1 3 2 83	Add a method to configure the fail-over hierarchy	<p>The UAG automatic_failover configuration statement was extended to allow a ranking value to be appended to the secondary_primary value:</p> <p>secondary_primary - This existing value was enhanced to support appending an integer value between 1 and 32. This value indicates the relative ranking of the agent in the fail-over hierarchy. A lower number indicates a higher ranking. If not specified, the ranking is 1.</p> <p>Example:</p> <p>automatic_failover secondary_primary4 # Secondary eligible for fail-over. Ranking is 4.</p>
B - 1 3 2 84	Method to shut down the broker while preventing fail-over	See B-13285 below.

<p>B - 1 3 2 85</p>	<p>Method to shut down the broker while triggering fail-over</p>	<p>The current z/OS STOP command now used to shut down the broker with default (configured) fail-over behavior.</p> <p>The current z/OS MODIFY command was enhanced with new syntax. The new syntax allows shutdown of a Primary broker while specifying if fail-over is required or not and optionally, which Secondary should take over.</p> <p>For Secondary and non-Sysplex systems, the modify shutdown command functions like the STOP command. The FAILOVER and NOFAILOVER keywords will be ignored.</p> <p>e.g.: F <ubroker>,APPL=SHUTDOWN [[,FAILOVER [,<sysname>]]] ,NOFAILOVER]</p> <p>where:</p> <p><ubroker> is the name of a running broker.</p> <p>SHUTDOWN directs the broker to shut down.</p> <p>FAILOVER, NOFAILOVER specifies whether fail-over is required or not. This will work even if automatic fail-over is not configured. If neither is specified, the command will function like the z/OS STOP command.</p> <p><sysname> specifies the name of a system in the Sysplex whose broker should become the new Primary. If no UAG in the UAG Sysplex group is running on the specified system, fail-over will not occur. If not specified, the configured fail-over hierarchy will determine which system will become the broker</p>
<p>B - 1 3 2 91</p>	<p>A new Primary can receive tracking data for jobs it hasn't submitted or executed</p>	<p>A new or backup Primary can receive tracking data for jobs it neither submitted, nor are being executed on the system it is running on. Currently, this would result in an error and the job would not be tracked. Only the system which submitted the job and the system executing it has knowledge of the job.</p> <p>For instance, System A submits a job and it executes on System B. System A shuts down and System C takes over as Primary. System C will not recognize the job.</p> <p>System C should consult the UNVJSC dataset for information about jobs which it does not recognize and build the minimum information structures it needs to track the job.</p>
<p>B - 1 3 9 64</p>	<p>Proper licensing / handover when primary or secondary switch</p>	

Data Pipeline

<p>B a c k l o g</p>	<p>Title</p>	<p>Description</p>
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<p>B-10691</p>	<p>UA: Add explicit FTPS (FTPES) support to UFTP</p>	<p>Enhanced UFTP to support Explicit FTPS(FTPES).</p> <p>The Universal FTP client (UFTP) has been modified to be able to connect to an FTP server that has enabled SSL support but does not necessarily require it as a server configured for implicit SSL support would.</p> <p>A typical use case is one in which a single FTP server, usually – but not necessarily – listening on the default FTP port 21, will support creation of either of the following session types:</p> <ul style="list-style-type: none"> • An SSL/TLS-encrypted session for clients that support or require it • An unencrypted, plain-text connection for clients that either <ul style="list-style-type: none"> • have no support for SSL/TLS, or • do not require an encrypted session <p>To create a secure, encrypted session, the FTP server presents a public/private key pair in X.509 certificate format to the FTP client (UFTP). The client authenticates this information using a certificate authority (CA). If the certificate information presented by the server cannot be authenticated, the connection fails.</p> <p>The client can set options that changes this behavior. For example, if the client only cares about insecure, plain-text connections, it can choose to bypass certificate (i.e., peer) authentication and accept whatever certificates the server presents. The client can also require host name authentication, where the server's certificates must contain a host name or IP address that matches the server specified by the client.</p> <p>Note that server options can also be set that disallow plain-text, unencrypted sessions.</p> <p>Note  Further details on set-up and security can be found within the documentation.</p>
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Development

Back log	Title	Description
B-13316	Upgrade libSSH2 to 1.9.0 to resolve potential sftp transfer issue	<p>Upgraded the version of libSSH2 from 1.8.2 to 1.9.0 for Universal FTP (UFTP) on those platforms where UFTP was using libSSH2 1.8.2 and/or those platforms on which UFTP provides SSH support.</p> <p>By definition, this removes HP-UX and z/OS from the targeted platforms.</p>

Universal Agent 7.0.0.0 Release Notes

- [Release Notes](#)
 - [Upgrading Universal Agent for I-Series](#)
 - [z/OS Improvements](#)
 - [Universal Agent Password Handling Extensions](#)
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 - [SSL Default Changes](#)
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Release Notes


Universal Controller release 7.0.0.0 contains the following high-level features, For a complete list of all the included features and fixes, please refer to the [Universal Agent 7.0.x Maintenance list](#).

Upgrading Universal Agent for I-Series

ID	Title	Description
B-12401	IBMi: Update IBMi implementation of agent to support changes for OpenSSL 1.1.1b.	Upgrade the current UA for IBMi to allow support of current SSL/TLS Versions as in any of the UA 6.9.0.0 Agents. UA 5.1.1.0 now connects to a UA 6.9 Agent that has a TLS1.2 protocol definition in place which is the current default setting.
B-12407	IBMi: Attempt OpenSSL 1.1.1b build on IBMi 5.4.	
B-12410	IBMi: packaging of created Agent code as "new" Release (5.1.1.0).	

z/OS Improvements

ID	Title	Description
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<p>B - 1 2 8 11</p>	<p>Make UBROKER and components (UAG UDM UCMD...) XCF REALLOCATE aware/compatible</p>	<p>Implementation of the required changes to fully support compatibility to XCF reallocate process.</p> <p>This support comes in two basic parts:</p> <ol style="list-style-type: none"> 1. When connecting to the XCF structure UAG indicates it supports System Managed Rebuild. 2. Recognize and support new XCF events. <p>XCF events are asynchronous notifications sent to each connector to a structure indicating the state of the structure, the CF and the connection.</p> <p>For example, events occur when users connect to - or disconnect from, the structure, or when failures occur in the structure the CF or the connection to it.</p> <p>System Managed Rebuild will result in (up to) five events. "Structure Temporarily Unavailable", "Structure State Change", "Structure Available" and "Alter Begin" and "Alter End".</p> <p>New Messages that can be Expected</p>  <p>UAG1109 XCF structure <cf_struct_name> is temporarily unavailable.</p> <p>UAG1109 XCF structure <cf_struct_name> is now available.</p>
<p>B - 0 6 0 93</p>	<p>UAGSRV tracing enhancements</p>	<p>Improved Tracing capabilities for SMF Exits</p>
<p>B - 1 1 5 38</p>	<p>zOS UAGSRV: Extended "Cancel Job" support for jobs running on any Sysplex node</p>	<p>The Problem</p> <ol style="list-style-type: none"> 1. UAG supports cancelling jobs submitted by UAG and currently executing. This functionality does not work if a job is running on a Sysplex node other than the Primary one. 2. When a UNIX System Services (USS) job is executed as a batch job, multiple address spaces are spawned with the same job name. Since UAG cancels jobs by executing a z/OS CANCEL command with the job name as the parameter, the CANCEL fails due to multiple matching address spaces. <p>The Solution</p> <p>UAG for z/OS tracks internally which system a job is executing on. When a Task Cancel request is received by a Primary UAG for a job which is not executing on the same system as the Primary UAG, the Task Cancel request will be forwarded to the system on which the job is executing. (Note this only works if the job has started execution and the Primary UAG has received the notification thereof.)</p> <p>UAG has been extended to capture and save the address space ID of the submitted job. When a Task Cancel request is received, the address space ID is added to the CANCEL command to uniquely identify the job/address space to be cancelled.</p>
<p>B - 0 7 1 34</p>	<p>UAG File Monitor on z/OS should return an error when attempting to use features not supported</p>	<p>z/OS File Monitor enhancements for better supporting Sysplex secondary Agents and allowing Error based handling when non supported Features are being used.</p> <p>As the primary Agent is, and will remain, the only Agent connected to a Controller and receive workload from a controller, a change has been implemented that will ensure that relevant File Monitors will be made available from the primary to any secondary Agent within the PLEX. That will ensure that any of the secondary Agents can also handle relevant file activity in case it is happening on a secondary Agent.</p>
<p>B - 1 1 5 37</p>	<p>zOS UAGSRV: Extend file monitor support for secondary agents in a sysplex environment</p>	<p>After a secondary Agents has started, and received his license, a file monitor synchronization process will be initiated by the primary Agent to allow triggering the file activity across the PLEX.</p>

Universal Agent Password Handling Extensions

ID	Title	Description
B-10365	Add support to UDM scripts for passwords with certain special characters =+."	In order to support extended UTF-8 characters (those that translate into multibyte sequences) the passwords are internally translated from UTF-8 to UTF-16 and Unicode-aware version of the logon function is now being used for user authentication. This allows to use any extended unicode character to be used in user names and passwords. Since the change was introduced in the common code for UDM, UCMD and UAG, it added support for those unicode characters not only for UDM, but for UCMD and UAG as well. There are no changes in behavior of UDM, UCMD and UAG as result of this change except for support of extended characters in user names and passwords.
B-12882	update configuration parsing routines to handle password with all supported characters	
B-12884	Allow passwords with any characters to be specified in a udm script	

UFTP Separation Connection and Transfer Logic

ID	Title	Description
B-11141	UFTP (SFTP Protocol) - Separate Connection from Transfer Logic	<p>For the respective protocols, the Return-codes are categorized in 3 different, internal, groups</p> <p>1.) XP_EXIT_ERROR (1002)</p> <p>This generally includes any transfer error.</p> <p>The client should end unsuccessfully with exit code 1002</p> <p>2.) XP_EXIT_NETWORK (1024)</p> <p>This error Code describes network issues that are encountered while a file transfer processing</p> <p>The client should end unsuccessfully with exit code 1024</p> <p>3.) XP_EXIT_SECURITY (1023)</p> <p>This error generally occurs with authentication problems.</p> <p>The client should end unsuccessfully with exit code 1023</p> <p>Any results provided will be mapped to the Windows or Linux Exit-Code field to allow Job Status to be set accordingly.</p>
B-11140	UFTP (FTP & FTPS Protocol) - Separate Connection from Transfer Logic	
B-09713	UFTP - Add support for timestamps on UNV stdout /stderr messages	

SSL Default Changes

ID	Title	Description
B-12442	UAG Remove enable SSL from configuration and installs	Necessary changes based on vulnerability findings in the 2020 Audit performed by SECUVERA.
B-12368	UAG change default for enable SSL to YES	

Summary of UIP-Related Items to Strengthen Integration and Orchestration Capabilities

ID	Title	Description
E-01561	Universal Agent feature & Function for creating and delivering the Universal Integration Platform	Allow UA Extension to become the new standard for deploying downstream integration Solutions to applications.

