



**stonebranch**

Universal Controller 7.2.x

Agents

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# Agents



## Overview

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## Agents

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[Linux/Unix Agent](#)

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## Agent Clusters

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[Agent Clusters](#)

The information on these pages also is located in the [Universal Controller 7.2.x Resources.pdf](#).

# Agents Overview

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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:

Name	Host Name	Agent Id	Version	Last Heartbeat	Suspended	Status	Started Date
qa-cntlr-ibm.stone.branch - qa-cntlr-ibm	qa-cntlr-ibm.stone.branch	qa-cntlr-ibm	6.6.0.0		No	Offline	
qa-cntlr-mysql.stone.branch - qa-cntlr-mysql	qa-cntlr-mysql.stone.branch	qa-cntlr-mysql	6.8.0.0	2021-05-04 17:18:22 -0400	No	Active	2021-04-29 15:10:5

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 **Name** or click anywhere in the Agent row.

The screenshot shows a window titled "Linux/Unix Agent Details: qa-cntr-ibm.stone.branch - qa-cntr-ibm". The window has a toolbar with "Update", "Suspend Agent", "Delete", "Refresh", and "Close" buttons. Below the toolbar are tabs for "Linux/Unix Agent", "Notifications", "Agent Clusters", "Task Instances", and "Tasks".

**Configuration Details:**

- Name: qa-cntr-ibm.stone.branch - qa-cntr-ibm
- Agent Id: qa-cntr-ibm
- Description: (empty field)
- Member of Business Services: (dropdown menu)
- Status: Offline
- Log Level: Info
- Heartbeat Interval: 120
- Task Execution Limit: Unlimited
- Credentials: (dropdown menu)
- Suspended:
- Retrieve Output Prohibited:
- Heartbeat Grace Period: 60

**Installation Details:**

- Host Name: qa-cntr-ibm.stone.branch
- IP Address: 192.168.31.125
- Operating System: Linux
- Operating System Release: x86\_64 3.10.0-229.el7.x86\_64 (#1 SMP Fri Mar 6 11:36:42 UTC)
- Version: 6.6.0.0
- Build Id: 143
- Build Date: 2018-11-20 21:10:00 -0500
- CPU: GenuineIntel Common KVM processor (2 CPU)

**System Details:**

- Started Date: (empty field)
- Last Heartbeat: (empty field)
- CPU Load: 0
- OMS Server: (empty field)
- PID: (empty field)
- Jobs Run: 0
- Authentication Version: 2

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

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

You also can choose to:

- Temporarily [suspend](#) the agent's ability to run tasks.

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

## Agents List Column Descriptions

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

Column	Description
Name	User-defined during installation; name used within the Controller to identify this Agent.
Host Name	User-provided during installation; IP address or domain/name of the host machine where the resource resides.
Type	All Agents list only; Agent's platform: Linux/Unix, Windows, or z/OS.
Agent ID	Unique ID for this Agent, created during installation.
Version	System-supplied; version number of the Agent program.
Last Heartbeat	System-supplied; date and time the most recent heartbeat was received from the resource.
Current Task Count	System supplied; current number of tasks currently being run by this Agent.
Suspended	Specification (true or false) for whether or not this Agent has been suspended from the ability to run tasks.
Status	System-supplied; status of the Agent. <ul style="list-style-type: none"> <li>• <b>Active</b>: the Agent is running.</li> <li>• <b>Offline</b>: the Agent is not running.</li> </ul>
Started Date	Time stamp of when the Agent started or connected.
Updated By	User that last updated this record.
Updated	Date when this record was last updated.
Member of Business Service	Business Services that this Agent belongs to.

## Agent Details Field Descriptions

Detailed descriptions of the fields in the Agent Details are provided for each [type of Agent](#).

## Starting and Stopping Agents

For instructions on starting and stopping Agents, see [Starting and Stopping Agent Components](#).

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

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

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

Note



The following [roles and permissions](#) are required to suspend/resume Agents, Agent Clusters, and Agent Cluster Memberships:

- Agent Suspend/Resume requires the **ops\_admin role** and the appropriate [Agent permissions](#) for Agent Suspend/Resume commands.
- Agent Cluster Suspend/Resume and Agent Cluster Membership Suspend/Resume require the **ops\_agent\_cluster\_admin** role.

