Universal Controller 6.3.x

Resources

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The information on these pages also is located in the Universal Controller 6.3.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): • Linux/Unix • Windows • 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 6.3.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.
SNMP Managers	Allow you to generate SNMP notifications.
Application Resources	Define the names of applications being monitored.

Agents

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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:

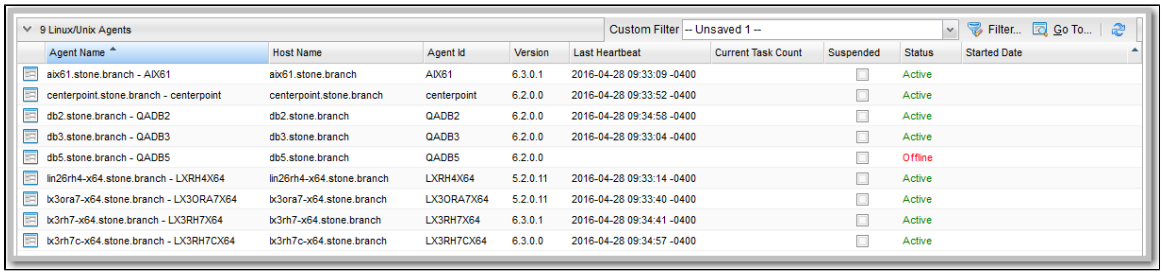
- Linux/Unix Agent
- Windows Agent
- z/OS Agent

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.

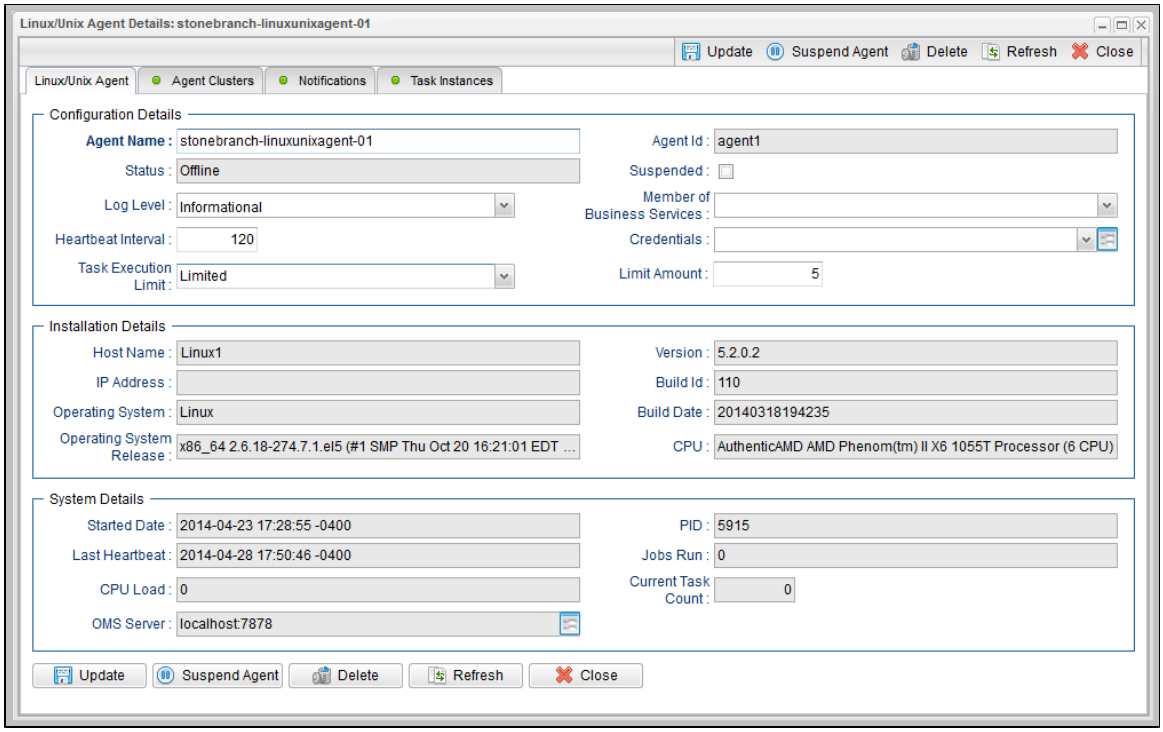
(You also can view status information about Agents from the Command Line Interface (CLI).)

Step 1 From the Agents & Connections navigation pane, select **Agents > All Agents** or **Agents > <type of agent>**. An Agents list displays:



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:

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 default Log Level.
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.

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	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. • Active: the Agent is running. • Offline: the Agent is not running.
Updated By	User that last updated this record.
Updated	Date when this record was last updated.

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**.

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**.

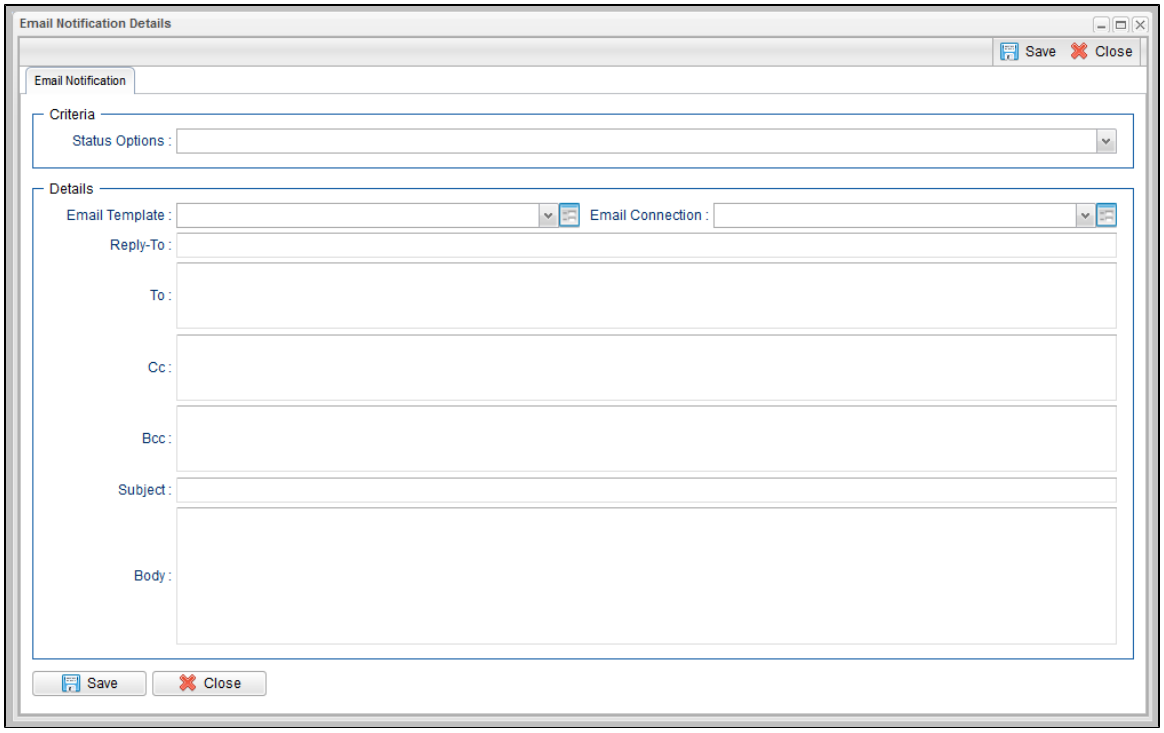
> **Note**
> The following roles and permissions are required to reset the current task count:
>
> - Reset Agent Task Count requires the **ops_admin** role and the Update Agent permission.
> - Reset Cluster Task Count requires the **ops_agent_cluster_admin** role.

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). **Note** 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



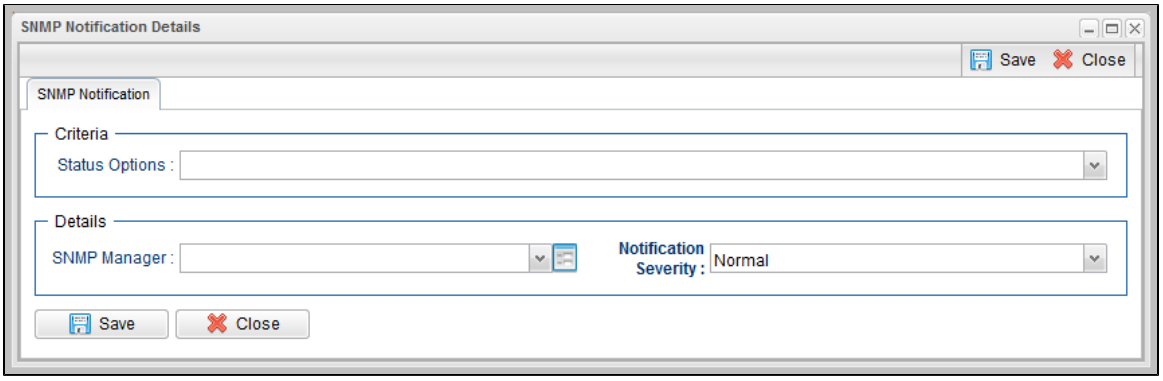
Email Notification Details Field Descriptions

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. • 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. 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. 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. (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 Email Connection. An Email Connection specifies information about an email server. Enter the name of an existing Email Connection, or click the magnifying glass to browse for an existing Email Connection or create a new Email Connection. 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. If both the email template and the email task contain text in the body, the text is appended.
Buttons	This section identifies the buttons displayed above and below the Notification Details that let you perform various actions.
Save button	Submits the new record to the database.
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. • 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.
Notification Severity	Severity of this notification. Options: • Normal (1) • Warning (2) • Minor (3) • Major (4) • Critical (5)
Buttons	This section identifies the buttons displayed above and below the Notification Details that let you perform various actions.
Save button	Submits the new record to the database.
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
- Linux/Unix Agent Details
- Linux/Unix Agent Details Field Descriptions

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.

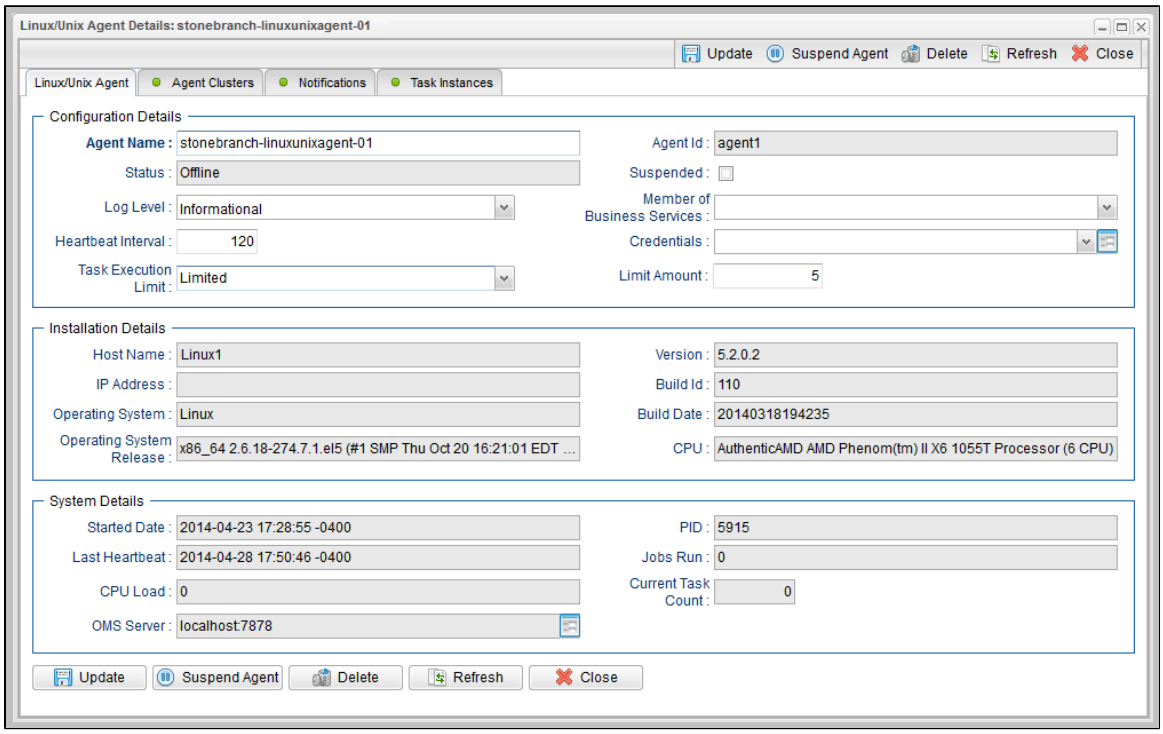
Linux/Unix Agent Details

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. **Note** 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.
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 should perform. Options: • Severe Error • Errors • Warning • Informational • Debug • Trace
Member of Business Service	User-defined at installation; specifies one or more Business Services that this resource belongs to.
Heartbeat Interval	User-modifiable; heartbeat interval (in seconds). The heartbeat is a status message sent from the Agent to the Controller. 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.
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**.) 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. (See Resetting the Current Task Count for information on resetting the current task count.)
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.
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.