Universal Agent 6.9.0.0 Release Notes

- [Release Overview](#)
- [Release Notes](#)
 - [Application Integration](#)
 - [Universal Agent Architecture](#)
 - [z/OS Features](#)
 - [Hybrid IT/Cloud](#)
 - [New Central Licensing: UCAM](#)

Release Overview

Universal Agent Release 6.9.0.0 is considered an interim Release to prepare the ground for a central license and Audit Management System, Universal Controller for Agent Management (UCAM). UCAM allows customers to centrally apply and audit license keys for all Universal Agent components in one place using a single GUI for all administrative purposes regarding license keys. It currently is limited to license management functionality but will be enhanced in upcoming releases to a full function Agent Management System.

An Agent-only client can optionally decide to implement UCAM and connect the Universal Agent environment centrally, via UAG/OMS, to UCAM to take advantage of the single license key approach.

For all pre-6.9.0.0 Universal Agents (except Tandem and I-Series) that are still under support, the existing local licensing will continue to operate as usual.

Changing to UCAM will require additional components to be available for supporting central license management.

For detailed information on UCAM installation and set-up, see [Universal Controller for Agent Management](#).

Note



UCAM can be downloaded from the Universal Agent / Universal Data Mover section of Software Downloads in the Stonebranch [Customer Portal](#).

Release Notes

Universal Agent release 6.9 contains the following high level features. For a complete list of all included features and fixes, please refer to the [Universal Agent 6.9.x Maintenance list](#).

Application Integration

Backlog ID	Title	Description
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B-10715	UA Python - Add External Module to Packaged Delivery	<p>The following list of Python Modules and their respective Versions, used by Stonebranch-created Universal Task/Template definitions, will be included within the Python package delivered alongside Universal Agent. They do not require any further installation effort once the Agent has been installed.</p> <table border="1" data-bbox="541 204 869 618"> <thead> <tr> <th>Module Name</th> <th>Version</th> </tr> </thead> <tbody> <tr> <td>azure-storage-blob</td> <td>12.1.0</td> </tr> <tr> <td>azure-storage-logging</td> <td>0.5.1</td> </tr> <tr> <td>botocore</td> <td>1.14.8</td> </tr> <tr> <td>boto3</td> <td>1.11.8</td> </tr> <tr> <td>docker</td> <td>4.1.0</td> </tr> <tr> <td>google-cloud-storage</td> <td>1.25.0</td> </tr> <tr> <td>paramiko</td> <td>2.7.1</td> </tr> <tr> <td>requests</td> <td>2.22.0</td> </tr> </tbody> </table> <p>No additional installation or set-up activities will be required for the Python modules listed above.</p>	Module Name	Version	azure-storage-blob	12.1.0	azure-storage-logging	0.5.1	botocore	1.14.8	boto3	1.11.8	docker	4.1.0	google-cloud-storage	1.25.0	paramiko	2.7.1	requests	2.22.0
Module Name	Version																			
azure-storage-blob	12.1.0																			
azure-storage-logging	0.5.1																			
botocore	1.14.8																			
boto3	1.11.8																			
docker	4.1.0																			
google-cloud-storage	1.25.0																			
paramiko	2.7.1																			
requests	2.22.0																			


Universal Agent Architecture

Backlog ID	Title	Description
B-11181	Extend password scrubbing to CSK methods	<p>When certain command and scripts are run with embedded user ID/password information, this information can be displayed in trace statements when message_level is set to trace.</p> <p>The two trace points in question are:</p> <ul style="list-style-type: none"> 20190923 101709.181894 CPR ENTRY prcattr.c 00474 00004a90 CSProcessAttribSetCommand(000001E5867903A0, echo xxxsecretxxx) 20190923 104155.555310 CPR ENTRY prcattr.c 00367 00005c08 CSProcessAttribSetScriptLine(0000018AC90E5850, echo xxxsecretxxx <p>With B-11181, the command and script lines in the offending trace statements will be replaced with *****.</p>

B-12001	<p>Universal Java networking component (used by OMS Java Client) - Modify properties referenced in code to use the new "uc." pathing initiated by the ControllerCritical</p>	<p>Universal Controller 6.9.0.0 modified the prefix used for properties from "opswise." to "uc.". The Universal Java Networking component (used by the OMS Java Client) references a subset of the Controller's properties related to key managers and trust managers. Therefore, the Universal Java Networking Component must modify the property names it uses to the new "uc." prefix used by the Controller.</p> <p>Properties in question are</p> <p>In file <code>.\ualautoctr-projects\universal\src\com\stonebranch\universal\net\UniversalTrustManager.java</code>, function <code>com.stonebranch.universal.net.UniversalKeyManager.UniversalKeyManager()</code> was modified to reference the new property names:</p> <ul style="list-style-type: none"> • <code>uc.keymanager.algorithm</code> • <code>uc.keymanager.provider</code> • <code>uc.keymanager.client.alias</code> <p>In file <code>.\ualautoctr-projects\universal\src\com\stonebranch\universal\net\UniversalSession.java</code>, function <code>com.stonebranch.universal.net.UniversalSession.sendNegotiation()</code> was modified to reference the new property name:</p> <ul style="list-style-type: none"> • <code>opswise.trustmanager.ssl.protocols => uc.trustmanager.ssl.protocols</code> <p>In file <code>.\ualautoctr-projects\universal\src\com\stonebranch\universal\net\UniversalTrustManager.java</code>, function <code>com.stonebranch.universal.net.UniversalTrustManager.UniversalTrustManager()</code> was modified to reference the new property names:</p> <ul style="list-style-type: none"> • <code>opswise.trustmanager.algorithm => uc.trustmanager.algorithm</code> • <code>opswise.trustmanager.provider => uc.trustmanager.provider</code>
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z/OS Features


Backlog ID	Title	Description
B-11540	z/OS UAGSRV: Support exits issuing messages to UAG JESMSG LG, LOG and TRACE datasets	<p>The \$LOGMSG macro will allow assembler programs to issue message to the UAG LOG dataset with a severity level of INFO, DEBUG and TRACE.</p> <p>The appropriate log level will need to be set to allow the messages to be logged.</p> <p>It will allow TRACE messages with a level of ENTRY, EXIT, TRACE and WATCH. Trace will need to be active to allow the messages to be logged.</p> <p>For JESMSG LG messages, the message number will be 1097. The levels will be ERROR, WARN, INFO, AUDIT and TRACE. The appropriate log level will need to be set.</p> <p>The macro specification will allow a single text string to be sent. The assembler code line number and the issuing CSECT name will be sent as well. These will be printed in the LOG and TRACE datasets to indicate the source of the message.</p>
B-11561	z/OS UAGSRV: Implementation bi-directional messaging between primary and secondary agents in sysplex	<p>With Universal Agent 6.9.0.0, UAG for z/OS will create and join a Sysplex group if it is running Sysplex-aware.</p> <p>The XCF group name will consist of the characters UAG, followed by the first 4 (upper cased) characters of the system ID (<code>system_id</code> from <code>UBRCFG00</code>).</p> <p>Each UAG will have a member name, which will be the group name appended with @ and followed by the MVS system name.</p> <p>So, for example, my UAG with a system ID of mndv, running on DVZOS202, would have a group name of UAGMNDV and a member name of UAGMNDV@DVZOS202.</p>

<p>B-06132</p>	<p>Recognize when a pre-allocated file is updated on z/OS (Implementation)</p> <p>Note</p>  <p>Universal Agent 6.9.0.0 Behavioral Change: Adding a z/OS File Monitor type "change" that may affect your current file monitor settings for z/OS.</p>	<p>Currently, UAG for z/OS uses SMF record type 15 to detect dataset creates. The same record can be used to detect updates. Create File Monitors will be modified to trigger only on creation of a dataset. Change File Monitors will be supported by having them trigger on dataset updates.</p> <p>Additionally, UAG for z/OS will start collecting SMF type 18 records. (These are created when a dataset is renamed.) When a dataset rename is detected which matches a Change File Monitor, the File Monitor will also trigger.</p> <p>For Change File Monitors, z/OS will support only the "Monitor File(s)" field in the "Agent File Monitor Details" section of the "Agent File Monitor" pane. Wildcards * and ? will be supported.</p> <p>For Create File Monitors, z/OS will continue to support only the "Monitor File(s)" field in the "Agent File Monitor Details" section of the "Agent File Monitor" pane. Wildcards * and ? are supported.</p> <p>Both Create and Change File Monitors will not be triggered until a dataset has been opened for output and then subsequently closed. Change File Monitors will also trigger when a rename of a dataset completes successfully.</p>
<p>B-10813</p>	<p>Suppress ICH408I message for unprivileged z/OS Agent install</p>	<p>Running UDM with an un-authorized User message</p> <p>ICH408I USER(UBRTRP) GROUP(UBRGRP) NAME(#####) BPX.SUPERUSER CL(FACILITY) INSUFFICIENT ACCESS AUTHORITY ACCESS INTENT(READ) ACCESS ALLOWED(NONE)</p> <p>is shown within the LOG.</p> <p>Even though it is an informational message confirming that the user does not have authorization, it is often considered as a "security issue" in Audits. To avoid confusion, the RACF-check, leading to that message, will be omitted when an unauthorized user is used.</p>

Hybrid IT/Cloud

Backlog ID	Title	Description
<p>B-11915</p>	<p>Make all Universal Agent DNS alias comparisons case-insensitive</p>	<p>A customer has identified a situation in which a Universal Agent's Access Control List (ACL) entry will not be applied if the host name portion of the entry does not match a resolved host name returned by a domain name server (DNS).</p> <p>According to RFC-4343, resolved host names returned from a DNS should be compared in a case-insensitive manner.</p> <p>The Universal Agent logic that selects ACL entries by comparing host names is currently doing a case-sensitive comparison. This means that entries that should be applied for a particular host will be bypassed, mistakenly allowing or denying access to UA components.</p> <p>To conform to RFC-4343, any host names compared during ACL entry processing will be treated in a case-insensitive manner.</p>
<p>B-11408</p>	<p>Expose Agent external/NAT IP</p>	<p>Since the client is not aware of its external IP, it cannot report that to the Controller in the JSS-HELLO message. However, the external IP is known by the OMS server when a client connects. What was missing is the way to report that IP from the OMS server to the Controller.</p> <p>However, OMS Server already has notification messages for client connection connection open/close events. The connection open event (destination=topic.ops.event.connection.open) already contains the "clientid" tag which carries the client's queue name in the "ops.agent.AGENTID" format.</p> <p>The new tag "clientip" was added into the event. Its value contains the IP address of the source of client connection to the OMS server. That value is the external IP of a client if it resides behind NAT.</p>

