# Universal Controller 6.8.x

## Resources

# Resources

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The information on these pages also is located in the Universal Controller 6.7.x Resources.pdf.

# Resources Overview

Universal Controller resources are records that both define your Universal Automation Center system and that you set up to help facilitate operations:

| | |
|---|---|
| Agents | Universal Agents, running programs on one or more remote machines, connected to the Controller via Universal Message Service (OMS):<br>• Linux/Unix<br>• Windows<br>• z/OS |
| Agent Clusters | Groups of Agents from which the Controller uses pre-defined parameters to select the most appropriate agent for a task. |
| OMS Servers | Network communication provider between Universal Controller 6.7.x and Universal Agent. |
| Cluster Nodes | Controller instances. |
| Virtual resources | Allow you to create throttling schemes for tasks. |
| Scripts | Allow you to execute scripts stored in the Controller database. |
| Email Templates | Allow you to construct information that can be copied to create Email tasks. |
| Email Connections | Provide email server information required for the Controller to send an email. |
| Database Connections | Provide database server information required for running SQL tasks and Stored Procedure tasks. |
| SAP Connections | Provide SAP server information required for running SAP tasks. |
| PeopleSoft Connections | Provide PeopleSoft server information required for running PeopleSoft tasks. |
| SNMP Managers | Allow you to generate SNMP notifications. |
| Application Resources | Define the names of applications being monitored. |

# Agents



## Agents

Agent resources refer to Universal Agents, running programs on one or more remote machines, connected to the Controller via Universal Message Service (OMS).

OMS must be running in order for you to run tasks on an Agent.

There are three types of Agents:

- Linux/Unix Agent
- Windows Agent
- z/OS Agent

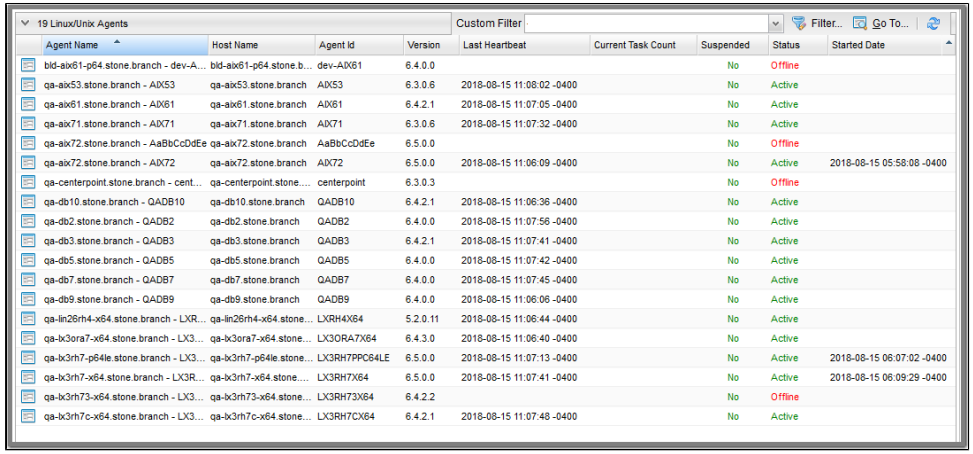
## Displaying Agent Details

When you start an Agent for the first time, the Controller automatically creates a database record for that Agent. You can view these records for details and status information.

(You also can view status information about Agents from the Command Line Interface (CLI).)

**Step 1**

From the Agents & Connections navigation pane, select **Agents > All Agents** or **Agents ><type of agent>**. An Agents list displays:



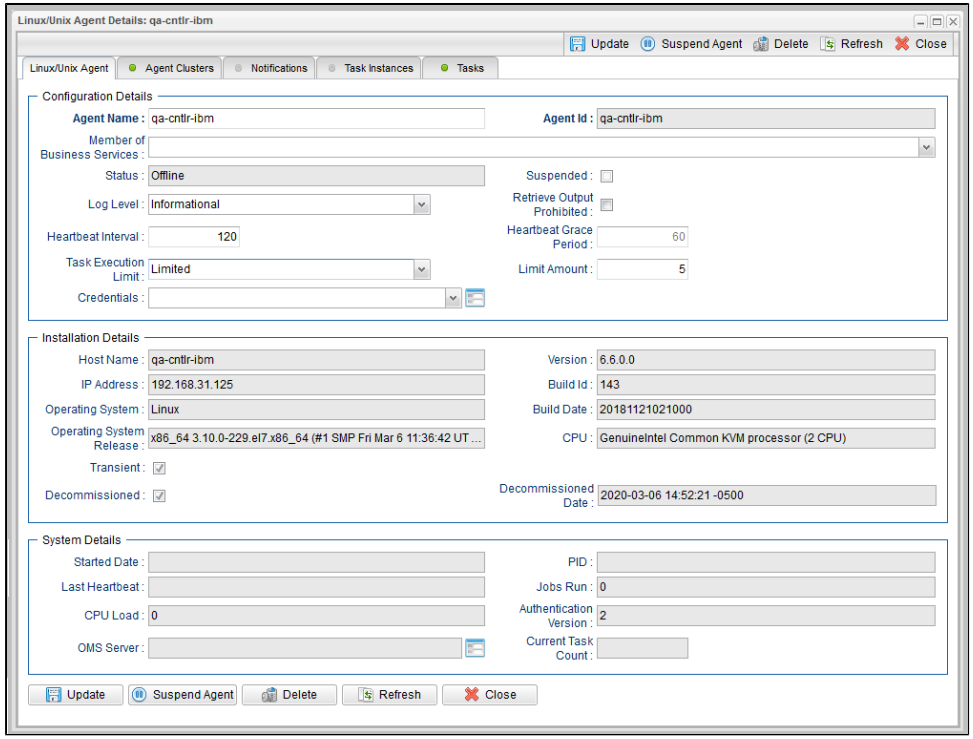
19 Linux/Unix Agents — Custom Filter — Filter... — Go To...

| Agent Name | Host Name | Agent Id | Version | Last Heartbeat | Current Task Count | Suspended | Status | Started Date |
|---|---|---|---|---|---|---|---|---|
| bld-aix61-p64.stone.branch - dev-A... | bld-aix61-p64.stone.b... | dev-AIX61 | 6.4.0.0 | | | No | Offline | |
| qa-aix53.stone.branch - AIX53 | qa-aix53.stone.branch | AIX53 | 6.3.0.6 | 2018-08-15 11:08:02 -0400 | | No | Active | |
| qa-aix61.stone.branch - AIX61 | qa-aix61.stone.branch | AIX61 | 6.4.2.1 | 2018-08-15 11:07:05 -0400 | | No | Active | |
| qa-aix71.stone.branch - AIX71 | qa-aix71.stone.branch | AIX71 | 6.3.0.6 | 2018-08-15 11:07:32 -0400 | | No | Active | |
| qa-aix72.stone.branch - AaBbCcDdEe | qa-aix72.stone.branch | AaBbCcDdEe | 6.5.0.0 | | | No | Offline | |
| qa-aix72.stone.branch - AIX72 | qa-aix72.stone.branch | AIX72 | 6.5.0.0 | 2018-08-15 11:06:09 -0400 | | No | Active | 2018-08-15 05:58:08 -0400 |
| qa-centerpoint.stone.branch - cent... | qa-centerpoint.stone.... | centerpoint | 6.3.0.3 | | | No | Offline | |
| qa-db10.stone.branch - QADB10 | qa-db10.stone.branch | QADB10 | 6.4.2.1 | 2018-08-15 11:06:36 -0400 | | No | Active | |
| qa-db2.stone.branch - QADB2 | qa-db2.stone.branch | QADB2 | 6.4.0.0 | 2018-08-15 11:07:56 -0400 | | No | Active | |
| qa-db3.stone.branch - QADB3 | qa-db3.stone.branch | QADB3 | 6.4.2.1 | 2018-08-15 11:07:41 -0400 | | No | Active | |
| qa-db5.stone.branch - QADB5 | qa-db5.stone.branch | QADB5 | 6.4.0.0 | 2018-08-15 11:07:42 -0400 | | No | Active | |
| qa-db7.stone.branch - QADB7 | qa-db7.stone.branch | QADB7 | 6.4.0.0 | 2018-08-15 11:07:45 -0400 | | No | Active | |
| qa-db9.stone.branch - QADB9 | qa-db9.stone.branch | QADB9 | 6.4.0.0 | 2018-08-15 11:06:06 -0400 | | No | Active | |
| qa-lin26rh4-x64.stone.branch - LXR... | qa-lin26rh4-x64.stone.... | LXRH4X64 | 5.2.0.11 | 2018-08-15 11:06:44 -0400 | | No | Active | |
| qa-lx3ora7-x64.stone.branch - LX3... | qa-lx3ora7-x64.stone.... | LX3ORA7X64 | 6.4.3.0 | 2018-08-15 11:06:40 -0400 | | No | Active | |
| qa-lx3rh7-p64le.stone.branch - LX3... | qa-lx3rh7-p64le.stone.... | LX3RH7PPC64LE | 6.5.0.0 | 2018-08-15 11:07:13 -0400 | | No | Active | 2018-08-15 06:07:02 -0400 |
| qa-lx3rh7-x64.stone.branch - LX3R... | qa-lx3rh7-x64.stone.... | LX3RH7X64 | 6.5.0.0 | 2018-08-15 11:07:41 -0400 | | No | Active | 2018-08-15 06:09:29 -0400 |
| qa-lx3rh73-x64.stone.branch - LX3... | qa-lx3rh73-x64.stone.... | LX3RH73X64 | 6.4.2.2 | | | No | Offline | |
| qa-lx3rh7c-x64.stone.branch - LX3... | qa-lx3rh7c-x64.stone.... | LX3RH7CX64 | 6.4.2.1 | 2018-08-15 11:07:48 -0400 | | No | Active | |

See Agents List Field Descriptions, below, for a description of the columns on an Agent List.

**Step 2**

To display Details about an Agent on the list, click the icon next to the **Agent Name** or click anywhere in the Agent row.




Most fields are display-only; however, you can make the following changes:

- Add a Member of Business Services.
- Assign Credentials.
- Change the heartbeat interval. The heartbeat is a status message sent from the Agent to the Controller.
- Change the heartbeat grace period. The heartbeat grace period is the time that the Controller will allow for a delayed heartbeat message.
- Change the default Log Level.
- Select whether or not to apply a Task Execution Limit (and Limit Amount) on the Agent.

You also can choose to:

- Temporarily suspend the agent's ability to run tasks.

For information on how to access additional details - such as Metadata and complete database Details - for Agent (or any type of record), see Records.

## Agents List Column Descriptions

The following table describes the default display columns on an Agents list.

| Column | Description |
|---|---|
| Agent Name | User-defined during installation; name used within the Controller to identify this Agent. |
| Host Name | User-provided during installation; IP address or domain/name of the host machine where the resource resides. |
| Type | All Agents list only; Agent's platform: Linux/Unix, Windows, or z/OS. |
| Agent ID | Unique ID for this Agent, created during installation. |
| Version | System-supplied; version number of the Agent program. |
| Last Heartbeat | System-supplied; date and time the most recent heartbeat was received from the resource. |
| Current Task Count | System supplied; current number of tasks currently being run by this Agent. |
| Suspended | Specification (true or false) for whether or not this Agent has been suspended from the ability to run tasks. |
| Status | System-supplied; status of the Agent.<br>• Active: the Agent is running.<br>• Offline: the Agent is not running. |
| Started Date | Time stamp of when the Agent started or connected. |
| Updated By | User that last updated this record. |
| Updated | Date when this record was last updated. |
| Member of Business Service | Business Services that this Agent belongs to. |

### Agent Details Field Descriptions

Detailed descriptions of the fields in the Agent Details are provided for each type of Agent.

## Starting and Stopping Agents

For instructions on starting and stopping Agents, see Starting and Stopping Agent Components.

## Suspending Agents, Agent Clusters, and Agent Cluster Memberships

If an Agent or Agent Cluster reaches its Task Execution Limit, all new work queued against that Agent or Agent Cluster will transition into the Execution Wait status until the Current Task Count falls below the Limit Amount.

You also can manually suspend (and resume) Agents and Agent Clusters, as well as Agent memberships in Agent Clusters.

Note

The following roles and permissions are required to suspend/resume Agents, Agent Clusters, and Agent Cluster Memberships:

- Agent Suspend/Resume requires the **ops_admin role** and the appropriate Agent permissions for Agent Suspend/Resume commands.
- Agent Cluster Suspend/Resume and Agent Cluster Membership Suspend/Resume require the **ops_agent_cluster_admin** role.

## Suspending an Agent

You can temporarily suspend the ability of an Agent to run tasks from the Agent list or the Agent Details for that Agent. Any tasks queued against a suspended Agent will transition into Execution Wait status until the Agent has been resumed.

- To suspend an Agent from the Agents list, either:
  - Right-click the **Agent Name** of the Agent to be suspended and, on the Action menu, click **Suspend Agent**.
  - Click the box to the left of the **Agent Name** and, from the **Action on selected rows...** drop-down list at the bottom of the page, click **Suspend Agent**.
- To suspend an Agent from the Agent Details, click the **Suspend Agent** button. A **Resume Agent** button replaces the **Suspend Agent** button.

### Resuming an Agent

(To end the suspension, and resume the ability of an Agent to run tasks, either:

- Click **Resume Agent** on the Action menu or from the **Action on selected rows...** drop-down list.
- Click the **Resume Agent** button.

## Suspending an Agent Cluster

You can temporarily suspend the ability of a cluster of Agents to run tasks from the Agent Clusters list or an Agent Cluster Details. Any tasks queued against a suspended agent cluster will transition into Execution Wait status until the agent cluster has been resumed.

- To suspend an Agent Cluster from the Agent Clusters list, either:
  - Right-click the **Cluster Name** of the agent cluster to be suspended and, on the Action menu, click **Suspend Agent Cluster**.
  - Click the box to the left of the agent cluster. From the **Action on selected rows...** drop-down list at the bottom of the page, click **Suspend Agent**.
- To suspend an Agent Cluster from an Agent Cluster Details, click the **Suspend Cluster** button. A **Resume Cluster** button replaces the *Suspend Cluster * button.

### Resuming an Agent Cluster

To end the suspension, and resume the ability of a cluster of Agents to run tasks, either:

- Click **Resume Agent Cluster** on the Action menu or from the **Action on selected rows...** drop-down list.
- Click the **Resume Cluster** button.

## Suspending an Agent Cluster Membership

You can temporarily suspend the membership of an Agent in an agent cluster from an Agent Cluster Details. Suspending the membership of an Agent in an agent cluster is equivalent to removing the Agent from the agent cluster, except it is meant to be temporary. The Agent will not be available as a selection from the agent cluster when a task is queued against the agent cluster until the membership of the Agent has been resumed.

Note

If a task specifies both an Agent and an agent cluster in which that Agent is a member, and the specified Agent has been suspended from the agent cluster, the Agent still has the ability to run the task. Directly specifying an Agent overrides its suspension from an agent cluster.

To suspend the membership of an Agent from an Agent Cluster Details, click the Agents in Cluster tab and then either:

- Right-click an **Agent** on the list and, on the Action menu, click **Suspend Cluster Membership**.
- Click the box to the left of an **Agent** and then, from the **Action on selected rows...** drop-down list at the bottom of the page, click **Suspend Cluster Membership**.

### Suspending an Agent Cluster Membership Due to Decommissioning

A suspended cluster membership cannot be resumed if it was suspended due to decommissioning. The cluster membership will be restored if the Agent is recommissioned or deleted if the Agent is deleted.

### Resuming an Agent Cluster Membership

To end the suspension, and resume the membership of an Agent in an agent cluster:

- Click **Resume Cluster Membership** on the Action menu or from the **Action on selected rows...** drop-down list.

# Resetting the Current Task Count

The Current Task Count field in Agent Details and Agent Cluster Details identifies the current number of tasks currently being run by, respectively, that Agent or Agent Cluster.

If there is a limit to the number of tasks that an Agent or Agent Cluster can run concurrently (as specified by the **Task Execution Limit** and **Limit Amount** fields), you can reset the current task count to 0. This can help avoid a situation where the Controller believes the Agent to be running more tasks than it actually is running, and therefore might impose the task limit on the Agent unnecessarily.

To reset the Current Task Count field, hover your cursor over the down arrow on the Agent Details or the Agent Cluster Details title bar, or right-click the title bar, and then click, respectively, **Reset Agent Task Count** or **Reset Cluster Task Count**.

Note

The following roles and permissions are required to reset the current task count:

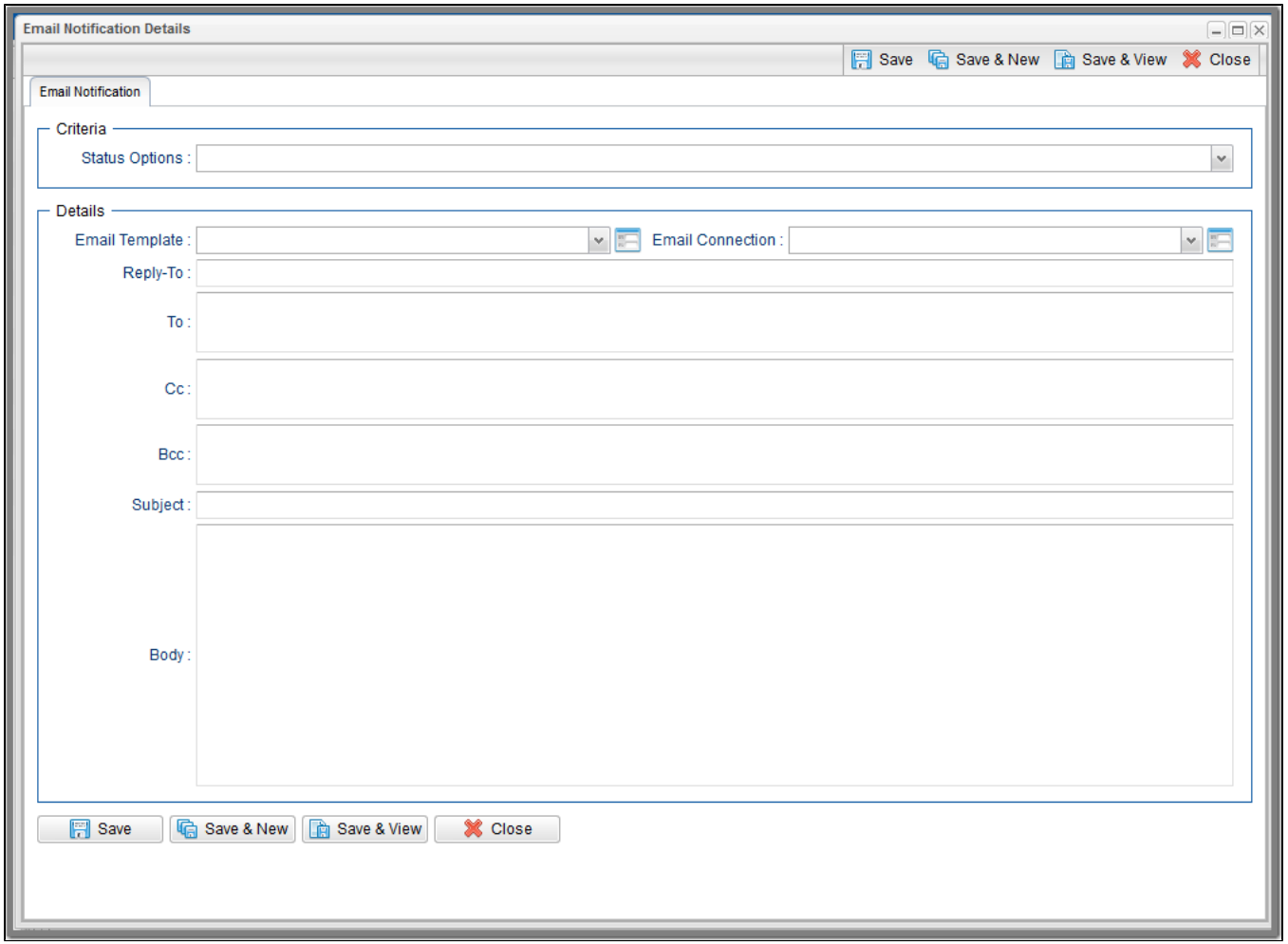
- Reset Agent Task Count requires the **ops_admin** role and the Update Agent permission.
- Reset Cluster Task Count requires the **ops_agent_cluster_admin** role.

# Sending Notifications on Status of an Agent

You can configure an Agent to send a notification via email or SNMP if the Agent goes down (Offline) or then when it comes back up (Active).

| | |
|---|---|
| **Step 1** | From the Agents & Connections navigation pane, select **Agents > All Agents** or **Agents ><type of agent>**. An Agents list displays. |
| **Step 2** | Click the icon next to the **Agent Name** of an Agent, or click anywhere in the Agent row, to display Details about the Agent. |
| **Step 3** | Click the **Notifications** tab to display a list of any Email and SNMP notifications configured for the Agent. |
| **Step 4** | Select the type of notification you want the Agent to send, and then click **New**. Notification Details for a new Notification displays (See Email Notification Details and SNMP Notification Details, below. |
| **Step 5** | Complete the fields as needed (see Email Notification Details Field Descriptions and SNMP Notification Details Field Descriptions, below).<br><br>Note<br>Agent built-in variables are available to pass data about the Agent into the notification. (User-defined variables, including Global variables, are not available for use in Agent email notifications). |
| **Step 6** | Click the **Save** button to save the record. |

## Email Notification Details



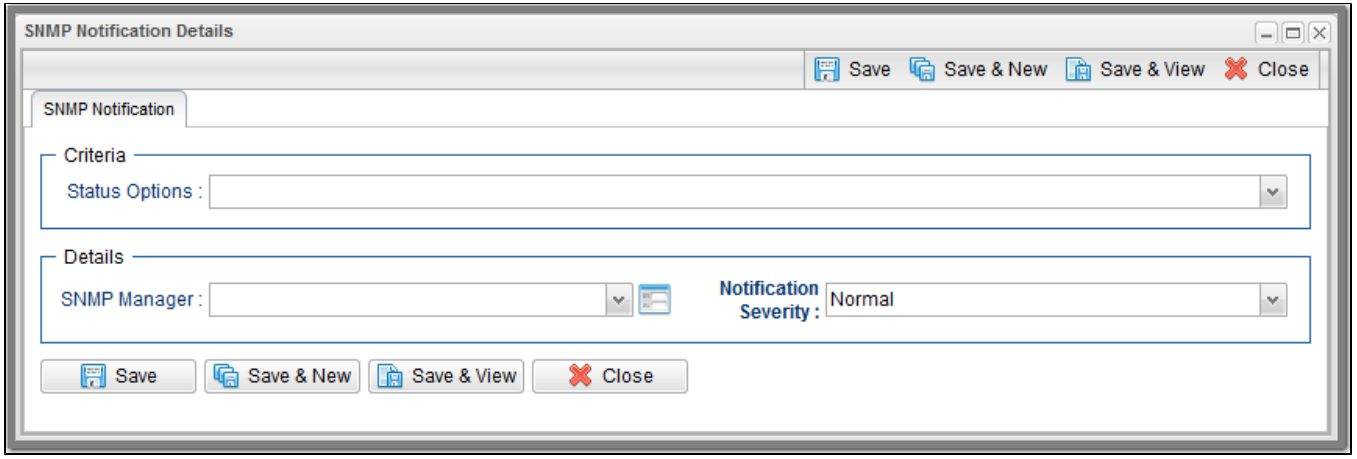

## Email Notification Details Field Descriptions

The following table describes the fields and buttons on Email Notification Details.

| Field Name | Description |
|---|---|
| **Criteria** | This section contains criteria for sending the notification. |

| | |
|---|---|
| Status Options | • Offline = Trigger the notification when the resource goes offline.<br>• Active = Trigger the notification when the resource comes up. |
| **Details** | This section contains assorted detailed information about the notification. |
| Email Template | Name of an Email template defined in an Email Template Details. An Email template allows you to specify standard recipients and text for outgoing emails. Enter the name of an existing Email template, select an Email template from the drop-down list, or click the Details icon to create a new Email template.<br><br>Every Email template specifies an Email connection. If you do not specify an Email template in this field, you must specify an Email connection in the #Email Connection field.<br><br>If you specify both an Email template (in this field) and an #Email Connection, the Email server specified in the #Email Connection field overrides the Email server specified in this field.<br><br>(Any information specified in an Email task overrides what is specified in an Email template.) |
| Email Connection | Required if an Email Template is not specified in the #Email Template field; Name of an outgoing Email Connection (Type = Outgoing). An Email Connection specifies information about an outgoing or incoming email server. Enter the name of an existing outgoing Email Connection, select an existing outgoing Email Connection from the drop-down list, or clear the Email Connection field and click the Details icon to create a new Email Connection (Outgoing will be pre-selected in the Type field).<br><br>If you specify both an #Email Template and an Email Connection (in this field), the Email Connection specified in this field overrides the Email Connection specified in the #Email Template field. |
| Reply-To | Email address of the sender. Use commas to separate multiple recipients. Variables and functions supported. |
| To | Email address of the recipient. Use commas to separate multiple recipients. Variables and functions supported. |
| CC | Email address of the party being sent a copy of the email, if any. Use commas to separate multiple recipients. Variables and functions supported. |
| BCC | Email address of the party being sent a blind (hidden) copy of the email, if any. Use commas to separate multiple recipients. Variables and functions supported. |
| Subject | Subject line of the email. Variables and functions supported. |
| Body | Text of the email message. Variables and functions supported.<br><br>Note<br>If both the Email Template and the Email Task (or Email Notification) contain text in the Body, the text in the Email Template is appended to the text in the Email Task (or Email Notification). |
| **Buttons** | This section identifies the buttons displayed above and below the Notification Details that let you perform various actions. |
| **Save** | Submits the new record to the database. |
| **Save & New** | Saves a new record in the Controller database and redisplays empty Details so that you can create another new record. |
| **Save & View** | Saves a new record in the Controller database and continues to display that record. |
| **Update** | Saves updates to the record. |
| **Delete** | Deletes the current record. |
| **Refresh** | Refreshes any dynamic data displayed in the Details. |
| **Close** | For pop-up view only; closes the pop-up view of this notification. |

# SNMP Notification Details




## SNMP Notification Details Field Descriptions

The following table describes the fields and buttons on SNMP Notification Details.

| Field Name | Description |
|---|---|
| **Criteria** | This section contains criteria for sending the notification. |
| Status Options | • Offline = Trigger the notification when the resource goes offline.<br>• Active = Trigger the notification when the resource comes up. |
| **Details** | This section contains assorted detailed information about the notification. |
| SNMP Manager | The SNMP Manager that will receive the SNMP notification. Enter the name of an existing SNMP Manager, select an existing SNMP Manager from the drop-down list, or clear the SNMP Manager field and click the Details icon to create a new SNMP Manager. |
| Notification Severity | Severity of this notification.<br><br>Options:<br><br>• Normal (1)<br>• Warning (2)<br>• Minor (3)<br>• Major (4)<br>• Critical (5) |

| **Buttons** | This section identifies the buttons displayed above and below the Notification Details that let you perform various actions. |
|---|---|
| **Save** | Submits the new record to the database. |
| **Save & New** | Saves a new record in the Controller database and redisplays empty Details so that you can create another new record. |
| **Save & View** | Saves a new record in the Controller database and continues to display that record. |
| **Update** | Saves updates to the record. |
| **Delete** | Deletes the current record. |
| **Refresh** | Refreshes any dynamic data displayed in the Details. |
| **Close** | For pop-up view only; closes the pop-up view of this notification. |

# Linux Unix Agent



## Overview

The Linux/Unix Agent resource provides information about Universal Agent for UNIX running on a Linux/Unix platform. To run a Linux/Unix task, you need a UNIX Agent installed and running on the target machine.

## Linux/Unix Agent Details

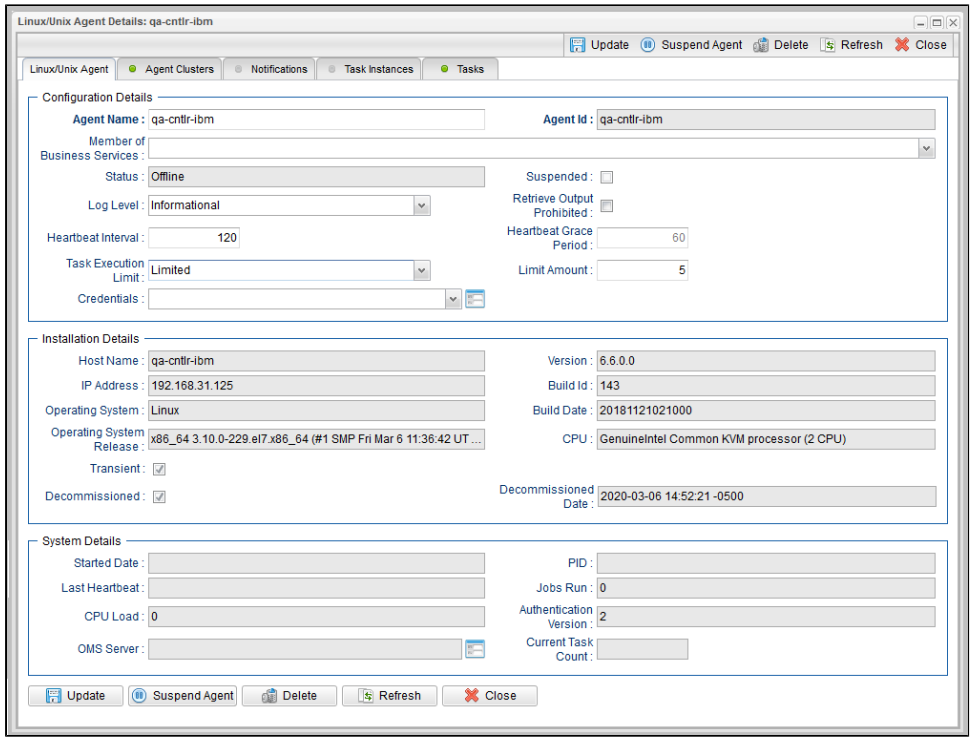
Linux/Unix Agent Details provide the information necessary for the scheduler to locate and communicate with the machine where the Agent resides. Universal Controller creates this record automatically when the Agent connects with the Controller.