Windows Agent

- Overview
- Windows Agent Details
- Windows Agent Details Field Descriptions

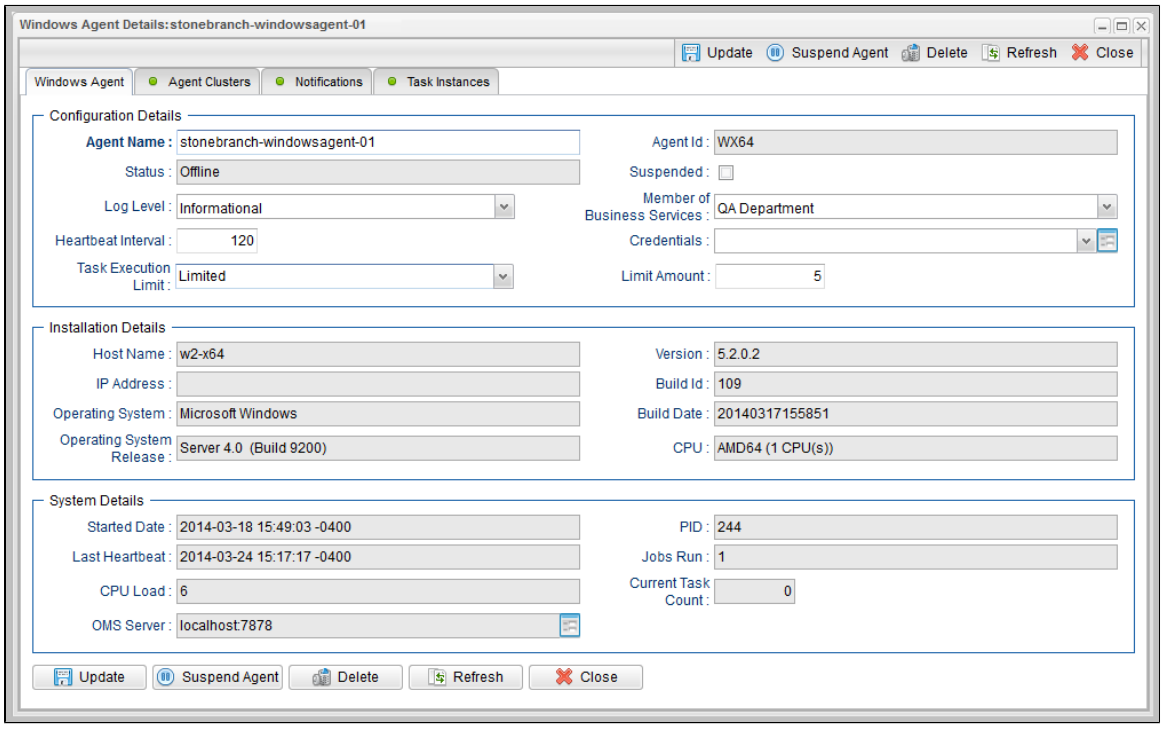
Overview

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:

Step 1	From the Agents & Connections navigation pane, select **Agents > Windows Agents**. The Windows Agents list displays a list of connected Windows Agents. **Note** 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.
Step 2	Click the Details icon next to an Agent Name or click anywhere in the Agent row to display Details for that agent. 

Step 3	Most fields are display-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 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.
Agent ID	Unique ID for this Agent, created during installation.
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 should perform. Options: • Severe Error • Errors • Warning • Informational • Debug • Trace
Member of Business Service	User-defined at installation; specifies one or more Business Services that this resource belongs to.
Heartbeat Interval	User-modifiable; heartbeat interval (in seconds). The heartbeat is a status message sent from the Agent to the Controller. 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.
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**.) 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. (See Resetting the Current Task Count for information on resetting the current task count.)

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.
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.

zOS Agent

- Overview
- z/OS Agent Details
- z/OS Agent Details Field Descriptions

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

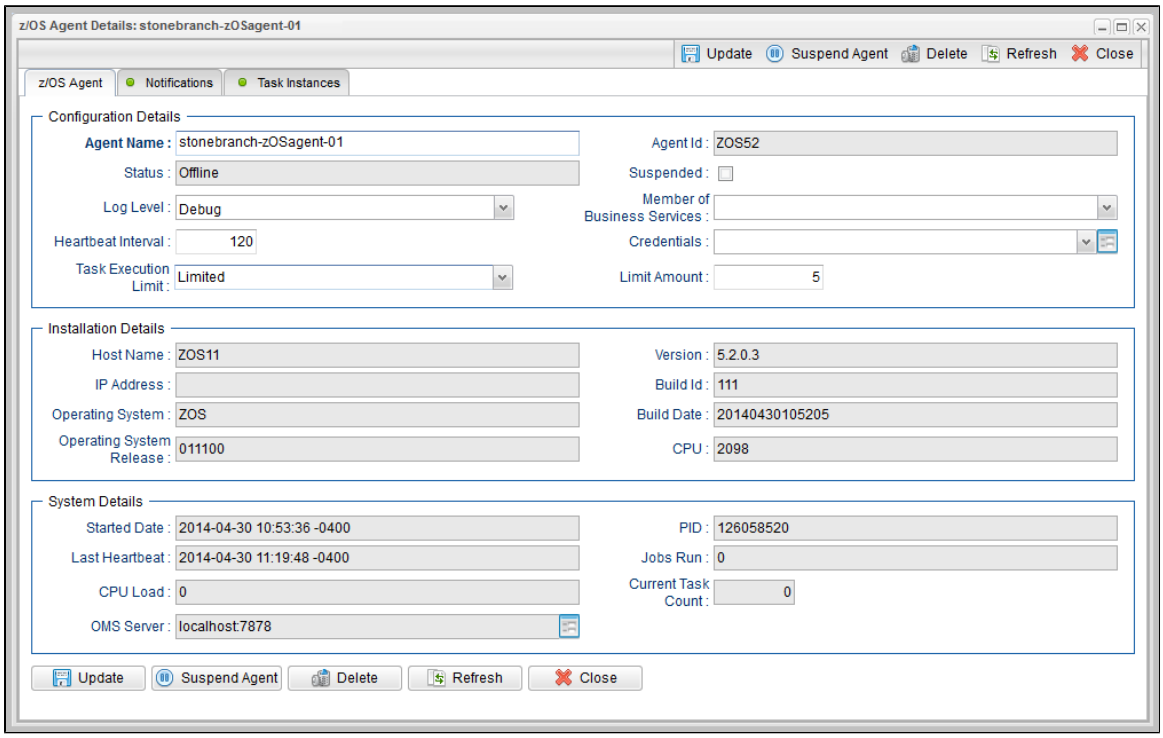
z/OS Agent Details provide the information necessary for the scheduler to locate and communicate with the machine where the Agent resides. Universal Controller creates this record automatically when the Agent connects with the Controller.

To view z/OS Agent Details:

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.

Note
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.
Agent ID	Unique ID for this Agent, created during installation.
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 should perform. Options: • Severe Error • Errors • Warning • Informational • Debug • Trace
Member of Business Service	User-defined at installation; specifies one or more Business Services that this resource belongs to.
Heartbeat Interval	User-modifiable; heartbeat interval (in seconds). The heartbeat is a status message sent from the Agent to the Controller. 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.
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**.) 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. (See Resetting the Current Task Count for information on resetting the current task count.)
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.
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.

Agent Clusters

- Overview
- Creating an Agent Cluster
  - Agent Cluster Details
  - Agent Cluster Details Field Descriptions
- Assigning Agents to the Cluster
- Suspending Agent Clusters and Agent Cluster Memberships

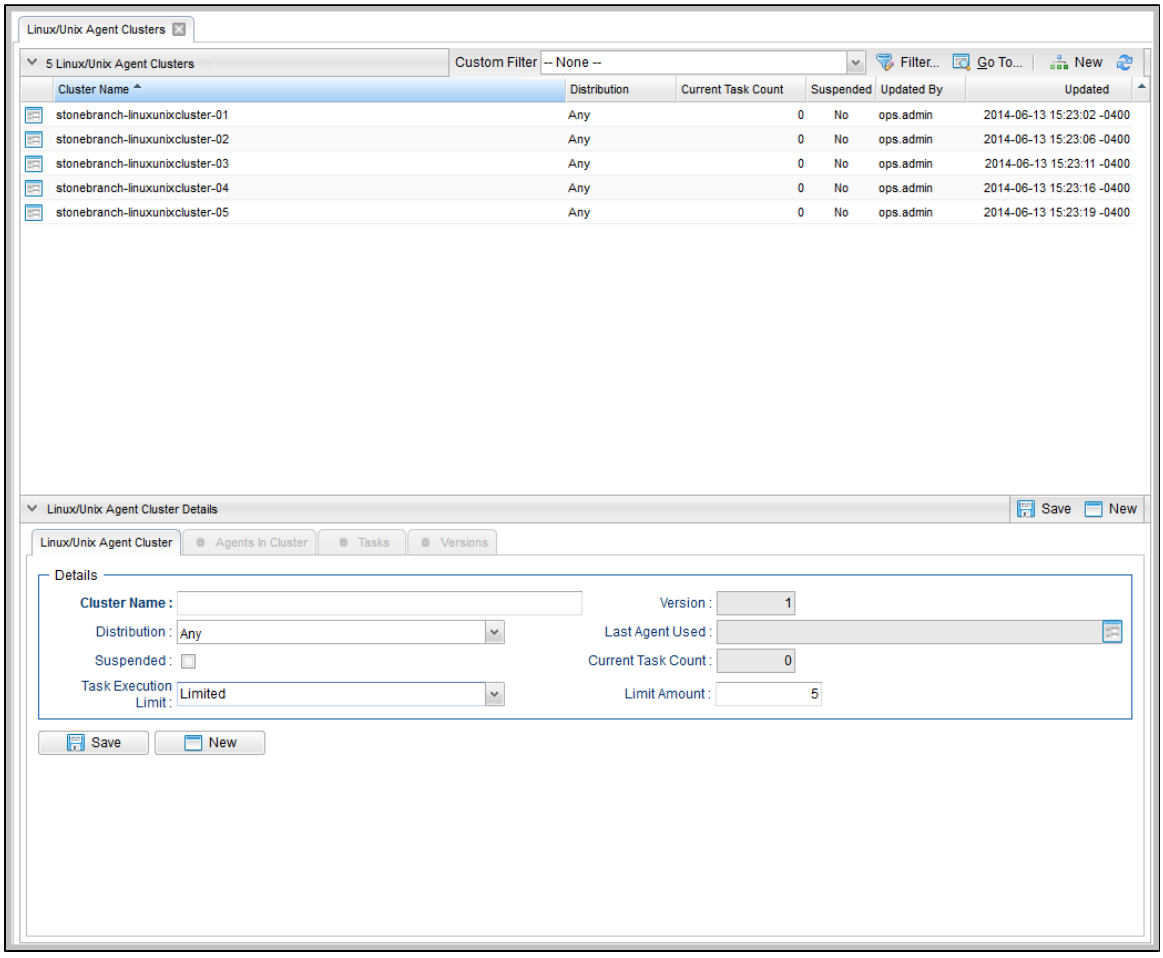
Overview

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.

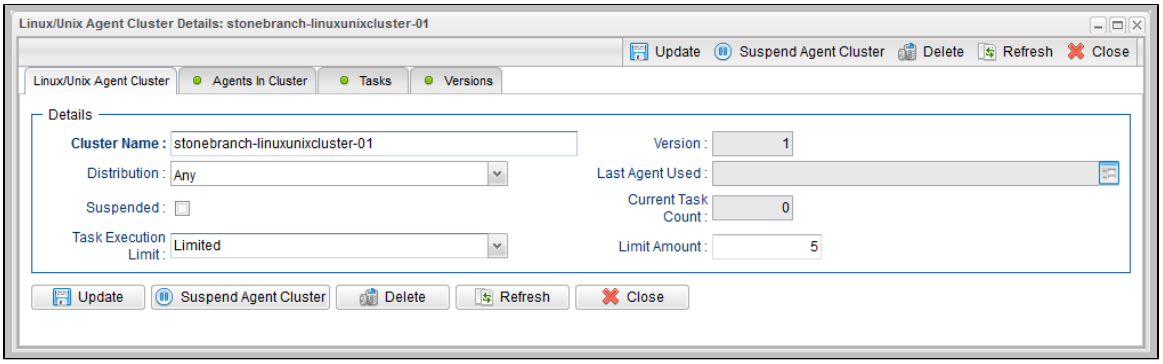
Note
The instructions and illustrations, below, for creating Windows agent clusters and Linux/Unix agent clusters, and assigning Agents to those clusters, are the same.

Creating an Agent Cluster

Step 1	From the Agents & Connections navigation pane, select (for example) **Agent Clusters > Linux/Unix Agent Clusters**. The Linux/Unix Clusters List displays. Below the list, Agent Cluster Details for a new Agent Cluster displays. (You also can click the **New** button to display Agent Cluster Details for a new Agent Cluster.) 
Step 2	Enter / select Details for a new agent cluster, using the field descriptions below as a guide. • Required fields display in **boldface**. • Default values for fields, if available, display automatically. To display more of the Details fields on the screen, you can temporarily hide the list. **Note** If you view Agent Cluster Details for an existing agent cluster by clicking a n agent cluster in the list, and then want to create a new agent cluster, you must click the **New** button that displays above and below the Details.
Step 3	Click the **Save** button. The task is added to the database, and all buttons and tabs in the Agent Cluster Details are enabled.

Agent Cluster Details

The following Agent Cluster Details is for an existing Linux/Unix agent cluster. See the field descriptions, below, for a description of all fields that may display in the Agent Cluster Details.



