# General Information

Universal Controller 7.6.x

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# 4 Universal Controller - Overview

## 4.1 Introduction

Universal Controller, a Java web application running in a Tomcat web container, is the enterprise job scheduler and workload automation broker solution of Universal Automation Center. The Controller presents a user interface for creating, monitoring, and configuring Controller information; handles the scheduling logic; processes all messages to and from Universal Agents; and synchronizes much of the High Availability operation of Universal Automation Center.

Each instance of a Controller in a Universal Automation Center environment is referred to as a cluster node. A High Availability (redundant system) environment contains two or more cluster nodes.

## 4.2 Application Container

The application container is third-party software that serves as a container for the Controller. Universal Controller uses Apache Tomcat as the application container.

## 4.3 Database

The database management component supports SQL queries to a set of tables in the Controller database.

The following databases are supported:

- MySQL 8.0.x
- Microsoft SQL Server 2016, 2017, 2019 and 2022
- Oracle 19c, and 21c

> Databases that are compatible with and use the same JDBC drivers as the supported databases are also supported, for example AWS RDS (MySQL), MariaDB (MySQL), or Azure SQL Database (SQL Server). We recommend that customers periodically review the database documentation for Incompatibilities and Feature Differences as these may change over time.

## 4.4 Universal Message Service (OMS)

Universal Message Service (OMS) is the network communications provider between the Controller and Agent(s).

**Note**

OMS replaces the Message Hub and Transporter components of pre-5.2.0 releases of the Universal Automation Center.

OMS is installed as a component of Universal Agent for Windows and UNIX.

## 4.5 Command Line Interface (CLI)

The Universal Controller Command Line Interface (CLI) is implemented as a set of commands that perform specific actions in a Controller. The CLI commands can execute on any system that has TCP/IP connectivity to OMS. The results of the action are printed to the CLI commands standard output.

The CLI is installed as a component of Universal Agent for z/OS, Windows, and UNIX.

# 5 Universal Controller - Directory Structure

## 5.1 Directory Structure

Shown below is the directory structure of Universal Controller.

### 5.1.1 UNIX

```
$CATALINA_HOME/
$CATALINA_HOME/bin
$CATALINA_HOME/conf
$CATALINA_HOME/lib
$CATALINA_HOME/logs
$CATALINA_HOME/uc_backup/System_Backups
$CATALINA_HOME/uc_backup/System_Backups/Activity
$CATALINA_HOME/uc_backup/System_Backups/Audit
$CATALINA_HOME/uc_backup/System_Backups/History
$CATALINA_HOME/uc_export
$CATALINA_HOME/uc_images
$CATALINA_HOME/uc_logs
$CATALINA_HOME/webapps
$CATALINA_HOME/webapps/uc
```

### 5.1.2 Windows

```
$CATALINA_HOME\
$CATALINA_HOME\bin
$CATALINA_HOME\conf
$CATALINA_HOME\lib
$CATALINA_HOME\logs
$CATALINA_HOME\uc_backup\System_Backups
$CATALINA_HOME\uc_backup\System_Backups\Activity
$CATALINA_HOME\uc_backup\System_Backups\Audit
$CATALINA_HOME\uc_backup\System_Backups\History
$CATALINA_HOME\uc_export
$CATALINA_HOME\uc_images
$CATALINA_HOME\uc_logs
$CATALINA_HOME\webapps
$CATALINA_HOME\webapps\uc
```

# 6 Universal Controller - Provided Metrics

## 6.1 Introduction

System metrics are scraped through our Prometheus Metrics Web Service endpoint.

For configuring and exporting user-defined Universal Event metrics, click here.

## 6.2 Universal Controller Task Instance Activity and History Metric Exports

For configuring UC with optional metric labels, click here.

| Metric Name | Description | Metric Type | Default Labels | Optional Labels |
|---|---|---|---|---|
| uc_history_total | Total number of task instances that completed with an end status of In Doubt, Start Failure, Confirmation Required, Cancelled, Failed, Skipped, Finished, or Success. | Counter | • cluster_node_id<br>• task_type<br>• task_type_detailed<br>• task_instance_status | • agent_id<br>• task_name<br>• security_business_services<br>• task_instance_exit_code |
| uc_task_instance_launch_total | Total number of task instances launched. | Counter | • cluster_node_id<br>• task_type<br>• task_type_detailed | • agent_id<br>• task_name<br>• security_business_services |
| uc_task_instance_late_start_total | Total number of task instances that started late. | Counter | • cluster_node_id<br>• task_type<br>• task_type_detailed | • agent_id<br>• task_name<br>• security_business_services |
| uc_task_instance_late_finish_total | Total number of task instances that finished late. | Counter | • cluster_node_id<br>• task_type<br>• task_type_detailed | • agent_id<br>• task_name<br>• security_business_services |
| uc_task_instance_early_finish_total | Total number of task instances that finished early. | Counter | • cluster_node_id<br>• task_type<br>• task_type_detailed | • agent_id<br>• task_name<br>• security_business_services |

| Metric Name | Description | Metric Type | Default Labels | Optional Labels |
|---|---|---|---|---|
| uc_task_instance_duration_seconds | Task instance duration in seconds.<br><br>The default buckets, defined in seconds, are as follows.<br><br>1, 2.5, 5, 10, 15, 30, 45, 60, 150, 300, 600, 900, 1800, 2700, 3600<br><br>This translates to the following.<br><br>1s, 2.5s, 5s, 10s, 15s, 30s, 45s, 60s, 2.5m, 5m, 10m, 15m, 30m, 45m, 1hr<br><br>To customize the buckets, you can configure the `uc.properties`<br><br>property `uc.prometheus.metrics.uc_task_instance_duration_seconds.buckets`. | Histogram | • cluster_node_id<br>• task_type<br>• task_type_detailed | • agent_id<br>• task_name<br>• security_business_services |
| uc_universal_event_total | Total number of Universal Events published by Universal Event Templates and Universal Template Event Templates. | Counter | • cluster_node_id<br>• universal_event_name<br>• universal_template_name<br>• universal_extension_name<br><br>The **universal_template_name** and **universal_extension_name** label values are non-empty for published local Universal Events (defined by a Universal Template Event Template) and empty for published global Universal Events (defined by a Universal Event Template). | • agent_id<br>• task_name<br>• security_business_services |

# 6.3 Standard Metric Exports (CPU Time Spent and Memory Usage)

| Metric Name | Description | Metric Type |
|---|---|---|
| process_cpu_seconds_total | Total user and system CPU time spent in seconds. | Counter |
| process_start_time_seconds | Start time of the process since unix epoch in seconds. | Gauge |
| process_open_fds | Number of open file descriptors. | Gauge |
| process_max_fds | Maximum number of open file descriptors. | Gauge |
| process_virtual_memory_bytes | Virtual memory size in bytes. | Gauge |
| process_resident_memory_bytes | Resident memory size in bytes. | Gauge |

# 6.4 JVM Class Loading

## 6.4.1 JVM Memory Pools Metric Exports

| Metric Name | Description | Metric Type |
|---|---|---|
| jvm_memory_objects_pending_finalization | The number of objects waiting in the finalizer queue. | Gauge |
| jvm_memory_bytes_used | Used bytes of a given JVM memory area. | Gauge |
| jvm_memory_pool_bytes_used | Used bytes of a given JVM memory pool. | Gauge |
| jvm_memory_bytes_committed | Committed (bytes) of a given JVM memory area. | Gauge |
| jvm_memory_bytes_max | Max (bytes) of a given JVM memory area. | Gauge |
| jvm_memory_bytes_init | Initial bytes of a given JVM memory area. | Gauge |

## 6.4.2 JVM Memory Allocation Metric Exports

| Metric Name | Description | Metric Type |
|---|---|---|
| jvm_memory_pool_allocated_bytes_total | Total bytes allocated in a given JVM memory pool. Only updated after GC, not continuously. | Counter |

### 6.4.3 JVM Buffer Pools Metric Exports

| Metric Name | Description | Metric Type |
|---|---|---|
| jvm_buffer_pool_used_bytes | Used bytes of a given JVM buffer pool. | Gauge |
| jvm_buffer_pool_capacity_bytes | Bytes capacity of a given JVM buffer pool. | Gauge |
| jvm_buffer_pool_used_buffers | Used buffers of a given JVM buffer pool. | Gauge |

### 6.4.4 JVM Garbage Collector Exports

| Metric Name | Description | Metric Type |
|---|---|---|
| jvm_gc_collection_seconds | Time spent in a given JVM garbage collector in seconds. | Summary |

### 6.4.5 JVM Thread Metric Exports

| Metric Name | Description | Metric Type |
|---|---|---|
| jvm_threads_current | Current thread count of a JVM. | Gauge |
| jvm_threads_daemon | Daemon thread count of a JVM. | Gauge |
| jvm_threads_peak | Peak thread count of a JVM. | Gauge |
| jvm_threads_started_total | Started thread count of a JVM. | Counter |
| jvm_threads_deadlocked | Cycles of JVM-threads that are in deadlock waiting to acquire object monitors or ownable synchronizers. | Gauge |
| jvm_threads_deadlocked_monitor | Cycles of JVM-threads that are in deadlock waiting to acquire object monitors. | Gauge |
| jvm_threads_state | Current count of threads by state. | Gauge |

### 6.4.6 JVM Class Loading Metric Exports

| Metric Name | Description | Metric Type |
|---|---|---|
| jvm_classes_currently_loaded | The number of classes that are currently loaded in the JVM. | Gauge |
| jvm_classes_loaded_total | The total number of classes that have been loaded since the JVM has started execution. | Counter |

| Metric Name | Description | Metric Type |
|---|---|---|
| jvm_classes_unloaded_total | The total number of classes that have been unloaded since the JVM has started execution. | Counter |

### 6.4.7 JVM Version Info Exports

| Metric Name | Description | Metric Type |
|---|---|---|
| jvm_info | VM version info. | Gauge |

## 6.5 Universal Controller Build Info Metric Exports

| Metric Name | Description | Metric Type | Default Labels |
|---|---|---|---|
| uc_build_info | Universal Controller build information. | Gauge | • build<br>• build_date<br>• release |

## 6.6 Universal Controller Database Connection Pool Metric Exports

| Metric Name | Description | Metric Type | Default Labels |
|---|---|---|---|
| uc_database_connection_pool_active | Number of connections currently borrowed from this pool. | Gauge | • pool<br>• db_type |
| uc_database_connection_pool_idle | Returns the number of connections currently idle in this pool. | Gauge | • pool<br>• db_type |
| uc_database_connection_pool_idle_min | Returns the target for the minimum number of idle connections to maintain in the pool. | Gauge | • pool<br>• db_type |
| uc_database_connection_pool_idle_max | Returns the cap on the number of idle connections in the pool. | Gauge | • pool<br>• db_type |
| uc_database_connection_pool_total | Returns the total number of connections currently borrowed and currently idle in this pool. | Gauge | • pool<br>• db_type |
| uc_database_connection_pool_max | Returns the maximum number of connections that can be allocated by the pool (currently borrowed and currently idle) at a given time. | Gauge | • pool<br>• db_type |

## 6.7 OMS Server Metrics

| Metric Name | Description | Metric Type | Default Labels |
|---|---|---|---|
| uc_oms_server_last_connected_time_seconds | OMS Server last connected time specified as the number of seconds since the Unix epoch, namely January 1, 1970, 00:00:00 GMT. | Gauge | • server_address<br>• last_connected |
| uc_oms_server_session_status | OMS Server session status. (0=None, 1=Impaired, 2=Operational, -1=Unknown) | Gauge | • server_address<br>• last_connected |

## 6.8 License Detail Metrics

| Metric Name | Description | Metric Type | Default Labels |
|---|---|---|---|
| uc_license_agents_distributed_used | Returns the number of distributed agents used. | Gauge | • environment<br>• customer<br>• expiry_date |
| uc_license_agents_distributed_max | Returns the number of distributed agents allowed. | Gauge | • environment<br>• customer<br>• expiry_date |
| uc_license_agents_zos_used | Returns the number of Zos agents used. | Gauge | • environment<br>• customer<br>• expiry_date |
| uc_license_agents_zos_max | Returns the number of Zos agents allowed. | Gauge | • environment<br>• customer<br>• expiry_date |
| uc_license_cluster_nodes_used | Returns the number of cluster nodes used. | Gauge | • environment<br>• customer<br>• expiry_date |
| uc_license_cluster_nodes_max | Returns the number of cluster nodes allowed. | Gauge | • environment<br>• customer<br>• expiry_date |
| uc_license_monthly_executions_used | Returns the number of monthly task executions used. | Gauge | • environment<br>• customer<br>• expiry_date |
| uc_license_monthly_executions_max | Returns the number of monthly task executions allowed. | Gauge | • environment<br>• customer<br>• expiry_date |
| uc_license_task_definitions_used | Returns the number of task definitions used. | Gauge | • environment<br>• customer<br>• expiry_date |
| uc_license_task_definitions_max | Returns the number of task definitions allowed. | Gauge | • environment<br>• customer<br>• expiry_date |

# 7 Setting up Universal Controller

The following table provides a guideline for setting up Universal Controller. It is a checklist of features and functions, including links to the detailed information and instructions on this website.

| | |
|---|---|
| **Perform Pre-installation Procedure** | Perform the pre-installation procedure that is required before installing the Controller. |
| **Download Universal Controller Distribution File** | Download the appropriate Universal Controller distribution file from the Stonebranch Customer Portal. |
| **Install Universal Controller** | Install the Controller package from the downloaded Controller distribution file. See Universal Controller Installation for help in getting the Controller installed and verified. |
| **Configure Universal Controller** | After installation, check the Universal Controller properties. If you will be running the Controller in a High Availability environment, you must configure the Controller for High Availability. |
| **Log in to Universal Controller** | Once the Controller is installed and configured, we recommend that you log in and familiarize yourself with the basic features of the user interface. All Controller functions are accessed from the Services. Within the user interface, you will create all your records (for example: users, tasks, and triggers) by entering information into record Details. (See Naming Tips for information on organizing your records.) The records are then displayed in lists of each type, which you can sort and filter and perform a wide variety of other functions. |
| **Configure Password Settings** | Before you create users for Universal Controller, configure the settings for all user passwords. |
| **Set up Security** | Use the Controller Security feature to create users and user groups and assign them roles and permissions. You can also define credentials that are used by the Controller to log in to remote machines. You can create Business Services that represent your organization and assign Controller records to them, and assign permission only to users and/or user groups that belong to a specific Business Services. A complete audit history of all Controller activity also is available for regulatory compliance. |
| **LDAP and SAML** | Specify LDAP Settings, which allow you to enable the LDAP bridge for both UNIX and Windows operating systems, and Single Sign-On Settings, which allow you to pre-authenticate users to a third-party identity provider. |
| **Define Resources** | Define the types of resources that you will need in your operational database. If you have installed Universal Agent on any machines, records for each of them are automatically created when they connect to the Controller. You also may need to define one or more resources, such as email, database, PeopleSoft, and SAP connections, as well as SNMP Managers. You also can create status-based notifications for Agent, Cluster Node, and OMS Server resources. You can set up a throttling scheme for your machines using Virtual Resources and create scripts that you can execute on remote machines. |
| **Create Tasks and Workflows** | Once you have your resources in place, you can begin creating tasks. Supported task types are Workflows, Linux/Unix, Windows, z/OS, Universal Command, SAP, PeopleSoft, File Transfer, Manual, Timer, SQL, Stored Procedure, Email, Web Service, Recurring, Task Monitor, Agent File Monitor, Remote File Monitor, FTP File Monitor, System Monitor, Variable Monitor, Email Monitor, Application Control, and Universal. |
| **Create Universal Templates and Universal Tasks** | In order to design your own Integrations, you first must create the Universal Templates on which the Universal Tasks are based. |

| | |
|---|---|
| **Create Task Triggers** | To run your tasks outside of workflows, you can create task triggers, which define events, conditions, or dates/times that the tasks will run. Trigger types include Cron, Time, Temporary, Manual, File Monitor, Task Monitor, Variable Monitor, Email Monitor, Application Monitor, and Composite. You may also need to set up one or more customized calendars that reflect your fiscal year and holiday schedules, and custom days for those calendars. |
| **Manually Run and Control Tasks** | You also may need to manually run and control tasks, either from the user interface, the command line, or the API. |
| **Create and Run Reports** | The Report Details feature lets you create reports from a variety of Universal Controller database tables. You can use a report to create a Widget. |
| **Monitor Operations** | You will monitor your automated operations from the Activity Monitor, which you can customize using Filters. |
| **Dashboards** | The Home Dashboard, a system-defined Dashboard that displays when you log in to the Controller, provides details about the Controller system and status information on active task instances, Agents Overview, Cluster Nodes, and OMS Servers]. You also can create your own Dashboard Details that display information about the Controller, its environment, and the jobs it is running as defined in system-provided and user-defined Widgets. |
| **Monitor and Control Applications** | The Controller lets you to monitor and control all of the applications that you may have running in your entire network. |
| **Command Line Interface (CLI) and API** | In addition allowing you to manually run and control tasks, you also can monitor and control your operations and perform basic administrative functions from the command line or the API. |
| **Manage Data and Audit Records** | Comprehensive utilities are provided that allow you to manage your Controller records. You can view, restore, and purge old versions of Controller records, bundle and promote records from one Controller server to another, and export and import records when applying maintenance to a Controller. You also can configure the automatic backup and purge of Controller data. |
| **Help and Support** | This documentation website provides information to help you install, configure, and use the Controller; see Documentation Help for information on documentation layout and usage. Step-by-step tutorials are available for many of the features and functions described here. Troubleshooting provides a description of error messages that you could encounter, as well as potential problems and solutions. Technical Support for critical and non-critical problems is always available. |

# 8 Licensing

## 8.1 System Details Widget

The System Details widget displays Universal Controller system information in the following categories:

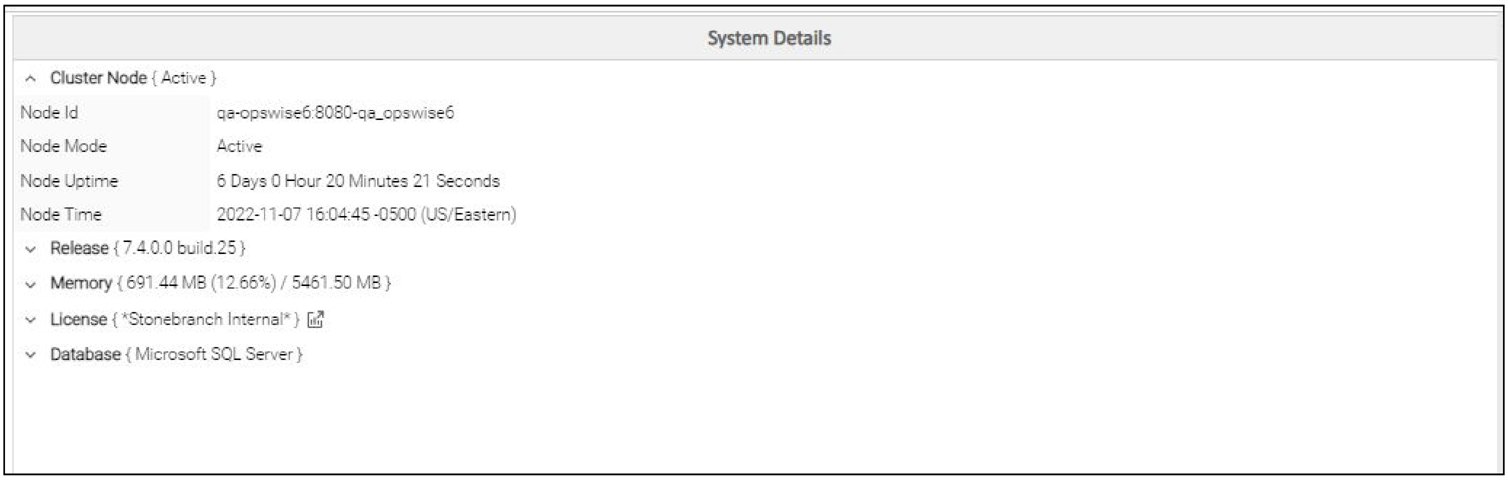
- Cluster Node
- Release
- Memory
- License
- Database

The License category has been enhanced to display:

- Universal Agent-defined limits for the number of:
    - Universal Connector for PeopleSoft (UPPS) connections.
    - Universal Connector for SAP (USAP) connections.
- Universal Agent for SOA protocols that are licensed for use.

**Note**

For details on all Universal Agent license information, see Universal Agent Licensing.




### 8.1.1 System Details Widget Categories

This new design has the following categories, along with their respective attributes, defined within the widget.

- **Cluster Node** { *Node Mode* }

    - Node Id
    - Node Mode
    - Node Uptime
    - Node Time
- **Release** { *Release Build* }
    - Release
    - Build
    - Build Date
- **Memory** { *Memory Used / Memory Maximum* }
    - Memory Maximum
    - Memory Used
    - Memory Free
- **License** { *Customer* }
    - Expiry Date
    - Cluster Nodes
    - Distributed Agents
    - z/OS Agents
    - Tasks
    - Monthly Executions
    - UPPS
    - USAP
    - UPPS Connections
    - USAP Connections
    - JMS
    - IBM WebSphere MQ
    - SOAP
    - XD SOAP
    - HTTP
    - Customer
- **Database** { *Database Type* }
    - Database Type
    - Database Name
    - Database URL
    - Database Connections

By default, all categories will be collapsed with the exception of the **Cluster Node** category.

While the dashboard remains open, any change to the expanded categories will be preserved between widget/dashboard refreshes.

To change the category expansion default, see the System Details Expanded Categories Universal Controller system property.

**Note**

Clicking the License category bar chart icon runs the UAC - Licensed Monthly Task Instance Executions built-in system report.

### 8.1.2 Flagged Categories

If an attribute under a category is flagged, the category will be expanded automatically and appear in **red**. Likewise, the flagged attribute will also appear in **red**.

The following attributes can be flagged.

| | | |
|---|---|---|
| Cluster Node | Node Mode | Flagged when this cluster node is Unlicensed. |
| Memory | Memory Used | Flagged when percentage of memory used is greater than or equal to 90%. |
| License | Expiry Date | Flagged when current date is past the expiry date. |
| License | Distributed Agents | Flagged when number of registered distributed agents (Windows/ Linux) exceeds licensed distributed agents. |
| License | z/OS Agents | Flagged when number of registered z/OS agents exceeds licensed z/ OS distributed agents. |
| License | Tasks | Flagged when number of task definitions exceeds licensed number of tasks. |
| License | Monthly Executions | Flagged when number of monthly task instance executions exceeds licensed number of monthly executions. |
| License | Cluster Nodes | Flagged when number of registered cluster nodes exceeds licensed number of cluster nodes. |

## 8.2 Expiry Date

The license has an explicit expiry date, regardless of when the license is applied.

In prior releases, the expiry date was always based on the number of days relative from the date the license was applied.

## 8.3 Distributed Agents and z/OS Agents

Distributed Agents (Windows, Linux/Unix) and z/OS Agents are licensed separately.

A z/OS agent with secondary Agents requires a license for the primary Agent and one license for each secondary Agent.

In prior releases, agents were licensed under a single Agents component.

For information on how licenses are migrated from a prior release, see Product Licensing in the Universal Controller 6.8.0.0 Release Notes.

## 8.4 Tasks

The Controller license can enforce a fixed number of Task definitions or allow an Unlimited number of Task definitions.

## 8.5 Number of Monthly Executions

The Controller is licensed by the number of monthly executions; specifically, the number of task instances that run to Success or Finished over a period of one month.

The following task types are excluded from the monthly execution count.

- Workflow
- Timer
- Agent File Monitor
- Manual
- Remote File Monitor
- Task Monitor
- System Monitor
- Application Control
- Variable Monitor
- Email Monitor

**Note**

Universal Monitors are excluded from Monthly Executions.

The Type filter for the following built-in reports were updated.

- UAC - Licensed Monthly Task Instance Executions
- UAC - Completed Task Counts : Grouped by Month
- UAC - Completed Task Counts : Grouped by Month / Stacked by Type

Extension-based Universal Tasks that are Launched by a Universal Monitor as a configured Universal Task Publisher will be excluded from license instance history collection using the Launch Source. These instances will have a Launch Source of Universal Monitor or Universal Monitor Trigger.

The Controller will capture execution statistics on a daily basis, commencing immediately after midnight in the server timezone, and store those statistics in the **License Instance History (ops_license_exec_history)** table.

If you are licensed for an **Unlimited** number of monthly executions, then there is no limit on the number of task instances you can run.

## 8.6 High Availability Licensed Cluster Nodes

When a Universal Controller has restrictions on the Cluster Nodes within its License, the following behavior may be experienced when a new or existing Cluster Node is started up:

### 8.6.1 Number of Nodes within the Licensed Amount (No Violation)

If a new Cluster Node starts up and adding this new Cluster Node will not violate the License:

- The usual process occurs where the Cluster Node is created and starts up as Passive.

If an existing Cluster Node starts up and the License is not in violation with respect to Cluster Nodes:

- The usual process takes place with the Cluster Node starting up as Passive.

### 8.6.2 Number of Nodes exceeds or will exceed the Licensed Amount (Violation)

If a new Cluster Node starts up and adding this new Cluster Node will violate the License, or the License is already in violation for Cluster Nodes:

- The new Cluster Node will be added but it will run as a new status of "Unlicensed".

If an existing Cluster Node starts up and there are more Cluster Nodes than the License allows; that is, the License already is in violation for Cluster Nodes:

- A count of running Cluster Nodes is taken:
  - If the number of running Cluster Nodes is less than the licensed amount, the Cluster Node starts up normally as Passive.
  - If the number of running Cluster Nodes exceeds the licensed amount, the Cluster Node starts up as Unlicensed.

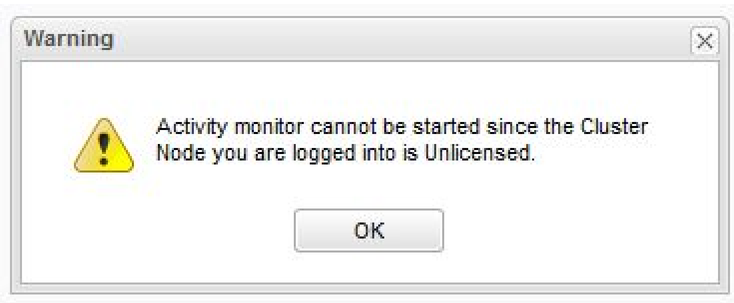
### 8.6.3 Unlicensed Node Processing

When a Cluster Node starts up as Unlicensed, it can only transition out of this mode for the following conditions:

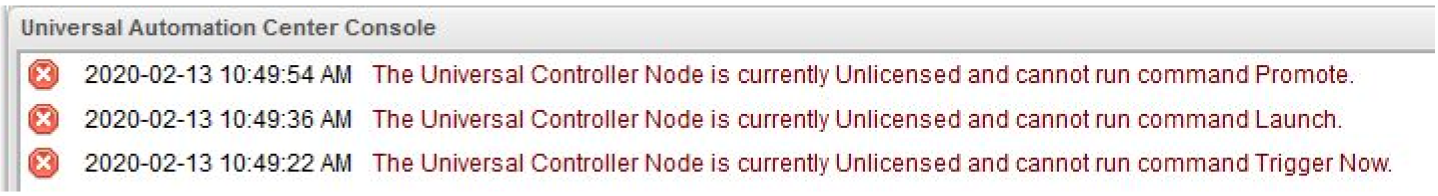
- A new License is applied to the system that no longer makes the amount of Cluster Nodes in violation of the License.
- Deletion of Cluster Node(s) occurs, thereby removing the Cluster Node violation of the License.

A user can connect to an Unlicensed Cluster Node from the User Interface; however, limited interaction is allowed:

- Activity Monitoring is not allowed.




- Commands are not allowed to be executed.

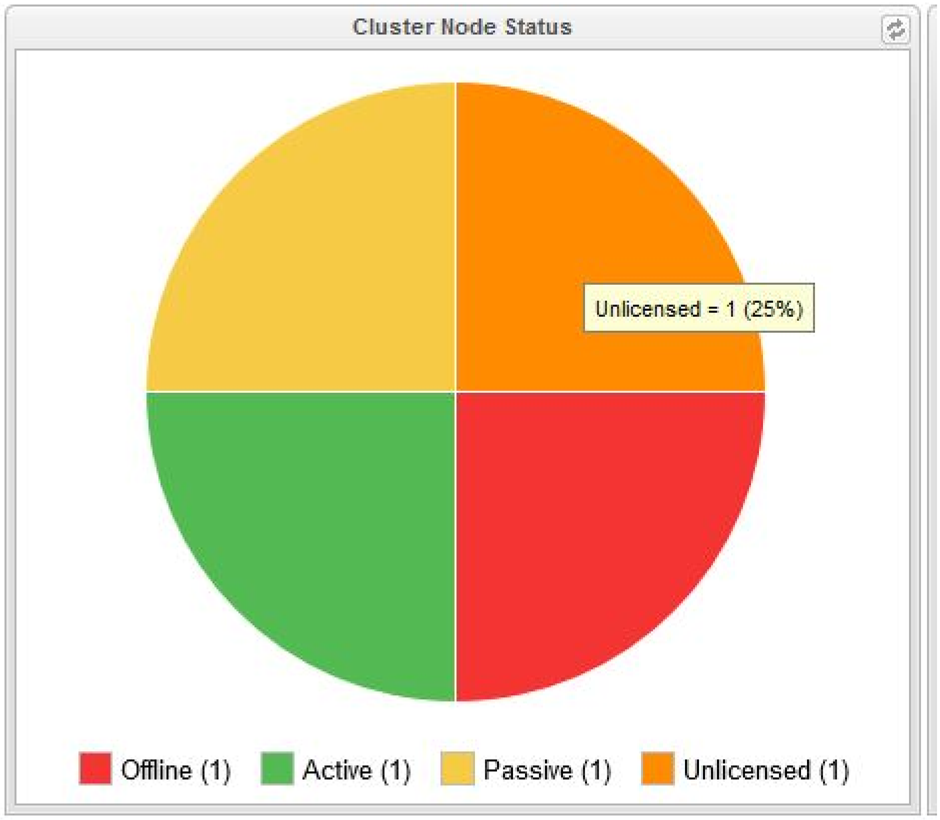



- Create/Update/Delete are NOT allowed of Tasks/Triggers/Calendars/Custom Days/.....

- Cluster Nodes can be deleted (as long as they are marked offline, as usual).
- Properties can be updated, in order to allow a new license to be applied.

## 8.6.4 Unlicensed Node UI

The Cluster Node Status widget will show Unlicensed Cluster Nodes as seen below:

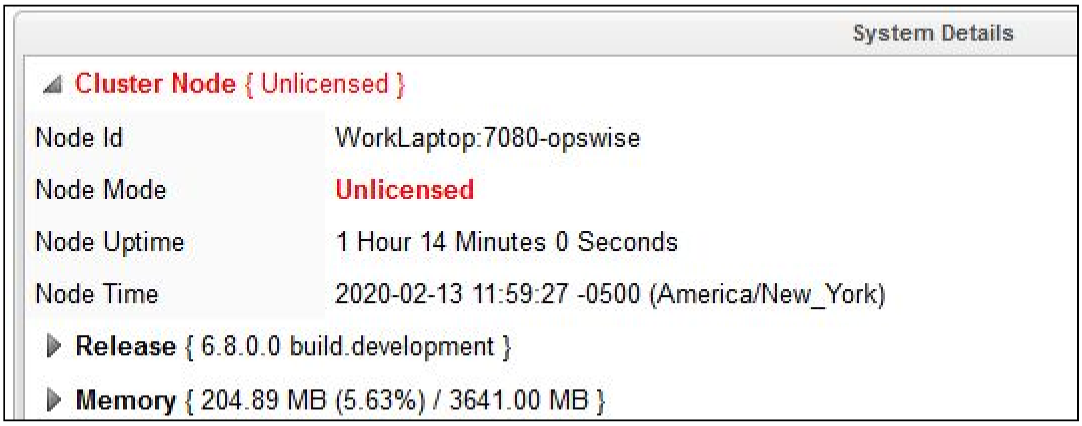



Cluster Node List:

4 Cluster Nodes

| Node Id | Mode |
|---|---|
| WorkLaptop:7080-opswise | Unlicensed |
| XXX:1-opswise | Passive |
| YYY:2-opswise | Offline |
| ZZZ:3-opswise | Active |

When connected to an Unlicensed Cluster Node, The License under the System Details will recognize it as:




## 8.7 Universal Connector for PeopleSoft

The License will have a new boolean (True/False) attribute for Universal Connector for PeopleSoft (UPPS) to control whether or not UPPS is allowed.

The following will be prohibited if not licensed for UPPS:

1. Creating PeopleSoft Connections.
2. Executing PeopleSoft Task Instances.

### 8.7.1 PeopleSoft Connections

Creating a new PeopleSoft Connection will only be allowed if licensed for UPPS.

The following error message will be logged if not licensed for UPPS.

```
PeopleSoft Connection cannot be created because of License restriction.
```

If system notifications are enabled, a license notification email also will be sent with the following message in the email body.

```
Universal Controller node 'localhost:8080-uc' is not licensed for UPPS.

User 'ops.admin' was prohibited from creating PeopleSoft Connection 'PPSC1'.

Please contact Stonebranch customer support.
...
```

**Note**

- PeopleSoft Connections will not be hidden in the UI if not licensed for UPPS.
- Creating PeopleSoft Connections will not be prohibited by Promotion, List Import, or Bulk Import.

### 8.7.2 PeopleSoft Task Instances

Creating new PeopleSoft Tasks will not be prohibited if not licensed for UPPS. Likewise, launching a PeopleSoft Task will not be prohibited; however, PeopleSoft Task Instances will transition to a *Start Failure* **Status** with the following **Status Description**:

```
Execution prohibited due to License restriction.
```

If system notifications are enabled, a license notification email also will be sent with the following message in the email body.

```
Universal Controller node 'localhost:8888-uc' is not licensed for UPPS.

Execution of PeopleSoft task instance 'PPST1' was prohibited.

Please contact Stonebranch customer support.
...
```

**Note**

PeopleSoft Tasks/Task Instances will not be hidden in the UI if not licensed for UPPS.

## 8.8 Universal Connector for SAP

The License will have a new boolean (True/False) attribute for Universal Connector for SAP (USAP) to control whether or not USAP is allowed.

The following will be prohibited if not licensed for USAP:

1. Creating SAP Connections.
2. Executing SAP Task Instances.

### 8.8.1 SAP Connections

Creating a new SAP Connection will only be allowed if licensed for USAP.

The following error message will be logged if not licensed for USAP.

```
SAP Connection cannot be created because of License restriction.
```

If system notifications are enabled, a license notification email also will be sent with the following message in the email body.

```
Universal Controller node 'localhost:8080-uc' is not licensed for USAP.

User 'ops.admin' was prohibited from creating SAP Connection 'SAPC1'.

Please contact Stonebranch customer support.
...
```

**Note**

- SAP Connections will not be hidden in the UI if not licensed for USAP.
- Creating SAP Connections will not be prohibited by Promotion, List Import, or Bulk Import.

### 8.8.2 SAP Task Instances

Creating new SAP Tasks will not be prohibited if not licensed for USAP. Likewise, launching an SAP Task will not be prohibited; however, SAP Task Instances will transition to a *Start Failure* **Status** with the following **Status Description**:

```
Execution prohibited due to License restriction.
```

If system notifications are enabled, a license notification email also will be sent with the following message in the email body.

```
Universal Controller node 'localhost:8080-uc' is not licensed for USAP.

Execution of SAP task instance 'SAPT1' was prohibited.

Please contact Stonebranch customer support.
...
```

**Note**

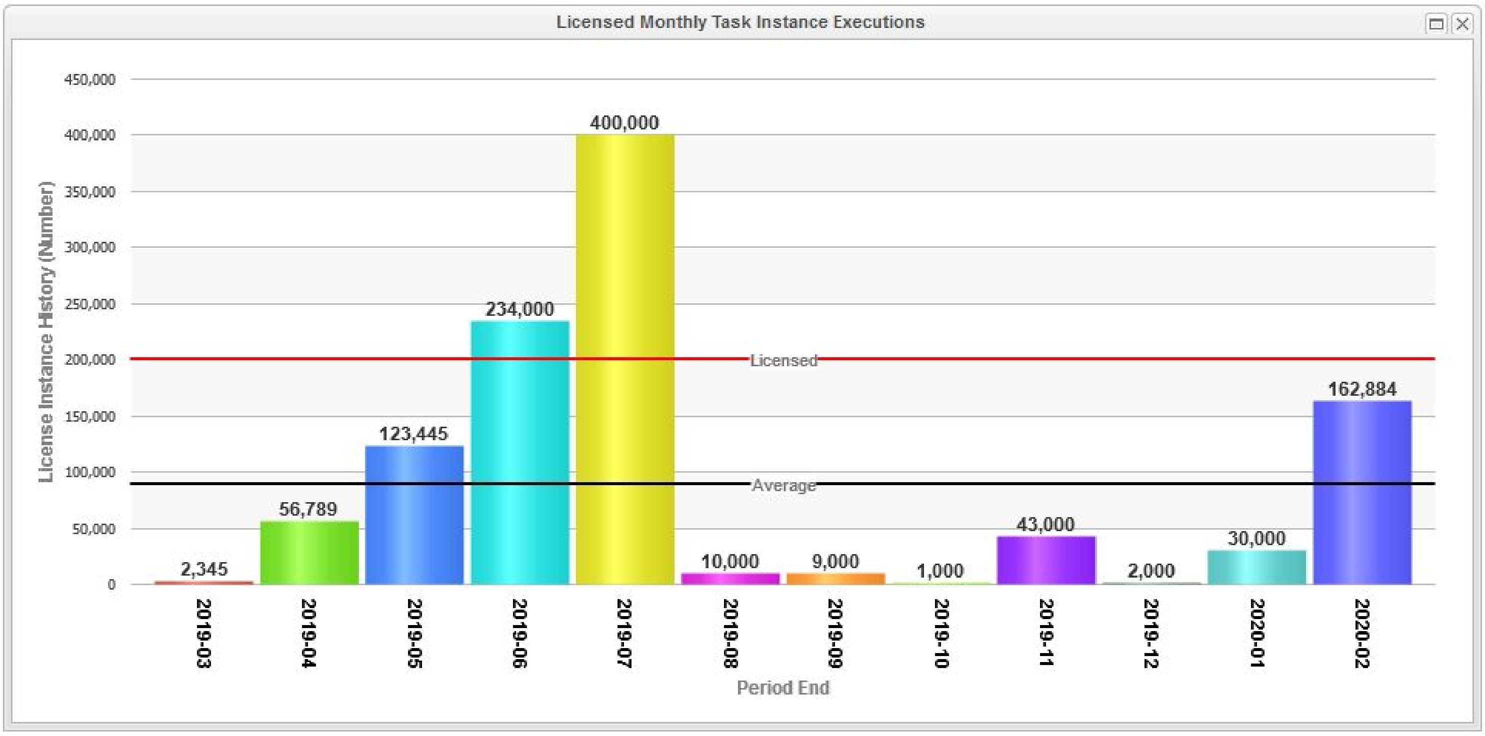
SAP Tasks/Task Instances will not be hidden in the UI if not licensed for USAP.