### Suspending an Agent

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

- To suspend an Agent from the [Agents list](#), either:
  - Right-click the **Name** of the Agent to be suspended and, on the [Action menu](#), click **Suspend Agent**.
  - Click the box to the left of the **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 **Name** of the agent cluster to be suspended and, on the [Action menu](#), click **Suspend Agent Cluster**.
  - Click the Details icon next to the Name of the Agent Cluster and, in the Agent Cluster Details, click **Suspend Agent Cluster**.
- To suspend an Agent Cluster from an [Agent Cluster Details](#), click the **Suspend Cluster** button. A **Resume Cluster** button replaces the **Suspend Cluster** button.
- When an Agent Cluster is Suspended or Resumed, a Suspended On or Resumed On field indicates the date and time of the suspension or resumption.

### Resuming an Agent Cluster

- To end the suspension, and resume the ability of a Agents in an Agent Cluster to run tasks, from the [Agent Clusters list](#), either:
  - Right-click the **Name** of the agent cluster to be resumed and, on the [Action menu](#), click **Resume Agent Cluster**.
  - Click the Details icon next to the Name of the Agent Cluster and, in the Agent Cluster Details, click **Resume Agent Cluster**.
- To resume an Agent Cluster from an [Agent Cluster Details](#), click the **Resume Cluster** button. A **Suspend Cluster** button replaces the **Resume Cluster** button.
- When an Agent Cluster is Suspended or Resumed, a Suspended On or Resumed On field indicates the date and time of the suspension or resumption.

### 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**.

## Suspending an Agent Cluster Membership Due to Decommissioning

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

## Resuming an Agent Cluster Membership

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

- Click **Resume Cluster Membership** on the [Action menu](#) or from the **Action on selected rows...** drop-down list.

## Resetting the Current Task Count

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

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

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

#### Note

The following [roles and permissions](#) are required to reset the current task count:

- Reset Agent Task Count requires the **ops\_admin** role and the [Update Agent](#) permission.
- Reset Cluster Task Count requires the **ops\_agent\_cluster\_admin** role.


## Sending Notifications on Status of an Agent

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

#### Note

The [Agent Notification Disabled If Suspended](#) Universal Controller system property lets you disable the sending of notifications for suspended Agents.

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


## Email Notification Details

The screenshot shows the 'Email Notification Details' configuration window. At the top, there is a toolbar with buttons for 'Save', 'Save & New', 'Save & View', and 'Close'. Below the toolbar, the window is divided into two main sections: 'Criteria' and 'Details'. The 'Criteria' section contains a 'Status Options' dropdown menu. The 'Details' section contains several input fields: 'Email Template' (with a dropdown arrow and a document icon), 'Email Connection' (with a dropdown arrow and a document icon), 'Reply-To', 'To', 'Cc', 'Bcc', 'Subject', and 'Body' (a large text area).

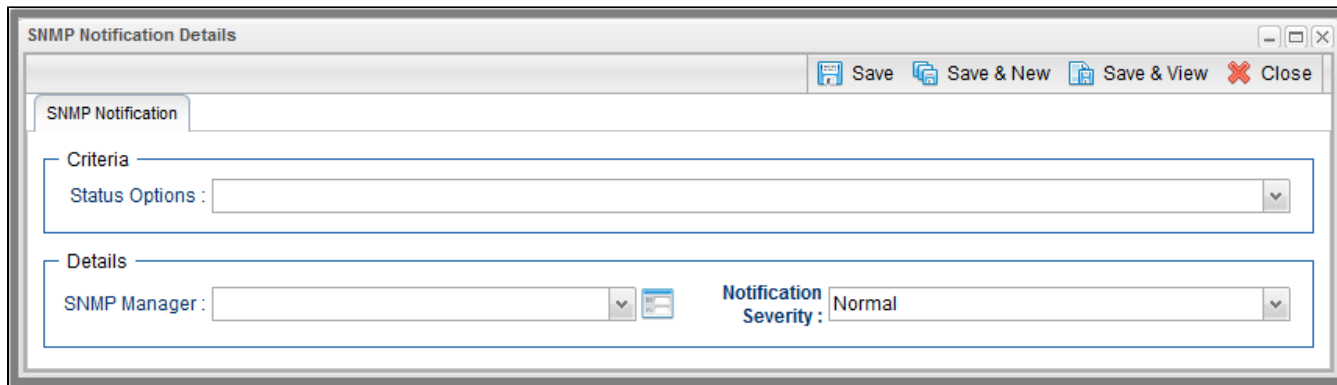
## Email Notification Details Field Descriptions