New Central Licensing: UCAM

Backlog ID	Title	Description
B-10873	UAG sending License Information to Ubroker	<p>Ensure proper license processing for Universal Broker working for a pre-Universal Agent 6.9.0.0 environment and map local license keys, as defined in UCMD and UDM Manager components to the new license structure.</p> <p>This is mainly to avoid unnecessary communication between a Broker and the central license management component. Once the Broker has received / Acquired the License key it will handle further license requirements locally on the Broker level.</p>
B-10874	Start-up sequencing between Primary and Secondary z/OS UAGs	<p>When a Primary agent starts, it will initialize normally (Like a non-Sysplex UAG). Additionally, it will broadcast an (internal) XCF message to all members connected to the UAG Sysplex Group. (A group that encompasses all Primary and Secondary agents in the Sysplex that share the same system_id value.) When a Secondary agent receives this message, it will reply to it. Once the Primary agent receives a reply, it will send another XCF message to the replying Secondary agent containing its license information. The Secondary agent will use this information to decide to start processing, or shut down.</p> <p>When a Secondary agent starts, it will initialize to the point where it can start to process. It will remain in a state where no tracking data of any kind will be processed. It will wait to be contacted by a Primary agent.</p> <p>Tracking data will be <u>collected</u> by the various UAG exits and cached in the high common storage area while there is space. (The size of this area is defined by the high <u>common_storage</u> configuration parameter.) Jobs will continue to run and UAGRERUN will function normally. However, job tracking, File Monitor and Syslog message information will not be <u>processed</u> until the Secondary receives a valid license.</p> <p>If a Primary shuts down after granting licenses to Secondary agents, all Secondary agents will return to their initial state, waiting to be contacted by the Primary. Secondaries will have to re-acquire a license when the Primary restarts. If the number of licenses has been reduced for any reason (or the number of Secondaries increased), some Secondaries will not receive a new license and will have to stop processing.</p> <p>Licenses are handed out by the Primary on a first come, first serve basis.</p> <p>In case a Secondary agent starts after the Primary agent, the Primary agent will detect the startup and broadcast the same XCF message it broadcast on startup. Processing will then proceed as described above. (Agents can detect the startup, and shutdown, of any agent in their group through XCF events that are sent to all agents connected to the group.)</p> <p>Note </p> <p>When upgrading in a Sysplex environment, the customer should upgrade the Primary first and then the Secondaries (or upgrade them all at the same time).</p> <p>If the Secondaries are upgraded first, and then the Primary, the Secondaries will not initialize because they will be waiting for a V6.9.0 Primary to contact them.</p>
B-11515	Ubroker receives UAG license Information	<p>Implementation allows Ubroker to receive the new license information in the new MSID_BROKER_LICENSE command from the broker interface IPC.</p> <p>Message issued upon reception of license Information:</p> <pre data-bbox="527 1166 1955 1230">UNV0226I [1000000001] License Information Received: EXPIREDATE 0, DISTRIBUTED 0, ZOS 0, ZOSSECONDARY 0, USAP 0, UPPS 0, SOA 0</pre> <p>When GA, the above message will contain the details of the license key received.</p>

<p>B-11518</p>	<p>Distribute License key, to UAC (SOA conector) when needed</p>	<p>The Universal Agent 6.9.0.0 release removes the requirement to enforce licenses based on endpoint counts.</p> <p>License enforcement is based solely on the following supported protocols:</p> <ul style="list-style-type: none"> • HTTP • JMS • SOAP • XD SOAP • IBM WebSphere MQ <p>A value of TRUE authorizes the protocol for use; a value of FALSE prohibits use of the protocol.</p> <p>The JMS, SOAP, and MQ protocols control inbound (file listener) and outbound (Web service execution) connections. If the protocol is licensed, the SOA connector is authorized to create an unlimited number of inbound or outbound connections using that protocol.</p> <p>The SOA connector uses the HTTP and XD SOAP for Web service execution only.</p> <ul style="list-style-type: none"> • A 6.9.0.0 Universal Agent receives license information upon receipt of a UC 6.9.0.0's HELLO message response • The Universal Broker receives the license information from UAG Server • The Universal Broker forwards the license information to UAC Server during component registration. <p>When UAC Server starts, it may perform component registration before the Broker has obtained license information from the Controller. In this case, the license is un-acquired at this point and UAC Server terminates.</p> <p>The UAC Server component definition may be authored to restart until it either:</p> <ul style="list-style-type: none"> • Receives license information. • Exceeds the number of retry attempts. <ul style="list-style-type: none"> • UAC Server starts a local Apache Tomcat container and starts an application to execute within that container <ul style="list-style-type: none"> • This application is responsible for servicing inbound and outbound requests • License enforcement occurs when it receives new inbound or outbound requests
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<p>B-11519</p>	<p>UAGSRV: Receive new license parameters in HELLO message response</p>	<p>The Controller handles the JSS-HELLO message from UAGSRV and sends back the license information in the JSS-HELLO response. UAGSRV collects the information for transmission to the ubroker process. Since there is no way to check the new field existence, the following log message was added to the agent.log:</p> <p>"License info: CUSTOMER: <custname>, REGISTERED: YES, EXPIREDATE: <expdt>, DISTAGENTS: <cnt>, ZOSAGENTS: <cnt>, ZOSSECAGENTS: <cnt>, USAP: <conn>, UPPS: <conn>, SOA: <protocols>"</p> <p>JSS-HELLO message tags containing license information</p> <table border="1" data-bbox="520 363 1957 1143"> <thead> <tr> <th>Tag</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>LICCUSTOMER</td> <td>String buffer</td> <td>Licensed customer name</td> </tr> <tr> <td>LICEXPIREDATE</td> <td>String representation of 64-bit unsigned integer</td> <td>Expiration date (TBD)</td> </tr> <tr> <td>LICDISTAGENTS</td> <td>String representation of 32-bit unsigned integer</td> <td>Number of distributed agents</td> </tr> <tr> <td>LICZOSAGENTS</td> <td>String representation of 32-bit unsigned integer</td> <td>Number of z/OS agents</td> </tr> <tr> <td>LICZOSSECAGENTS</td> <td>String representation of 32-bit unsigned integer</td> <td>Number of z/OS secondary agents</td> </tr> <tr> <td>LICUSAP</td> <td>String representation of 32-bit unsigned integer</td> <td>Number of USAP connections granted by the license</td> </tr> <tr> <td>LICUPPS</td> <td>String representation of 32-bit unsigned integer</td> <td>Number of UPPS connections granted to the agent.</td> </tr> <tr> <td>LICSOA</td> <td>String representation of 32-bit unsigned integer</td> <td>A value that indicates which Web service protocols/endpoints the SOA connector may use/connect to, from the following: <ul style="list-style-type: none"> • HTTP • JMS • SOAP • XD SOAP • IBM WebSphere MQ </td> </tr> <tr> <td>REGISTERED</td> <td>"YES"/"NO", or "TRUE"/"FALSE"</td> <td>Flag indicating whether the agent is successfully registered and the license was granted.</td> </tr> </tbody> </table> <p>Recognizing a 6.9.0.0 License:</p> <p>All of the new license handling implemented in the Agent requires it to know whether a new, 6.9.0.0 license was obtained from Universal Controller. If the HELLO response does not contain information for a 6.9.0.0 license, the Agent must rely on locally-configured license information.</p> <p>If the Agent does <i>not</i> receive values for the REGISTERED, LICEXPIREDATE, LICDISTAGENTS, <i>and</i> LICZOSAGENTS parameters, then it will behave as though it received a HELLO response from a pre-6.9.0.0 Controller and local license information is used.</p>	Tag	Type	Description	LICCUSTOMER	String buffer	Licensed customer name	LICEXPIREDATE	String representation of 64-bit unsigned integer	Expiration date (TBD)	LICDISTAGENTS	String representation of 32-bit unsigned integer	Number of distributed agents	LICZOSAGENTS	String representation of 32-bit unsigned integer	Number of z/OS agents	LICZOSSECAGENTS	String representation of 32-bit unsigned integer	Number of z/OS secondary agents	LICUSAP	String representation of 32-bit unsigned integer	Number of USAP connections granted by the license	LICUPPS	String representation of 32-bit unsigned integer	Number of UPPS connections granted to the agent.	LICSOA	String representation of 32-bit unsigned integer	A value that indicates which Web service protocols/endpoints the SOA connector may use/connect to, from the following: <ul style="list-style-type: none"> • HTTP • JMS • SOAP • XD SOAP • IBM WebSphere MQ 	REGISTERED	"YES"/"NO", or "TRUE"/"FALSE"	Flag indicating whether the agent is successfully registered and the license was granted.
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<p>B-11543</p>	<p>Enforce startup order of autostart components so that OMS & UAG start first</p>	<p>Starting with Universal Agent 6.9.0.0, all licensing can, optionally, be handled by Universal Controller for Agent Management</p> <p>Prior to 6.9.0.0 licenses for individual agent components were stored in their respective configuration files. Aside from verifying that the license information was valid (i.e., the individual license parameters were capable of generating a key at runtime that matched the configured license key)</p> <p>To ensure proper startup behavior, the UA components responsible to obtaining license information (manager components) from the Controller must be started in an orderly fashion.</p> <p>Specifically, an OMS Server must exist to enable message exchange between the Central license management and Agent. OMS Server does not need to run on every Agent installation, but it must start first for those agents that do have it set to auto start.</p> <p>Next, a UAG Server must start to register with the Controller and receive the license information. All agents must now execute a UAG Server that connects to an OMS Server (B-11845), and that UAG Server must start before the Broker can proceed with its startup.</p> <p>After OMS Server (if necessary) and UAG Server start – and valid license information is available to the Universal Broker – the order in which the Broker starts remaining auto-start components is not important.</p>
<p>B-11544</p>	<p>Ensure that Universal Broker does not open any local Service Interfaces until license Information is received</p>	<p>At this stage the license received from the Controller by UAG and passed to the Broker. The Broker saves the information and allows the UCMD/UDM component startup only in case if the license was received and the agent is allowed to execute jobs. Also, the current license information on the broker side is available for display in the UQUERY output.</p> <p>In case if UAG did not pass the license to the Controller for any reason (UAG is not connected to OMS, Controller unavailable, etc), the broker will refuse to start UDM or UCMD component with the following error:</p> <p>UNV3354E [1000000001] Error starting component ucmd for client 127.0.0.1:61830: CPMSStartComponent, 25, License for running this component was not acquired</p> <p>2020.06.24 15.48.45.455 UNV3385W [1000000001] Manager component ucmd 1593002837 (PID20045) ended with non-zero exit code 202 (000000CA).</p>