To view Linux/Unix Agent Details:

| | |
|---|---|
| **Step 1** | From the Agents & Connections navigation pane, select **Agents > Linux/Unix Agents**. The Linux/Unix Agents list displays a list of connected Linux/Unix Agents.<br><br>Note<br>You also can select **Agents > All Agents** from the **Agents & Connections** navigation pane to display a list of all connected Agents: Linux/Unix, Windows, and z/OS. |

**Step 2**

Click the Details icon next to an Agent Name or click anywhere in the Agent row to display Details for that agent.




Most fields are read-only; however, you can make the following changes:

1. Add a Member of Business Services.
2. Assign Credentials.
3. Change the heartbeat interval. The heartbeat is a status message sent from the Agent to the Controller.
4. Change the Log Level (default is Informational).
5. Select whether or not to apply a Task Execution Limit (and Limit Amount) on the Agent.

You also can choose to temporarily suspend the agent's ability to run tasks.

See the field descriptions, below, for details about all fields in the Linux/Unix Agent Details.

# Linux/Unix Agent Details Field Descriptions

The following table describes the fields, buttons, and tabs in the Linux/Unix Agent Details.

| Field Name | Description |
|---|---|

| | |
|---|---|
| **Configuration Details** | This section contains detailed information about the configuration of the Agent. |
| Agent Name | User-defined during installation; name used within the Controller to identify this Agent. |
| Agent ID | Unique ID for this Agent, created during installation. |
| Member of Business Services | User-defined; allows you to select one or more Business Services that this record belongs to. |
| Status | System-supplied; status of the Agent. |
| Suspended | Indication that the Agent's ability to run tasks has been suspended. |
| Log Level | User-modifiable; level of logging that the Agent will perform.<br><br>Options:<br><br>• Severe Error<br>• Errors<br>• Warning<br>• Informational<br>• Debug<br>• Trace |
| Retrieve Output Prohibited | If enabled, disallows any Retrieve Output request (automatic or manual) from being performed. |
| Heartbeat Interval | User-modifiable; heartbeat interval (in seconds). The heartbeat is a status message sent from the Agent to the Controller.<br><br>If you change the heartbeat interval, it only affects new Agents that are registered after the change. It does not affect the heartbeat interval of existing Agents. |
| Heartbeat Grace Period | User-modifiable; grace period, in seconds, that the Controller will allow for a delayed heartbeat message. |
| Credentials | Credentials under which this Agent runs tasks. These credentials are overridden by any credentials provided in the task definition for any tasks being run by this Agent. |
| Task Execution Limit | Specification for whether a **Limited** or **Unlimited** number of task instances can be run concurrently on the Agent. (Default is **Unlimited**.)<br><br>For purposes of imposing this task execution limit, running task instances are those in any of these statuses: Cancel Pending, Queued, Received, Running, Submitted, and Started. |
| Limit Amount | If #Task Execution Limit = Limited; Number of tasks that can be running at the same time by the Agent. |
| **Installation Details** | This section contains detailed information about the installation of the Agent. |
| Host Name | User-provided during installation; IP address or domain/name of the host machine where the resource resides. |
| IP Address | User-provided during installation; TCP/IP address of the machine where the Agent is running. |
| Operating System | System-supplied; operating system on which the Agent is running. |
| Operating System Release | System-supplied; release information for the operating system on which the Agent is running. |
| Version | System-supplied; version number of the Agent program. |

| | |
|---|---|
| Build ID | System-supplied, provided by the Agent; build ID of the Agent. Internal use only. |
| Build Date | System-supplied, provided by the Agent; date the Agent program was last built. |
| CPU | System-supplied; information about the CPU on the Agent machine. |
| Transient | If checked, the Agent is Transient and will be deleted or decommissioned when the Agent shuts down or goes offline.<br><br>Transient Agents are suspended from any Agent Clusters that they may belong to.<br><br>Note<br>An Agent is transient if it has been identified as transient in the TRANSIENT UAG configuration option. |
| Decommissioned | If checked, the Agent has been decommissioned and is not available for use. An Agent becomes Decommissioned if it is a Transient Agent and has shut down or gone offline and could not be removed/deleted from the system because it is being referenced by a task. |
| Decommissioned Date | Date when the Agent was decommissioned. |
| **System Details** | This section contains detailed information about the Agent system. |
| Started Date | System-supplied; date/timestamp when the Agent was last started. |
| Last Heartbeat | System-supplied; date and time the most recent heartbeat was received from the resource. |
| CPU Load | System-supplied; current CPU load on the Agent machine, expressed as a percentage. For example, 1 means 1% currently utilized. |
| OMS Server | Host name of the OMS Server. |
| PID | System-supplied, provided by the Agent; process ID of the Agent. |
| Jobs Run | Total number of jobs that have been run through the Controller to this Agent. |
| Current Task Count | If #Task Execution Limit = Limited; Current number of tasks currently being run by this Agent.<br><br>(See Resetting the Current Task Count for information on resetting the current task count.) |
| Authentication Version | This value is used by the Controller to determine what level of encryption is to be used for sensitive data between the Agent and the Controller. The most secure method available is used per that agent.<br><br>Options:<br><br>• 1 or unspecified: Legacy authentication prior to Release 6.5.<br>• 2: Release 6.5 and above using AES encryption strategies. |
| **Metadata** | This section contains Metadata information about this record. |
| 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. |

| | |
|---|---|
| **Buttons** | This section identifies the buttons displayed above and below the Agent Details that let you perform various actions. |
| **Update** | Saves updates to the record. |
| **Suspend Agent** | Suspends the Agent's ability to run tasks. |
| **Resume Agent** | Resumes the suspended Agent's ability to run tasks. |
| **Delete** | Deletes the current record. |
| **Refresh** | Refreshes any dynamic data displayed in the Details. |
| **Close** | For pop-up view only; closes the pop-up view of this task. |
| **Tabs** | This section identifies the tabs across the top of the Agent Details that provide access to additional information about the Agent. |
| **Agent Clusters** | Lists all agent clusters that this Agent belongs to. |
| **Notifications** | Lists all notifications that have been defined for this Agent. |
| **Task Instances** | System-supplied; lists all task instances that have run or are ready to run on this Agent since it last started. |
| **Tasks** | System-supplied; lists all tasks that specify this Agent in its Details, and lets you create a new task that specifies this Agent. |

# Windows Agent



## Overview

The Windows Agent resource provides information about Universal Agent for Windows running on a Windows platform. To run a Windows task, you need a Windows Agent installed and running on the target machine.

## Windows Agent Details

Windows Agent Details provides the information necessary for the scheduler to locate and communicate with the machine where the Agent resides. Universal Controller creates this record automatically when the Agent connects with the Controller.

To view Windows Agent Details:

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| **Step 1** | From the Agents & Connections navigation pane, select **Agents > Windows Agents**. The Windows Agents list displays a list of connected Windows Agents.<br><br>Note<br>You also can select **Agents > All Agents** from the **Agents & Connections** navigation pane to display a list of all Agents: Linux/Unix, Windows, and z/OS. |

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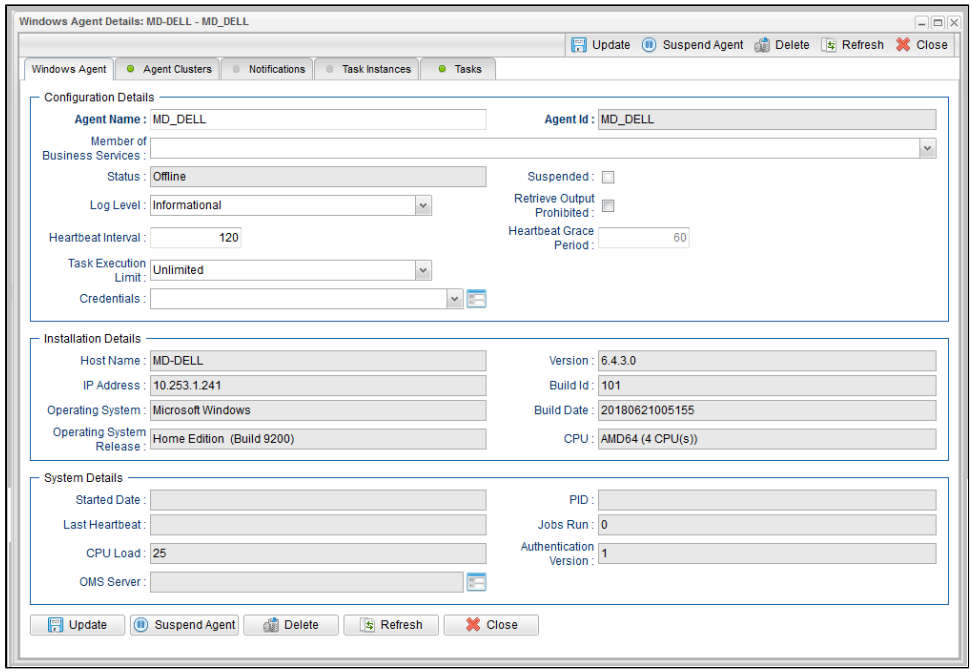
|---|---|
| **Step 2** | Click the Details icon next to an Agent Name or click anywhere in the Agent row to display Details for that agent.<br>  |
| **Step 3** | Most fields are display-only; however, you can make the following changes:<br><br>1. Add a Member of Business Services.<br>2. Assign Credentials.<br>3. Change the heartbeat interval. The heartbeat is a status message sent from the Agent to the Controller.<br>4. Change the Log Level (default is Informational).<br>5. Select whether or not to apply a Task Execution Limit (and Limit Amount) on the Agent.<br><br>You also can choose to temporarily suspend the agent's ability to run tasks.<br><br>See the field descriptions, below, for details about all fields in the Windows Details. |

# Windows Agent Details Field Descriptions

The following table describes the fields, buttons, and tabs in the Windows Agent Details.

| Field Name | Description |
|---|---|
| **Configuration Details** | This section contains detailed information about the configuration of the Agent. |
| Agent Name | User-defined during installation; name used within the Controller to identify this Agent. |

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|---|---|
| Agent ID | Unique ID for this Agent, created during installation. |
| Member of Business Services | User-defined; allows you to select one or more Business Services that this record belongs to. |
| Status | System-supplied; status of the Agent. |
| Suspended | Indication that the Agent's ability to run tasks has been suspended. |
| Log Level | User-modifiable; level of logging that the Agent will perform.<br><br>Options:<br><br>• Severe Error<br>• Errors<br>• Warning<br>• Informational<br>• Debug<br>• Trace |
| Retrieve Output Prohibited | If enabled, disallows any Retrieve Output request (automatic or manual) from being performed. |
| Heartbeat Interval | User-modifiable; heartbeat interval (in seconds). The heartbeat is a status message sent from the Agent to the Controller.<br><br>If you change the heartbeat interval, it only affects new Agents that are registered after the change. It does not affect the heartbeat interval of existing Agents. |
| Heartbeat Grace Period | User-modifiable; grace period, in seconds, that the Controller will allow for a delayed heartbeat message. |
| Credentials | Credentials under which this Agent runs tasks. These credentials are overridden by any credentials provided in the task definition for any tasks being run by this Agent. |
| Task Execution Limit | Specification for whether a **Limited** or **Unlimited** number of task instances can be run concurrently on the Agent. (Default is **Unlimited**.)<br><br>For purposes of imposing this task execution limit, running task instances are those in any of these statuses: Cancel Pending, Queued, Received, Running, Submitted, and Started. |
| Limit Amount | If #Task Execution Limit = Limited; Number of tasks that can be running at the same time by the Agent. |
| **Installation Details** | This section contains detailed information about the installation of the Agent. |
| Host Name | User-provided during installation; IP address or domain/name of the host machine where the resource resides. |
| IP Address | User-provided during installation; TCP/IP address of the machine where the Agent is running. |
| Operating System | System-supplied; operating system on which the Agent is running. |
| Operating System Release | System-supplied; release information for the operating system on which the Agent is running. |
| Version | System-supplied; version number of the Agent program. |
| Build ID | System-supplied, provided by the Agent; build ID of the Agent. Internal use only. |
| Build Date | System-supplied, provided by the Agent; date the Agent program was last built. |
| CPU | System-supplied; information about the CPU on the Agent machine. |

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| **System Details** | This section contains detailed information about the Agent system. |
| Started Date | System-supplied; date/timestamp when the Agent was last started. |
| Last Heartbeat | System-supplied; date and time the most recent heartbeat was received from the resource. |
| CPU Load | System-supplied; current CPU load on the Agent machine, expressed as a percentage. For example, 1 means 1% currently utilized. |
| OMS Server | Host name of the OMS Server. |
| PID | System-supplied, provided by the Agent; process ID of the Agent. |
| Jobs Run | Total number of jobs that have been run through the Controller to this Agent. |
| Current Task Count | If #Task Execution Limit = Limited; Current number of tasks currently being run by this Agent.<br><br>(See Resetting the Current Task Count for information on resetting the current task count.) |
| Authentication Version | This value is used by the Controller to determine what level of encryption is to be used for sensitive data between the Agent and the Controller. The most secure method available is used per that agent.<br><br>Options:<br><br>• 1 or unspecified: Legacy authentication prior to Release 6.5.<br>• 2: Release 6.5 and above using AES encryption strategies. |
| **Metadata** | This section contains Metadata information about this record. |
| 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. |
| **Buttons** | This section identifies the buttons displayed above and below the Agent Details that let you perform various actions. |
| **Update** | Saves updates to the record. |
| **Suspend Agent** | Suspends the Agent's ability to run tasks. |
| **Resume Agent** | Resumes the suspended Agent's ability to run tasks. |
| **Delete** | Deletes the current record. |
| **Refresh** | Refreshes any dynamic data displayed in the Details. |
| **Close** | For pop-up view only; closes the pop-up view of this task. |
| **Tabs** | This section identifies the tabs across the top of the Agent Details that provide access to additional information about the Agent. |
| **Agent Clusters** | Lists all agent clusters that this Agent belongs to. |

| | |
|---|---|
| **Notifications** | Lists all notifications that have been defined for this Agent. |
| **Task Instances** | System-supplied; lists all task instances that have run or are ready to run on this Agent since it last started. |
| **Tasks** | System-supplied; lists all tasks that specify this Agent in its Details, and lets you create a new task that specifies this Agent. |

# zOS Agent



## Overview

The z/OS Agent resource provides information about a Universal Agent for z/OS running on a z/OS platform.

To run a z/OS task, you need a z/OS Agent installed and running on the target machine.

## z/OS Agent Details

z/OS Agent Details provide the information necessary for the scheduler to locate and communicate with the machine where the Agent resides. Universal Controller creates this record automatically when the Agent connects with the Controller.

To view z/OS Agent Details:

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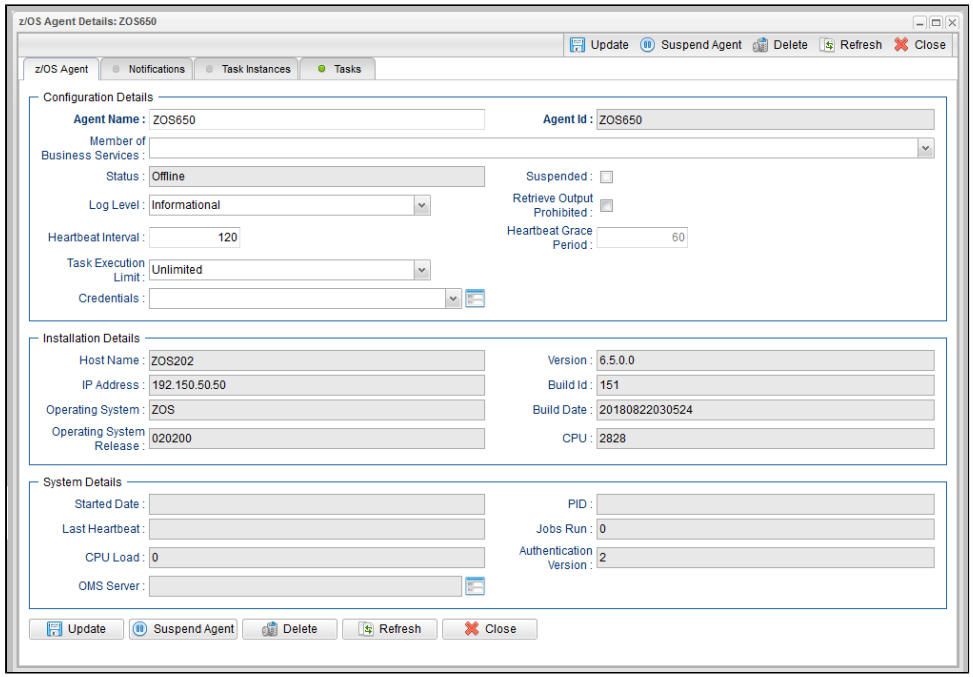
| **Step 1** | From the Agents & Connections navigation pane, select **Agents > z/OS Agents**. The z/OS Agents list displays a list of connected z/OS Agents.<br><br>Note<br>You also can select **Agents > All Agents** from the **Agents & Connections** navigation pane to display a list of all connected Agents: Linux/Unix, Windows, and z/OS. |

**Step 2**

Click the Details icon next to an Agent Name or click anywhere in the Agent row to display Details for that agent.




Most fields are read-only; however, you can make the following changes:

1. Add a Member of Business Services.
2. Assign Credentials.
3. Change the heartbeat interval. The heartbeat is a status message sent from the Agent to the Controller.
4. Change the Log Level (default is Informational).
5. Select whether or not to apply a Task Execution Limit (and Limit Amount) on the Agent.

You also can choose to temporarily suspend the agent's ability to run tasks.

See the field descriptions, below, for details about all fields in the z/OS Agent Details.

# z/OS Agent Details Field Descriptions

The following table describes the fields, buttons, and tabs in the z/OS Agent Details.

| Field Name | Description |
|---|---|
| **Configuration Details** | This section contains detailed information about the configuration of the Agent. |
| Agent Name | User-defined during installation; name used within the Controller to identify this Agent. |

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|---|---|
| Agent ID | Unique ID for this Agent, created during installation. |
| Member of Business Services | User-defined; allows you to select one or more Business Services that this record belongs to. |
| Status | System-supplied; status of the Agent. |
| Suspended | Indication that the Agent's ability to run tasks has been suspended. |
| Log Level | User-modifiable; level of logging that the Agent will perform.<br><br>Options:<br><br>• Severe Error<br>• Errors<br>• Warning<br>• Informational<br>• Debug<br>• Trace |
| Retrieve Output Prohibited | If enabled, disallows any Retrieve Output request (automatic or manual) from being performed. |
| Heartbeat Interval | User-modifiable; heartbeat interval (in seconds). The heartbeat is a status message sent from the Agent to the Controller.<br><br>If you change the heartbeat interval, it only affects new Agents that are registered after the change. It does not affect the heartbeat interval of existing Agents. |
| Heartbeat Grace Period | User-modifiable; grace period, in seconds, that the Controller will allow for a delayed heartbeat message. |
| Credentials | Credentials under which this Agent runs tasks. These credentials are overridden by any credentials provided in the task definition for any tasks being run by this Agent. |
| Task Execution Limit | Specification for whether a **Limited** or **Unlimited** number of task instances can be run concurrently on the Agent. (Default is **Unlimited**.)<br><br>For purposes of imposing this task execution limit, running task instances are those in any of these statuses: Cancel Pending, Queued, Received, Running, Submitted, and Started. |
| Limit Amount | If #Task Execution Limit = Limited; Number of tasks that can be running at the same time by the Agent. |
| **Installation Details** | This section contains detailed information about the installation of the Agent. |
| Host Name | User-provided during installation; IP address or domain/name of the host machine where the resource resides. |
| IP Address | User-provided during installation; TCP/IP address of the machine where the Agent is running. |
| Operating System | System-supplied; operating system on which the Agent is running. |
| Operating System Release | System-supplied; release information for the operating system on which the Agent is running. |
| Version | System-supplied; version number of the Agent program. |
| Build ID | System-supplied, provided by the Agent; build ID of the Agent. Internal use only. |
| Build Date | System-supplied, provided by the Agent; date the Agent program was last built. |
| CPU | System-supplied; information about the CPU on the Agent machine. |

| | |
|---|---|
| **System Details** | This section contains detailed information about the Agent system. |
| Started Date | System-supplied; date/timestamp when the Agent was last started. |
| Last Heartbeat | System-supplied; date and time the most recent heartbeat was received from the resource. |
| CPU Load | System-supplied; current CPU load on the Agent machine, expressed as a percentage. For example, 1 means 1% currently utilized. |
| OMS Server | Host name of the OMS Server. |
| PID | System-supplied, provided by the Agent; process ID of the Agent. |
| Jobs Run | Total number of jobs that have been run through the Controller to this Agent. |
| Current Task Count | If #Task Execution Limit = Limited; Current number of tasks currently being run by this Agent.<br><br>(See Resetting the Current Task Count for information on resetting the current task count.) |
| Authentication Version | This value is used by the Controller to determine what level of encryption is to be used for sensitive data between the Agent and the Controller. The most secure method available is used per that agent.<br><br>Options:<br><br>• 1 or unspecified: Legacy authentication prior to Release 6.5.<br>• 2: Release 6.5 and above using AES encryption strategies. |
| **Metadata** | This section contains Metadata information about this record. |
| 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. |
| **Buttons** | This section identifies the buttons displayed above and below the Agent Details that let you perform various actions. |
| **Save** | Saves a new task record in the Controller database. |
| **Update** | Saves updates to the record. |
| **Suspend Agent** | Suspends the Agent's ability to run tasks. |
| **Resume Agent** | Resumes the suspended Agent's ability to run tasks. |
| **Delete** | Deletes the current record. |
| **Refresh** | Refreshes any dynamic data displayed in the Details. |
| **Close** | For pop-up view only; closes the pop-up view of this task. |
| **Tabs** | This section identifies the tabs across the top of the Agent Details that provide access to additional information about the Agent. |

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|---|---|
| **Agent Clusters** | Lists all agent clusters that this Agent belongs to. |
| **Notifications** | Lists all notifications that have been defined for this Agent. |
| **Task Instances** | System-supplied; lists all task instances that have run or are ready to run on this Agent since it last started. |
| **Tasks** | System-supplied; lists all tasks that specify this Agent in its Details, and lets you create a new task that specifies this Agent. |

# Agent Clusters



## Overview

For Windows and Linux/Unix Agents only, Universal Controller allows you to create clusters (groups) of Agents.

If you specify an agent cluster in a task, the Controller selects an Agent from the cluster based on the selection method that you specified when you created the cluster. If you specify both an Agent and an agent cluster in a task, the Controller first attempts to run the task on the Agent; if the Agent is unavailable, the Controller selects an Agent from the agent cluster.

Note

The instructions and illustrations, below, for creating Windows agent clusters and Linux/Unix agent clusters, and assigning Agents to those clusters, are the same.

## Creating an Agent Cluster

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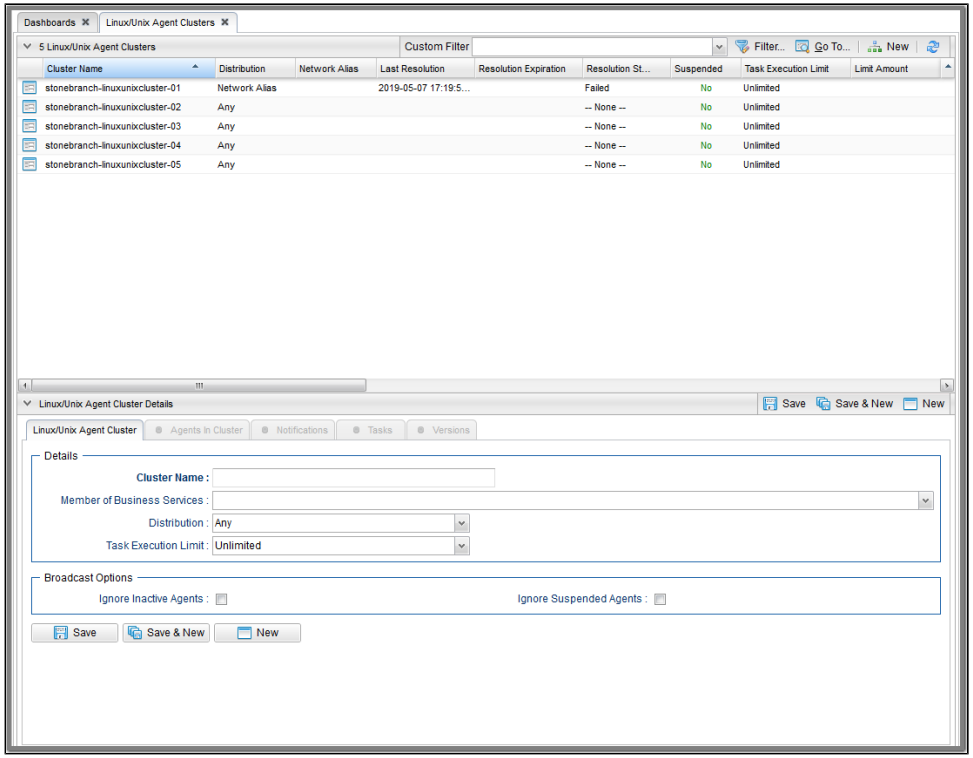
|---|---|
| **Step 1** | From the Agents & Connections navigation pane, select (for example) **Agent Clusters > Linux/Unix Agent Clusters**. The Linux/Unix Clusters List displays.<br><br>Below the list, Agent Cluster Details for a new Agent Cluster displays.<br><br>  |
| **Step 2** | Enter / select Details for a new agent cluster, using the field descriptions below as a guide.<br><br>• Required fields display in **boldface**.<br>• Default values for fields, if available, display automatically.<br><br>To display more of the Details fields on the screen, you can either:<br><br>• Use the scroll bar.<br>• Temporarily hide the list above the Details.<br>• Click the **New** button above the list to display a pop-up version of the Details. |
| **Step 3** | Click a **Save** button. The record is added to the database, and all buttons and tabs in the Agent Cluster Details are enabled. |

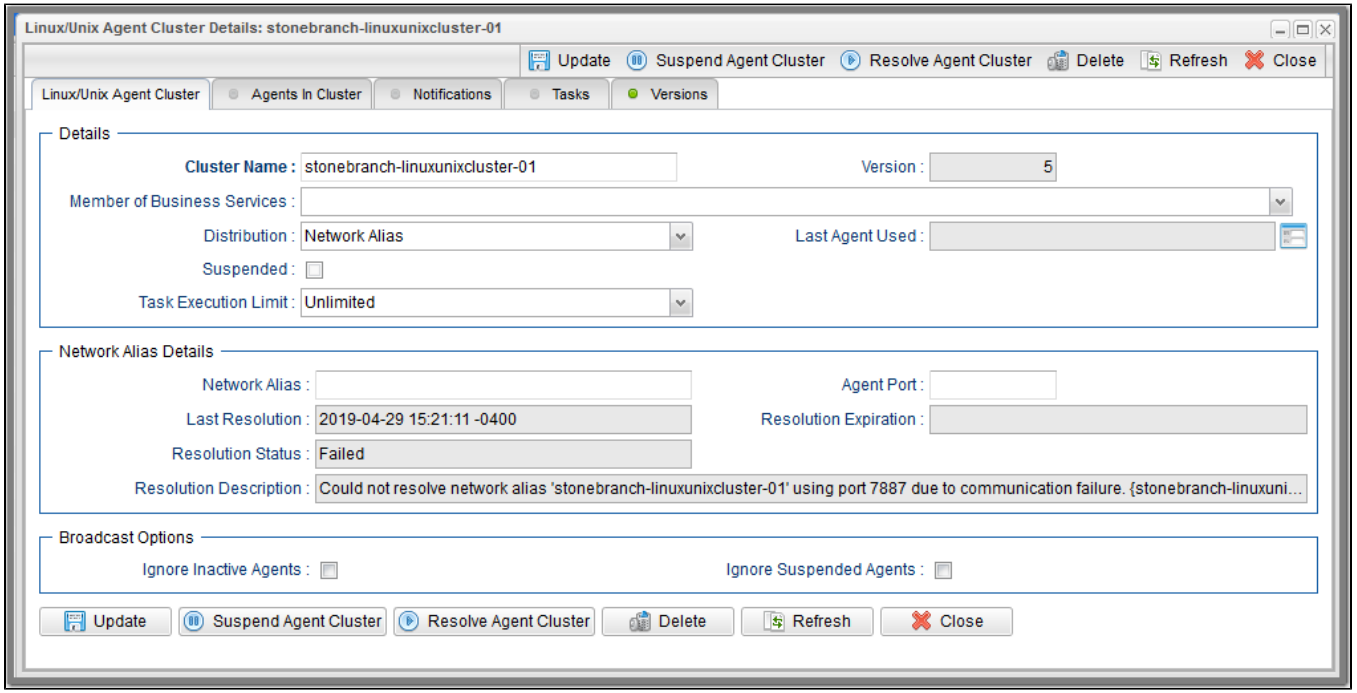
Note

To open an existing record on the list, either:

- Click a record in the list to display its record Details below the list. (To clear record Details below the list, click the **New** button that displays above and below the Details.)
- 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.
- 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).

## Agent Cluster Details

The following Agent Cluster Details is for an existing Linux/Unix agent cluster (with Network Alias specified as the #Distribution method for selecting an Agent). See the field descriptions, below, for a description of all fields that may display in the Agent Cluster Details.




For information on how to access additional details - such as Metadata and complete database Details - for Agent Clusters (or any type of record), see Records.