## 8.9 Reports

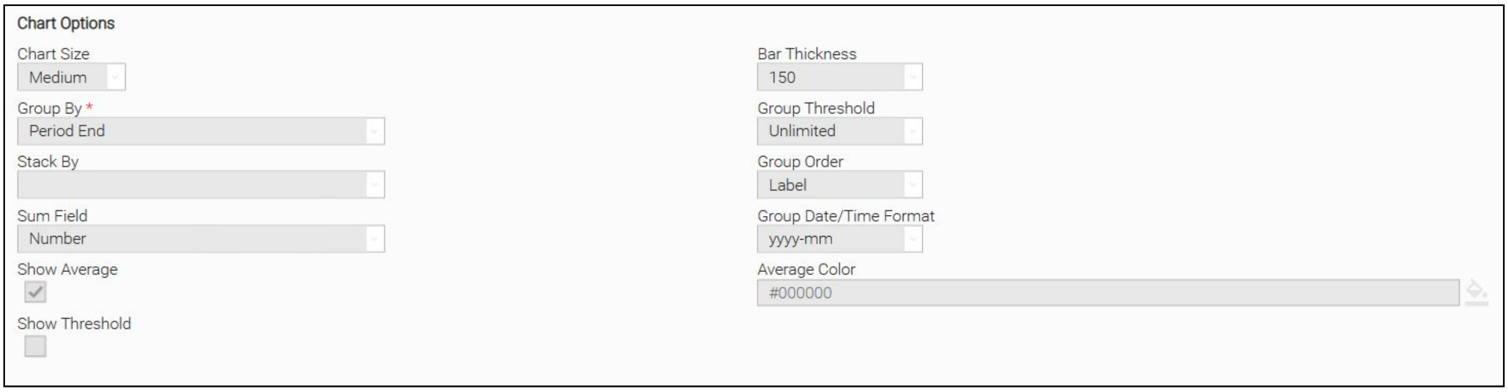
A new built-in report, **UAC - Licensed Monthly Task Instance Executions**, visually display the number of monthly executions.

The report is driven by data in the **License Instance History (ops_license_exec_history)** table, which also is available as a **Table** for selection for custom-built reports.

The report shows the average number of monthly executions, and the licensed number of monthly executions if not **Unlimited**, as shown in the following example.




Furthermore, when viewing the report definition, the **Show Threshold**, **Threshold Color**, **Threshold Value**, and **Threshold Label** will be dynamically populated with values in-line with the applied license.




# 8.10 Agent-Only Licensing

## 8.10.1 Overview

With the introduction of the Universal Agent 6.9.0.0, Universal Controller became the central location for the management of all licensing.

If you do not use Universal Controller as your enterprise job scheduler and workload automation broker solution, the Controller has an Agent-only license mode that allows you to manage licensing for Universal Agent 7.2.x deployments.

## 8.10.2 User Interface

If an Agent-only license is applied to the Controller, logging into the Controller user interface presents restricted navigation.

### 8.10.2.1 Automation Center Navigation

The Automation Center navigation pane which normally is the default navigation pane in the Controller user interface, is not relevant in the context of an Agent-only license, and is hidden from view.

### 8.10.2.2 Bundles and Promotion

The Bundles & Promotion navigation pane is not relevant in the context of an Agent-only license and is hidden from view; the Bundles & Promotion icon is not available for selection.

### 8.10.2.3 Reporting Navigation

Under the Reporting navigation pane, the following menu options are available:

- Dashboards
- Reports
- Widgets

The Colors menu option is hidden.

#### 8.10.2.3.1 Restrictions

| | |
|---|---|
| Reports | You can create reports only on Report tables that are permitted in Agent-Only licensing mode:<br>• Agents<br>• Cluster Nodes<br>• Connections<br>    • Email Connections<br>    • OMS Servers<br>    • SNMP Managers<br>• Security<br>• Widgets |
| Widgets | You cannot create Activity Widgets in Agent-Only licensing mode.<br>You cannot create Report Widgets for Reports that are not permitted in Agent-Only licensing mode.<br>**Note**<br>You can create Report Widgets for all Built-In Reports in Agent-Only licensing mode. |

### 8.10.2.4 Agents and Connections Navigation

Under the Agents & Connections navigation pane, the following menu options are available:

- Agents
    - Linux/Unix Agents
    - Windows Agents
    - z/OS Agents
- System
    - OMS Servers
    - Cluster Nodes
    - Email Connections
    - SMNP Managers

### 8.10.2.5 Administration Navigation

Under the Administration navigation pane, the following menu options are available:

- Configuration
    - Properties
    - Password Settings
    - LDAP Settings
    - Single Sign-On Settings
    - Server Operations
    - Filters
- Security
    - Users
    - Groups
    - Business Services
    - Audits
- Support
    - Support Portal
    - Video Classroom

**Note**

In the Agent-only license mode, the Administration navigation pane is the default navigation pane.

## 8.10.3 System Details Widget

If the License is for a normal Universal Controller system (that is, not Agent-Only), no changes to the License Information are displayed; no mention of Agent-Only will be presented if the -AGENTONLY attribute is set to False.

**License** { *Stonebranch Internal* }

| | |
|---|---|
| Expiry Date | 2025-12-31 |
| Cluster Nodes | 1/2 |
| Distributed Agents | 186/10000 |
| z/OS Agents | 59/100 |
| Tasks | Unlimited |
| Monthly Executions | Unlimited |
| UPPS | true |
| USAP | true |
| Exclude Source Recurring | false |
| UPPS Connections | 25 |
| USAP Connections | 25 |
| JMS | true |
| IBM WebSphere MQ | true |
| SOAP | true |
| XD SOAP | true |
| HTTP | true |
| Customer | *Stonebranch Internal* |
| Environment | QA |

If the License is for Agent Only set-up, the icon to display Licensed Monthly Task Instance Executions will not be displayed, nor will any information about Tasks or Monthly Executions.

# 9 Logging In

## 9.1 Login Methods

Universal Controller provides a Login Method option at the user account level that allows you to select the following login methods:

- Standard
- Single Sign-On
- Standard/Authenticator App (TOTP)

You can select multiple Login Methods; however, you can select only one of **Standard** or **Standard/Authenticator App (TOTP)**.

The default login method for a user depends on the user account type.

| Account Type | Login Method |
| --- | --- |
| Local User Account | Local user accounts, by default, are designated with the Standard login method.<br><br>Any user account created prior to Universal Controller 6.4.6.0 is, by default, designated with the Standard login method; for example, after applying maintenance, or after importing users from an earlier release.<br><br>Any attempt by a user to use the Standard login for an account that is not designated to use Standard login method will receive the following error:<br><br>`Username and/or password invalid.` |
| LDAP-Provisioned User Account | Any user provisioned through LDAP synchronization will be designated, by default, with the login method(s) configured in the LDAP Settings.<br><br>The designation of the login method only applies at user creation time. |
| Single Sign-On-Provisioned User Account | Any user provisioned through SAML Single Sign-On will be designated, by default, with the Single Sign-On login method only.<br><br>The designation of the login method only applies at user creation time. |

**Note**

The local administrator account, ops.admin, is configured to allow only the Standard login method. Modification of the ops.admin account Login Method is not permitted.

For additional details on login method enforcement, see Single Sign-On Troubleshooting.

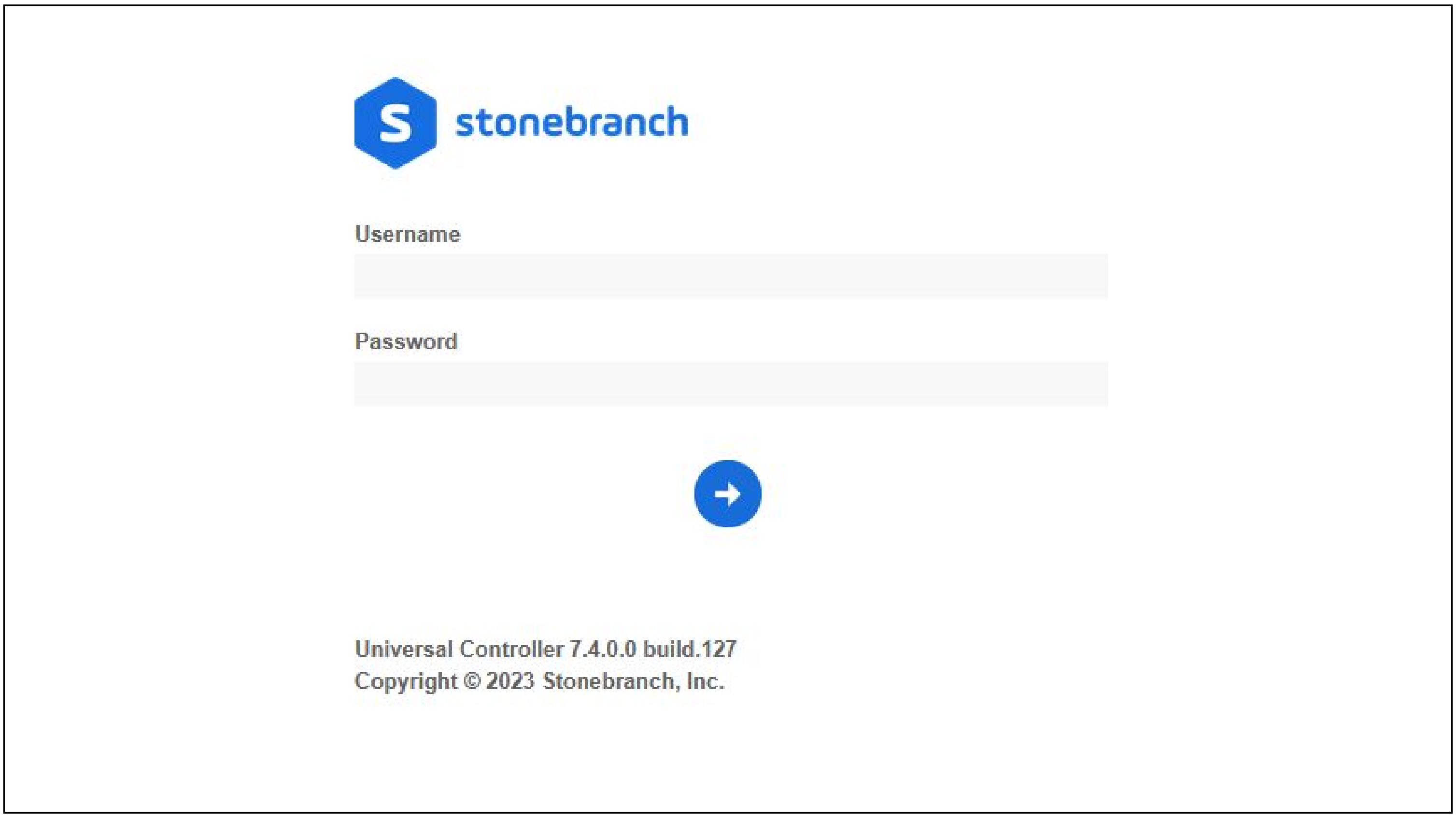
## 9.2 Standard Login

The **Universal Automation Center Login** page displays automatically when you bring up the Universal Controller system and browse to its URL.

The Standard login URL is:

http(s)://<server:port>/uc/login.jsp (or simply, http(s)://<server:port>/uc/).

All Local account and AD/LDAP-authenticated accounts authenticate through this standard login URL.



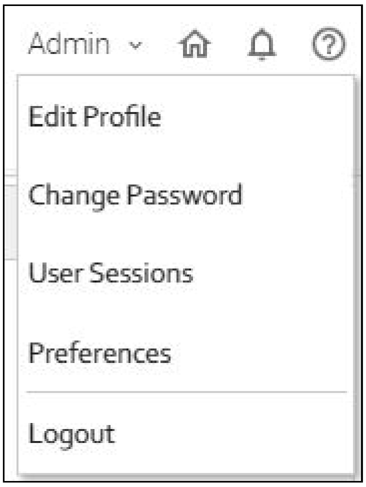
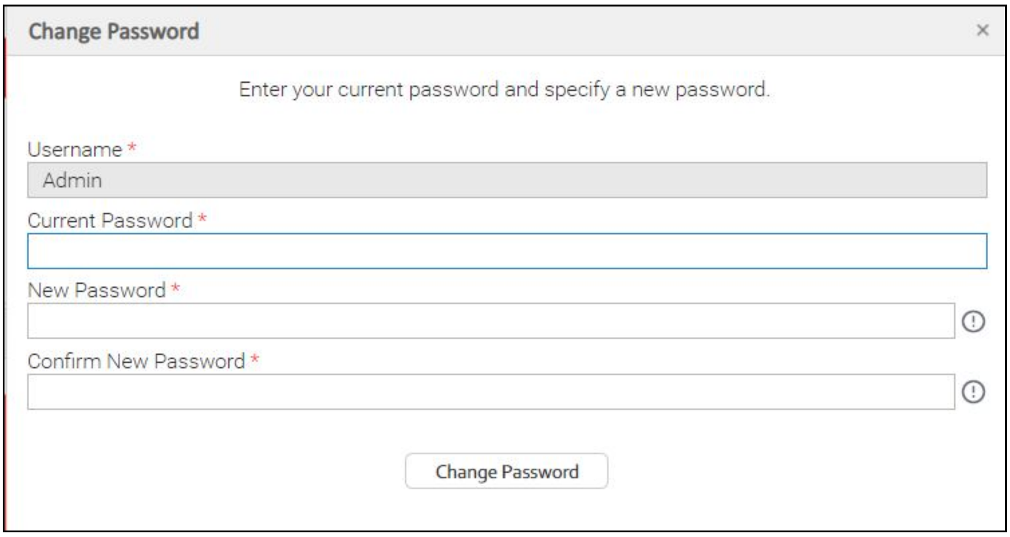

| | |
|---|---|
| **User Name** | The default login User name is **ops.admin**. |
| **Password** | For your initial login to the Controller, no password is required; the Controller prompts you to create a password. |

### 9.2.1 Changing Your Password

**Note**

Changing your password is not applicable to users that log in using LDAP authentication.

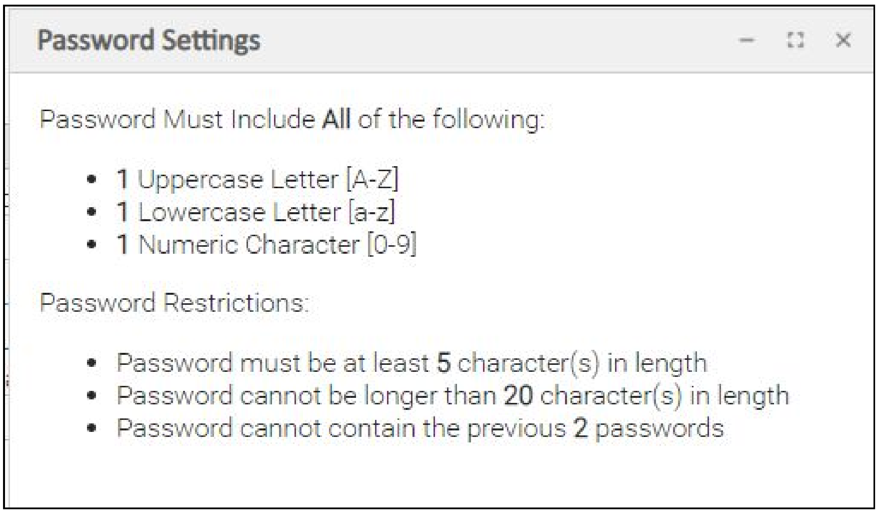
To change your password at any time after you have logged in:

<table>
<tr><td>Step 1</td><td>On the User task bar, click the User Actions drop-down list arrow to display a menu of user actions.<br>

</td></tr>
<tr><td>Step 2</td><td>Click Change Password. The Change Password dialog pops up.<br>

</td></tr>
<tr><td>Step 3</td><td>Enter your Current Password and a New Password, and reenter your new password in Confirm New Password.</td></tr>
<tr><td>Step 4</td><td>Click the Change Password button.</td></tr>
</table>

**Note**

If any Password Settings have been defined for user passwords, the hint for the New Password and Confirm New Password fields, as well as the information icon pop-up for either field, will display those settings.

For example:

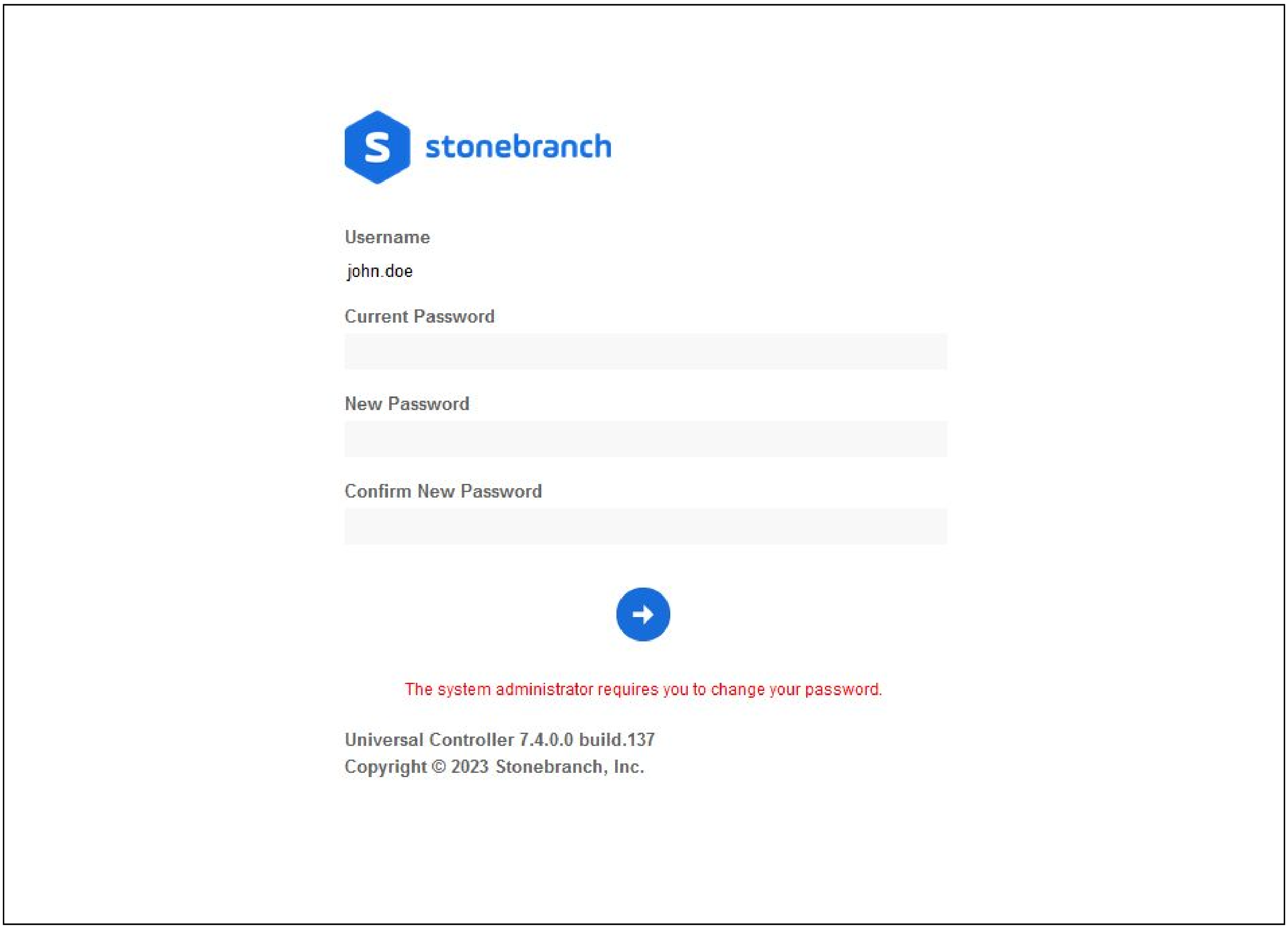



### 9.2.2 Password Expiration

**Note**

Password expiration is not applicable to users that log in using LDAP authentication.

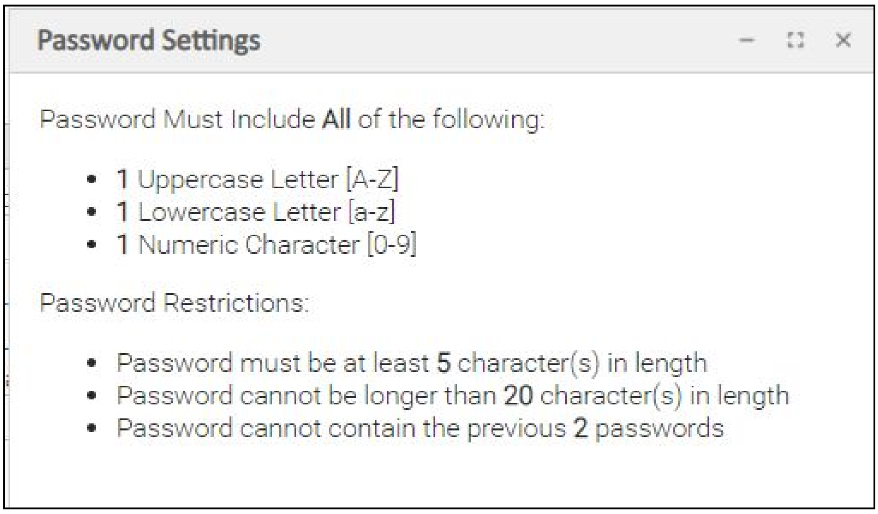
If the Password Expiration Enabled field in Password Settings has been enabled, and you reach the maximum number of days that a user password can remain unchanged, as specified by the Password Expiration in Days field in Password Settings, the following dialog displays when you enter your password on the Standard Login page:




**Note**

Below the **Change Password** button, the Change Password dialog will displays any characteristics and restrictions defined in Password Settings.

For example:




You must enter a new password, one that is different than your currently expired password. (To maintain a high level of security, you should never use a password that you have used before.)

1. In **Current Password**, enter your password that has just expired.
2. In **New Password** and **Confirm New Password**, enter a new, previously unused password.
3. Click **Change Password**.

If you try to enter your currently expired password as your new password, the following error message displays on the Password Expired dialog:

```
Your new password cannot be the same as your current password.
```

## 9.3 Single Sign-On Login

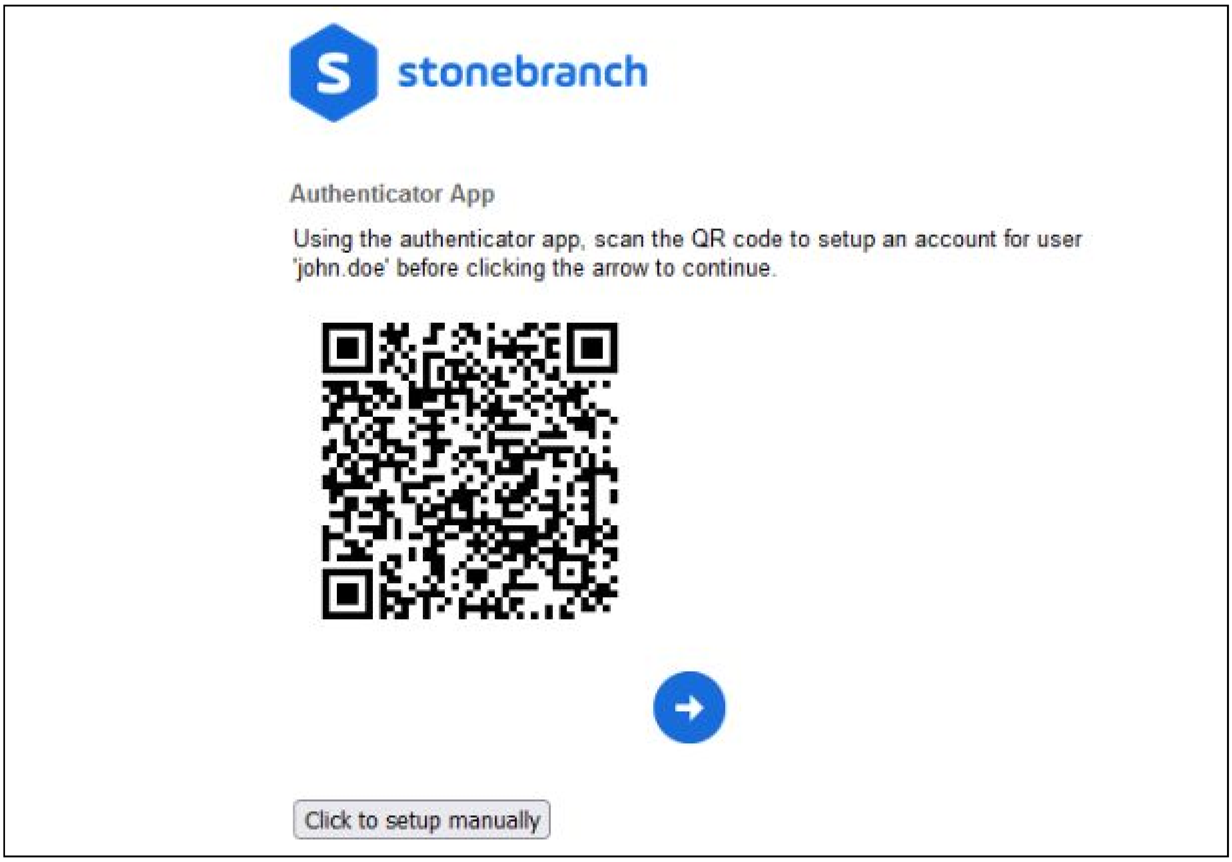
For information on Single Sign-On Login method and the Single Sign-On Login URL, see Single Sign-On Login on the Single Sign-On Settings page.

## 9.4 Standard/Authenticator App (TOTP)

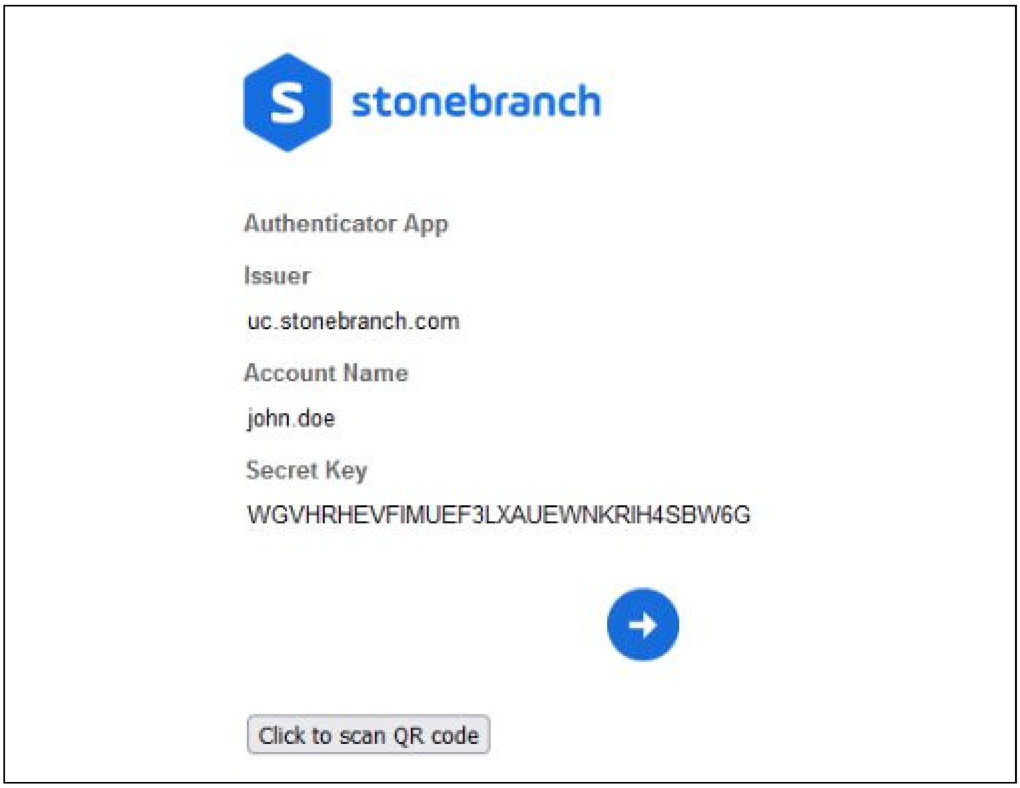
Universal Controller supports the use of an Authenticator App for standard login accounts.

A user configured for **Standard / Authenticator App (TOTP)** as a Login Method must setup their Universal Controller account in their authenticator app during their initial login.

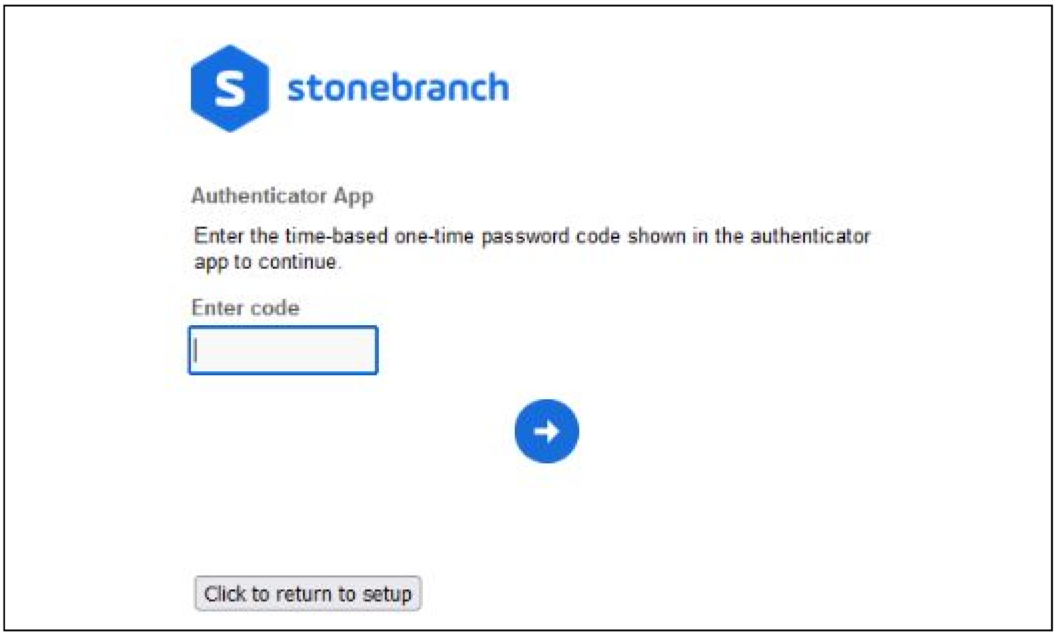
During the initial login, an enrollment page will be presented to the user assuming they authenticated successfully using their username and password:




You can switch to setup manually by clicking the **Click to setup manually** button:




Next, the user will be prompted to enter their Time-based one-time password (TOTP) to login to the controller:




After the initial enrollment, you will only have to enter the Time-based one-time password (TOTP) after authenticated successfully using your username and password.

The Issuer, which the authenticator app uses for identifying the account in the app, will appear as [System Identifier@]uc.stonebranch.com.

Once a user has successfully logged into the application using their Authenticator App two-factor authentication, a TOTP code will not be required to restore an expired session from the Session Expired login prompt.

## User Lockout

If the Lock Account After Maximum Login Attempts field in Password Settings has been enabled, and you reach the maximum number of successive login attempts that is allowed, as specified by the Maximum Failed Login Attempts field in Password Settings, your user account in Universal Controller will be locked.

(Whenever Lock Account After Maximum Login Attempts is reset from enabled to disabled, the current number of login attempts for all users is reset to 0.)

If you attempt to log in to a locked account, the following message displays:

```
User account <Username> is locked. Please check with your administrator."
```

To unlock a locked account, your Controller system administrator must uncheck the **Locked out** field ion the User Details for that user account.

# 9.5 User Restriction

You can be restricted from logging in to the Universal Controller user interface either of two ways:

1. The system level default for web browser access, specified by the System Default Web Browser Access Universal Controller system property, has been set to **No**, and the **Web Browser access** field in the User Details for your user account is set to **-- System Default --**."
2. The **Web Browser access** field is set to **No**, which overrides the **System Default Web Browser Access** value (**Yes** or **No**).

If either restriction is in place, the following error message will display when you enter your user name at the **User name** prompt:

```
User <Username> not permitted to login through the web browser. Please check with your
administrator.
```

To remove the restriction, the system administrator must either:

- Set the System Default Web Browser Access property to **Yes** and set the **Web Browser access** field in the User Details for your user account to **-- System Default --**.
- Set the **Web Browser access** field in the User Details for your user account to **Yes**.

## 9.6 License Expiration

If you log in to the Controller and your Controller license is about to expire within one week, the following informational message displays in the Console:

```
Universal Controller license for node <node_id> will expire in N days.

Please contact Stonebranch customer support to avoid service interruption.
```

If you log in to the Controller and your Controller license already has expired, the following error message displays in the Console:

```
Universal Controller license for node <node_id> has expired and the Controller has been
suspended.

Licensed Number of Days: N
Actual Number of Days: N

Please contact Stonebranch customer support to restore services.
```

In each case, the Console will remain open until you manually close it.

Additionally, if you have configured the Controller for System Notifications, system notifications are sent when the Controller license will expire in seven days and if the license already has expired.

**Note**

If your license expires, you will not be able to run any tasks.

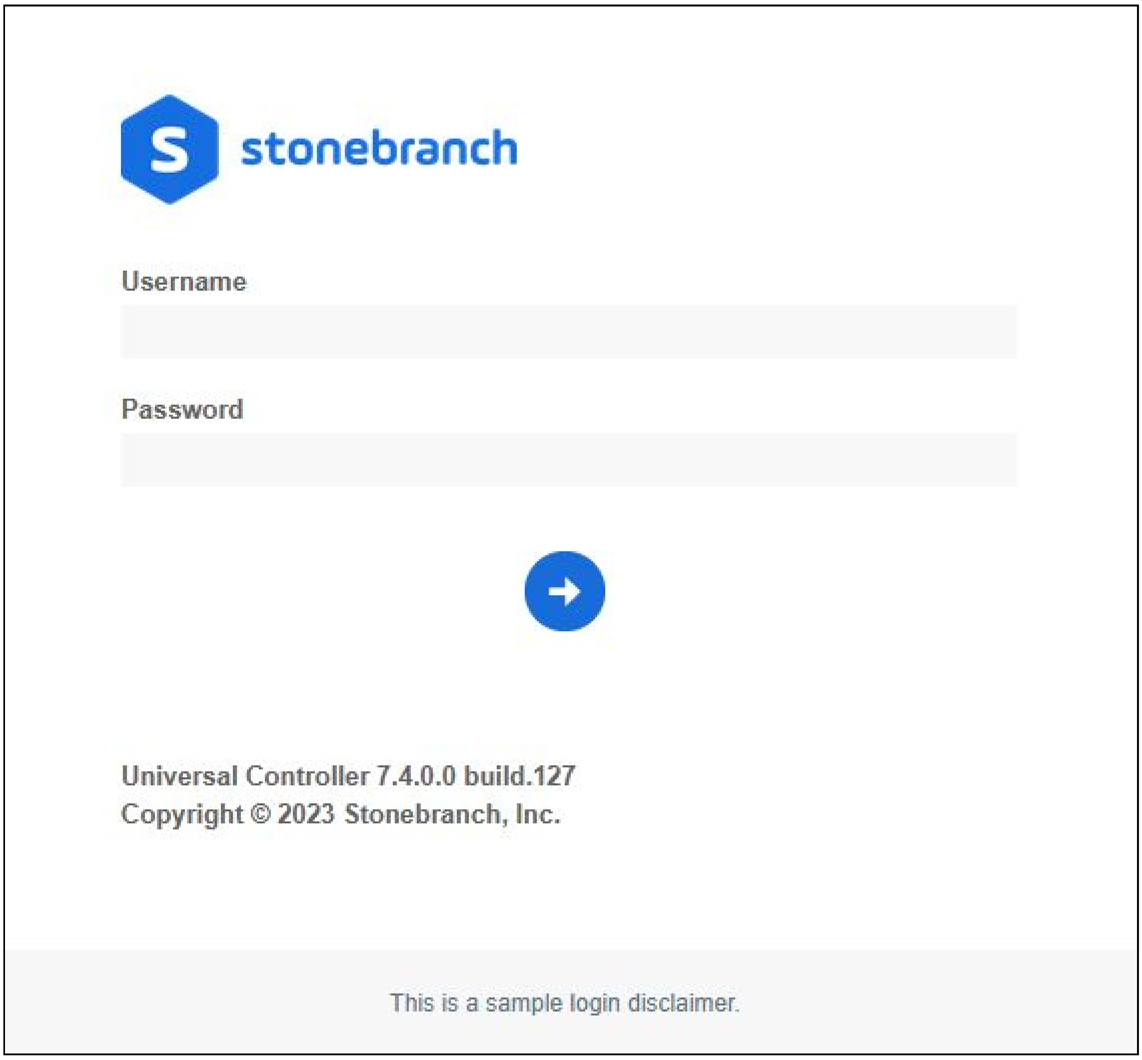
## 9.7 Login Disclaimer

The Login Disclaimer Universal Controller system property lets you define multi-lines of free-form text that will display at the bottom of the Universal Automation Center Login page when you attempt to login.

**Note**

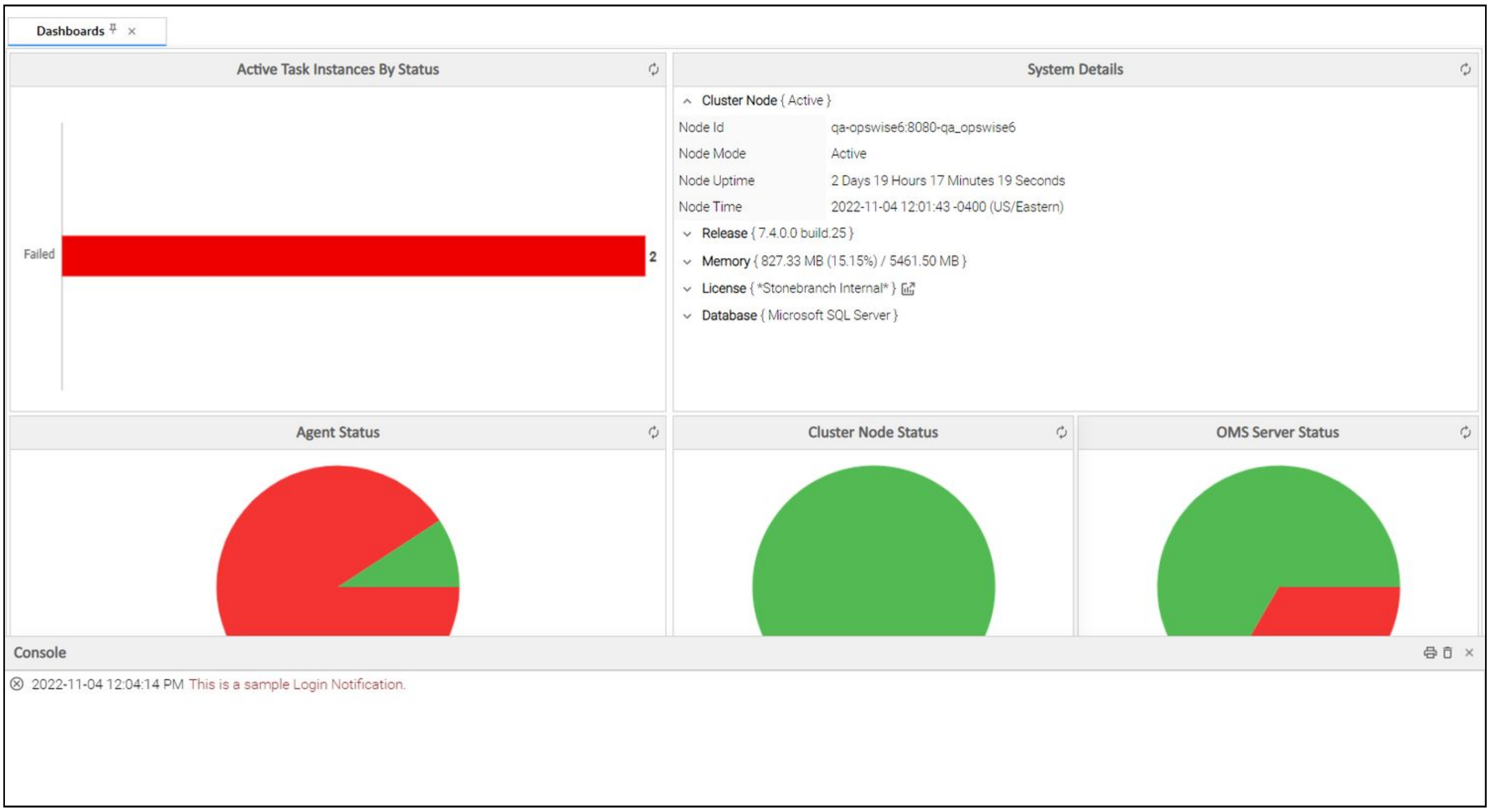
HTML is not permitted and will be escaped accordingly.