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

Field Name	Description
<b>Criteria</b>	This section contains criteria for sending the notification.
Status Options	<ul style="list-style-type: none"> <li>Offline = Trigger the notification when the resource goes offline.</li> <li>Active = Trigger the notification when the resource comes up.</li> </ul>
<b>Details</b>	This section contains assorted detailed information about the notification.
Email Template	<p>Name of an <a href="#">Email template</a> 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.</p> <p>Every <a href="#">Email template</a> specifies an Email connection. If you do not specify an Email template in this field, you must specify an Email connection in the <a href="#">Email Connection</a> field.</p> <p>If you specify both an Email template (in this field) and an <a href="#">Email Connection</a>, the Email server specified in the <a href="#">Email Connection</a> field overrides the Email server specified in this field.</p> <p>(Any information specified in an Email task overrides what is specified in an Email template.)</p>
Email Connection	<p>Required if an Email Template is not specified in the <a href="#">Email Template</a> field; Name of an outgoing <a href="#">Email Connection</a> (Type = Outgoing). An Email Connection specifies information about an outgoing or incoming email server. Enter the name of an existing outgoing Email Connection, select an existing outgoing Email Connection from the drop-down list, or clear the Email Connection field and click the Details icon to create a new Email Connection (Outgoing will be pre-selected in the Type field).</p> <p>If you specify both an <a href="#">Email Template</a> and an Email Connection (in this field), the Email Connection specified in this field overrides the Email Connection specified in the <a href="#">Email Template</a> field.</p>
Reply-To	Email address of the sender. Use commas to separate multiple recipients. <a href="#">Variables and functions</a> supported.
To	Email address of the recipient. Use commas to separate multiple recipients. <a href="#">Variables and functions</a> supported.
CC	Email address of the party being sent a copy of the email, if any. Use commas to separate multiple recipients. <a href="#">Variables and functions</a> supported.
BCC	Email address of the party being sent a blind (hidden) copy of the email, if any. Use commas to separate multiple recipients. <a href="#">Variables and functions</a> supported.
Subject	Subject line of the email. <a href="#">Variables and functions</a> supported.

<b>Body</b>	Text of the email message. <a href="#">Variables and functions</a> supported.  <b>Note</b>  If both the Email Template and the Email Task (or Email Notification) contain text in the Body, the text in the Email Template is appended to the text in the Email Task (or Email Notification).
<b>Buttons</b>	This section identifies the buttons displayed above and below the Notification Details that let you perform various actions.
<b>Save</b>	Submits the new record to the database.
<b>Save &amp; New</b>	Saves a new record in the Controller database and redisplay empty Details so that you can create another new record.
<b>Save &amp; View</b>	Saves a new record in the Controller database and continues to display that record.
<b>Update</b>	Saves updates to the record.
<b>Delete</b>	Deletes the current record.
<b>Refresh</b>	Refreshes any dynamic data displayed in the Details.
<b>Close</b>	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
<b>Criteria</b>	This section contains criteria for sending the notification.
Status Options	<ul style="list-style-type: none"> <li>• Offline = Trigger the notification when the resource goes offline.</li> <li>• Active = Trigger the notification when the resource comes up.</li> </ul>
<b>Details</b>	This section contains assorted detailed information about the notification.
SNMP Manager	The <a href="#">SNMP Manager</a> that will receive the SNMP notification. Enter the name of an existing SNMP Manager, select an existing SNMP Manager from the drop-down list, or clear the SNMP Manager field and click the Details icon to create a new SNMP Manager.
Notification Severity	<p>Severity of this notification.</p> <p>Options:</p> <ul style="list-style-type: none"> <li>• Normal (1)</li> <li>• Warning (2)</li> <li>• Minor (3)</li> <li>• Major (4)</li> <li>• Critical (5)</li> </ul>
<b>Buttons</b>	This section identifies the buttons displayed above and below the Notification Details that let you perform various actions.
<b>Save</b>	Submits the new record to the database.
<b>Save &amp; New</b>	Saves a new record in the Controller database and redisplay empty Details so that you can create another new record.
<b>Save &amp; View</b>	Saves a new record in the Controller database and continues to display that record.
<b>Update</b>	Saves updates to the record.
<b>Delete</b>	Deletes the current record.
<b>Refresh</b>	Refreshes any dynamic data displayed in the Details.
<b>Close</b>	For pop-up view only; closes the pop-up view of this notification.