<p>B-11546</p>	<p>Universal Broker to refresh local license Info with UCTRL</p>	<p>The Universal Control (UCTL) utility must not cause Universal Controller-obtained license information that is cached within Universal Broker to be replaced with locally-configured license information during a configuration refresh.</p> <p>The Universal Broker is responsible for responding to a UCTL configuration refresh request (i.e., UCTL -refresh). In its response handling, the Broker re-reads all configuration files and stores the information in its cached configuration information. When this occurs, it is not possible to prevent the Broker from re-reading and re-caching any locally-configured license information that may exist in the configuration files. However, it is possible – and necessary – to prevent the re-cached license information from being applied and enforced against license information obtained from Universal Controller.</p> <p>To enforce the requirement, the Broker must cache license information separately from the configuration file cache. The Broker must know the source of the license information in that separate cache. Finally, the Broker must know when license acquisition is complete, and the source of the license information to enforce is resolved.</p> <p>At startup, the Universal Broker always caches any locally-configured license information and maps that information to the new license parameters. This new licensing information is stored in a cache that is separate from the cache used for local configuration files.</p> <p>At the point where license information is merely mapped and cached, the Broker considers the license to be un-acquired (i.e., the license's source has not been fully resolved). The Broker knows it has cached local license information, but won't enforce that information until license acquisition completes.</p> <p>The Universal Broker will allow any cached, locally-configured license information to be refreshed while the license is un-acquired.</p> <p>The idea behind this implementation is to ensure no stale data exists when the Broker resolves the license source to use locally-configured information.</p> <p>If the Broker completes license acquisition and determines that locally-configured license information should be used, that Broker will allow that information to be refreshed at any time and it will enforce the refreshed information.</p> <p>If, at any point during its life, the Broker receives notification that UAG Server successfully connected to Universal Controller and received a 6.9.0.0 or later license, only that remote license information will be used. To prevent a UCTL refresh from overlaying this information, the Broker changes the license source from local to remote. The function within the Broker that handles the license configuration refresh sees that a remote license is being used and will immediately exit. This ensures that after a remote license is acquired, the Broker never allows a UCTL refresh to update the cached license information again.</p> <p>There is no situation in which a Broker will “fall-back” to using locally-configured license information after it acquires a UC 6.9.0.0 or later license.</p> <p>No combination of UCTL refreshes or UAG Server activity will allow remote license information to be replaced with local information.</p>
<p>B-11552</p>	<p>Implementation USAP licensing based on results of B-11521</p>	<p>Special Handling for USAP/UUPS Licensing</p> <p>Licensed execution of the Universal Connector for SAP (USAP) and Universal Connector for PeopleSoft Process Scheduler (UUPS) will be enforced using a value that represents the number of concurrent connections any USAP or UUPS component executing on behalf of a licensed agent may use at one time.</p> <p>Every agent as of UA 6.9.0.0, that connects to a Universal Controller 6.9.0.0 or later will receive the SAP and PeopleSoft connections that are included with the Controller's license.</p> <p>The UAG Server is responsible for providing this information to its Universal Broker, which is then responsible for providing the values to the USAP and UUPS components.</p> <p>USAP and UUPS are responsible for defining what constitutes a unique connection.</p> <p>USAP and UUPS are responsible for ensuring that the number of unique connections in use at any given time do not exceed the value provided by the license.</p> <p>Sample</p> <p>Suppose that a customer purchases a license that permits 5 SAP connections.</p> <p>This customer has 2 6.9.0.0 Universal Agents.</p> <p>Each agent will receive this value (5). A USAP instance running on either agent will be permitted to use 5 unique SAP connections at the same time. An attempt to create a 6th unique connection while the other 5 are in use will fail.</p>

<p>B-11551</p>	<p>Implementation UPPS licensing based on results of B-11520</p>	<p>Legacy licenses did not allow to limit the connections number made by upps, i.e. the number was unlimited. The new license sends the maximum connections allowed by the license to the broker, which must keep track of all active connections and allow/reject any new connections depending on how many connections are currently active.</p> <p>A “connection” for UPPS is defined as the PeopleSoft Connector’s Endpoint .</p> <p>The license restricts the number of simultaneous unique connections performed by UPPS, meaning that the numer of sessions to the same PeopleSoft Endpoint is unlimited.</p>
<p>B-11553</p>	<p>Implement USOA licensing depending on results of B-11522</p>	<p>The Universal Connector for SOA (USOA) is an optional agent component that executes Web services using one of the five connection protocols or endpoints:</p> <ul style="list-style-type: none"> • HTTP • JMS • SOAP • XD SOAP • IBM WebSphere MQ <p>All that USOA needs to know is whether or not the customer purchased a license that permits Web service execution using one of the supported protocols /endpoints.</p> <p>Because there is no requirement for the agent to request any USOA-specific license information from the Controller, no updates to the HELLO message are needed to support USOA’s new licensing implementation.</p> <p>The protocols/endpoints the customer is permitted to execute will be sent via parameters in the HELLO message response. The Universal Broker will forward the value of these parameters to USOA, which is responsible for managing Web service execution based on the values it receives.</p>

<p>B-11917</p>	<p>Universal Broker to check license expiration once a day</p>	<p>A 6.9.0.0 Universal Agent receives license information upon receipt of a UC 6.9.0.0's HELLO message response</p> <p>The Universal Broker receives the license information from UAG Server</p> <p>The Universal Broker converts the expiration date to local time.</p> <p>Universal Controller licenses expire at 23:59:59 UTC</p> <p>The first expiration check occurs at this time, converted to local time.</p> <p>After the first expiration check, subsequent checks occur at 24 hour intervals.</p> <p>Expiration notices begin 30 days prior to the expiration date.</p> <p>The Universal Broker sends the expiration date to licensed components upon local registration.</p> <p>Each licensed component will report an expired license at startup.</p> <p>When a 6.9.0.0 Universal Agent (UA) connects to a 6.9.0.0 UACM(via UAG Server and OMS) it will receive license information during the HELLO message /response exchange that occurs at UAG Server startup. UC has always maintained its own license information, but in 6.9.0.0 the information it maintains is expanded to control UA licensing. This single set of license information allows the Agent to manage licensing for all of its components and eliminates the need to have licenses stored in local configuration files.</p> <p>UA receives a single license expiration date from the Controller and applies that expiration date to all licensed components. Although UAG Server is the direct recipient of this license information the Universal Broker is the final keeper of it, given its traditional role as owner of an agent's local configuration.</p> <p>As a long-running process, the Universal Broker must implement a daily check on the license's expiration date. Starting 30 days prior to a license's expiration, the Broker will issue the following message when it performs its periodic check on the license:</p> <p>UNV0130W [] Product license expires in nn day(s). Contact Stonebranch, Inc. for license renewal.</p> <p>Individual licensed components will also display this message at startup.</p> <p>When the expiration date elapses, the Broker must ensure that no <i>new</i> work can start on that Universal Agent instance. The Broker and any auto-started components will continue to run, but will fail upon a check of the license's expiration date.</p> <p>When a license expires, you can expect to see the following message in the Broker log and from licensed components:</p> <p>UNV0129E [] License is expired. Contact Stonebranch, Inc. for license renewal.</p> <p>Expired licenses can still be considered to be valid. Validity and expiration are handled and reported differently.</p> <p>Universal Agents that connect to Universal Controller whose license is expired will still receive a HELLO response. The Agent will be granted the license, provided the number of licensed agents is not exceeded.</p> <p>Universal Agents do not change state when a UACM license expires. Any "online" Agents will continue to show online after the license expires.</p> <p>However, when a UCAM license expires, it will enter a paused state, which will prevent any Universal Agent task execution. After a new license is applied, you must select the UACM Server Operations option and execute the Resume Cluster Node task.</p>
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Universal Agent 6.8.0.0 Release Notes

- [Release Notes](#)
 - [Architecture](#)
 - [Customer Focused](#)
 - [Hybrid Cloud](#)

Release Notes

Universal Agent release 6.8 contains the following high level features. For a complete list of all included features and fixes, please refer to the [Universal Agent 6.8.x Maintenance list](#).

Architecture

Backlog ID	Title	Description
B-09365	Add require_ssl option to Broker disallow UNVv2 legacy connections	When setting the require_SSL Option on the broker level, all legacy UNVv2 protocol based sessions will be denied.
B-10367	PKG - Enable command line support for Windows user mode install	There is now a command line based install available for a user-mode installation of Universal Agent
B-10789	Include ssl_client_auth in uags.conf comments.	Update UA documentation to include the "client_auth" option.
B-11270	Windows: package new python version within UA	Update the UA based Python Version to Version 3.7 for supported Windows Platforms.
B-11269	UNIX: package new python version within UA (except HP-UX)	Update the UA based Python Version to Version 3.7 for Unix Platforms except HP-UX.
B-11220	Change min_ssl_protocol Default to TLS1_2 for Agent only components	Change the Default setting for "min_ssl_protocol" to TLS1.2 for all Agent components. !CAUTION! Changing the default setting as of UA 6.8.0.0
B-11486	UAG Server - add peer authentication and enable_ssl to list of refreshable config parameters	Add configuration Parameter's "peer_auth" and "enable_ssl" to list of refreshable configuration Parameters.

Customer Focused

Backlog ID	Title	Description
B-11354	Certify IBMi Universal Agent	The Agent Version5.1 is now certified for i-OS 7.2, 7.3 and 7.4
B-10723	Increase size of file that ops_copyfile can buffer	File size has been updated to 6 MB

Hybrid Cloud

Backlog ID	Title	Description
B-11264	OMS: CA and CRL Config UControl Refresh Support - Implementation	Dynamic Refresh for Agent based certificates and the Revoke list
B-11265	UAG: CA and CRL Config UControl Refresh Support - Implementation	Dynamic Refresh for Agent based certificates and the Revoke list
B-11143	Mark a LINUX Agent as "Transient" during startup	<p>New Option for containerized Agents where the connection to a Universal Controller is marked as transient. When "stopping" the Agent (container) all references within the Controller will disappear.</p> <p>!CAUTION!</p> <p>Using this option requires no direct references to an Agent to be used in any Definitions. Using variables and Clusters must be the option of choice.</p>
B-11245	Allow Broker start options to be provided by environment variables and command line option	The broker start options have been updated to support component start options now via command-line as well as provision the values via environment variables.
B-11151	Allow component startup options to be controlled /overwritten during startup (Linux Intel)	The broker start options have been updated to support component start options now via command-line as well as provision the values via environment variables.
B-11385	Allow Transient option to be set via environment variable	The broker start options have been updated to support component start options now via command-line as well as provision the values via environment variables.
B-11425	Linux : Do not write messages to agent.log when running in console mode	When running in a containerized environment, ensure all Messages are retained within the container. Starting the Broker in console mode will ensure all messages are written as part of the Container log.
B-06187	Unix option for changing the security type during installation (Linux Intel)	
B-09364	UDM "open" statement should include a min_ssl_protocol option	The UDM open statement requires now, based on B-09365 and B-11120 an option to allow the specification of which SSL protocol to be used, in case different from the default.
B-09464	UBROKER: CA and CRL Config UControl Refresh Support - Implementation	See B-11264 and B-11265
B-10724	New Security = Inherit Option for UA server components	Allow a new security option "inherit" to visualize properly that a parent application has taken control over the security context the Universal Agent is executed in. This option replaces the security=none option previously available.
B-10751	UNVINST option not to start ubroker during UA install (Linux Intel)	Change the UNVINST script to allow for an option not to start the UBROKER.
B-10788	OMS Client Authentication Option to Not Verify Hostname	For SaaS based Controller implementation this new option allows skipping the host name validation, as on-premise Agents are usually non-visible to any cloud based Controller instance.
B-11137	Linux/Unix : Prevent UAG8016E message when running UBROKER in Console Mode	When running in Console mode the UBROKER issues a UAG8106E message unnecessarily. Avoid issuing this message when running in Console mode.