Agent Cluster Details Field Descriptions

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

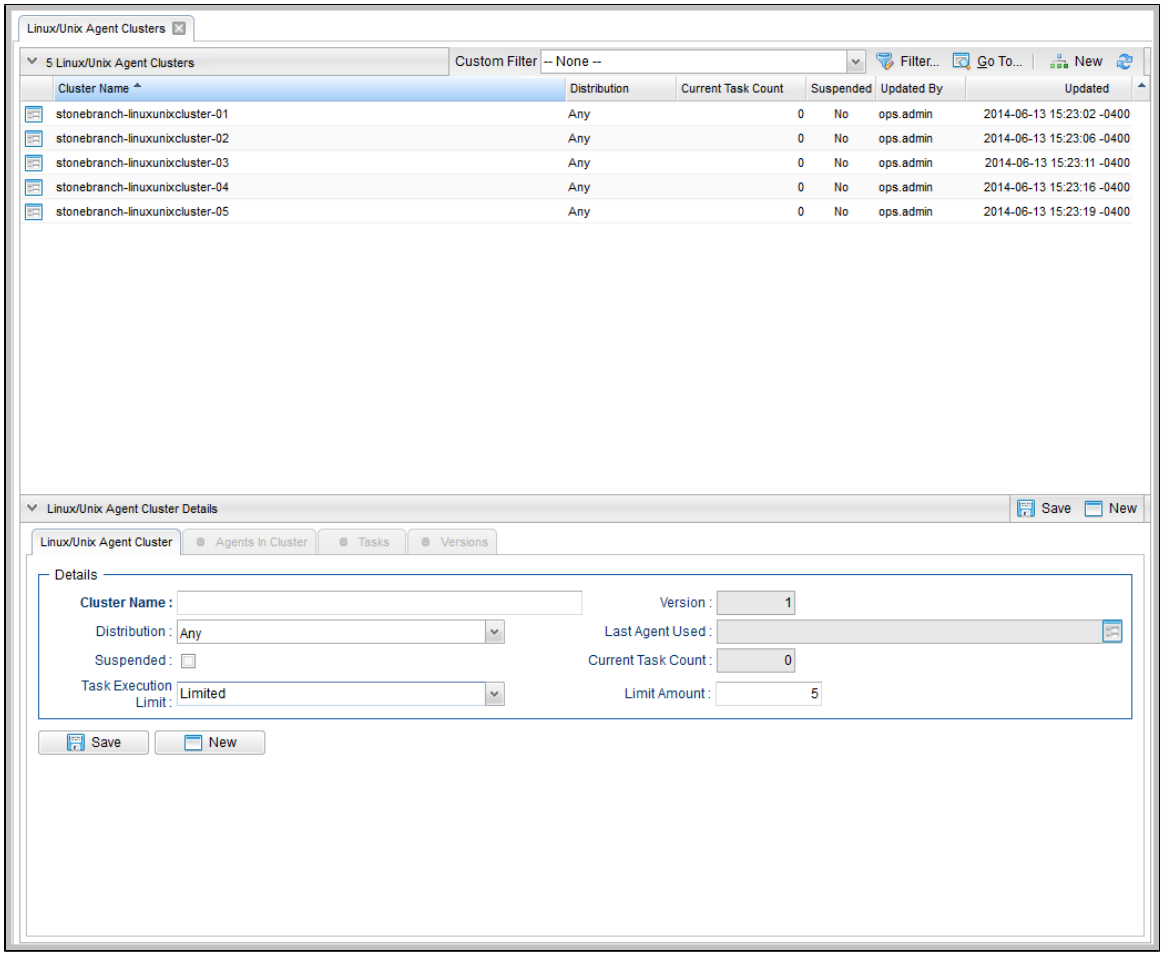
Field Name	Description
Details	This section contains detailed information about the agent cluster.
Cluster Name	Name used within the Controller to identify this agent cluster. Up to 40 alphanumerics. It is the responsibility of the user to develop a workable naming scheme for agent clusters.
Version	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.
Distribution.	Method used to select an Agent. Options: • **Any** - Select any Agent in the cluster. • **Round Robin** - Select the next Agent in a round robin series. • **Lowest CPU Utilization** - Selects the Agent whose CPU utilization is currently the lowest.
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. (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**.) 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.
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.
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.
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.
Tasks	Lists all tasks, according to task type, that currently are being dispatched to this agent cluster. 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.
Versions	Stores copies of all previous versions of the current record. See Record Versioning.

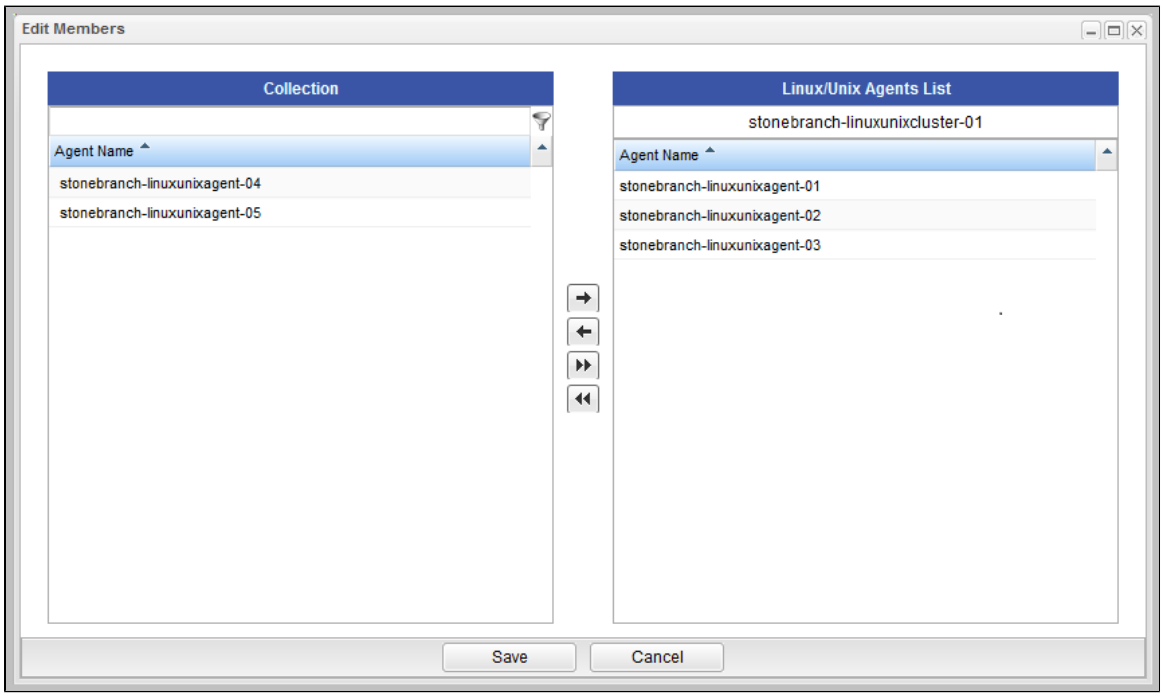
Assigning Agents to the Cluster

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.



Step 3 Click the **Edit** button. The Edit Members dialog displays:



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: • To add an Agent, double-click the Agent Name (or click the Agent Name and then click the **->** arrow) in the Collection window. • 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.

OMS Servers

- Introduction
- Creating OMS Server Records
  - OMS Server Details
  - OMS Server Details Field Descriptions
- Starting and Stopping OMS
- Sending Notifications on Status of an OMS Server
  - Email Notification Details
  - Email Notification Details Field Descriptions
  - SNMP Notification Details
  - SNMP Notification Details Field Descriptions

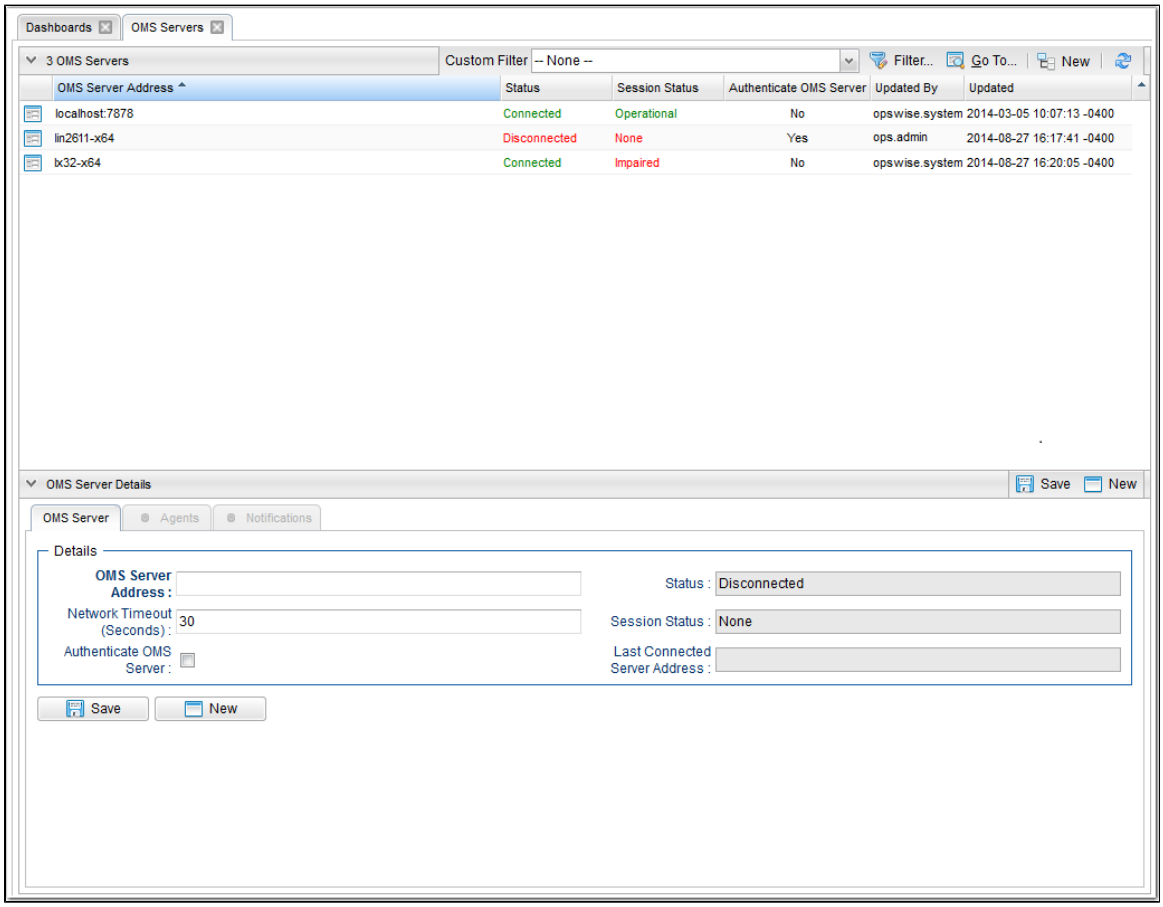
Introduction

OMS (Universal Message Service) Servers are the network communication providers between Universal Controller 6.3.x and Universal Agent 6.3.x.

Creating OMS Server Records

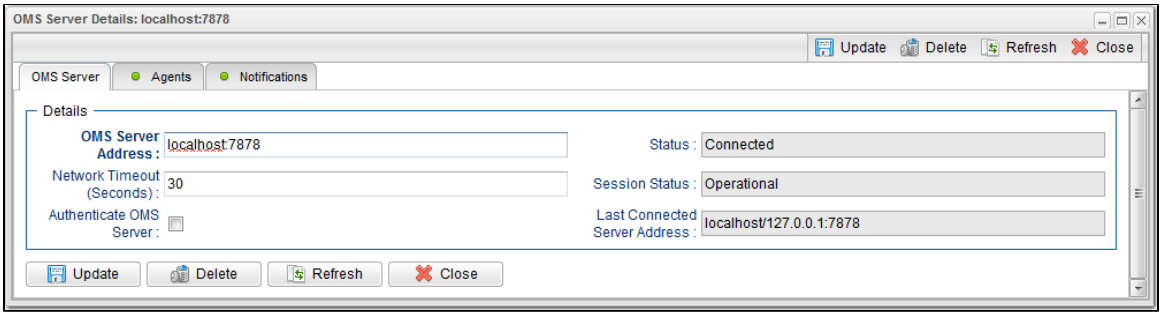
You must create a record for each OMS Server and OMS HA cluster (two or more OMS Servers in an HA / High Availability environment) that will be used as the network communications provider between the Controller and Agents.

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. (You also can click the **New** button to display OMS Server Details for a new OMS Server record.) 
Step 2	Enter / select Details for a new OMS Server, using the field descriptions below as a guide. • Required fields display in **boldface**. • Default values for fields, if available, display automatically. To display more of the Details fields on the screen, you can temporarily hide the list. **Note** If you view OMS Server Details for an existing OMS Server by clicking an OMS Server in the list, and then want to create a new OMS Server record, you must click the **New** button that displays above and below the Details.
Step 3	Click the **Save** button. The OMS Server record is added to the database, and all buttons and tabs in the OMS Server Details are enabled.

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.



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.
Authenticate OMS Server	If enabled, the Controller authenticates the OMS server digital certificate.
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. Options: • **Operational** - All OMS Server messaging sessions are operational. • **Impaired** - Ability of OMS clients to produce and/or consume messages is impaired. • **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.
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.
Update	Saves updates to the record.
New	Displays empty (except for default values) Details for creating a new OMS Server 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

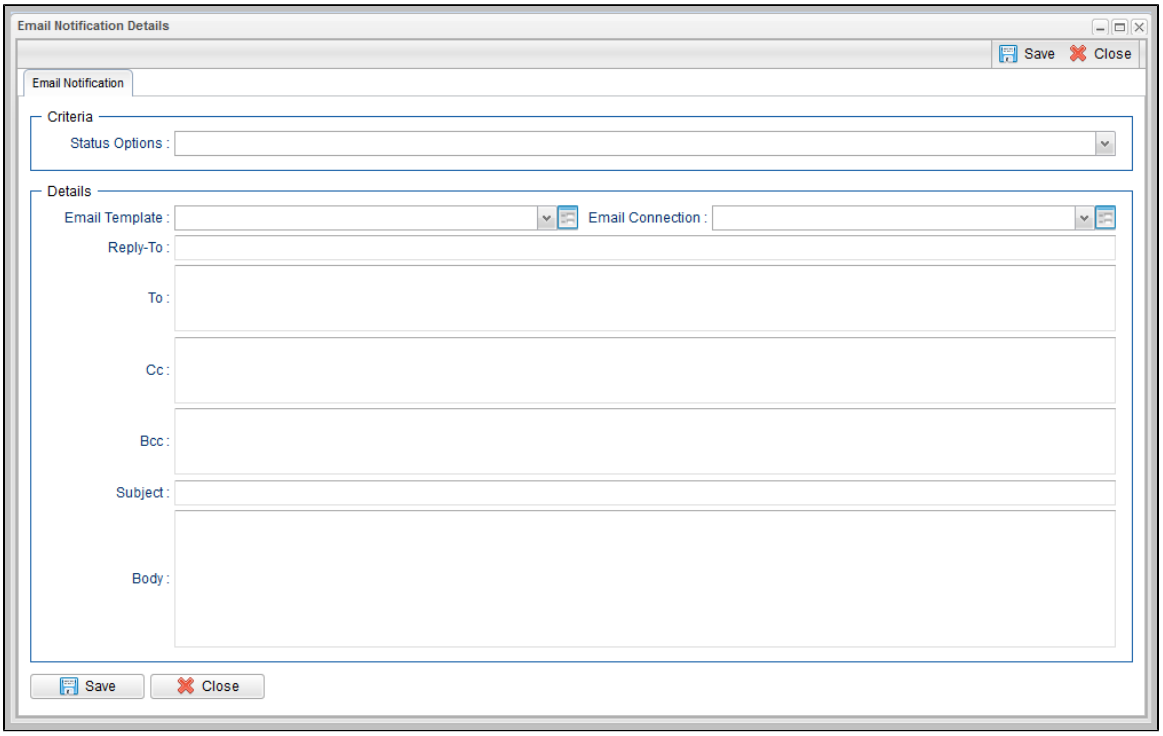
For instructions on starting and stopping OMS Servers, see Starting and Stopping Agent Components.