# Linux Unix Agent

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- [Linux/Unix Agent Details](#)
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## 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 a 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
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<b>Configuration Details</b>	This section contains detailed information about the configuration of the 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.
Description	Description of this record. (Maximum = 255 characters.)
Member of Business Services	User-defined; Allows you to select one or more <a href="#">Business Services</a> that this record belongs to. (You also can Check All or Uncheck All Business Services for this record.) You can select up to 62 Business Services for any record type, and enter a maximum of 2048 characters for each Business Service. If the <a href="#">Business Service Visibility Restricted</a> Universal Controller system property is set to true, depending on your assigned (or inherited) <a href="#">Permissions</a> or <a href="#">Roles</a> , Business Services available for selection may be restricted.
Status	System-supplied; status of the Agent.
Suspended	Indication that the Agent's ability to run tasks has been suspended.
Log Level	User-modifiable; level of logging that the Agent will perform.  Note  You cannot modify a Log Level from a non-active (Passive or Offline) mode.  Modifying this field changes the log level of the messages that appear in the <code>agent.log</code> file.  Options: <ul style="list-style-type: none"> <li>• Severe Error</li> <li>• Errors</li> <li>• Warning</li> <li>• Informational</li> <li>• Debug</li> <li>• Trace</li> </ul> Note  A Trace file is not created when the Trace option is selected.
Retrieve Output Prohibited	If enabled, disallows any <a href="#">Retrieve Output</a> request (automatic or manual) from being performed.

Heartbeat Interval	<p>User-modifiable; heartbeat interval (in seconds). The heartbeat is a status message sent from the Agent to the Controller.</p> <p>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.</p> <p>Note                   You cannot modify a Heartbeat Interval from a non-active (Passive or Offline) mode.</p>
Heartbeat Grace Period	<p>User-modifiable; grace period, in seconds, that the Controller will allow for a delayed heartbeat message.</p>
Credentials	<p><a href="#">Credentials</a> 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.</p>
Task Execution Limit	<p>Specification for whether a <b>Limited</b> or <b>Unlimited</b> number of task instances can be run concurrently on the Agent. (Default is <b>Unlimited</b>.)</p> <p>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.</p>
Limit Amount	<p>If <a href="#">Task Execution Limit</a> = Limited; Number of tasks that can be running at the same time by the Agent.</p>
<b>Installation Details</b>	<p>This section contains detailed information about the installation of the Agent.</p>
Host Name	<p>User-provided during installation; IP address or domain/name of the host machine where the resource resides.</p>
IP Address	<p>User-provided during installation; TCP/IP address of the machine where the Agent is running.</p> <p>If the currently logged in user is a non-Administrator (<a href="#">ops_admin</a>) user, and the <a href="#">Agent Address Information Restricted</a> Universal Controller system property is set to true, the IP Address field will display ***** instead of the actual value.</p> <p>Note                   This also applies to the ipAddress of <a href="#">z/OS secondary Agents</a>.</p>
Operating System	<p>System-supplied; operating system on which the Agent is running.</p>
Operating System Release	<p>System-supplied; release information for the operating system on which the Agent is running.</p>
Version	<p>System-supplied; version number of the Agent program.</p>