For example:



## 9.8 Login Notification

The Login Notification Universal Controller system property lets you define a message that displays in the Console when you login to the Controller.




## 9.9 Show Last Login

If the Show Last Login Universal Controller system property = true, the last login time is shown in the console when logging into the user interface. The format of the message is as follows.

```
Last login for <user-name> at <login-time> from <login-source> @ <login-ipaddr>.
```

For example,

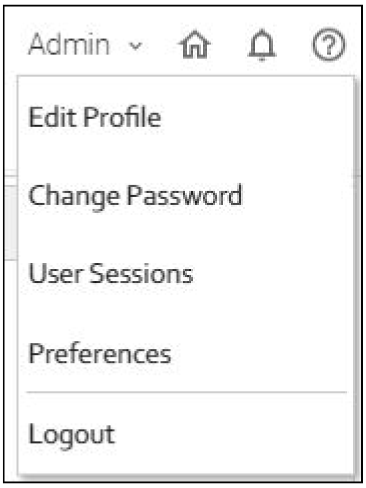
```
Last login for john.doe at 2022-11-23 12:24:18 -0500 from User Interface @ 127.0.0.1.
```

```
Last login for john.doe at 2022-11-23 12:24:18 -0500 from Web Service @ 127.0.0.1.
```

```
Last login for john.doe at 2022-11-23 12:24:18 -0500 from Command Line.
```

## 9.10 Logging Out

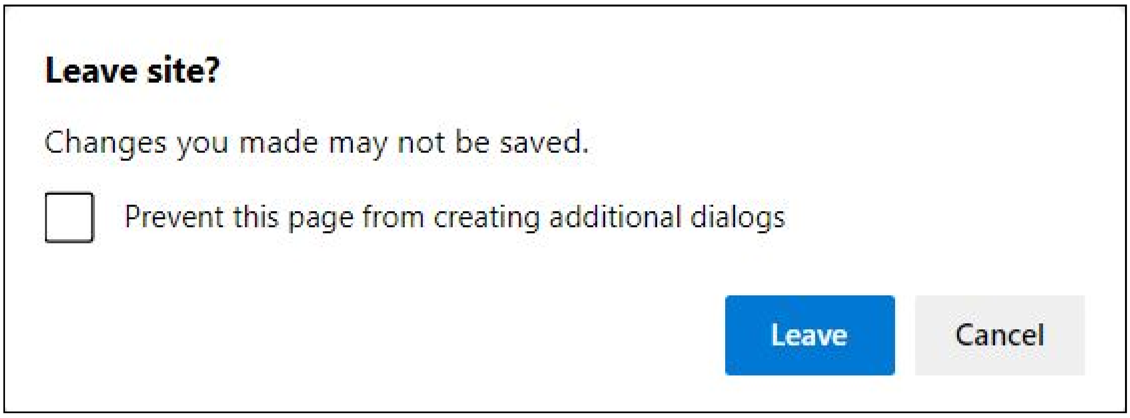
To log out of your Universal Controller session:

| | |
|---|---|
| **Step 1** | On the User Task Bar, click the User Actions drop-down list arrow to display a menu of user actions.   |
| **Step 2** | Click **Logout**. You are logged out of this session, and the Universal Automation Center Login page displays. |

### 9.10.1 Exiting without Logging Out

As a best practice, we recommend that you always end your Universal Controller session by logging out before closing the browser or navigating away from the user interface.

If you attempt to close the browser or navigate away from the user interface before logging out, and the Confirm Exit Universal Controller system property is set to **true**, the following pop-up dialog displays:



**Note**

This dialog may differ from browser to browser.

### 9.10.2 SAML Single Logout

For information on SAML Single Logout, see Single Logout in Single Sign-On Settings.

## 9.11 Log File and Audits

All user login and logout activity, whether via the user interface or a Universal Controller remote interface, is logged and audited (as a single audit type: User Login).

### 9.11.1 Log File Messages

Log file messages for login activity are in the following format:

```
timestamp (internal) login activity <user=user name, ipaddr=IP address>
```

For example:

```
2015-04-16-11:16:26:391 -0400   INFO [http-bio-8080-exec-5] Login OK <user=ops.admin,
ipaddr=192.55.44.123>
2015-04-16-11:17:20:208 -0400   INFO [http-bio-8080-exec-10] Login Failed
<user=ops.admin, ipaddr=192.55.44.123>
2015-04-16-11:16:57:442 -0400   INFO [http-bio-8080-exec-11] Logout OK <user=ops.admin,
ipaddr=192.55.44.123>
```

### 9.11.2 Audit Messages

Audit messages for login activity are in the following format:

```
login activity <user=user name, ipaddr=IP address>
```

For example:

```
LOGIN <user=stonebranch-user-01, ipaddr=192.55.44.123>
```

**Note**

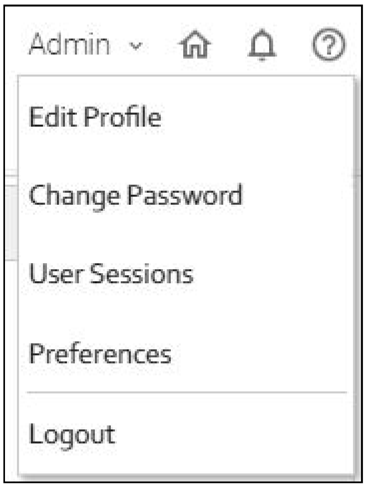
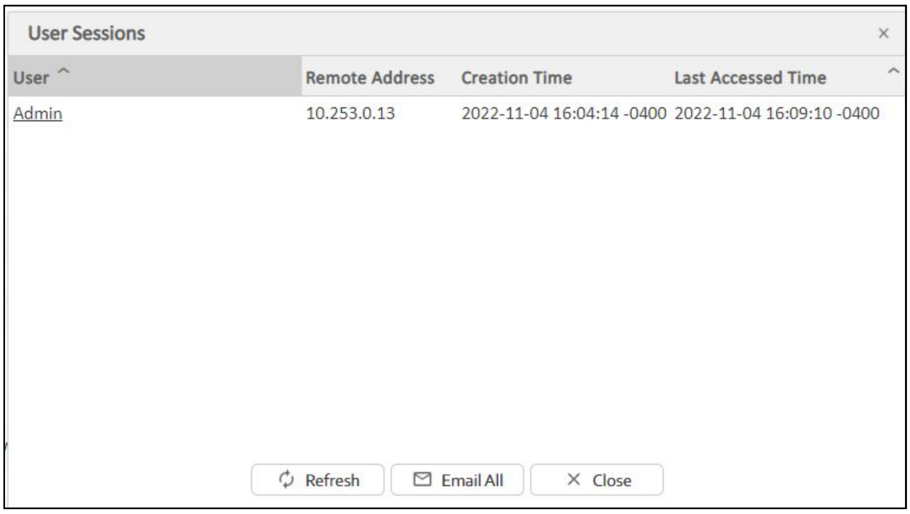
The IP Address of the user is not logged or audited for login activity via the Command Line Interface (CLI).

## 9.12 User Sessions

**Note**

This action requires the ops_admin role or the ops_user_admin role.

To display a list of currently authenticated user sessions (logged in users):

| | |
|---|---|
| **Step 1** | On the User task bar, click the User Actions drop-down list arrow to display a menu of user actions.<br><br> |
| **Step 2** | Click **User Sessions** to display the User Sessions list of currently authenticated user sessions.<br><br> |

For each logged in the user, the User Sessions list provides the following columns of information:

| Column | Description |
| --- | --- |
| User | User Id of the user. (You can click a User Id to display the User Details for that user.) |
| Remote Address | Address of the machine from where the user logged in. |
| Creation Time | Date and time that the user initially logged in; in other words, when the user session was created. |
| Last Accessed Time | Last date and time that the client (browser) sent a request associated with this user session.. |

**Note**

If you have configured Tomcat for never timing out sessions or for an exceptionally long session timeout - neither of which is recommended - this can result in a large number of lingering sessions if users are not logging out of the web application prior to closing their browser. As a precaution, if the Universal Controller detects more than 1,000 authenticated sessions, only those sessions with a Last Accessed Time of less than 24 hours ago will be displayed.

To view an up-to-date list of the currently logged in users, click the **Refresh button**; to close the list, click the **Close** button.

From the Users Sessions list, you also can:

- Send an Email to one or more (or all) logged in users.
- Expire the user session of one or more users.

**Note**

If the following error appears in the Console while you are using the User Sessions feature, you may need to manually configure the opswise.mbean.catalina.manager.name Universal Controller start-up property:

```
Universal Controller not configured for user session operations.
```

## 9.12.1 Send an Email to Logged In Users

From the User Sessions list, you can send an Email to:

- All users on the list.
- One or more users on the list.

The Controller will auto-generate the email Subject in the following format:

```
Message from system_identifier Universal Controller Administrator (user_id@cluster_node_id)
```

The Reply-To address for the email will be the email address of the sender.

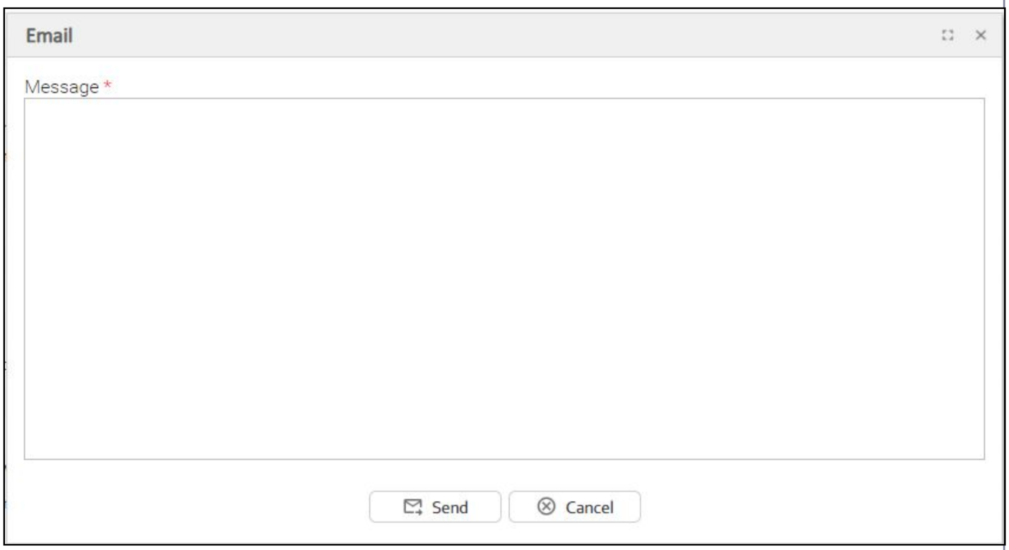
An administrator must ensure that an Email Connection exists with the Use for System Notifications option enabled. The Email Address specified in the Email Connection Details will appear as the From email address.

**Note**

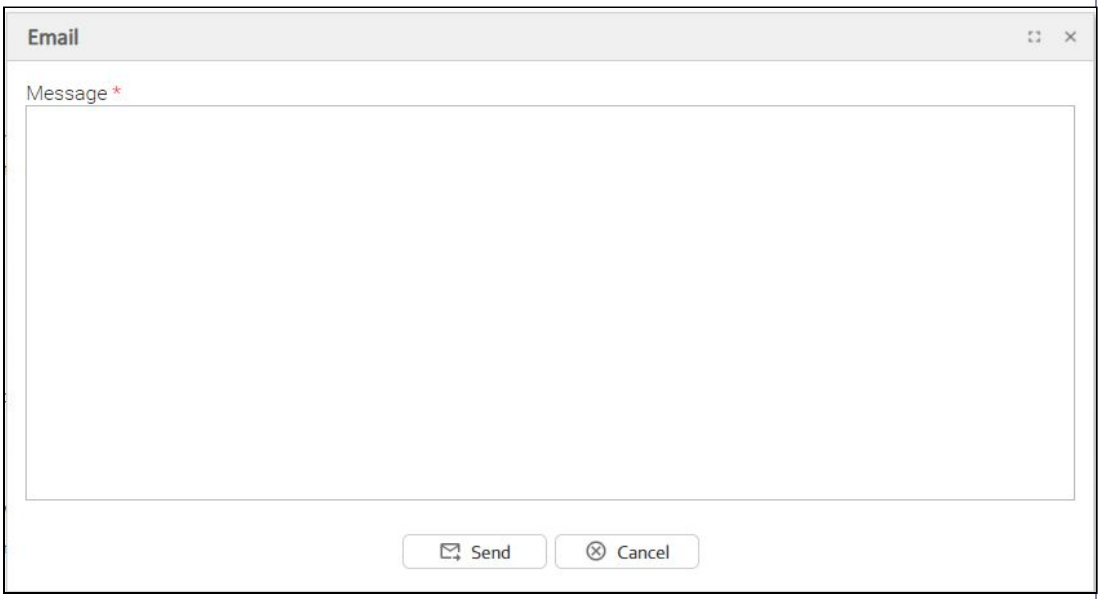
For local user accounts, each user must have assigned a valid email address.

For AD/LDAP synchronized user accounts, each synchronized user must have a valid email address mapped to their user record. (By default, this should be true.)

### 9.12.1.1 Send an Email to All Logged In Users

| | |
|---|---|
| **Step 1** | Click the **Email All** button on the User Sessions list. An Email pop-up dialog displays.   |
| **Step 2** | Enter a **Message** and click the **Send** button. |

### 9.12.1.2 Send an Email to One or More Logged In Users

| | |
|---|---|
| **Step 1** | Select one or more users on the User Sessions list and right-click any of the selected users. The User Sessions actions menu displays:   |
| **Step 2** | Click **Email** to display an Email pop-up dialog.   |
| **Step 3** | Enter a **Message** and click the **Send** button. |

## 9.12.2 Expire User Sessions

**Note**

This action requires the ops_admin role or the ops_user_admin role.

To expire (log out) one or more currently authenticated user sessions (logged in users):

| | |
|---|---|
| **Step 1** | Click **User Sessions** in the User Actions drop-down list on the User Task Bar. The User Sessions list then displays a list of currently authenticated user sessions. |

| | |
|---|---|
| **Step 2** | Select one or more users on the list and right-click any of the selected users. The User Sessions actions menu displays:<br><br> |
| **Step 3** | Click **Expire Session** to expire the user sessions of the selected users. A confirmation pop-up then displays. |
| **Step 4** | Click **OK** to confirm that you want to expire the selected user sessions. |

# 10 User Interface

## 10.1 Overview

The Universal Controller 7.6.x user interface is comprised of two basic elements:

- Home page
- Services

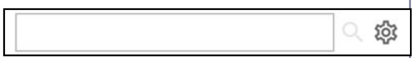
## 10.2 Home Page

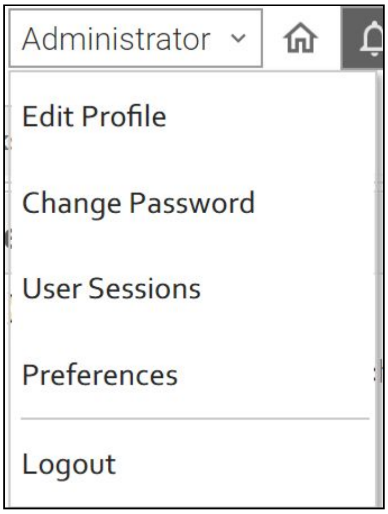
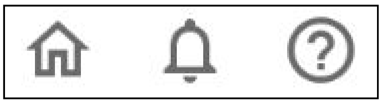
When you log in to the Universal Controller 7.6.x user interface, your Universal Controller home page displays.

The home page contains the Home Dashboard and a drop down menu on the left side of the page that lists any Services that you had selected for easy access.

### 10.2.1 User Interface Details

In addition to the Home Dashboard and user-selected links to areas in Services, the Home Page - and all pages accessed via Services - contains the following information (except where noted).

| Section | Description |
|---|---|
| | Link to the Stonebranch website. |
|   | System Identifier defined by the System Identifier property.<br>The background color and text color of the system identifier are defined by the System Identifier Background Color and System Identifier Color properties. |
|   | Opens drop down menu of the Universal Controller Services available in the user interface. |
|  | Search field that enables you to search for a Name, Description, Member of Business Services, and/or UUID across multiple record types.<br>The Search icon lets you select which field types to search for. |

| Section | Description |
| --- | --- |
|  | User-specific information for the logged in user.<br>• Edit Profile<br>User Details for this user.<br>• Change Password<br>Change Password dialog for this user.<br>• User Sessions<br>List of currently authenticated user sessions.<br>• Preferences<br>List of User Preferences for this user.<br>• Logout<br>Logs out this user from the user interface. |
|  | Links to:<br>• Home Dashboard<br>• Console<br>• Universal Controller user documentation |
|  | Time and node status (System Details). |
|  | Home page only; Refreshes the information displayed on this page. |
|  | Home page only:<br>• New<br>Creates a new Dashboard.<br>• Edit<br>Edits the Dashboard<br>• Delete<br>Delete the Dashboard<br>• Set As Default<br>Set the Dashboard as the default Dashboard.<br>• Copy<br>Creates a copy of the Dashboard.<br>• Visibility<br>Sets the visibility of the Dashboard.<br><br>**Note**<br>You cannot Edit or Delete the Home Dashboard. |

## 10.3 Available Services

All of the record types are under Available Services.

Available Services
Dashboards
Activity
Workflows
Instances
Task Instances
History
Tasks
All Tasks
Linux/Unix Tasks
Windows Tasks
z/OS Tasks
Universal Command Tasks
File Transfer Tasks
Manual Tasks
Timer Tasks
SQL Tasks
Stored Procedure Tasks
Email Tasks
Web Service Tasks
Recurring Tasks
Application Control Tasks
Integrations
Integration Hub
Import Integration Template
PeopleSoft Tasks
SAP Tasks
Triggers
All Triggers
Active Triggers
Cron Triggers
Time Triggers
Manual Triggers
Temporary Triggers
Agent File Monitor Triggers
Task Monitor Triggers
Variable Monitor Triggers
Email Monitor Triggers
Universal Monitor Triggers
Application Monitor Triggers
Composite Triggers
Monitors
Task Monitors
Agent File Monitors
Remote File Monitors
System Monitors
Variable Monitors
Email Monitors
Universal Monitors
Calendars
Calendars
Custom Days
Forecasts
Forecasts
Forecast Calendar
Other
Credentials
Email Templates
Scripts
Variables
Virtual Resources
Simulation
Reports
Reports
Widgets
Colors
Lifecycle Management
Bundles
Promotion Targets
Promotion History
Promotion Schedules
Agents
All Agents
Linux/Unix Agents
Linux/Unix Agent Clusters
Windows Agents
Windows Agent Clusters
z/OS Agents
Connections
Email Connections
Database Connections
SAP Connections
PeopleSoft Connections
System
Applications
Cluster Nodes
OMS Servers
SNMP Managers
OAuth Clients
Administration
Audits
Business Services
Data Backup / Purge
Filters
Groups
LDAP Settings
Password Settings
Properties
Server Operations
Single Sign-On Settings
Universal Templates
Universal Event Templates
Users
Webhooks

To add a record type to the home page navigation panel, click the star icon (U) next to the record type in Available Services.

## 10.4 Global Search

Global Search enables you to search the user interface for Name, Description, Member of Business Services, and/or UUID for the following record types:

- Agent
- Agent Cluster
- Application
- Bundle
- Bundle Target
- Calendar
- Credentials
- Database Connection
- Email Connection
- Email Template
- OAuth Client
- OMS Server
- PeopleSoft Connection
- SAP Connection
- Script
- SNMP Manager
- Task
- Trigger
- Variable
- Virtual Resource
- Webhook

You can search for:

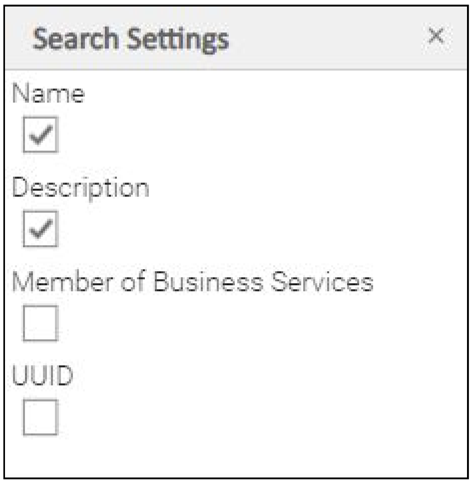
- Exact field:
  Enter a specific record name.
- Partial field:
  Enter partial text and use a question mark ( ? ) to replace any single character.
- Wildcard:
  Use a wildcard ( * ) to match one or more matching values (for example: **t***, **Test***, ***est***.

**Note**

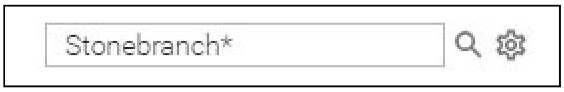
You can receive search results only for records for which you have read access.

### 10.4.1 Performing a Global Search:

1. Click the Settings icon on the task bar to configure which fields to search.  By default, the Name and Description fields are selected.




2. In the Search field, enter the text to search for. (Search text is not case sensitive.)




3. Click the Search icon to perform the search.

   A list of any search results then displays.

## 10.5 Customizing the Banner

You can customize the Universal Automation Center banner that displays across the top of the page by changing the banner logo.

### 10.5.1 Changing the Banner Background Color

To change the background color of the banner, enter a new hexadecimal value in the  Banner Background Color Universal Controller system property.

### 10.5.2 Changing the Banner Logo

| | |
|---|---|
| **Step 1** | Copy the logo file that you want to use in the banner to the `uc_images` directory directly under your Tomcat `home/installation` directory: `../tomcat/uc_images`. Valid logo file extensions are .png, .jpg, and .gif. The logo should be a maximum 298px x 48px. Any logo larger than these dimensions will be scaled automatically; however, it is recommended that keep the logo within these dimensions.<br>• If the `uc_images` directory does not exist, create it.<br>• If you have a High Availability system, you must copy the logo to the `uc_images` directory for each Universal Controller cluster node in the system. |
| **Step 2** | Login to the Universal Controller (or any Controller cluster node in a High Availability system) and update the Banner Logo Universal Controller system property to the name of the logo file (excluding path) that you copied to the `uc_images` directory. The logo will be deployed automatically to the Controller. In a High Availability system, where an updated property on one cluster node applies to all cluster nodes (since they share the same database), the logo file will be deployed automatically on initial application request. |
| **Step 3** | If you want the logo to link to a web resource, enter the URL for the web resource in the Banner Logo URL Universal Controller system property. |

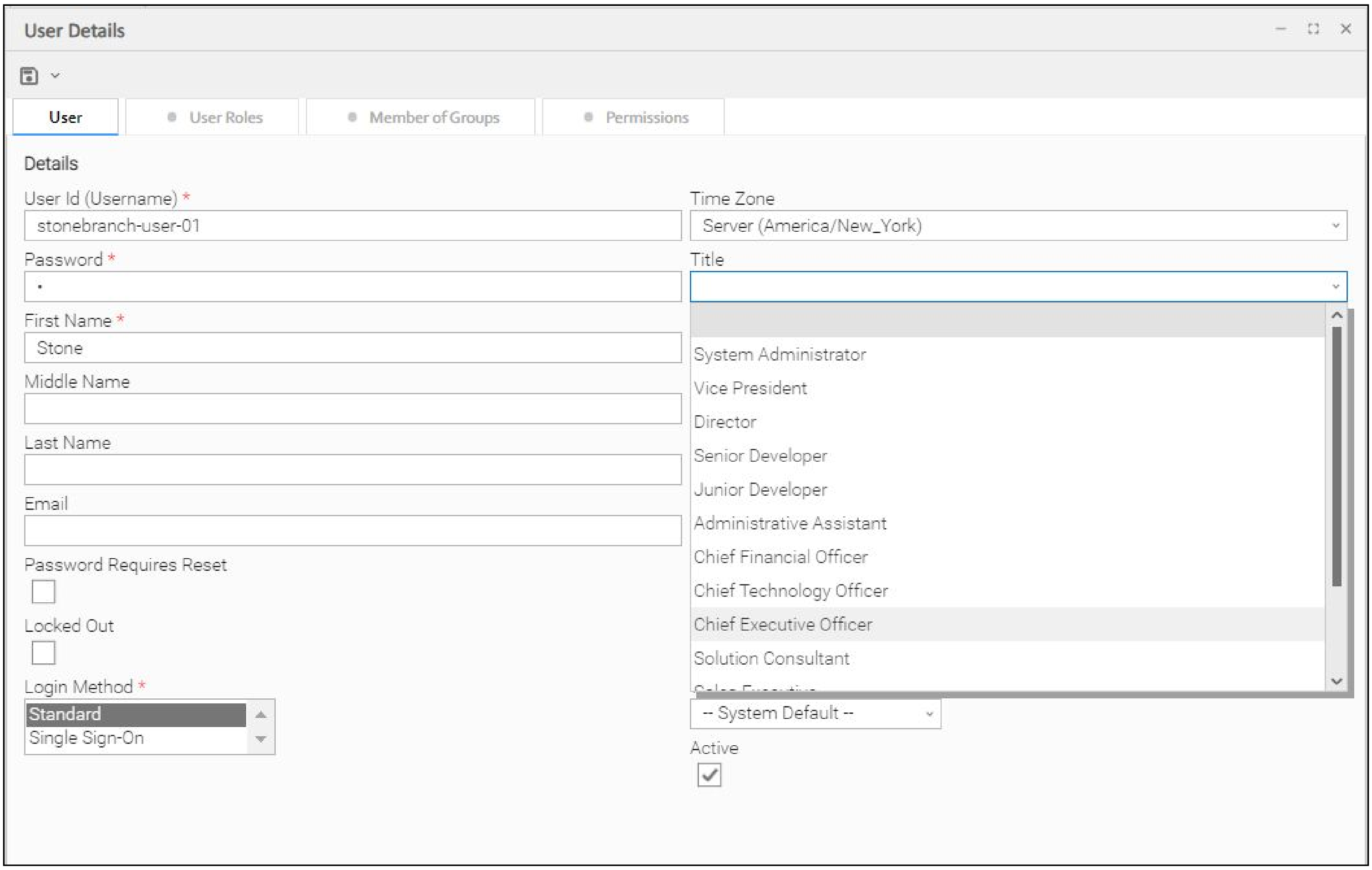
**Note**

If you update the currently configured banner logo file in the `uc_images` folder, as long as the banner logo file size has changed, it will be redeployed automatically. If you do not see the updated banner logo from the user interface, try running the Clear Server Cache server operation and/or clearing your browser cache.

## 10.6 Drop-Down Lists

Many record Details contain drop-down lists of available values for specific fields.

For example, the record Details for a User contains a drop-down list of titles that can be assigned to the User:




To select a value from a drop-down list, either:

- Click the drop-down list arrow and then click a value.
- Begin entering the name of a value in the drop-down list field. A list of values that match your entry then displays. Click a displayed value.

## 10.7 Console

The Console contains informational and error messages regarding recent Controller activity.

For example:

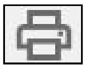
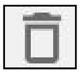
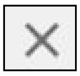

The Console opens automatically to display error ( **x** ) messages, and you can set the Console to open automatically to display information ( **i** ) messages (via one of four user preferences that allow you to control the Console display).

**Note**

Error messages related to specific fields are displayed next to the fields themselves in the record Details, not in the Console.

You also can open the Console manually at any time by clicking the Universal Automation Center Console icon on the User Task Bar.

### 10.7.1 Console Actions

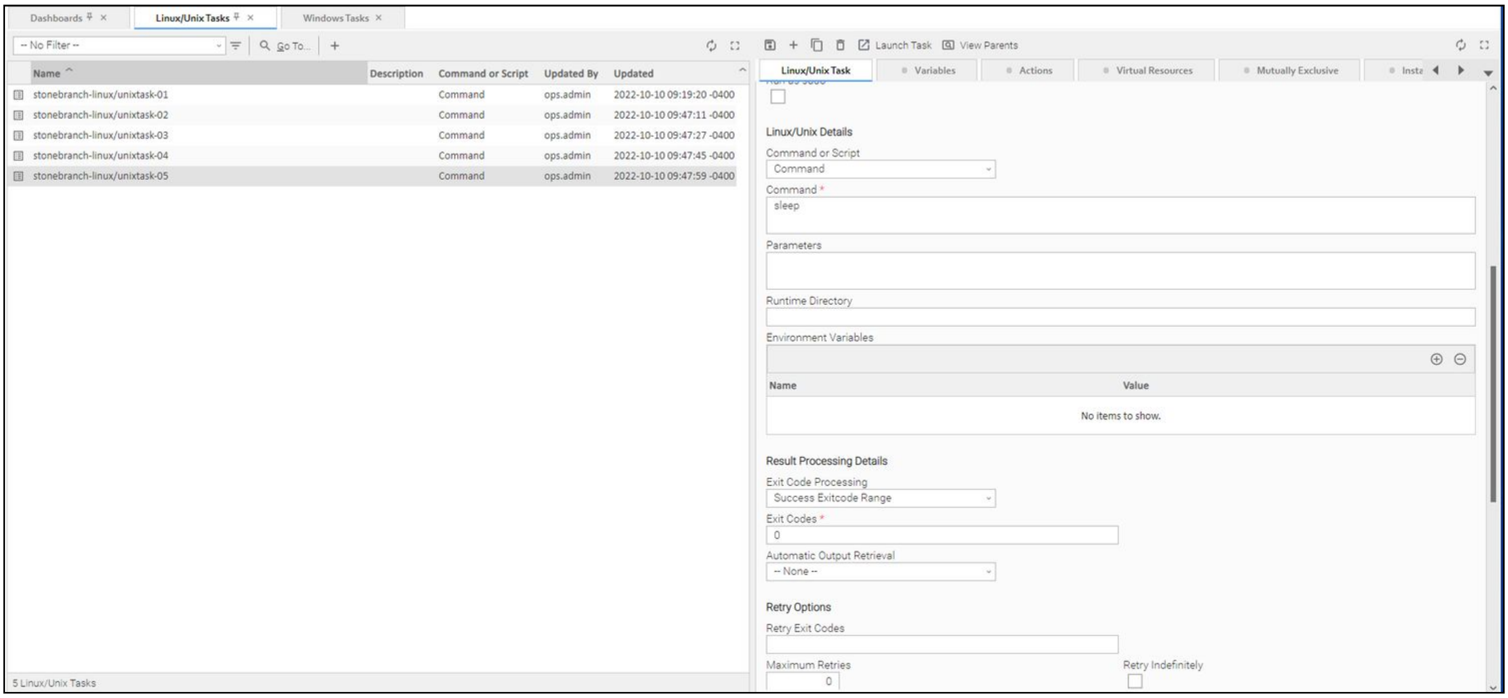
| Action | Icon | Description |
|---|---|---|
| Select and Copy | n/a | Select message text either of three ways:<br>• Drag your cursor across any of the text.<br>• Double-click a single entry in the text to select only that entry.<br>• Triple-click anywhere in the message text to select all of the text.<br>Use **Ctrl+C** and **Ctrl+V** to copy and paste the selected text.<br>You also can select and copy text this way from the Print Preview pop-up (see **Print** in this table). |
| Print |  | Click the Print icon at the top of the Console to display a Print Preview pop-up, and then click the **Print** button. |
| Trash |  | Click the Trash icon at the top of the Console to empty the contents of the Console. |
| Close |  | Close the Console either by:<br>• Clicking the Close icon at the top of the Console.<br>• Double-clicking the Console header. |

## 10.8 Tabs

Every page in the user interface displays, when selected, under a tab at the top of the page. The tab for the page currently being viewed is white; all other tabs are gray.

When you log in to the Controller, the Home dashboard displays under a **Dashboards** tab. The Home dashboard - as well as the Activity Monitor and Dashboard Details - remain open throughout your session unless you manually close them by clicking the **x** icon in the tab itself. The tabs for those pages otherwise remain at the top of the screen so that you can quickly return to them at any time.

For example:




If you select a page in the Services while viewing Dashboards, Activity Monitor, or Server Operations, a new tab will open for that page. The Dashboards, Activity Monitor, and Server Operations tabs are pinned automatically to the top of the page and will remain open if you navigate from them.

If you select a page in the Services while viewing any other page, the Tabs Pinned Automatically user preference specifies whether or not that page is pinned.

**Note**

When you close the tab for the page currently being viewed, you return to the tab for the previous page that you viewed, not the tab for the page that you last opened.

## 10.8.1 Pinning Tabs

You can pin tabs to the top of the page so that the pinned page displays even if you select other pages to display.  You also can unpin any pinned tabs at any time (see the Tabs action menu).

The following tabs are pinned automatically and will not close unless you manually close them either by clicking the **x** icon on the tab or close them via the Tabs action menu.

- Dashboards
- Activity
- Server Operation

Pinned tabs are identified with a pin icon next to the tab name.

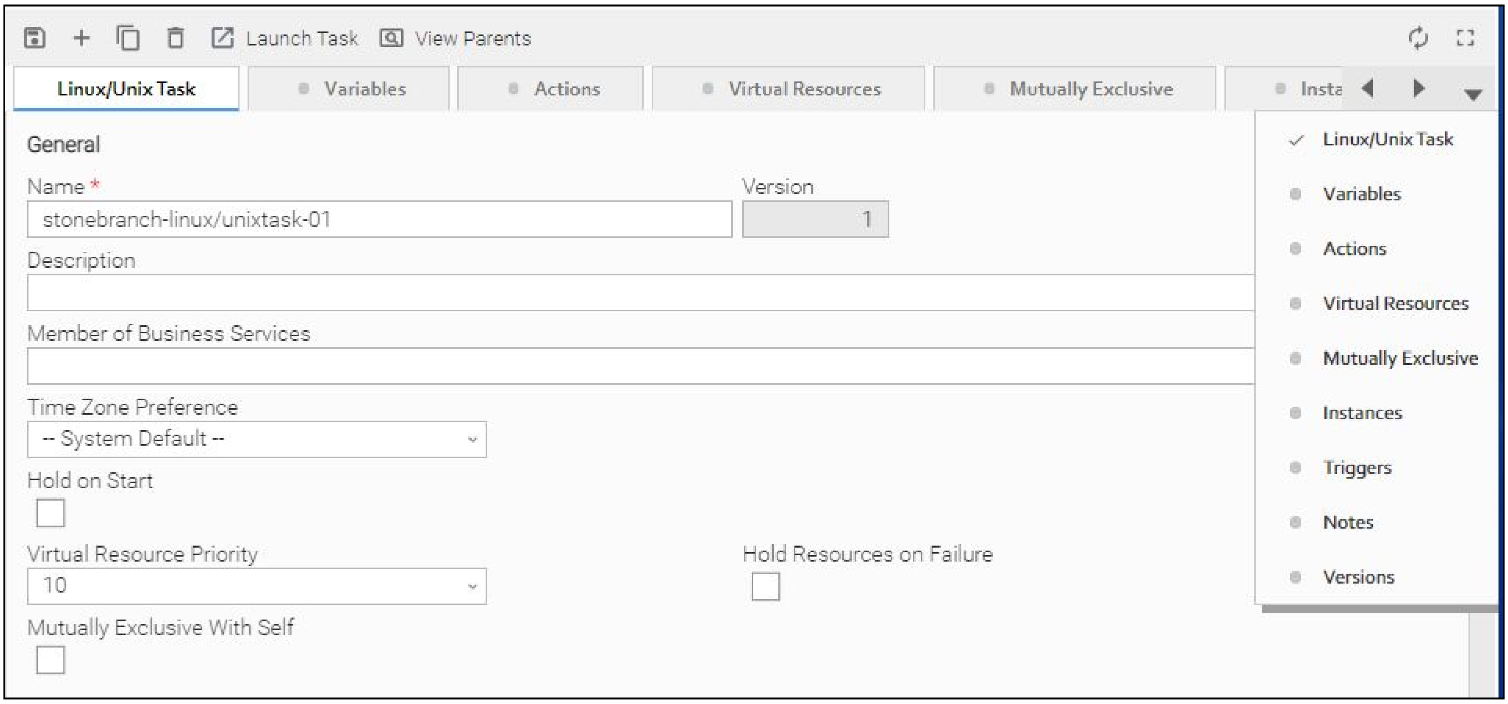
Any tab pinned during the current user session will display as pinned when the tab is opened again in a future user session, until the tab is unpinned.

## 10.8.2 Tab Picker

If you open more tabs that can be displayed on your screen, tab picker icons display that let you scroll back and forth among the tabs and select any tab from a drop-down list

| | |
|---|---|
| **<** | Scroll left through the tabs. |
| **>** | Scroll right through the tabs. |
| **v** | Display a drop-down list of all open tabs. |

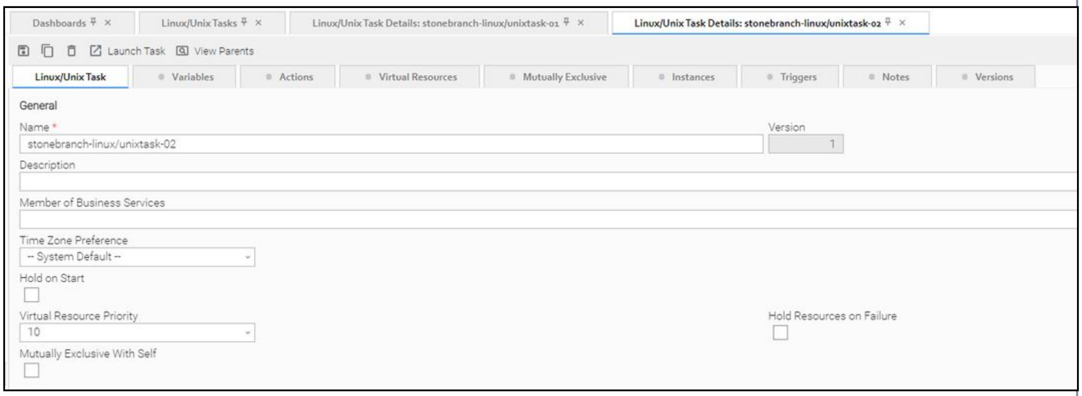
For example:




## 10.8.3 Record Details as Tabs

You also can display record Details as tabs at the top of a page

| | |
|---|---|
| **Step 1** | From a record list, either:<br>• Right-click a record in the list.<br>• Open a record and right-click in the record Details. |
| **Step 2** | In the Action menu, click **Open in Tab**. The record Details display under a tab at the top of the page.<br><br>If you click **Open in Tab** for an open record, the record is closed and displays only under the tab. |

| | |
|---|---|
| **Step 3** | If you want to open the same record or another record under another tab, repeat Steps 1 and 2.<br>You can open any number and combination of tabs from one or more lists in the user interface.<br>For example:<br> |

## 10.9 Additional Information

The following pages provide additional information for the Universal Controller user interface:

- Home Dashboard
- Services
- Records
- Record Lists
- Filters
- Action Menus
- User Preferences
- Wildcards and Regular Expressions
- Access Keys

## 10.10 Services

### 10.10.1 Overview

The Services area of the user interface provides access to all areas of the user interface.