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). **Note** 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

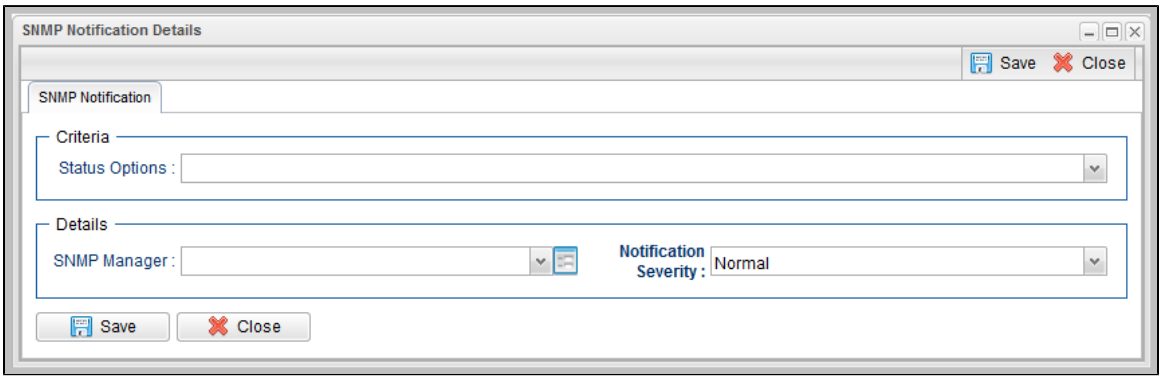
The following table describes the fields and buttons on Email Notification Details.

Field Name	Description

Criteria	This section contains criteria for sending the notification.
Status Options	• Disconnected = Trigger the notification when the OMS Server is connected. • Connected = Trigger the notification when the OMS Server is connected. **Note** • If you select Disconnected, and the OMS Server status is Connected but the session status becomes Impaired, the notification will qualify and be sent. • 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. 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. 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. (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 Email Connection. An Email Connection specifies information about an email server. Enter the name of an existing Email Connection, or click the magnifying glass to browse for an existing Email Connection or create a new Email Connection. 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. If both the email template and the email task contain text in the body, the text is appended.
Buttons	This section identifies the buttons displayed above and below the Notification Details that let you perform various actions.
Save button	Submits the new record to the database.

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. • Connected = Trigger the notification when the OMS Server is connected. **Note** • If you select Disconnected, and the OMS Server status is Connected but the session status becomes Impaired, the notification will qualify and be sent. • 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.

Notification Severity	Severity of this notification. Options: • Normal (1) • Warning (2) • Minor (3) • Major (4) • Critical (5)
Buttons	This section identifies the buttons displayed above and below the Notification Details that let you perform various actions.
Save button	Submits the new record to the database.
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
- Displaying Information About Cluster Nodes
  - Cluster Node Details
  - Cluster Node Details Field Descriptions
- Starting/Stopping Cluster Nodes
- Sending Notifications on Status of a Cluster Node
  - Email Notification Details
  - Email Notification Details Field Descriptions
  - SNMP Notification Details
  - SNMP Notification Details Field Descriptions

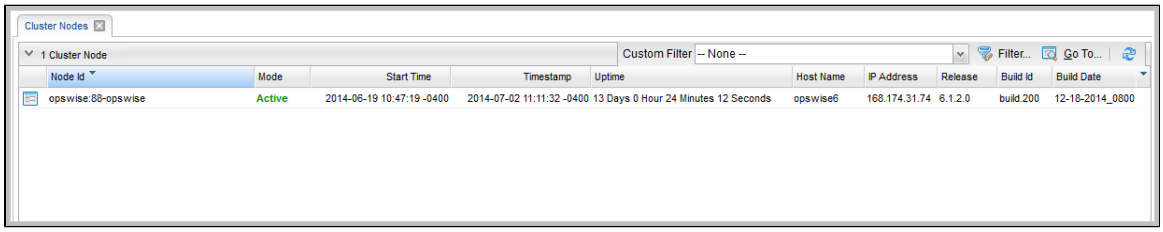
Introduction

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

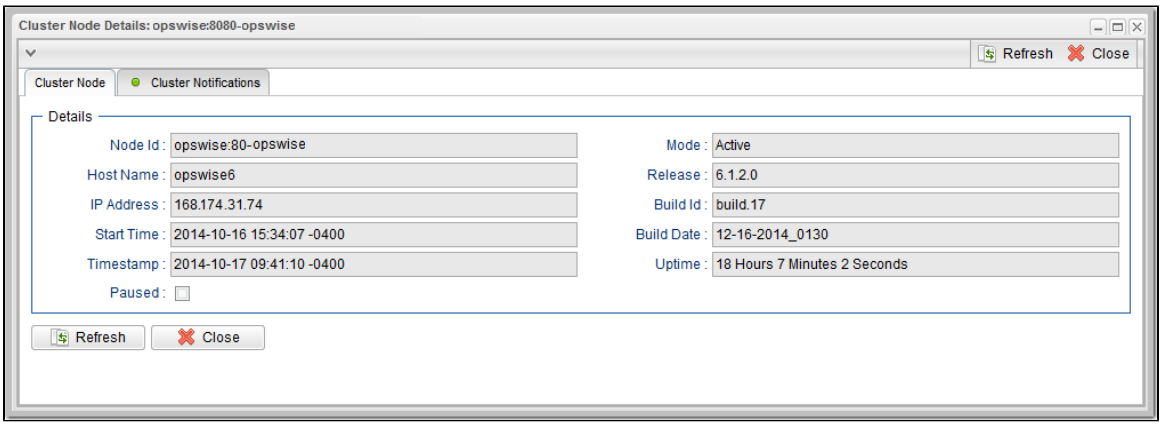
Universal Automation Center contains more than one cluster node only if it is operating in a High Availability environment.

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



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	URL of the cluster node.

Mode	Current mode of the cluster node:
	• **Active**: Cluster node processes events and messages and interfaces with the database. It is the active node for automated operations.\\
	• **Passive**: Cluster node is running but is not connected to its OMS Server. It performs the following tasks:
	  • Accepts HTTP requests for data. It can access the database, generate reports, monitor and display data.
	  • Does not process any events or messages.
	  • Takes over as Active node if it determines that the Active node is not running.
	• **Offline**: Cluster node is not running.
	(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.
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.

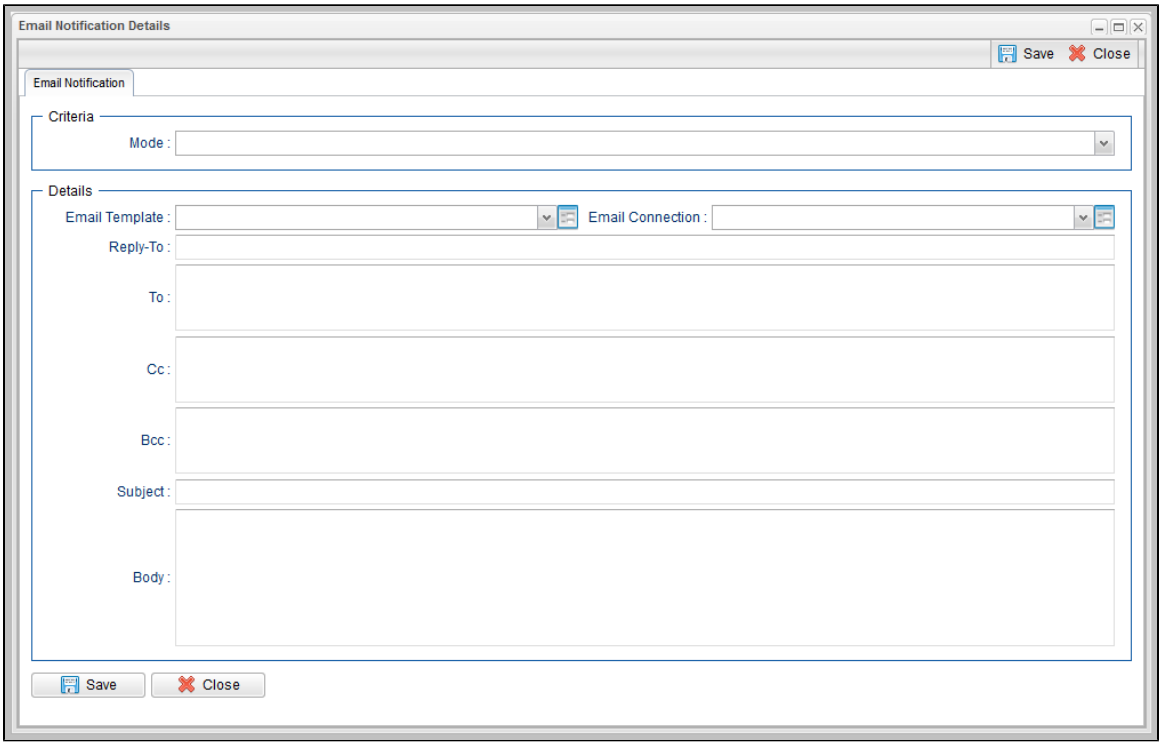
Sending Notifications on Status of a Cluster Node

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). **Note** 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 the **Save** button to save the record.

Email Notification Details



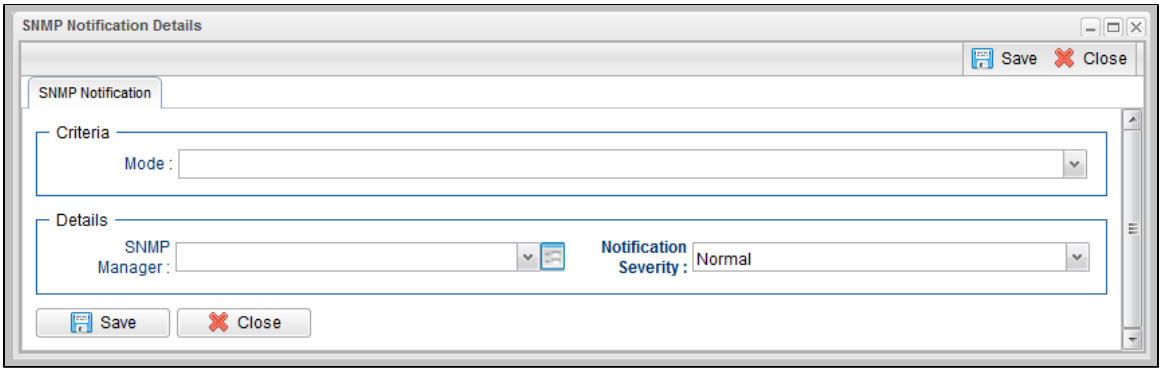
Email Notification Details Field Descriptions

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

Field Name	Description
Criteria	This section contains criteria for sending the notification.
Mode	Options: • Offline = Trigger the notification when the cluster node goes offline. • Active = Trigger the notification when the cluster node becomes active. • 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. 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. 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. (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 Email Connection. An Email Connection specifies information about an email server. Enter the name of an existing Email Connection, or click the magnifying glass to browse for an existing Email Connection or create a new Email Connection. 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. If both the email template and the email task contain text in the body, the text is appended.
Buttons	This section identifies the buttons displayed above and below the Notification Details that let you perform various actions.
Save button	Submits the new record to the database.
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: • Offline = Trigger the notification when the cluster node goes offline. • Active = Trigger the notification when the cluster node becomes active. • 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.
Notification Severity	Severity of this notification. Options: • Normal (1) • Warning (2) • Minor (3) • Major (4) • Critical (5)
Buttons	This section identifies the buttons displayed above and below the Notification Details that let you perform various actions.
Save button	Submits the new record to the database.
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
  - Using a Virtual Resource
- Creating a Virtual Resource
  - Virtual Resource Details
  - Virtual Resource Details Field Descriptions
- Assigning Tasks to a Virtual Resource
- Resetting a Renewable Virtual Resource

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

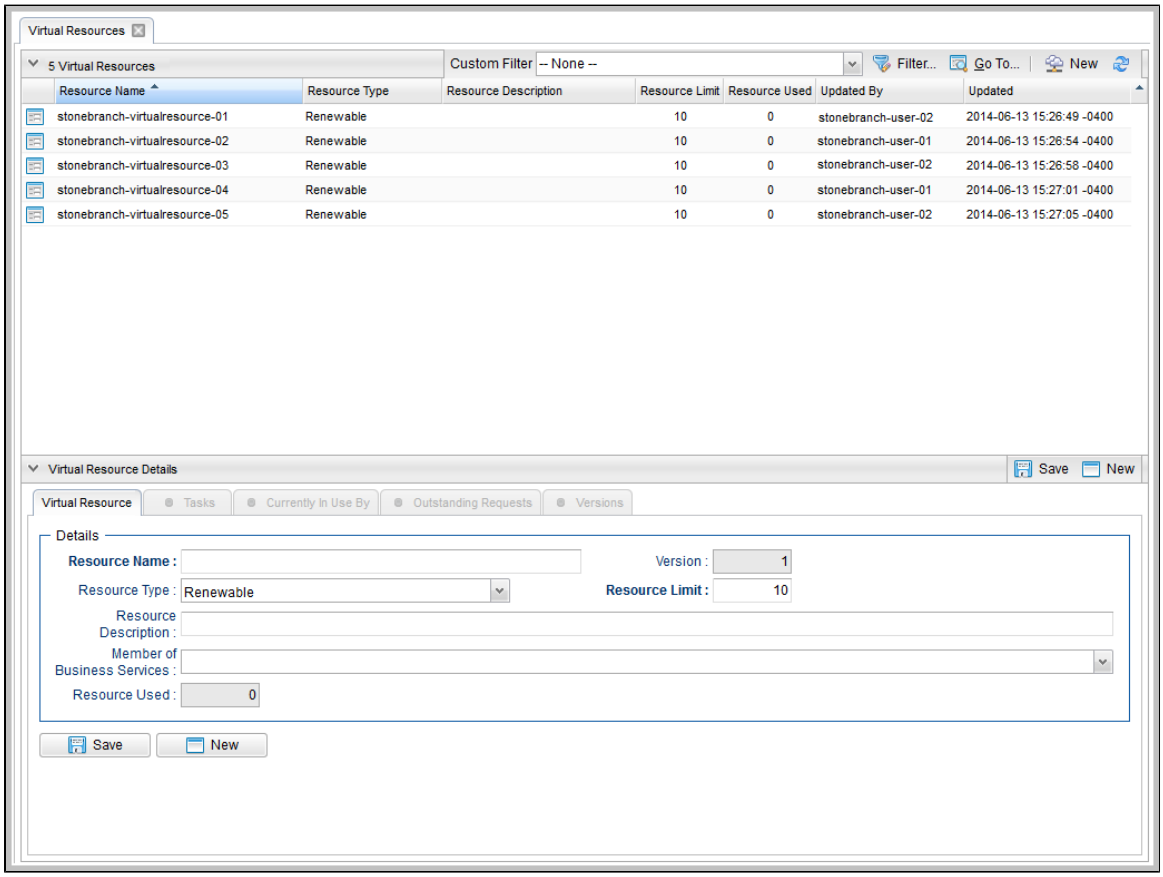
Outlined below is the basic procedure and processing flow for using a virtual resource:

Step 1	Create a virtual resource. There are three types of virtual resources: 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. 2. **Boundary**: Resources that are like "windows." Only those tasks defined to fit through that window (or Resource Limit) will run. 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. 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. • 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. • 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. • 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:

Below the list, Virtual Resource Details for a new Virtual Resource record displays. (You also can click the **New** button to display Virtual Resource Details for a new Virtual Resource.)