## Agent Cluster Details Field Descriptions

The following table describes the fields, buttons, and tabs in the Agent Cluster Details.

| Field Name | Description |
|---|---|
| **Details** | This section contains detailed information about the agent cluster. |

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|---|---|
| Cluster Name | Name used within the Controller to identify this agent cluster. Up to 40 alphanumerics. It is the responsibility of the user to develop a workable naming scheme for agent clusters. |
| Version | System-supplied; version number of the current record, which is incremented by the Controller every time a user updates a record. Click the #Versions tab to view previous versions. For details, see Record Versioning. |
| Member of Business Service | User-defined; allows you to select one or more Business Services that this record belongs to. |
| Distribution | Method used to select an Agent.<br><br>Options:<br><br>• **Any** - Select any Agent in the cluster.<br>• **Round Robin** - Select the next Agent in a round robin series.<br>• **Lowest CPU Utilization** - Selects the Agent whose CPU utilization is currently the lowest.<br>• **#Network Alias** - Select the Agent based on either an IP or DNS name for an external Load Balancer, or a Virtual IP address. |
| Last Agent Used | System-supplied; Agent that was selected the last time a task was sent to this agent cluster. |
| Suspended | Indication that the ability for this cluster of Agents to run tasks has been suspended. |
| Current Task Count | If #Task Execution Limit = Limited; Current number of tasks currently being run by the Agents in this agent cluster.<br><br>(See Resetting the Current Task Count for information on resetting the current task count.) |
| Task Execution Limit | Specification for whether a **Limited** or **Unlimited** number of task instances can be run concurrently by the Agents in this agent cluster. (Default is **Unlimited**.)<br><br>For purposes of imposing this task execution limit, running task instances are those in any of these statuses: Cancel Pending, Queued, Received, Running, Submitted, and Started. |
| Limit Amount | If #Task Execution Limit = Limited; Number of tasks that can be running at the same time by the Agents in this agent cluster. |
| **Network Alias Details** | If #Distribution = Network Alias; This section contains information about the #Network Alias. |
| Network Alias | Network alias (or VIP). If a network alias is not specified, the Cluster Name is used as the network alias. |
| Agent Port | Network alias (or VIP) port that the Agent Cluster Agent Broker is listening on. If a port is not specified, the default is the value of the Agent Cluster Network Alias Uquery Port Universal Controller system property. |
| Last Resolution | Last attempted time of Network Alias resolution. |
| Resolution Expiration | Expiration of Network Alias resolution. |
| Resolution Status | Status of the last resolution of the Network Alias. |
| Resolution Description | Description of the last attempted resolution. |
| **Broadcast Options** | This section contains information about Cluster Broadcasts. |
| Ignore Inactive Agents | Specification for whether or not inactive (offline) Agents should be ignored when the agent cluster is used for broadcasting. |
| Ignore Suspended Agents | Specification for whether or not suspended Agents should be ignored when the agent cluster is used for broadcasting. |
| **Metadata** | This section contains Metadata information about this record. |
| 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. |
| **Buttons** | This section identifies the buttons displayed above and below the Agent Cluster Details that let you perform various actions. |
| **Save** | Saves a new task record in the Controller database. |
| **Save & New** | Saves a new Agent Cluster record in the Controller database and redisplays empty Details so that you can create another Agent Cluster. |
| **Save & View** | Saves a new Agent Cluster record in the Controller database and continues to display that record. |
| **New** | Displays empty (except for default values) Details for creating a new record. |
| **Update** | Saves updates to the record. |
| **Suspend Agent Cluster** | Suspends the ability for this cluster of Agents to run tasks. |
| **Resume Agent Cluster** | Resumes the ability for this suspended cluster of Agents to run tasks. |
| **Resolve Agent Cluster** | If #Distribution = Network Alias; Resolves the Network Alias for this Agent Cluster. |
| **Delete** | Deletes the current record. |
| **Refresh** | Refreshes any dynamic data displayed in the Details. |
| **Close** | For pop-up view only; closes the pop-up view of this task. |
| **Tabs** | This section identifies the tabs across the top of the Agent Cluster Details that provide access to additional information about the agent cluster. |
| **Agents in Cluster** | List of Agents assigned to this cluster. |
| **Notifications** | Lists all notifications that have been defined for this agent cluster. |
| **Tasks** | Lists all tasks, according to task type, that currently are being dispatched to this agent cluster.<br><br>You also can create tasks for the identified task types that will have this agent cluster pre-selected in the Agent Cluster field of its Task Details. |

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|---|---|
| **Versions** | Stores copies of all previous versions of the current record. See Record Versioning.<br><br>Note<br><br>Updates to the following fields, whether system-supplied or user-supplied (as appropriate), does not affect the version of the Agent Cluster Details:<br><br>• Current Task Count<br>• Execution Limit<br>• Last Agent Used<br>• Limit Amount<br>• Suspended<br><br>Additionally, if you restore Agent Cluster Details to a previous version, values for those fields are preserved; they do not revert to their values from the selected previous version. |

# Assigning Agents to the Cluster

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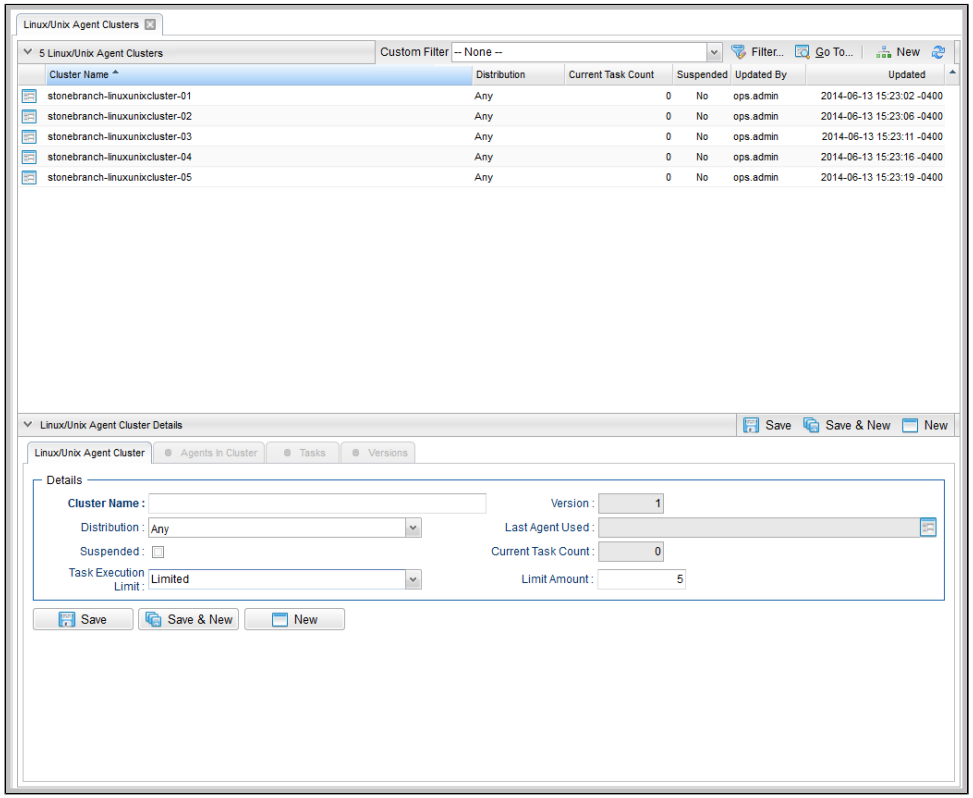
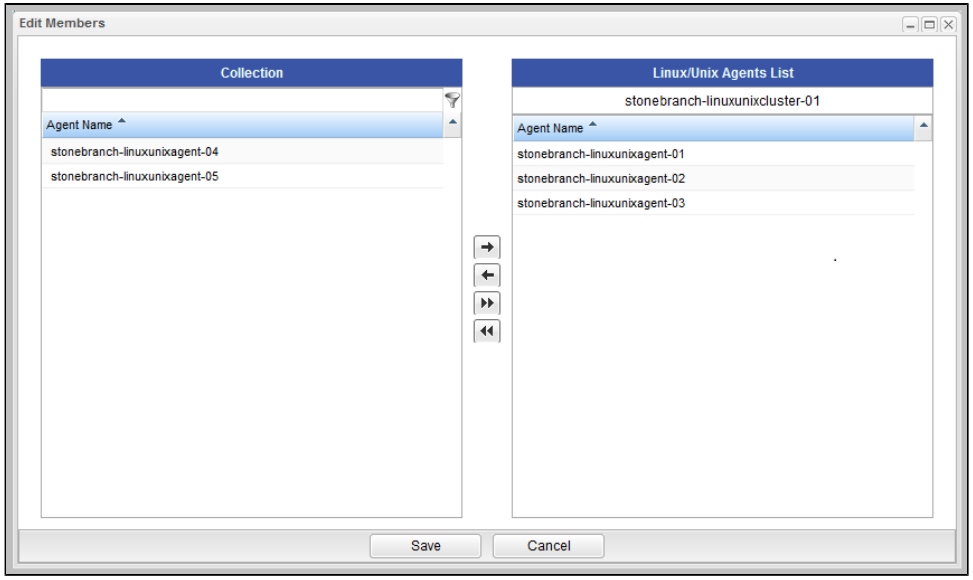
| **Step 1** | On the Linux/Unix Clusters list (for example), click the Cluster Name of the cluster to which you want to assign one or more existing Agents. |
| **Step 2** | Click the **Agents in Cluster** tab to display a list of Agents currently assigned to the cluster.<br><br>  |

| | |
|---|---|
| **Step 3** | Click the **Edit** button. The Edit Members dialog displays:<br>  |
| **Step 4** | The Agents in the Collection window are existing Agents of the current type that do not belong to this cluster. The Agents in the Linux/Unix Agents List window are Agents that belong to this cluster. |
| **Step 5** | To add to or remove Agents from the Linux/Unix Agents List:<br>• To add an Agent, double-click the Agent Name (or click the Agent Name and then click the **->** arrow) in the Collection window.<br>• To remove an Agent from the list, double-click the Agent Name (or click the Agent Name and then click the **<-** arrow) in the Linux/Unix Agents List window. |
| **Step 6** | When you are finished, click **Save**. |

# Suspending Agent Clusters and Agent Cluster Memberships

You can temporarily suspend the ability for an agent cluster to run tasks, and you can temporarily suspend the agent cluster membership of any Agent in an agent cluster.

For information on how to implement these suspensions, see Suspending Agents, Agent Clusters, and Agent Cluster Memberships.

# Sending Notifications on Status of an Agent Cluster

You can configure an Agent Cluster to send a notification via email or SNMP if an available, non-expired Agent in the Agent Cluster goes down (Offline) or then when it comes back up (Active).

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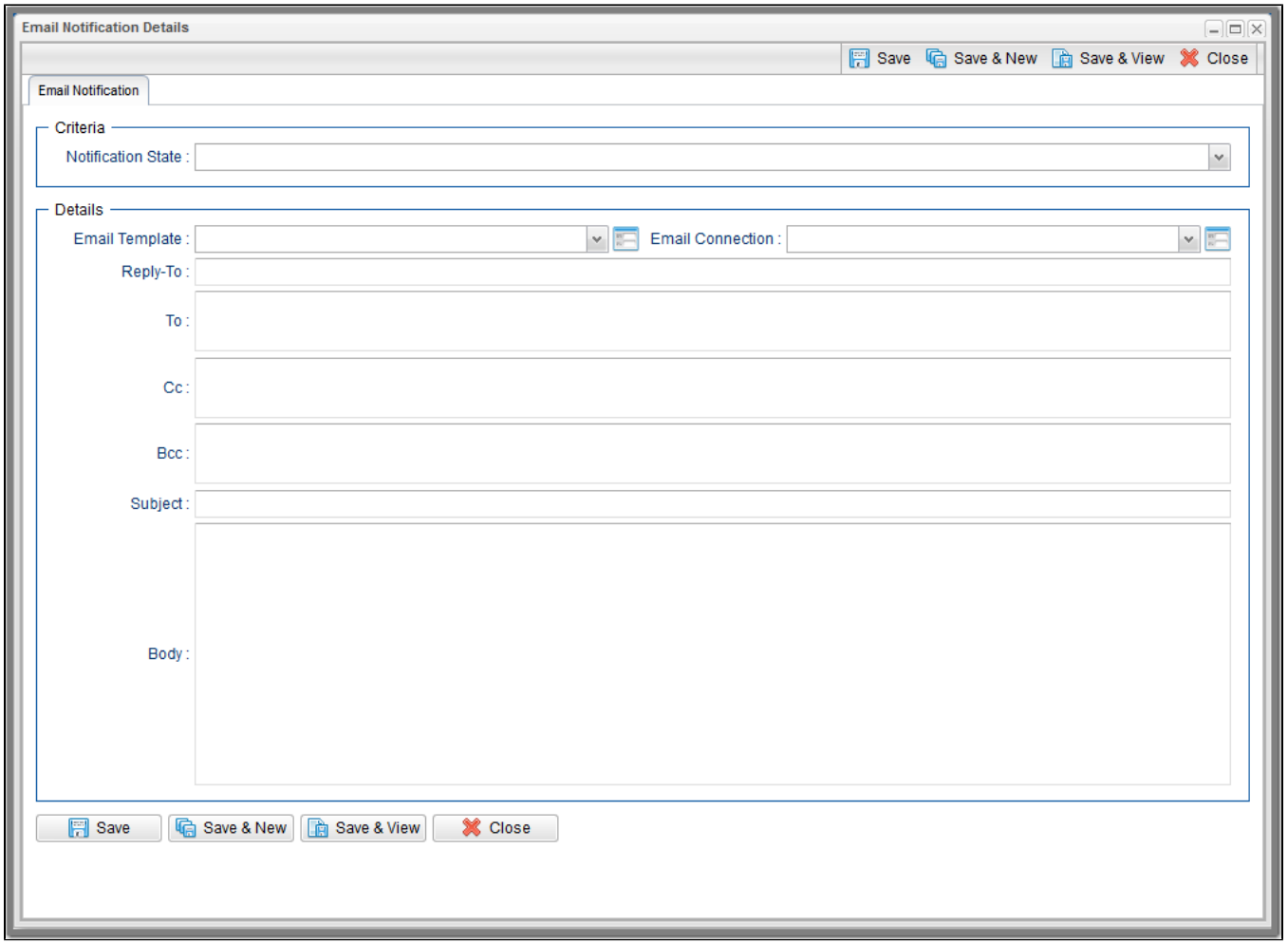
|---|---|
| **Step 1** | From the Agents & Connections navigation pane, select **Agent Clusters ><type of agent cluster>**. An Agent Clusters list displays. |
| **Step 2** | Click the icon next to the **Cluster Name** of an Agent Cluster, or click anywhere in the Agent Cluster row, to display Details about the Agent Cluster. |

| | |
|---|---|
| **Step 3** | Click the **Notifications** tab to display a list of any Email and SNMP notifications configured for the Agent Cluster. |
| **Step 4** | Select the type of notification you want the Agent Cluster to send, and then click **New**. Notification Details for a new Notification displays (See #Email Notification Details and #SNMP Notification Details, below. |
| **Step 5** | Complete the fields as needed (see #Email Notification Details Field Descriptions and #SNMP Notification Details Field Descriptions, below).<br><br>Note<br>Agent built-in variables are available to pass data about the Agent Cluster into the notification. (User-defined variables, including Global variables, are not available for use in Agent Cluster email notifications). |
| **Step 6** | Click the **Save** button to save the record. |

## Email Notification Details




## Email Notification Details Field Descriptions

The following table describes the fields and buttons on Email Notification Details.

| Field Name | Description |
|---|---|
| **Criteria** | This section contains criteria for sending the notification. |

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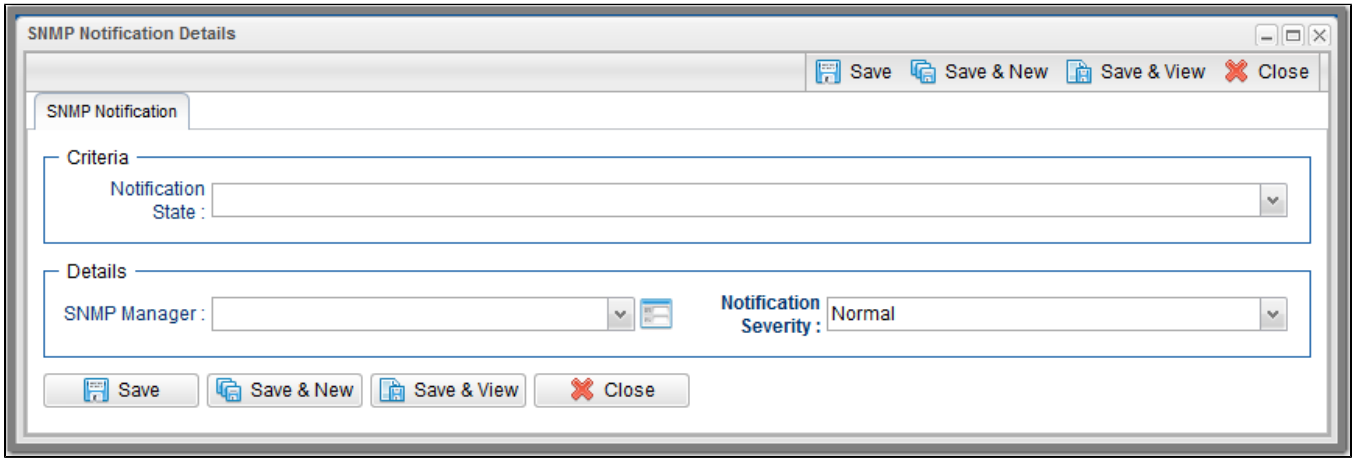
|---|---|
| Notification State | Criteria (one or more states) for which the notification will be delivered:<br>• Agents Unavailable: All Agents in the Agent Cluster are unavailable.<br>• Agents Available: One or more Agents in the Agent Cluster that had no available Agents now are available.<br>• Suspended: Agent Cluster is suspended<br>• Resumed: Agent Cluster suspension has ended. |
| **Details** | This section contains assorted detailed information about the notification. |
| Email Template | Name of an Email template defined in an Email Template Details. An Email template allows you to specify standard recipients and text for outgoing emails. Enter the name of an existing Email template, select an Email template from the drop-down list, or click the Details icon to create a new Email template.<br><br>Every Email template specifies an Email connection. If you do not specify an Email template in this field, you must specify an Email connection in the #Email Connection field.<br><br>If you specify both an Email template (in this field) and an #Email Connection, the Email server specified in the #Email Connection field overrides the Email server specified in this field.<br><br>(Any information specified in an Email task overrides what is specified in an Email template.) |
| Email Connection | Required if an Email Template is not specified in the #Email Template field; Name of an outgoing Email Connection (Type = Outgoing). An Email Connection specifies information about an outgoing or incoming email server. Enter the name of an existing outgoing Email Connection, select an existing outgoing Email Connection from the drop-down list, or clear the Email Connection field and click the Details icon to create a new Email Connection (Outgoing will be pre-selected in the Type field).<br><br>If you specify both an #Email Template and an Email Connection (in this field), the Email Connection specified in this field overrides the Email Connection specified in the #Email Template field. |
| Reply-To | Email address of the sender. Use commas to separate multiple recipients. Variables and functions supported. |
| To | Email address of the recipient. Use commas to separate multiple recipients. Variables and functions supported. |
| CC | Email address of the party being sent a copy of the email, if any. Use commas to separate multiple recipients. Variables and functions supported. |
| BCC | Email address of the party being sent a blind (hidden) copy of the email, if any. Use commas to separate multiple recipients. Variables and functions supported. |
| Subject | Subject line of the email. Variables and functions supported. |
| Body | Text of the email message. Variables and functions supported.<br><br>Note<br>If both the Email Template and the Email Task (or Email Notification) contain text in the Body, the text in the Email Template is appended to the text in the Email Task (or Email Notification). |
| **Buttons** | This section identifies the buttons displayed above and below the Notification Details that let you perform various actions. |
| **Save** | Submits the new record to the database. |
| **Save & New** | Saves a new record in the Controller database and redisplays empty Details so that you can create another new record. |
| **Save & View** | Saves a new record in the Controller database and continues to display that record. |
| **Update** | Saves updates to the record. |
| **Delete** | Deletes the current record. |
| **Refresh** | Refreshes any dynamic data displayed in the Details. |

| | |
|---|---|
| **Close** | For pop-up view only; closes the pop-up view of this notification. |

## SNMP Notification Details




## SNMP Notification Details Field Descriptions

The following table describes the fields and buttons on SNMP Notification Details.

| Field Name | Description |
|---|---|
| **Criteria** | This section contains criteria for sending the notification. |
| Notification State | Criteria (one or more states) for which the notification will be delivered:<br>• Agents Unavailable: All Agents in the Agent Cluster are unavailable.<br>• Agents Available: One or more Agents in the Agent Cluster that had no available Agents now are available.<br>• Suspended: Agent Cluster is suspended<br>• Resumed: Agent Cluster suspension has ended. |
| **Details** | This section contains assorted detailed information about the notification. |
| SNMP Manager | The SNMP Manager that will receive the SNMP notification. Enter the name of an existing SNMP Manager, select an existing SNMP Manager from the drop-down list, or clear the SNMP Manager field and click the Details icon to create a new SNMP Manager. |

| | |
|---|---|
| Notification Severity | Severity of this notification.<br><br>Options:<br><br>• Normal (1)<br>• Warning (2)<br>• Minor (3)<br>• Major (4)<br>• Critical (5) |
| **Buttons** | This section identifies the buttons displayed above and below the Notification Details that let you perform various actions. |
| **Save** | Submits the new record to the database. |
| **Save & New** | Saves a new record in the Controller database and redisplays empty Details so that you can create another new record. |
| **Save & View** | Saves a new record in the Controller database and continues to display that record. |
| **Update** | Saves updates to the record. |
| **Delete** | Deletes the current record. |
| **Refresh** | Refreshes any dynamic data displayed in the Details. |
| **Close** | For pop-up view only; closes the pop-up view of this notification. |

# Network Alias

The Network Alias Distribution accepts an IP address or DNS name of an External Load Balancer, such as an F5, or a Virtual IP address. When it has been specified, the Universal Controller performs a periodic query to the alias to determine the Universal Agent Qname to use for running workloads.

The system administrator (ops_admin) role will be able to specify a cache retention time as a system property, meaning that a previously resolved and looked up UA Qname may, optionally, be reused for a specified period. This negates the need to perform the query lookup for every task that is launched. The cache retention will be specified in minutes via the Agent Cluster Network Alias Cache Retention In Minutes Universal Controller system property.

# OMS Servers



## Introduction

OMS (Universal Message Service) Servers are the network communication providers between Universal Controller 6.7.x and Universal Agent 6.7.x.

## Creating OMS Server Records

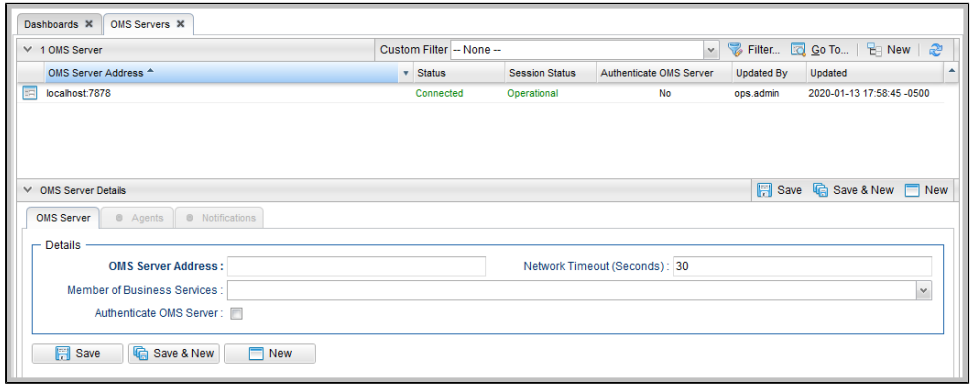
You must create a record for each OMS Server and OMS HA cluster (two or more OMS Servers in an HA / High Availability environment) that will be used as the network communications provider between the Controller and Agents.

Do not create individual records for each member (OMS Server) of an OMS HA cluster. You must define an OMS HA cluster as a single record, with the #OMS Server Address containing a comma-separated list of each OMS Server in the cluster.

**Step 1**

From the Agents & Connections navigation pane, select **System > OMS Servers**. The OMS Servers list displays.

Below the list, OMS Server Details for a new OMS Server record displays.



| | |
|---|---|
| **Step 2** | Enter / select Details for a new OMS Server, using the field descriptions below as a guide.<br><br>• Required fields display in **boldface**.<br>• Default values for fields, if available, display automatically.<br><br>To display more of the Details fields on the screen, you can either:<br><br>• Use the scroll bar.<br>• Temporarily hide the list above the Details.<br>• Click the **New** button above the list to display a pop-up version of the Details. |
| **Step 3** | Click a **Save** button. The OMS Server record is added to the database, and all buttons and tabs in the OMS Server Details are enabled. |

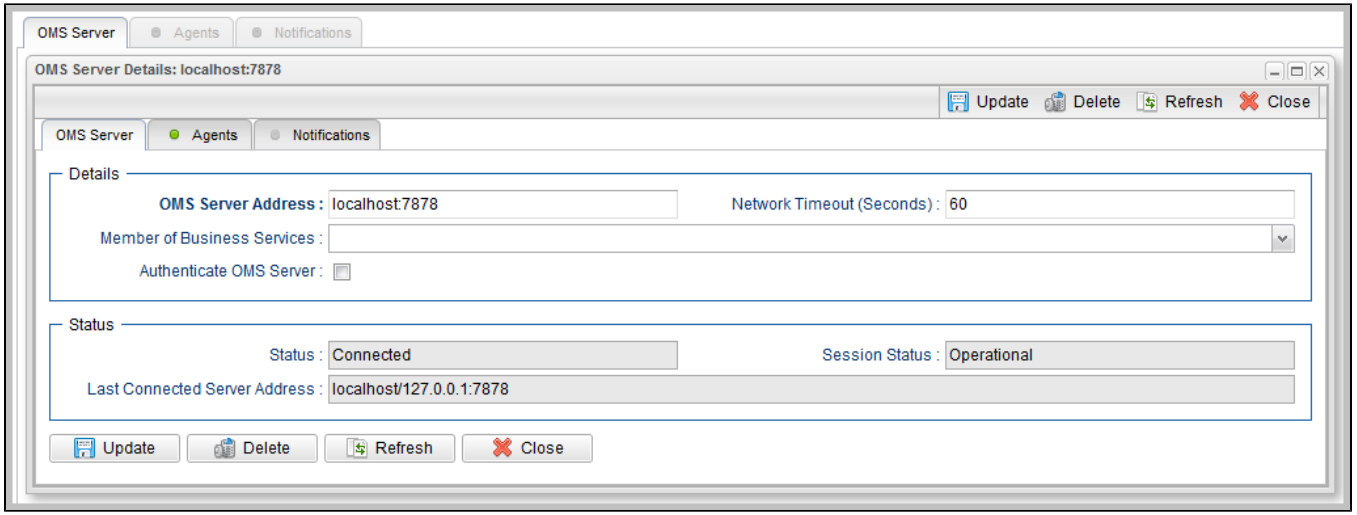
Note

To open an existing record on the list, either:

- Click a record in the list to display its record Details below the list. (To clear record Details below the list, click the **New** button that displays above and below the Details.)
- 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.
- 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).

## OMS Server Details

The following OMS Server Details is for an existing OMS Server. See the field descriptions, below, for a description of all fields that display in the OMS Server Details.




For information on how to access additional details - such as Metadata and complete database Details - for OMS Servers (or any type of record), see Records.

## OMS Server Details Field Descriptions

The following table describes the fields, buttons, and tabs that display in the OMS Server Details.

| Field Name | Description |
|---|---|
| **Details** | This section contains detailed information about the OMS Server. |
| OMS Server Address | IP address or host name of an OMS Server, or a comma-separated list of OMS Servers configured as an OMS Server cluster. |
| Network Timeout (Seconds) | Network socket time-out value used for TCP/IP receive and connect operations. |
| Member of Business Services | User-defined; allows you to select one or more Business Services that this record belongs to.<br><br>If the Business Service Visibility Restricted Universal Controller system property is set to true, depending on your assigned (or inherited) Permissions or Roles, Business Services available for selection may be restricted. |
| Authenticate OMS Server | If enabled, the Controller authenticates the OMS server digital certificate. |
| **Status** | This section contains detailed information about the status of the OMS Server.<br><br>(This section does not display if you are creating a new OMS Server record.) |
| Status | Current status of the OMS server: Connected or Disconnected. |
| Session Status | Current status of the OMS server messaging sessions: heartbeat, input, and output sessions.<br><br>Options:<br><br>• **Operational** - All OMS Server messaging sessions are operational.<br>• **Impaired** - Ability of OMS clients to produce and/or consume messages is impaired.<br>• **None** - OMS Server is disconnected. |
| Last Connected Server Address | OMS Server, in a High Availability environment of multiple cluster nodes, that is connected to the Controller or was last connected to the Controller. |
| **Metadata** | This section contains Metadata information about this record. |
| 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. |
| **Buttons** | This section identifies the buttons displayed above and below the OMS Server Details that let you perform various actions. |
| **Save** | Saves a new record in the Controller database. |
| **Save & New** | Saves a new OMS Server record in the Controller database and redisplays empty Details so that you can create another new record. |
| **Save & View** | Saves a new OMS Server record in the Controller database and continues to display that record. |
| **New** | Displays empty (except for default values) Details for creating a new record. |

| | |
|---|---|
| **Update** | Saves updates to the record. |
| **Delete** | Deletes the current record. |
| **Refresh** | Refreshes any dynamic data displayed in the Details. |
| **Close** | For pop-up view only; closes the pop-up view of this record. |
| **Tabs** | This section identifies the tabs across the top of the OMS Server Details that provide access to additional information about the OMS Server. |
| **Agents** | Lists all Agents for which this OMS Server is the network communication provider between the Controller. |
| **Notifications** | Lists all notifications that have been defined for this OMS Server. |

# Starting and Stopping OMS

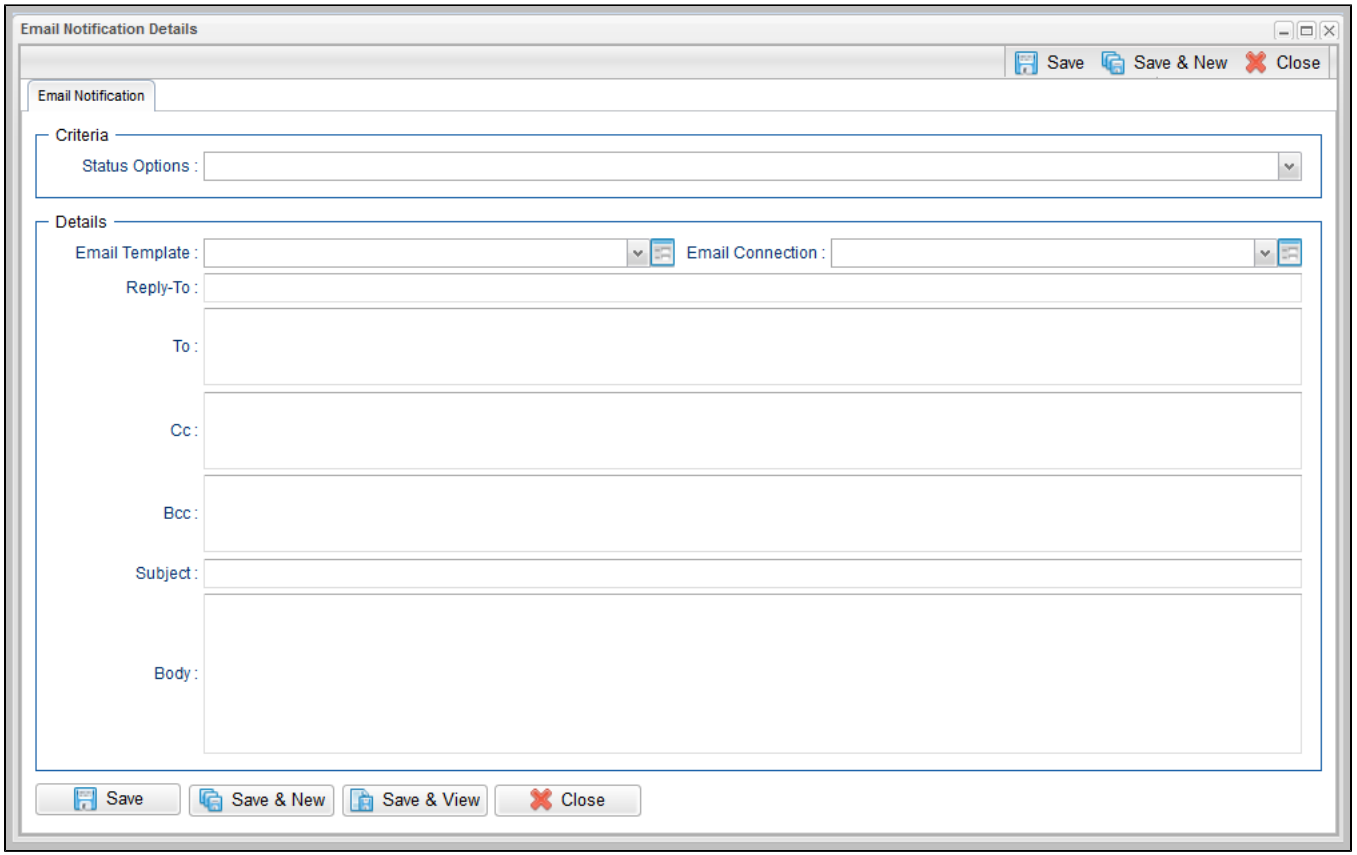
For instructions on starting and stopping OMS Servers, see Starting and Stopping Agent Components.