Available Services
Dashboards
Activity
Workflows
Instances
Task Instances
History
Tasks
All Tasks
Linux/Unix Tasks
Windows Tasks
z/OS Tasks
Universal Command Tasks
File Transfer Tasks
Manual Tasks
Timer Tasks
SQL Tasks
Stored Procedure Tasks
Email Tasks
Web Service Tasks
Recurring Tasks
Application Control Tasks
Integrations
Integration Hub
Import Integration Template
PeopleSoft Tasks
SAP Tasks
Triggers
All Triggers
Active Triggers
Cron Triggers
Time Triggers
Manual Triggers
Temporary Triggers
Agent File Monitor Triggers
Task Monitor Triggers
Variable Monitor Triggers
Email Monitor Triggers
Universal Monitor Triggers
Application Monitor Triggers
Composite Triggers
Monitors
Task Monitors
Agent File Monitors
Remote File Monitors
System Monitors
Variable Monitors
Email Monitors
Universal Monitors
Calendars
Calendars
Custom Days
Forecasts
Forecasts
Forecast Calendar
Other
Credentials
Email Templates
Scripts
Variables
Virtual Resources
Simulation
Reports
Reports
Widgets
Colors
Lifecycle Management
Bundles
Promotion Targets
Promotion History
Promotion Schedules
Agents
All Agents
Linux/Unix Agents
Linux/Unix Agent Clusters
Windows Agents
Windows Agent Clusters
z/OS Agents
Connections
Email Connections
Database Connections
SAP Connections
PeopleSoft Connections
System
Applications
Cluster Nodes
OMS Servers
SNMP Managers
OAuth Clients
Administration
Audits
Business Services
Data Backup / Purge
Filters
Groups
LDAP Settings
Password Settings
Properties
Server Operations
Single Sign-On Settings
Universal Templates
Universal Event Templates
Users
Webhooks

### 10.10.2 Available Services

The Available Services area displays all services available to the logged in user.

#### 10.10.2.1 Adding a Service to the Favorites

To add a Service to the Favorites list on the user interface home page, click the white star next to the name of that Service. The star turns blue to signify that it has been added to the Favorites list.

To remove a service from the Favorites list, click the blue star next to the service in Available Services. The star turns from blue to white to signify that the service has been removed from the Navigator.

**Note**

If the Dashboards and Activity services are available to the logged in user, they will automatically be added to the Favorites list.

### 10.10.3 Recently Visited

The Recently Visited list identifies items in Available Services that you have recently visited.

The most recently visited items are at the top of the list.

The Services Recently Visited Limit user preference specified how many recently visited items will display on the list.

### 10.10.4 Available Services

Available Services provides access to all areas of the user interface.

Each navigation pane provides links to specific pages in the user interface, such as a record type or list. When you hover you cursor over a link, it is highlighted in gray. When you click a link, the highlight is removed.

The following tables provide a quick reference and links for each item in the Available Services.

| Area | Menu Options | Description and Links |
|---|---|---|
| **Dashboards** | | Access to all Dashboards. |
| **Activity** | | Access to the Activity Monitor , which lists all active task instances ; the data is automatically refreshed. From this list, you can view and edit any task instance. For non-Workflow task instances, you also can view output or rerun the task. |
| **Workflows** | | Lists all Workflow tasks in the Controller. |
| **Task Instances** | | Multiple task instance lists. |

| | | |
|---|---|---|
| | Task Instances | Lists the same task instances as the Activity Monitor, but only for task instances for which there has been a status change or a modification to the task instance record within the last 7 days (an **Updated on Last 7 Days** filter has been pre-selected for this display). Also, unlike the Activity Monitor, the data is not automatically refreshed. Task Instances also allows you to view details about workflow instances – information that is not available from the Activity Monitor. |
| | History | Lists a history of completed task instances with a status in an "end state" (SUCCESS, FINISHED, FAILED, CANCELLED, START FAILURE, SKIPPED). This allows you to track information about a specific task instance, including multiple runs. For example, Task A may have failed and was then re-run by a user. This task instance will appear twice on the History list, first for the time that it ran and failed and again for the time it was re-run to success.<br>From the History list, you can display read-only details about any task instance on the list. |
| **Tasks** | | Lists of tasks for all task types; list of all tasks. |
| | All Tasks | Lists all existing tasks of all types. From this list, you can view, edit, or launch any task on the list, or create a new task of any type. |
| | Workflow Tasks | Lists all Workflow tasks. From this list, you can view, edit, or launch any Workflow, or create a new Workflow. |
| | Linux/Unix Tasks | Lists all Linux/Unix tasks. From this list, you can view, edit, or launch any Linux/Unix task, or create a new Linux/Unix task. |
| | Windows Tasks | Lists all Windows tasks. From this list, you can view, edit, or launch any Windows task, or create a new Windows task. |
| | z/OS Tasks | Lists all z/OS tasks. From this list, you can view, edit, or launch any z/OS task, or create a new z/OS task. |
| | Universal Command Tasks | Lists all Universal Command tasks. From this list, you can view, edit, or launch any Universal Command task, or create a new Universal Command task. |
| | File Transfer Tasks | Lists all File Transfer tasks. From this list, you can view, edit, or launch any File Transfer task, or create a new File Transfer task. |
| | Manual Tasks | Lists all Manual tasks. From this list, you can view, edit, or launch any Manual task, or create a new Manual task. |
| | Timer Tasks | Lists all Timer tasks. From this list, you can view, edit, or launch any Timer task, or create a new Timer task. |
| | SQL Tasks | Lists all SQL tasks. From this list, you can view, edit, or launch any SQL task, or create a new SQL task. |
| | Stored Procedure Tasks | Lists all Stored Procedure tasks. From this list, you can view, edit, or launch any Stored Procedure task, or create a new Stored Procedure task. |
| | Email Tasks | Lists all Email tasks. From this list, you can view, edit, or launch any Email task, or create a new Email task. |
| | Web Service Tasks | Lists all Web Service tasks. From this list, you can view, edit, or launch any Web Service task, or create a new Web Service task. |
| | Recurring Tasks | Lists all Recurring tasks. From this list, you can view, edit, or launch any Recurring task, or create a new Recurring task. |
| | Application Control Tasks | Lists all Application Control tasks. From this list, you can view, edit, or launch any Application Control task, or create a new Application Control task. |
| **Integrations** | | Lists all Integrations, categorized by Universal Task type. Each Universal Task type is based on an administrator-defined Universal Template .<br>(The area for Universal Tasks displays only if one or more Universal Templates - which the Controller lists as Universal Task types - have been created with one or more defined fields.) |
| | Integration Hub | Provides access to the Stonebranch Integration Hub. |
| | Import Integration Template | Provides ability to import IvnNtegration Templates to the Controller. |

| | | |
|---|---|---|
| | PeopleSoft Tasks | Lists all PeopleSoft tasks . From this list, you can view, edit, or launch any PeopleSoft task, or create a new PeopleSoft task.Lists all PeopleSoft tasks . From this list, you can view, edit, or launch any PeopleSoft task, or create a new PeopleSoft task. |
| | SAP Tasks | Lists all SAP tasks . From this list, you can view, edit, or launch any SAP task, or create a new SAP task. |
| **Triggers** | | List of triggers for each trigger type; list of all trigger triggers; forecast information. |
| | All Triggers | Lists all existing triggers of all types. From this list, you can view and edit any trigger on the list, or create a new trigger of any type. |
| | Active Triggers | Lists all active (enabled) triggers. From this list, you can view and edit any trigger on the list, or create a new trigger of any type. |
| | Cron Triggers | Lists all Cron triggers. From this list, you can view or edit any Cron trigger, or create a new Cron trigger. |
| | Time Triggers | Lists all Time triggers. From this list, you can view or edit any Time trigger, or create a new Time trigger. |
| | Manual Triggers | Lists all Manual triggers. From this list, you can view or edit any Manual trigger, or create a new Manual trigger. |
| | Temporary Triggers | Lists all Temporary triggers. From this list, you can view or edit any Temporary trigger, or create a new Temporary trigger. |
| | Agent File Monitor Triggers | Lists all Agent File Monitor triggers. From this list, you can view or edit any Agent File Monitor trigger, or create a new Agent File Monitor trigger. |
| | Task Monitor Triggers | Lists all Task Monitor triggers. From this list, you can view or edit any Task Monitor trigger, or create a new Task Monitor trigger. |
| | Variable Monitor Triggers | Lists all Variable Monitor triggers. From this list, you can view or edit any Variable Monitor trigger, or create a new Variable Monitor trigger. |
| | Email Monitor Triggers | Lists all Email Monitor triggers. From this list, you can view or edit any Email Monitor trigger, or create a new Email Monitor trigger. |
| | Application Monitor Triggers | Lists all Application Monitor triggers. From this list, you can view or edit any Application Monitor trigger, or create a new Application Monitor trigger. |
| | Composite Triggers | Lists all Composite triggers. From this list, you can view or edit any Composite trigger, or create a new Composite trigger. |
| | Forecasts | Lists information about every task in the Forecast Calendar, including tasks within a workflow launched by a trigger. See Forecast List. |
| | Forecast Calendar | For Time, Temporary and Cron triggers: Lists a Forecast Calendar of all scheduled task instances for the next N days. The number (N) of days displayed in the forecast is specified using the Forecast Period in Days Universal Controller system property (see Forecast Calendar). |
| **Monitors** | | List of all Monitor task types. |
| | Task Monitors | Lists all Task Monitor tasks. From this list, you can view, edit, or launch any Task Monitor task, or create a new Task Monitor task. |
| | Agent File Monitors | Lists all Agent File Monitor tasks. From this list, you can view, edit, or launch any Agent File Monitor task, or create a new Agent File Monitor task. |
| | Remote File Monitors | Lists all Remote File Monitor tasks. From this list, you can view, edit, or launch any Remote File Monitor task, or create a new Remote File Monitor task. |
| | System Monitors | Lists all System Monitor tasks. From this list, you can view, edit, or launch any System Monitor task, or create a new System Monitor task. |

| | | |
|---|---|---|
| | Variable Monitors | Lists all Variable Monitor tasks. From this list, you can view, edit, or launch any Variable Monitor task, or create a new Variable Monitor task. |
| | Email Monitors | Lists all Email Monitor tasks. From this list, you can view, edit, or launch any Email Monitor task, or create a new Email Monitor task. |
| | Universal Monitors | Lists all Universal Monitor tasks . From this list, you can view, edit, or launch any Universal Monitor task, or create a new Universal Monitor task. |
| **Calendars** | | Lists of all Calendars and Custom Days. |
| | Calendars | Lists all Calendars Overview. From this list, you can view or edit any Calendar, create a new Calendar, and assign Custom Days to any Calendar. |
| | Custom Days | Lists all global Custom Days. From this list, you can view or edit any Custom Day, create a new Custom Day, and assign any Custom Day to any Calendar.<br><br>**Note**<br>**Custom Days** displays in the Automation Center navigation pane only if the Custom Day Global Permitted Universal Controller system property is set to **true**. |
| **Forecasts** | | Lists of all Forecasts and Forecast Calendars. |
| | Forecasts | Lists all Forecasts. |
| | Forecast Calendar | Displays a Forecast Calendar for enabled Time, Temporary, and Cron Triggers. |
| **Other** | | Lists of task- and trigger-related information. |
| | Credentials | Lists all Credentials. From this list, you can view or edit any Credential, or create a new Credential. |
| | Email Templates | Lists all Email Templates, which allow you to construct commonly-used information that can be copied to create Email tasks. |
| | Scripts | Lists all Scripts, which have been stored in the Controller database for execution by Windows, Linux/Unix, and SAP tasks. From this list, you can create and edit Script records containing a script, and specify which tasks can use the script. |
| | Variables | List all user-defined Global variables. From this list, you can view or edit any Global variable, or create a new Global variable. |
| | Virtual Resources | Lists all virtual resources defined in your system, which allow you to set up "throttling" schemes that will manage the number of specific tasks that can run at one time. From this list, you can view, edit, and create a virtual resources, as well as assign tasks to a virtual resource. |
| | Simulation | Lists all Simulations , which allow you to validate the execution of a workflow, a specific set of tasks within a workflow, or a standalone task in the Universal Controller without actually having to execute the underlying operation of each task instance. |
| **Reports** | | |
| | Reports | Lists all Report Details. From this list, you can view or edit any Report, or create a new Report. |
| | Widgets | Lists all Widgets. From this list, you can view or edit any Widget, or create a new Widget. |
| | Colors | Lists all Colors. From this list, you can view and edit the color assigned by default to any task instance status. |

| | | |
|---|---|---|
| **Lifecycle Management** | | |
| | Bundles | Lists all Bundles, which are groups of user-selected records that can be promoted from one Controller server to another.<br>Available if the user has the ops_bundle_admin or ops_promotion_admin role, or at least one Bundle Read permission assigned. |
| | Promotion Targets | Lists all Promotion Targets, which are the cluster nodes to which you can promote a Bundle.<br>Available if the user has the ops_promotion_admin or ops_bundle_admin role, or at least one Promotion Target Read permission assigned. |
| | Promotion History | Lists a history of all promoted Bundles.<br>Available if the user has the ops_promotion_admin or ops_bundle_admin role. |
| | Promotion Schedules | Lists all scheduled Bundle promotions.<br>Available if the user has the ops_bundle_admin or ops_promotion_admin role, or at least one Bundle Read permission assigned. |
| **Agents** | | Lists of Agent and Agent Clusters for each Agent type. |
| | All Agents | Lists all Agents Overview. From this list, you can view or edit any Agent resource record. You also can suspend/resume any Agent. |
| | Linux/Unix Agents | Lists all Linux/Unix Agents. From this list, you can view or edit any Linux/Unix Agent resource record, as well as suspend/resume any Linux/Unix Agent. |
| | Linux/Unix Agent Clusters | Lists all Linux/Unix agent clusters. From this list, you can view or edit any Linux/Unix agent cluster record, as well as suspend/resume any Linux/Unix agent cluster. |
| | Windows Agents | Lists all Windows Agents. From this list, you can view or edit any Windows Agent resource record, as well as suspend/resume any Windows Agent. |
| | Windows Agent Clusters | Lists all Windows agent clusters. From this list, you can view or edit any Windows agent cluster record, as well as suspend/resume any Windows agent cluster. |
| | z/OS Agents | Lists all z/OS Agents. From this list, you can view or edit any z/OS Agent resource record, as well as suspend/resume any z/OS Agent. |
| **Connections** | | Lists of all Connection types. |
| | Email Connections | Lists all Email Connections, which provide all of the email server information necessary for the Controller to send emails. From this list, you can view, edit, and create Email Connections, as well as specify the Email tasks that will use the server specified in the Email Connection. |
| | Database Connections | Lists all Database Connections, which provide all the database server information necessary for the Controller to execute a SQL task or Stored Procedure task. From this list, you can view, edit, and create Database Connections, as well as specify the SQL and Stored Procedure tasks that can use this Database Connection. |
| | SAP Connections | Lists all SAP Connections that have been defined in your system, which provide the SAP server information necessary for the Controller to execute an SAP task on an SAP system. |
| | PeopleSoft Connections | Lists all PeopleSoft Connections that have been defined in your system, which provide the PeopleSoft server information necessary for the Controller to execute a PeopleSoft task on a PeopleSoft system. |
| **System** | | Lists of Universal Controller system-related records. |
| | Applications | Lists all Applications that have been defined in your system and which can be monitored and controlled. |

| | | |
|---|---|---|
| | Cluster Nodes | Lists all cluster nodes in your system. From this list, you can view Details of any cluster node and create Cluster Node Notifications. |
| | OMS Servers | Lists all Universal Message Service (OMS) servers. From this list, you can create a new OMS Server record and view Details of any existing OMS Server record. From OMS Server Details, you can edit the record and display the list of Agents using this OMS Server. |
| | SNMP Managers | Lists all SNMP Managers, to which SNMP notifications are sent. |
| | OAuth Clients | Lists all OAuth Clients, which are used to integrate with an external application registered with an authentication server such as Azure AD or Google. |
| **Administration** | | |
| | Audits | Lists all Audits that have been created for user interaction with the Controller. |
| | Business Services | Lists all Business Services. From this list, you can view or edit any Business Service, or create a new Business Service. |
| | Data Backup/ Purge | Lists all Data Backup/Purge records in your system, which specify the automatic back-up and purge of Controller activity data. From this list, you can view, edit, and create Data Backup / Purge records. |
| | Filters | Lists all record Filters for which the logged in user has permission. List filters are created using the filtering fields on the record list itself. Note that this feature is used only for record lists, not the Activity Monitor. This feature allows you to update or delete existing filters. |
| | Groups | Lists all user groups that have been defined in your system. |
| | LDAP Settings | Allows you to configure Lightweight Directory Access Protocol (LDAP) settings. See LDAP Settings. |
| | Password Settings | Allows you to configure password specifications. See Password Settings. |
| | Properties | Lists all Universal Controller system properties. |
| | Server Operations | Lists all Server Operations, which you can run to help maintain and administer your Controller installation. |
| | Single Sign-On Settings | Allows you to configure SAML Single Sign-On settings. See Single Sign-On Settings. |
| | Universal Templates | Lists all Universal Templates, from which Universal Task types are created.<br>Available if the user has the ops_universal_template_view, ops_universal_template_admin, ops_admin, or ops_service role. |
| | Universal Event Templates | Lists all global Universal Event Templates,<br>For any global Universal Event, the Universal Template administrator must declare the Universal Event here to allow the event to be monitored by an Universal Monitor. |
| | Users | Lists all users that have been defined in your system. |
| **Support** | | |
| | Support Portal | Links to the Support page on the Stonebranch website. |
| | Video Classroom | Links to the Universal Controller Video Classroom, which provides demos of Controller features. |

### 10.10.5 Available Services Refresh

You can refresh the Navigation tree for any navigation pane at any time in order to refresh the displayed items in that tree. Refreshing the Navigation tree reloads the tree as if you were logging out and logging in.

If you change the navigation visibility to one or more areas of a navigation pane for a user group, refreshing the navigation tree for that navigation pane will show those changes for any user in that group.

Additionally, for the Automation Center navigation pane, any new Universal Task types that were created since user login, as well as any modifications made to the System Default Navigation pane by an Administrator, will be displayed on the Automation Center navigation pane when the navigation tree is refreshed.

To refresh a navigation tree, right-click anywhere in the navigation pane and, in the Action menu that displays, click Refresh Navigation Tree. Any changes to the navigation pane will display.

## 10.11 Records

### 10.11.1 Introduction

A record is an entry in the Universal Controller database. Most records are created by the user via the user interface, but others (such as Agent records) are created by the Controller.

All system-supplied and/or user-supplied information about a record is contained in the record Details.

#### 10.11.1.1 Naming Tips

Many functions within Controller are executed against one or more records.

For example, you can assign a user permission to:

- Change only certain tasks.
- Issue commands against a group of task instances.
- Filter a trigger list to display only certain triggers.

Two methods are available to help you organize your records to facilitate the use of these functions.

| | |
|---|---|
| **Method 1** | Develop a naming scheme for records.<br><br>For example, when naming tasks, you could prepend with **SF** all tasks related to San Francisco operations, or you could prepend with **REPT** all report-related tasks. With such a naming scheme, you can sort and filter lists by selecting records, for example, that begin with "REPT." You can assign permissions and execute commands against records using the same method. |
| **Method 2** | Use Business Services, which simply is a method of grouping records. Whenever you create a record, you can assign it to a Business Service.<br><br>For example, you could have a Business Service called "SF" and a Business Service called "REPT." Using this method, you could then filter or sort a list based on the Business Service. As another example, you could assign permissions to a user, giving the user update permission to all records in the "REPT" Business Service. Business Services allow you to create groups based on business functions and organize all your Controller records according to user-defined categories. |

## 10.11.2 Creating a Record

| | |
|---|---|
| **Step 1** | Select a record type from the appropriate navigation pane of the Services. The records list for that record type displays. |
| **Step 2** | Either:<br>• Enter / select information for a new record in the empty Details that displays below the list.<br>• Click the button that displays above the list to display an empty Details pop-up, and enter / select information for a new record. |
| **Step 3** | Click the **Save**, **Save & New**, or **Save & View** button to save the record. |

**Note**

You also can create a record by copying and renaming an existing record.

## 10.11.3 Opening a Record

Opening a record refers to the displaying of a record Details.

**Note**

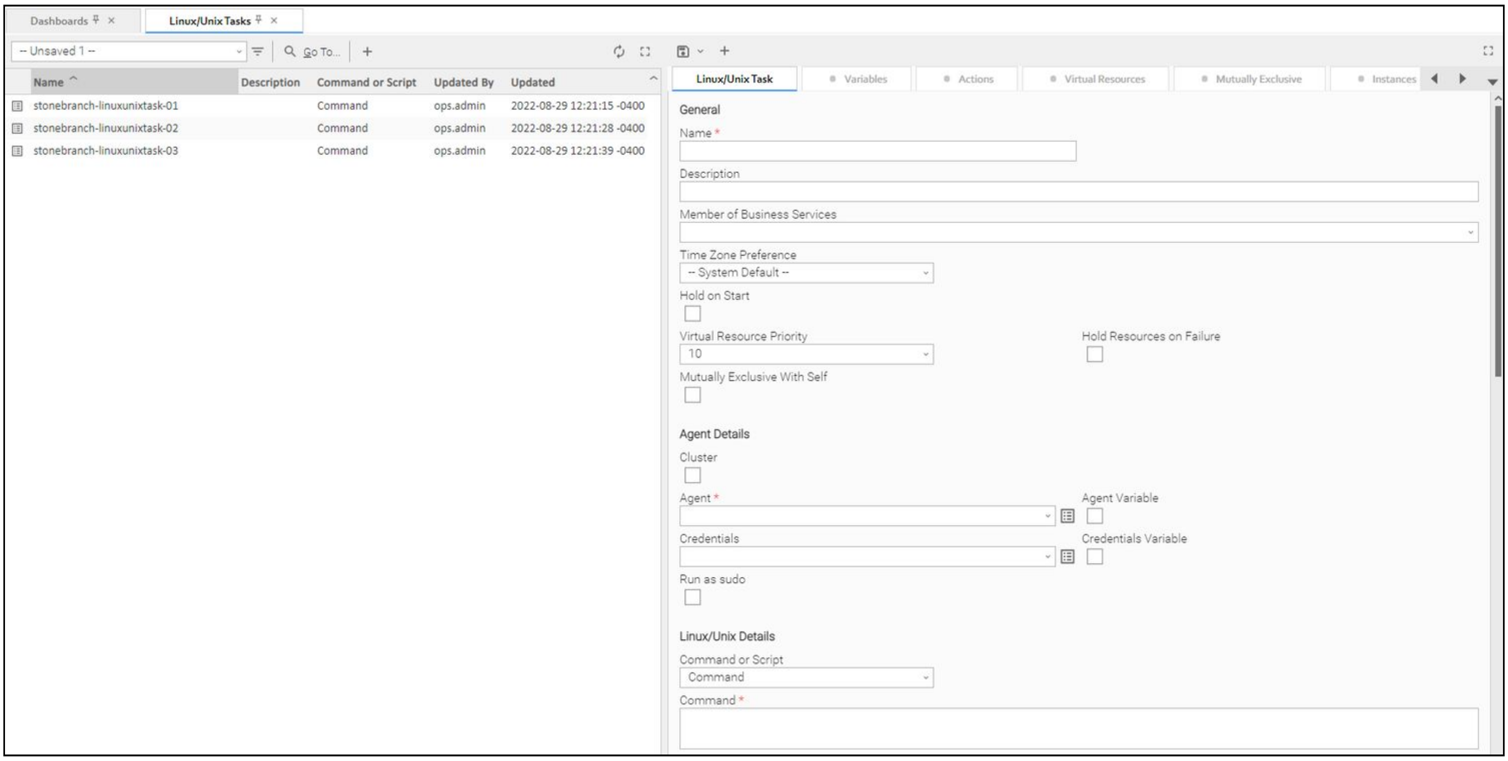
Some actions (such as delete) can be performed on a record without opening the record.

| | |
|---|---|
| **Step 1** | Select a record type from the appropriate navigation pane of the Services. The records list for that record type displays. |
| **Step 2** | Either:<br>• Click a record in the list to display its record Details below the list.<br>• Clicking the Details icon next to a record name in the list, or right-click a record in the list and then click **Open** in the Action menu that displays, to display a pop-up version of the record Details.<br>• Right-click a record in the a list, or open a record and right-click in the record Details, and then click **Open In Tab** in the Action menu that displays, to display the record Details under a new tab on the record list page (see Record Details as Tabs). |

## 10.11.4 Record Details

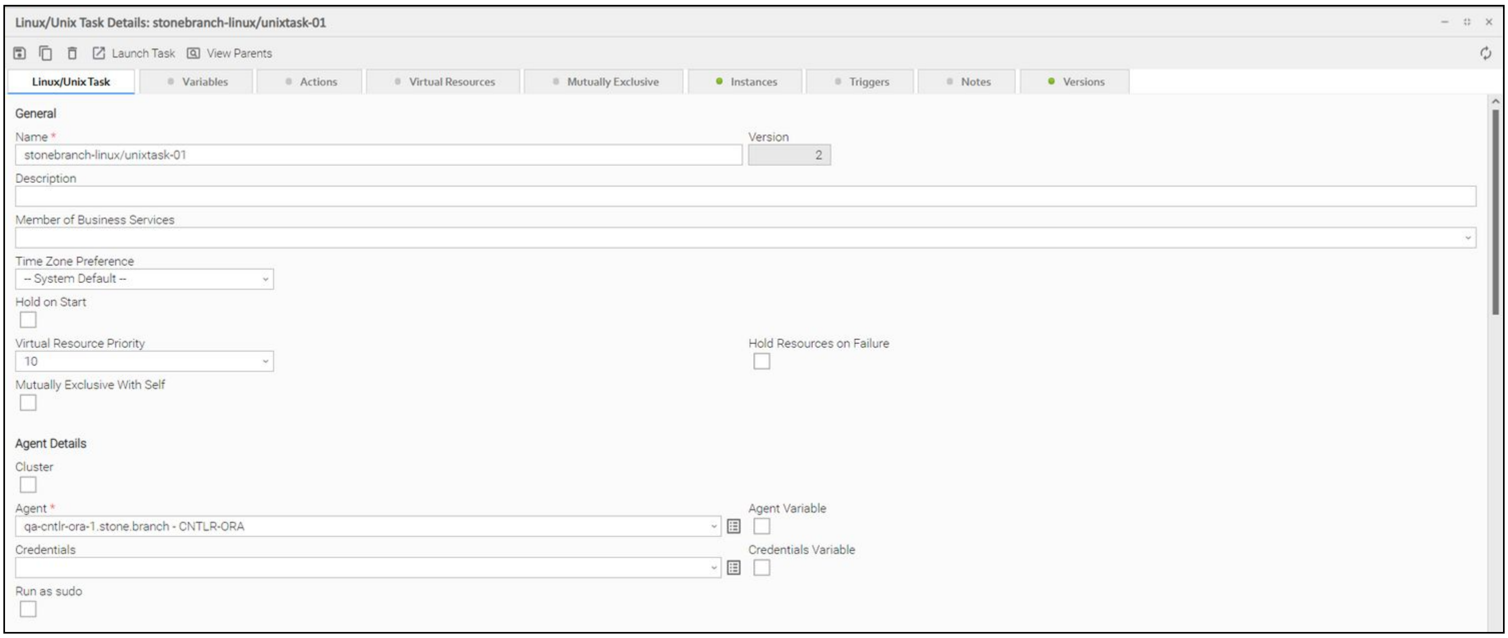
When you select a record type from the Services, a list of records for that type displays. To the right of the list, an empty record Details for a new record of that type displays.

For example:




To see Details of an existing record, open the record.

For example:




## 10.11.5 Record Details Fields

The following formatting applies to fields for all record types:

- Fields with names followed by an asterisk ( * ) are required.
- Gray fields are read-only.

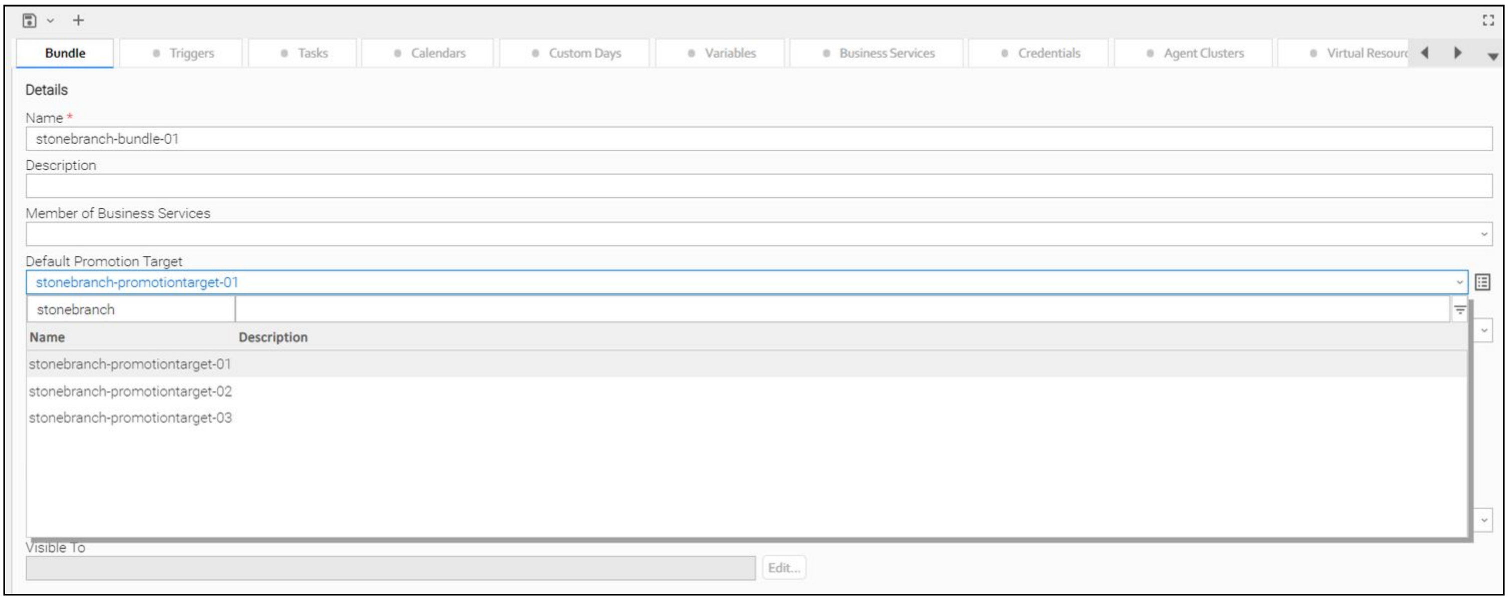
- White fields are editable. They may accept any value or only values selected from a drop-down list.
- Some fields provide a drop-down list of values, which are the only selections available for that field.
- Some fields contain a default value.
- Some fields provide hints that describe value to be entered/selected for that field.

## 10.11.5.1 Selecting Field Values

Many fields provide a drop-down list of values for that field. These fields have a down arrow next to it, which you must click to display the list of values.

Additionally, drop-down list fields whose available values are records (as identified by a Details Icon), provide a filter for only listing records that contain the sequence characters that you enter in any of the provided record fields.

In the following example, the drop-down list for **Default Promotion Target** lets you filter the list of Promotion Target records by **Name** or **Description** field:



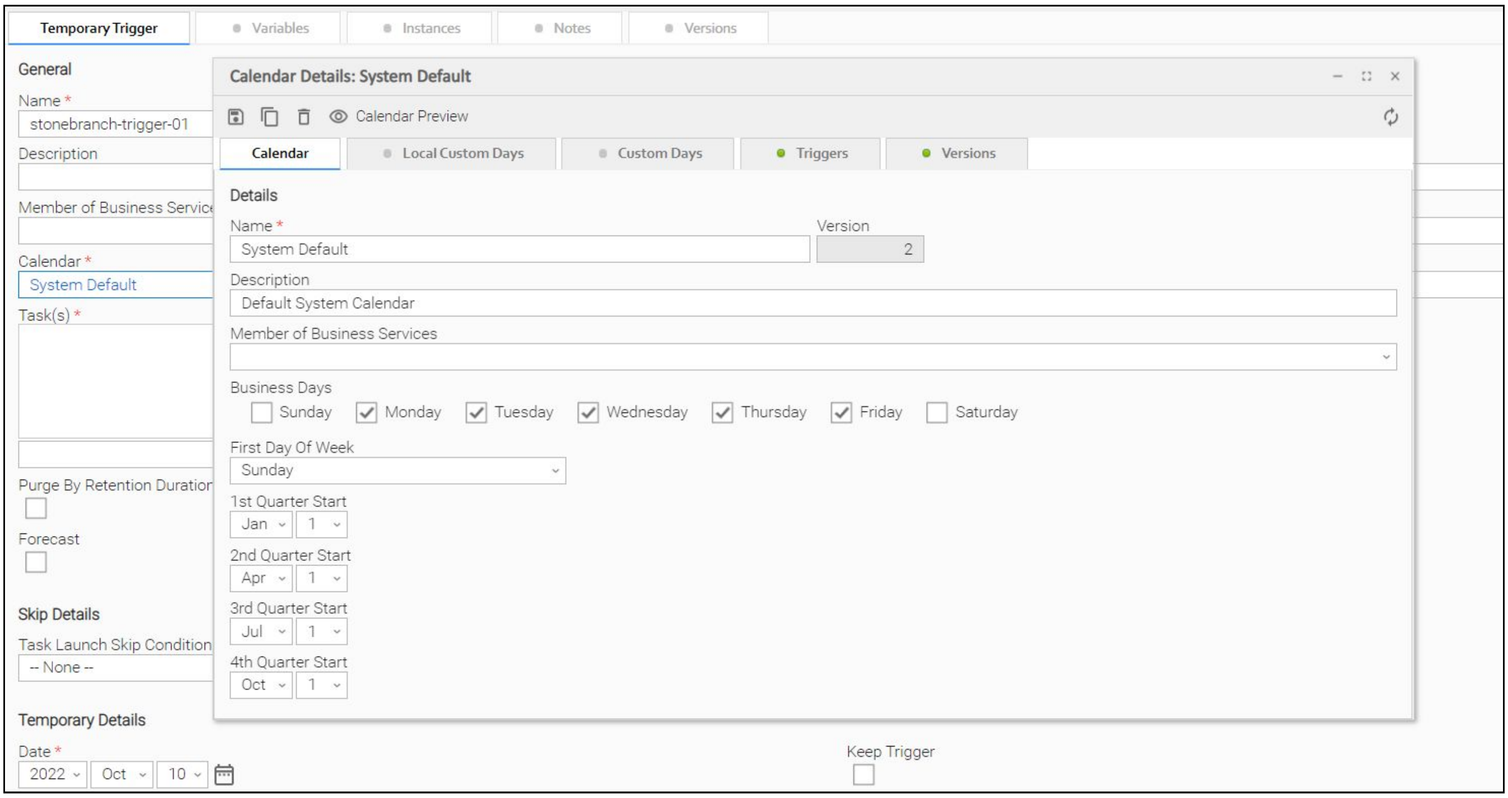

## 10.11.5.2 Details Icon

A Details icon displays next to a drop-down list field if the values available for that field are records.

- If the drop-down list field contains a value (a record selected from the list), you can click the Details icon to view (and modify) that record.
- If the drop-down list is empty, you can click the Details icon to create a record of that record type.

For example, every Trigger record contains a Calendar field whose value is the name of a Calendar selected from the drop-down list:


If you click the Details icon next to the Calendar field, the Details for that Calendar displays.

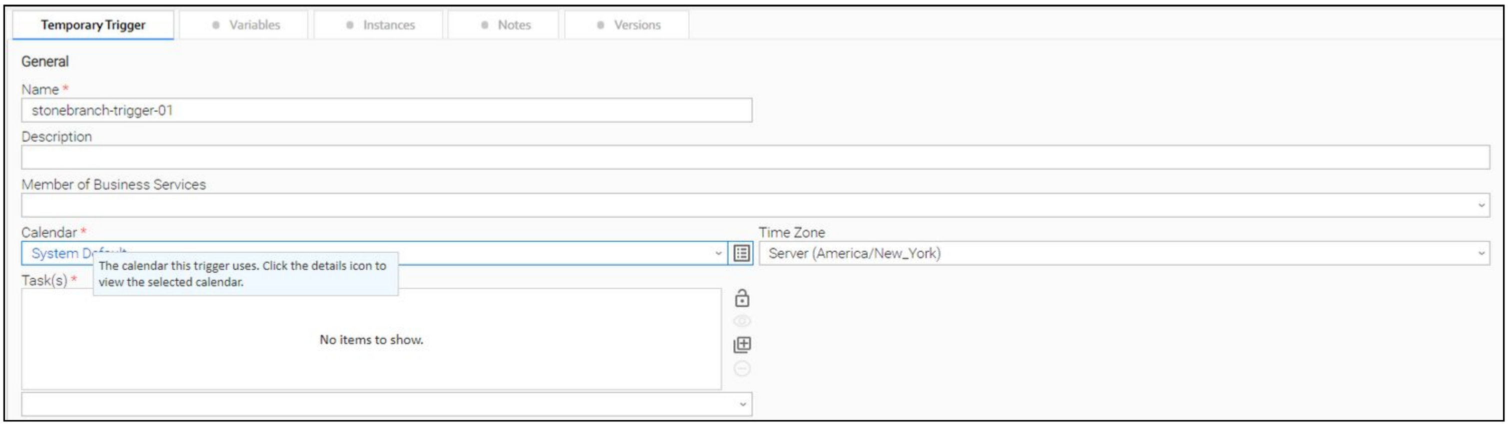



## 10.11.5.3 Field Hints

Fields hints describe the value to be entered/selected for that field.

To display a field hint, hover your cursor over the field value.