Step 2 Enter / select Details for a new Virtual Resource, using the field descriptions below as a guide.

- Required fields display in **boldface**.
- Default values for fields, if available, display automatically.

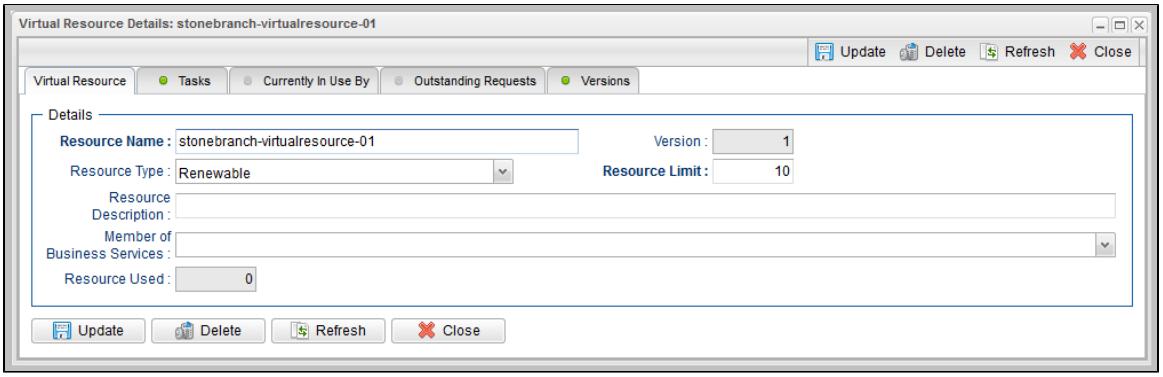
To display more of the Details fields on the screen, you can temporarily hide the list.

> **Note**
> If you view Virtual Resource Details for an existing Virtual Resource by clicking a Virtual Resource in the list, and then want to create a new Virtual Resource record, you must click the **New** button that displays above and below the Details.

Step 3 Click the **Save** button. The Virtual Resource record is added to the database, and all buttons and tabs in the Virtual Resource Details are enabled.

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.

Virtual Resource Details Field Descriptions

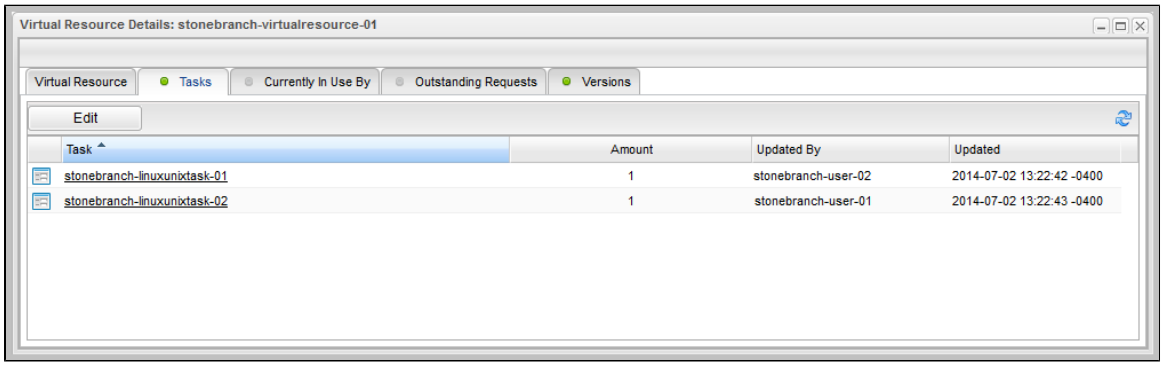
The following table describes the fields, buttons, and tabs that display in the Virtual Resource Details.

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. Options: • Renewable • Boundary • 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.
Resource Used	If Resource Type = Renewable; system-supplied. Number of units currently in use, as of the time you opened the record.
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.
Update	Saves updates to the record.
New	Displays empty (except for default values) Details for creating a new Virtual Resource record.

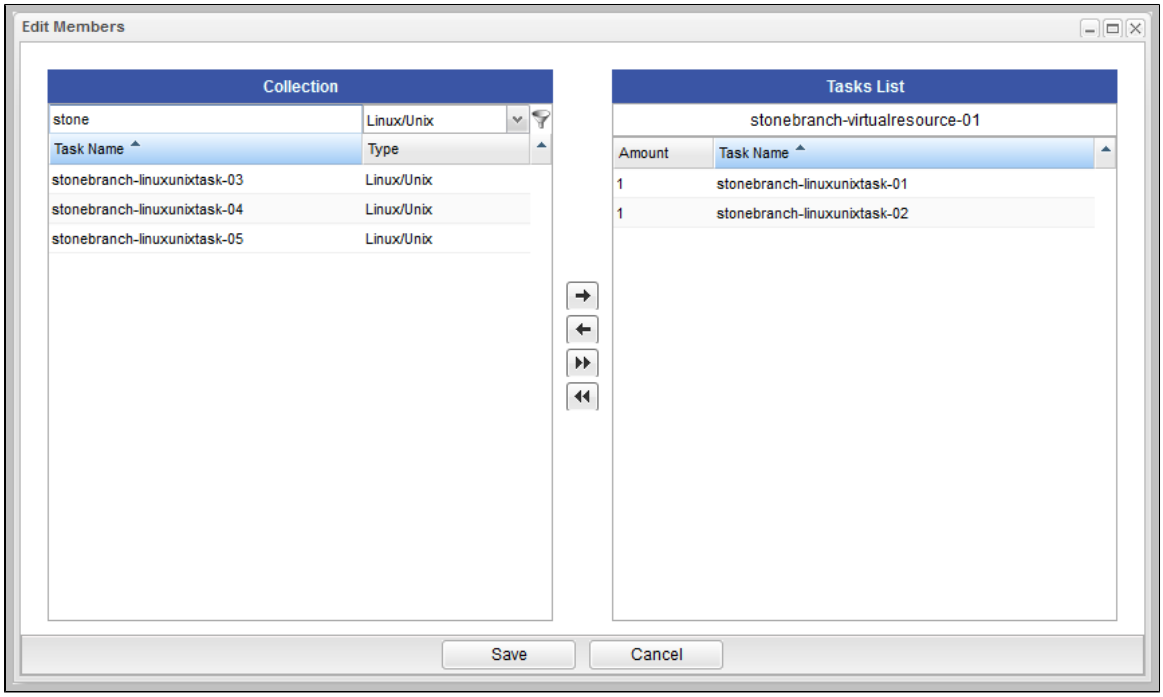
Delete	Deletes the current record.
Refresh	Refreshes any dynamic data displayed in the Details.
Close	For pop-up view only; closes the pop-up view of this record.
Tabs	This section identifies the tabs across the top of the Virtual Resource Details that provide access to additional information about the 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. 

Step 3 Click the **Edit** button. The Edit Members pop-up dialog displays:



- The **Collection** window lists tasks that are not assigned to this virtual resource.
- 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:

- Enter characters in the text field above the **Task Name** column. Only tasks containing that sequence of characters will display in the list.
- Select a task type from the drop-down list above the **Type** column.

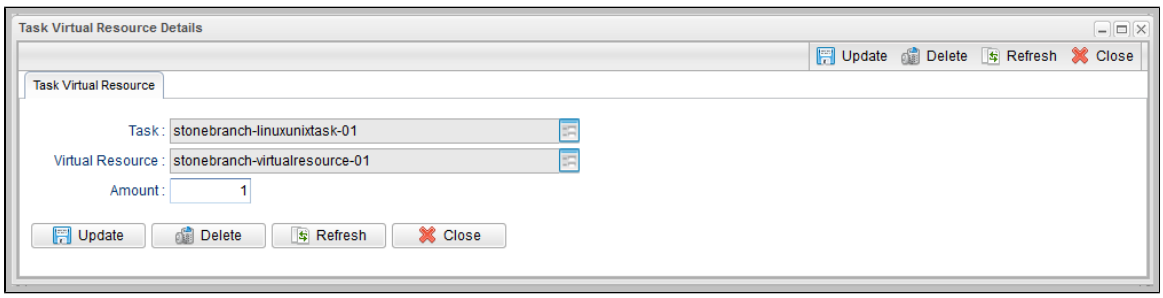
Step 5 To assign a task to the Virtual Resource, move the task from the **Collection** window to the **Tasks List** window:

1. To move a single task, double-click it or click it once and then click the **->** arrow.
2. To move multiple tasks, Ctrl-click them and then click the **>** arrow.
3. To move all tasks, click the **>>** arrow.

To unassign a task to the Virtual Resource, move the task from the **Tasks List** windows to the **Collection** window:

1. To move a single task, double-click it or click it once and then click the **<-** arrow.
2. To move multiple tasks, Ctrl-click them and then click the **<** arrow.
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



Change the **Amount** as desired and click **Update**.

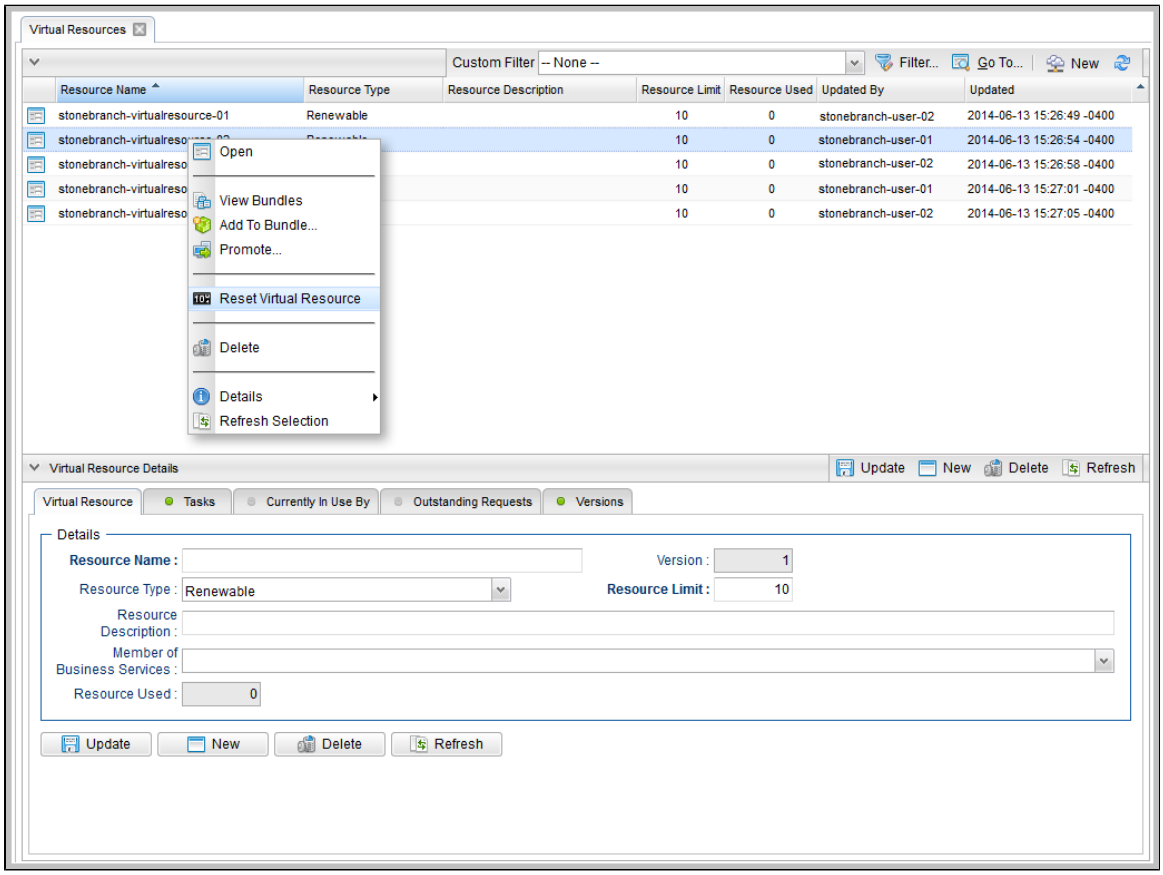
Step 7	Click **Save**.

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
- Creating a Script
  - Script Details
  - Script Details Field Descriptions
- Uploading a Script

Overview

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

There are three types of scripts:

- Scripts
- UDM scripts
- SAP definition files

When a task that specifies a 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.