# Sending Notifications on Status of an OMS Server

You can configure OMS Servers to send a notification via email or SNMP if that OMS Server status changes from Connected to Disconnected or Disconnected to Connected.

| | |
|---|---|
| **Step 1** | From the **Agents and Connections** navigation pane, select **System > OMS Servers**. The OMS Servers list displays. |
| **Step 2** | Open the record of an OMS Server on the list. |
| **Step 3** | Click the **Notifications** tab to display a list of any Email and SNMP notifications configured for the OMS Server. |
| **Step 4** | Select the type of notification you want the OMS Server to send, and then click **New**. Notification Details for a new Notification displays (See #Email Notification Details and #SNMP Notification Details, below. |
| **Step 5** | Complete the fields as needed (see #Email Notification Details Field Descriptions and #SNMP Notification Details Field Descriptions, below).<br><br>Note<br>OMS built-in variables are available to pass data about the OMS Server into the notification. (User-defined variables, including Global variables, are not available for use in OMS Server email notifications.) |
| **Step 6** | Click the **Save** button to save the record. |

## Email Notification Details




## Email Notification Details Field Descriptions

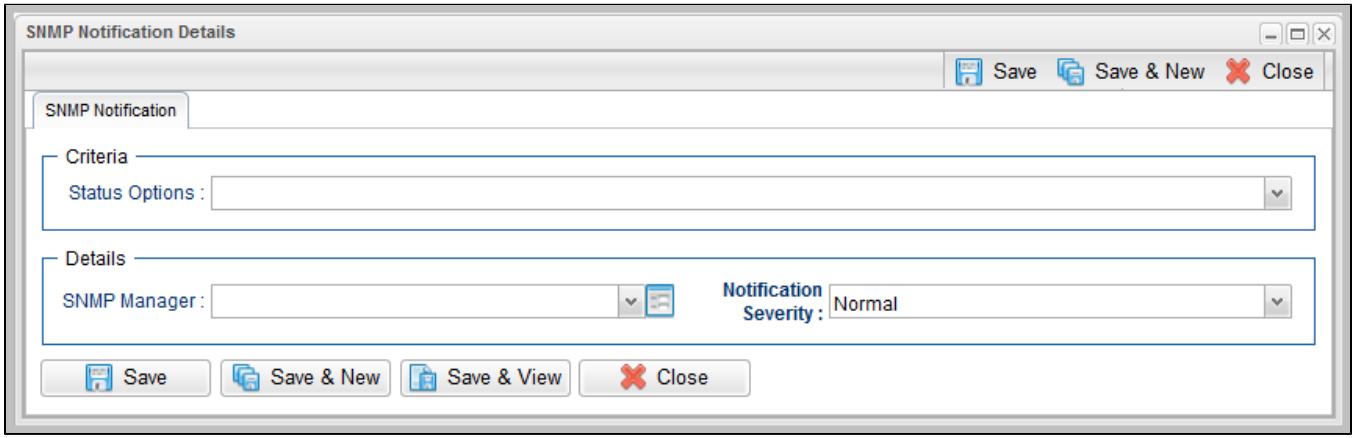
The following table describes the fields and buttons on Email Notification Details.

| Field Name | Description |
|---|---|
| **Criteria** | This section contains criteria for sending the notification. |

| | |
|---|---|
| Status Options | • Disconnected = Trigger the notification when the OMS Server is connected.<br>• Connected = Trigger the notification when the OMS Server is connected.<br><br>Note<br>⚠<br>• If you select Disconnected, and the OMS Server status is Connected but the session status becomes Impaired, the notification will qualify and be sent.<br>• If you select Connected, and the OMS Server recovers from an Impaired session status, the notification will qualify and be sent. |
| **Details** | This section contains assorted detailed information about the notification. |
| Email Template | Name of an Email template defined in an Email Template Details. An Email template allows you to specify standard recipients and text for outgoing emails. Enter the name of an existing Email template, select an Email template from the drop-down list, or click the Details icon to create a new Email template.<br><br>Every Email template specifies an Email connection. If you do not specify an Email template in this field, you must specify an Email connection in the #Email Connection field.<br><br>If you specify both an Email template (in this field) and an #Email Connection, the Email server specified in the #Email Connection field overrides the Email server specified in this field.<br><br>(Any information specified in an Email task overrides what is specified in an Email template.) |
| Email Connection | Required if an Email Template is not specified in the #Email Template field; Name of an outgoing Email Connection (Type = Outgoing). An Email Connection specifies information about an outgoing or incoming email server. Enter the name of an existing outgoing Email Connection, select an existing outgoing Email Connection from the drop-down list, or clear the Email Connection field and click the Details icon to create a new Email Connection (Outgoing will be pre-selected in the Type field).<br><br>If you specify both an #Email Template and an Email Connection (in this field), the Email Connection specified in this field overrides the Email Connection specified in the #Email Template field. |
| Reply-To | Email address of the sender. Use commas to separate multiple recipients. Variables and functions supported. |
| To | Email address of the recipient. Use commas to separate multiple recipients. Variables and functions supported. |
| CC | Email address of the party being sent a copy of the email, if any. Use commas to separate multiple recipients. Variables and functions supported. |
| BCC | Email address of the party being sent a blind (hidden) copy of the email, if any. Use commas to separate multiple recipients. Variables and functions supported. |
| Subject | Subject line of the email. Variables and functions supported. |
| Body | Text of the email message. Variables and functions supported.<br><br>Note<br>⚠<br>If both the Email Template and the Email Task (or Email Notification) contain text in the Body, the text in the Email Template is appended to the text in the Email Task (or Email Notification). |
| **Buttons** | This section identifies the buttons displayed above and below the Notification Details that let you perform various actions. |
| **Save** | Submits the new record to the database. |
| **Save & New** | Saves a new record in the Controller database and redisplays empty Details so that you can create another new record. |
| **Update** | Saves updates to the record. |
| **Delete** | Deletes the current record. |
| **Refresh** | Refreshes any dynamic data displayed in the Details. |

| | |
|---|---|
| **Close** | For pop-up view only; closes the pop-up view of this notification. |

## SNMP Notification Details




## SNMP Notification Details Field Descriptions

The following table describes the fields and buttons on SNMP Notification Details.

| Field Name | Description |
|---|---|
| **Criteria** | This section contains criteria for sending the notification. |
| Status Options | • Disconnected = Trigger the notification when the OMS Server is connected.<br>• Connected = Trigger the notification when the OMS Server is connected.<br><br>Note<br>⚠<br>• If you select Disconnected, and the OMS Server status is Connected but the session status becomes Impaired, the notification will qualify and be sent.<br>• If you select Connected, and the OMS Server recovers from an Impaired session status, the notification will qualify and be sent. |
| **Details** | This section contains assorted detailed information about the notification. |
| SNMP Manager | The SNMP Manager that will receive the SNMP notification. Enter the name of an existing SNMP Manager, select an existing SNMP Manager from the drop-down list, or clear the SNMP Manager field and click the Details icon to create a new SNMP Manager. |

| | |
|---|---|
| Notification Severity | Severity of this notification.<br><br>Options:<br><br>• Normal (1)<br>• Warning (2)<br>• Minor (3)<br>• Major (4)<br>• Critical (5) |
| **Buttons** | This section identifies the buttons displayed above and below the Notification Details that let you perform various actions. |
| **Save** | Submits the new record to the database. |
| **Save & New** | Saves a new record in the Controller database and redisplays empty Details so that you can create another new record. |
| **Update** | Saves updates to the record. |
| **Delete** | Deletes the current record. |
| **Refresh** | Refreshes any dynamic data displayed in the Details. |
| **Close** | For pop-up view only; closes the pop-up view of this notification. |

# Cluster Nodes



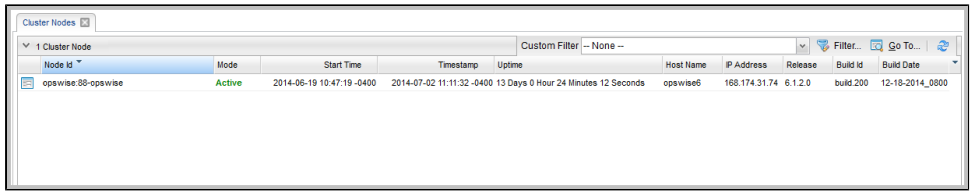
## Introduction

Cluster Nodes are Universal Controller instances in a Universal Automation Center system.

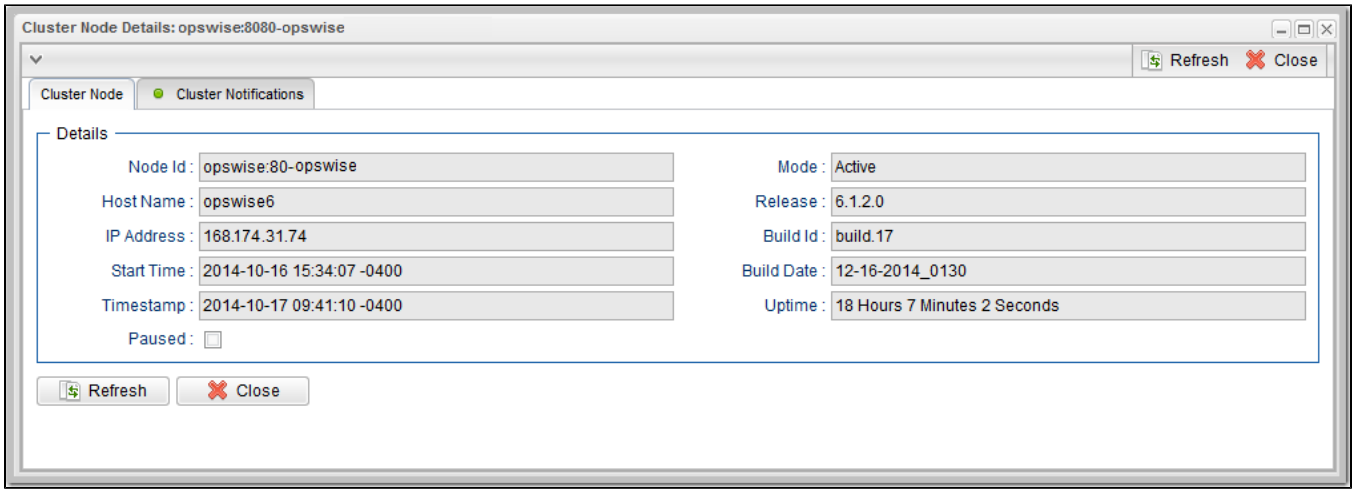
Universal Automation Center contains more than one cluster node only if it is operating in a High Availability environment.

## Displaying Information About Cluster Nodes

When you start a cluster node for the first time, the Controller automatically creates a database record for that cluster node. You can view these records for details and status information.

| | |
|---|---|
| **Step 1** | From the Agents & Connections navigation pane, select **System > Cluster Nodes**. The Cluster Nodes list displays:   |
| **Step 2** | To display the Details for a cluster node on the list, click the Details icon next to the **Node Id** of the OMS Server, or click anywhere in the OMS Server row. |

### Cluster Node Details




For information on how to access additional details - such as Metadata and complete database Details - for Cluster Nodes (or any type of record), see Records.

## Cluster Node Details Field Descriptions

The following table describes the fields on the Cluster Nodes Details

| Field Name | Description |
|---|---|
| **Details** | This section contains detailed information about the cluster node. |
| Node ID | hostname:port-database_name of the cluster node. |
| Mode | Current mode of the cluster node:<br>• **Active**: Cluster node processes events and messages and interfaces with the database. It is the active node for automated operations. \\<br>• **Passive**: Cluster node is running but is not connected to its OMS Server. It performs the following tasks:<br>  • Accepts HTTP requests for data. It can access the database, generate reports, monitor and display data.<br>  • Does not process any events or messages.<br>  • Takes over as Active node if it determines that the Active node is not running.<br>• **Offline**: Cluster node is not running.<br>(See Passive Cluster Node Restrictions for further information on Passive cluster node capabilities.) |
| Host Name | User-provided during installation; IP address or domain/name of the host machine where the resource resides. |
| Release | System-supplied; release number for this node. Support purposes only. |
| IP Address | System-supplied; IP address of this node. |
| Build ID | System-supplied; build ID for this node. Support purposes only. |

| | |
|---|---|
| Start Time | System-supplied; date and time this node was last started. |
| Build Date | System-supplied; build date for this node. Support purposes only. |
| Timestamp | System-supplied; date and time of this node's last heartbeat. |
| Uptime | System-supplied; amount of time this node has been running. |
| Paused | Indication that the Controller has been paused. |
| **Metadata** | This section contains Metadata information about this record. |
| 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. |
| **Buttons** | This section identifies the buttons displayed above and below the Cluster Node Details that let you perform various actions. |
| **Refresh** | Refreshes any dynamic data displayed in the Details. |
| **Tabs** | This section identifies the tabs across the top of the Cluster Node Details that provide access to additional information about the cluster node. |
| **Cluster Notifications** | Lists all notifications that have been defined for this cluster node. |

# Starting/Stopping Cluster Nodes

For instructions on starting and stopping cluster nodes, see Starting and Stopping Universal Controller.

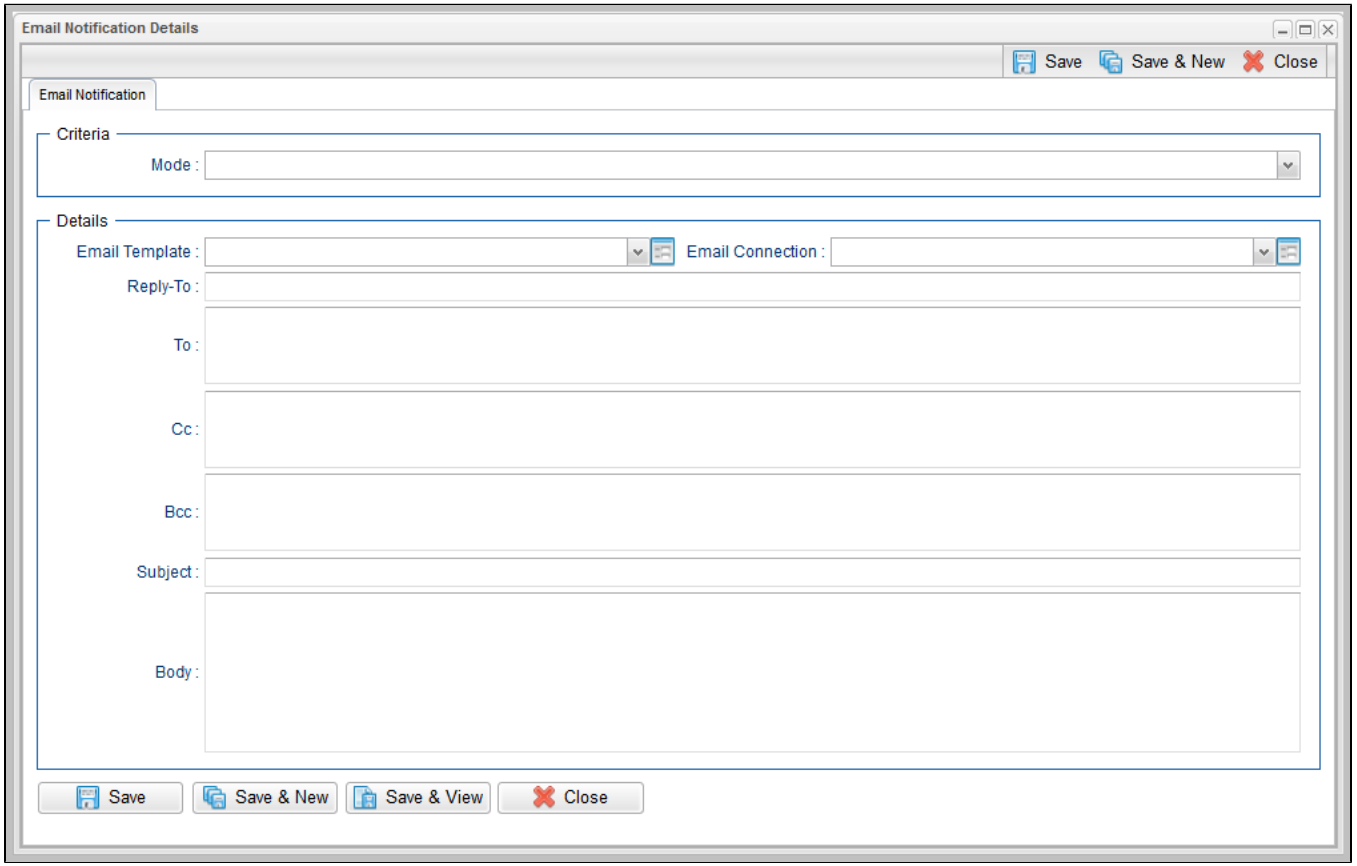
# Sending Notifications on Status of a Cluster Node

You can configure Cluster Nodes to send a notification via email or SNMP when the resource goes Offline or becomes Active.

| | |
|---|---|
| **Step 1** | From the **Agents and Connections** navigation pane, select **System > Cluster Nodes**. The Cluster Nodes list displays. |
| **Step 2** | Click the Details icon next to the **Node ID** of a Cluster Node, or click anywhere in the Cluster Node row, to display Details about the Cluster Node. |
| **Step 3** | Click the **Cluster Notifications** tab to display a list of any Email and SNMP notifications configured for the Cluster Node. |
| **Step 4** | Select the type of notification you want the Cluster Node to send, and then click **New**. Notification Details for a new Notification displays (see Email Notification Details and SNMP Notification Details, below). |

| | |
|---|---|
| **Step 5** | Complete the fields as needed (see Email Notification Details Field Descriptions and SNMP Notification Details Field Descriptions, below).<br><br>Note<br>Cluster Node built-in variables are available to pass data about the Cluster Node into the notification. (User-defined variables, including Global variables, are not available for use in Cluster Node email notifications). |
| **Step 6** | Click a **Save** button to save the record. |

## Email Notification Details



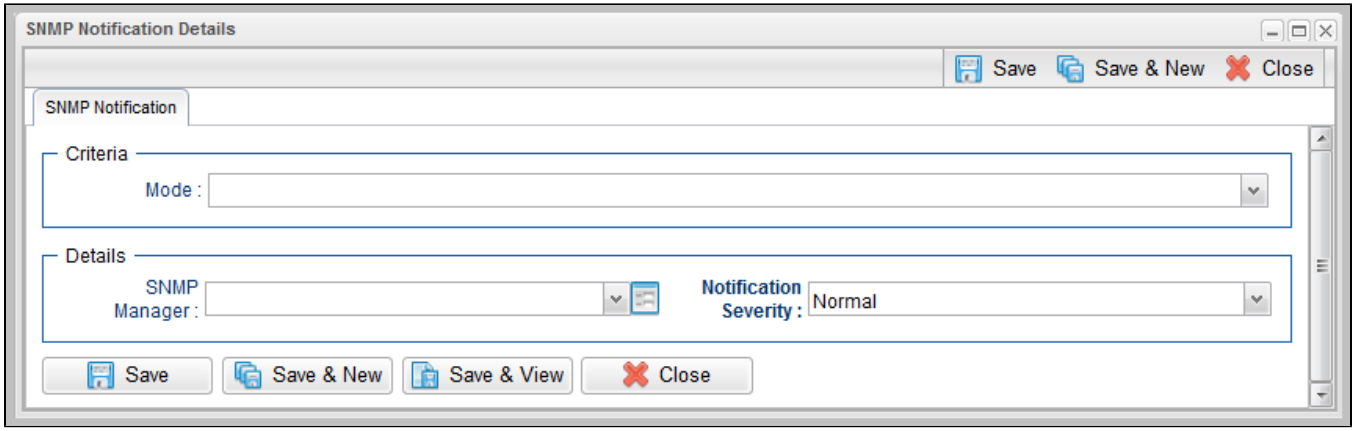

## Email Notification Details Field Descriptions

The following table describes the fields and buttons on Email Notification Details.

| Field Name | Description |
|---|---|
| **Criteria** | This section contains criteria for sending the notification. |
| Mode | Options:<br>• Offline = Trigger the notification when the cluster node goes offline.<br>• Active = Trigger the notification when the cluster node becomes active.<br>• Passive = Trigger the notification when the cluster node becomes passive. |
| **Details** | This section contains assorted detailed information about the notification. |
| Email Template | Name of an Email template defined in an Email Template Details. An Email template allows you to specify standard recipients and text for outgoing emails. Enter the name of an existing Email template, select an Email template from the drop-down list, or click the Details icon to create a new Email template.<br><br>Every Email template specifies an Email connection. If you do not specify an Email template in this field, you must specify an Email connection in the #Email Connection field.<br><br>If you specify both an Email template (in this field) and an #Email Connection, the Email server specified in the #Email Connection field overrides the Email server specified in this field.<br><br>(Any information specified in an Email task overrides what is specified in an Email template.) |
| Email Connection | Required if an Email Template is not specified in the #Email Template field; Name of an outgoing Email Connection (Type = Outgoing). An Email Connection specifies information about an outgoing or incoming email server. Enter the name of an existing outgoing Email Connection, select an existing outgoing Email Connection from the drop-down list, or clear the Email Connection field and click the Details icon to create a new Email Connection (Outgoing will be pre-selected in the Type field).<br><br>If you specify both an #Email Template and an Email Connection (in this field), the Email Connection specified in this field overrides the Email Connection specified in the #Email Template field. |
| Reply-To | Email address of the sender. Use commas to separate multiple recipients. Variables and functions supported. |
| To | Email address of the recipient. Use commas to separate multiple recipients. Variables and functions supported. |
| CC | Email address of the party being sent a copy of the email, if any. Use commas to separate multiple recipients. Variables and functions supported. |
| BCC | Email address of the party being sent a blind (hidden) copy of the email, if any. Use commas to separate multiple recipients. Variables and functions supported. |
| Subject | Subject line of the email. Variables and functions supported. |
| Body | Text of the email message. Variables and functions supported.<br><br>Note<br>If both the Email Template and the Email Task (or Email Notification) contain text in the Body, the text in the Email Template is appended to the text in the Email Task (or Email Notification). |
| **Buttons** | This section identifies the buttons displayed above and below the Notification Details that let you perform various actions. |
| **Save** | Submits the new record to the database. |
| **Save & New** | Saves a new record in the Controller database and redisplays empty Details so that you can create another new record. |
| **Save & View** | Saves a new record in the Controller database and continues to display that record. |
| **Update** | Saves updates to the record. |

| | |
|---|---|
| **Delete** | Deletes the current record. |
| **Refresh** | Refreshes any dynamic data displayed in the Details. |
| **Close** | For pop-up view only; closes the pop-up view of this notification. |

## SNMP Notification Details




## SNMP Notification Details Field Descriptions

The following table describes the fields and buttons on SNMP Notification Details.

| Field Name | Description |
|---|---|
| **Criteria** | This section contains criteria for sending the notification. |
| Mode | Options:<br>• Offline = Trigger the notification when the cluster node goes offline.<br>• Active = Trigger the notification when the cluster node becomes active.<br>• Passive = Trigger the notification when the cluster node becomes passive. |
| **Details** | This section contains assorted detailed information about the notification. |
| SNMP Manager | The SNMP Manager that will receive the SNMP notification. Enter the name of an existing SNMP Manager, select an existing SNMP Manager from the drop-down list, or clear the SNMP Manager field and click the Details icon to create a new SNMP Manager. |

| | |
|---|---|
| Notification Severity | Severity of this notification.<br><br>Options:<br><br>• Normal (1)<br>• Warning (2)<br>• Minor (3)<br>• Major (4)<br>• Critical (5) |
| **Buttons** | This section identifies the buttons displayed above and below the Notification Details that let you perform various actions. |
| **Save** | Submits the new record to the database. |
| **Save & New** | Saves a new record in the Controller database and redisplays empty Details so that you can create another new record. |
| **Save & View** | Saves a new record in the Controller database and continues to display that record. |
| **Update** | Saves updates to the record. |
| **Delete** | Deletes the current record. |
| **Refresh** | Refreshes any dynamic data displayed in the Details. |
| **Close** | For pop-up view only; closes the pop-up view of this notification. |

# Virtual Resources



## Overview

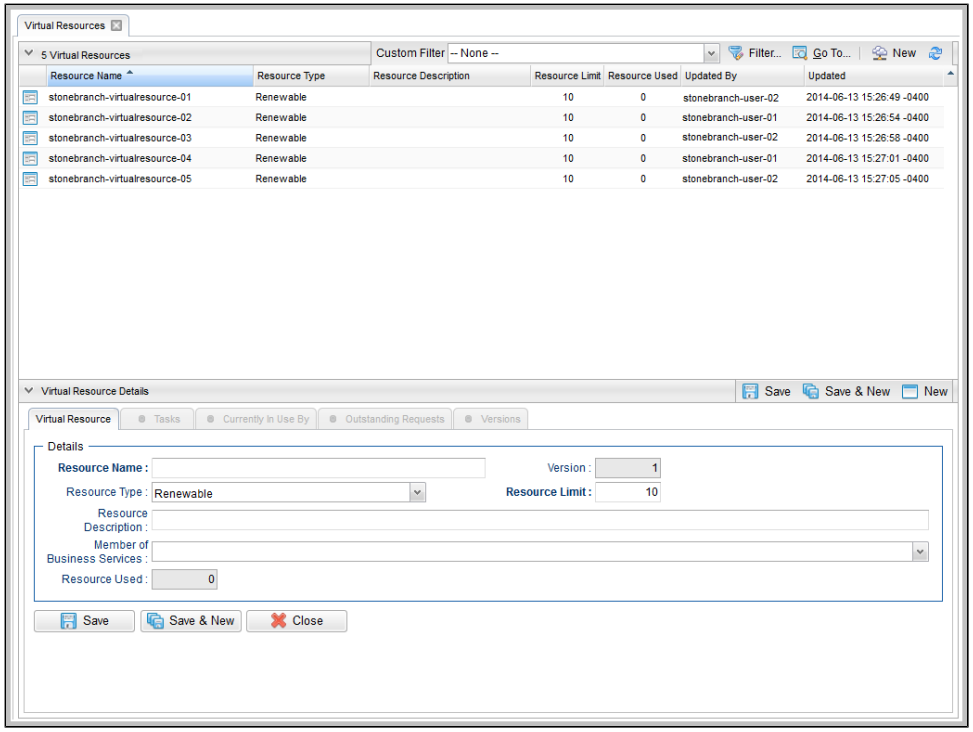
A virtual resource allows you to set up a throttling scheme that will manage the number of specific tasks that can run at one time.