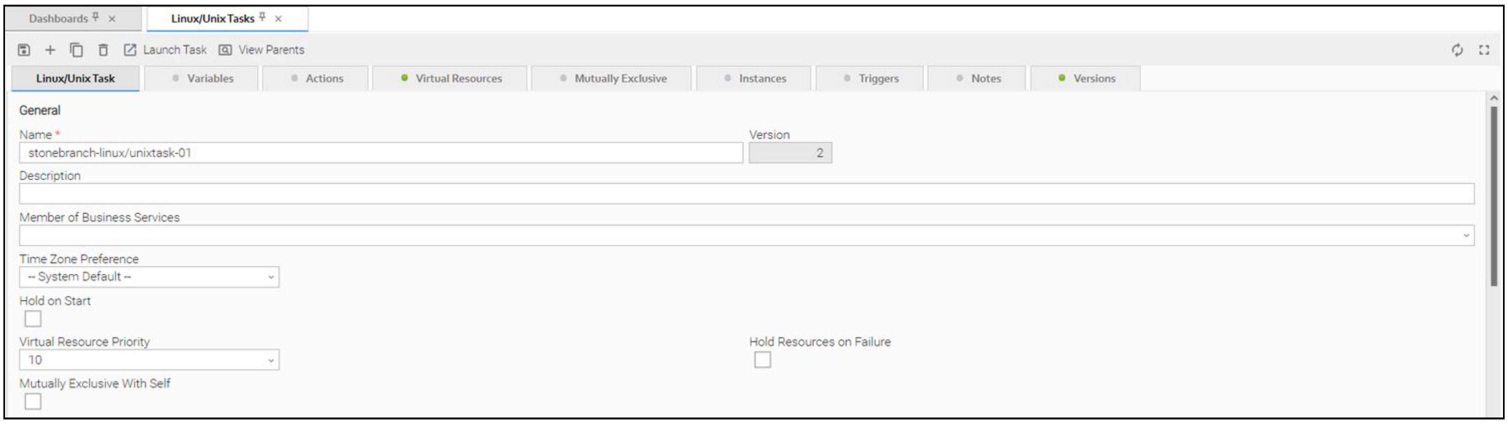
For example:




## 10.11.6 Record Details Tabs

The record Details for every record contains one or more tabs, including the default **<record type>** tab that provides detailed information about the record.

The currently selected tab displays in white. All other tabs display in gray.




Each tab displays a list of records that have been user-defined to be associated with the record. For example, the **Triggers** tab for a task would list any trigger records that specify this task in its trigger Details.

As appropriate for the type of record listed for a tab, the following also is provided:

- **Details** icon that allows you to view and edit Details for that record.
- + button that allows you to create a new record of that type and automatically associate it with the record whose Details are displayed in the **<record type>** tab.

When you click a tab to display a list of records associated with the current record, you can:

- View details about each record on the list.
- Create a new record of that type.

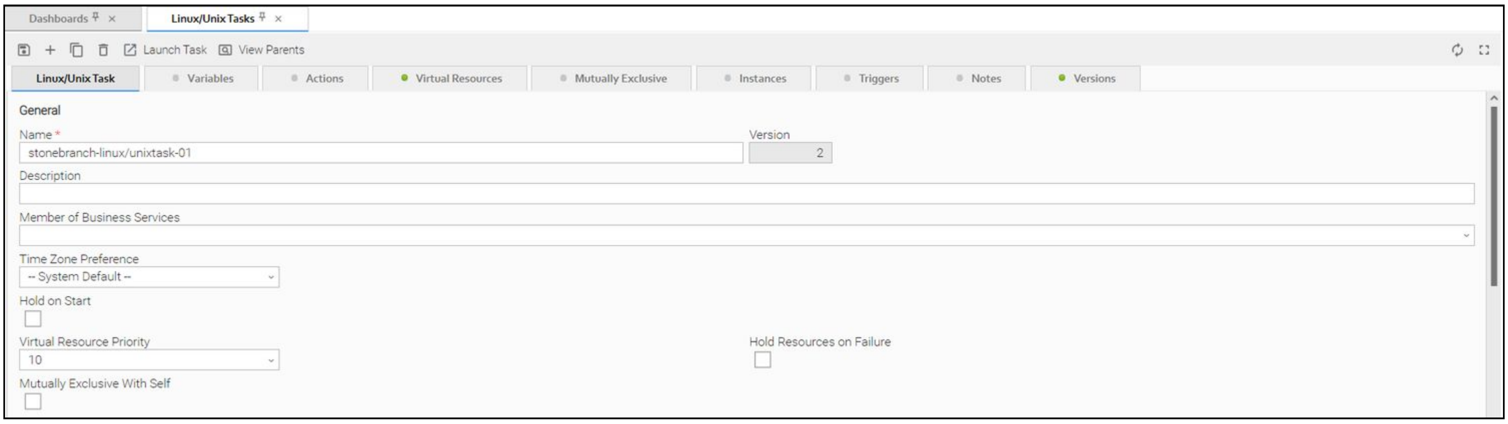
### 10.11.6.1 Color-Coding of Tabs

Tabs are color-coded:

- Current tab displays in white.
- Tabs that contain records display a green icon.

- Tabs that do not contain records display a gray icon.

For example, this Linux/Unix Task Details shows that there are one or more records under the Virtual Resources and Versions tabs:




## 10.11.6.2 Re-Ordering of Tabs

You can change the order of one or more tabs for a record type by clicking the tabs in any record of that type and dragging them left or right to a new position.

The tabs for all records of that record type will display in that order.

To restore the original order of the tabs, right-click any tab and click **Restore Tab Order**.

Any tab re-ordering that you apply is associated with your user own account. The re-ordering is automatically persisted in the Universal Controller database and will apply any time that you log into the user interface.

## 10.11.7 Complete Database Details

The information displayed in the Details for any record is only a portion of the complete details for that record contained in the Controller database.

To see the complete details, right-click anywhere in the record Details to display an Action menu and then click **Details > Show Details**.

The database Details for all records contains the following fields:

- UUID
- Updated By
- Updated
- Created By
- Created

The database Details for some record types (for example, any Task Instance record, as shown below) may show additional fields, such as Status History.

| | |
|---|---|
| After Date: | |
| After Time: | |
| Agent: | |
| Agent Acquired: | |
| Agent Acquired Name: | |
| Agent Cluster: | cb5c8998a9fec69f003b05b69a2061e4 |
| Agent Cluster Acquired: | |
| Agent Cluster Acquired Name: | |
| Agent Cluster Name: | Opswise - Default Linux/Unix Cluster |
| Agent Cluster Unresolved: | |
| Agent Cluster Variable: | false |
| Agent Name: | |
| Agent Unresolved: | |
| Agent Variable: | false |
| All Dependencies Cleared: | false |
| Attempt: | 1 |
| Auto Cleanup: | false |
| Automatic Output File: | |
| Automatic Output Retrieval: | -- None -- |
| Average Estimated End Time: | |
| Before Date: | |
| Before Time: | |
| Calendar: | 77171434c0a801c9016d5b2b5d17ddee |
| Calendar Name: | System Default |
| Can Copy: | false |
| Can Delete: | false |
| Can Update: | true |
| Class: | ops_exec_universal |
| Cluster: | true |
| Computed Late Finish Time: | |
| Computed Late Start Time: | |
| Content Type: | Text |
| CP Duration: | |
| CP Duration (Resolved): | |
| CP Duration Unit: | Minutes |
| CPU Time: | 0 |
| Created: | 2022-08-16 09:43:55 -0400 |
| Created By: | Yan |
| Credentials: | |
| Credentials Name: | |
| Credentials Unresolved: | |
| Credentials Variable: | false |
| Critical: | false |
| Current Retry Count: | 0 |
| Date List: | |
| Delay Duration: | 00:00:00:00 |
| Delay Duration In Seconds: | |
| Delay On Start: | -- None -- |
| Description: | |
| Duration: | |
| Duration In Seconds: | |
| Early Finish: | false |
| Early Finish Day Constraint: | -- None -- |
| Early Finish Duration: | 00:00:00:00 |
| Early Finish Duration Offset (-): | |
| Early Finish Duration Offset Unit: | Minutes |
| Early Finish Nth Amount: | 5 |
| Early Finish Offset Type: | Percentage |

## 10.11.8 Record Details Metadata

The Action menu for every record Details contains a Details sub-menu. If you click **Show Metadata** on this sub-menu, a Metadata section displays at the bottom of the Details. (If Metadata is being displayed, the Details sub-menu contains a **Hide Metadata** entry.)

**Note**

You can choose to display Metadata automatically via the Show Metadata Universal Controller system property, and you can override the Show Metadata property setting via the Show Metadata user preference.

The Metadata for all records contains the following fields:

- UUID
- Updated By
- Updated
- Created By
- Created

The Metadata for any Task Instance record also contains a Status History field and an Operational Memo History field.

### 10.11.8.1 Metadata Field Descriptions

The following table describes the fields that display in the Metadata section of record Details.

| Field Name | Description |
|---|---|
| UUID | Universally Unique Identifier of this record. |
| Updated By | Name of the user that last updated this record. |
| Updated | Date and time that this record was last updated. |
| Created By | Name of the user that created this record. |
| Created | Date and time that this record was created. |
| Status History | Task instance only; History of all statuses that the task instance has gone through. |
| Operational Memo History | Task instance only; History of all Operational Memos for the task. |

## 10.11.9 Performing Actions on a Record

You can perform many actions on a record by right-clicking anywhere in the record Details to display an Action menu of all actions available for that record.

You also can perform many actions on a record (or multiple records) from a records list; that is, without having to open the record (see Performing Actions on a Record from a List).

> **Note**
>
> The actions available for a record when selecting an Action menu from the record Details may not be the same as the actions available when you select an Action menu from a list.

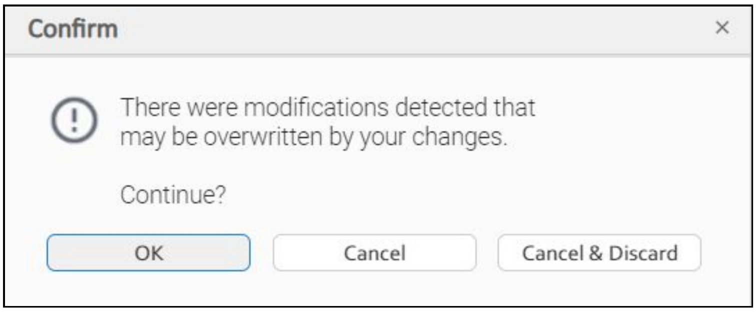
The following actions can be performed for all user-defined records:

- Updating
- Printing
- Deleting

## 10.11.9.1 Updating a Record

| | |
|---|---|
| **Step 1** | Open the record that you want to update. |
| **Step 2** | Make any desired updates to the record and click the button. |

The Controller checks if other users have made changes before updating the record. If other modifications were made, a dialog box will appear, giving you options to proceed with the update and overwrite the modifications, cancel the update and return to the form, or cancel and discard your changes.




The Automatically Create Versions system property must be true for the Controller to check for changes made by other users.

If you change the name of a task that is part of a Workflow, the Controller automatically changes the name of that task within the Workflow itself.

### 10.11.9.2 Printing a Record

To print a hard copy of the Details of any record:

| | |
|---|---|
| **Step 1** | Either:<br>• Right-click the record in the records list and click **Details > Print** in the Action menu.<br>• Open the record, right-click in the record Details, and click **Details > Print** in the Action menu. |
| **Step 2** | Select a printer and click **OK**. |

### 10.11.9.3 Deleting a Record

Deleting a record removes it from the Controller database.

| | |
|---|---|
| **Step 1** | Either:<br>• Right-click a record in the records list and click **Delete** in the Action menu.<br>• Open the record and either:<br>    • Click the **Delete** button.<br>    • Right-click anywhere in the record Details and click **Delete** in the Action menu. |
| **Step 2** | On the Confirmation pop-up that displays, click **Yes**. |

## 10.11.10 Record Versioning

Universal Controller maintains historical copies of most user-created records in the database. These include tasks and their associated records (virtual resources, variables, actions, notes), calendars and their custom day associations, custom days, variables, credentials, virtual resources, scripts (and associated notes), email templates and connections, database connections, SNMP managers, SAP connections, PeopleSoft connections, agent clusters, applications, Business Services, and triggers (and associated variables).

These historical copies - old versions of the current records - are read-only.

When you update any of these records, the Controller creates an image of the old version and stores it in the record's **Versions** tab. It also updates the **Version** field in the current version of the record. For example, if you have updated a task three times, there will be three versions of that task stored in the Versions tab, and the current version will be identified as Version 4.

Although you can purge old versions of records, the **Versions** field in the current record always will show how many versions of the record have been created.

### 10.11.10.1 Viewing Old Versions of Records

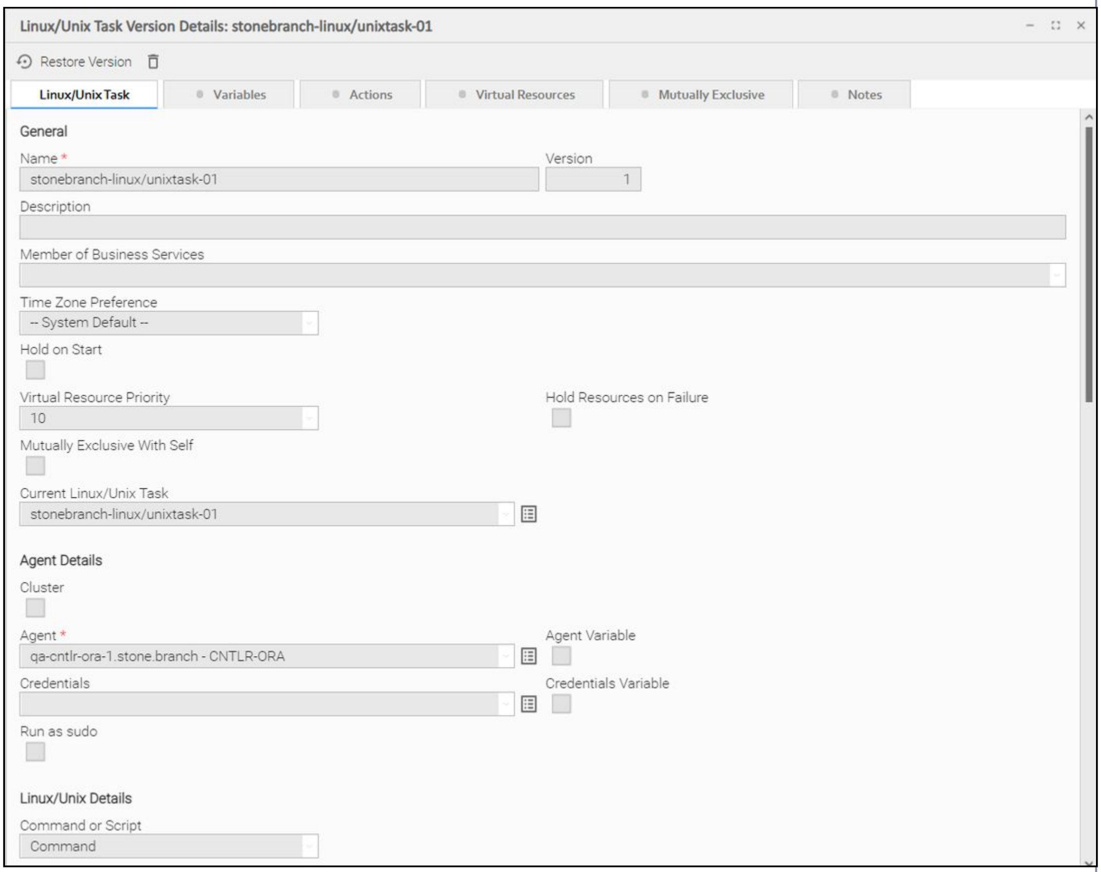
To view old versions:

<table>
<tr><td>Step 1</td><td>
Open the record Details for which you want to view old versions. The Version field indicates how many versions of this record have been made.

</td></tr>
<tr><td>Step 2</td><td>
Click the Versions tab. A list of old versions that currently exist for this record displays.


The number of old versions that currently exist for this record is identified above the list.

Click the Refresh icon at any time to get the current list.
</td></tr>
<tr><td>Step 3</td><td>
Click the Details icon next to the Name of the version, or double-click anywhere in the version row, to displays Details for that version.




All of the associated records (tabs) contain the data as it existed when this version was the current version. At the top of the Details, the Name field contains the name of the record as it existed for this version. At the bottom of the Details, the Current <record type> field contains the current name of this record.
</td></tr>
<tr><td>Step 4</td><td>
Click Close to return to the version list.
</td></tr>
</table>

## 10.11.10.2 Restoring Old Versions of Records

You can restore an old version of a record to the current version. When you restore an old version, the current version will become the newest old version.

| | |
|---|---|
| **Step 1** | Display the Details of the record for which you want to restore an old version. |
| **Step 2** | Click the **Versions** tab. |
| **Step 3** | Either right-click a Version record in the Versions list and then click **Restore Version**, or open a Version record and click the **Restore Version** button. |

### 10.11.10.2.1 Fields Not Restored

The following fields are not restored when you restore an old version of a record.

| Record Type | Fields |
|---|---|
| Trigger (all types} | • Disabled By<br>• Execution User<br>• Forecast<br>• Skip Count |
| Agent Cluster | • Task Execution Limit<br>• Current Task Count<br>• Suspended<br>• Limit Amount<br>• Last Used |
| Application | • Status<br>• Status Description<br>• Last Known Status<br>• PID<br>• Queued Time<br>• Start Time<br>• Last Query |
| Email Connection | • Use for System Notifications |
| Task (all types) | • Statistics (Statistics section in Task Details) |
| Workflow Task | • Calculate Critical Path |
| Virtual Resource | • Resource Used |

## 10.11.10.3 Purging Old Versions of Records

The Controller provides two methods for purging old versions of records.

**Note**

When you purge old versions of records, the version number of the current version remains the same.

#### 10.11.10.3.1 Purge Specific Versions

| | |
|---|---|
| **Step 1** | Display the Details of the record for which you want to purge versions. |
| **Step 2** | Click the **Version** tab to display a list of old versions of that record. |
| **Step 3** | Either:<br>• Ctrl-click one or more versions to be purged, right-click in the row of any selected version, and click **Delete**.<br>• Display the Details of a version that you want to delete and click the **Delete** button. |

#### 10.11.10.3.2 Purge All Outdated Versions

| | |
|---|---|
| **Step 1** | From the **Administration** navigation pane, select **Configuration > Server Operations**. The Server Operations list displays. |
| **Step 2** | Run the Purge Versions server operation to purge versions that exceed the maximum number of records allowed, as defined by the System Default Maximum Versions Universal Controller property. |

### 10.11.10.4 Enabling/Disabling Versioning

Two properties are available that allow you to control if and when the Controller automatically creates a new version of a record (and all its associated records):

- The Automatically Create Versions Universal Controller system property (true or false) determines whether modifications to the record itself will cause the Controller to create a new version of the record. The default value is true. If this property is set to false, the Controller does not create versions.
- The Create Version On Related List Change Universal Controller system property (true or false) determines whether changes, deletions, or additions to a related list will cause the Controller to create a new version of the record. For example, if this property is enabled, the Controller will create a new version of the task and all its associated records when the user adds a variable to the task, deletes a Note, or changes an Email Notification. The default value is true. If this property is set to false, and the Automatically Create Versions property is set to true, the Controller creates a new version only if the base record is updated.

To change one or both of these properties:

| | |
|---|---|
| **Step 1** | From the **Administration** navigation pane, select **Configuration > Properties.** |
| **Step 2** | Locate the property you want to change. |
| **Step 3** | Double-click the **Value** and select **true** or **false**. |

## 10.11.11 Exporting and Importing Records

There are two different types of exports/imports:

- Bulk exports/imports let you export/import all records in a Controller database.
- List exports/imports let you export/import all records selected on a list.

**Note**

Critical Path settings for tasks and Workflows are not exported/imported.

**Important!**

It is strongly recommended that you do NOT use the Import and Export functions for modification of Universal Controller records. API functions are available if you need to programmatically update, copy, insert, or otherwise manipulate Universal Controller records.

### 10.11.11.1 Bulk Export/Import

Universal Controller provides Server Operations that allow you to perform a bulk export and bulk import of all records in your Controller database.

You would use bulk export and bulk import to migrate data, in bulk, from an existing Universal Controller deployment to a new Universal Controller deployment. See:

- Run an Import
- Run an Export

### 10.11.11.2 List Export/Import

You also can perform a list export of records selected on a list, or a list import of an XML file to any list for a specific record type.

## 10.11.12 Updating Multiple Records

You can update multiple records from any of the following lists:

- Agents list for any Agent type (Credentials field and Member of Business Services field only)
- All Agents list (Credentials field and Member of Business Services field only)
- Tasks list for any task type
- All Tasks list
- Triggers list for any trigger type
- All Triggers list
- Database Connections, Email Connections, PeopleSoft Connections, and SAP Connections lists
- SNMP Managers list

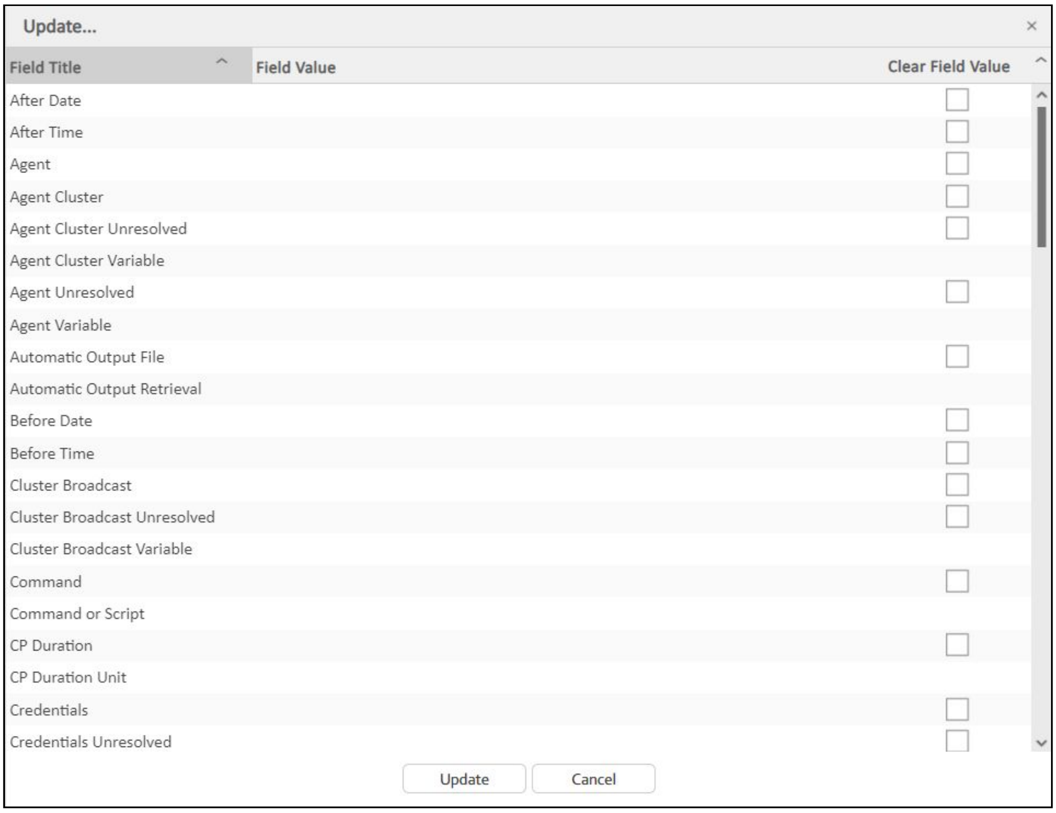
- Credentials list (all fields except Type and Key Location (FTP only))
- Email Templates list
- Global Variables list
- Scripts list
- Users (these fields only: Active, Command Line Access, Department, Locked Out, Manager, Password, Password Requires Reset, Time Zone, Web Browser Access, Web Service Access)
- Virtual Resources list

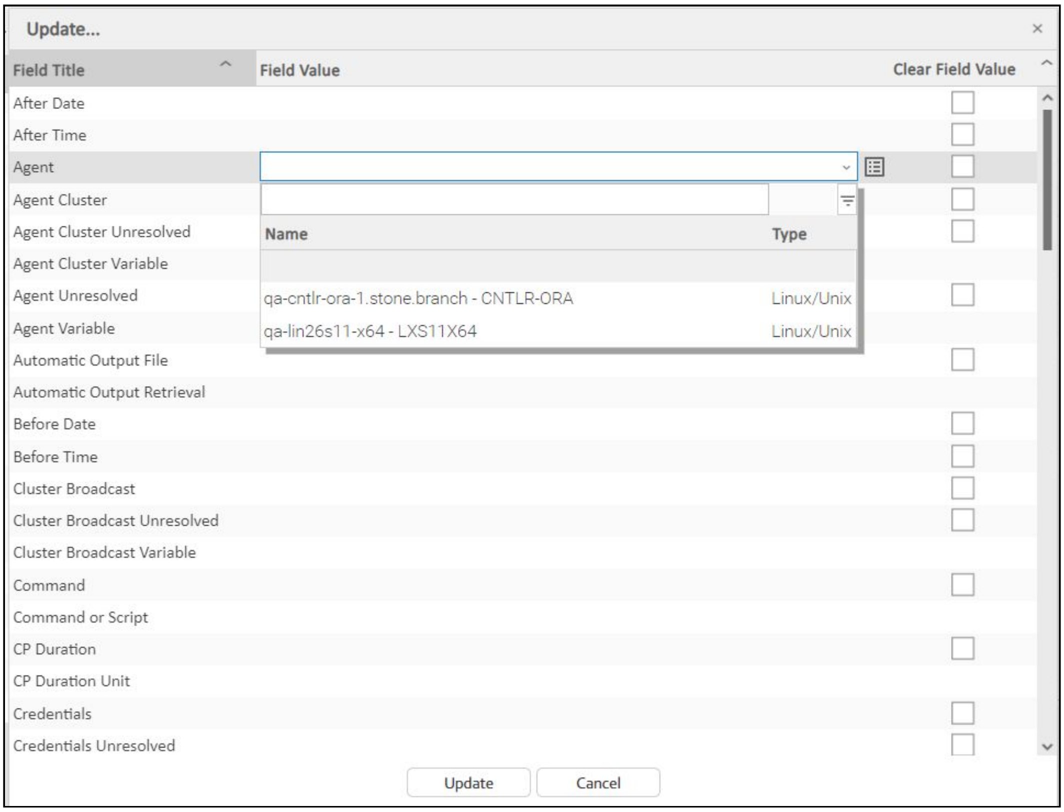
There are two actions available for updating multiple records:

1. Update - Updates all manually selected records on the list.
2. Update Filtered - Updates all records that match the currently selected filter for the list.

Updates are applied and validated per selected record, since a valid update for one record may not be valid for another. A validation failure for one update does not prevent the update of other records.

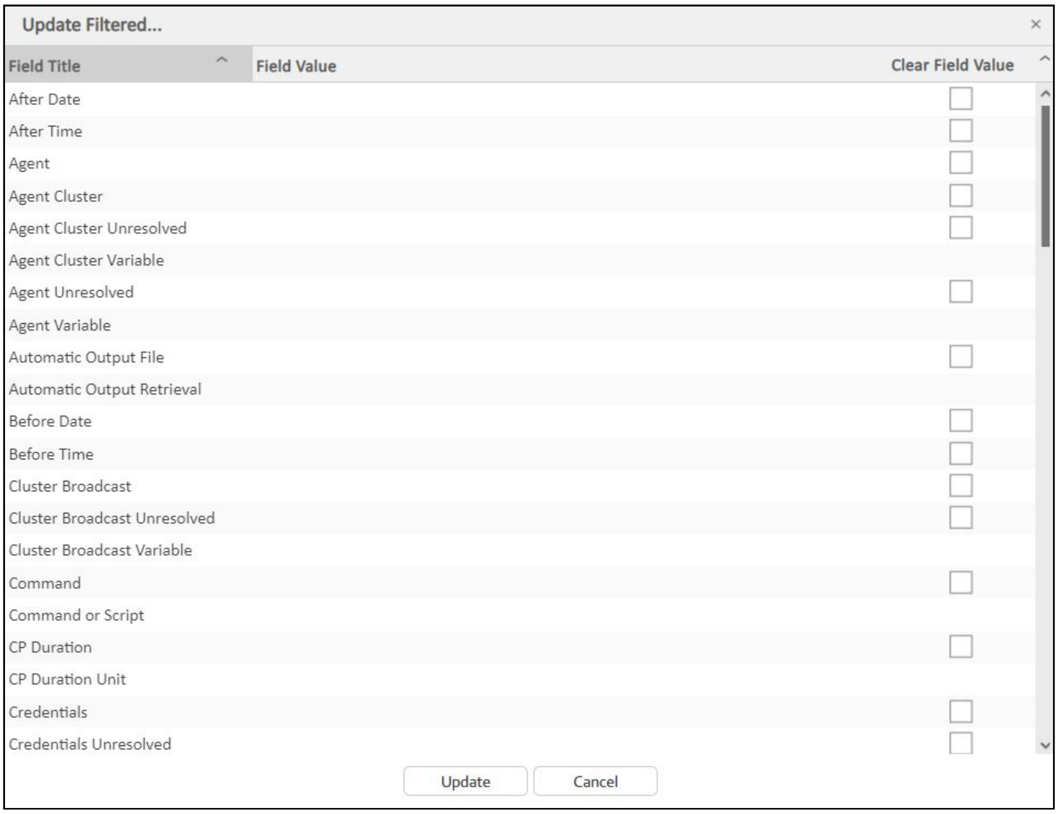
## 10.11.12.1 Updating Manually Selected Records

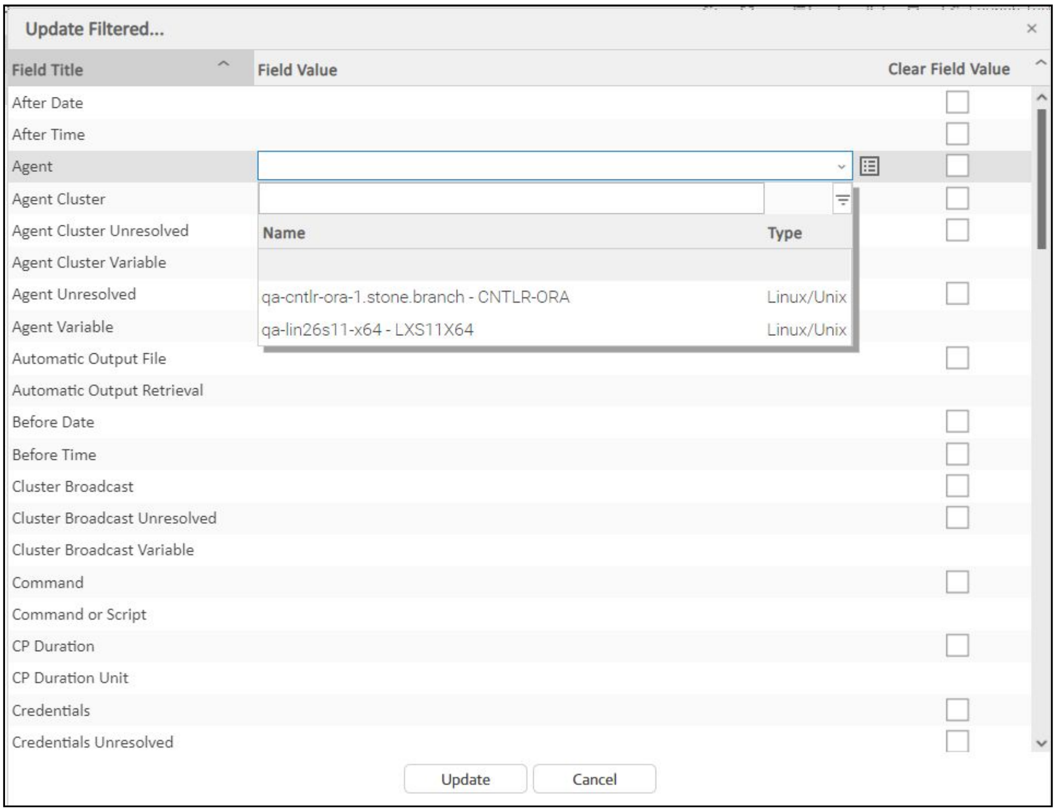
| | |
|---|---|
| **Step 1** | Select the list from which you want to update multiple records. |
| **Step 2** | Ctrl-click each record on the list that you want to update. |
| **Step 3** | Right-click any of the selected records to display an Action menu. |
| **Step 4** | Click **Update...** to display the **Update** dialog, which lists every field that can be updated for that record type (since read-only fields cannot be updated, they are not displayed).<br><br>For example, the following **Update** dialog displays if you select multiple Linux/Unix Task records.<br><br> |

| | |
|---|---|
| **Step 5** | For any field, click anywhere in the **Field Value** cell to display an editor where you can enter / select a value.<br><br>For example, if you click the **Agent** row, a drop-down list displays that lets you select any currently defined Linux/ Unix Agent.<br><br><br> |
| **Step 6** | If you want to clear the value of a field for each selected record and not select a new value, click the **Clear Field Value** check box. |
| **Step 7** | Click the **Update** button to update all of the fields with the changed values. |

## 10.11.12.2 Updating Records That Match the Current Filter

| | |
|---|---|
| **Step 1** | Select the list from which you want to update multiple records. |
| **Step 2** | Create a Filter to display only those records that you want to update. |
| **Step 3** | Right-click the list header to display an Action menu. |
| **Step 4** | Click **Update Filtered...**. A Confirm pop-up displays. |

<table>
<tr>
<td>Step 5</td>
<td>Click OK to display the Update Filtered dialog, which lists every field that can be updated for that record type (since read-only fields cannot be updated, they are not displayed).<br><br>For example, the following Update Filtered dialog displays if you select multiple Linux/Unix Task records.<br><br>
</td>
</tr>
</table>

| | |
|---|---|
| **Step 6** | For any field, click anywhere in the **Field Value** cell to display an editor where you can enter / select a value.<br><br>For example, if you click the **Agent** row, a drop-down list displays that lets you select any currently defined Linux/ Unix Agent.<br><br> |
| **Step 7** | If you want to clear the current value of a field for each selected record and not select a new value, click the **Clear Field Value** check box. |
| **Step 8** | Click the **Update** button to update all of the fields with the changed values. |

## 10.11.12.3 Update / Update Filtered Dialog Columns

The following columns display on the Update / Update Filtered dialog:

| | |
|---|---|
| **Field Title** | Name of the field as displayed in the Record Details. |
| **Field Value** | Value that you want to select for this field in all of the selected records. |
| **Clear Field Value** | Check box indicating whether or not to clear the value from this field when the record is updated. By default, this column is unselected for all fields.<br><br>For fields that cannot be blank (for example, fields that demand a **yes** or **no** value), the check box will not be displayed. |

Since read-only fields cannot be updated, they are not displayed on the List.

If you are updating multiple records on the All Tasks list or All Triggers list, the Update / Update Filtered dialog contains only fields that are common to all types of tasks or triggers.

**Note**

When updating manually selected Universal Task records on the All Tasks list, the Update dialog will only contain mapped fields if all of the records have the same Universal Template UUID (that is, those Universal Tasks were based on the same Universal Template).

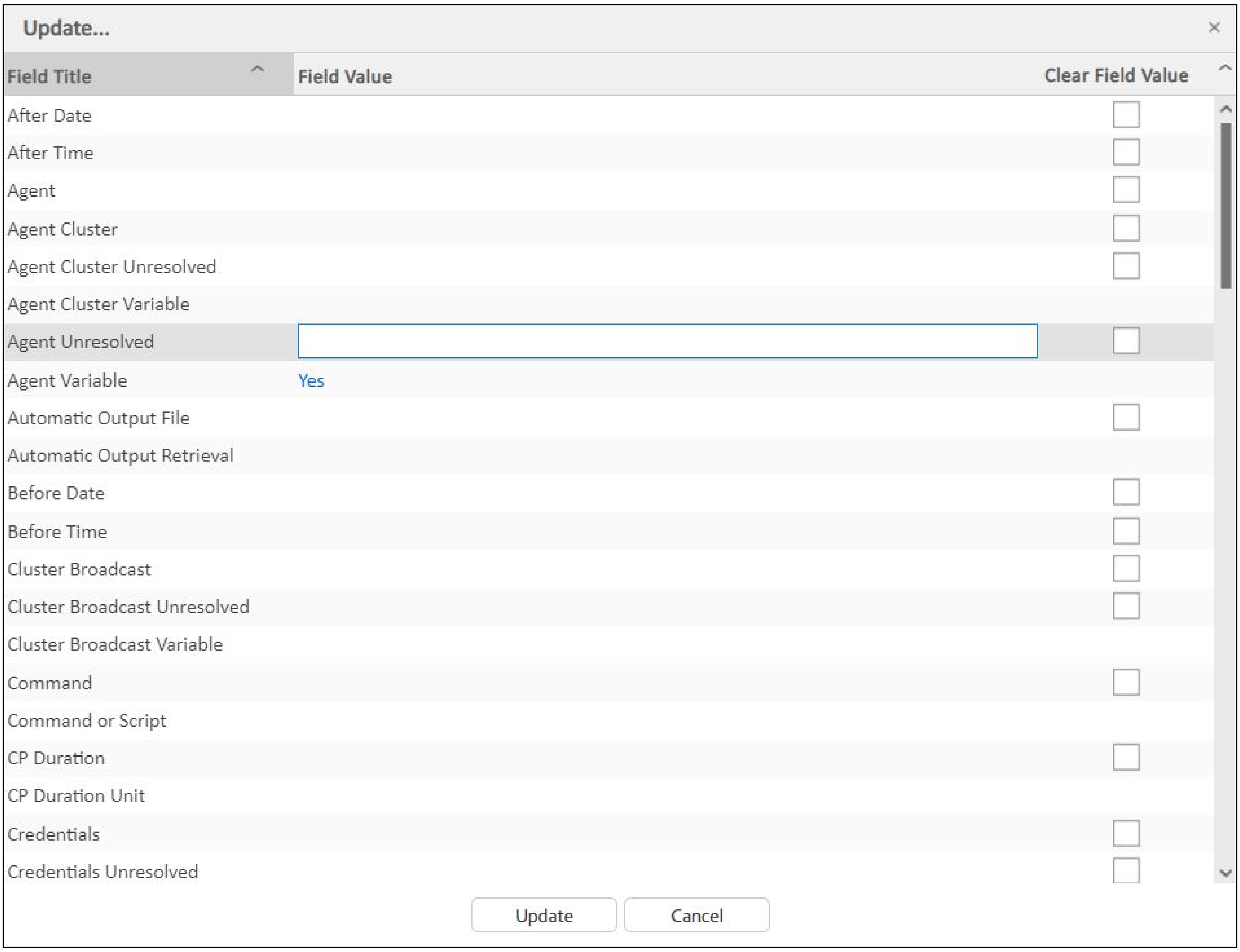
## 10.11.12.4 Update / Update Filtered Dialog Variable Fields for Tasks

The Record Details for many individual tasks contain one or more Variable fields that allow you enter a variable instead of a record.

For example:

If you select **Agent Variable** in the Details for a single Linux/Unix task, the **Agent** field converts from a reference field (where you browse and select a record) into a text field that allows you to enter the variable.

In the Update / Update Filtered dialog for multiple tasks, the **Agent** field is not converted into a text field if you select **Agent Variable**. Instead, an additional field - **Agent Unresolved** - is provided, into which you enter a variable, variable and text, or Agent name. The **Agent** field is not used.




## 10.11.13 Uploading Records

You can upload records (as contained in a zip and/or JSON file) from your local system to any of the following lists:

- Agent Clusters list
- Bundles list
- Business Services list
- Calendars list
- Connections list (Database Connections, Email Connections, PeopleSoft Connections, and SAP Connections)
- Credentials list
- Custom Days list
- Email Templates list
- OMS Servers list
- Promotion Targets list
- Scripts list
- Simulation list
- SNMP Managers list

- Tasks list (for any task type)
- All Tasks list
- Triggers list (for any trigger type)
- All Triggers list
- Variables list
- Virtual Resources list

The Upload operation takes a zip file (containing one or more files) or a JSON file.

- For a zip file, each JSON file in the zip file will parsed, and non-JSON files will be ignored.
- For a JSON file, the file is parsed to update/create a record.