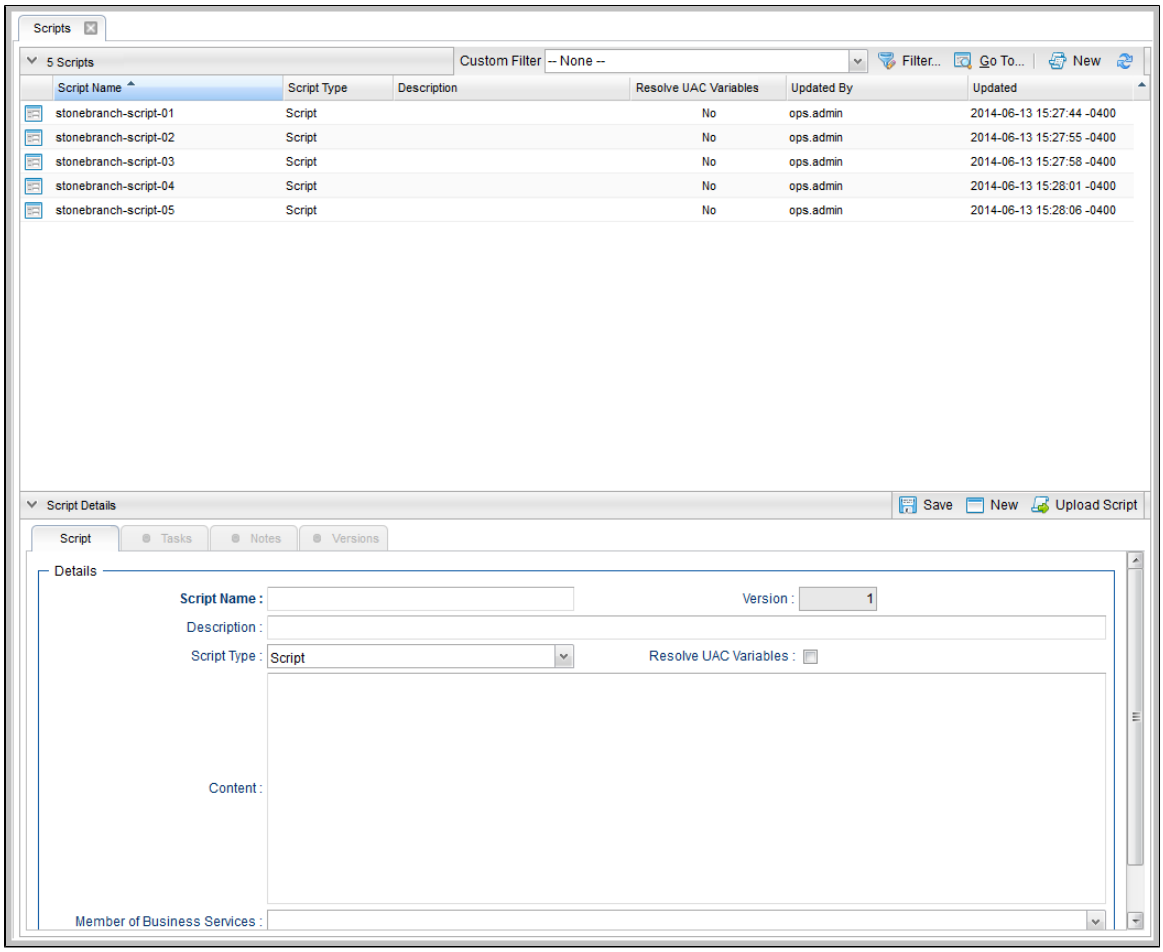
Controller variables can be passed as parameters, but the script still has to be written to parse the variables. However, you cannot pass variables as parameters that contain data longer than the parameter field (for example, SQL results).