### Using a Virtual Resource

Outlined below is the basic procedure and processing flow for using a virtual resource:

| | |
|---|---|
| **Step 1** | Create a virtual resource.<br><br>There are three types of virtual resources:<br><br>1. **Renewable**: Resources that renew; that is, when a task has finished using them, they can be returned and made available to other tasks sharing the same resources.<br>2. **Boundary**: Resources that are like "windows." Only those tasks defined to fit through that window (or Resource Limit) will run.<br>For example, if you define a Boundary Resource with Resource Limit of 5, and Task A requires a window (amount) of 5, Task B requires a window (amount) of 5, and Task C requires a window (amount) of 10, both A and B will run. However, C will go into a Resource Wait state. If the Boundary Resource is updated to a Resource Limit of 10, C will run.<br>3. **Depletable**: Resources that do not renew. Once consumed by a task, they are gone. |
| **Step 2** | Assign a resource limit to the virtual resource as appropriate for the resource type. |
| **Step 3** | Assign tasks to the virtual resource. |
| **Step 4** | Specify the number of resource units that each task will consume. For example, a task that requires a small amount of processing power might consume one unit; a task that requires a high amount of resources might consume three units. The number of units you specify for each task is relative to the maximum number that you assign to the resource. |
| **Step 5** | Save the virtual resource record. |
| **Step 6** | When a task with a virtual resource requirement launches, Universal Controller checks the virtual resource record to see if enough units are available to run the task, based on what other tasks assigned to that virtual resource are currently running.<br><br>• If enough units are available, the task runs and the number of available units is decremented by the amount specified in the task. For example, if the resource has a maximum of ten and the task uses two, the remaining amount available on that virtual resource for use by other tasks is eight.<br>• If there are not enough units available, the task is put into Resource Wait status and is listed in the Outstanding Requests tab in the virtual resource. When the required amount of resource becomes available, the task is launched.<br>• If multiple tasks are in Resource Wait status, the virtual resource priority is used to determine which task will be first to acquire the resource when it becomes available. |
| **Step 7** | Tabs on the Virtual Resource record keep track of tasks that are currently "running" on this virtual resource and tasks that are waiting to "run" on this virtual resource. |

# Creating a Virtual Resource

| | |
|---|---|
| **Step 1** | From the Automation Center navigation pane, select **Other > Virtual Resources**. The Virtual Resources list displays:<br><br>Below the list, Virtual Resource Details for a new Virtual Resource record displays.<br><br>  |
| **Step 2** | Enter / select Details for a new Virtual Resource, using the field descriptions below as a guide.<br><br>• Required fields display in **boldface**.<br>• Default values for fields, if available, display automatically.<br><br>To display more of the Details fields on the screen, you can either:<br><br>• Use the scroll bar.<br>• Temporarily hide the list above the Details.<br>• Click the **New** button above the list to display a pop-up version of the Details. |
| **Step 3** | Click a **Save** button. The Virtual Resource record is added to the database, and all buttons and tabs in the Virtual Resource Details are enabled. |

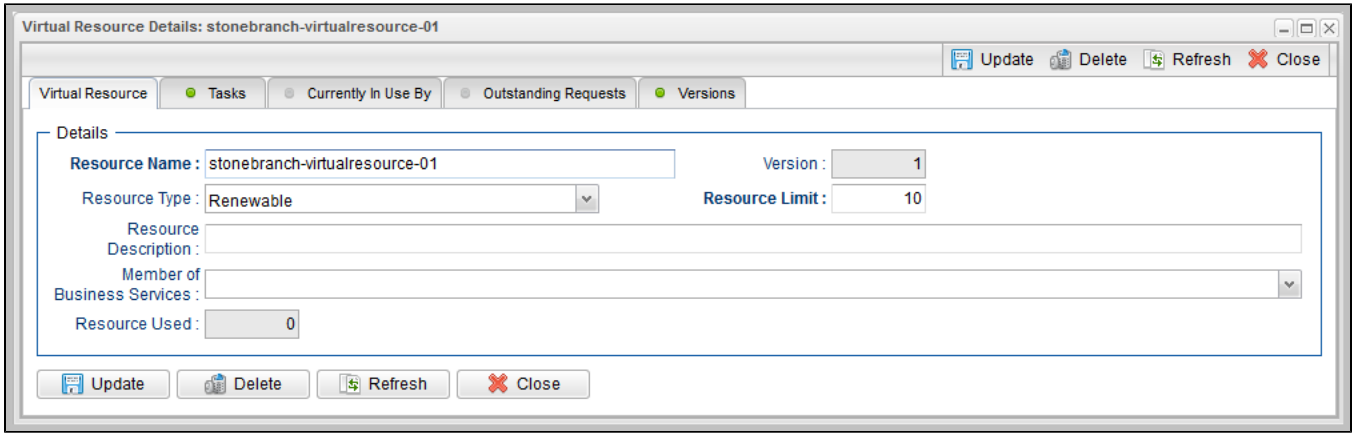
Note

To open an existing record on the list, either:

- Click a record in the list to display its record Details below the list. (To clear record Details below the list, click the **New** button that displays above and below the Details.)
- 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.
- 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).

## Virtual Resource Details

The following Virtual Resource Details is for an existing Virtual Resource. See the field descriptions, below, for a description of all fields that display in the Virtual Resource Details.




Note

This sample Virtual Resource Details shows a Resource Limit of 1. Because each task has a minimum value of 1, this virtual resource would be limited to running only one task at a time.

For information on how to access additional details - such as Metadata and complete database Details - for Virtual Resources (or any type of record), see Records.

## Virtual Resource Details Field Descriptions

The following table describes the fields, buttons, and tabs that display in the Virtual Resource Details.

| Field Name | Description |
|---|---|
| **Details** | This section contains detailed information about the Virtual Resource. |
| Resource Name | Name used within the Controller to identify this resource. Up to 40 alphanumerics. It is the responsibility of the user to develop a workable naming scheme for resources. |
| Version | System-supplied; version number of the current record, which is incremented by the Controller every time a user updates a record. Click the #Versions tab to view previous versions. For details, see Record Versioning. |

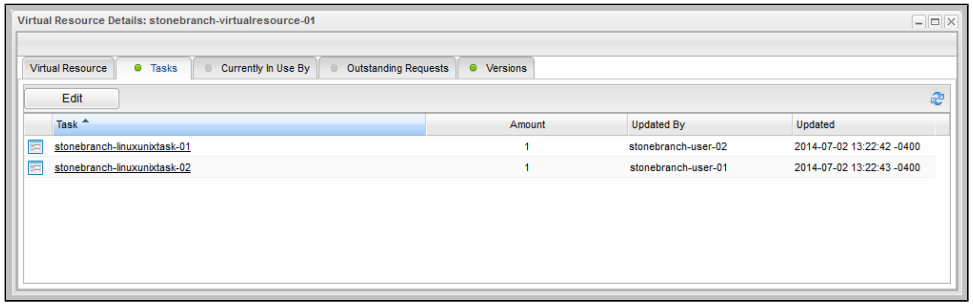
| | |
|---|---|
| Resource Type | Type of resource.<br><br>Options:<br><br>• Renewable<br>• Boundary<br>• Depletable |
| Resource Limit | Maximum number of units available for this resource. |
| Resource Description | Description of this virtual resource. |
| Member of Business Services | User-defined; allows you to select one or more Business Services that this record belongs to.<br><br>If the Business Service Visibility Restricted Universal Controller system property is set to true, depending on your assigned (or inherited) Permissions or Roles, Business Services available for selection may be restricted. |
| Resource Used | If #Resource Type = Renewable; system-supplied. Number of units currently in use, as of the time you opened the record. |
| **Metadata** | This section contains Metadata information about this record. |
| 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. |
| **Buttons** | This section identifies the buttons displayed above and below the Virtual Resource Details that let you perform various actions. |
| **Save** | Saves a new record in the Controller database. |
| **Save & New** | Saves a new record in the Controller database and redisplays empty Details so that you can create another record. |
| **Save & View** | Saves a new record in the Controller database and continues to display that record. |
| **New** | Displays empty (except for default values) Details for creating a new record. |
| **Update** | Saves updates to the record. |
| **Delete** | Deletes the current record. |
| **Refresh** | Refreshes any dynamic data displayed in the Details. |
| **Close** | For pop-up view only; closes the pop-up view of this record. |
| **Tabs** | This section identifies the tabs across the top of the Virtual Resource Details that provide access to additional information about the Virtual Resource. |
| **Tasks** | Lists tasks that are assigned to this virtual resource. |
| **Currently In Use By** | Lists the task instances that have acquired this virtual resource and the number of units acquired, at the time you opened this virtual resource record. |
| **Outstanding Requests** | Lists the task instances that are currently waiting to acquire this virtual resource, and the number of units required for each waiting task instance, at the time you opened this record. |

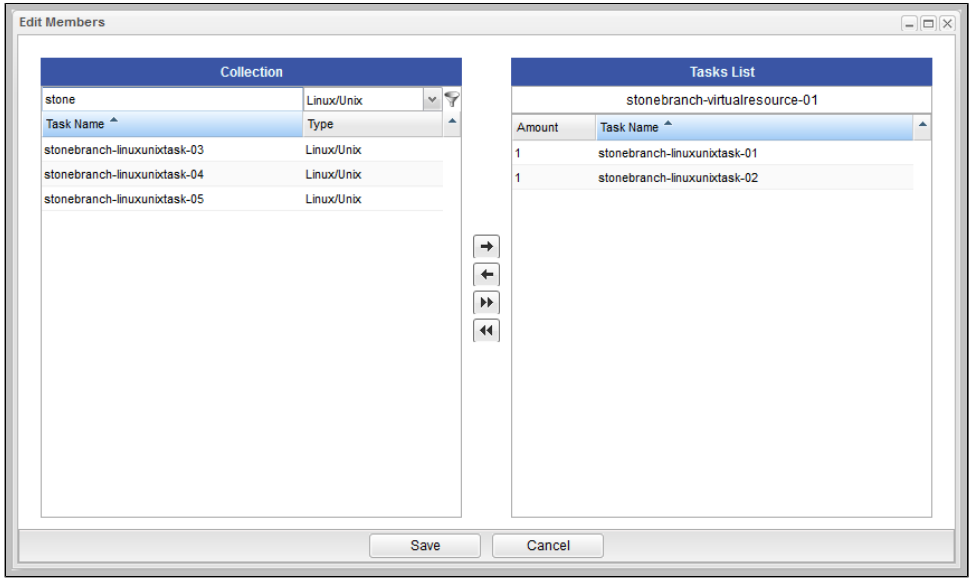
| | |
|---|---|
| **Versions** | Stores copies of all previous versions of the current record. See Record Versioning. |

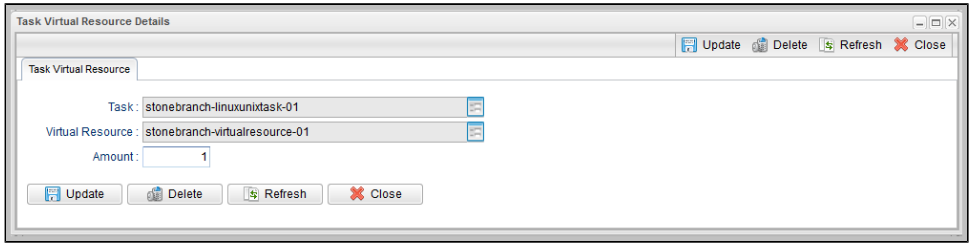
# Assigning Tasks to a Virtual Resource

Note

You can also assign a task to a virtual resource from a task Details.

| | |
|---|---|
| **Step 1** | Open the Virtual Resource record that you want to assign tasks to. |
| **Step 2** | Click the Tasks tab. A list of any tasks assigned to the Virtual Resource displays.<br>  |

| | |
|---|---|
| **Step 3** | Click the **Edit** button. The Edit Members pop-up dialog displays:<br>  <br><br>• The **Collection** window lists tasks that are not assigned to this virtual resource.<br>• The **Tasks List** window lists tasks that refer to this virtual resource. |
| **Step 4** | To filter the Tasks listed in the Collection window, you can do either or both of the following:<br>• Enter characters in the text field above the **Task Name** column. Only tasks containing that sequence of characters will display in the list.<br>• Select a task type from the drop-down list above the **Type** column. |
| **Step 5** | To assign a task to the Virtual Resource, move the task from the **Collection** window to the **Tasks List** window:<br>1. To move a single task, double-click it or click it once and then click the **->** arrow.<br>2. To move multiple tasks, Ctrl-click them and then click the **>** arrow.<br>3. To move all tasks, click the **>>** arrow.<br>To unassign a task to the Virtual Resource, move the task from the **Tasks List** windows to the **Collection** window:<br>1. To move a single task, double-click it or click it once and then click the **<-** arrow.<br>2. To move multiple tasks, Ctrl-click them and then click the **<** arrow.<br>3. To move all tasks, click the **<<** arrow. |

| | |
|---|---|
| **Step 6** | The default **Amount** for each task assigned to a Virtual Resource is 1. To change the **Amount**, click the icon next to the **Task** name in the Tasks tab list or double-click anywhere in the task row. A Task Virtual Resource Details pop-up displays<br>  <br><br>Change the **Amount** as desired and click **Update**. |
| **Step 7** | Click **Save**. |

# Resetting a Renewable Virtual Resource

You can reset the #Resource Used amount of a **Renewable** virtual resource to accurately reflect the actual number of resources currently in use.

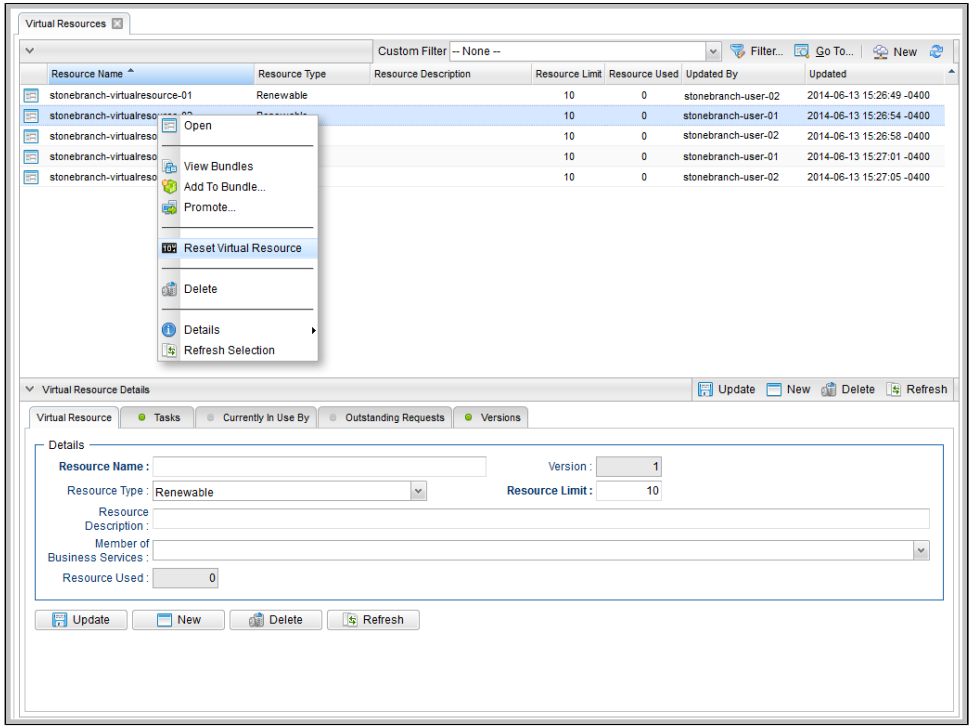
Resetting a **Renewable** virtual resource requires the ops_admin role.

(For **Boundary** and **Depletable** virtual resources, the #Resource Used amount is always reset to 0, as it does not apply to these types of virtual resources.)

| | |
|---|---|
| **Step 1** | Access the Action menu for the Virtual Resource that you want to reset. |

**Step 2**

Click **Reset Virtual Resource**.




This resets the #Resource Used amount to the #Currently In Use By value.

# Scripts



## Overview

Scripts allows you to store scripts in the Universal Controller database.

When a task that specifies a stored script is executed, the script is transmitted to the remote machine for execution.

Note

There is a 1MB limit on the content size of scripts, whether the content is defined in the Script Details or a uploaded from a local file system (see #Uploading a Script, below).

You can use scripts with the following task types: Windows, Linux/Unix, SAP, and File Transfer (UDM scripts for UDM File Transfer tasks).

You cannot import compiled executables into Scripts. The content of scripts must be text that can be processed by some shell, script host, or command interpreter.

You can embed Universal Controller variables in the script content. Embedded variables are resolved at trigger/run time before the script is sent to an Agent.

Controller variables can be passed as parameters, but the script still has to be written to parse the variables. However, you cannot pass variables as parameters that contain data longer than the parameter field (for example, SQL results).

For example, the following script shows how a Controller variable could be used.

```
#!/bin/bash
echo Task Name: ${ops_task_name}
echo Task Instance: ${ops_task_id}
```

Note

You also can enter a script directly into a Universal Template, but you cannot select a stored script.

## Types of Scripts

There are five types of scripts:

| | |
|---|---|
| **Script** | For use in Windows or Linux/Unix tasks. |
| **SAP Definition** | For use in SAP tasks. |
| **UDM Script** | For use in UDM File Transfer tasks. |
| **Web Service Payload** | For use in Web Service tasks. |
| **Data** | For use in a script or task (see #Data Scripts, below). |

# Data Scripts

Data Scripts (Script Type = Data) are meant to be used with scripts and commands specified in tasks, and resolved when the script or command is executed. Data Scripts provide the script or command with access to a path on the UAG file system where the temporary Data Script content resides.

Note

Deleting a Data script is prohibited if it is referenced by one or more Universal Tasks or Universal Template Fields (Default Value).

Changing the type for a Data script is prohibited if it is referenced by one or more Universal Tasks or Universal Template Fields (Default Value).

The Tasks tab on the Script Details is enabled for Data scripts and lists Universal Tasks that reference the script via a mapped Script field.

## Using Data Scripts in a Script

To use a Data Script with a script, embed the Data Script in any of the following:

- Content of a Script specified in the Script field in a Linux/Unix or Windows task.
- Content of a Data Script.
- Universal Template Script (Script, Linux/Unix Script, or Windows Script field).

## Using Data Scripts in a Task

To use a Data Script with a task, embed the Data Script in any of the following:

- Command field in a Linux/Unix or Windows task
- Parameters field in a Linux/Unix or Windows task

Note

Although you can embed a Data Script in the Command field or Parameters field of a Linux/Unix or Windows task, only scripts with Script Type = Script can be referenced in a Linux/Unix or Windows task; that is, it is the only type of script that is available for selection in the Linux/Unix or Windows task Script field.

# Embedding a Data Script

To embed a Data Script, use the following Script Function:

| Name | Description | Syntax |
|---|---|---|
| Return Path to Data Script | Used for embedding the path to a Data Script. | **${_scriptPath**('<script_name>')} |

Note

**_scriptPath** requires Agent 6.4.0.0 or later.

Upon task instance execution, the Controller will resolve **${_scriptPath**('<script_name>')} and replace it with a token representing the path to the embedded Data Script in the following format: $(ops_unv_script_path_<script-sys_id>).

For every Data Script embedded in a Data Script, the Controller will resolve **${_scriptPath**('script_name')} (if #Resolve UAC Variables is enabled for the Data Script), and look for additional Data Script references (and Resolvable Credentials references). This process will continue until no additional Data Script references are found.

For each Data Script reference, the Controller will send UAG the Data Script Content, file extension, and the corresponding token ($(ops_unv_script_path_<script-sys_id>)) that would represent a reference to that Content, which would ultimately be temporarily written to the UAG file system.

UAG will replace any tokens within the Script Content, Universal Template Script, Command, or Parameters with the appropriate file path associated with the Data Script Content. UAG also will replace any tokens within each Data Script Content.

Additionally, for a Universal Template, you can create a Field of Type = Script, which lets you select or create Data Scripts. The Controller will create a variable for the Data Script Field, which you can embed in the Universal Template script using the Script Functions. This also lets you change Scripts when you run a Universal Task based on the Universal Template.

## Restrictions on Embedding Data Scripts

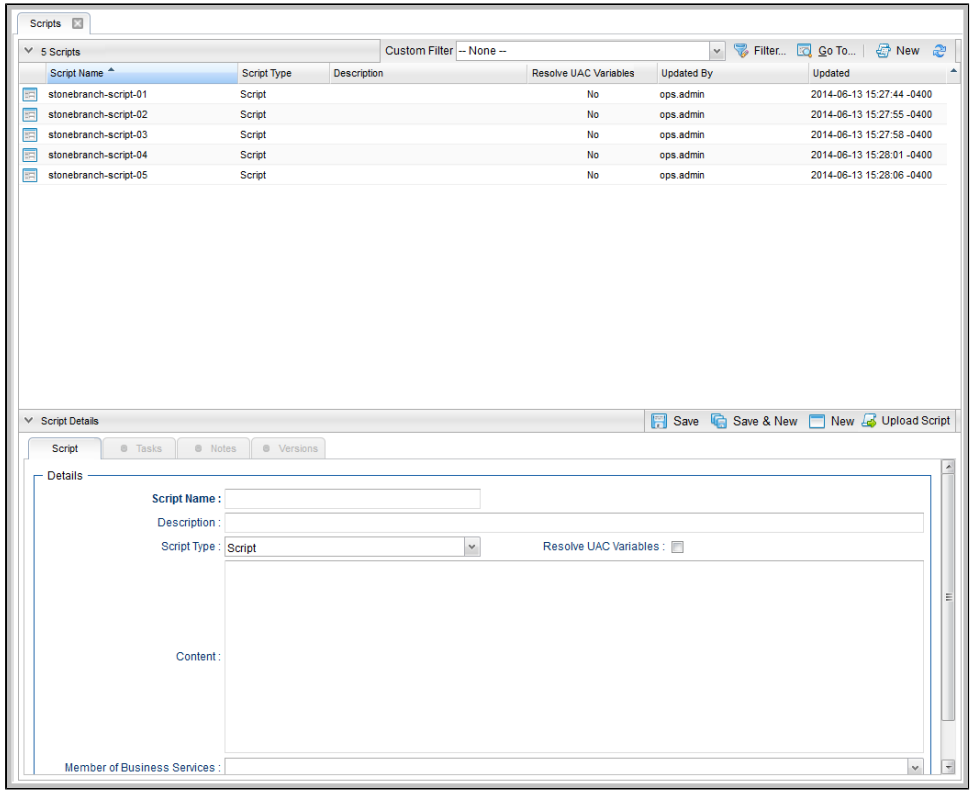
For every embedded Script, the Script Type must be Data; otherwise, the task will transition to the Start Failure status with one of the following status descriptions:

```
Execution for script "script-name", contained within the Universal Template Script, prohibited due to script type constraint; only Data script type permitted.

Execution for script "script-name", contained within the command field or parameters field prohibited due to script type constraint; only Data script type permitted.

Execution for script "script-name", contained within the script "script-name", prohibited due to script type constraint; only Data script type permitted.
```

For every embedded Data Script, the Execution User must have Execute permission for the Data Script; otherwise, the task instance will transition to the Start Failure status with one of the following status descriptions:

```
Execution for script "script-name", contained within a Universal Template Script or script, prohibited due to security constraints.

Execution for script "script-name", contained within a script, command field, or parameters field, prohibited due to security constraints.
```

# Creating a Script

| | |
|---|---|
| **Step 1** | From the Automation Center navigation pane, select **Other > Scripts**. The Scripts list displays a list of all existing scripts.<br><br>Below the list, Script Details for a new script displays.<br><br>  |
| **Step 2** | Enter / select Details for a new script, using the field descriptions below as a guide.<br><br>• Required fields display in **boldface**.<br>• Default values for fields, if available, display automatically.<br><br>To display more of the Details fields on the screen, you can either:<br><br>• Use the scroll bar.<br>• Temporarily hide the list above the Details.<br>• Click the **New** button above the list to display a pop-up version of the Details. |
| **Step 3** | Click a **Save** button. The script is added to the Controller database, and all buttons and tabs in the Script Details are enabled. |

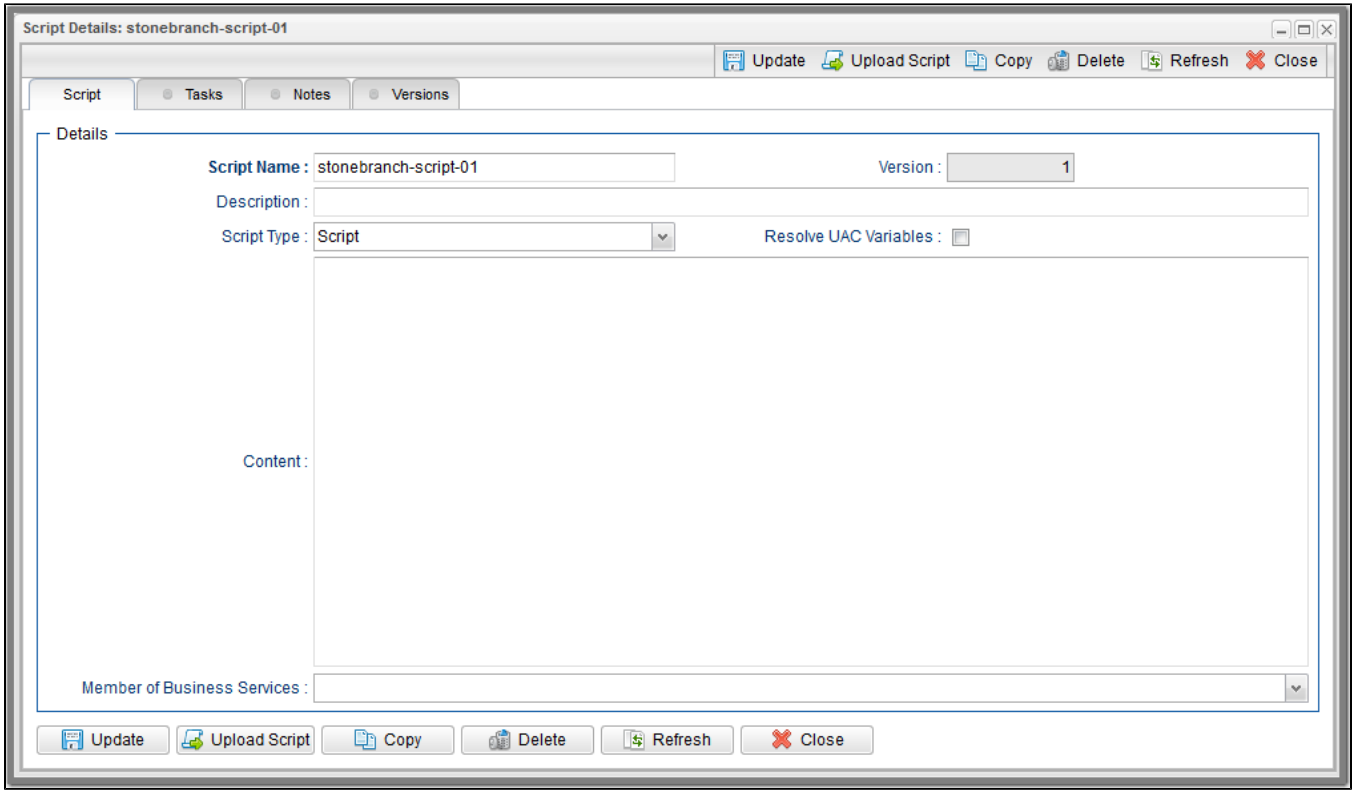
Note

To open an existing record on the list, either:

- Click a record in the list to display its record Details below the list. (To clear record Details below the list, click the **New** button that displays above and below the Details.)
- 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.
- 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).

## Script Details

The following Script Details is for an existing script. See the field descriptions, below, for a description of all fields that display in the Script Details.




For information on how to access additional details - such as Metadata and complete database Details - for Scripts (or any type of record), see Records.

## Script Details Field Descriptions

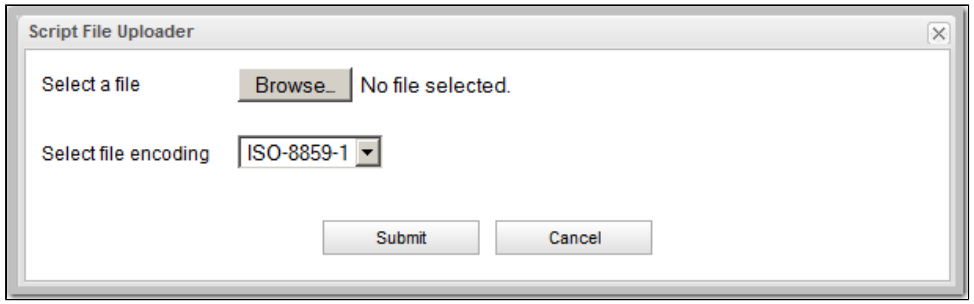
The following table describes the fields, buttons, and tabs that display in the Script Details.

| Field Name | Description |
|---|---|
| **Details** | This section contains detailed information about the Script. |
| Script Name | Name of the script. This name can be the same as the name of the script file.<br><br>You also can specify a file extension; the default file extension for Windows is **`.bat`**.<br><br>If the name has the extension **`.ps1`**, Windows will run the script as a powershell script. You may have to create the appropriate file association and security for this to work. |
| Version | System-supplied; version number of the current record, which is incremented by the Controller every time a user updates a record. Click the #Versions tab to view previous versions. For details, see Record Versioning. |
| Description | Description of this record. (Maximum = 200 characters.) |
| Script Type | Type of script:<br><br>Options:<br><br>• Script<br>• SAP Definition<br>• UDM Script<br>• Web Service Payload<br>• Data |
| Resolve UAC Variables | Controls whether or not the Script will be parsed in pursuit of Universal Controller variables. It allows the Controller to avoid the overhead of parsing a Script that does not contain variables.<br><br>Note<br><br>Variables *could* be embedded with this field disabled; likewise, you could have a Script with no variables but have this field enabled. However, enabling this field for a Script that does not contain Controller variables will impose an unnecessary burden (however small) on the Controller. |
| Content | Content of the script or SAP definition file.<br><br>You can enter content manually or upload content from the local file system by using the #Upload Script button.<br><br>For UDM Scripts, Source and Destination credentials are available for use. The credentials can be coded into the UDM script using the following File Transfer variables:<br><br>• ops_src_cred_user<br>• ops_src_cred_pwd<br>• ops_dst_cred_user<br>• ops_dst_cred_pwd<br><br>The variables will be resolved by UDM internally. The following example illustrates the correct way to code them:<br><br>`open src=srcserver user=$(ops_src_cred_user) pwd=$(ops_src_cred_pwd) dst=dstserver user=$(ops_dst_cred_user) pwd=$(ops_dst_cred_pwd)`<br><br>The values for these variables are sent to UDM via stdin. This provides a secure channel where the credentials never show up in the script or on the command line. |
| **Metadata** | This section contains Metadata information about this record. |

| | |
|---|---|
| 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. |
| **Buttons** | This section identifies the buttons displayed above and below the Script Details that let you perform various actions. |
| **Save** | Saves a new script record in the Controller database. |
| **Save & New** | Saves a new record in the Controller database and redisplays empty Details so that you can create another new record. |
| **Save & View** | Saves a new record in the Controller database and continues to display that record. |
| **New** | Displays empty (except for default values) Details for creating a new record. |
| **Update** | Saves updates to the record. |
| **Upload Script** | Allows you to upload a script from the local file system and place it in the #Content field (see #Uploading a Script, below). |
| **Copy** | Creates a copy of this script, which you are prompted to rename. |
| **Delete** | Deletes the current record. |
| **Refresh** | Refreshes any dynamic data displayed in the Details. |
| **Close** | For pop-up view only; closes the pop-up view of this task. |
| **Tabs** | This section identifies the tabs across the top of the Script Details that provide access to additional information about the script. |
| **Tasks** | Lists of all tasks using this script. |
| **Notes** | Lists all notes associated with this record. |
| **Versions** | Stores copies of all previous versions of the current record. See Record Versioning. |

# Uploading a Script

To upload a script into the #Content field in the Script Details:

| | |
|---|---|
| **Step 1** | Click the #Upload Script button. The Script File Uploader pop-up displays.<br>  |
| **Step 2** | Click the **Browse...** button and select a script from the local file system. |
| **Step 3** | From the **Select file encoding** drop-down list, select the character set of the script: ISO-8859-1, US-ASCII, UTF-8, UTF-16, UTF-16BE, or UTF-16LE. |
| **Step 4** | Click the **Submit** button to add the script to the #Content field. |

# Copying Scripts



## Overview

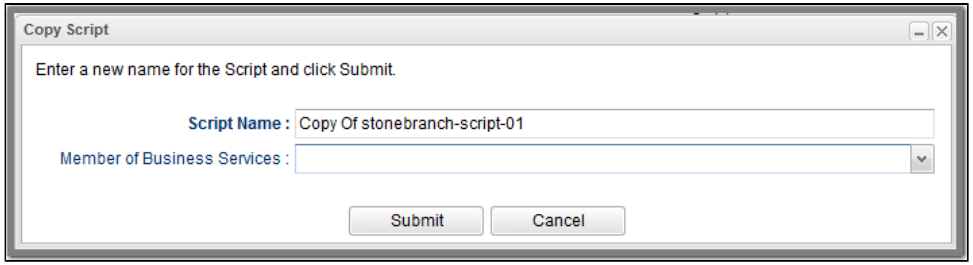
You can make copies of all Universal Controller records, including scripts, using the standard method for Copying a Record: selecting **Insert** on the Action menu.