**Note**

A zip can contain multiple files, where each file could be for a different record type. For example, the zip might contain two files; one file for a task and one file for a trigger. The zip file can be uploaded from any list that supports upload (for example; tasks list, triggers list, and calendars list). When the zip file has been successfully uploaded, both the task record and the trigger record will be uploaded.

A JSON file contains data for one record type only. The `exportTable` property in the JSON file is used to identify the record type. Any file without this attribute will be ignored.

- For a record type that supports download/upload, the JSON response from Read web service API contains the `exportTable` property.
- For a Read response from an older release, you must manually add the `exportTable` property in order to be upload compatible.

| | |
|---|---|
| **Step 1** | Right-click any column on any list that supports uploads to display an Action menu. |
| **Step 2** | Click **Upload...** to display the Upload dialog.<br><br> |
| **Step 3** | Click **Browse** to Select a file to upload. |
| **Step 4** | Click **Upload** to upload the selected file. |

### 10.11.14 Downloading Records

You can download multiple records from a list (or download a single record from its record details) from any of the following lists:

- Agent Clusters list
- Bundles list
- Business Services list
- Calendars list
- Connections list (Database Connections, Email Connections, PeopleSoft Connections, and SAP Connections)
- Credentials list
- Custom Days list
- Email Templates list
- OMS Servers list
- Promotion Targets list
- Scripts list
- Simulation list
- SNMP Managers list
- Tasks list (for any task type)
- All Tasks list
- Triggers list (for any trigger type)
- All Triggers list
- Variables list
- Virtual Resources list

There are two actions available for downloading records from a list:

- Download
  Downloads all manually selected records on the list.
- Download Filtered
  Downloads all records that match the currently selected filter for the list.

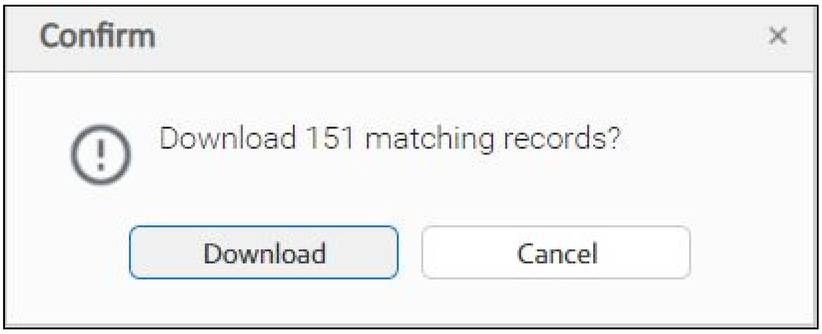
There is one action available for downloading a single record from its record details:

- Download
  Downloads the current record.

#### 10.11.14.1 Download Manually Selected Records from a List

| | |
|---|---|
| **Step 1** | Select the list from which you want to download multiple records. |
| **Step 2** | Ctrl-click each record on the list that you want to download. |
| **Step 3** | Right-click any of the selected records to display an Action menu. |
| **Step 4** | Click **Download** to download the selected records. |

#### 10.11.14.2 Download Records That Match the Current Filter

| | |
|---|---|
| **Step 1** | Select the list from which you want to download multiple records. |
| **Step 2** | Create a Filter to display only those records that you want to download. |
| **Step 3** | Right-click the list header to display an Action menu. |
| **Step 4** | Click **Download Filtered...**. A Confirm pop-up displays.   |
| **Step 5** | Click **Download** to download the matching records |

#### 10.11.14.3 Download a Single Record from its Record Details

| | |
|---|---|
| **Step 1** | Select the list from which you want to download a single record. |
| **Step 2** | Open the record that you want to download. |
| **Step 3** | Right-click anywhere in the record details to displays an Action menu. |
| **Step 4** | Click **Download**  to download the record. |

**Note**

You also can download a single record by manually selecting it from the records list.

## 10.12 Record Lists

### 10.12.1 Introduction

A record list is either a:

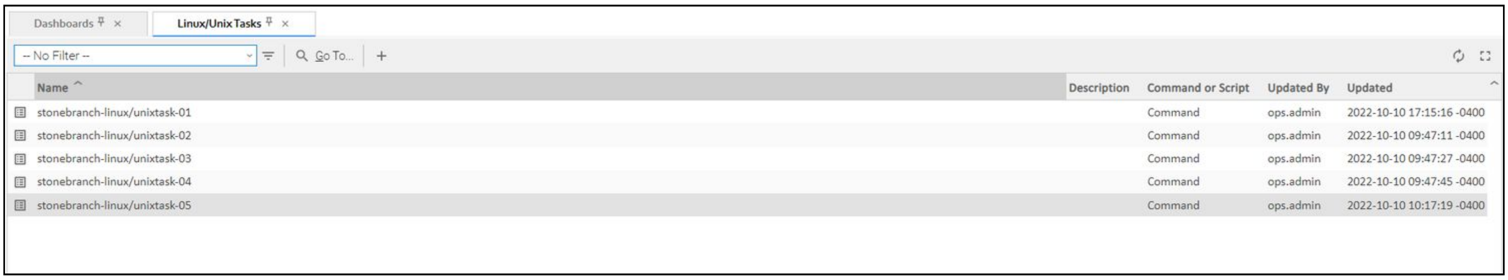
- Listing of records of the same type, such as tasks, calendars, or users.

- Listing of all records of the same type or category, such as all tasks or active triggers.

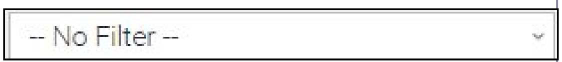
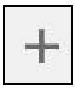
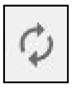
When you click a record type in the Services, a list of currently defined records for that record type displays.

## 10.12.2 List Task Bar

A task bar displays at the top of every list. For example:



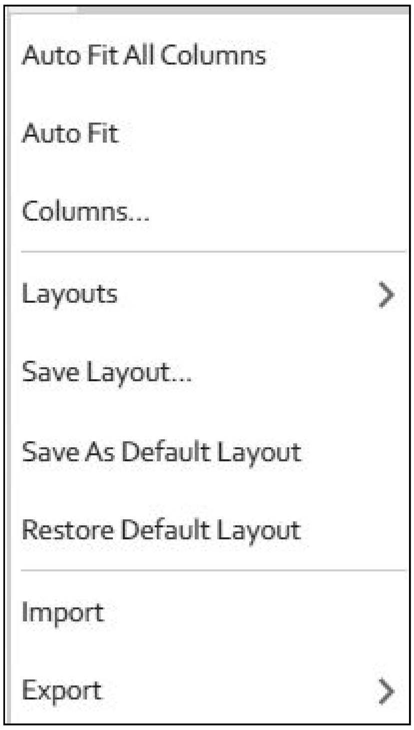

The following table describes the different elements that can appear on a list task bar and the function of each element:

| Task Bar Element | Function |
|---|---|
|   | Allows you to apply an existing filter to the records on the list. The default selection is **-- No Filter --** (no Filter is applied). Click the down arrow to display a list of existing filters. |
|  | Allows you to create, view, or edit a filter that you can save or apply to the records on the list. |
|   | Allows you to create a quick record name filter that you can apply (but not save) to the records on the list. |
|  | Allows you to create a new record of the record type displayed on the list. |
|  | Allows you to refresh any dynamic data displayed on the list. |

## 10.12.3 Formatting a List

For every list in the user interface, an Action menu of formatting options is available.

To display the menu of formatting options, click the down arrow that appears over the Detail icons column.




For all lists, you can right-click any column header on the list to display an Action menu of formatting options preceded by sort actions for the selected column.


See Action Menus for a description of these formatting and sort options.

## 10.12.4 Sorting

By default, lists are sorted by **<record type> Name** in ascending, alphanumeric order (0-9, a-z).

You can sort a list in ascending or descending order of the entries in any displayed column.

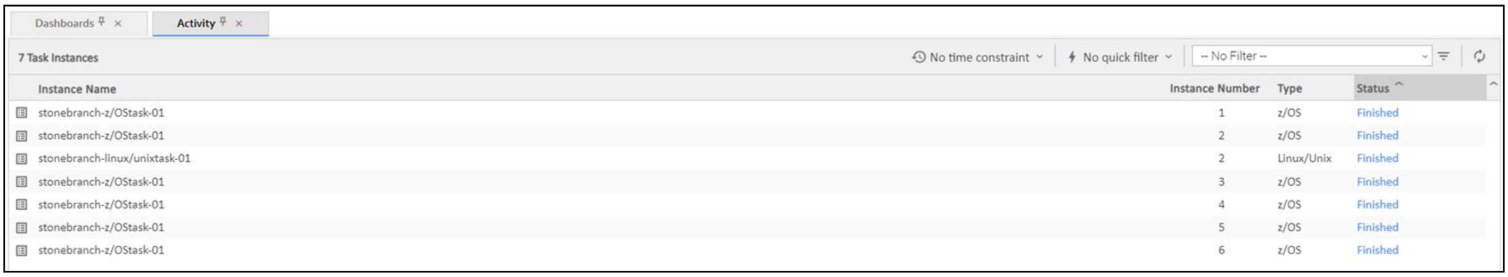
There are two ways to sort a list:

1. Click a column header; the list is sorted in ascending order of the entries in that column. A small arrow appears to the left of the column name to indicate the direction of sort. An up arrow indicates ascending alphanumerical order; a down arrow indicates descending alphanumerical. Re-click the header to reverse the direction of sort.
2. Right-click a column header to display an Action menu and click either:
    - Sort Ascending
    - Sort Descending

### 10.12.4.1 Sorting by Type

Type columns, such as Permission Type, Task Type, or Task Instance Status, are sorted by the Type underlying integer values, not alphabetically by the Type display names.

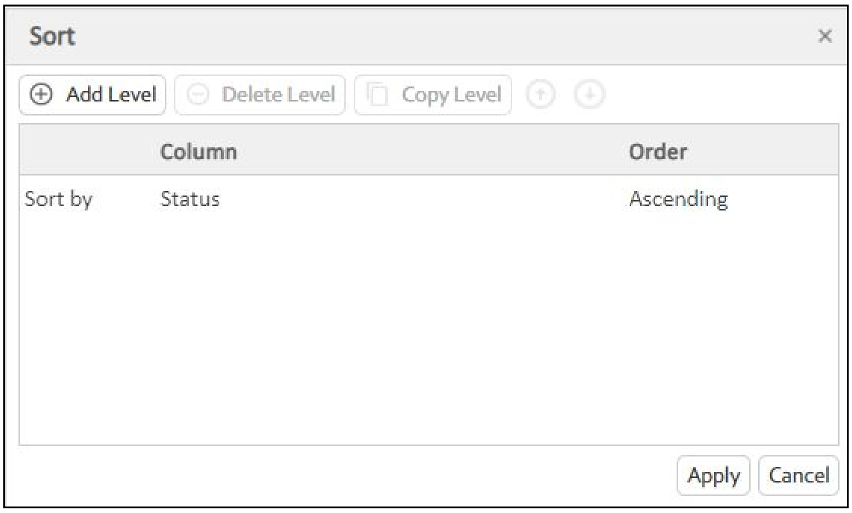
For example, if you sort the list of task instances on the Activity Monitor by Status , the list is sorted by the numeric Status Code, not the alphabetic Status Name:



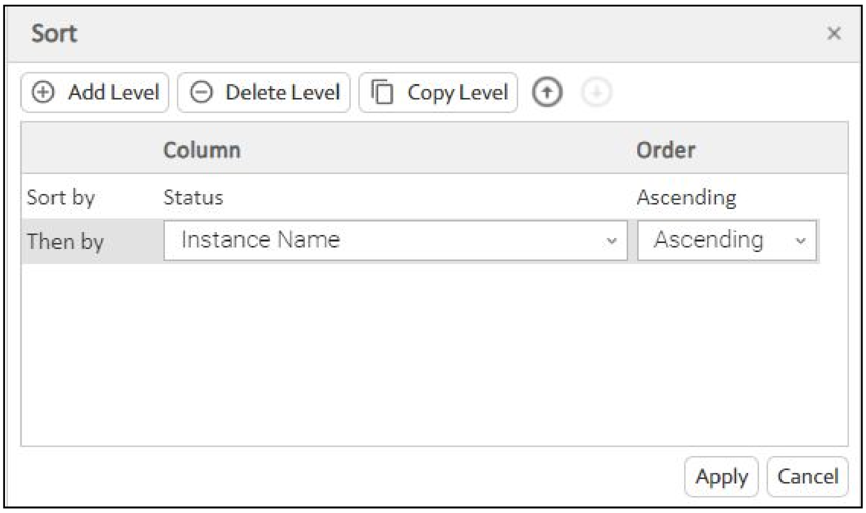
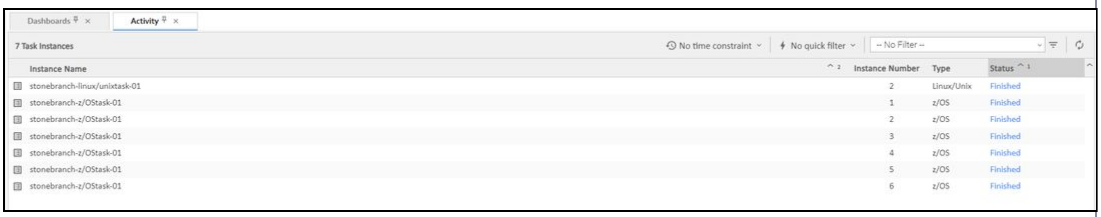

## 10.12.4.2 Configure a Multi-Level Sort

You can use the Configure Sort action to create a temporary, multi-level sort for any column.

<table>
<tr><td>Step 1</td><td>Click a column header to sort the list by the currently defined sort level of that column (default is column name in ascending order).</td></tr>
<tr><td>Step 2</td><td>Right-click the same column header to display an Action menu .</td></tr>
<tr><td>Step 3</td><td>Click Configure Sort... to display the Sort dialog.




The Sort By row identifies the default Column and Order by which the list is sorted if you click the column header.</td></tr>
</table>

| | |
|---|---|
| Step 4 | Click the **Add Level** or **Copy Level** button to add a **Then by** row to the list.<br><br> |
| Step 5 | Select a **Column** and **Order** for **Then by**. |
| Step 6 | Add as many sort levels as desired. To remove a level from the dialog (including the default level), select it and then click **Delete Level**. Use the up and down arrow buttons to re-arrange the order of the levels. |
| Step 7 | Click **Apply**. The list is sorted according to the levels that you have defined. Numbers display next to the column headers, identifying the sort order.<br><br>For example:<br> |
| Step 8 | To remove the temporary sort levels for the column, either:<br>• Click anywhere in the list header row.<br>• Right-click the column header of the column you were sorting and click **Clear Sort**. |

## 10.12.5 Filtering

You can apply a filter to a list so that it temporarily displays only records matching the filter criteria, and you can create and save a filter that can be applied at any time to the list.

You also can create a quick filter that will filter a list by full or partial record name.

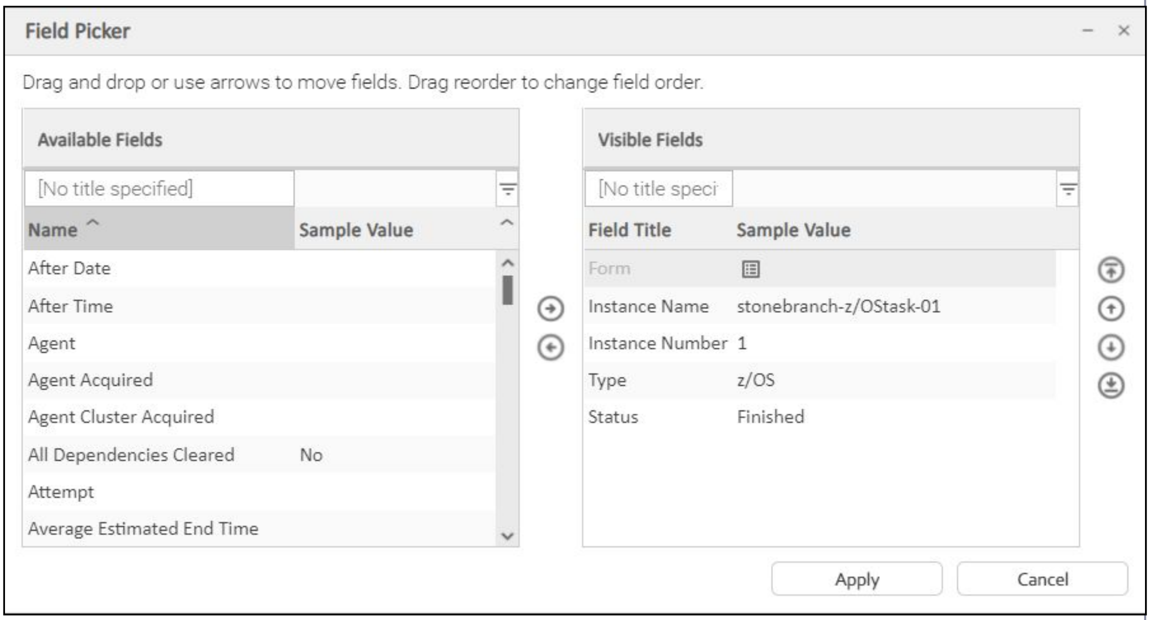
For detailed information on creating and applying filters, see Filters.

## 10.12.6 Selecting Columns / Column Locations for a List

Initially, all lists display default columns of information in default locations. You can change a list to display any available column in any location.

The columns are based on the fields that exist for a record type in the Controller database; all fields that display in the user interface, including Metadata fields, are available as columns.

To select which columns you want displayed on a list:

| | |
|---|---|
| **Step 1** | Display the list. |
| **Step 2** | Access the Action menu of list formatting options . |
| **Step 3** | Click **Columns...** to display the Field Picker pop-up dialog.<br><br>• The **Available Fields** window lists the fields that currently are not displayed on the list but are available for display.<br>• The **Visible Fields** window lists the fields that currently are displayed on the list (in left-to-right sequence). |
| **Step 4** | Drag and drop fields between the Available Fields and Visible Fields windows, as appropriate for whichever fields you want displayed on the list.<br><br>You can drag and drop a field from the Available Fields window into any location in the Visible Fields window, and you can drag and drop any field in the Visible Fields window to a new location. Fields dragged from the Visible Fields window to the Available Fields are automatically dropped into location based on alphabetical order.<br><br>**Note**<br>You also can:<br>• Move any field between the Available Fields and Visible Fields windows by clicking the field and then clicking the **>** or **<** arrow.<br>• Relocate any field by dragging and dropping the corresponding column directly on the list. |
| **Step 5** | To filter the fields listed in either window, enter characters in the text field above the Name column. Only fields containing that sequence of characters will display in the list. |
| **Step 6** | Click the **Apply** button on the Field Picker dialog to save your relocation selections. |

## 10.12.7 List Layouts

Every list displays in its System Default layout when you first log in to the Controller.

You can sort, filter, select, and/or relocate columns in a list, and save that configuration of the list as a new layout.

You can create any number of layouts for a list, and:

- Pin any layout to a list, making it your Default layout whenever you display that list.
- Select any layout as a temporary layout for the list while it currently is being displayed.

To select a layout for a list, access the Action menu , which provides the following selections for saving and selecting list layouts:

| | |
|---|---|
| **Layouts >** | Displays a menu of all layouts , including the System Default layout, that you can apply to the list. |
| **Save Layout...** | Saves the current configuration of the list as a new layout and displays the layout in the Layouts menu . |
| **Save As Default Layout** | For the ops_admin role only; Saves the current configuration of the list as the System Default layout for this list. |
| **Restore the Default Layout** | For the ops_admin role only; Restores the System Default layout of this list to the original System Default layout. |

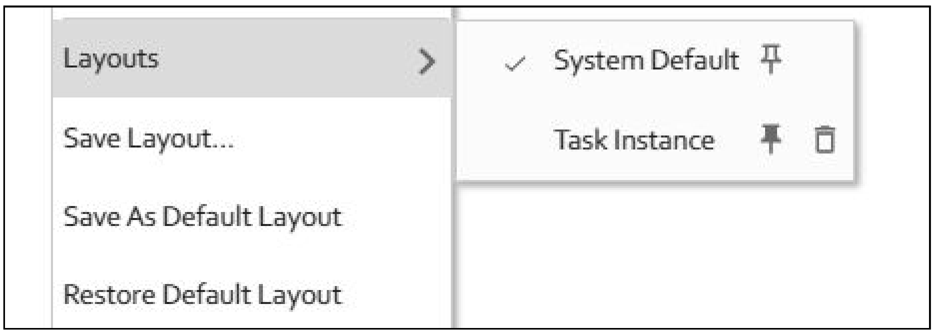
## 10.12.7.1 Layouts Menu

The Layouts menu identifies all currently defined layouts for the list, including the System Default layout.

Layouts menu Icons:

| Icon | Description |
|---|---|
|  | Indicates that this layout has been pinned as the Default layout for this list. |
|  | Lets you delete a layout (except the System Default layout). |
|  | Indicates the list layout that currently is selected for the list. This layout will display for the list - including any modifications made since the layout was selected - until you close, and then re-open, the list. |

For example:




In this Layouts menu, the checkmark next to **System Default** indicates this is the currently selected layout.

### 10.12.7.2 Selecting a Layout for a List

There are two ways to select a layout for a list:

1. Click the name of the layout in the Layouts menu. The check mark will display next to that layout, indicating that it is the currently selected layout for the list.
2. Click the Layout icon next to the layout. The Default Layout icon and the check mark will display next to that layout, indicating that it is the currently selected layout for the list and is pinned as the Default layout for the list.

**Note**

Pinning a layout as your Default layout also selects it as the currently displayed layout, but selecting a layout as the currently displayed layout does not pin it as your Default layout.

### 10.12.7.3 Saving a Layout

You can save any configuration of a list as a list layout.

| | |
|---|---|
| **Step 1** | Select Save Layout... from the Action menu. A Save As... pop-up dialog displays.   |
| **Step 2** | Enter a **Name** for the layout. (By default, the dialog displays the record type of the list as the **Name**.) |
| **Step 3** | Select whether or not you want to pin the layout as your Default layout for this list. |

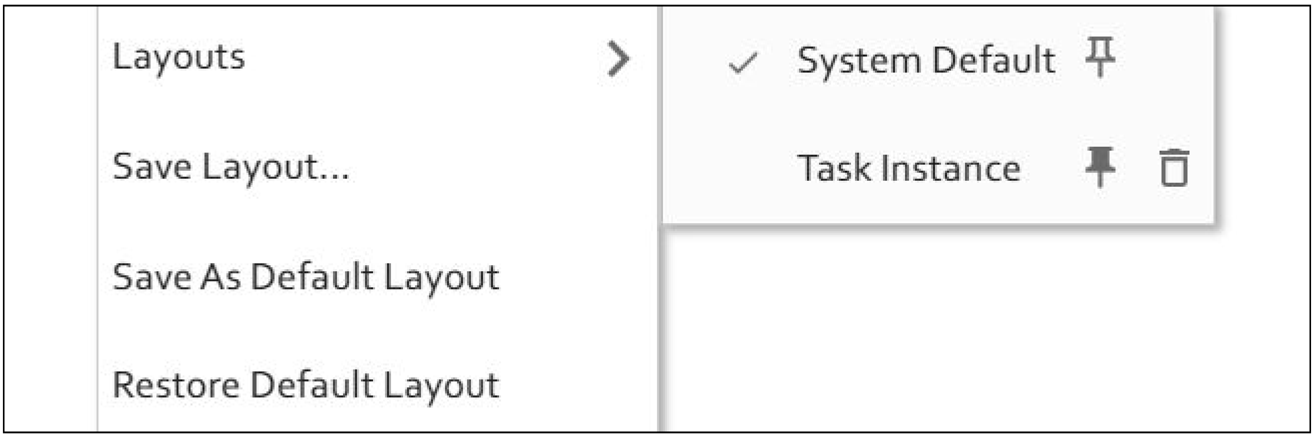
You can display a layout for a list without pinning it as your Default layout by clicking the layout name in the **Layout >** menu. The list will display in the selected layout, but your Default layout will remain the same.

### 10.12.7.4 Saving a Layout As Your Default Layout

To save a layout as your Default layout for a list, which pins the layout to the list, click the  icon next to that layout in the Layouts menu.

Saving a layout as your Default layout for a list does not make that layout the System Default layout; it only means that for you, as the user that saved the layout, it is pinned as your Default layout for the list whenever you display the list.

In the following example, **Task Instance** has been pinned as the your Default layout for the list, and **System Default** has been selected as the currently displayed layout.




### 10.12.7.5 Deleting a Layout

To delete a list layout, click the icon that appears next to every layout (except the System Default layout, which cannot be deleted) in the Layouts menu.

If you delete a layout that is pinned as your Default layout for the list, the System Default layout automatically becomes your Default layout for the list.

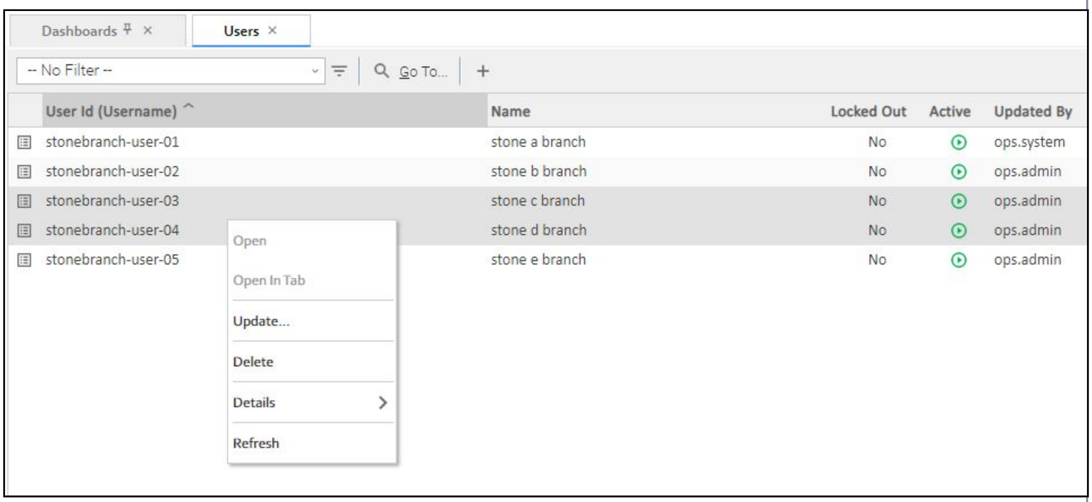
## 10.12.8 Adding Records from a List

Adding a new record is a simple uniform procedure through the environment: from any list, click the + button.

## 10.12.9 Deleting Records from a List

To delete one or more records from a list of records:

| | |
|---|---|
| **Step 1** | On the records list, Ctrl+right-click the records that you want to delete. Each selected record is highlighted.<br>For example: |



| | |
|---|---|
| **Step 2** | On the Action menu that displayed after you made your first selection, click **Delete**. |
| **Step 3** | On the Confirmation pop-up that displays, click **OK**. |

**Note**

You also can delete an individual record from its record Details (see Deleting a Record ).

## 10.12.10 Updating Multiple Records from a List

You can update multiple records from any of the following lists:

- Agents list for any Agent type (Credentials field and Member of Business Services field only)
- All Agents list (Credentials field and Member of Business Services field only)
- Tasks list for any task type
- All Tasks list
- Triggers list for any trigger type
- All Triggers list
- Credentials list (all fields except Type and Key Location (FTP only))
- Email Templates list
- Global Variables list
- Scripts list
- Users (these fields only: Active, Command Line Access, Department, Locked Out, Manager, Password, Password Requires Reset, Time Zone, Web Browser Access, Web Service Access)
- Virtual Resources list

For detailed information on how to perform a multiple records update, see Updating Multiple Records .

## 10.12.11 Uploading Records to a List

You can upload records (as contained in a zip and/or json file) to any of the following lists:

- Agent Clusters list
- Bundles list
- Business Services list
- Calendars list
- Connections list (Database Connections, Email Connections, PeopleSoft Connections, and SAP Connections)
- Credentials list
- Custom Days list
- Email Templates list
- OMS Servers list
- Promotion Targets list
- Simulation list
- Scripts list
- SNMP Managers list
- Tasks list (for any task type)
- All Tasks list
- Triggers list (for any trigger type)

- All Triggers list
- Variables list
- Virtual Resources list

For detailed information on how to perform a multiple records upload, see Uploading Records .

## 10.12.12 Downloading Multiple Records from a List

You can download multiple records from a list (or download a single record from its record details) from any of the following lists:

- Agent Clusters list
- Bundles list
- Business Services list
- Calendars list
- Connections list (Database Connections, Email Connections, PeopleSoft Connections, and SAP Connections)
- Credentials list
- Custom Days list
- Email Templates list
- OMS Servers list
- Promotion Targets list
- Simulation list
- Scripts list
- SNMP Managers list
- Tasks list (for any task type)
- All Tasks list
- Triggers list (for any trigger type)
- All Triggers list
- Variables list
- Virtual Resources list

For detailed information on how to perform a multiple records downloads, see Download Records .

## 10.12.13 Performing Actions on One or More Records from a List

You can perform many actions on one or more records on a list without having to open the record(s).

- For a single record, right-click the record on the list to display an Action menu of all actions available for that record.
- For multiple records, press Ctrl and right-click each record. An Action menu of all actions available for multiple records of that type displays.

**Note**

The actions available for a record when selecting an Action menu from a list may not be the same as the actions available when you select an Action menu from its record Details.

## 10.12.14 Exporting Records to an Output File

This feature allows you to export record information for records on a list to any of the following file types:

- CSV (comma-separated values in an Excel file)
- Permissions for Group (XML for User Groups only)
- PDF
- XLS (Excel)
- XLXS
- XML
- XML (Export References)

To export records, you first display the current list of those records.

By default, an export contains all records on the list. If you do not want to export all records on the list, use filtering to select the records to be exported.

**Note**

You cannot *select* records on a list manually to indicate which records are to be exported; you must *filter* the list in order to select the records.

**Important!**

It is strongly recommended that you do NOT use the Import and Export functions for modification of Universal Controller records. API functions are available if you need to programmatically update, copy, insert, or otherwise manipulate Universal Controller records.

### 10.12.14.1 Exporting Records to CSV, PDF, XLS (Excel), or XLSX

When you export to CSV, PDF, XLS (Excel), or XLXS, you export only the columns of information displayed on the list. To select which columns are displayed, see Selecting Columns / Column Locations for a List.

To run the export:

| | |
|---|---|
| **Step 1** | Display the list of records. |
| **Step 2** | Right-click in any column header of the list to display an Action menu . |
| **Step 3** | Select **Export**. |
| **Step 4** | Select **CSV**, **PDF**, **XLS (Excel)**, or **XLXS**. |
| **Step 5** | When the export is complete, select whether to open or save the file. |

### 10.12.14.2 Exporting Records to XML, XML (Export References), or Permissions for Group

When you export to XML, XML (Export References), or Permissions for Group (XML for User Groups only), you export the entire record.

**Note**

Exporting records to XML files requires the ops_admin role or the ops_imex role.

To run the export:

| | |
|---|---|
| **Step 1** | Display the list of records. |
| **Step 2** | Right-click in any column header of the list to display an Action menu . |
| **Step 3** | Select **Export**. |

<table>
<tr>
<td>Step 4</td>
<td>
Select either:
<ul>
<li>XML</li>
<li>XML (Export References)</li>
<li>Permissions for Group</li>
</ul>
The following table provides notes on these export types for different record types.
<table>
<tr><th>Export Type</th><th>Record Type</th><th>Notes</th></tr>
<tr><td>XML</td><td>Task</td><td>Also exported: local variables, Actions, Notes, and Virtual Resource requirements.</td></tr>
<tr><td>XML</td><td>Workflow</td><td>Also exported: all tasks in the workflow. Each task is exported to a separate XML file</td></tr>
<tr><td>XML (Export References)</td><td>Task</td><td>Also exported: all of the XML export data, plus triggers, global variables, calendars, credentials, and any resources referred to. These "reference" records are saved to separate XML file.</td></tr>
<tr><td>XML</td><td>Universal Task</td><td><ul><li>Export does not include Universal Template XML.</li><li>Any unmapped fields (for example: booleanField1, choiceField1) are excluded from the XML.</li><li>For any mapped fields, the XML element includes both the Name and Label attributes. For example: <boolean_field1 name="immediate" label="Immediate">true</boolean_field1></li></ul></td></tr>
<tr><td>XML (Export References)</td><td>Universal Task</td><td>Export includes:<ul><li>Universal Template XML.</li><li>Referenced Credentials, Agent Cluster, and Broadcast Cluster.</li><li>Referenced Agent only if the Export Agent References Universal Controller system property (opswise.export.agent_references) is set to true.</li></ul>For any other reference fields that might be inherited from the common Task definition (for example, System Operations), those references also will be followed.</td></tr>
<tr><td>XML</td><td>Universal Template</td><td>Export includes the base Universal Template definition, along with as the Universal Template Field and Universal Template Field Value Maps data, in a single XML per Universal Template.</td></tr>
<tr><td>XML (Export References)</td><td>Universal Template</td><td>Export includes:<ul><li>Referenced Credentials, Agent Cluster, and Broadcast Cluster (under "Defaults" section).</li><li>Referenced Agent only if the Export Agent References Universal Controller system property (opswise.export.agent_references) is set to true.</li></ul></td></tr>
</table>
</td>
</tr>
</table>

| Export Type | Record Type | Notes |
|---|---|---|
| XML (Export References) | Bundle | Export includes:<br>• Any Business Services referenced by the Member of Business Services field.<br>• Any Promotion Target referenced by the Default Promotion Target field.<br>• Any record added to the Bundle, including those records referenced by any record added to the Bundle. |

| | |
|---|---|
| **Step 5** | When the export is complete, an ***Exported*** message displays above the list, indicating that the export is complete. (The export location is configurable; see the Export Path Universal Controller system property.) |

### 10.12.15 Importing Records from a File

You can import record information from any valid XML file to a list using the Import action that is available for all lists.

- Any Universal Template XML found in the import directory will be processed prior to any other XML.
- Universal Template XML will be processed only if the Universal Template does not exist by **name** or **sys_id**. You can create a Universal Template via List Import, but you cannot update a Universal Template via List Import; if the Universal Template exists, the Universal Template XML will be ignored.
- Any Universal Task XML must be validated to ensure that it conforms to the currently defined Universal Template it is associated with.

**Note**

Importing records from XML files requires either the ops_admin role or the ops_imex role.

**Important!**

It is strongly recommended that you do NOT use the Import and Export functions for modification of Universal Controller records. API functions are available if you need to programmatically update, copy, insert, or otherwise manipulate Universal Controller records.

## 10.13 Action Menus

### 10.13.1 Overview

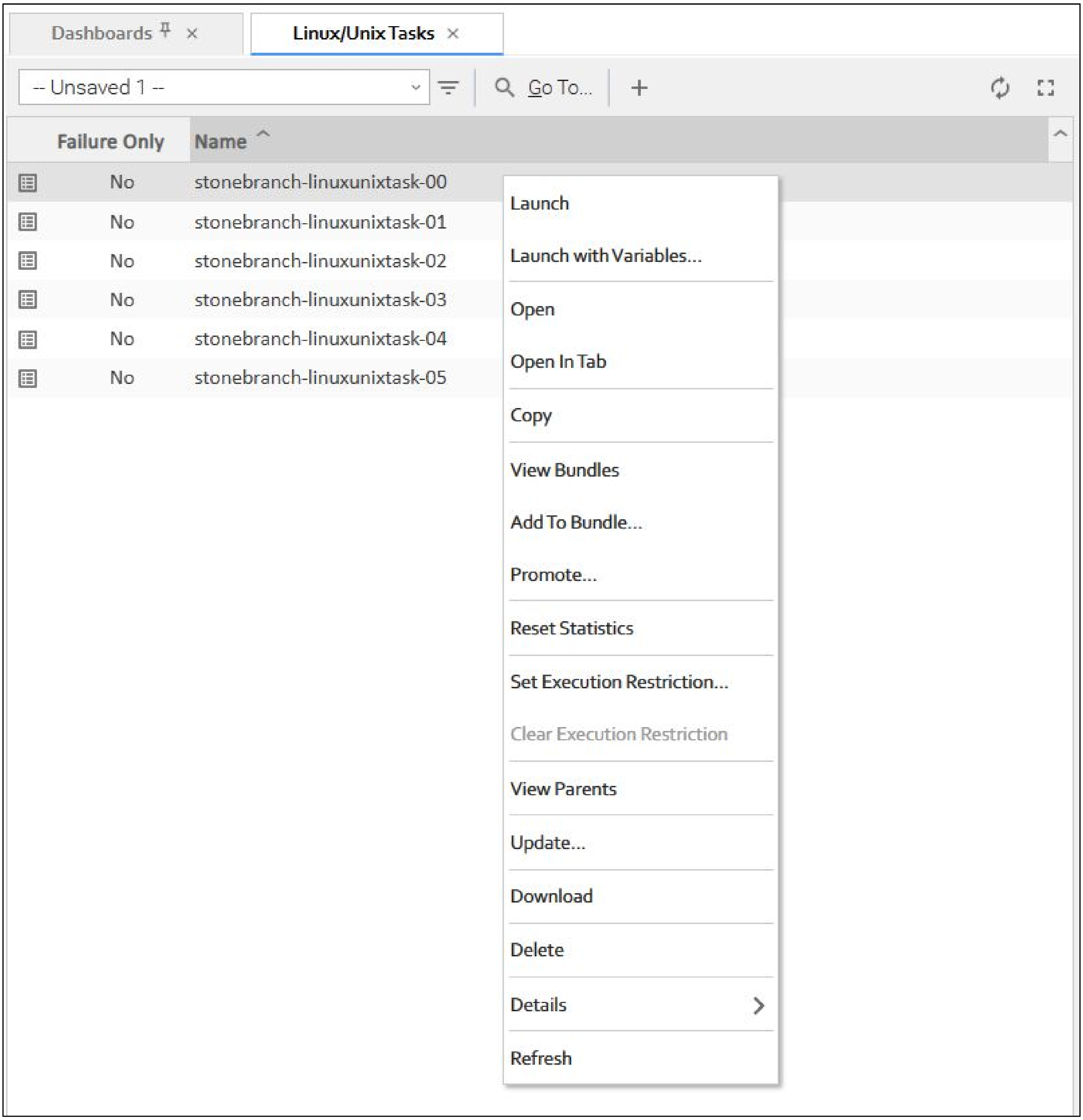
Action menus contain a set of actions and commands that you can apply to a list of records or one or more individual records. The actions listed on an Action menu are context-sensitive; they appear only as appropriate for the type of list or record (and as allowed by your User Permissions).

### 10.13.2 Accessing Action Menus

To access an Action menu:

| | |
|---|---|
| **For a List** | Right-click a column header to display an Action menu containing a set of actions that you can apply to that column or to the entire list. |
| **For a Record** | Either:<br>• Right-click a record on a list.<br>• Right-click anywhere in the record Details.<br><br>The list of actions on an Action menu for a record may differ depending on whether you accessed the menu from the records list or from the record Details. |

The following is a sample Action menu for an individual record selected on a list:




## 10.13.3 Actions

The following table identifies actions that can appear on Action menus throughout the Universal Controller user interface. The Availability column identifies the location(s) from where each action is available.