Universal Agent 6.7.0.0 Release Notes

Release Notes

Universal Agent release 6.7 contains the following high level features, for a complete list of all the included features and fixes please refer to the [Universal Agent 6.7.x Maintenance list](#).

Backlog ID	Title	Description
B-10383	Upgrade OpenSSL to Version 111B	<p>Upgrading our OpenSSL environment to version 102f will require some changes to the Ciphers being used or available within the Agent Infrastructure.</p> <p>Windows, Linux, and Unix platforms, apart from HP-UX, have been upgraded with Universal Agent 6.7.0.0.</p> <p>z/OS and z-Linux will be upgraded as part of Universal Agent 6.8.0.0, as it requires a couple of prerequisites not being manageable for the 6.7.0.0 Release.</p> <p>HP-UX will currently remain undone and will be re-evaluated if there is a customer requirement for that specific platform.</p> <p>With GA of Universal Agent Version 6.7.0.0, as part of the OpenSSL upgrade, the following Cipher will no longer be available: DES-CBC-SHA. This is due to the fact that that Cipher are no longer supported with OpenSSL 111B. Nevertheless, for compatibility reasons it will remain in the cipher list for platforms still supporting it. Selecting it for a platform not supporting it will flag it as an invalid value. Customers using that Cipher need to use the TLS null-null Cipher suites instead if neither of the supported ciphers is suitable for the platform or the environment.</p> <p>For Universal Agent 6.7.0.0, the following Ciphers remain available:</p> <ul style="list-style-type: none"> • AES256-GCM-SHA384 • AES256-SHA • AES128-GCM-SHA256 • AES128-SHA • RC4-SHA • RC4-MD5 • DES-CBC3-SHA • DES-CBC-SHA • NULL-SHA • NULL-SHA256 • NULL-MD5 <p>In a future release of Universal Agent, the following Ciphers will be deprecated and no longer available:</p> <ul style="list-style-type: none"> • DES-CBC3-SHA • RC4-SHA • NULL-SHA • NULL-MD5
B-10357 B-10313	Open JRE 8 for Windows and Linux	<p>For the SOA Connector, the Open JRE Version 8 is now packaged, supported, and validated.</p> <p>On the Agent side, the SOA Connector is the only component we do package as a Java run-time component.</p>

B-05491	Add message_dest LogFile support for Windows Platform	<p>Allow changing of the Logfile Destination for the Agent Log on Windows systems.</p> <p>You can now change the destination of the UNVLOG to a destination of your choice on Windows systems as well.</p> <p>New Parameter option have been added to message_dest.</p> <ul style="list-style-type: none"> • log_directory defining where the Ubroker Log should be stored. • message_dest allowing to define the location for Broker Log messages. <p>System is the default and routes all messages to the system Console</p> <p>Logfile directs messages to the UNVLOG as specified in the log:directory Parameter</p> <p>STDERR directs messages to the STDERR file of the Job Output</p>
B-10731	Research AWS S3 file monitoring	<p>AWS file systems have been researched, alongside the technology of the currently available universal Tasks, and a basic design for making this technology available as part of the Universal Agent has been created.</p>
B-10329	Research HDFS File Monitoring	<p>HDFS file systems have been researched, alongside the technology of the currently available universal Tasks, and a basic design for making this technology available as part of the Universal Agent has been created.</p>
B-07363	OMS Server should enforce the usage of SSL connections	<p>A new Option in configuration Member OMSS:</p> <p>Option: require_ssl Default: no</p> <p># Whether to require clients to establish SSL connections. # If set to 'yes', the OMS server will reject all non-SSL # client connections.</p> <p>The processing when require ssl is set to yes is as follows:</p> <ol style="list-style-type: none"> 1. require_ssl = "yes", min_ssl_protocol = "TLS1_0" or "TLS1_2", then SSL must be used the session cannot be negotiated to an SSL level lower that the one specified in min_ssl 2. require_ssl = "yes", min_ssl_protocol = default ('tls1_0'), then SSL must be used lowest, supported ssl level in this case is TLS 1.0 3. require_ssl = "no", min_ssl_protocol = "TLS1_0" or "TLS1_2", then SSL is not required The session can be negotiated on whatever level is agreeable between both parties 4. require_ssl = "no", min_ssl_protocol = default, then SSL is not required The session can be negotiated on whatever level is agreeable between both parties 5. require_ssl = default ('yes'), min_ssl_protocol = "TLS1_0" or "TLS1_2", same as #1 6. require_ssl = default('yes'), min_ssl_protocol = default, then same as #2
B-10229 B-10800	Update Windows Installer package to 64-bit Installation	<p>The Windows Installer package, as well as all required routines, has been upgraded to support native 64-bit installation process.</p>
B-10308	Deliver USOA for 64-bit windows systems	<p>Effective immediately, a standard download package for 64-bit windows systems is available.</p>
B-10687	UPPS Web Services Call to become Fault Tolerant	<p>Fault Tolerance for UPPS Connector based WEB-Services.</p>

B-06684	Threshold to avoid memory consumption of UDM when using the acknowledge window.	
B-03322	Specify UAG z/OS log-data sets as GDG	<p>z/OS Log datasets can now be defined as GDG and managed by the z/OS catalog accordingly. We do consider Backlog B-03644 as solved by this implementation as well, as deleting the log datasets can now be handled by the definition of generations available.</p> <p>Job UNVIN07 has been updated to create a GDG for the UAG log dataset by default.</p> <p>A new job, UNVIN11, has been created for use during upgrades. It is optional if a customer wishes to continue using sequential datasets for the log.</p> <p>In order to switch to using GDGs for the UAG log dataset, create a GDG base with the same name as the log dataset.</p> <p>The log dataset is named by appending ".UAG.AGENT.LOG" to the value specified for the &PHLQ parameter in the UBROKER JCL PROC. Deleting the GDG will cause UAG to switch back to using sequential datasets.</p> <p>Sample JCL to create a GDG base:</p> <pre data-bbox="499 574 1959 883"> //STEP1 EXEC PGM=IDCAMS //SYSPRINT DD SYSOUT=* //SYSIN DD * DEFINE GENERATIONDATAGROUP - (- NAME(<&PHLQ>.UAG.AGENT.LOG) - <=== replace &PHLQ LIMIT(7) - SCRATCH -) /* </pre>
B-10795 B-10701 B-10794	Upgrade Regex support for identifying UTF 8 and UTF 16 encoded file names	<p>Introduce extended REGEX support, based on BOOST, for all platforms to allow identification of filenames regardless of UTF8 or UTF16 encoding.</p> <p>Linux and Windows systems, as well as all Unix derivatives, have been upgraded with 6.7.0.0.</p> <p>z/OS Agent will be updated with 6.8.0.0 as the required BOOST Library is not available/supported on the z/OS platform we are running on.</p> <p>Also, this enhancement is currently available only for internal use in identifying the file names but will be opened to the general use of Extended REGEX support with Universal Agent 6.8.0.0.</p>
B-10801	Port Universal Configuration Manager to 64-bit Windows.	The configuration manager is now also available as a 64-bit application under Windows.
B-10934	Agent Certification	Universal Agent now tested and validated for Windows 2019.
B-10628	Update xpsmsgnt.dll to include messages ids of all Universal Agent message catalogs	Universal Agent 6.6.0.0 identified a couple of missing messages. This backlog ensures messages to be present as in the message catalog.

Universal Agent 6.6.0.0 Release Notes

- [Release Notes](#)
 - [UBROKER Enhancements](#)
 - [UDM Enhancements](#)
 - [UFTP Enhancements](#)
 - [USAP Enhancements](#)
 - [UAG Enhancements](#)

Release Notes

Universal Agent release 6.6 contains the following high level features, for a complete list of all the included features and fixes please refer to the [Universal Agent 6.6.x Maintenance list](#).

UBROKER Enhancements

Backlog	Title	Description
B-08841	Local Broker should only send UCTL -stop to UCMSRV host when zOS UCMMGR is cancelled	<p>The UBROKER on zOS has been changed to only pass to UControl the specific host that a Universal Command manager was connected to in the event of needing to send a stop command to the Universal command Server when the zOS Universal Command Manager is cancelled.</p> <p>Previously if the user has specified a very long host list in the Universal command Manager, the resulting Universal Control invocation could produce one of a number of different error conditions.</p>

UDM Enhancements

Backlog	Title	Description
B-01832	Add support for PAM using pam_open_session for Linux	<p>New configuration option for udms.conf on Linux distributions:</p> <p>SECURITY = PAM_SESSIONS</p> <p>Security is activated and uses PAM to verify user ID and password. PAM session modules are then processed. WARNING: Without a properly configured PAM session module, Universal Data Mover will fail when this value is set. Check system logs, including the authentication log, for failure information.</p>
B-09330	Add ability to transfer text data as binary and translate on target system	Performance Enhancement.

UFTP Enhancements

Backlog	Title	Description
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B-08447	Enable connection fault tolerance for FTP file monitor tasks	<p>The "ftp_fm_fault_tolerance yes/no" configuration option was added to uags.conf to enable FTP FM Fault Tolerance feature when UFTP is executed from UAG. When set to YES, and Wait Until Satisfied is turned on for the FTP FM instance, any error from UFTP is ignored up to the last poll attempt. If the error still occurs during the last poll attempt, the instance will go to the Start Failure state. When the parameter is set to NO (no fault tolerance), any error from UFTP is treated as fatal and the instance goes to Start Failure regardless of the Wait Until Satisfied value.</p> <p>Fault Tolerance functionality for stand-alone (Command Line) execution of UFTP is disabled. When executed from UAG, all UFTP errors are treated as retryable.</p>
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USAP Enhancements

Backlog	Title	Description
B-09782	SAP Re-certification	Universal Connector for SAP has completed re-certifications with SAP for XBP 2.0 and XBP 3.0 for SAP and SAP Hana.
B-10129	SAP Connection Enhancement - Support Additional Parameters for Connection	<p>The following additional parameters for SAP RFC connections have been added to the USAP command line:</p> <ul style="list-style-type: none"> • RFCTRACE • SAPROUTER • SNC_LIB • SNC_MYNAME • SNC_PARTNERNAME • SNC_QOP • SNC_SSO • PCS • CODEPAGE • NO_COMPRESSION • ON_CCE • CFIT • MYAPSSO2 • X509CERT • DELTA • USE_SYMBOLIC
B-09345	SAP configuration option "-max_spool_size_exceeded_exitcode 0"	<p>A new configuration option was added to override the exit code used for the warning condition that arises when a requested spool list exceeds the user specified max_spool_size.</p> <p>For example:</p> <pre>UNV3069W Spool list exceeds user specified maximum size limit of 10 bytes. UNV3070I Job.....: BTCSPool/15034800 UNV3071I Step.....: 1 UNV3072I Spool request number.....: 1557684 UNV3073I Spool pages.....: 1 UNV3074I Projected spool size.....: 1044480 bytes UNV3075I Spool title.....: ""</pre>
B-04918	Add support for transferring spool requests in blocks	Added support for XBP functions that allow transferring spool lists in blocks.
B-04919	Add support for job logs that exceed the size limits of BAPI_XBP_JOB_JOBLOG_READ	Added support for XBP functions that allow the transfer of a specified offset from the beginning or end of the job log.
B-10377	Add support for NW RFC connection parameter: SNC_MODE	Universal Connector for SAP no supports the NW RFC connection parameter SNC_MODE.