Build ID	System-supplied, provided by the Agent; build ID of the Agent. Internal use only.
Build Date	System-supplied, provided by the Agent; date the Agent program was last built.
CPU	System-supplied; information about the CPU on the Agent machine.
Transient	<p>If checked, the Agent is Transient and will be deleted or decommissioned when the Agent shuts down or goes offline.</p> <p>Transient Agents are suspended from any <a href="#">Agent Clusters</a> that they may belong to.</p> <p>Note  An Agent is transient if it has been identified as transient in the <a href="#">TRANSIENT</a> UAG configuration option.</p>
Decommissioned	If checked, the Agent has been decommissioned and is not available for use. An Agent becomes Decommissioned if it is a Transient Agent and has shut down or gone offline and could not be removed/deleted from the system because it is being referenced by a task.
Decommissioned Date	Date when the Agent was decommissioned.
<b>System Details</b>	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	<p>If <a href="#">Task Execution Limit</a> = Limited; Current number of tasks currently being run by this Agent.</p> <p>(See <a href="#">Resetting the Current Task Count</a> for information on resetting the current task count.)</p>

Authentication Version	<p>This value is used by the Controller to determine what level of encryption is to be used for sensitive data between the Agent and the Controller. The most secure method available is used per that <a href="#">agent</a>.</p> <p>Options:</p> <ul style="list-style-type: none"> <li>• 1 or unspecified: Legacy authentication prior to Release 6.5.</li> <li>• 2: Release 6.5 and above using AES encryption strategies.</li> </ul>
<b>Extension Details</b>	This section contains detailed information about Universal Extensions.
API Level Minimum	Minimum extension API level supported.
API Level Maximum	Maximum extension API level supported.
Extensions	List of deployed Universal Extensions and their corresponding checksums.
Accept Extensions	Specification (true or false) for whether or not the Agent will accept deployment of Universal Extensions.
Accept List	If Accept Extensions true; list of specific Universal Extensions that are allowed to be deployed to the agent, or * for no deployment restrictions.
<b>Metadata</b>	This section contains <a href="#">Metadata</a> information about this record.
UUID	Universally Unique Identifier of this record.
Updated By	Name of the user that last updated this record.
Updated	Date and time that this record was last updated.
Created By	Name of the user that created this record.
Created	Date and time that this record was created.
<b>Buttons</b>	This section identifies the buttons displayed above and below the Agent Details that let you perform various actions.
<b>Update</b>	Saves updates to the record.
<b>Suspend Agent</b>	Suspends the Agent's ability to run tasks.
<b>Resume Agent</b>	Resumes the suspended Agent's ability to run tasks.
<b>Delete</b>	Deletes the current record.
<b>Refresh</b>	Refreshes any dynamic data displayed in the Details.
<b>Close</b>	For pop-up view only; closes the pop-up view of this task.

<p><b>Tabs</b></p>	<p>This section identifies the tabs across the top of the Agent Details that provide access to additional information about the Agent.</p> <p>Note </p> <p>For an Agent-Only installation of Universal Controller, the Agent Clusters, Task Instances, and Tasks tabs do not display.</p>
<p><b>Agent Clusters</b></p>	<p>Lists all <a href="#">agent clusters</a> that this Agent belongs to.</p>
<p><b>Notifications</b></p>	<p>Lists all <a href="#">notifications</a> that have been defined for this Agent.</p>
<p><b>Task Instances</b></p>	<p>System-supplied; lists all task instances that have run or are ready to run on this Agent since it last started.</p>
<p><b>Tasks</b></p>	<p>System-supplied; lists all tasks that specify this Agent in its Details, and lets you create a new task that specifies this Agent.</p>

# Windows Agent

- [Overview](#)
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- [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 a Name or click anywhere in the Agent row to display Details for that agent.

The screenshot shows the 'Windows Agent Details' window for agent 'MD-DELL - MD\_DELL'. The window has a title bar with 'Update', 'Suspend Agent', 'Delete', 'Refresh', and 'Close' buttons. Below the title bar are tabs for 'Windows Agent', 'Notifications', 'Agent Clusters', 'Task Instances', and 'Tasks'. The main content is divided into three sections:

- Configuration Details:** Includes fields for Name (MD-DELL - MD\_DELL), Agent Id (MD\_DELL), Description, Member of Business Services, Status (Offline), Log Level (Info), Heartbeat Interval (120), Task Execution Limit (Unlimited), Credentials, Suspended checkbox, Retrieve Output Prohibited checkbox, and Heartbeat Grace Period (60).
- Installation Details:** Includes Host Name (MD-DELL), IP Address (10.253.1.241), Operating System (Microsoft Windows), Operating System Release (Home Edition (Build 9200)), Version (6.4.3.0), Build Id (101), Build Date (2018-06-20 20:51:55 -0400), and CPU (AMD64 (4 CPU(s))).
- System Details:** Includes Started Date, Last Heartbeat, CPU Load (25), OMS Server, PID, Jobs Run (0), and Authentication Version (1).