However, this method does not make copies of any records that are associated with the copied record. For scripts, **Insert** does not make copies of any Notes that are associated with the script.

The Copy option allows you to make a complete copy of a script, including all of its Notes.

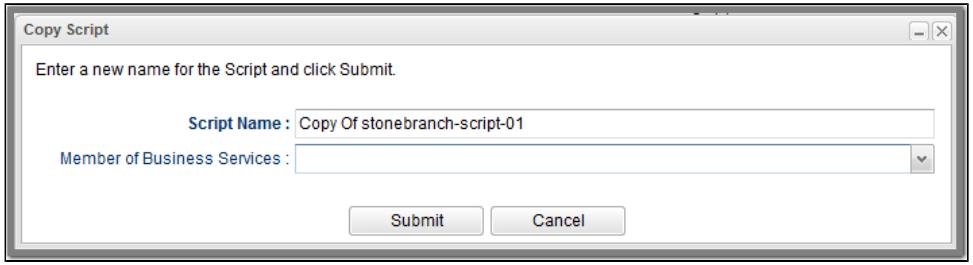
## Copying One or More Scripts from a Scripts List

| | |
|---|---|
| **Step 1** | From the Automation Center navigation pane, select **Other > Scripts** to display the Scripts list. |
| **Step 2** | Locate the script(s) you want to copy (see Filtering). |

| | |
|---|---|
| **Step 3** | Copy the script(s):<br><br>**Copy One Script**<br><br>1. Right-click the **Script Name**.<br>2. On the<br><br>Action menu<br><br>, select **Copy**. A Copy Script pop-up dialog displays.<br><br>  <br><br><br>3. Enter a new name for the script and, optionally, select any<br><br>Business Services<br><br>that you want the script assigned to.<br>4. Click **Submit** to create a copy of the script.<br><br>**Copy Multiple Scripts**<br><br>1. Ctrl-Click the scripts you want to copy.<br>2. Right-click any of the selected scripts.<br>3. On the Action menu, select **Copy**.<br>4. On the Confirmation pop-up that displays, click **OK**. The copied scripts are added to the list, with **Copy of** added as a prefix to the Script Name for each script. If a script with that **Copy of** name already exists, a numerical suffix is added to the Script Name. |

# Copying a Script from the Script Details

| | |
|---|---|
| **Step 1** | Select a script from the Script list. The Script Details for that script displays. |

| | |
|---|---|
| **Step 2** | Either:<br>• Click the **Copy** button.<br>• Right-click the Details to display the Action menu, and then click **Copy**.<br>A Copy Script pop-up dialog displays.<br>  |
| **Step 3** | Enter a new name for the script and, optionally, select any Business Services that you want the script assigned to. |
| **Step 4** | Click **Submit** to create a copy of the script. |

# Copy Permissions

To copy a Script, you must have both Read permission and Copy command permission for the Script you are copying, in addition to having Create permission for the copied Script.

# Email Templates



## Overview

Email templates allow you to construct commonly-used information that can be copied to create Email tasks.

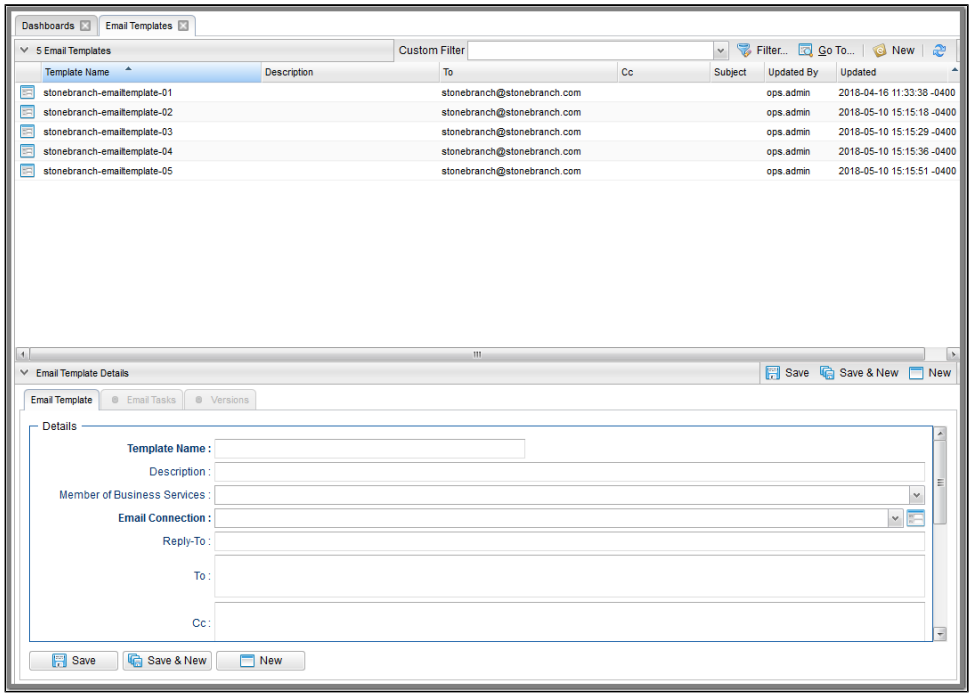
If an Email task specifies a template, Universal Controller uses the information in the template to construct and execute the Email task. Any information specified in the task overrides what is specified in the template.

## Creating an Email Template

**Step 1**

From the Agents & Connections navigation pane, select **System > Email Templates**. The Email Templates list displays.

Below the list, Email Template Details for a new Email Template displays.



| | |
|---|---|
| **Step 2** | Enter / select Details for a new Email Template, using the field descriptions below as a guide.<br><br>• Required fields display in **boldface**.<br>• Default values for fields, if available, display automatically.<br><br>To display more of the Details fields on the screen, you can either:<br><br>• Use the scroll bar.<br>• Temporarily hide the list above the Details.<br>• Click the **New** button above the list to display a pop-up version of the Details. |
| **Step 3** | Click a **Save** button. The Email Template is added to the database, and all buttons and tabs in the Email Template Details are enabled. |

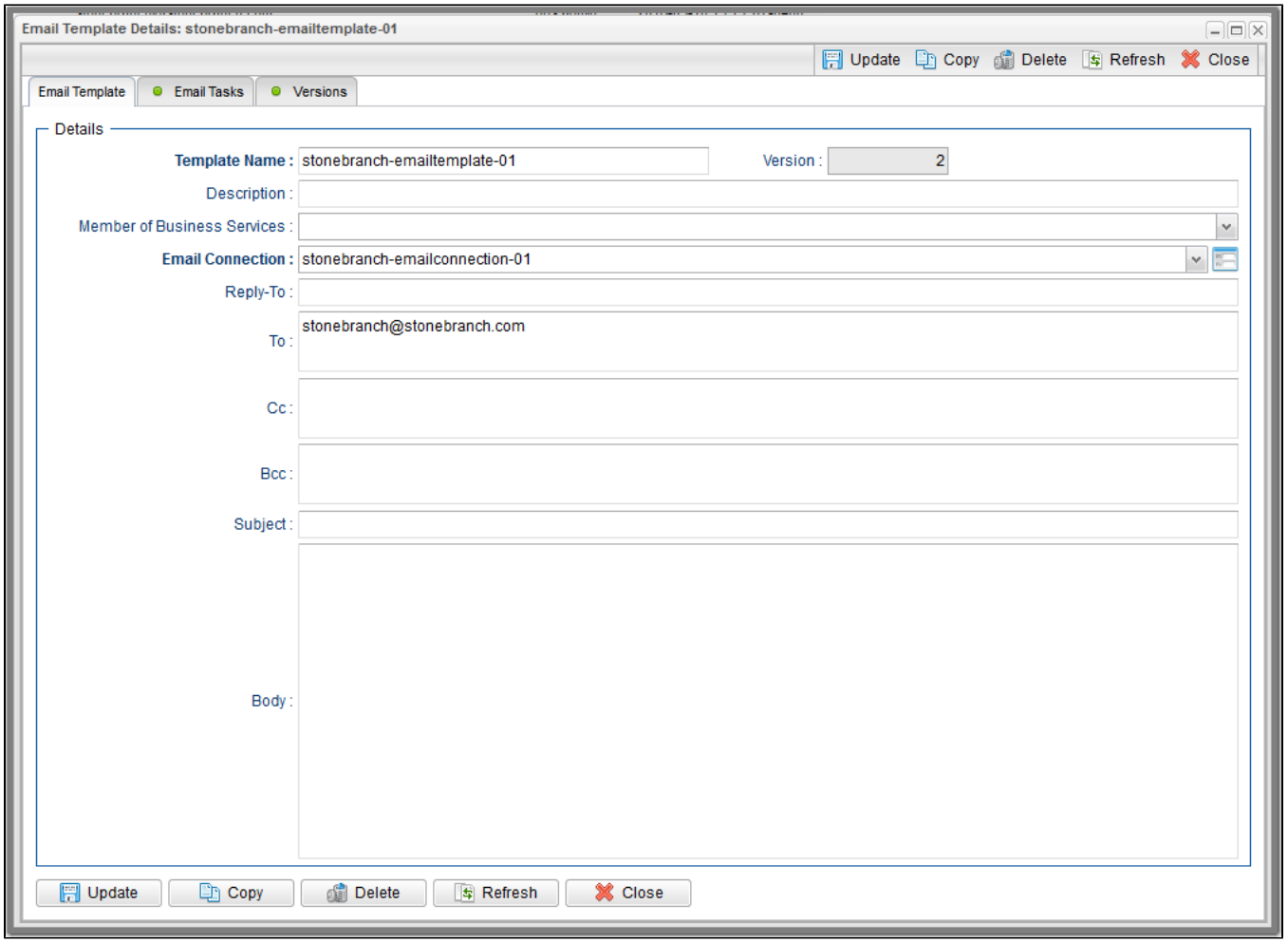
Note

To open an existing record on the list, either:

- Click a record in the list to display its record Details below the list. (To clear record Details below the list, click the **New** button that displays above and below the Details.)
- 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.
- 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).

## Email Template Details

The following Email Template Details is for an existing Email Template. See the field descriptions, below, for a description of all fields that display in the Email Template Details.




For information on how to access additional details - such as Metadata and complete database Details - for Email Templates (or any type of record), see Records.

## Email Template Details Field Descriptions

The following table describes the fields, buttons, and tabs that display in the Email Template Details.

| Field Name | Description |
|---|---|
| **Details** | This section contains detailed information about the Email Template. |
| Template Name | Name used within the Controller to identify this resource. Up to 40 alphanumerics. It is the responsibility of the user to develop a workable naming scheme for resources. |

| | |
|---|---|
| Version | System-supplied; version number of the current record, which is incremented by the Controller every time a user updates a record. Click the Versions tab to view previous versions. For details, see Record Versioning. |
| Description | Description of this record. (Maximum = 200 characters.) |
| Member of Business Services | User-defined; allows you to select one or more Business Services that this record belongs to.<br><br>If the Business Service Visibility Restricted Universal Controller system property is set to true, depending on your assigned (or inherited) Permissions or Roles, Business Services available for selection may be restricted. |
| Email Connection | Connection used for the Email Template. Select an Email Connection from the drop-down list, or click the Details icon to create a new Email Connection or view the Details of a selected Email Connection. |
| Reply-To | Email address of the sender. Use commas to separate multiple recipients. Variables and functions supported. |
| To | Required unless CC or BCC is specified; Email address of the recipient. Use commas to separate multiple recipients. Variables and functions supported. |
| CC | Required unless To or BCC is specified; Email address of the party being sent a copy of the email, if any. Use commas to separate multiple recipients. Variables and functions supported. |
| BCC | Required unless To or CC is specified; Email address of the party being sent a blind (hidden) copy of the email, if any. Use commas to separate multiple recipients. Variables and functions supported. |
| Subject | Subject line of the email. Variables and functions supported. |
| Body | Text of the email message. Variables and functions supported.<br><br>Note<br>If both the Email Template and the Email Task (or Email Notification) contain text in the Body, the text in the Email Template is appended to the text in the Email Task (or Email Notification). |
| **Metadata** | This section contains Metadata information about this record. |
| 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. |
| **Buttons** | This section identifies the buttons displayed above and below the Email Template Details that let you perform various actions. |
| **Save** | Saves a new Email Template record in the Controller database. |
| **Save & New** | Saves a new record in the Controller database and redisplays empty Details so that you can create another new record. |
| **Save & View** | Saves a new record in the Controller database and continues to display that record. |
| **New** | Displays empty (except for default values) Details for creating a new record. |
| **Update** | Saves updates to the record. |
| **Copy** | Creates a copy of this Email Template, which you are prompted to rename. |

| | |
|---|---|
| **Delete** | Deletes the current record. |
| **Refresh** | Refreshes any dynamic data displayed in the Details. |
| **Close** | For pop-up view only; closes the pop-up view of this Email Template. |
| **Tabs** | This section identifies the tabs across the top of the Email Template Details that provide access to additional information about the Email Template. |
| **Email Tasks** | Displays a list of Email Tasks that specify this Email Template, and lets you create a new Email Task with its Email Template field pre-populated with this Email Template. |
| **Versions** tab | Stores copies of all previous versions of the current record. See Record Versioning. |

# Copying Email Templates



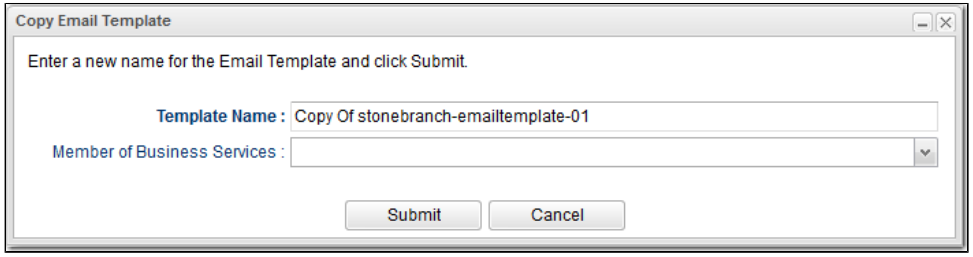
## Overview

You can make copies of all Universal Controller records, including Email Templates, using the standard method for Copying a Record: selecting **Insert** on the Action menu.

However, you also can use the Copy action on the Email Templates Action menu or the Copy button in the Email Templates Details.

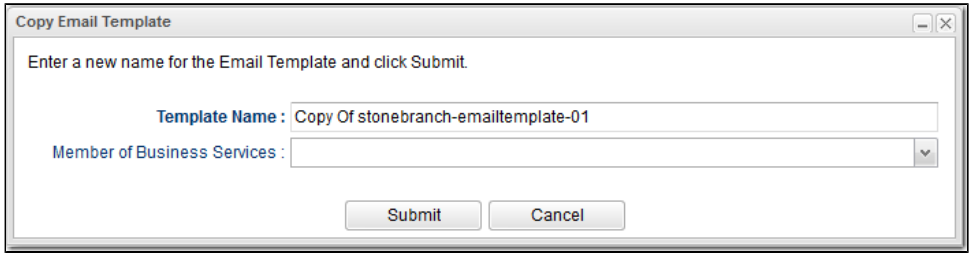
## Copying One or More Email Templates from an Email Templates List

| | |
|---|---|
| **Step 1** | From the Agents & Connections navigation pane, select **System > Email Templates** to display the Email Templates list. |
| **Step 2** | Locate the Email Template(s) you want to copy (see Filtering). |

| | |
|---|---|
| **Step 3** | Copy the Email Template(s):<br><br>**Copy One Email Template**<br><br>1. Right-click the **Email Template Name**.<br>2. On the<br><br>Action menu<br><br>, select **Copy**. A Copy Email Template pop-up dialog displays.<br><br>  <br><br><br>3. Enter a new name for the Email Template and, optionally, select any<br><br>Business Services<br><br>that you want the Email Template assigned to.<br>4. Click **Submit** to create a copy of the Email Template.<br><br>**Copy Multiple Email Templates**<br><br>1. Ctrl-Click the Email Templates you want to copy.<br>2. Right-click any of the selected Email Templates.<br>3. On the Action menu, select **Copy**.<br>4. On the Confirmation pop-up that displays, click **OK**. The copied Email Templates are added to the list, with **Copy of** added as a prefix to the Email Template Name for each Email Template. If an Email Template with that **Copy of** name already exists, a numerical suffix is added to the Email Template Name. |

# Copying an Email Template from the Email Template Details

| | |
|---|---|
| **Step 1** | Select an Email Template from the Email Template list. The Email Template Details for that Email Template displays. |

| | |
|---|---|
| **Step 2** | Either:<br>• Click the **Copy** button.<br>• Right-click the Details to display the Action menu, and then click **Copy**.<br>A Copy Email Template pop-up dialog displays.<br>  |
| **Step 3** | Enter a new name for the Email Template and, optionally, select any Business Services that you want the Email Template assigned to. |
| **Step 4** | Click **Submit** to create a copy of the Email Template. |

# Copy Permissions

To copy an Email Template, you must have both Read permission and Copy command permission for the Email Template you are copying, in addition to having Create permission for the copied Email Template.

# Email Connections



## Overview

Email connections provide all of the email server information necessary for Universal Controller to send emails.

Email connections are used these ways within the Controller:

- An Email Task uses the Email connection to generate emails independent of tasks.
- An Email Notification uses the Email connection to generate notifications related to tasks.
- Agents, OMS Servers, and Cluster Nodes use the Email connection to generate email notifications.
- System Operations use Email connections to generate system notifications.

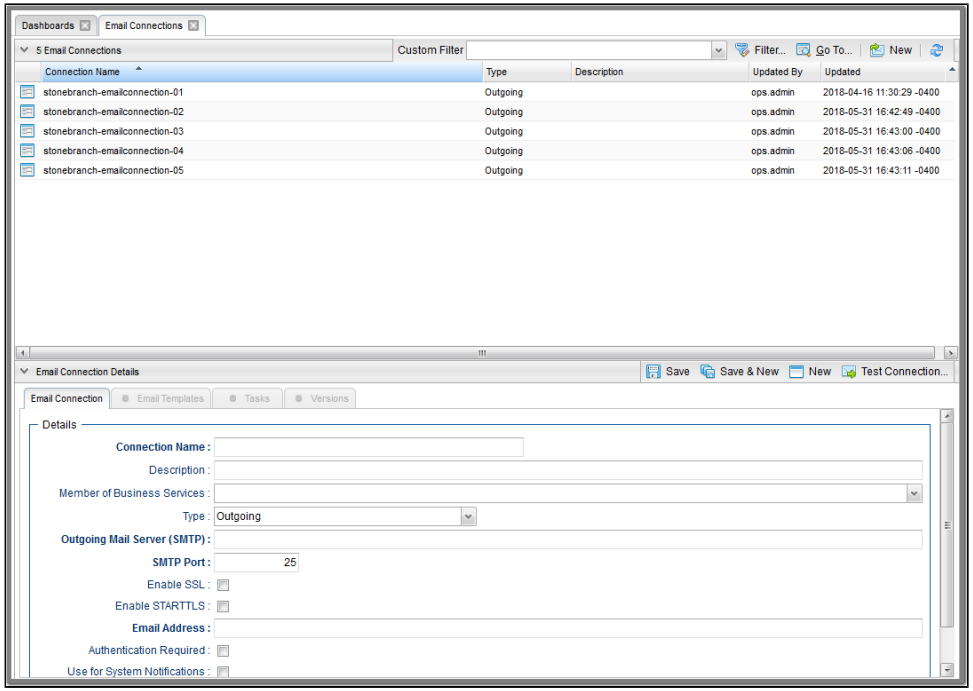
Email Connections can receive Email Notifications when:

- An Agent or OMS Server goes down or comes back up.
- A Cluster Node goes Offline or becomes Active.
- An Email Notification is associated with a task.

Note

Email Notifications on Cluster Nodes cannot be exported; therefore, they cannot be imported. You must set up new Email Notifications for Cluster Nodes whenever an export / import has been run.

## Creating an Email Connection

| | |
|---|---|
| **Step 1** | From the Agents & Connections navigation pane, select **System > Email Connections**. The Email Connections list displays.<br><br>Below the list, Email Connection Details for a new Email Connection displays.<br><br>  |
| **Step 2** | Enter / select Details for a new Email Connection, using the field descriptions below as a guide.<br><br>• Required fields display in **boldface**.<br>• Default values for fields, if available, display automatically.<br><br>To display more of the Details fields on the screen, you can either:<br><br>• Use the scroll bar.<br>• Temporarily hide the list above the Details.<br>• Click the **New** button above the list to display a pop-up version of the Details. |
| **Step 3** | Click a **Save** button. The Email Connection is added to the database, and all buttons and tabs in the Email Connection Details are enabled. |

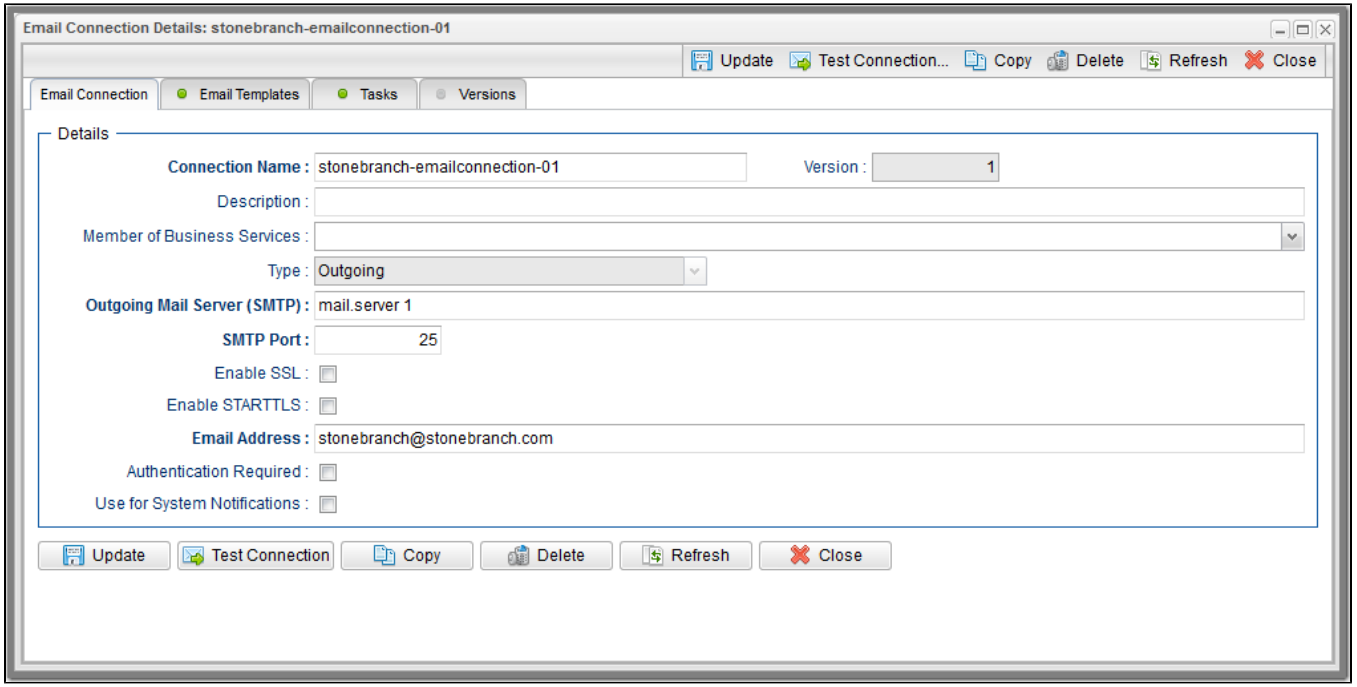
Note

To open an existing record on the list, either:

- Click a record in the list to display its record Details below the list. (To clear record Details below the list, click the **New** button that displays above and below the Details.)
- 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.
- 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).

## Email Connection Details

The following Email Connection Details is for an existing Email Connection. See the field descriptions, below, for a description of all fields that display in the Email Connection Details.




For information on how to access additional details - such as Metadata and complete database Details - for Email Connections (or any type of record), see Records.

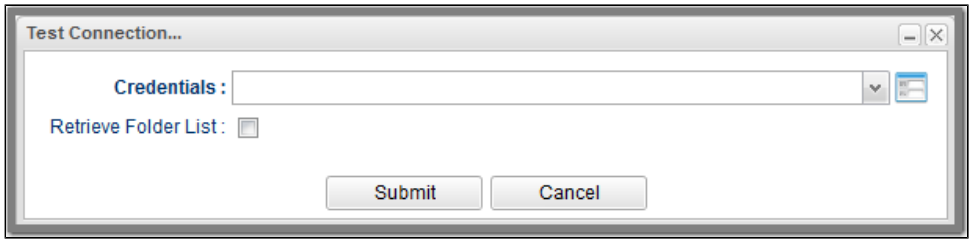
## Email Connection Details Field Descriptions

The following table describes the fields, buttons, and tabs that display in the Email Connection Details.

| Field Name | Description |
|---|---|
| **Details** | This section contains detailed information about the Email Connection. |

| | |
|---|---|
| Connection Name | Name (maximum 40 alphanumeric characters) used within the Controller to identify this resource. It is the responsibility of the user to develop a workable naming scheme for resources. |
| Version | System-supplied; version number of the current record, which is incremented by the Controller very time a user updates a record. Click the #Versions tab to view previous versions. For details, see Record Versioning. |
| Description | Description of this record. (Maximum = 200 characters.) |
| Member of Business Services | User-defined; allows you to select one or more Business Services that this record belongs to.<br><br>If the Business Service Visibility Restricted Universal Controller system property is set to true, depending on your assigned (or inherited) Permissions or Roles, Business Services available for selection may be restricted. |
| Type | Type of Email Connection:<br><br>Options:<br><br>• Outgoing<br>• Incoming<br><br>Default is Outgoing. |
| Outgoing Mail Server (SMTP) | If #Type is Outgoing; Name or IP address of the outgoing email server. |
| SMTP Port | If #Type is Outgoing; Port on the machine where the outgoing email server resides. |
| Incoming Mail Server (IMAP) | If #Type is Incoming; Name or IP address of the incoming email server. |
| IMAP Port | If #Type is Incoming; Port on the machine where the incoming email server resides. |
| Enable SSL | Enables SSL connectivity for your server. |
| Enable STARTTLS | Enables the use of the **STARTTLS** command (if supported by the server) to switch the connection to a TLS-protected connection before issuing any login commands. (An appropriate trust store must be configured so that the client will trust the server's certificate. ) |
| Email Address | If #Type is Outgoing; Email address of the sender.<br><br>Warning<br><br>If the selected sender email address is invalid, or becomes invalid at any time after you create an Email Connection, all Email Notifications that specify that Email Connection will fail, but no warning will be issued. You must click the #Test Connection button to test the Email Connection, which will generate an error message in the Controller Console. |
| Authentication Required | If #Type is Outgoing; If enabled, #User Name and #Password are required. |
| User Name | If #Authentication Required is enabled; user name that the Controller will use to connect to the server. |
| Password | If #Authentication Required is enabled; password that the Controller will use to connect to the server.<br><br>(This field is cleared if the Email Connection is copied.) |

| | |
|---|---|
| Use for System Notifications | If #Type is Outgoing; Indicates whether or not this Email Connection is to be used for system notifications.<br><br>(This field is set to false if the Email Connection is copied.)<br><br>Note<br>Only one Email Connection can be used for system notifications. If this field is checked in an Email Connection Details, it will appear unchecked on all other Email Connection Details. If you then check this field in another Email Connection Details, it automatically will be unchecked from the Details in which it had been checked. |
| Trash Folder | If #Type is Incoming; Folder to use for deleted emails. |
| **Metadata** | This section contains Metadata information about this record. |
| 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. |
| **Buttons** | This section identifies the buttons displayed above and below the Email Connection Details that let you perform various actions. |
| **Save** | Saves a new Email Connection record in the Controller database. |
| **Save & New** | Saves a new record in the Controller database and redisplays empty Details so that you can create another new record. |
| **Save & View** | Saves a new record in the Controller database and continues to display that record. |
| **New** | Displays empty (except for default values) Details for creating a new record. |
| **Update** | Saves updates to the record. |

<table>
<tr><td>Test Connection</td><td>After saving the record to the database, click Test Connection to run a connection test.<br><br>If the Email Connection Type is Incoming, clicking Test Connection causes a Test Connection... pop-up dialog to display<br><br> 

<br><br>The following table describes the fields on the Test Connection... dialog:<br><br>
<table>
<tr><th>Field</th><th>Description</th></tr>
<tr><td>Credentials</td><td>Credentials to be used to connect to the Email server.</td></tr>
<tr><td>Retrieve Folder List</td><td>Enabling this field instructs the Controller to retrieve a list of all the Folders within the connected User’s mailbox.</td></tr>
</table>
</td></tr>
<tr><td>Copy</td><td>Creates a copy of this Email Connection, which you are prompted to rename.</td></tr>
<tr><td>Delete</td><td>Deletes the current record.</td></tr>
<tr><td>Refresh</td><td>Refreshes any dynamic data displayed in the Details.</td></tr>
<tr><td>Close</td><td>For pop-up view only; closes the pop-up view of this Email Connection.</td></tr>
<tr><td>Tabs</td><td>This section identifies the tabs across the top of the Email Connection Details that provide access to additional information about the Email Connection.</td></tr>
<tr><td>Email Templates</td><td>Provides a list of Email Templates that specify this Email Connection, and lets you create a new Email Template with its Email Connection field pre-populated with this Email Connection.<br><br>This tab is enabled only if the Email Connection #Type = Outgoing.</td></tr>
<tr><td>Tasks</td><td>Provides a list of Email tasks (for Outgoing Email Connections) and Email Monitor tasks (for Incoming Email Connections).<br><br>It also lets you create a new Email task (from the Email Tasks list), or a new Email Monitor Task (from the Email Monitor Tasks list), with its Email Connection field pre-populated with this Email Connection.</td></tr>
<tr><td>Versions</td><td>Stores copies of all previous versions of the current record. See Record Versioning.</td></tr>
</table>

# Copying Email Connections



## Overview

You can make copies of all Universal Controller records, including Email Connections, using the standard method for Copying a Record: selecting **Insert** on the Action menu.