UAG Enhancements

Backlog	Title	Description
B-09733	UAG : Allow UAG to verify SMF exit version and capabilities	For customers who use the z/OS Dynamic Exit Facility to load the SMF exits, UAG will verify the exit version at startup.
B-09879	UAG : \$HASP106 messages cause Controller z/OS tasks to remain in Submitted status	\$HASP106 JOB DELETED BY JES2 OR CANCELLED BY OPERATOR BEFORE EXECUTION will no longer cause jobs to remain in SUBMITTED status.
B-10117	UAG : Be able to specify a minimum size on the creation of a file	Support has been added for the UAG file monitor to specify a minimum size when monitoring for the creation of a new file from the Universal Controller File Monitor Task.
B-10208	Support refresh of UAG config options that do not require substantial tear down/re negotiation	<p>The following UAG component configuration options can now be "refreshed" via a Universal Control refresh of the uag component, i.e.</p> <pre>uctl -host localhost -refresh uag</pre> <p>Supported UAGS.CONF options:</p> <ul style="list-style-type: none"> • loglvl • message_level • trace_directory • trace_file_lines • trace_table • security <p>Supported UACL.CONF options:</p> <ul style="list-style-type: none"> • uag_work_request

Universal Agent 6.5.0.0 Release Notes

- [UQuery Updates](#)
- [Remove Requirement on z/OS for BPX.DAEMON and BPX.SUPERUSER](#)
- [Platform Support Updates / Product End of Life Notification](#)
- [Security Enhancements](#)

UQuery Updates

New UQuery option to return the UAG QName. This is being provided in support of a new Universal Controller feature to support scheduling of Windows and Linux/Unix tasks via external load balancing and clustering mechanisms such as Reverse Proxy Load balancers, Virtual IP Addresses, MS Clusters, IBM HACMP, etc.

Remove Requirement on z/OS for BPX.DAEMON and BPX.SUPERUSER

Universal Agent installations on z/OS will no longer require BPX.DAEMON or BPX.SUPERUSER authorizations. Previously, BPX.SUPERUSER and BPX.DAEMON were required to allow UBROKER components to switch user context; the Universal Agent 6.5.x implementation without BPX.SUPERUSER and BPX.DAEMON will still support user switching.

Platform Support Updates / Product End of Life Notification

- Withdrawal of support for 32-bit versions of Windows and Linux. Customers should be advised that we will not be delivering 32-bit versions of the Universal Agent for the Windows or Linux platforms with this release. 32-bit versions of older releases will remain available until those releases reach their end-of-life dates. This information can be found on the [Stonebranch Product Release End of Support Dates](#) page of the product documentation.
- Customers using the IBM System z platform should be aware that with the release of Universal Agent 6.5, we are supporting z/OS 2.2 and 2.3.
- With the release of Universal Agent 6.5.0.0, we are providing advanced notification for the withdrawal of support for the Universal Agent 6.4.x product releases, effective September 30, 2019. Information regarding supported product releases and end-of-support dates can be found [here](#).

Security Enhancements

- OMS Client SSL Authentication. Connections between the OMS Server and the OMS Clients (Universal Agents and Universal Controller) now can be configured to require the OMS Clients to be validated via a Certificate (OMS Clients can already validate the OMS server via this method). This additional layer of security allows Universal Controller customers to ensure that no "rogue" Universal Agents can be configured to connect to a Universal Controller instance.
- Enhanced security for how credentials are passed from Universal Controller to Universal Agent (UAG) via OMS.

Universal Agent 6.4.3.0 Release Notes

- [Integrated Python Run-time Environment](#)
- [New Agent Install Options](#)
- [Automatic path resolution for UCMD, UDM, and USAP when executed from UAG](#)

Integrated Python Run-time Environment

To support running Universal Tasks from the Universal Controller, customers have the option to install a Python run-time environment with the Universal Agent installation. As many of the Universal Task examples available in the Stonebranch Marketplace require specific versions of Python and utilize optional Python modules, this prerequisite can be satisfied by taking advantage of the option to install Python along with the Universal Agent install.

New Agent Install Options

Installation parameters that set values for the following Universal Automation Center Agent (UAG) options can now be specified as part of the installation process:

- [AUTOMATICALLY_START](#)
- [AGENT_IP](#)
- [AGENT_CLUSTERS](#)

Automatic path resolution for UCMD, UDM, and USAP when executed from UAG

Universal Controller users executing UDM File Transfer, Universal Command, and SAP tasks will no longer have to ensure that each execution user (credential) has the location of the UCMD, UDM, or USAP manager .exe specified in its path. This change ensures that these tasks will work without additional configuration.

Universal Agent 6.4.2.0 Release Notes

- [Security Updates](#)
- [Agent Installation](#)
- [Universal Command](#)
- [Universal Agent](#)

Security Updates

D-07169 : UAGCMD needs to be able to negotiate newer SSL ciphersuite and TLS 1.2

Universal Agent changes related to Universal Controller change B-06182 : Modify the Universal java networking component to support TLS v1.2 (UC 6.4.3.0).

B-08853 : UCERT - extend maximum [key_size](#) past 2048.

B-08534 : UCERT - Allow [existing private key](#) to be used when creating certificate request.

Agent Installation

B-05451 : Add support for multiple/[user-mode](#) agent installs on Windows

User mode installs are now also supported for Windows. This allows customers to install multiple Universal Agents on the same Windows Server.

Universal Command

B-08592 : Support for ITWS variables in scripts

This change is specific to customers using Universal Agents to replace existing ITWS agents and removes the need to modify existing scripts that contain `/*%OPC` statements.

Universal Agent

B-08909 : Add "shell" configuration option to specify alternate execution shell when user has no interactive shell defined

Provides an option for Linux / Unix servers that allows a Universal Controller task to execute as a credentialed user even when that user has no login shell associated with it. This new option will allow a process to spawn in a default shell.

B-06263 : Allow for "New Jobclass" up to 8 Characters

Added support to allow Universal Controller to specify a new Jobclass that is up to 8 characters long for zOS tasks.

Universal Agent 6.4.1.0 Release Notes

- [Scalability Enhancements](#)
- [Installation Packaging Changes](#)
- [OMS Configuration](#)
- [z/OS Agent Job Tracking Enhancements](#)

Scalability Enhancements

B-07133: Allow User Configurable Max OMS Connections Limit

This item includes scalability testing to demonstrate support for at least 30,000 agent connections to a single [OMS](#).

Installation Packaging Changes

B-06846: AIX install package change from installp to rpm

The installation packaging for [AIX](#) systems has been updated to use rpm packaging.

OMS Configuration

B-08611: Add ability to bind the agent's OMS socket to a specific IP address

For servers with multiple network connections, it is now possible to bind [OMS](#) network communication to a specific network adapter.

z/OS Agent Job Tracking Enhancements

B-08469: Allow job tracking data to be collected when UAG is down

For [z/OS jobs](#) initiated from the Universal Controller, the Universal Agent can now track Job and Job/Step completions when the Universal Broker [started task](#) is shut down. This information is preserved until the Universal Broker started task is restarted.

Universal Agent 6.4.0.0 Release Notes

- [USAP Enhancements](#)
- [New FTP Client](#)
- [z/OS Enhancements](#)
- [Security Enhancements](#)
- [Platform Support Changes](#)
- [End-of-Life UA 5.2](#)

USAP Enhancements

USAP (Universal Connector for SAP) has been enhanced to support SAP process chain restarts without the operators needing access to the SAP logs.

Support has been added to export SAP Factory and Holiday Calendars.

New FTP Client

Universal Agent 6.4.0.0 introduces a new capability for Universal Agent customers. UFTP (Universal FTP Client) is now available and supports the following file transfer protocols, FTP, FTPs, SFTP, and TFTP. UFTP provides a consistent file transfer client for all supported 6.4.0.0 Universal Agent platforms.

z/OS Enhancements

Installation packaging changes, we are now delivering the z/OS installation package for the Universal Agent as an DFDSS backup. This is intended to significantly reduce the number of files that need to be transferred during the installation process. We are also providing a zip version of the installation package.

Mixed case passwords are now supported for z/OS.

Security Enhancements

System SSL security for z/OS now supports TLS1.2.

The UENCRYPT utility now supports the ability to allow customers to create their own encryption key and configure the UENCRYPT utility to use this encryption key. User-generated encryption keys are stored in the new Universal Broker key store. This further enhances the security provided for objects encrypted with the UENCRYPT utility.

Platform Support Changes

As of Universal Agent 6.4.0.0, we no longer are supporting IBM z/OS 1.12 and 1.13. Universal Agent for z/OS now requires IBM z/OS 2.1.x or later.

End-of-Life UA 5.2

With the release of Universal Agent 6.4.x, we are announcing the withdrawal of support for Universal Agent releases 5.2.x, effective at the end of June 2018 pursuant to our product release support policy, <http://docs.stonebranch.com/confluence/display/SMLRI/Stonebranch+Product+Release+End+of+Support+Dates>. Customers using Universal Agent for the IBM i and HP NonStop platforms are not affected by this announcement.

Universal Agent 6.3.0.5 Release Notes

- [Oracle PeopleSoft Connector](#)

Oracle PeopleSoft Connector

A new Universal Connector product is being introduced, Universal Connector for PeopleSoft Process Scheduler (UPPS). Customers using the PeopleSoft Process Scheduler can leverage this new product to integrate scheduling of Oracle PeopleSoft business applications from any scheduling or workload automation system on any platform. This capability will allow customers to take advantage of more advanced scheduling capabilities and integrate Oracle PeopleSoft processes with other applications and business processes. Please contact sales@stonebranch.com for pricing details.