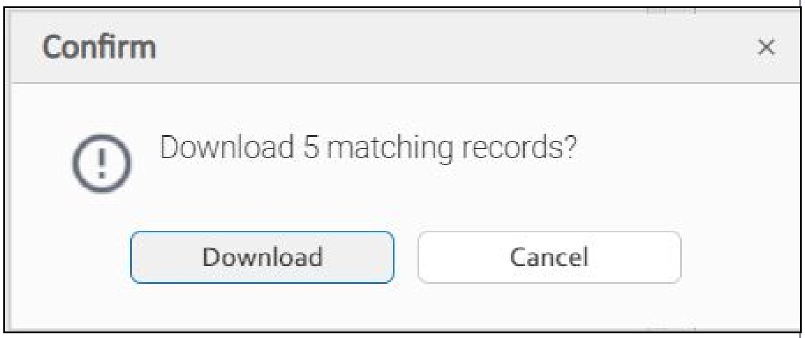
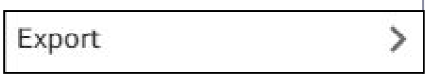
Most actions are available for multiple, if not all, record types. Some actions are available for specific record types; these actions are categorized alphabetically following the list of actions for multiple record types:

- Multiple Record Types
- Agents and Agent Clusters
- Applications
- Bundles and Promotion
- Calendars and Custom Days
- Dashboards
- Data Backup/Purge
- Manual Task Instances
- Reports
- SAP Task Instances
- Task Instances
- Task Monitor Task Instances
- Tasks
- Triggers
- Universal Templates
- Users and Groups
- Virtual Resources
- Workflow Task Instances
- Workflow Tasks
- z/OS Task Instances
- z/OS Tasks

| Action | Availability | Description |
|---|---|---|
| **Multiple Record Types** | | |
| Add To Bundle... | For any type of record that can be added to a Bundle:<br>• Record on any list<br>• Record Details | Adds this record to any existing Bundle.<br><br>This action is enabled only if a user has the ops_bundle_admin role or at least one Bundle Update permission assignment.<br>• For a user with the ops_bundle_admin role, the Add To Bundle dialog allows selection of any pre-existing Bundle.<br>• For a user without the ops_bundle_admin role but at least one Bundle Update permission assignment, the Add To Bundle dialog allows selection of pre-existing Bundles for which the user has Read permission.<br><br>Only users with the ops_bundle_admin role or Update permission for the bundle can add definitions to the Bundle. |
| Auto Fit | • Lists | Left-adjusts all columns in the list to their smallest size that still displays the full column name and column details for all records in the list. |
| Auto Fit All Columns | • Lists | Adjusts all Auto Fitted columns back to their original size. |
| Clear Sort | • Lists | Clears the temporary sort levels that you created via the Configure Sort action. |
| Close | • Record Details pop-up | Closes the Details pop-up of any record. |

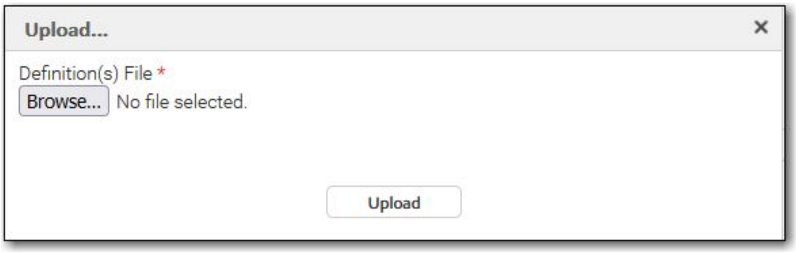
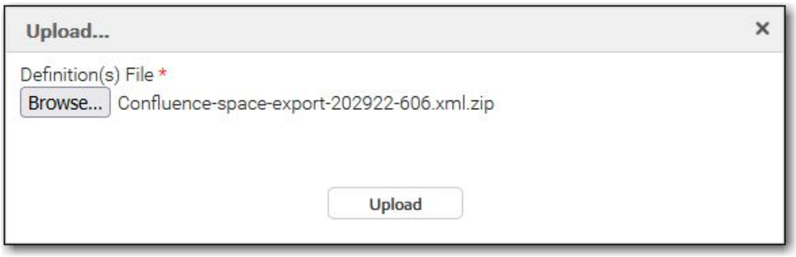
| | | |
|---|---|---|
| Columns... | • Lists | Displays a list of all available columns that can be displayed for this list. Click any column in the list to display / remove it. |
| Configure Sort... | • Lists | Sorts a list according to temporary, user-defined sort levels for a column on the list (see Configure a Multi-Level Sort). |
| Copy | • Record on any list<br>• Record Details | Creates a copy of the selected record, which you are prompted to rename. |
| CSV | • Lists | Exports records on a list in CSV (comma-separated values in an Excel file) format (see Exporting Records to an Output File). |
| Details > | • Record on any list<br>• Record Details | Displays a menu of the following actions:<br>• Show/Hide Metadata<br>• Show Details<br>• Show Variables<br>• Print |
| Delete | • Record on any list<br>• Record Details | Deletes the selected record(s). |

| | | |
|---|---|---|
| Download | • Records on any of these lists:<br>◦ Agent Clusters list<br>◦ Bundles list<br>◦ Business Services<br>◦ Calendars<br>◦ Connections lists (Database, Email, PeopleSoft, SAP)<br>◦ Credentials list<br>◦ Custom Days<br>◦ Email Templates list<br>◦ OAuth Clients list<br>◦ OMS Servers list<br>◦ Promotion Targets<br>◦ Scripts list<br>◦ Simulation list<br>◦ SNMP Managers list<br>◦ Tasks lists<br>◦ Triggers lists<br>◦ Variables list<br>◦ Virtual Resources list<br>◦ Webhooks list<br>• Record Details of these record types | Downloads the selected record(s) to a zip file on your local file system. |

| | | |
|---|---|---|
|   | • Records on any of these lists:<br>◦ Agent Clusters list<br>◦ Bundles list<br>◦ Business Services<br>◦ Calendars<br>◦ Connections lists (Database, Email, PeopleSoft, SAP)<br>◦ Credentials list<br>◦ Custom Days<br>◦ Email Templates list<br>◦ OAuth Clients list<br>◦ OMS Servers list<br>◦ Promotion Targets<br>◦ Scripts list<br>◦ Simulation list<br>◦ SNMP Managers list<br>◦ Tasks lists<br>◦ Triggers lists<br>◦ Variables list<br>◦ Virtual Resources list<br>◦ Webhooks list | Downloads all records in the list that match the current filter to a zip file on your local file system.<br>  |
|   | • Lists | Exports records on a list in either of seven formats (as available for the type of record in the list):<br>• CSV<br>• Permissions For Group<br>• PDF<br>• XLS (Excel)<br>• XLSX<br>• XML<br>• XML (Export References) |
|   | • All record Details | Hide Metadata for these Details. |

| | | |
|---|---|---|
| Import | • Lists | Imports valid XML files (usually from an Export) from a user-defined location to a list.<br><br>Import performs a pre-validation on the XML files; if any files are found to be invalid, a warning displays on the Console and the import operation is aborted. Any invalid XML files should be fixed or removed from that location. |
| Insert | • All record Details (except task instances, Agents, cluster nodes) | Creates a copy of the current record, for which which you have just entered a new Name. |
| Layouts > | • Lists | Displays a menu of available layouts for this list. |
| New | • Any Details | Displays empty Details for you to begin creating a new record. |
| Open | • Any record on list | Opens the Details pop-up of a record. |
| Open | • Navigator | Opens a page right-clicked in the Navigator under the current tab. (If the current tab is for the Activity Monitor or Dashboard Details, the page will open in a new tab (see Tabs). |
| Open In New Tab | • Navigator | Opens a page right-clicked in the Navigator under a new tab. |
| Open In Tab | • Record in list<br>• Record Details | Displays the record Details under a new tab rather than as a pop-up (see Opening a Record). |
| PDF | • Lists | Exports the displayed data (the selected columns) of every record on a list into PDF format (see Exporting Records to an Output File). |
| Print | • Record in list<br>• Record Details | Prints the record Details as shown in the user interface. |
| Promote... | For any type of record that can be promoted:<br>• Record on any list<br>• Record Details | Copies this record from this source cluster node to a target cluster node.<br><br>The Promote... action is disabled unless a user has the ops_promotion_admin role or if the Bundleless Promotion With Execute Permission Permitted Universal Controller system property is true and the user has at least one promotion target Execute permission assignment.<br>• For a user with the ops_promotion_admin role, the Promote... dialog allows selection of any pre-existing promotion target.<br>• For a user without the ops_promotion_admin role, the Promote... dialog allows selection of pre-existing promotion targets for which the user has Read permission.<br><br>The server will prohibit the user from promoting the definition using the promotion target if neither of the two conditions are met:<br>• The user has the ops_promotion_admin role.<br>• The user has Execute permission for the selected promotion target and the Bundleless Promotion With Execute Permission Permitted Universal Controller system property is true. |

| | | |
|---|---|---|
| Refresh | • Record Details | Refreshes all dynamic information in the Details. |
| Restore Default Layout | • Lists | Restores the current layout of the list to its default layout. |
| Save | • New, unsaved record | Saves this record and, if the record is displayed in a pop-up dialog, closes the record.<br><br>(Same action as **Save** button on Details.) |
| Save & New | • New, unsaved record | Saves this record and displays empty Details for a new record.<br><br>(Same action as **Save & New** button on Details.) |
| Save As Default Layout | • Lists | Saves the current layout of the list as the default layout. |
| Save Layout... | • Lists | Saves the current layout of the list. |
| Show Details | • Record on any list<br>• All record Details. | Displays all details stored in the database for this record in table format. |
| Show Metadata | • All record Details | Display Metadata for these Details. |
| Sort Ascending | • Lists | Sorts the list in ascending alphabetical order. |
| Sort Descending | • Lists | Sorts the list in descending alphabetical order. |
| ✓ System Default | • Lists | Selects the default layout for the list. |
| Test Connection | • Email, Database, SAP, and PeopleSoft Connections lists | Performs a connectivity test to the selected connection.<br><br>(Same action as **Test Connection** button on Details.) |
| Update | • Record Details (except Cluster Nodes) | Updates the Details of any record and, if the Details are displayed in a pop-up dialog, closes the pop-up.<br><br>(Same action as **Update** button on Details.) |
| Update & View | • Record Details pop-up (except Cluster Nodes) | Updates the Details of any record and continues to display the record. |

| | | |
|---|---|---|
| Update... | • Agents lists<br>• Connections lists (Database, Email, PeopleSoft, SAP)<br>• Credentials list<br>• Email Templates list<br>• SNMP Managers list<br>• Tasks lists<br>• Triggers lists<br>• Users list<br>• Variables list<br>• Virtual Resources list | Updates all currently selected records in the list. |
| Update Filtered... | • Agents lists<br>• Connections lists (Database, Email, PeopleSoft, SAP)<br>• Credentials list<br>• Email Templates list<br>• SNMP Managers list<br>• Tasks lists<br>• Triggers lists<br>• Users list<br>• Variables list<br>• Virtual Resources list | Updates all records in the list that match the current filter. |
| Upload... | • Agent Clusters list<br>• Bundles list<br>• Business Services<br>• Calendars<br>• Connections lists (Database, Email, PeopleSoft, SAP)<br>• Credentials list<br>• Custom Days<br>• Email Templates list<br>• OAuth Clients list<br>• OMS Servers list<br>• Promotion Targets<br>• Scripts list<br>• Simulation list<br>• SNMP Managers list<br>• Tasks lists<br>• Triggers lists<br>• Variables list<br>• Virtual Resources list<br>• Webhooks list | Uploads all selected files.<br><br>Click Browse to select the file(s) that you want to upload.<br><br>Click Upload to upload the selected file(s). |
| View | • Entries on Edit Members dialogs | Displays detailed information about that entry. |

| | | |
|---|---|---|
| View Bundles | For any type of record that can be added to a Bundle:<br>• Record on any list<br>• Record Details | Displays a list of bundles to which this record belongs.<br><br>This action is enabled only if a user has the ops_bundle_admin or ops_promotion_admin role, or at least one Bundle Read permission assignment.<br>• For a user with the ops_bundle_admin or ops_promotion_admin role, the View Bundles list displays every Bundle containing the definition.<br>• For a user with neither the ops_bundle_admin or ops_promotion_admin role, the View Bundles list displays every Bundle, for which the user has Read permission, containing the definition. |
| XLS (Excel) | • Lists | Exports the displayed data (the selected columns) of every record on a list into XLS (Excel) format (see Exporting Records to an Output File). |
| XLSX | • Lists | Exports the displayed data (the selected columns) of every record on a list into XLSX format (see Exporting Records to an Output File). |
| XML | • Lists | Exports all data of every record on a list into XML format (see Exporting Records to an Output File). |
| XML (Export References) | • Lists | Exports all data, plus references, of every record on a list into XML format (see Exporting Records to an Output File). |
| **Agents and Agent Clusters** | | |
| Reset Agent Task Count | • Agents list<br>• Agent Details | Resets the Current Task Count field for this Agent to 0. |
| Reset Agent Cluster Task Count | • Agent Clusters list<br>• Agent Cluster Details | Resets the Current Task Count field for this Agent Cluster to 0. |
| Resolve Agent Cluster | • Agent Cluster on Agent Clusters list<br>• Agent Cluster Details | If Distribution type for an Agent Cluster is Network Alias; Resolves the Network Alias for this Agent Cluster. |
| Resume Agent | • Agent on Agents list<br>• Agent Details | Resumes the ability to run tasks for suspended Agent.<br><br>(Same action as **Resume Agent** button on Agent Details.) |
| Resume Agent Cluster | • Agent Cluster on Agent Clusters list<br>• Agent Cluster Details | Resumes the ability to run tasks for a suspended cluster of Agents.<br><br>(Same action as Resume Cluster button on Agent Cluster Details.) |
| Resume Cluster Membership | • Agents in Cluster list | Resumes the membership of this Agent in the selected Agent Cluster. |
| Suspend Agent | • Agent on Agents list<br>• Agent Details | Suspends the ability to run tasks for this Agent.<br>(Same action as **Suspend Agent** button on Agent Details.) |
| Suspend Agent Cluster | • Agent Cluster on Agent Clusters list<br>• Agent Cluster Details | Suspends the ability to run tasks for this cluster of Agents.<br>(Same action as **Suspend Cluster** button on Agent Cluster Details.) |

| | | |
|---|---|---|
| Suspend Cluster Membership | • Agents in Cluster list | Suspends the membership of this Agent in the selected agent cluster. |
| **Applications** | | |
| Query | • Application on Applications list | Queries the application (if it is running). |
| Start | • Application on Applications list | Starts the application. |
| Stop | • Application on Applications list | Stops the application. |
| **Bundles and Promotion** | | |
| Bundle Report | • Bundle on Bundles list | Displays a Bundle Report for this bundle.<br>(Same action as the **Bundle Report** button in Bundle Details.) |
| Promote Bundle... | • Bundle on Bundles list | Copies this bundle from this source cluster node to a target cluster node.<br>(Same action as **Promote Bundle** button on Bundle Details.) |
| Refresh Target Agents | • Promotion Targets list<br>• Promotion Targets Details | Refreshes any Agents on the promotion target server selected in this record. |
| Reschedule... | • Promotion Schedule on Promotion Schedule list<br>• Promotion Schedule Details | Reschedules a scheduled promotion.<br>(Same action as **Reschedule...** button in Promotion Schedule Details.) |
| View Target Server Info | • Promotion Targets List<br>• Promotion Targets Details | Displays a Remote Server Information pop-up that lists details about the Automation Center cluster node selected as the promotion target in this record. |
| **Calendars and Custom Days** | | |
| Calendar Preview | • Calendar on Calendars list<br>• Calendar Details | Provides a month-by-month display of all Custom Days defined for this calendar. |
| List Qualifying Dates... | • Custom Day Details | Displays a table of the next 30 dates that match this Custom Day details.<br>(Same action as **List Qualifying Dates** button.) |
| List Qualifying Periods | • Custom Day Details | Displays a table of the next 30 periods that match this Custom Day details.<br>(Same action as **List Qualifying Periods** button.) |
| **Cluster Nodes** | | |

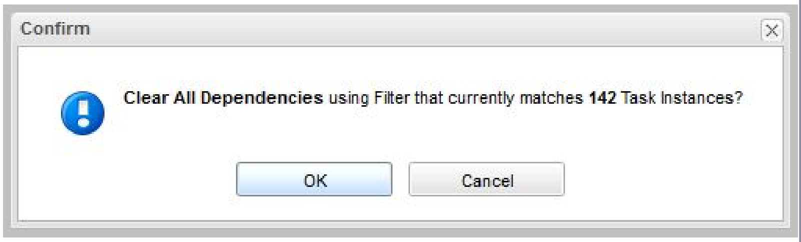
| | | |
|---|---|---|
| Set Node Preferred | • Cluster Node List<br>• Cluster Node Details | Designates a particular Cluster Node as Preferred so that it will always be the Active node if it is running. |
| Clear Node Preferred | • Cluster Node List<br>• Cluster Node Details | Clears the Preferred status from a particular Cluster Node. |
| Set Node Transient | • Cluster Node List<br>• Cluster Node Details | Designates a particular Cluster Node as Transient so that it will be deleted from the system automatically when the node is shutdown or offline. |
| Clear Node Transient | • Cluster Node List<br>• Cluster Node Details | Clears the transient status from a particular Cluster Node. |
| **Data Backup/Purge** | | |
| Disable | • Data Backup/Purge record on Data Backup/Purge list | Disables this *scheduled* data backup/purge.<br><br>(Same action as **Disable** button on Details.) |
| Enable | • Data Backup/Purge record on Data Backup/Purge list | Enables this *scheduled* data backup/purge.<br><br>(Same action as **Enable** button in Details.) |
| Run | • Data Backup/Purge list | Run the selected backup or purge.<br><br>(Same action as **Run** button in Details.) |
| Terminate | • Data Backup/Purge record on Data Backup/Purge list | Terminates this *scheduled* data backup/purge.<br><br>(Same action as **Terminate** button in Details.) |
| **Manual Task Instances** | | |
| Manual Task Commands > | • Manual task instance on Activity Monitor / Task Instances list<br>• Manual task instance Details | Displays a menu of commands specific to Manual task instances:<br>• Set Completed<br>• Set Started |
| Set Completed | • Manual task instance on Activity Monitor / Task Instances list | Sets this task instance to Success status. |
| Set Started | • Manual task instance on Activity Monitor / Task Instances list | Resets the Started Time of this task instance. |
| **OMS Servers** | | |

| | | |
|---|---|---|
| Resume | • OMS Server on OMS Servers list<br>• OMS Server Details | Resumes the connection of a suspended OMS Server.<br><br>(Same action as **Resume** button on OMS Server Details.) |
| Suspend | • OMS Server on OMS Servers list<br>• OMS Server Details | Temporarily disconnects the OMS Server.<br><br>(Same action as **Suspend** button on OMS Server Details.) |
| **Reports** | | |
| Run | • Reports list<br>• Reports Details | Run the selected report.<br><br>(Same action as **Run** button in Details.) |
| **SAP Task Instances** | | |
| SAP Task Commands > | • SAP task instance on Activity Monitor / Task Instances list<br>• SAP task instance Details | Displays a menu of commands specific to SAP task instances:<br>• Abort SAP Job<br>• Interrupt SAP Process Chain<br>• Purge SAP Job<br>• Restart SAP Process Chain<br>• Retrieve SAP Job Definition<br>• Retrieve SAP Job Log<br>• Retrieve SAP Job Status<br>• Retrieve SAP Process Chain - Instance<br>• Retrieve SAP Process Chain - Planned<br>• Retrieve SAP Process Chain Log<br>• Retrieve SAP Process Chain Status<br>• Retrieve SAP Spool List |
| Abort SAP Job | • SAP task instance on Activity Monitor / Task Instances list<br>• SAP task instance Details | Aborts the SAP job specified in the task instance. |
| Interrupt SAP Process Chain | • SAP task instance on Activity Monitor / Task Instances list<br>• SAP task instance Details | Interrupts the SAP Process Chain. |
| Purge SAP Job | • SAP task instance on Activity Monitor / Task Instances list<br>• SAP task instance Details | Purges the SAP job specified in the task instance. |
| Restart SAP Process Chain | • SAP task instance on Activity Monitor / Task Instances list<br>• SAP task instance Details | Restarts the SAP Process Chain. |

| | | |
|---|---|---|
| Retrieve SAP Job Definition | • SAP task instance on Activity Monitor / Task Instances list<br>• SAP task instance Details | Retrieves the SAP job definition. |
| Retrieve SAP Job Log | • SAP task instance on Activity Monitor / Task Instances list<br>• SAP task instance Details | Retrieves the SAP job log. |
| Retrieve SAP Job Status | • SAP task instance on Activity Monitor / Task Instances list<br>• SAP task instance Details | Retrieves the SAP job status. |
| Retrieve SAP Process Chain - Instance | • SAP task instance on Activity Monitor / Task Instances list<br>• SAP task instance Details | Retrieves the specific run information for the SAP Process Chain. |
| Retrieve SAP Process Chain - Planned | • SAP task instance on Activity Monitor / Task Instances list<br>• SAP task instance Details | Retrieves the "blueprint" information for the SAP Process Chain. |
| Retrieve SAP Process Chain Log | • SAP task instance on Activity Monitor / Task Instances list<br>• SAP task instance Details | Retrieves SAP Process Chain log. |
| Retrieve SAP Process Chain Status | • SAP task instance on Activity Monitor / Task Instances list<br>• SAP task instance Details | Retrieves SAP Process Chain status. |
| Retrieve SAP Spool List | • SAP task instance on Activity Monitor / Task Instances list<br>• SAP task instance Details | Retrieves SAP spool list. |
| **Tabs** | | |
| Pin | • All tabs except non-replaceable tabs. | Pins the tab to the task bar. |
| Auto | • All tabs except non-replaceable tabs. | Automatically pins the tab to the task bar upon login. |

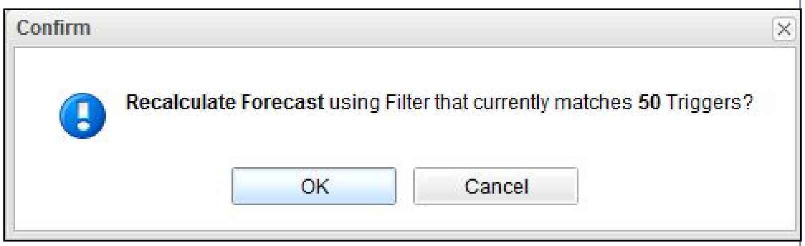
| | | |
|---|---|---|
| Close | • All tabs. | Close this tab from the task bar. |
| Close Others | • All tabs. | Close all other tabs except this tab. |
| Close All | • All tabs. | Close all tabs including this tab. |
| **Task Instances** | | |
| Cancel | • Task instance on Activity Monitor / Task Instances list | Cancels this task instance.<br><br>**Note**<br>Cancelling a Web Service task instance with Protocol = SOAP is prohibited.<br><br>Cancelling a PeopleSoft task instance cancels the PeopleSoft process itself, not the PeopleSoft task process. Once the Peoplesoft process has been cancelled, its status will filter through to the PeopleSoft task. |
| Clear > | • Task instance on Activity Monitor / Task Instances list<br>• Task Instance Details | Displays a menu of the following actions:<br>• Clear All Dependencies<br>• Clear Exclusive<br>• Clear Resources<br>• Clear Time Wait/Delay |
| Clear All Dependencies | • Task instance on Activity Monitor | Clears all dependencies (predecessors, resources, and exclusive) to allow the task instance to run. |
| Clear Exclusive | • Task instance on Activity Monitor / Task Instances list | Clears mutually exclusive dependencies of this task instance. |
| Clear Resources | • Task instance on Activity Monitor / Task Instances list | Clears resource dependencies of this task instance. |
| Clear Time Wait/Delay | • Task instance on Activity Monitor / Task Instances list<br>• Task instance Details | Clears all Wait To Start and Delay On Start specifications for this task instance. |

| | | |
|---|---|---|
| Delete | • Task Instance on Activity Monitor / Task Instances list | Deletes the selected task instance if it is in any of the following statuses:<br>• In Doubt (110)<br>• Failed to Start (120)<br>• Confirmation Required (125)<br>• Cancelled (130)<br>• Failed (140)<br>• Skipped (180)<br>• Finished (190)<br>• Success (200)<br>**Note:**<br>You cannot delete a task instance in any of these statuses if it was within a workflow task instance that itself has not been deleted. |
| Force Finish > | • Task instance on Activity Monitor / Task Instances list | Displays a menu of the following actions:<br>• Force Finish<br>• Force Finish (Halt)<br>• Force Finish/Cancel<br>• Force Finish/Cancel (Halt) |
| Force Finish | • Task instance on Activity Monitor / Task Instances list | Places this task into the Finished status. |
| Force Finish (Halt) | • Task instance on Activity Monitor | Places this task into the Finished status without aborting monitoring processes. |
| Force Finish/Cancel | • Task instance on Activity Monitor / Task Instances list | Cancels this task and places it into the Finished status. |
| Force Finish/Cancel (Halt) | • Task instance on Activity Monitor | Cancels this task and places it into the Finished status without aborting monitoring processes. |
| Hold | • Task instance on Activity Monitor / Task Instances list | Places this task instance in the Held status |
| Release | • Task instance on Activity Monitor / Task Instances list | Releases this task instance from Held status. |
| Re-run > | • Task instance (except Workflows) on Activity Monitor / Task Instances list | Displays a menu of the following actions:<br>• Re-run<br>• Re-run (Suppress Intermediate Failures)<br>This menu is disabled if the task instance does not qualify for re-run. |
| Re-run | • Task instance (except Workflows) on Activity Monitor / Task Instances list | Re-runs this completed task.<br>For tasks not completed but scheduled for automatic retry, it re-runs the task and counts the re-run as one of the automatic retries. |

| | | |
|---|---|---|
| Re-run (Suppress Intermediate Failures) | • Task instance (except Workflows) on Activity Monitor / Task Instances list | Re-runs a task instance specifying that intermediate failures be suppressed. (See Re-run (Suppress Intermediate Failures) Permitted Universal Controller system property.)<br>If the task instance qualifies for re-run, but it already has Retry Options enabled, the Re-run (Suppress Intermediate Failures) command will display as disabled in the menu. |
| Retrieve Output... | • Task instance in list<br>• Task Instance Details | Retrieves standard out and/or standard error output for the following running or completed task instances: FTP File Monitor, Linux/Unix, SAP, Universal Command, Windows, z/OS. |
| Run Command On Filtered | • Activity Monitor<br>• Task Instances List | Executes a selected command against all task instances that match the current filter.<br>• Clear<br>    • Clear All Dependencies<br>    • Clear Exclusive<br>    • Clear Resources<br>    • Clear Time Wait Delay<br>• Force Finish<br>    • Force Finish<br>    • Force Finish (Halt)<br>    • Force Finish/Cancel<br>    • Force Finish/Cancel (Halt)<br>• Cancel<br>• Hold<br>• Release<br>• Skip Path<br>• Skip<br>• Unskip<br>• Rerun<br>• Set Priority (High, Medium, Low)<br>• Delete<br><br>Before the selected command is executed, a confirmation pop-up displays. For example:<br> |
| Set Priority<br><br>High<br><br>Medium<br><br>Low | • Linux/Unix, Universal, Windows, and z/OS Task instance on Activity Monitor / Task Instances lists<br>• Linux/Unix, Universal, Windows, and z/OS Task instance Details | Displays a menu of run priorities that you can set for this task instance:<br>• **High** = Sets the run priority to High so that it will run before task instances in Low and Medium priorities.<br>• **Medium** = Sets the run priority to Medium so that it will run before task instances in Low priority and after task instances in High priority.<br>• **Low** = Sets the run priority to Low so that it will run after task instances in High and Medium priorities. |

| | | |
|---|---|---|
| Show Variables | • Task instance on Activity Monitor / Task Instances list<br>• Task Instance Details | Displays all variables currently available to the task instance, including those inherited from a workflow, those passed in from a trigger, or those available globally. |
| Skip | • Task instance on Activity Monitor / Task Instances list | Places this task in the Skipped status. |
| Skip Path | • Task instance on Activity Monitor | Skips this task instance and all of its dependent task instances. |
| Unskip | • Task instance on Activity Monitor / Task Instances list | Removes the Skip status from this task. |
| View Blocking Ancestors... | • Task Instance Details<br>• Task Instance on Activity Monitor / Task Instances list<br>• Task Instance on View Blocking Ancestors... pop-up dialog | Displays a dialog identifying blocking ancestors of a waiting task instance in a Workflow, if any exist.<br>Only task instances that are in a workflow and have not started (that is: Defined, Waiting or Held status) will qualify. |
| View In Workflow | • Task Instance Details<br>• Task Instance on Activity Monitor / Task Instances list | Displays the Workflow Monitor for the parent Workflow of a selected task instance and highlights that task instance within the Workflow. |
| View Parent | • Task Instance Details<br>• Task Instance on Activity Monitor / Task Instances list | Displays the Workflow Task Instance Details of the parent Workflow, if applicable, of this task instance. |
| View Predecessors/Successors | • Task Instance Details<br>• Task Instance on Activity Monitor / Task Instances list<br>• Task Instance on View Predecessors/ Successors pop-up dialog | Displays a dialog identifying the predecessors / successors of this task instance in the Workflow, if any exist. |
| **Task Monitor Task Instances** | | |
| View Potential Matches... | • Task Instance Details<br>• Task Instance on Activity Monitor / Task Instances list<br>• Workflow Monitor | For task instances in Running status; Displays a list of running task instances that have the potential to match the specifications for tasks being monitored by the running Task Monitor task instance. |
| **Tasks** | | |

| | | |
|---|---|---|
| Clear Execution Restriction | • Tasks lists<br>• Task Details | Clears any Execution Restrictions that have been set for this task. |
| Launch | • Task on Tasks list<br>• Task Details | Launches the task.<br>(Same action as **Launch** button in Task Details.) |
| Launch with Variables... | • Task on Tasks list<br>• Task Details | Launches this task with one or more variables that you will specify on a Task Variables pop-up dialog. |
| Reset Statistics | • Task Details | Resets the run-time statistics that the Controller has gathered for this task. |
| Run Command On Filtered | • All Tasks list<br>• Tasks list (all task types) | Executes a selected command against all tasks that match the current filter.<br>• Launch<br>• Add To Bundle<br>• Promote<br>• Reset Statistics<br>• Delete<br><br>Before the selected command is executed, a confirmation pop-up displays. For example:<br><br> |
| Set Execution Restriction... | • Tasks lists<br>• Task Details | Allows you to sets Execution Restrictions for this task. |
| View Parents | • Tasks lists<br>• Task Details | Displays a list of all parent workflows, if any, of this task.<br><br>(Same action as **View Parents** button on Task Details.) |
| **Triggers** | | |
| Assign Execution User... | • Trigger on Triggers list<br>• Trigger Details | Displays a dialog that lets you select an execution user that overrides the execution user of task instances being launched by the trigger.<br><br>Users not assigned the ops_admin role must provide the execution user credentials (User ID and Password) in order to assign the execution user to the trigger.<br><br>Users must have the **Assign Execution User** Trigger permission in order to assign an execution user. |
| Disable | • Trigger record on Triggers list<br>• Trigger Details | Disables this trigger.<br><br>(Same action as **Disable** button on Details.) |
| Enable | • Trigger record on Triggers list<br>• Trigger Details | Enables this trigger.<br><br>(Same action as **Enable** button on Details.) |

| | | |
|---|---|---|
| Forecast... | • Workflow on Workflows list<br>• Workflow Details<br>• Trigger on Workflow Triggers tab list | Allows for the forecasting of a Workflow by specific date/time. |
| List Qualifying Times... | • Trigger Details | Lets you modify and display a list of qualifying times for this trigger (the next 30 dates and times when this trigger will be satisfied). |
| Recalculate Forecast | • Trigger on Triggers list<br>• Trigger Details | Recalculates the forecast data for this trigger. |
| Run Command On Filtered > | • Triggers list | Executes a selected command against all triggers that match the current filter.<br>• Enable<br>• Disable<br>• Assign Execution User...<br>• Unassign Execution User...<br>• Set Skip Count...<br>• Recalculate Forecast<br>• Add To Bundle...<br>• Promote...<br>**Note**<br>• Enable and Disable are not valid for Active and Manual Triggers.<br>• Disable is not valid for Manual Triggers.<br>• Set Skip Count is not valid for Manual and Temporary Triggers.<br>• Recalculate is valid only for the following lists: All Triggers, Active Triggers, Cron, Time, and Temporary.<br>Before the selected command is executed, a confirmation pop-up displays. For example:<br> |
| Set Skip Count... | • Trigger on Triggers list<br>• Trigger Details | Lets you perform a Set Skip Count action if you have the Set Skip Count Trigger permission, Update permission, or both. |

| | | |
|---|---|---|
| Trigger Now... | • Trigger on Triggers list<br>• Trigger Details | Immediately triggers all the tasks specified in this trigger.<br><br>(Same action as **Trigger Now...** button on Trigger Details.)<br><br>Optionally, you also can select to:<br>• Launch the task(s) specified in the trigger with one or more variables.<br>• Launch the task(s) specified in the trigger by a specified date and time.<br>• Launch the task(s) specified in the trigger but place them in Held status; they will not run until they are released.<br><br>**Note**<br>If a **Trigger Now...** command is issued for an Enabled trigger that does not have an assigned Execution User, the trigger will launch its task(s) under the context of the user that enabled the trigger.<br><br>If a **Trigger Now...** command is issued for a Disabled trigger that does not have an assigned Execution User, the trigger will launch its task(s) under the context of the user that issued the **Trigger Now...** command.<br><br>If a **Trigger Now...** command is issued for an Enabled or Disabled trigger that has an assigned Execution User, the trigger will launch its task(s) under the context of the assigned Execution User. |
| Unassign Execution User | • Trigger on Triggers list<br>• Trigger Details | Unassigns an execution user that had been selected to override the execution user of task instances being launched by the trigger.<br><br>Users must have the **Assign Execution User** Trigger permission in order to unassign an execution user. |
| **Universal Templates** | | |
| Deselect All | • List/Load Built-In Universal Templates server operation | Deselects all templates on the List/Load Built-In Universal Templates server operation list. |
| Load | • List/Load Built-In Universal Templates server operation | Loads all templates on the List/Load Built-In Universal Templates server operation list to the Universal Templates list. |
| Restore Default Icon | • Universal Template on Universal Templates list<br>• Universal Template Details | Restores the default Universal Task icon to all Universal Tasks based on this Universal Template. |
| Select All | • List/Load Built-In Universal Templates server operation | Selects all templates on the List/Load Built-In Universal Templates server operation list. |
| **Users and Groups** | | |
| Permissions For Group | • Groups List | Exports user groups and their permissions (see Exporting Records to an Output File). |

| | | |
|---|---|---|
| **Virtual Resources** | | |
| Reset Virtual Resource | • Virtual Resource Details | Resets the Resource Used value of a renewable virtual resource to accurately reflect the actual number of resources currently in use. |
| **Workflow Task Instances** | | |
| Workflow Task Commands > | • Workflow task instance on Activity Monitor / Task Instances list<br>• Workflow task instance Details | Displays a menu of the commands specific to Workflow task instances:<br>• Release Recursive<br>• View Children<br>• View Tree<br>• View Workflow<br>• View Timeline... |
| Release Recursive | • Workflow task instance on Activity Monitor / Task Instances list | Releases this Workflow, and all of its task instances on Held Status, from Held status. |
| View Children | • Workflow task instance on Activity Monitor / Task Instances list<br>• Workflow task instance Details<br>• Workflow Monitor | Displays all children task instances of this Workflow task instance (and children task instances of any sub-Workflow task instance) and, optionally, their Predecessors and Successors within this Workflow. |
| View Tree | • Workflow task on Workflow tasks list<br>• Workflow task Details<br>• Workflow Editor<br>• Workflow Forecast<br>• Workflow Monitor<br>• Workflow Vertex in Workflow Editor / Workflow Forecast | Displays a tree view of this workflow task instance and its tasks, including children tasks of any sub-Workflow task, and, optionally, lets you display the Details for any of those tasks. |
| View Timeline... | • Workflow task instance on Activity Monitor / Task Instances list<br>• Workflow task instance Details<br>• Workflow Monitor | Displays the progress of a Workflow task instance in a timeline format. |
| View Workflow | • Workflow task instance on Activity Monitor / Task Instances list<br>• Workflow task instance Details | Displays the Workflow Monitor for this Workflow task instance.<br><br>(Same action as **View Workflow** button on Details.) |
| **Workflow Tasks** | | |

| | | |
|---|---|---|
| Workflow Task Commands > | • Workflow task on All Tasks list<br>• Workflow task on Workflow Tasks list<br>• Workflow task Details | Displays a menu of the commands specific to Workflow tasks:<br>• Clone<br>• Edit Workflow<br>• Forecast<br>• Recalculate Forecast<br>• View Children<br>• View Tree |
| Clone... | • Workflow task on All Tasks list<br>• Workflow task on Workflow Tasks list<br>• Workflow task Details | Creates a copy of the Workflow, a copy of each task in the Workflow, and - optionally - copies of its Virtual Resources. |
| Edit Workflow | • Workflow task on All Tasks list<br>• Workflow task on Workflow Tasks list<br>• Workflow task Details | Displays the Workflow Editor for this Workflow. |
| Recalculate Forecast | • Workflow task on All Tasks list<br>• Workflow task on Workflow Tasks list<br>• Workflow task Details | Recalculates the forecast data for this workflow. |
| Forecast... | • Workflow task on All Tasks list<br>• Workflow task on Workflow Tasks list<br>• Workflow task Details<br>• Trigger on Workflow Triggers tab list | Allows for the forecasting of a Workflow by specific date/time. |
| View Children | • Workflow task on All Tasks list<br>• Workflow task on Workflow Tasks list<br>• Workflow task Details<br>• Workflow Editor<br>• Workflow Forecast<br>• Workflow Vertex in Workflow Editor / Workflow Forecast | Displays all children tasks of this Workflow task (and children tasks of any sub-Workflow task) and, optionally, their Predecessors, Successors, and Task Run Criteria within this Workflow. |
| View Tree | • Workflow task on All Tasks list<br>• Workflow task on Workflow Tasks list<br>• Workflow task Details<br>• Workflow Editor<br>• Workflow Forecast<br>• Workflow Vertex in Workflow Editor / Workflow Forecast | Displays a tree view of this workflow and its tasks, including children tasks of any sub-Workflow task, and, optionally, lets you display the Details for any of those tasks. |
| Launch | • Workflow on Workflow list<br>• Workflow Details<br>• Workflow Editor | Launches the Workflow. |

| | | |
|---|---|---|
| Launch with Variables... | • Workflow on Workflow list<br>• Workflow Details<br>• Workflow Editor | Launches this Workflow with one or more variables that you will specify on a Task Variables pop-up dialog. |
| z/OS Task Instances | | |
| z/OS Task Commands > | • z/OS task instance Details | Displays a menu of the following actions:<br>• Confirm JCL Changes |
| Confirm JCL Changes... | • z/OS task instance Details | |
| Deselect for Re-run | • Restartable Job Step tab of z/OS Task Instance Details | Deselects the selected job step(s) from being included in a z/OS job re-run. |
| Select for Re-run | • Restartable Job Steps list in z/OS Task Instance Details.<br>• Restartable Job Steps Details | Selects the selected job step(s) for inclusion in a z/OS job re-run. |
| Select for Re-run (Force) | • Restartable Job Steps list in z/OS Task Instance Details.<br>• Restartable Job Steps Details | Selects the selected non-Restartable job step(s) for inclusion in a z/OS job re-run. |
| Select to End for Re-run | • Restartable Job Steps list in z/OS Task Instance Details | Selects the selected job step and all following job steps for inclusion in a z/OS job re-run. |
| z/OS Tasks | | |
| z/OS Task Commands > | • All Tasks list<br>• z/OS Tasks list<br>• z/OS Task Details | Displays a menu of the following actions:<br>• Reset Override Statistics |
| Reset Override Statistics | • All Tasks list<br>• z/OS Tasks list<br>• z/OS Task Details | Reset the override statistics used for automated JCL override clean-up. |

# 10.14 Action URLs

## 10.14.1 Overview

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

There are three action URLs:

| Name | Action |
|---|---|
| open | Navigates to a specific record in the user interface. |
| open_workflow | Navigate to a specific Workflow Monitor/Editor graph in the user interface. |
| run_report | Runs a Report and displays the report output without navigating to the Report record. |

To use an action URL:

- Verify that the URL Action Parameter Enabled Universal Controller system property is set to true (the default).
- Append the action URL to the URL of the Universal Controller Login page or Home page.