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}
```

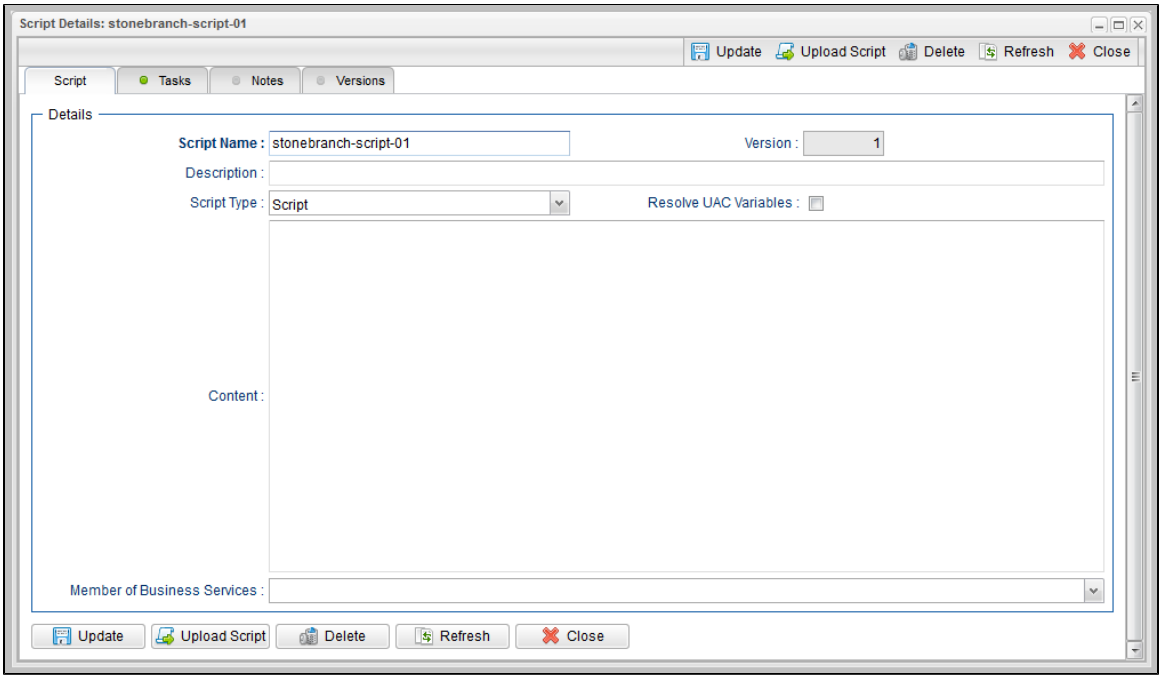
View the Scripts video to learn more about this feature.

Creating a Script

Step 1	From the Automation Center navigation pane, select **Other > Scripts**. The Scripts list displays a list of all existing scripts. Below the list, Script Details for a new script displays. (You also can click the **New** button to display Script Details for a new Script.) 
Step 2	Enter / select Details for a new script, using the field descriptions below as a guide. • Required fields display in **boldface**. • Default values for fields, if available, display automatically. To display more of the Details fields on the screen, you can temporarily hide the list. **Note** If you view Script Details for an existing script by clicking a script in the list, and then want to create a new script, you must click the **New** button that displays above and below the Details.
Step 3	Click the **Save** button. The script is added to the Controller database, and all buttons and tabs in the Script Details are enabled.

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.



Script Details Field Descriptions

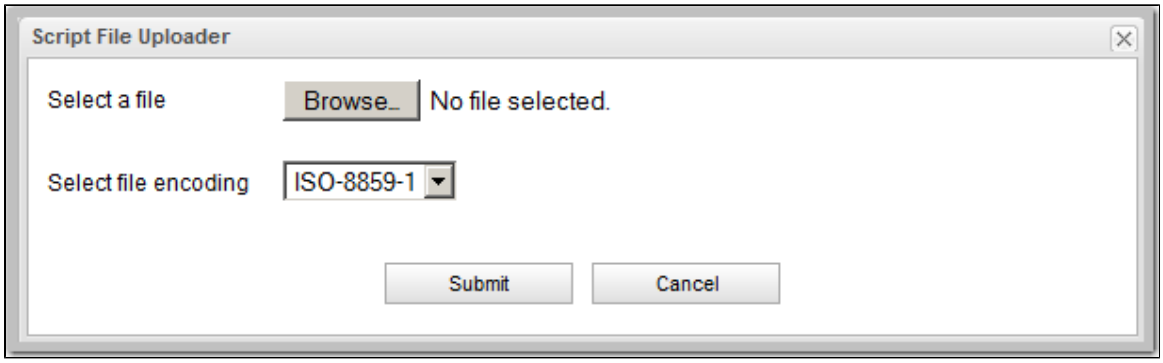
The following table describes the fields, buttons, and tabs that display in the Script Details.

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. You also can specify a file extension; the default file extension for Windows is **`.bat`**. 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	User-defined; description of this record. (Maximum = 200 characters.)
Script Type	Type of script. Options: • 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)

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. **Note** 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. You can enter content manually or upload content from the local file system by using the Upload Script button. 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: • ops_src_cred_user • ops_src_cred_pwd • ops_dst_cred_user • ops_dst_cred_pwd The variables will be resolved by UDM internally. The following example illustrates the correct way to code them: `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)` 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.
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.
Update	Saves updates to the record.
New	Displays empty (except for default values) Details for creating a new script.
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).
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. 
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.

Email Templates

- Overview
- Creating an Email Template
  - Email Template Details
  - Email Template Details Field Descriptions

Overview

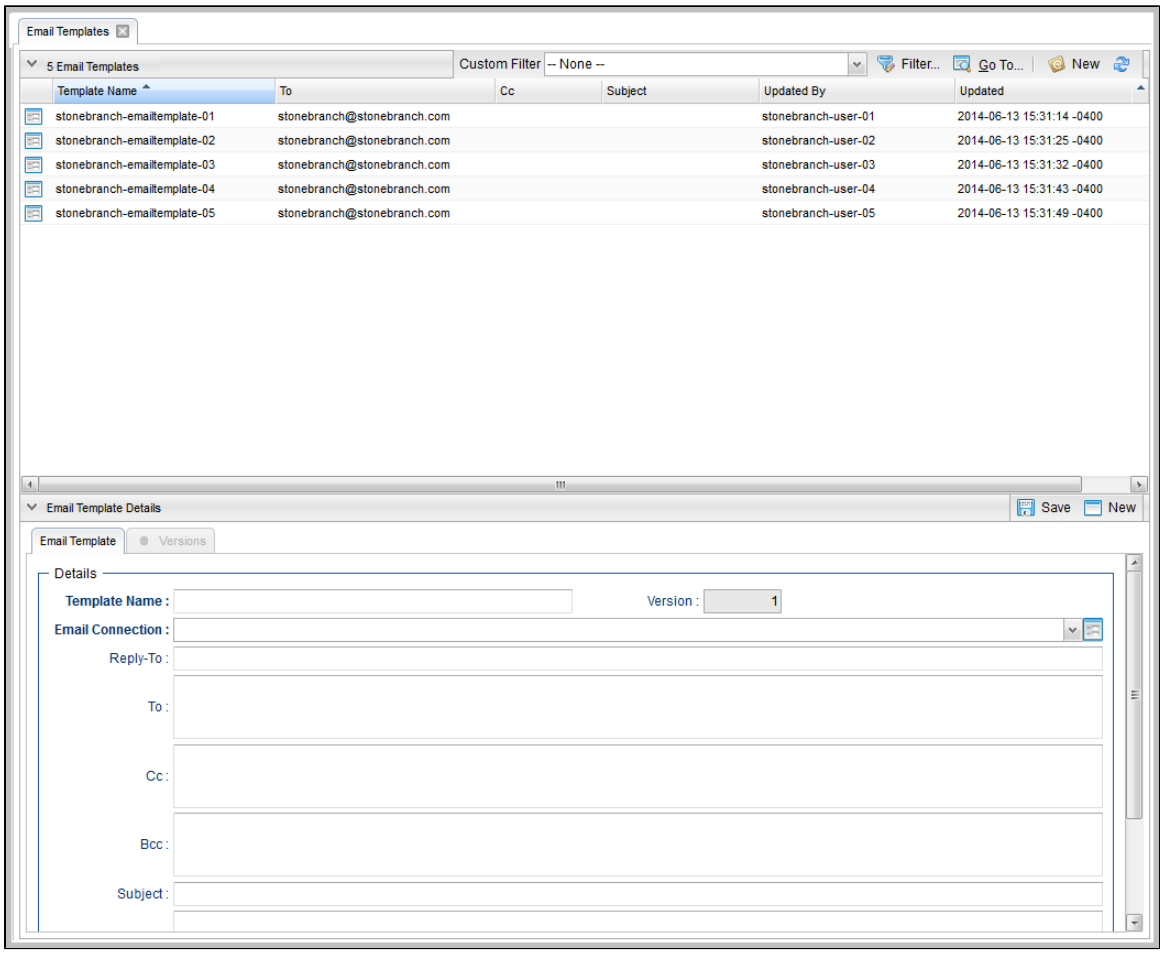
Email templates allow you to construct commonly-used information that can be copied to create Email tasks.

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.

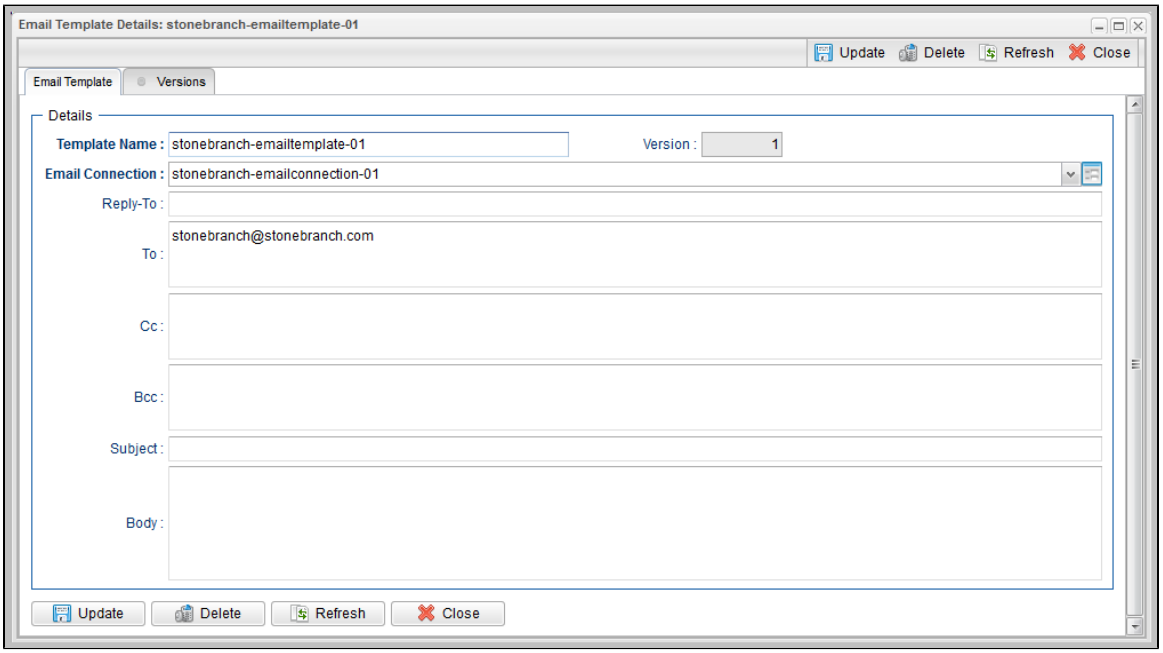
Below the list, Email Template Details for a new Email Template displays. (You also can click the **New** button to display Email Template Details for a new Email Template.)



Step 2	Enter / select Details for a new Email Template, using the field descriptions below as a guide. • Required fields display in **boldface**. • Default values for fields, if available, display automatically. To display more of the Details fields on the screen, you can temporarily hide the list. **Note** If you view Email Template Details for an existing Email Template by clicking an Email Template in the list, and then want to create a new Email Template, you must click the **New** button that displays above and below the Details.
Step 3	Click the **Save** button. The Email Template is added to the database, and all buttons and tabs in the Email Template Details are enabled.

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.



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.
Email Connection	Required; name of an Email connection defined via the Email Connection Details. An email connection specifies information about an email server. Enter the name of an existing Email connection, select an Email Connection from the drop-down list of all existing Email Connections, or click the Details icon to create an Email Connection.

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. If both the email template and the email task contain text in the body, the text is appended.
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.
Update	Saves updates to the record.
New	Displays empty (except for default values) Details for creating a new Email Template.
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.
Versions tab	Stores copies of all previous versions of the current record. See Record Versioning.

Email Connections

- Overview
- Creating an Email Connection
  - Email Connection Details
  - Email Connection Details Field Descriptions

Overview

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

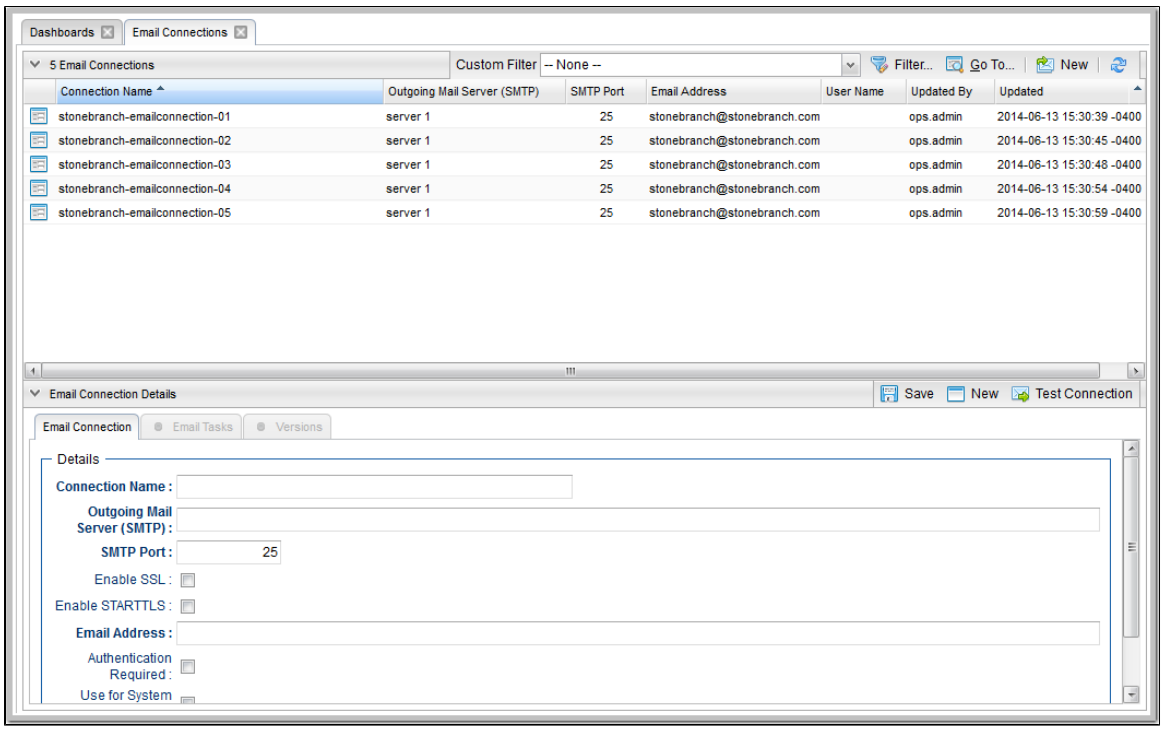
Email connections are used these ways within the Controller:

- 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.

Creating an Email Connection

Step 1 From the Agents & Connections navigation pane, select **System > Email Connections**. The Email Connections list displays.

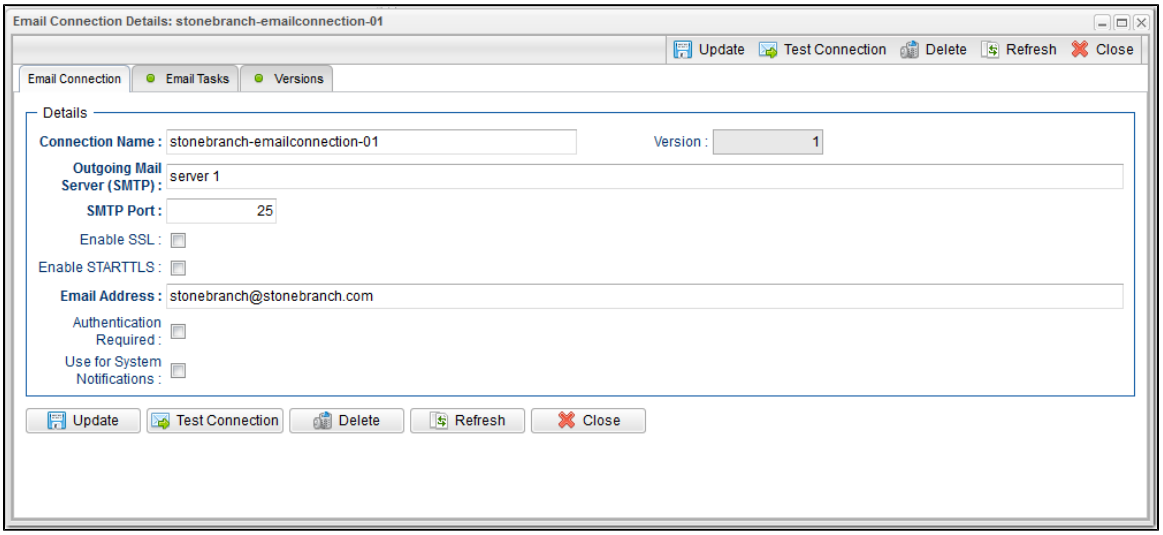
Below the list, Email Connection Details for a new Email Connection displays. (You also can click the **New** button to display Email Connection Details for a new Email Connection.)



Step 2	Enter / select Details for a new Email Connection, using the field descriptions below as a guide. • Required fields display in **boldface**. • Default values for fields, if available, display automatically. To display more of the Details fields on the screen, you can temporarily hide the list. **Note** If you view Email Connection Details for an existing Email Connection by clicking an Email Connection in the list, and then want to create a new Email Connection, you must click the **New** button that displays above and below the Details.
Step 3	Click the **Save** button. The Email Connection is added to the database, and all buttons and tabs in the Email Connection Details are enabled.

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.



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.
Outgoing Mail Server (SMTP)	Name or IP address of the outgoing email server.
SMTP Port	Port on the machine where the email server resides.

Enable SSL	Enables SSL connectivity for your SMTP 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	Email address of the sender. **Warning** 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 Req'd	If enabled, User Name and Password are required.
User Name	If Authentication Req'd is enabled; user name that the Controller will use to connect to the server.
Password	If Authentication Req'd is enabled; password that the Controller will use to connect to the server.
Use for System Notifications	Indicates whether or not this Email Connection is to be used for system notifications. **Note** 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.
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.
Update	Saves updates to the record.
New	Displays empty (except for default values) Details for creating a new Email Connection.
Test Connection	After saving the record to the database, click **Test Connection** to run a connection test.
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 Connection.
Tabs	This section identifies the tabs across the top of the Email Connection Details that provide access to additional information about the Email Connection.