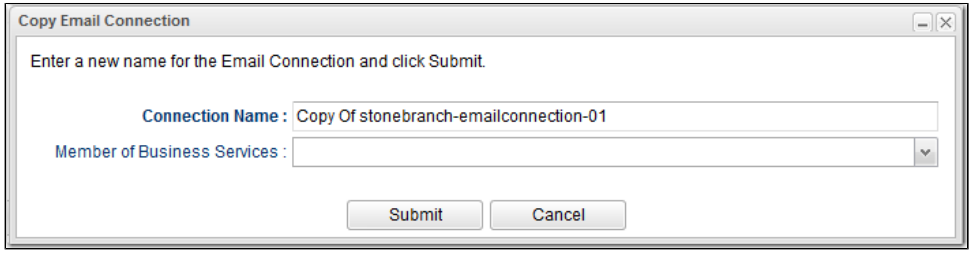
However, you also can use the Copy action on the Email Connections Action menu or the Copy button in the Email Connections Details.

Note

If you use the Copy action or Copy button to copy an Email Connection, the Password field is cleared and the Use for System Notifications field is set to false in the Email Connection copy.

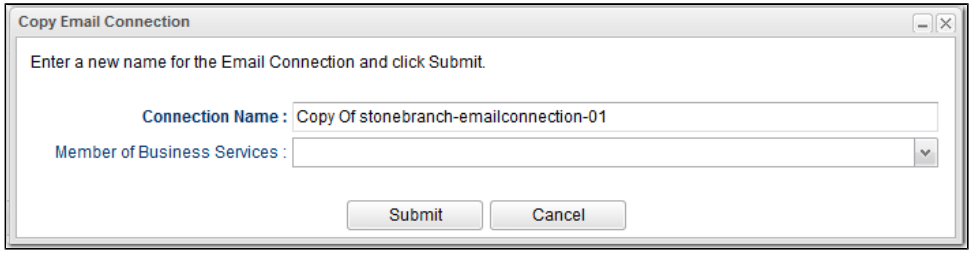
## Copying One or More Email Connections from an Email Connections List

| | |
|---|---|
| **Step 1** | From the Agents & Connections navigation pane, select **System > Email Connections** to display the Email Connections list. |
| **Step 2** | Locate the Email Connection(s) you want to copy (see Filtering). |

| | |
|---|---|
| **Step 3** | Copy the Email Connection(s):<br><br>**Copy One Email Connection**<br><br>1. Right-click the **Email Connection Name**.<br>2. On the<br><br>Action menu<br><br>, select **Copy**. A Copy Email Connection pop-up dialog displays.<br><br>  <br><br><br>3. Enter a new name for the Email Connection and, optionally, select any<br><br>Business Services<br><br>that you want the Email Connection assigned to.<br>4. Click **Submit** to create a copy of the Email Connection.<br><br>**Copy Multiple Email Connections**<br><br>1. Ctrl-Click the Email Connections you want to copy.<br>2. Right-click any of the selected Email Connections.<br>3. On the Action menu, select **Copy**.<br>4. On the Confirmation pop-up that displays, click **OK**. The copied Email Connections are added to the list, with **Copy of** added as a prefix to the Email Connection Name for each Email Connection. If an Email Connection with that **Copy of** name already exists, a numerical suffix is added to the Email Connection Name. |

# Copying an Email Connection from the Email Connection Details

| | |
|---|---|
| **Step 1** | Select an Email Connection from the Email Connection list. The Email Connection Details for that Email Connection displays. |

| | |
|---|---|
| **Step 2** | Either:<br>• Click the **Copy** button.<br>• Right-click the Details to display the Action menu, and then click **Copy**.<br>A Copy Email Connection pop-up dialog displays.<br>  |
| **Step 3** | Enter a new name for the Email Connection and, optionally, select any Business Services that you want the Email Connection assigned to. |
| **Step 4** | Click **Submit** to create a copy of the Email Connection. |

# Copy Permissions

To copy an Email Connection, you must have both Read permission and Copy command permission for the Email Connection you are copying, in addition to having Create permission for the copied Email Connection.

# Database Connections



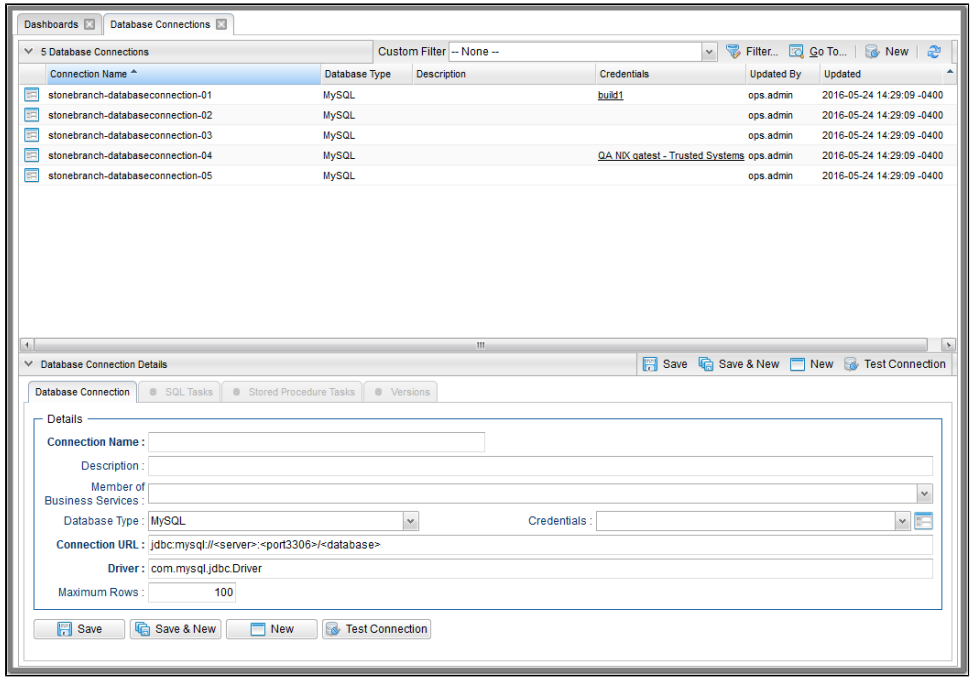
## Overview

Database Connections provide all database server information required for Universal Controller to execute an SQL task or a Stored Procedure Task.

Database Connections can receive Email Notifications when:

- An Agent or OMS Server goes down or comes back up.
- A Cluster Node goes Offline or becomes Active.

## Creating a Database Connection

| | |
|---|---|
| **Step 1** | From the Agents & Connections navigation pane, select **System > Database Connections**. The Database Connections list displays.<br><br>Below the list, Database Connection Details for a new Database Connection displays.<br><br>  |
| **Step 2** | Enter / select Details for a new Database Connection, using the field descriptions below as a guide.<br><br>• Required fields display in **boldface**.<br>• Default values for fields, if available, display automatically.<br><br>To display more of the Details fields on the screen, you can either:<br><br>• Use the scroll bar.<br>• Temporarily hide the list above the Details.<br>• Click the **New** button above the list to display a pop-up version of the Details. |
| **Step 3** | Click a **Save** button. The Database Connection is added to the database, and all buttons and tabs in the Database Connection Details are enabled. |

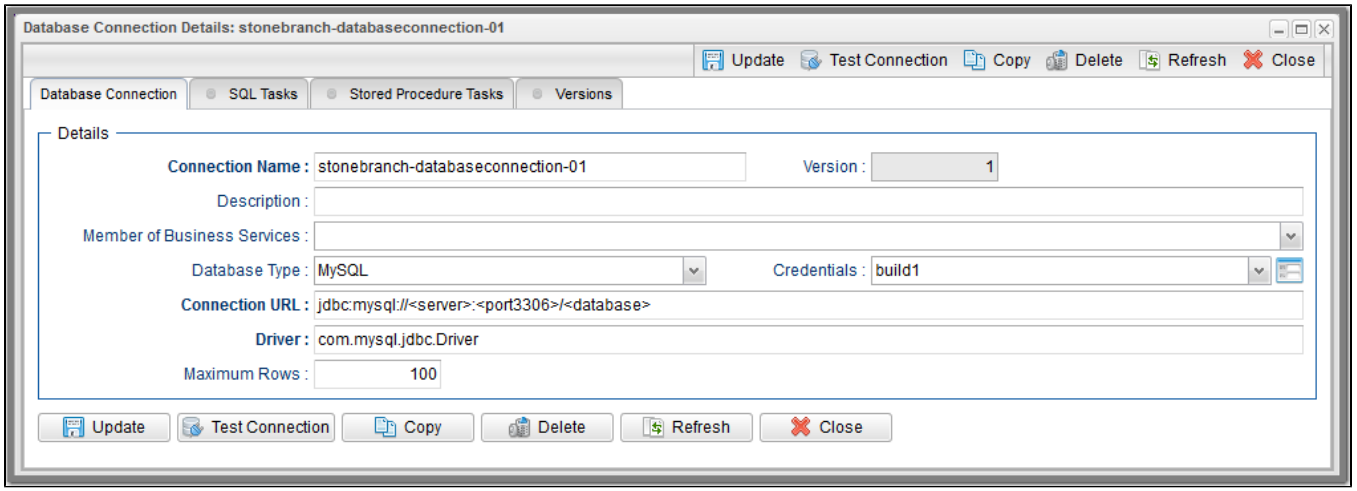
Note

To open an existing record on the list, either:

- Click a record in the list to display its record Details below the list. (To clear record Details below the list, click the **New** button that displays above and below the Details.)
- 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.
- 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).

# Database Connection Details

The following Database Connection Details is for an existing Database Connection. See the field descriptions, below, for a description of all fields that display in the Database Connection Details.




For information on how to access additional details - such as Metadata and complete database Details - for Database Connections (or any type of record), see Records.

# Database Connection Details Field Descriptions

The following table describes the fields, buttons, and tabs that display in the Database Connection Details.

| Field Name | Description |
|---|---|
| **Details** | This section contains detailed information about the Database Connection. |
| Connection Name | Name (maximum 40 alphanumeric characters) used within the Controller to identify this resource. It is the responsibility of the user to develop a workable naming scheme for resources. |
| Version | System-supplied; version number of the current record, which is incremented by the Controller every time a user updates a record. Click the #Versions tab to view previous versions. For details, see Record Versioning. |
| Description | Description of this record. (Maximum = 200 characters.) |
| Member of Business Services | User-defined; allows you to select one or more Business Services that this record belongs to.<br><br>If the Business Service Visibility Restricted Universal Controller system property is set to true, depending on your assigned (or inherited) Permissions or Roles, Business Services available for selection may be restricted. |

| | |
|---|---|
| Database Type | Type of database.<br><br>Options:<br><br>• MySQL<br>• MS SQL Server<br>• Oracle<br>• DB2<br>• Sybase SQL Anywhere<br>• Other<br><br>Note<br>When using the database type **Other**, you will need to source the JDBC driver from your database vendor. Simply place the JDBC driver .jar file into the `$CATALINA_HOME/webapps/opswise/WEB-INF/lib` directory and restart Tomcat. Format the **Connection URL** and **Driver** fields per the database vendor's documentation.<br>Note<br>Customers have reported difficulty establishing secure SQL connections using the jTDS open source JDBC driver for Microsoft SQL Server (**Driver=net.sourceforge.jtds.jdbc.Driver**) when SSL is enabled on the server.<br><br>We have received feedback that the issue can be resolved by installing a patched version of the jTDS driver from bug report https://sourceforge.net/p/jtds/bugs/725/.<br><br>Stonebranch only bundles the official jTDS release, currently 1.3.1, with the Universal Controller.<br><br>We do not include unofficial patches, and if you decide to use them, you do so at your own risk. |
| Credentials | Credentials for this Database Connection. Click the Details icon to create a new Credentials record, or select an existing Credentials record from the drop-down list. |
| Connection URL | URL of the database.<br><br>If you are using a MySQL database and want the ability to issue multiple SQL commands from a single task, you need to enable this by appending the following string to the end of the connection string:<br><br>`?allowMultiQueries=true`<br><br>For example:<br><br>`jdbc:mysql://localhost:3306/opswise?allowMultiQueries=true` |
| Driver | Name of the JDBC driver. |
| Maximum Rows | If necessary, specifies a limit to the number of rows you want returned by the SQL statement. |
| **Metadata** | This section contains Metadata information about this record. |
| 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. |
| **Buttons** | This section identifies the buttons displayed above and below the Database Connection Details that let you perform various actions. |
| **Save** | Saves a new Database Connection record in the Controller database. |
| **Save & New** | Saves a new record in the Controller database and redisplays empty Details so that you can create another new record. |
| **Save & View** | Saves a new record in the Controller database and continues to display that record. |
| **New** | Displays empty (except for default values) Details for creating a new record. |
| **Update** | Saves updates to the record. |
| **Test Connection** | After saving the record to the database, click **Test Connection** to run a connection test. |
| **Copy** | Creates a copy of this Database Connection, which you are prompted to rename. |
| **Delete** | Deletes the current record. |
| **Refresh** | Refreshes any dynamic data displayed in the Details. |
| **Close** | For pop-up view only; closes the pop-up view of this Database Connection. |
| **Tabs** | This section identifies the tabs across the top of the Database Connection Details that provide access to additional information about the Database Connection. |
| **SQL Tasks** | Lists all SQL tasks that are using this Database Connection. |
| **Stored Procedure Tasks** | Lists all Stored Procedure tasks that are using this Database Connection. |
| **Versions** | Stores copies of all previous versions of the current record. See Record Versioning. |

# Copying Database Connections



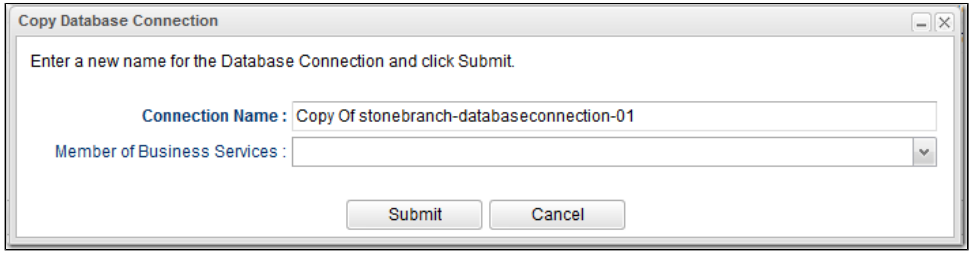
## Overview

You can make copies of all Universal Controller records, including Database Connections, using the standard method for Copying a Record: selecting **Insert** on the Action menu.

However, you also can use the Copy action on the Database Connections Action menu or the Copy button in the Database Connections Details.

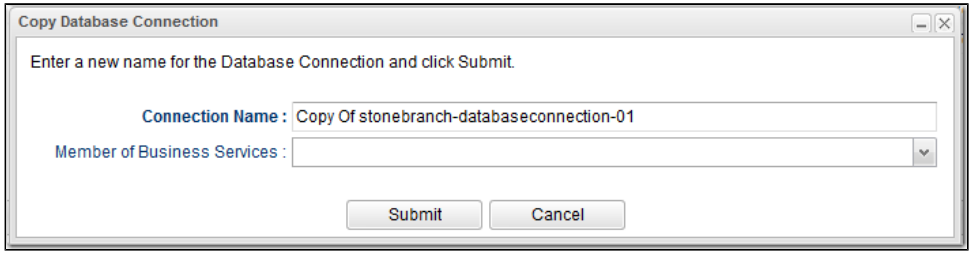
## Copying One or More Database Connections from a Database Connections List

| | |
|---|---|
| **Step 1** | From the Agents & Connections navigation pane, select **System > Database Connections** to display the Database Connections list. |
| **Step 2** | Locate the Database Connections(s) you want to copy (see Filtering). |

| | |
|---|---|
| **Step 3** | Copy the Database Connection(s):<br><br>**Copy One Database Connection**<br><br>1. Right-click the **Database Connection Name**.<br>2. On the<br><br>Action menu<br><br>, select **Copy**. A Copy Database Connection pop-up dialog displays.<br><br>  <br><br><br>3. Enter a new name for the Database Connection and, optionally, select any<br><br>Business Services<br><br>that you want the Database Connection assigned to.<br>4. Click **Submit** to create a copy of the Database Connection.<br><br>**Copy Multiple Database Connections**<br><br>1. Ctrl-Click the Database Connections you want to copy.<br>2. Right-click any of the selected Database Connections.<br>3. On the Action menu, select **Copy**.<br>4. On the Confirmation pop-up that displays, click **OK**. The copied Database Connections are added to the list, with **Copy of** added as a prefix to the Database Connection Name for each Database Connection. If a Database Connection with that **Copy of** name already exists, a numerical suffix is added to the Database Connection Name. |

# Copying a Database Connection from the Database Connection Details

| | |
|---|---|
| **Step 1** | Select a Database Connection from the Database Connections list. The Database Connection Details for that Database Connection displays. |

| | |
|---|---|
| **Step 2** | Either:<br><br>• Click the **Copy** button.<br>• Right-click the Details to display the<br><br>Action menu<br><br>, and then click **Copy**.<br><br>A Copy Database Connection pop-up dialog displays.<br><br>  <br> |
| **Step 3** | Enter a new name for the Database Connection and, optionally, select any Business Services that you want the Database Connection assigned to. |
| **Step 4** | Click **Submit** to create a copy of the Database Connection. |

# Copy Permissions

To copy a Database Connection, you must have both Read permission and Copy command permission for the Database Connection you are copying, in addition to having Create permission for the copied Database Connection.

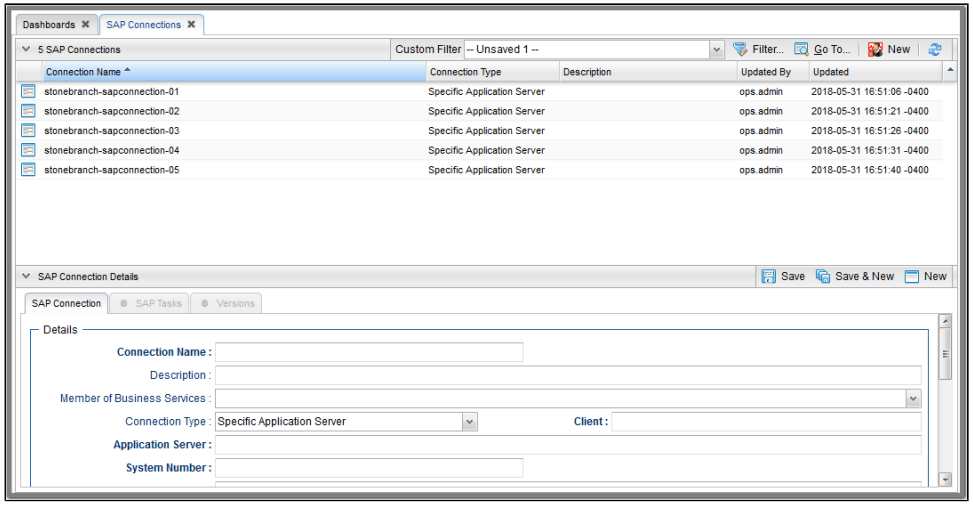
# SAP Connections



## Overview

SAP Connections provide all the SAP server information necessary for Universal Controller to execute an SAP task on an SAP system. These instructions assume the user is familiar with SAP.

## Creating an SAP Connection

| | |
|---|---|
| **Step 1** | From the Agents & Connections navigation pane, select **System > SAP Connections**. The SAP Connections list displays.<br><br>Below the list, SAP Connection Details for a new SAP Connection displays.<br><br>  |

| | |
|---|---|
| **Step 2** | Enter / select Details for a new SAP Connection, using the field descriptions below as a guide.<br><br>• Required fields display in **boldface**.<br>• Default values for fields, if available, display automatically.<br><br>To display more of the Details fields on the screen, you can either:<br><br>• Use the scroll bar.<br>• Temporarily hide the list above the Details.<br>• Click the **New** button above the list to display a pop-up version of the Details. |
| **Step 3** | Click a **Save** button. The SAP Connection is added to the database, and all buttons and tabs in the SAP Connection Details are enabled. |

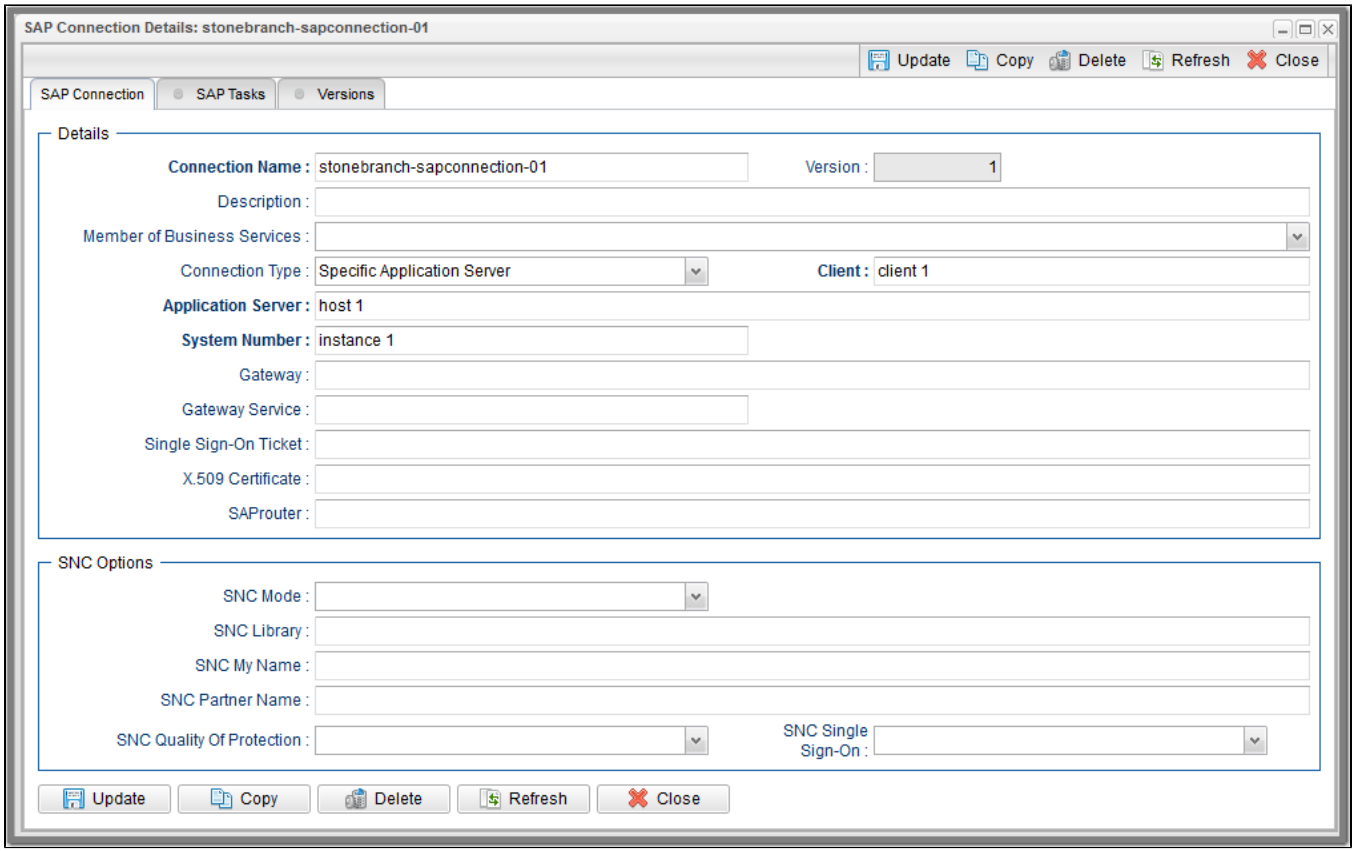
Note

To open an existing record on the list, either:

- Click a record in the list to display its record Details below the list. (To clear record Details below the list, click the **New** button that displays above and below the Details.)
- 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.
- 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).

## SAP Connection Details

The following SAP Connection Details is for an existing SAP Connection. See the field descriptions, below, for a description of all fields that display in the SAP Connection Details.




For information on how to access additional details - such as Metadata and complete database Details - for SAP Connections (or any type of record), see Records.

## SAP Connection Details Field Descriptions

The following table describes the fields, buttons, and tabs that display in the SAP Connection Details.

| Field Name | Description |
|---|---|
| **Details** | This section contains detailed information about the SAP Connection. |
| Connection Name | Name (maximum 40 alphanumeric characters) used within the Controller to identify this resource. It is the responsibility of the user to develop a workable naming scheme for resources. |
| Version | System-supplied; version number of the current record, which is incremented by the Controller every time a user updates a record. Click the #Versions tab to view previous versions. For details, see Record Versioning. |
| Description | Description of this record. (Maximum = 200 characters.) |

| | |
|---|---|
| Member of Business Services | User-defined; allows you to select one or more Business Services that this record belongs to.<br><br>If the Business Service Visibility Restricted Universal Controller system property is set to true, depending on your assigned (or inherited) Permissions or Roles, Business Services available for selection may be restricted. |
| Connection Type | Type of SAP connection.<br><br>Options:<br><br>• **Specific Application Server**<br>Connection to a specific SAP application server (type A RFC connection).<br>• **Load Balancing**<br>Connection to an SAP system where the application server is determined by load balancing (type B RFC connection). |
| Application Server | If #Connection Type = Specific Application Server; ASHOST parameter; Host name of an SAP application server. If the path to the server goes through SAP routers, prefix the host name with the SAP router string. |
| Client | CLIENT parameter; SAP Client number. This field is not required if #Connection Type is **Load Balancing**. |
| System Number | If #Connection Type = Specific Application Server; SYSNR parameter. |
| Gateway | If #Connection Type = Specific Application Server; GWHOST parameter; Host name of the SAP gateway. |
| Gateway Service | If #Connection Type = Specific Application Server; GWSERV parameter; Service name of the SAP gateway. |
| System ID | If #Connection Type = Load Balancing; R3NAME/SYSID parameter; System ID of the SAP system to which you want to connect. |
| Message Server | If #Connection Type = Load Balancing; MSHOST parameter; Host name of the message server. |
| Group | If #Connection Typee = Load Balancing; GROUP parameter; Application servers group name. |
| Use Symbolic Names | If #Connection Type = Load Balancing; USE_SYMBOLIC_NAMES parameter; Specification for whether or not to use symbolic service names.<br><br>Options:<br><br>• No<br>• Yes |
| Single Sign-On Ticket | Path to a file that contains the actual value for the MYSAPSSO2 parameter. |
| X.509 Certificate | Path to a file that contains the actual value for the X509CERT parameter. |
| SAProuter | SAPROUTER parameter. |
| **SNC Options** | This section contains detailed information about the SAP Secure Network Communications (SNC). |
| SNC Mode | SNC_MODE parameter; Specification for whether or not SNC is activated.<br><br>Options:<br><br>• Off<br>• On |
| SNC Library | SNC_LIB parameter; Path to the third-party security library for SNC. |
| SNC My Name | SNC_MYNAME parameter; Token/identifier representing the external RFC program. |

| | |
|---|---|
| SNC Partner Name | SNC_PARTNERNAME parameter; Token/identifier representing the back-end system. |
| SNC Quality of Protection | SNC_QOP parameter; Quality of protection level.<br><br>Options:<br><br>• Authentication Only<br>• Integrity Protection<br>• Privacy Protection<br>• Default Protection<br>• Maximum Protection |
| SNC Single Sign-On | SNC_SSO parameter; Specification for whether or not to use single sign-on for SNC.<br><br>Options:<br><br>• No<br>• Yes |
| **Buttons** | This section identifies the buttons displayed above and below the SAP Connection Details that let you perform various actions. |
| **Save** | Saves a new SAP Connection record in the Controller database. |
| **Save & New** | Saves a new record in the Controller database and redisplays empty Details so that you can create another new record. |
| **Save & View** | Saves a new record in the Controller database and continues to display that record. |
| **New** | Displays empty (except for default values) Details for creating a new record. |
| **Update** | Saves updates to the record. |
| **Copy** | Creates a copy of this SAP Connection, which you are prompted to rename. |
| **Delete** | Deletes the current record. |
| **Refresh** | Refreshes any dynamic data displayed in the Details. |
| **Close** | For pop-up view only; closes the pop-up view of this SAP Connection. |
| **Tabs** | This section identifies the tabs across the top of the SAP Connection Details that provide access to additional information about the SAP Connection. |
| **SAP Tasks** tab | Lists all SAP tasks that use this SAP connection. |
| **Versions** tab | Stores copies of all previous versions of the current record. See Record Versioning. |

# Copying SAP Connections



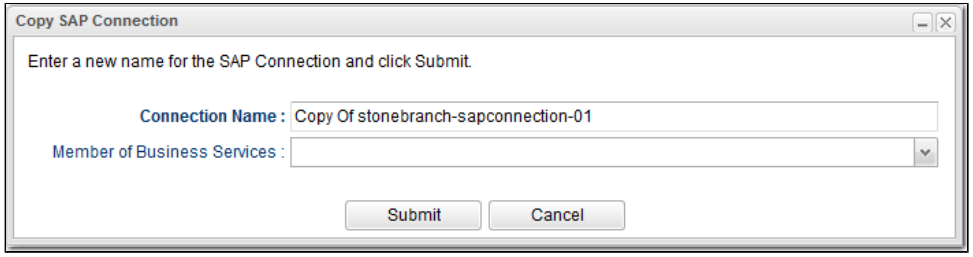
## Overview

You can make copies of all Universal Controller records, including SAP Connections, using the standard method for Copying a Record: selecting **Insert** on the Action menu.