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.

If you have an authenticated browser session, and you are entering the action URL from an already loaded application page/ browser tab, the application page/browser tab will be reloaded, comparable to a browser refresh, and all unsaved changes will be lost, including any open application tabs.

## 10.14.2 open Action URL

The **open** action URL lets you automatically navigate to a specific record.

You must append the **open** action URL to the Login page or Home page URL in the following format: `?action=open&type=<record type>&id=<UUID>`

The **open** action URL contains the following parameters:

| Name | Value |
|---|---|
| `action` | open |
| `type` | Type of record to open. |
| `id` | UUID of the specific record to open. |

Examples:

- Login Page
  http://localhost:8081/uc/login.jsp?action=open&type=task&id=b93b64075a49419ea19b74faaa864320
- Home Page
  http://localhost:8081/uc/?action=open&type=task&id=b93b64075a49419ea19b74faaa864320

The following table provides:

- List of the record types that you can navigate to with the **open** action URL.
- `type` parameter value for each record type.

Parameter values with a V suffix, such as credentialV, let you navigate to any previous record version of that record type by using the UUID of that version.

| Record Type | `type` Parameter Value |
|---|---|
| Agent | agent |
| Agent Cluster | agentCluster, agentClusterV |
| Application | application, applicationV |
| Audit | audit |
| Business Service | businessService, businessServiceV |
| Calendar | calendar, calendarV |
| Cluster Node | clusterNode |
| Credential | credential, credentialV |
| Custom Day | customDay, customDayV |
| Data Backup/Purge | backup |
| Database Connection | databaseConnection, databaseConnectionV |
| Email Connection | emailConnection, emailConnectionV |
| Email Template | emailTemplate, emailTemplateV |
| History | history |
| OMS Server | omsServer |
| PeopleSoft Connection | peoplesoftConnection, peoplesoftConnectionV |
| Report | report |
| SAP Connection | sapConnection, sapConnectionV |
| Script | script, scriptV |
| SNMP Manager | snmpManager, snmpManagerV |
| Task | task, taskV |
| Task Instance | exec |
| Trigger | trigger, triggerV |
| Variable | variable, variableV |
| Virtual Resource | virtualResource, virtualResourceV |
| Widget | widget |

### 10.14.3 open_workflow Action URL

The **open_workflow** action URL lets you automatically navigate to a specific Workflow Monitor/Editor graph in the user interface.

You must append the **open_workflow** action URL to the Login page or Home page URL in the following format: `?action=open_workflow&type=<record type>&id=<UUID>`

The **open_workflow** action URL contains the following parameters:

| Name | Value |
|---|---|
| `action` | open_workflow |
| `type` | Type of record to open. |
| `id` | UUID of the specific record to open. |

Examples:

- Login Page
  http://localhost:8081/uc/login.jsp?action=open_workflow&type=task&id=b93b64075a49419ea19b74faaa864320
- Home Page
  http://localhost:8081/uc/?action=open_workflow&type=task&id=b93b64075a49419ea19b74faaa864320

The following table provides:

- List of the record types that you can navigate to with the **open_workflow** action URL.
- type parameter value for each record type.

| **Record Type** | type **Parameter Value** |
|---|---|
| Workflow Task | task |
| Workflow Task Instance | exec |

### 10.14.4 run_report Action URL

The **run_report** action URL lets you automatically run a Report and display the report output without navigating to a specific Report record.

You must append the **run_report** action URL to the Login page or Home page URL in the following format: `?action=run_report&id=<UUID>`

The **run_report** action URL contains the following parameters:

| Name | Value |
|---|---|
| `action` | run_report |

| Name | Value |
|---|---|
| `id` | UUID of the specific Report record for which you want to run a report. |

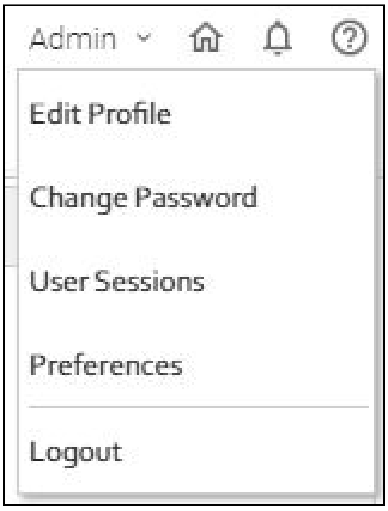
Examples:

- Login Page
  http://localhost:8081/uc/login.jsp?action=run_report&id=bfe8a7df83b64c90876dfce6cfab0a5a
- Home Page
  http://localhost:8081/uc/?action=run_report&id=bfe8a7df83b64c90876dfce6cfab0a5a

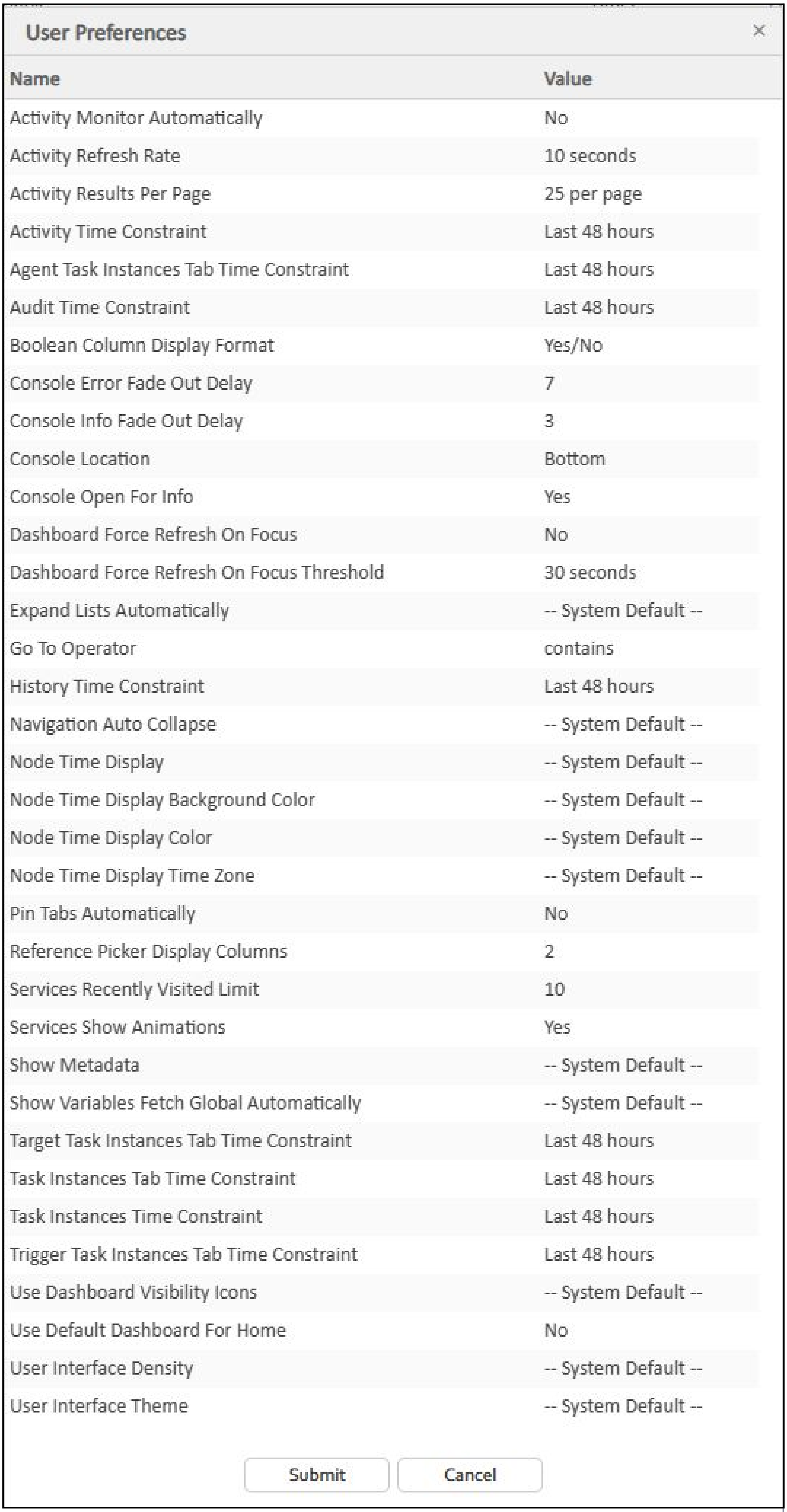
# 10.15 User Preferences

## 10.15.1 Selecting User Preferences

You can select your own preferences for the display of information on the Controller Activity Monitor and the Universal Automation Center Console.

<table>
<tr><td>Step 1</td><td>On the User task bar, click the User Actions drop-down list arrow to display a menu of user actions.<br><br></td></tr>
</table>

| | |
|---|---|
| **Step 2** | Click **Preferences**. The **User Preferences** dialog pops up. |



User Preferences

| Name | Value |
|---|---|
| Activity Monitor Automatically | No |
| Activity Refresh Rate | 10 seconds |
| Activity Results Per Page | 25 per page |
| Activity Time Constraint | Last 48 hours |
| Agent Task Instances Tab Time Constraint | Last 48 hours |
| Audit Time Constraint | Last 48 hours |
| Boolean Column Display Format | Yes/No |
| Console Error Fade Out Delay | 7 |
| Console Info Fade Out Delay | 3 |
| Console Location | Bottom |
| Console Open For Info | Yes |
| Dashboard Force Refresh On Focus | No |
| Dashboard Force Refresh On Focus Threshold | 30 seconds |
| Expand Lists Automatically | -- System Default -- |
| Go To Operator | contains |
| History Time Constraint | Last 48 hours |
| Navigation Auto Collapse | -- System Default -- |
| Node Time Display | -- System Default -- |
| Node Time Display Background Color | -- System Default -- |
| Node Time Display Color | -- System Default -- |
| Node Time Display Time Zone | -- System Default -- |
| Pin Tabs Automatically | No |
| Reference Picker Display Columns | 2 |
| Services Recently Visited Limit | 10 |
| Services Show Animations | Yes |
| Show Metadata | -- System Default -- |
| Show Variables Fetch Global Automatically | -- System Default -- |
| Target Task Instances Tab Time Constraint | Last 48 hours |
| Task Instances Tab Time Constraint | Last 48 hours |
| Task Instances Time Constraint | Last 48 hours |
| Trigger Task Instances Tab Time Constraint | Last 48 hours |
| Use Dashboard Visibility Icons | -- System Default -- |
| Use Default Dashboard For Home | No |
| User Interface Density | -- System Default -- |
| User Interface Theme | -- System Default -- |

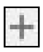
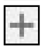
Submit Cancel

| | |
|---|---|
| **Step 3** | Using the field descriptions below as a guide, change any of the User Preferences, as desired. |
| **Step 4** | Click the **Submit** button. |

## 10.15.2 User Preferences Field Descriptions

The following table describes the fields that display on the User Preferences pop-up dialog.

| **Name** | **Description** |
|---|---|
| Activity Monitor Automatically | Specifies whether or not the Activity Monitor automatically monitors Controller activity. |
| Activity Refresh Rate | Frequency that dynamic data is refreshed on the Activity Monitor. |
| Activity Results Per Page | Number of task instances that display on a single page of the Activity Monitor |
| Activity Time Constraint | Time frame, starting with the current time, for which activity data is listed on the Activity Monitor and Task Instances list. |
| Agent Task Instances Tab Time Constraint | Time frame, starting with the current time, for which instance data is listed on the Task Instances tab of a specific Agent. |
| Audit Time Constraint | Time frame, starting with the current time, for which audit data is listed on the Audits list. |
| Boolean Column Display Format | Specifies whether Boolean columns on lists will be in Yes/No or enabled/disabled (check box) format. |
| Console Error Fade Out Display | Specifies how long the Console will stay open after displaying an error message. |
| Console Info Fade Out Display | Specifies how long the Console will stay open after displaying an informational message. |
| Console Location | Location of the Console that displays when you click the Console icon. |
| Console Open For Info | Specifies whether or not the Console will open automatically to display informational messages. |
| Dashboard Force Refresh On Focus | Forces a refresh of all Widgets in a Dashboard when the Dashboard is re-focused (that is, the user tabs back to the Dashboard). Whether a Widget qualifies for a refresh depends on the configuration of the User Preferences#Dashboard Force Refresh On Focus Threshold user preference.<br><br>**Warning**<br>Depending on user behaviour, enabling this user preference could increase the load on Universal Controller by ultimately increasing the number of and frequency of Widget refreshes. |
| Dashboard Force Refresh On Focus Threshold | If the User Preferences#Dashboard Force Refresh On Focus user preference is Yes, when re-focusing an already open Dashboard, each Widget in the Dashboard will be refreshed immediately if the last refresh time of the Widget exceeds this threshold (Default is 30 seconds). |
| Expand Lists Automatically | Specifies whether to use the currently defined system default for whether or not to Expand Lists by Default in the List / Details views, or to select **Yes** or **No**. |

| Name | Description |
| --- | --- |
| Go To Operator | Specifies the default operator for the Go To filter:<br>• contains<br>• starts with<br>• equals |
| History Time Constraint | Time frame, starting with the current time, for which history data is listed on the History list |
| Navigation Auto Collapse | Specifies whether to use the currently defined system default for whether or not the side Navigation Menu on the Home Dashboard collapses by default. |
| Node Time Display | Specifies whether to use the currently defined system default for whether or not to display the Cluster Node time in the User Task Bar, or to select **Yes** or **No**.<br><br>**Note**<br>For a change in Cluster Node time visibility to take effect, you must re-login or click your browser refresh button. In either case, all unsaved changes will be lost, including any open application tabs. |
| Node Time Display Background Color | Specifies whether to use the currently defined system default as the background color of the Cluster Node time in the User Task Bar or select another color. |
| Node Time Display Color | Specifies whether to use the currently defined system default as the color of the Cluster Node time in the User Task Bar or select another color. |
| Node Time Display Time Zone | Specifies whether to use the currently defined system default for the cluster node time zone in the User Task Bar, or to use the time zone of the **Server** or **User**. |
| Pin Tabs Automatically | Specifies whether or not to pins tabs automatically.<br>• If No (default):<br>• Users must pin their own tabs.<br>• Once a tab is pinned, a tab will not be replaced by a new tab being opened and will remain designated as pinned between a user's sessions.<br>• Pinned tabs are identified with a pin icon displayed in the tab.<br>• Tabs are pinned by DataSource; therefore, once you pin a type of tab (for example, Reports,) any time you open Reports in a tab, it will be designed as pinned.<br>• If Yes:<br>• All tabs will be pinned automatically, no pin icon will be displayed, and legacy tab behavior will be applied. |
| Record New In Tab | Specifies whether to use the currently defined system default for whether or not to display the new record editor under a new tab when clicking on the following icons, or to select **Yes** or **No**.<br>•  for non-related record list<br>•  from the Services menu<br>• **New Task...** in workflow editor |
| Record Open In Tab | Specifies whether to use the currently defined system default , or to select **Yes** or **No,** for whether or not to display the record Details under a new tab when double clicking or clicking on the form icon for a record in following cases:<br>• Any non-related record list<br>• Workflow tree<br>• Workflow timeline |

| Name | Description |
|---|---|
| Reference New In Tab | Specifies whether to use the currently defined system default , or to select **Yes** or **No,** for whether or not to display the record Details under a new tab when creating a reference record. |
| Reference Open In Tab | Specifies whether to use the currently defined system default , or to select **Yes** or **No,** for whether or not to display the record Details under a new tab when viewing a reference field. |
| Reference Picker Display Columns | Where applicable, if additional information is available for Controller records in drop-down lists, the columns of information displayed for each record:<br>• 1 = Record name only.<br>• 2 = Record name and type.<br>• 3 = Record name, type, and ID or Description.<br>• All = (Same as 3.) |
| Services Recently Visited Limit | Maximum number of Services that will display in the Recently Visited column for Available Services in the user interface.<br>If the number of recently visited Services exceeds this number, the earliest of the recently visited Services will be dropped from the column.<br>Default is 10. |
| Show Metadata | Specifies whether to use the currently defined system default for whether or not the Metadata section displays automatically in the the Details of all Controller records, or to override the system default by selecting **Yes** or **No**. |
| Show Variables Fetch Global Automatically | Specifies whether to use the currently defined system default for whether or not to fetch and display Global Variables automatically for the Show Variables action, or to override the system default by selecting **Yes** or **No**. |
| Target Task Instances Tab Time Constraint | Time frame, starting with the current time, for which target task instance data is listed on the Target Task Instances tab of a Recurring Task instance. |
| Task Instances Tab Time Constraint | Time frame, starting with the current time, for which instance data is listed on the Instances tab of a specific task. |
| Task Instances Time Constraint | Time frame, starting with the current time, for which instance data is listed on the Task Instances list. |
| Trigger Task Instances Time Tab Constraint | Time frame, starting with the current time, for which task instances display on a trigger Instances tab. |
| Use Dashboard Visibility Icons | Specifies whether to use the currently defined system default for whether or not to include visibility indicator icons in the Dashboard tabs that display at the bottom of the Dashboards page, or to select **Yes** or **No**. |
| Use Default Dashboard For Home | Specifies whether you want to use the currently selected default Dashboard as the Home dashboard for this user (**Yes**) or use the system-defined default Dashboard as the Home dashboard (**No**).<br>**Warning**<br>We strongly encourage you to maintain the system-defined default Dashboard as your Home dashboard. At login, all Widgets on the Home dashboard will be loaded. By keeping the system-defined default Dashboard, you will maintain a more consistent and optimal login process. |
| User Interface Density | Specifies whether to use the currently defined system default for the user interface density, or to select another density. |

| Name | Description |
| --- | --- |
| User Interface Theme | Specifies whether to use the currently defined system default for the user interface theme, or to select another theme. |
| View/Edit JCL Credentials | Specifies default credentials to be selected for Viewing and Editing JCL for z/OS tasks. |

# 10.16 Wildcards and Regular Expressions

## 10.16.1 Introduction

Universal Controller supports the use of wildcards and regular expressions in the user interface and remote interfaces.

For files, wildcards and regular expressions can be used only in:

- Source file specifications, not destination file specifications. (Under some operating systems, it is possible for * and ? to be valid characters in a file name. If they appear in a destination file, they are treated as file characters, not as wildcards or regular expressions.)
- File name portion of file specifications, not as part of the directory.

## 10.16.2 Wildcards

Universal Controller supports two wildcards:

- Asterisk (*)
- Question mark (?)

You can use wildcards in record searches and when applying some rule or command against records. Fields that support wildcards are identified in their field description.

| Wildcard | Meaning |
| --- | --- |
| Asterisk (*) | Represents a wildcard of any number of characters.<br><br>For example, a search for string "FEE*SF" returns all records whose name begins with "FEE" and ends with "SF", with any number and type of characters between the two strings. |
| Question mark (?) | Represents a wildcard of one character in a specific position.<br><br>For example, a search for string "FEE?SF" returns all records whose name begins with "FEE" and ends with "SF", with any single character between the two strings. |
| Multiple questions marks | Represent wildcards of multiple characters in a specific position.<br><br>For example, a search for string "FEE??SF" returns all records whose name begins and ends with "FEE" and "SF", respectively, with any two characters between the two strings. |

### 10.16.2.1 File Name Examples

#### 10.16.2.1.1 File Names

1. `test.txt`
2. `test1.txt`
3. `test2.txt`
4. `test3.txt`
5. `test.bin`
6. `test1.bin`
7. `test2.bin`
8. `test3.bin`

#### 10.16.2.1.2 Wildcard Matches

- `*`, `*.*`, `test*.*`, and `tes?**.` will match all of the files.
- `*.txt` will match files 1 - 4.
- `*.bin` will match files 5 - 8.
- `test?.txt` will match files 2 - 4.

## 10.16.3 Regular Expressions

**Important!**

POSIX Extended Regular Expression syntax is used for file name matching and string matching.

**Note**

You can use regular expressions only on Windows and UNIX operating systems; you cannot use them on z/OS.

### 10.16.3.1 File Name Examples

#### 10.16.3.1.1 File Names

1. `test.txt`
2. `test1.txt`
3. `test2.txt`
4. `test3.txt`
5. `test.bin`
6. `test1.bin`
7. `test2.bin`
8. `test3.bin`

#### 10.16.3.1.2 Regular Expression Matches

- `.+`, `tes.+`, and `te.+[tn]$` will match all of the files.
- `.+txt$` will match files 1 - 4.
- `.+bin$` will match files 5 - 8.
- `te..[123].+bin$` will match files 6 - 8.

### 10.16.3.2 String Examples

| | |
|---|---|
| C:\UDM\TEST\OUT\LinuxSystem.[D](20)[1-9][1-9][0-1][0-9][0-3][0-9][.][T][0-2][0-9][0-5][0-9][0-5][0-9].* | Matches C:\UDM\TEST\OUT\LinuxSystem.D20171001.T235159.* |
| C:\UDM\TEST\OUT\LinuxSystem.[D][1-9][1-9][0-1][0-9][0-3][0-9][.][T][0-2][0-9][0-5][0-9][0-5][0-9].* | Matches C:\UDM\TEST\OUT\LinuxSystem.D171001.T235159.* |
| C:\UDM\TEST\OUT\LinuxSystem.[D](20)[1-9][1-9][0-1][0-9][0-3][0-9][.][T][0-2][0-9][0-5][0-9][0-5][0-9].* | Fails C:\UDM\TEST\OUT\LinuxSystem.D2017201033.T235159.* month 20 day 33! |
| C:\UDM\TEST\OUT\LinuxSystem.[D][1-9][1-9][0-1][0-9][0-3][0-9][.][T][0-2][0-9][0-5][0-9][0-5][0-9].* | Fails C:\UDM\TEST\OUT\LinuxSystem.D171001.T266159.* hour 26 minutes 61! |

## 10.17 Access Keys

### 10.17.1 Overview

In a web browser, access keys allow you to immediately jump to specific sections of a web page using only the keyboard.

To use an access key, press the access key in combination with one or more other keys, as defined by the browser, in order to focus an element on a page.

## 10.17.2 Access Key Combination

The following access key combinations, which vary for different browsers / platforms, are implemented in Universal Controller:

| Browser | Platforms | Access Key Combination |
|---|---|---|
| Mozilla Firefox | Windows, Unix | Alt+Shift + access key |
| Mozilla Firefox | Mac | Ctrl+Opt + access key |
| Chrome | Windows, Unix | Alt + access key |
| Chrome | Mac | Ctrl+Opt + access key |

## 10.17.3 Access Keys

The following access keys are pre-defined in Universal Controller:

| Access Key | Description |
|---|---|
| G | Focuses the **Go To...** button on any list so that the Go To Filter dialog can be displayed by pressing **Enter**. |

# 11 Troubleshooting

## 11.1 Troubleshooting

Troubleshooting information is categorized into two areas:

- Problem Resolution
- Error Messages

## 11.2 Problem Resolution

### 11.2.1 Problem Resolution

This page provides links to problems, and their solutions, that you might encounter with Universal Controller.

#### 11.2.1.1 Database

- Error in your SQL syntax
- Maximum open cursors have been exceeded
- Out-of-Range Value during Database Initialization
- JDBC Connections Time Out
- DB2 JDBC License Error

#### 11.2.1.2 Installation

- Processes Will Not Start Automatically (Debian Linux)
- Error when Starting Controller
- Tomcat Post Limit: STATUS_MAX_POST_SIZE_EXCEEDED
- Special Characters not Displayed Correctly
- Open JRE Dependency not Installed

#### 11.2.1.3 Operations

- Cannot launch a task
- VBScript stuck in "Running" state
- My Universal Controller License has Expired
- Packet for query is too large
- Invalid login credentials for refreshing target agents
- Invalid Call Error: Invalid call to setDataSource()

### 11.2.2 Error in your SQL syntax

#### 11.2.2.1 Problem

When you execute an SQL task that includes multiple SQL commands, the following error message (for example) may display:

```
INSERT INTO uc_demo (name, value) values ('A', 'F');
INSERT INTO uc_demo (name, value) values ('B', 'S');
INSERT INTO uc_demo (name, value) values ('C', 'F');
```

#### 11.2.2.2 Solution

Multiple queries, by default, are disabled for MySQL. To enable multiple queries, append the following string to the Connection URL field in the Database Connections resource definition:

```
?allowMultiQueries=true
```

The following example is a URL connection string for a MySQL Database Connection resource definition:

```
jdbc:mysql://localhost:3306/uc?allowMultiQueries=true
```

### 11.2.3 Maximum open cursors have been exceeded

#### 11.2.3.1 Problem

During large imports on Oracle, you could receive following error message:

```
ORA-01000: maximum open cursors exceeded
```

(The cursors are used only during the import; they then are closed.)

Issue the following **sql*plus** utility command to check the current value for maximum open cursors:

```
show parameter open_cursors
```

A listing similar to the following will display:

```
SQL> show parameter open_cursors;

NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
open_cursors                         integer     1000
```

### 11.2.3.2 Solution

An `open_cursors` value of 1000 should be sufficient for all large imports.

You can temporarily set the `open_cursors` value with the following SQL:

```
alter system set open_cursors=1000
```

To make a permanent change, you must set the `open_cursors` value in the initialization parameters file.

## 11.2.4 Out-of-Range Value during Database Initialization

### 11.2.4.1 Problem

During the database initialization performed on initial start-up, you could receive the following message:

```
The conversion of a varchar data type to a datetime data type of the value is out of
range.
```

The problem likely is that the database was created in SQL SERVER Management Studio with a user that has other than English as the default language.

### 11.2.4.2 Solution

Verify the installed default language and set the language to U.S. English.

To check what default language a server has installed, use the following SQL command:

```
sp_configure 'default language'
```

If the resulting value is not 0, the default language is not U.S. English. Run the following SQL command to find the installed default language setting and date format used:

```
select name ,alias, dateformat
from syslanguages
   where langid =
   (select value from master..sysconfigures
      where comment = 'default language')
```

To set the default language to U.S. English, use the following SQL statements:

```
sp_configure 'default language', 0
reconfigure with override
```

For further details, refer to this Microsoft Support page.

### 11.2.5 JDBC Connections Time Out

#### 11.2.5.1 Problem

JDBC connections from Linux to MS SQL Server 2008 R2/Windows 2008 R2 time out after 40 seconds causing SQL/Stored Procedure Tasks that take longer than 40 seconds to fail with the following exception:

```
2014-09-22-14:51:37:034 -0400  ERROR
[Ops.General.15.EP.SqlHandler.ecd8ab62183f4b9dbf32d3ea4ad0a126.74b824ad1ca84142a40d3ec1f8
4d4d2b.0] SQLServerException - Connection reset
com.microsoft.sqlserver.jdbc.SQLServerException: Connection reset
          at
com.microsoft.sqlserver.jdbc.SQLServerConnection.terminate(SQLServerConnection.java:1667)
          at
com.microsoft.sqlserver.jdbc.SQLServerConnection.terminate(SQLServerConnection.java:1654)
          at com.microsoft.sqlserver.jdbc.TDSChannel.read(IOBuffer.java:1789)
          at com.microsoft.sqlserver.jdbc.TDSReader.readPacket(IOBuffer.java:4838)
          at com.microsoft.sqlserver.jdbc.TDSCommand.startResponse(IOBuffer.java:6150)
          at
com.microsoft.sqlserver.jdbc.SQLServerPreparedStatement.doExecutePreparedStatement(SQLSer
verPreparedStatement.java:402)
          at
com.microsoft.sqlserver.jdbc.SQLServerPreparedStatement$PrepStmtExecCmd.doExecute(SQLServ
erPreparedStatement.java:350)
          at com.microsoft.sqlserver.jdbc.TDSCommand.execute(IOBuffer.java:5696)
          at
com.microsoft.sqlserver.jdbc.SQLServerConnection.executeCommand(SQLServerConnection.java:
1715)
          at
com.microsoft.sqlserver.jdbc.SQLServerStatement.executeCommand(SQLServerStatement.java:18
0)
          at
com.microsoft.sqlserver.jdbc.SQLServerStatement.executeStatement(SQLServerStatement.java:
```

```
155)
        at
com.microsoft.sqlserver.jdbc.SQLServerPreparedStatement.execute(SQLServerPreparedStatemen
t.java:332)
        at
com.stonebranch.opswise.server.events.SqlEventHandler.storedProc(SqlEventHandler.java:266
)
```

### 11.2.5.2 Resolution

To disable TCP Chimney Offload, follow these steps:

| | |
|---|---|
| **Step 1** | Use administrative credentials to open a command prompt. |
| **Step 2** | At the command prompt, enter the following command: `netsh int tcp set global chimney=disabled` |
| **Step 3** | Press ENTER:. |

For additional information, see:

http://support.microsoft.com/kb/951037

## 11.2.6 DB2 JDBC License Error

### 11.2.6.1 Problem

A SQL or Stored Procedure task using a DB2 Database Connection may fail with the following error message:

```
The IBM Data Server for JDBC and SQLJ license was invalid or was not activated for the
DB2 for z/OS subsystem. If you are connecting
directly to the data server and using DB2 Connect Unlimited Edition for System z, perform
the activation step by running the activation
program in the license activation kit. If you are using any other edition of DB2 Connect,
obtain the license file, db2jcc_license_cisuz.jar,
from the license activation kit, and follow the installation directions to include the
license file in the class path.
```

### 11.2.6.2 Solution

The `db2jcc_license_cisuz.jar` file needs to be included in the classpath for Universal Controller.

| | |
|---|---|
| **Step 1** | Copy the `db2jcc_license_cisuz.jar` file to the following directory:<br><br>**Windows**<br>`[tomcat-install]\webapps\uc\WEB-INF\lib`<br><br>**UNIX**<br>`[tomcat-install]/webapps/uc/WEB-INF/lib` |
| **Step 2** | Restart Universal Controller. |

### 11.2.7 Processes Will Not Start Automatically (Debian Linux)

#### 11.2.7.1 Problem

For Debian Linux environment: Outboard 5.1.0 processes will not start automatically at boot time.

Debian Linux does not provide the **chkconfig** command and therefore cannot work with the runlevels specified in the opsagent, opstransport, opsmsghub scripts provided in `/etc/init.d`.

***This is a known problem; we are working on a solution.***

### 11.2.8 Error when Starting Controller

#### 11.2.8.1 Problem

Upon starting the Universal Controller, the `opswise.log` shows ERR:

```
SQLSTATE: HY000, SQLERR: 1040, ERRMSG: [unixODBC][MySQL][ODBC 5.1 Driver]Too many
connections
```

#### 11.2.8.2 Solution

You must set additional connections in your database server:

```
MySQL - /etc/my.conf - max_connections=500 (default is either 100 or 150)
```

### 11.2.9 Tomcat Post Limit - STATUS_MAX_POST_SIZE_EXCEEDED

#### 11.2.9.1 Problem

The following error message displays:

```
The server did not receive the data that was sent to it.  Please see the documentation
for isc.RPCResponse.STATUS_MAX_POST_SIZE_EXCEEDED
```

#### 11.2.9.2 Resolution

Remove the post limit by specifying the following attribute on the **<Connector>** element in `conf/server.xml`:

`maxPostSize="-1"`

### 11.2.10 Special Characters not Displayed Correctly

#### 11.2.10.1 Problem

Some special characters not getting displayed correctly in your browser GUI.

#### 11.2.10.2 Resolution

Tomcat on Windows requires you to define code page UTF-8 as the default code page for war files.

To do this, add the following to the Java options statement just as you did with the memory parameter:

`-Dfile.encoding=UTF8`

### 11.2.11 Open JRE Dependency not Installed

#### 11.2.11.1 Problem

If Universal Controller produces an exception similar to the following when exporting a dashboard widget or generating a scheduled chart report, a required dependency may not be installed.

```
java.lang.NullPointerException
        at sun.awt.FontConfiguration.getVersion(FontConfiguration.java:1264)
        at sun.awt.FontConfiguration.readFontConfigFile(FontConfiguration.java:219)
        at sun.awt.FontConfiguration.init(FontConfiguration.java:107)
```

```
        at sun.awt.X11FontManager.createFontConfiguration(X11FontManager.java:774)
        ...
```

When using the `java-1.8.0-openjdk-headless` package from the EL7 repository, it did does not include a required dependency; specifically, `fontconfig`.

#### 11.2.11.2 Solution

Installing the `fontconfig` dependency, along with its own dependencies, will resolve the issue.

```
yum install fontconfig
```

Alternatively, you can use the non-headless package, `java-1.8.0-openjdk`.

### 11.2.12 Cannot launch a task

#### 11.2.12.1 Problem

You cannot launch a task.

The problem may be with your credentials. Check the stderr for the following message:

```
ops_suexec: Not enough privileges. Check SUID bit and binary owner.
```

#### 11.2.12.2 Solution

If the error message is present, issue the following commands as **root** in the `$WMS_HOME/bin` directory:

```
chown root ops_suexec
chmod 4755 ops_suexec
```

### 11.2.13 VBScript stuck in "Running" state

#### 11.2.13.1 Problem

By default, Windows uses a GUI-based VBScript interpreter (`wscript.exe`). With this interpreter, if your script tries to display an error message that requires a user-response (for example, **Click OK**), you will never see the dialog box. The script therefore gets stuck in the "Running" state.

#### 11.2.13.2 Solution

To avoid this, we recommend you use the console version of the VBScript interpreter ( `cscript.exe` ). To do so, specify `cscript.exe` before the script name in a task definition, as shown in the following example:

```
"cscript.exe C:\Work\script.vbs".
```

### 11.2.14 My Universal Controller License has Expired

#### 11.2.14.1 Problem

If your Universal Controller license has expired, you will not be able to run any tasks. If you attempt to run a task under an expired license, the Controller will place the task in the Defined state.

When you log in to the Controller, the Console will displays a license expiration informational message if your license will expire within a week, and an error message if your license already has expired.

Additionally, if you have configured the Controller for System Notifications, system notifications are sent when the Controller license will expire in seven days and if the license already has expired.

There are two other methods you can use to check on license expiration.

##### 11.2.14.1.1 Method 1

Check the System Details widget (view the system-defined Home Dashboard or, on the Reporting navigation pane, click **Widgets**) to see how many days are left on your license.

##### 11.2.14.1.2 Method 2

Check the Controller log file.

If your license has expired, the following two messages should appear in the log at the midnight roll-over:

```
2015-01-07-00:00:00:006   WARN [Ops.Timer.Forecast_Refresh.0] License Violation: Number
of Days has exceeded # suspending system
2015-01-07-00:00:00:006   INFO [Ops.Timer.Forecast_Refresh.0] Pausing the server.
```

Additionally, this message should appear in the log if you try to run a task under an expired license:

```
2015-01-07-09:32:27:728   INFO [Ops.Available.2367.0] System paused, waiting for resume
```

#### 11.2.14.2 Solution

Contact Stonebranch Customer Support.

## 11.2.15 Packet for query is too large

### 11.2.15.1 Problem

During operations, the following message may appear in the Universal Controller log:

```
Packet for query is too large (1084852 > 1048576).
```

### 11.2.15.2 Solution

Change this value on the database server by setting the MySQL **max_allowed_packet** configuration variable.

For detailed information about this variable, refer to:

- MySQL 8.0.x reference manual

## 11.2.16 Error when refreshing target agents

### 11.2.16.1 Problem

An error occurs when you click **Refresh Target Agents** on a Promotion Target record and you are using invalid login credentials for the target Universal Controller instance.

The user interface on source machine will show the following error:

```
GET http://NN.NNN.NN.N:8080/uc/resources/agents/list returned a response status of 401
Unauthorized
```

The the Controller log on the source machine will show the following error:

```
ERROR [http-8080-10] com.sun.jersey.api.client.UniformInterfaceException:
GET http:///uc/resources/agents/list returned a response status of 401 Unauthorized"
```

The target machine will return the following error:

```
ERROR [http--#] *** ERROR *** Login using Basic Authentication failed for:
```

#### 11.2.16.2 Solution

Update the Promotion Target record with valid login credentials and try the promotion again.

### 11.2.17 Invalid Call Error

#### 11.2.17.1 Problem

The following error message displays:

```
onUncaughtException: Exception caught: Invalid call to setDataSource() passing null.
```

#### 11.2.17.2 Resolution

You may need to update the **LimitRequestLine** property in the Apache `httpd.conf` file to its default value, **8190**.

## 11.3 Error Messages

### 11.3.1 Error Messages

This page identifies error messages (in alphabetical order) that you may receive for Universal Controller.

For each error, there is a link to the cause problem, and its solution, in Problem Resolution.

```
GET http://NN.NNN.NN.N:8080/uc/resources/agents/list returned a response status of 401
Unauthorized
```

(in user interface on source machine)

```
ERROR [http-8080-10] com.sun.jersey.api.client.UniformInterfaceException:
GET http:///uc/resources/agents/list returned a response status of 401 Unauthorized"
```

(in Controller log on source machine)

```
ERROR [http--#] *** ERROR *** Login using Basic Authentication failed for:
```

(on Target machine)

See Error when refreshing target agents.

```
INSERT INTO uc_demo (name, value) values ('A', 'F');
```

See Error in your SQL syntax.

```
Java HotSpot(TM) 64-Bit Server VM warning: ignoring option MaxPermSize=512m; support was
removed in 8.0
```

See Permanent Generation (PermGen) space removed in Java 8

```
onUncaughtException: Exception caught: Invalid call to setDataSource() passing null.
```

See Invalid Call Error.

```
ops_suexec___Not enough privileges. Check SUID bit and binary owner
```

See Cannot launch a task.

```
ORA-01000: maximum open cursors exceeded
```

See Maximum open cursors have been exceeded.

```
Packet for query is too large (1084852 > 1048576
```

See Packet for query is too large.

```
SQLSTATE: HY000, SQLERR. 1040, ERRMSG. unixODBC MySQL ODBC 5.1 Driver Too many
connections
```

See Error when Starting Controller.

```
The conversion of a varchar data type to a datetime data type resulted in an out-of-range
value.
```

See Out-of-Range Value during Database Initialization.

```
The IBM Data Server for JDBC and SQLJ license was invalid or was not activated for the
DB2 for z/OS subsystem. If you are connecting directly to the data server and using DB2
Connect Unlimited Edition for System z, perform the activation step by running the
activation program in the license activation kit. If you are using any other edition of
DB2 Connect, obtain the license file, db2jcc_license_cisuz.jar, from the license
activation kit, and follow the installation directions to include the license file in the
class path.
```

See DB2 JDBC License Error.

```
The server did not receive the data that was sent to it. Please see the documentation for
isc.RPCResponse.STATUS_MAX_POST_SIZE_EXCEEDED
```

See Tomcat Post Limit - STATUS_MAX_POST_SIZE_EXCEEDED.