Email Tasks	Provides a list of tasks that use this email server.
Versions	Stores copies of all previous versions of the current record. See Record Versioning.

Database Connections

- Overview
- Creating a Database Connection
  - Database Connection Details
- Database Connection Details Field Descriptions

Overview

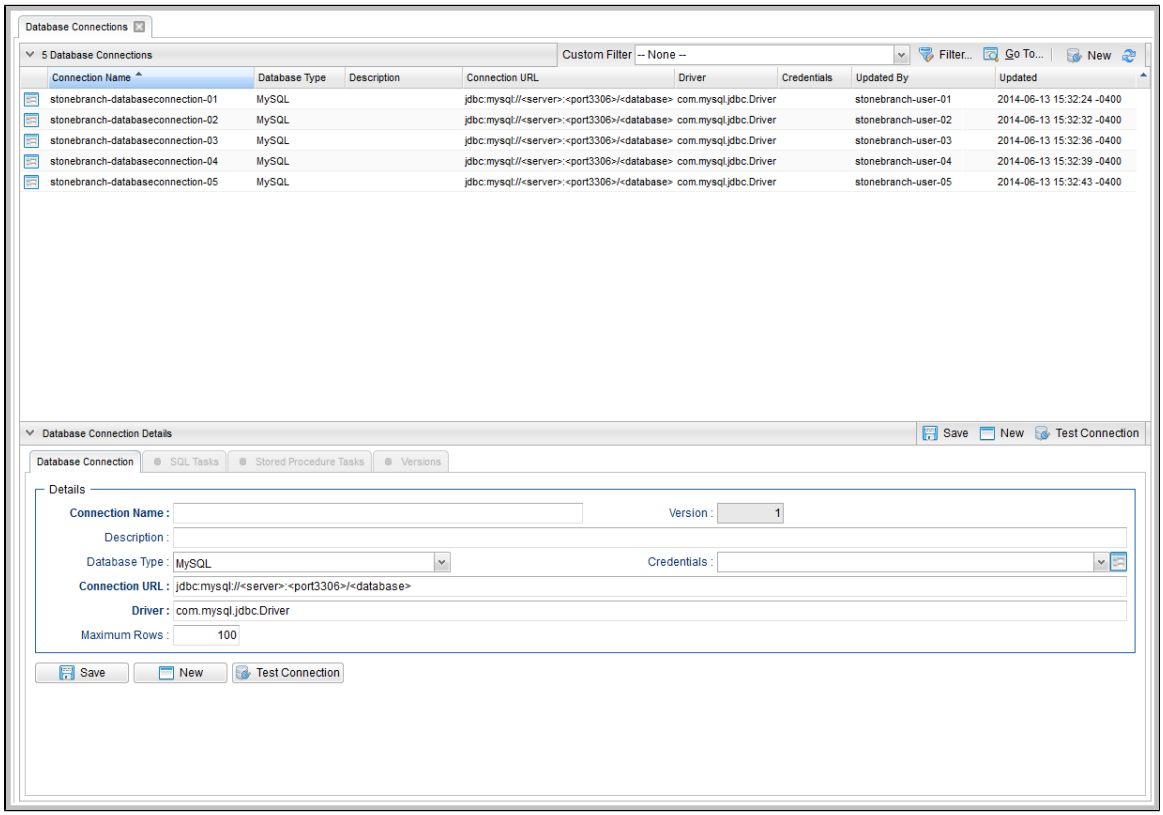
Database Connections provide all database server information required for Universal Controller to execute an SQL task or a Stored Procedure Task.

Creating a Database Connection

Step 1

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

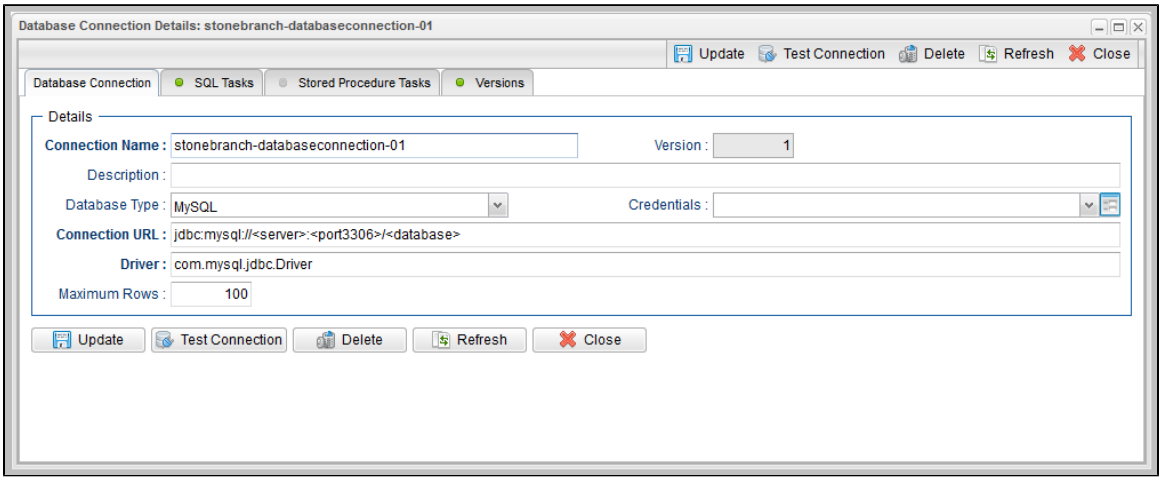
Below the list, Database Connection Details for a new Database Connection displays. (You also can click the **New** button to display Database Connection Details for a new Database Connection.)



Step 2	Enter / select Details for a new Database Connection, using the field descriptions below as a guide. • Required fields display in **boldface**. • Default values for fields, if available, display automatically. To display more of the Details fields on the screen, you can temporarily hide the list. **Note** If you view Database Connection Details for an existing Database Connection by clicking a Database Connection in the list, and then want to create a new Database Connection, you must click the **New** button that displays above and below the Details.
Step 3	Click the **Save** button. The Database Connection is added to the database, and all buttons and tabs in the Database Connection Details are enabled.

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.



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	Optional. Description of the database.

Database Type	Type of database. Options: • MySQL • MS SQL Server • Oracle • DB2 • Sybase SQL Anywhere • Other **Note** 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 `$TOMCAT_HOME/webapps/opswise/WEB-INF/lib` directory and restart Tomcat. Format the **Connection URL** and **Driver** fields per the database vendor's documentation.
Credentials	Credentials under which an Agent runs this task. These credentials override any credentials provided in the Agent resource definition for any Agent running this task.

Connection URL	URL of the database.
	
	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:
	
	`?allowMultiQueries=true`
	
	For example:
	
	`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.
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.
Update	Saves updates to the record.
New	Displays empty (except for default values) Details for creating a new Database Connection.
Test Connection	After saving the record to the database, click **Test Connection** to run a connection test.
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.

SAP Connections

- Overview
- Creating an SAP Connection
  - SAP Connection Details
  - SAP Connection Details Field Descriptions

Overview

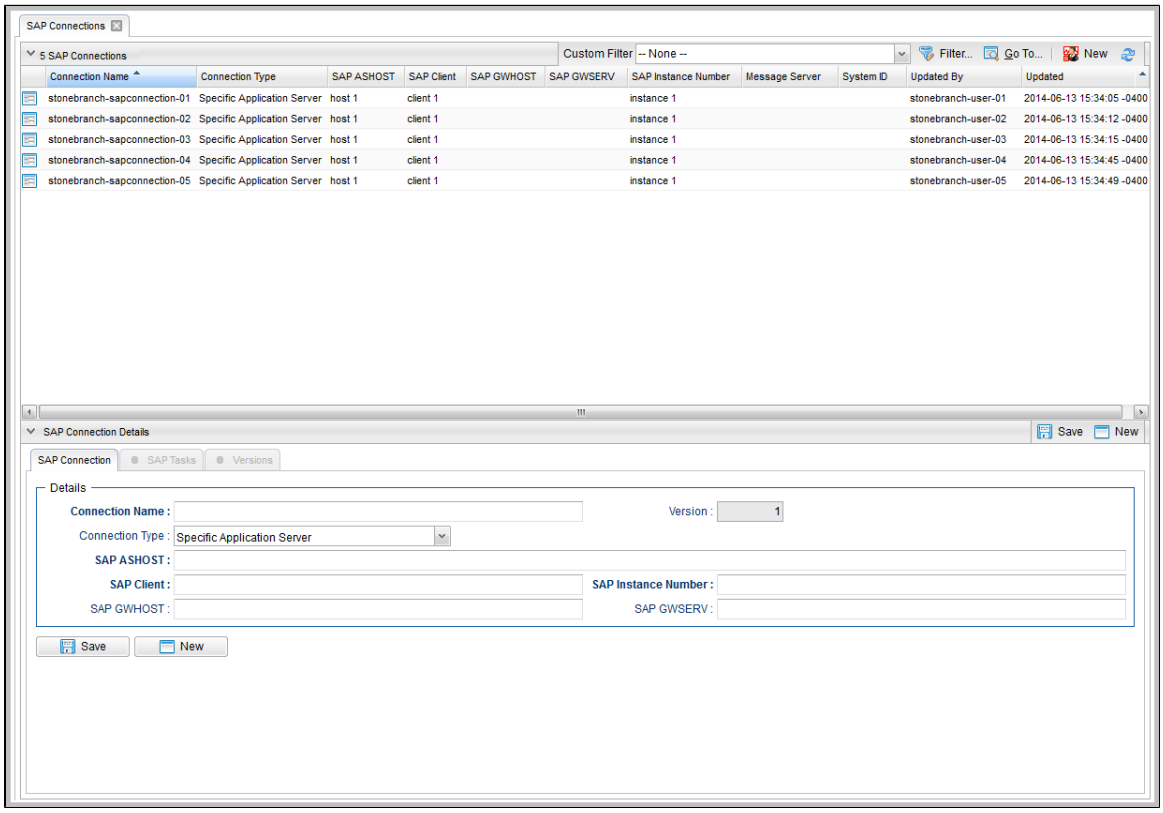
SAP Connections provide all the SAP server information necessary for Universal Controller to execute an SAP Task on an SAP system. These instructions assume the user is familiar with SAP.

Creating an SAP Connection

Step 1

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

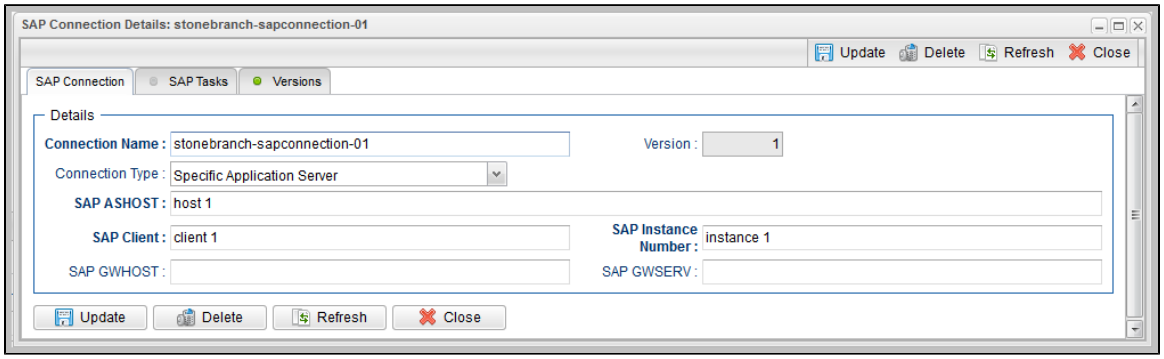
Below the list, SAP Connection Details for a new SAP Connection displays. (You also can click the **New** button to display SAP Connection Details for a new SAP Connection.)



Step 2	Enter / select Details for a new SAP Connection, using the field descriptions below as a guide. • Required fields display in **boldface**. • Default values for fields, if available, display automatically. To display more of the Details fields on the screen, you can temporarily hide the list. **Note** If you view SAP Connection Details for an existing SAP Connection by clicking an SAP Connection in the list, and then want to create a new SAP Connection, you must click the **New** button that displays above and below the Details.
Step 3	Click the **Save** button. The SAP Connection is added to the database, and all buttons and tabs in the SAP Connection Details are enabled.

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.



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.
Connection Type	Type of SAP connection. Options: • **Specific Application Server** Connection to a specific SAP application server (type A RFC connection). • **Load Balancing** Connection to an SAP system where the application server is determined by load balancing (type B RFC connection).
SAP ASHOST	If Connection Type = Specific Application Server; 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.

SAP Client	If Connection Type = Specific Application Server; SAP Client number.
SAP Instance Number	If Connection Type = Specific Application Server; SAP instance number.
SAP GWHOST	If Connection Type = Specific Application Server; host name of the SAP gateway.
SAP GWSERV	If Connection Type = Specific Application Server; service name of the SAP gateway.
System ID	If Connection Type = Load Balancing; system ID of the SAP system to which you want to connect.
Message Server	If Connection Type = Load Balancing; host name of the message server.
Group	If Connection Type = Load Balancing; application servers group name.
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.
Update	Saves updates to the record.
New	Displays empty (except for default values) Details for creating a new SAP Connection.
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.

SNMP Managers

- Overview
- Creating an SNMP Manager
  - SNMP Manager Details
  - SNMP Manager Details Field Descriptions
- MIB File
  - MIB and SNMP Protocol
  - MIB File Location

Overview

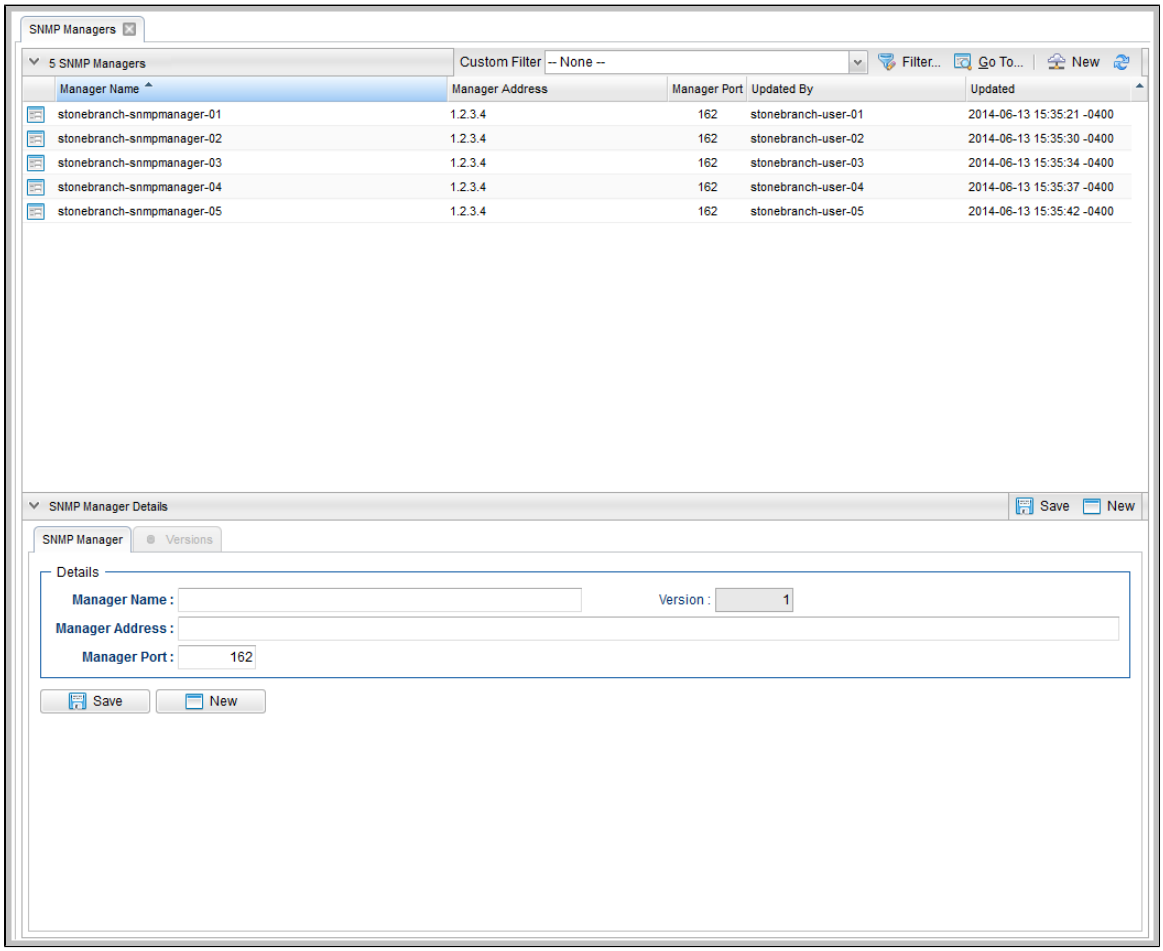
SNMP Managers are the network managers to which Universal Controller sends SNMP notifications.

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.

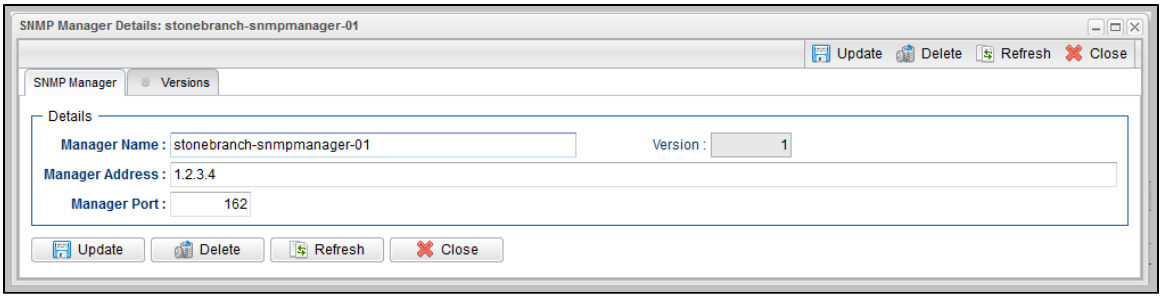
Note
SNMP Notifications on Cluster Nodes cannot be exported; therefore, they cannot be imported. You must set up new SNMP Notifications for Cluster Nodes whenever an export / import has been run.

Creating an SNMP Manager

Step 1	From the Agents & Connections navigation pane, select **System > SNMP Managers**. The SNMP Managers list displays. Below the list, SNMP Manager Details for a new SNMP Manager displays. (You also can click the **New** button to display SNMP Manager Details for a new SNMP Manager.) 
Step 2	Enter / select Details for a new SNMP Manager, using the field descriptions below as a guide. • Required fields display in **boldface**. • Default values for fields, if available, display automatically. To display more of the Details fields on the screen, you can temporarily hide the list. **Note** If you view SNMP Manager Details for an existing SNMP Manager by clicking an SNMP Manager in the list, and then want to create a new SNMP Manager, you must click the **New** button that displays above and below the Details.
Step 3	Click the **Save** button. The SNMP Manager is added to the database, and all buttons and tabs in the SNMP Manager Details are enabled.

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.



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.
Manager Address	Name or IP address of the SNMP Manager.
Manager Port	Port used by the SNMP Manager.
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.
Update	Saves updates to the record.
New	Displays empty (except for default values) Details for creating a new SNMP Manager.
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