However, you also can use the Copy action on the SAP Connections Action menu or the Copy button in the SAP Connections Details.

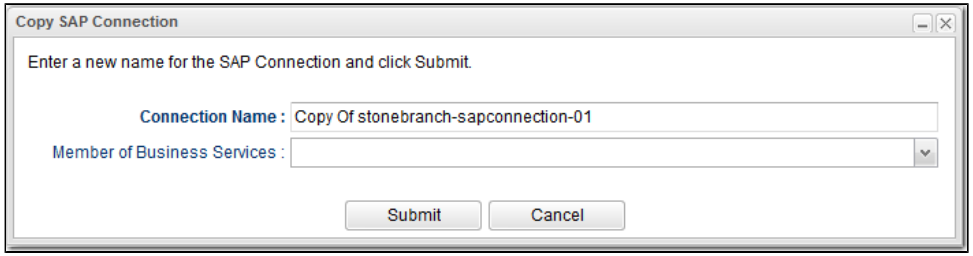
## Copying One or More SAP Connections from an SAP Connections List

| | |
|---|---|
| **Step 1** | From the Agents & Connections navigation pane, select **System > SAP Connections** to display the SAP Connections list. |
| **Step 2** | Locate the SAP Connections(s) you want to copy (see Filtering). |

| | |
|---|---|
| **Step 3** | Copy the SAP Connection(s):<br><br>**Copy One SAP Connection**<br><br>1. Right-click the **SAP Connection Name**.<br>2. On the<br><br>Action menu<br><br>, select **Copy**. A Copy SAP Connection pop-up dialog displays.<br><br>  <br><br><br>3. Enter a new name for the SAP Connection and, optionally, select any<br><br>Business Services<br><br>that you want the SAP Connection assigned to.<br>4. Click **Submit** to create a copy of the SAP Connection.<br><br>**Copy Multiple SAP Connections**<br><br>1. Ctrl-Click the SAP Connections you want to copy.<br>2. Right-click any of the selected SAP Connections.<br>3. On the Action menu, select **Copy**.<br>4. On the Confirmation pop-up that displays, click **OK**. The copied SAP Connections are added to the list, with **Copy of** added as a prefix to the SAP Connection Name for each SAP Connection. If an SAP Connection with that **Copy of** name already exists, a numerical suffix is added to the SAP Connection Name. |

# Copying an SAP Connection from the SAP Connection Details

| | |
|---|---|
| **Step 1** | Select an SAP Connection from the SAP Connections list. The SAP Connection Details for that SAP Connection displays. |

| | |
|---|---|
| **Step 2** | Either:<br>• Click the **Copy** button.<br>• Right-click the Details to display the Action menu, and then click **Copy**.<br>A Copy SAP Connection pop-up dialog displays.<br>  |
| **Step 3** | Enter a new name for the SAP Connection and, optionally, select any Business Services that you want the SAP Connection assigned to. |
| **Step 4** | Click **Submit** to create a copy of the SAP Connection. |

# Copy Permissions

To copy an SAP Connection, you must have both Read permission and Copy command permission for the SAP Connection you are copying, in addition to having Create permission for the copied SAP Connection.

# PeopleSoft Connections



## Overview

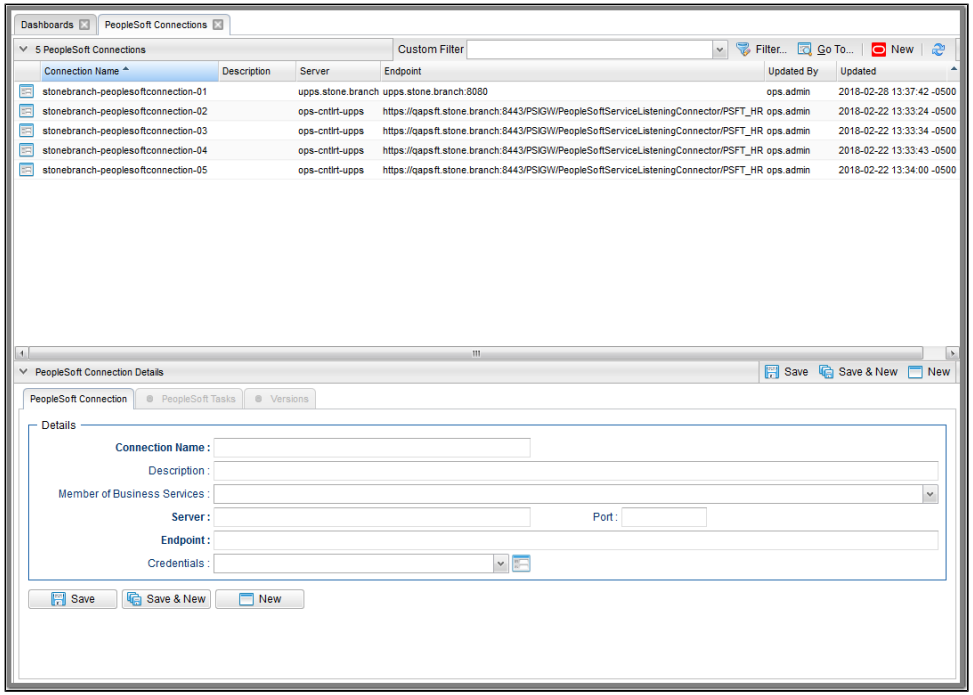
PeopleSoft Connections provide all the PeopleSoft server information necessary for Universal Controller to execute a PeopleSoft task on a PeopleSoft system. These instructions assume the user is familiar with PeopleSoft.

## Creating a PeopleSoft Connection

**Step 1**

From the Agents & Connections navigation pane, select **System > PeopleSoft Connections**. The PeopleSoft Connections list displays.

Below the list, PeopleSoft Connection Details for a new PeopleSoft Connection displays.



| | |
|---|---|
| **Step 2** | Enter / select Details for a new PeopleSoft Connection, using the field descriptions below as a guide.<br><br>• Required fields display in **boldface**.<br>• Default values for fields, if available, display automatically.<br><br>To display more of the Details fields on the screen, you can either:<br><br>• Use the scroll bar.<br>• Temporarily hide the list above the Details.<br>• Click the **New** button above the list to display a pop-up version of the Details. |
| **Step 3** | Click a **Save** button. The PeopleSoft Connection is added to the database, and all buttons and tabs in the PeopleSoft Connection Details are enabled. |

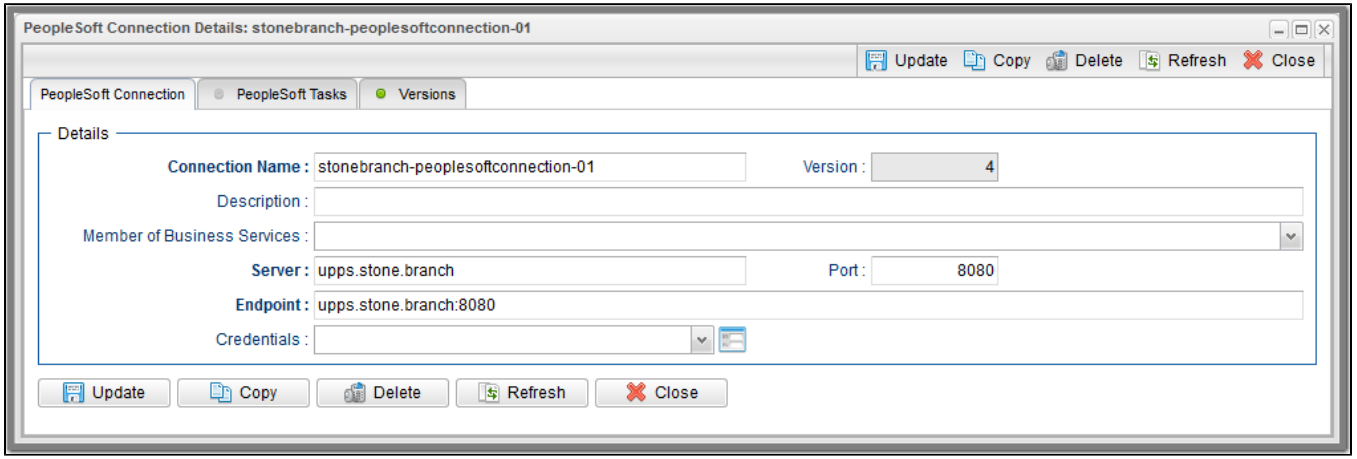
Note

To open an existing record on the list, either:

- Click a record in the list to display its record Details below the list. (To clear record Details below the list, click the **New** button that displays above and below the Details.)
- 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.
- 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).

## PeopleSoft Connection Details

The following PeopleSoft Connection Details is for an existing PeopleSoft Connection. See the field descriptions, below, for a description of all fields that display in the PeopleSoft Connection Details.




For information on how to access additional details - such as Metadata and complete database Details - for PeopleSoft Connections (or any type of record), see Records.

## PeopleSoft Connection Details Field Descriptions

The following table describes the fields, buttons, and tabs that display in the PeopleSoft Connection Details.

| Field Name | Description |
|---|---|
| **Details** | This section contains detailed information about the PeopleSoft Connection. |
| Connection Name | Name (maximum 40 alphanumeric characters) used within the Controller to identify this resource. It is the responsibility of the user to develop a workable naming scheme for resources. |
| Version | System-supplied; version number of the current record, which is incremented by the Controller every time a user updates a record. Click the #Versions tab to view previous versions. For details, see Record Versioning. |
| Description | Description of this record. (Maximum = 200 characters.) |
| Member of Business Services | User-defined; allows you to select one or more Business Services that this record belongs to.<br><br>If the Business Service Visibility Restricted Universal Controller system property is set to true, depending on your assigned (or inherited) Permissions or Roles, Business Services available for selection may be restricted. |
| Server | Host name of the Name or IP address of the PeopleSoft application server. |
| Port | Port number for the PeopleSoft application server. |
| Endpoint | Web service endpoint for the PROCESSREQUEST service. |
| Credentials | Credentials for the PeopleSoft connection.<br><br>Note<br>Either the PeopleSoft Connection or the PeopleSost task using that connection must specify PeopleSoft Credentials. If a PeopleSoft task using this PeopleSoft Connection specifies PeopleSoft Credentials, those PeopleSoft task credentials override the PeopleSoft Connection credentials. |
| **Metadata** | This section contains Metadata information about this record. |
| 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. |
| **Buttons** | This section identifies the buttons displayed above and below the PeopleSoft Connection Details that let you perform various actions. |
| **Save** | Saves a new PeopleSoft Connection record in the Controller database. |
| **Save & New** | Saves a new record in the Controller database and redisplays empty Details so that you can create another new record. |
| **Save & View** | Saves a new record in the Controller database and continues to display that record. |
| **New** | Displays empty (except for default values) Details for creating a new record. |
| **Update** | Saves updates to the record. |
| **Copy** | Creates a copy of this PeopleSoft Connection, which you are prompted to rename. |

| | |
|---|---|
| **Delete** | Deletes the current record. |
| **Refresh** | Refreshes any dynamic data displayed in the Details. |
| **Close** | For pop-up view only; closes the pop-up view of this PeopleSoft Connection. |
| **Tabs** | This section identifies the tabs across the top of the PeopleSoft Connection Details that provide access to additional information about the PeopleSoft Connection. |
| **PeopleSoft Tasks** tab | Lists all PeopleSoft tasks that use this PeopleSoft connection. |
| **Versions** tab | Stores copies of all previous versions of the current record. See Record Versioning. |

# Copying PeopleSoft Connections



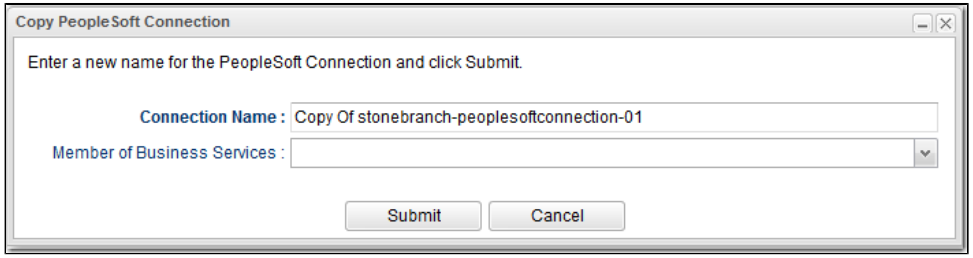
## Overview

You can make copies of all Universal Controller records, including PeopleSoft Connections, using the standard method for Copying a Record: selecting **Insert** on the Action menu.

However, you also can use the Copy action on the PeopleSoft Connections Action menu or the Copy button in the PeopleSoft Connections Details.

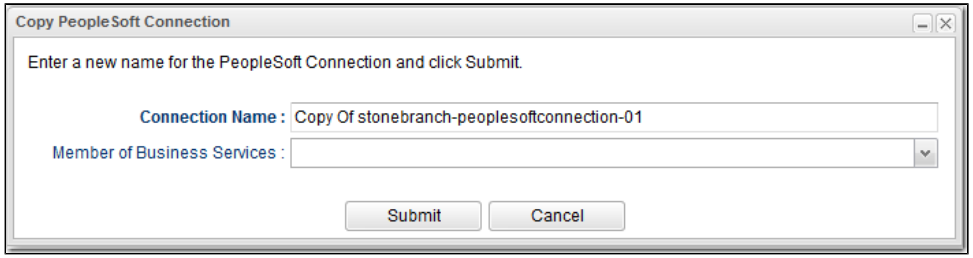
## Copying One or More PeopleSoft Connections from a PeopleSoft Connections List

| | |
|---|---|
| **Step 1** | From the Agents & Connections navigation pane, select **System > PeopleSoft Connections** to display the PeopleSoft Connections list. |
| **Step 2** | Locate the PeopleSoft Connections(s) you want to copy (see Filtering). |

| | |
|---|---|
| **Step 3** | Copy the PeopleSoft Connection(s):<br><br>**Copy One PeopleSoft Connection**<br><br>1. Right-click the **PeopleSoft Connection Name**.<br>2. On the<br><br>Action menu<br><br>, select **Copy**. A Copy PeopleSoft Connection pop-up dialog displays.<br><br>  <br><br><br>3. Enter a new name for the PeopleSoft Connection and, optionally, select any<br><br>Business Services<br><br>that you want the PeopleSoft Connection assigned to.<br>4. Click **Submit** to create a copy of the PeopleSoft Connection.<br><br>**Copy Multiple PeopleSoft Connections**<br><br>1. Ctrl-Click the PeopleSoft Connections you want to copy.<br>2. Right-click any of the selected PeopleSoft Connections.<br>3. On the Action menu, select **Copy**.<br>4. On the Confirmation pop-up that displays, click **OK**. The copied PeopleSoft Connections are added to the list, with **Copy of** added as a prefix to the PeopleSoft Connection Name for each PeopleSoft Connection. If a PeopleSoft Connection with that **Copy of** name already exists, a numerical suffix is added to the PeopleSoft Connection Name. |

# Copying a PeopleSoft Connection from the PeopleSoft Connection Details

| | |
|---|---|
| **Step 1** | Select a PeopleSoft Connection from the PeopleSoft Connections list. The PeopleSoft Connection Details for that PeopleSoft Connection displays. |

| | |
|---|---|
| **Step 2** | Either:<br>• Click the **Copy** button.<br>• Right-click the Details to display the Action menu, and then click **Copy**.<br>A Copy PeopleSoft Connection pop-up dialog displays.<br>  |
| **Step 3** | Enter a new name for the PeopleSoft Connection and, optionally, select any Business Services that you want the PeopleSoft Connection assigned to. |
| **Step 4** | Click **Submit** to create a copy of the PeopleSoft Connection. |

# Copy Permissions

To copy a PeopleSoft Connection, you must have both Read permission and Copy command permission for the PeopleSoft Connection you are copying, in addition to having Create permission for the copied PeopleSoft Connection.

# SNMP Managers



## Overview

SNMP Managers are the network managers to which Universal Controller sends SNMP notifications.

Note

Universal Controller uses **SNMPv1** for its SNMP Managers.

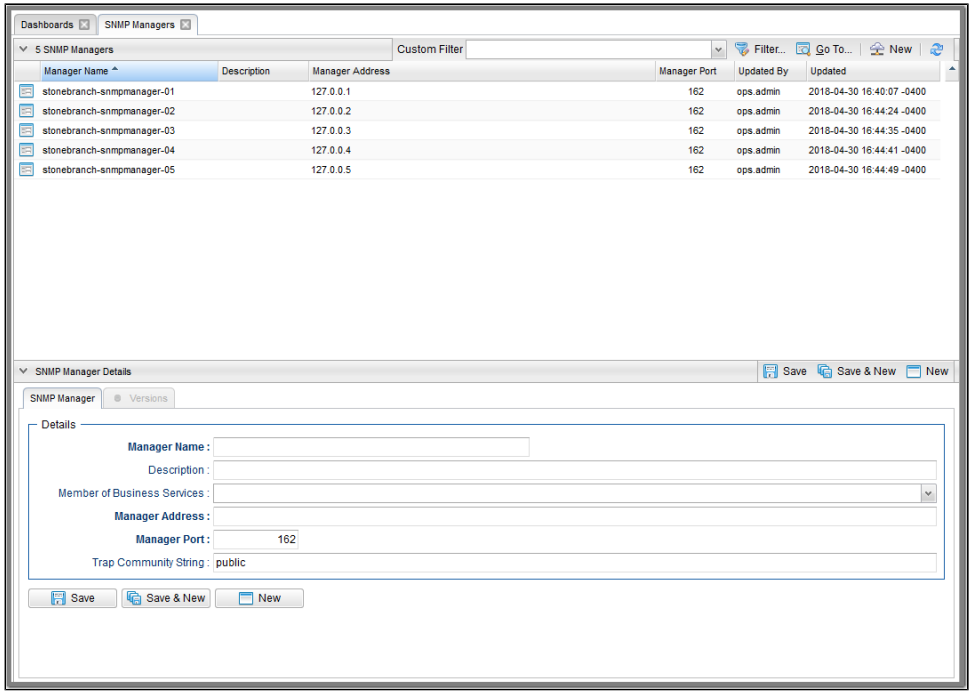
SNMP Managers can receive SNMP notifications when:

- An Agent or OMS Server goes down or comes back up.
- A Cluster Node goes Offline or becomes Active.
- An SNMP Notification is associated with a task.

Note

SNMP Notifications on Cluster Nodes cannot be exported; therefore, they cannot be imported. You must set up new SNMP Notifications for Cluster Nodes whenever an export / import has been run.

## Creating an SNMP Manager

| | |
|---|---|
| **Step 1** | From the Agents & Connections navigation pane, select **System > SNMP Managers**. The SNMP Managers list displays.<br><br>Below the list, SNMP Manager Details for a new SNMP Manager displays.<br><br>  <br> |
| **Step 2** | Enter / select Details for a new SNMP Manager, using the field descriptions below as a guide.<br><br>• Required fields display in **boldface**.<br>• Default values for fields, if available, display automatically.<br><br>To display more of the Details fields on the screen, you can either:<br><br>• Use the scroll bar.<br>• Temporarily hide the list above the Details.<br>• Click the **New** button above the list to display a pop-up version of the Details. |
| **Step 3** | Click a **Save** button. The SNMP Manager is added to the database, and all buttons and tabs in the SNMP Manager Details are enabled. |

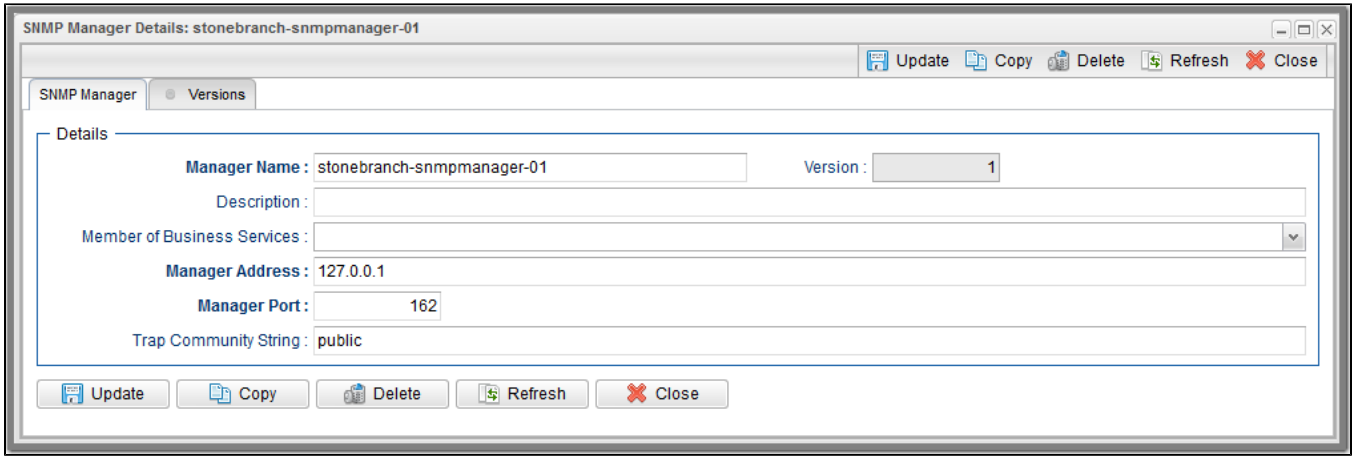
Note

To open an existing record on the list, either:

- Click a record in the list to display its record Details below the list. (To clear record Details below the list, click the **New** button that displays above and below the Details.)
- 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.
- 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).

## SNMP Manager Details

The following SNMP Manager Details is for an existing SNMP Manager. See the field descriptions, below, for a description of all fields that display in the SNMP Manager Details.




For information on how to access additional details - such as Metadata and complete database Details - for SNMP Managers (or any type of record), see Records.

## SNMP Manager Details Field Descriptions

The following table describes the fields, buttons, and tabs that display in the SNMP Manager Details.

| Field Name | Description |
|---|---|
| **Details** | This section contains detailed information about the SNMP Manager. |
| Manager Name | Name used within the Controller to identify this resource. Up to 40 alphanumerics. It is the responsibility of the user to develop a workable naming scheme for resources. |
| Version | System-supplied; version number of the current record, which is incremented by the Controller every time a user updates a record. Click the #Versions tab to view previous versions. For details, see Record Versioning. |
| Description | Description of this record. (Maximum = 200 characters.) |
| Member of Business Services | User-defined; allows you to select one or more Business Services that this record belongs to.<br><br>If the Business Service Visibility Restricted Universal Controller system property is set to true, depending on your assigned (or inherited) Permissions or Roles, Business Services available for selection may be restricted. |

| | |
|---|---|
| Manager Address | Name or IP address of the SNMP Manager. |
| Manager Port | Port used by the SNMP Manager. |
| Trap Community String | Used by the trap receiver to determine which traps to process. Default is **public**. |
| **Metadata** | This section contains Metadata information about this record. |
| 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. |
| **Buttons** | This section identifies the buttons displayed above and below the SNMP Manager Details that let you perform various actions. |
| **Save** | Saves a new SNMP Manager record in the Controller database. |
| **Save & New** | Saves a new record in the Controller database and redisplays empty Details so that you can create another new record. |
| **Save & View** | Saves a new record in the Controller database and continues to display that record. |
| **New** | Displays empty (except for default values) Details for creating a new record. |
| **Update** | Saves updates to the record. |
| **Copy** | Creates a copy of this SNMP Manager, which you are prompted to rename. |
| **Delete** | Deletes the current record. |
| **Refresh** | Refreshes any dynamic data displayed in the Details. |
| **Close** | For pop-up view only; closes the pop-up view of this SNMP Manager. |
| **Tabs** | This section identifies the tabs across the top of the SNMP Manager Details that provide access to additional information about the SNMP Manager. |
| **Versions** tab | Stores copies of all previous versions of the current record. See Record Versioning. |

# MIB File

A MIB file contains the translation of the SNMP notifications sent to the SNMP Manager by the Controller.

A sample MIB file, **`OPSWISE.MIB.txt`**, is shipped with all Universal Agent for Windows and UNIX packages.

## MIB and SNMP Protocol

SNMP protocol is a simple UDP package containing a set of dot-separated characters defined as ObjectID.

You can use the MIB file to set up the corresponding options Tree; the numbers will tell the server which line to go down. You then can look up inside the server for those results or, more importantly, define alerts on the decision option of the tree-structure that you defined with the MIN file.

If you have a more graphical server, you also may have a GUI showing the different parts of your trees in diagrams or other types of reporting.

SNMP protocol is, in effect, an external Alarm/(simple up to rather complex) Reporting System that searches for the Return Code (Success or Failure) of a task, rather than the actual output of the task. It could tell the Operator, for example: the Return Code is not as expected, add paper to the printer, the machine is low on disk space, or the server just booted up. These messages can be as descriptive as defined and, of course, will depend on the logging capability of the corresponding manager, which in our case is the Controller. It can be thought of as a centralized Information system, where quite a lot of tools and hardware can use for status exchange.

## MIB File Location

The MIB file for both UNIX and Windows are included in the **`samp`** directory (UNIX) and **`samples`** directory (Windows) for Universal Automation Center Agent (UAG):

| | |
|---|---|
| **UNIX** | /opt/universal/uagsrv/samp |
| **Windows** | \Program Files\Universal\UAGSrv\samples |

# Copying SNMP Managers



## Overview

You can make copies of all Universal Controller records, including SNMP Managers, using the standard method for Copying a Record: selecting **Insert** on the Action menu.

However, you also can use the Copy action on the SNMP Manager Action menu or the Copy button in the SNMP Manager Details.

## Copying One or More SNMP Managers from an SNMP Managers List

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|---|---|
| **Step 1** | From the Agents & Connections navigation pane, select **System > SNMP Managers** to display the SNMP Managers list. |
| **Step 2** | Locate the SNMP Managers(s) you want to copy (see Filtering). |

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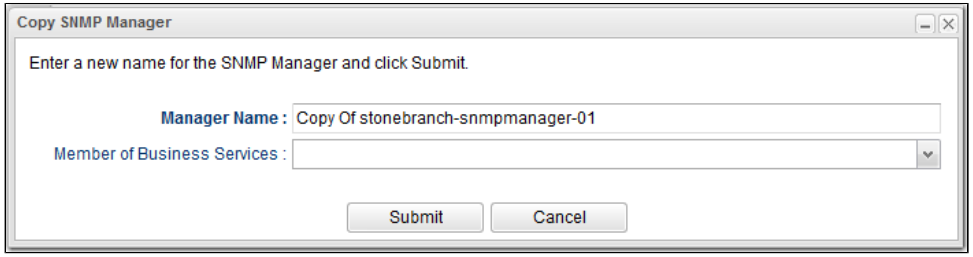
|---|---|
| **Step 3** | Copy the SNMP Manager(s):<br><br>**Copy One SNMP Manager**<br><br>1. Right-click the **SNMP Manager Name**.<br>2. On the<br><br>Action menu<br><br>, select **Copy**. A Copy SNMP Manager pop-up dialog displays.<br><br>  <br><br><br>3. Enter a new name for the SNMP Manager and, optionally, select any<br><br>Business Services<br><br>that you want the SNMP Manager assigned to.<br>4. Click **Submit** to create a copy of the SNMP Manager.<br><br>**Copy Multiple SNMP Managers**<br><br>1. Ctrl-Click the SNMP Managers you want to copy.<br>2. Right-click any of the selected SNMP Managers.<br>3. On the Action menu, select **Copy**.<br>4. On the Confirmation pop-up that displays, click **OK**. The copied SNMP Managers are added to the list, with **Copy of** added as a prefix to the SNMP Manager Name for each SNMP Manager. If an SNMP Manager with that **Copy of** name already exists, a numerical suffix is added to the SNMP Manager Name. |

# Copying an SNMP Manager from the SNMP Manager Details

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| **Step 1** | Select an SNMP Manager from the SNMP Managers list. The SNMP Manager Details for that SNMP Manager displays. |

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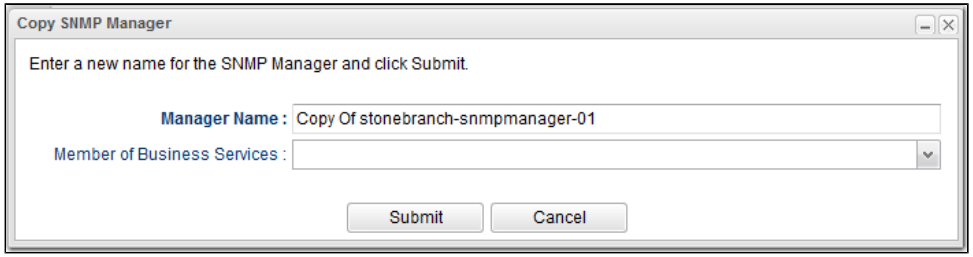
| **Step 2** | Either:<br>• Click the **Copy** button.<br>• Right-click the Details to display the Action menu, and then click **Copy**.<br>A Copy SNMP Manager pop-up dialog displays.<br>  |
| **Step 3** | Enter a new name for the SNMP Manager and, optionally, select any Business Services that you want the SNMP Manager assigned to. |
| **Step 4** | Click **Submit** to create a copy of the SNMP Manager. |

# Copy Permissions

To copy an SNMP Manager, you must have both Read permission and Copy command permission for the SNMP Manager you are copying, in addition to having Create permission for the copied SNMP Manager.