Universal Agent 6.3.0.4 Release Information for D-07295

- [Important note about the UDM/UDMSRV change delivered for D-07295](#)
 - [Summary of the Problem](#)
 - [Summary of the Fix](#)
 - [Side Effects of the Fix](#)
 - [Solution](#)

Important note about the UDM/UDMSRV change delivered for D-07295

UDM and UDMSRV contain a critical fix in the 6.3.0.4 agent maintenance release that prevents the possibility of duplicate data being written to a file following a network fault tolerant (NFT) recovery. This doesn't happen in all NFT recovery situations, and if no NFT recovery occurs during a file transfer, the following does not apply.

Summary of the Problem

The possibility of duplicate data can occur when the sending party in a UDM transfer (which can be either a UDM Manager or UDM Server) increments a packet ID before it receives a message from the remote side of the transfer confirming receipt of that packet. The sender won't adjust the pointer to the data itself until it gets that acknowledgement.

When a network fault occurs and the message acknowledgement isn't received, the incremented packet ID may be assigned to the same data. When the NFT recovery completes and the packet is sent with the new ID, the receiving end of the transfer behaves as though it just received a new data packet and writes that data to the file.

This problem only affects UDM/UDMSRV versions that support the ACK_WINDOW feature. Specifically, versions 5.2.0.1 thru 6.3.0.3, inclusive.

Summary of the Fix

The 6.3.0.4 agent maintenance release provides a fix to prevent the above situation from occurring. Data sent following an NFT recovery will have the same packet ID that it had in the original transmission attempt. If the receiving end of the transfer actually got the original packet (which means the network fault occurred during acknowledgement), it will discard the packet since it was already written to disk.

If the original packet was never sent, the receiving end will be expecting that packet ID when NFT recovery completes. When it receives that packet, it will acknowledge it and write that packet's contents to the output file.

Fixed in UDM/UDMSRV versions 6.3.0.4 and later.

Side Effects of the Fix

Unfortunately, the fix has an unintended side effect. Although the receiving end of the transfer has been able to detect and discard messages with duplicate ACK_WINDOW packet IDs since its delivery in 5.2.0.1, the discarded messages aren't acknowledged back to the sender until version 6.3.0.4.

The sending party is unable to know whether the packet it sends will be treated by the receiver as a duplicate, so it expects that every packet will be acknowledged. If this acknowledgement isn't received, the sender behaves as though another network fault has occurred and will enter NFT recovery.

When the recovery completes, the sender will re-send the packet, the receiver will discard it, and the sender will be left waiting for another acknowledgement. This is treated again like a network fault, and the cycle repeats, essentially creating an NFT recovery loop where no additional data is transferred.

Solution

The easiest solution to the problem described above is to make sure all parties involved in a UDM transfer are 6.3.0.4 or later.

If the UDM component that sends a file is 6.3.0.4 or later, and the receiving UDM component is 6.3.0.3 or earlier, the NFT recovery loop described above may occur (it doesn't happen in all situations, even under the same conditions).

If only the receiving side of a UDM transfer is updated to 6.3.0.4 or later, the possibility of duplicate data exists because the 6.3.0.3 or earlier sender will still use an incremented packet ID following an NFT recovery.

Making sure that the sender and receiver are both 6.3.0.4 or later gives the best solution for ensuring data integrity and network fault tolerance.

Note that in a 3-party transfer, if no data is transferred to or from the UDM Manager, its version is irrelevant.

Universal Agent 6.3.0.1 Release Notes

- [Security Refresh \(OpenSSL 1.02f\)](#)
- [New Cipher Suites](#)
- [Configuration File Security Changes](#)
- [Universal Encrypt Enhancements](#)
- [Universal Data Mover Peer Authentication](#)
- [SAP Process Chain Restart Enhancements](#)

Security Refresh (OpenSSL 1.02f)

Universal Agent 6.3.0.1 implements the latest OpenSSL toolkit for Transport Layer Security (TLS) and Secure Sockets Layer (SSL) protocols. This ensures that the Universal Agent and its components have the latest security fixes available. This implementation introduces several new and stronger cipher suites for encrypting control and data sessions. Cipher suite defaults for new installs have also been updated to reflect changes in security encryption standards. Existing users who are upgrading from older Universal Agent versions will not have their defaults automatically updated and should consider reviewing these to ensure that any corporate security standards are complied with.

New Cipher Suites

The following new SSL Cipher Suites have been made available:

- AES128-GCM-SHA256 - 128-bit AES encryption in Galois Counter Mode, SHA-2 256-bit message digest.
- AES256-GCM-SHA384 - 256-bit AES encryption in Galois Counter Mode, SHA-2 384-bit message digest.

Note



RC4_* and DES_* SSL cipher suites will be deprecated in a future release of Universal Agent.

Configuration File Security Changes

Universal Agent configuration files default access rights have been changed to owner and group read only.

Universal Encrypt Enhancements

The `--aes` option for `uencrypt` now defaults to `yes`, meaning that encrypted files will be by default use AES 256 bit encryption, previously the default was `no` which used DES 56 bit encryption. If customers do not supply their own key (`-k` option) an internal key is used for the encryption, this has been expanded to a 32 bit key. This means that Agent versions prior to 6.3.0.1 will not be able to use unencrypted files generated with the new defaults, this affects managers (`ucmd`, `udm`, etc) and the Universal Controller CLI. A new legacy option for the `--aes` option will force the new version to use the old internal key to maintain backward compatibility.

Universal Data Mover Peer Authentication

UDM now supports peer authentication. This allows a UDM manager to validate the identity via host-name and/or serial number of a remote Universal Broker certificate. Support has been added for both 2 party and 3rd party transfers.

SAP Process Chain Restart Enhancements

A USAP command ID can now be associated with an SAP process chain instance to facilitate a simplified restart process for failed SAP Process Chains.

Universal Agent 6.2.0.2 (October 31, 2015) Release Notes

New Built-In Variables for UDM forfiles Statement

This Agent release provides UDM forfiles support for generic character substitution into variables. This means that it provides new built-in variables to hold tokens found during wildcard (*, ?) pattern matching within a forFiles loop.

For example a forfiles pattern of ABC?.* will provide 2 variables when applied to a file name of ABCD.txt, "D" and "txt".

Universal Agent 6.2.0 Release Notes

- [System Support Changes](#)
- [Network Enhancements](#)
- [Job_Log_Copy_Keep](#)
- [SAP XBP 3.0 Certification](#)
- [UCOPY](#)

System Support Changes

z/FS is now the default file system for Universal Broker and Universal Enterprise Controller.

For UNIX platforms, Universal Broker will now run as non-root by default.

System symbols can now be specified in the configuration files for z/OS to improve support for Sysplex environments that share files.

Network Enhancements

For resource utilization improvements only, the ability to disable SSL for the control session has been added. Network traffic is not encrypted or authenticated.

Job_Log_Copy_Keep

The Job_Log_Copy_Keep feature has been enhanced to more easily identify the joblog kept on the IBM i platform.

For more details on this feature, see the [JOB_LOG_COPY_KEEP Implementation Update](#).

SAP XBP 3.0 Certification

The Universal Connector *for Use with SAP® ERP* used to provide support for SAP workload has been certified for [SAP XBP 3.0](#). This adds additional Criteria Management Functions, Event History Functions, Spool and Archiving Functions, and Variant Functions including copying and deleting Variants.

UCOPY

Support for copying a file with DSNTYPE LARGE using has been added to Universal Copy.

Opwise Universal Agent 5.2.0 Release Notes

- [Opwise Message Service \(OMS\)](#)
- [User Mode Installation for UNIX](#)
 - [UAG Configuration Options](#)
 - [OMS Configuration File](#)
 - [Installation](#)
- [Opwise Command Line Interface \(CLI\)](#)
 - [Installation](#)

Opwise Message Service (OMS)

OMS added as an installable component of Opwise Universal Agent.

User Mode Installation for UNIX

UAG Configuration Options

Added NETWORK_PROVIDER option.
Added OMS_SERVERS option.

OMS Configuration File

Installation

Added Windows install command line parameters:

- NETWORK_PROVIDER
- OMS
- OMS_AUTOSTART
- OMS_SERVERS

Opwise Command Line Interface (CLI)

CLI added as an installable component of Opwise Universal Agent.

Installation

Added OPSCLI Windows install command line parameter

Universal Automation Center 6.2 Release Notes

What's New in Universal Automation Center 6.2

- [Stonebranch Product Integration](#)
The Stonebranch agent and Opwise agent have been combined into one integrated workload agent, Universal Agent, that can accept work from Opwise, Indesca, and Infitran.
- [Platform Support Changes](#)
The installation and application support experience has been improved with native support for 64-bit Windows, HP-UX, and z/Linux operating systems.

Note



Please consult the [Platform Support for Universal Controller 6.2.x and Universal Agent 6.2.x](#) page to make sure that your platform is supported before upgrading.

- [Documentation](#)
A brand new documentation experience has been created. All Stonebranch documentation is available online, highly searchable and PDF-able using a content management solution.

To see what's new in Universal Agent and Universal Controller, click the following links:

[Universal Controller 6.2.0 Release Notes](#)

[Universal Agent 6.2.0 Release Notes](#)

Opswise Automation Center 5.2 Release Notes

What's New in Opswise Automation Center 5.2:

- [Stonebranch Product Integration](#)
The Stonebranch agent and Opswise agent have been combined into one integrated workload agent, Universal Agent, that can accept work from Opswise Universal Agent, Opswise Managed File Transfer, or Opswise.
- [Platform Support Changes](#)
The installation and application support experience has been improved with native support for 64-bit Windows and HP-UX operating systems.

Note



Please consult the [Platform Support for Opswise Controller 5.2.0 and Universal Agent 5.2.0](#) page to make sure that your platform is supported before upgrading.

- [Documentation](#)
A brand new documentation experience has been created. All Stonebranch documentation is available online, highly searchable and PDF-able using a content management solution.

To see what's new in Opswise Universal Agent, Opswise Managed File Transfer, and Opswise, click the following links.



[Opswise Controller 5.2.0 Release Notes](#)



[Opswise Universal Agent 5.2.0 Release Notes](#)

Universal Agent Installation Changes

- [Introduction](#)
- [All Platforms](#)
- [z/OS](#)
- [z/OS USS](#)
- [Windows](#)
- [UNIX](#)
- [IBM i](#)

Introduction


This page provides information on product / package installation changes that have occurred with each release of Universal Agent for all supported platforms.

If a release is absent from a list, no change occurred.

All Platforms

Stonebranch Solutions 4.2.0	Installation package name prefix changed from unv- to sb- .
Universal Products 3.1.0	Universal Products are bundled together into a single distributed unit referred to as a Universal Products Package.

z/OS

Universal Agent 6.4.0.0	Universal Agent 6.4.x for z/OS installation package is delivered as an DFSS backup. This significantly reduces the number of files that need to be transferred during the installation process. A zip version of the installation package also is provided.
Workload Automation 5.2.0.1	D-04266: FMID TUAG520 is not selected by SMP/E APPLY when upgrading a CSI with TUAG510 install.
Workload Automation 5.1.0.1	D-02817: Upgrade from 3.x or 4.x did not allocate UAG model data set.
Workload Automation 5.1.0	<p>Universal Automation Center Agent (UAG) is installed as FMID TUAG510. UAG provides agent services for an Opwise Automation Center Controller, enabling it to schedule workload, transfer files, and monitor events on the agent system.</p> <p>UAG replaces Universal Automation Center Registration Server (UAR), introduced in Stonebranch Solutions 4.3.0.</p> <p>Note  Installation of Workload Automation 5.1.0 for z/OS does not upgrade an Opwise 1.7, 1.6, or 1.5 z/OS agent to UAG.</p>
Stonebranch Solutions 4.3.0	Universal Automation Center Registration Server (UAR) is installed as FMID TUAR430. UAR provides the ability to register the Universal Broker with Opwise Automation Center 1.6 and 1.7.

Indesca and Infitran 4.1.0	The Universal Broker and Universal Enterprise Controller STCs can now use user profiles with non-zero UID values instead of UID 0 as required in previous releases. See Converting STC User Profiles to a Non-Zero UID for details on how to convert the STC user profiles from UID 0 to a non-zero UID value.
Universal Products 3.2.0.1	UPI-589: SE37 ABEND occurs on the SMPWRK6 ddname in the UNVSMPE JCL procedure during APPLY processing. PTF PU35001 has an SMP/E HOLD with instructions on modifying the UNVSMPE JCL procedure to avoid the SE37 ABEND.
Universal Products 3.2.0	Product configuration files have been moved from SMP/E target libraries SUNVCONF and SUNVCOMP to non-SMP/E product libraries UNVCONF and UNVCOMP . The change allows for remote configuration capability of z/OS configuration members. Configuration members are delivered in the SMP/E SUNVSAMP library and copied to the appropriate library in an installation job. All SMP/E target and distribution libraries have been changed from PDS to PDSEs. This includes the load libraries SUNVLOAD and AUNVLOAD . The installation upgrade jobs include steps to convert existing libraries to PDSE format.
Universal Products 3.1.1.3	DF03150: LMOD elements UCMSCPST, UCMSS000 and UCMSR000 were not defined correctly. Their JCLIN did not account for implicitly defined modules used in the CSSLIB. This fix updates their JCLIN and adds a DDDEF for CSSLIB.
Universal Products 3.1.1	Package size has increased significantly as the Universal Broker and Server components are now included as FMIDs. Product SMP/E target library SUNVLOAD and SMP/E distribution library AUNVLOAD space allocation should be increased to meet the new space requirements. Additionally, SMP/E SMPPTS and SMPPTS data sets and SMPPTS DDDEF space requirements have increased.
Universal Products 2.2.0	Products are packaged in the new Universal Products package. Starting with Universal Products 2.2.0, SMP/E target and distribution libraries are now shared between all products in order to make maintenance and administration easier. Product target and distribution data set names have changed. All products in the Universal Products package use UNV as the three character product identifier. As such, the last qualifier of the target libraries start with SUNV and the last qualifier of the distribution libraries start with AUNV .
Universal Command 2.1.0	Start with Universal Command 2.1.0, the SMP/E target and distribution libraries SUCMNLS , AUCMNLS , SUCMCONF , and AUCMCONF have changed their record format from variable block to fixed block.
Universal Command 1.2.0	Starting with Universal Command 1.2.0, the SMP/E target and distribution library names have changed. The product name qualifier has been changed to the three-character product identifier, and the version, release, modification qualifier (V1R1M0) has been removed. The changes comply with the IBM naming conventions for SMP/E libraries. Also, the absence of the version qualifier will make future upgrades much simpler and trouble-free.

z/OS USS

Universal Products 3.2.0.1	UPI-588: SMP/E distribution library AUNVHBN was incorrectly allocated with record format undefined in the 3.2.0.0 package. A new distribution library AUNVHBN2 must be allocated and a DDDEF defined. PTF PU42001 has an SMP/E HOLD with instructions on how to allocate and define the DDDEF for AUNVHBN2. UPI-590: Maintenance JCL members UNVMTRCV, UNVMTAPL and UNVMTACC in the INSTALL library do not specify the six USS FMIDs to be received, applied and accepted. The list of FMIDs specified in the FORFMID parameter in each job needs to have the following USS FMIDs included: UUNV320, UUBR320, UUCM320, UUDM320, UUEM320, and UUTL320. An example of the FORFMID parameter with a complete list of z/OS and USS FMIDs follows: FORFMID(TUNV320,TUTL320, TUBR320,TUCM320,TUEC320,TUDM320,TUXD320,TUSD320,TUSP320,TUEM320,UUNV320,UUBR320,UUCM320,UUDM320,UUEM320,UUTL320).
Universal Products 3.2.0	Universal Products for z/OS USS 3.2.0 was the first release where USS components were packaged as an SMP/E installation. Prior versions were installed with a product installation script. There is no automatic upgrade path to 3.2.0. Any previously installed version must be manually un-installed. If the 3.2.0 version will be installed in the same directories as the previous version, the previous version must be un-installed before the 3.2.0 version is installed. If the 3.2.0 version will not be installed in the same directories, the previous version can be un-installed after the 3.2.0 version is installed. To un-install a previous version, simply remove all z/OS UNIX file system product directories. Refer to the previous version's Installation Guide for a list of product directories. Product configuration files have been moved from the /etc/universal directory to the non-SMP/E product library UNVCONF . The change allows for remote configuration capability of z/OS USS configuration members. Configuration members are delivered in the SMP/E SUNVSAMP library and copied to the appropriate library in an installation job.


Universal Products 3.1.1.3	DF02871: Readme file incorrectly referred to starting the ubrokerd daemon.
Universal Products 3.1.0	Starting with Universal Products 3.1.0, the Universal Broker and Servers are no longer provided in the USS package. The Universal Broker and Servers are now part of the z/OS SMP/E installation.

Windows

Workload Automation 5.2.0.0	B-03882: Add Opwise Controller Command Line Interface (CLI) program as an optionally installed component. B-04014: Add support for Broker user domain accounts during installation.
Workload Automation 5.1.0.3	D-0300: New Broker will not start if trace_directory in ubroker.conf points to directory removed during 32- to 64-bit crossgrade.
Universal Products 3.2.0	Universal Command Agent for SOA added.
Universal Products 3.1.1.5	DF03398: Deselecting server component products during an upgrade does not remove the component definitions resulting in component start errors. DF03489: If upgrading Universal Command and Universal Command Server is not currently installed, an error occurs trying to move the server component database. DF03599: The ./UcmdMgr, ./UcmdSrv and ./Ueld installation directories were defined with too restrictive ACL's preventing user accounts in the Power User group from running ucmd and ueld commands.
Universal Products 3.1.1.3	DF03119: Location dependent registry values (for example, NLS directory) were not updated to account for potentially different installation directories upon an upgrade.

UNIX

Workload Automation 5.2.0.0	B-02799: Add support for multiple, parallel installations and user mode installation method. (Not valid for MP-RAS.) B-03712: Add support for user verification in unvinst for group membership assigned by Windows Active Directory. B-03904: Add Opwise Controller Command Line Interface (CLI) program as an optionally installed component. (Not valid for MP-RAS.)
Workload Automation 5.1.0.1	B-02851: Initial 5.1.0 delivery for z/Linux 64-bit.
Stonebranch Solutions 4.2.0.2	D-02508: Solaris install package scripts unnecessarily stop ubrokerd processes running on all zones, not just the one zone on which the package is being installed. The faulty scripts are included in packages prior to 4.2.0.2. When these packages are uninstalled or upgraded, they will stop all ubrokerd processes.
Universal Products 3.2.0	Universal Command Agent for SOA added.

<p>Universal Products 3.1.1.3</p>	<p>CR02373: Verify Linux installation script is running as root since rpm package installation requires root access.</p> <p>DF02465: Linux installation script unvinst.sh did not set the exit code properly upon an rpm error.</p> <p>DF02647: Linux installation log was written to /opt/universal directory instead of the current working directory.</p> <p>DF02877: The set-userid-on-exec flag was unnecessarily set for some executable programs.</p> <p>DF02904: Upgrading Universal Products for Linux from 3.1.0 to 3.1.1 did not start the ubrokerd daemon. This change will correct the problem for the next maintenance level, but not for this maintenance level.</p> <p>DF02973: HP-UX output from swlist showed the umet UNV.umeexec version as blank.</p> <p>DF02978: Upgrading Universal Products for Linux from 3.1.1.0 to 3.1.1.3 did not remove the 3.1.1.0 package. This change will correct the problem for the next maintenance level, but not for the application of this maintenance level.</p> <p>DF03094: Add support for Solaris 10's zone configuration.</p> <p>DF03113: Upgrading Universal Products for Linux from 3.1.0 to 3.1.1 does not update the inittab entry for the ubrokerd daemon. The 3.1.0 script is still called.</p> <p>DF03115: All AIX files /etc/*.conf were moved to /etc/universal upon upgrade to 3.1.1.</p>
<p>Universal Products 3.1.1.2</p>	<p>DF03074: Installation of Universal Products for AIX 3.1.1.1 fails due to missing requisite UDM 3.1.1.0.</p>
<p>Universal Products 3.1.0</p>	<p>All configuration files (for example, ucmd.conf and ubroker.conf) are updated and not replaced. Local modifications to the configuration files are preserved.</p> <p>Note </p> <p>With the generic Universal Products for UNIX installation script, the previous installed directories (default or user-specified) are not removed by the installation of Universal Products 3.1.0 or above.</p> <p>With the AIX, HP-UX, Solaris, and Linux installs, the previous installation directories are removed when the native installer has detected that additional directories or files have not been added to the original installation directories. If they have been modified, the directories will remain; they can be reviewed and removed when desired by your Administrator.</p>
<p>Universal Command 2.2.0</p>	<p>Starting with Universal Command 2.2.0, the generic Universal Products for UNIX installation script is no longer used for AIX, HP-UX, Solaris, and Linux installs. The native operating system vendor-recommended packaging methods are used on these operating systems. All other UNIX operating systems continue to use the generic installation script.</p> <p>All Universal Products now use the Filesystem Hierarchy Standard (FHS) 2.2 for product directory names and locations. This conforms to most vendor directory implementations. Consequently, the installation directory is /opt/universal, the variable files directory is /var/opt/universal, and the configuration files directory is /etc/universal.</p> <p>Executable files from versions prior to Universal Command 2.2.0 (ucmd, uctl, uquery, umet, uencrypt) require manual removal from their default installation directory, /usr/local/bin. Previous releases of Universal Command copied executable programs to the /usr/local/bin directory by default.</p> <p>The installation methods obtain the location where the configuration files for Universal Products are stored. Configuration files will be moved from their current location to the /etc/universal directory.</p>

IBM i

<p>Universal Products 3.1.1</p>	<p>The IBM i package contains Universal Products components for Universal Command, Universal Broker, Universal Data Mover, and Universal Encrypt. Previously, the package contained only Universal Command.</p>
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