**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
<b>Configuration Details</b>	This section contains detailed information about the configuration of the 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.
Description	Description of this record. (Maximum = 255 characters.)
Member of Business Services	<p>User-defined; Allows you to select one or more <a href="#">Business Services</a> that this record belongs to. (You also can Check All or Uncheck All Business Services for this record.)</p> <p>You can select up to 62 Business Services for any record type, and enter a maximum of 2048 characters for each Business Service.</p> <p>If the <a href="#">Business Service Visibility Restricted</a> Universal Controller system property is set to true, depending on your assigned (or inherited) <a href="#">Permissions</a> or <a href="#">Roles</a>, Business Services available for selection may be restricted.</p>
Status	System-supplied; status of the Agent.
Suspended	Indication that the Agent's ability to run tasks has been suspended.
Log Level	<p>User-modifiable; level of logging that the Agent will perform.</p> <p><b>Note</b>   You cannot modify a Log Level from a non-active (Passive or Offline) mode.</p> <p>Modifying this field changes the log level of the messages that appear in the <code>agent.log</code> file.</p> <p>Options:</p> <ul style="list-style-type: none"> <li>• Severe Error</li> <li>• Errors</li> <li>• Warning</li> <li>• Informational</li> <li>• Debug</li> <li>• Trace</li> </ul> <p><b>Note</b>   A Trace file is not created when the Trace option is selected.</p>
Retrieve Output Prohibited	If enabled, disallows any <a href="#">Retrieve Output</a> request (automatic or manual) from being performed.

<p>Heartbeat Interval</p>	<p>User-modifiable; heartbeat interval (in seconds). The heartbeat is a status message sent from the Agent to the Controller.</p> <p>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.</p> <p><b>Note</b>   You cannot modify a Heartbeat Interval from a non-active (Passive or Offline) mode.</p>
<p>Heartbeat Grace Period</p>	<p>User-modifiable; grace period, in seconds, that the Controller will allow for a delayed heartbeat message.</p>
<p>Credentials</p>	<p><a href="#">Credentials</a> 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.</p>
<p>Task Execution Limit</p>	<p>Specification for whether a <b>Limited</b> or <b>Unlimited</b> number of task instances can be run concurrently on the Agent. (Default is <b>Unlimited</b>.)</p> <p>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.</p>
<p>Limit Amount</p>	<p>If <a href="#">Task Execution Limit</a> = Limited; Number of tasks that can be running at the same time by the Agent.</p>
<p><b>Installation Details</b></p>	<p>This section contains detailed information about the installation of the Agent.</p>
<p>Host Name</p>	<p>User-provided during installation; IP address or domain/name of the host machine where the resource resides.</p>
<p>IP Address</p>	<p>User-provided during installation; TCP/IP address of the machine where the Agent is running.</p> <p>If the currently logged in user is a non-Administrator (<a href="#">ops_admin</a>) user, and the <a href="#">Agent Address Information Restricted</a> Universal Controller system property is set to true, the IP Address field will display ***** instead of the actual value.</p> <p><b>Note</b>   This also applies to the ipAddress of <a href="#">z/OS secondary Agents</a>.</p>
<p>Operating System</p>	<p>System-supplied; operating system on which the Agent is running.</p>
<p>Operating System Release</p>	<p>System-supplied; release information for the operating system on which the Agent is running.</p>

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.
<b>System Details</b>	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	<p>If <a href="#">Task Execution Limit</a> = Limited; Current number of tasks currently being run by this Agent.</p> <p>(See <a href="#">Resetting the Current Task Count</a> for information on resetting the current task count.)</p>
Authentication Version	<p>This value is used by the Controller to determine what level of encryption is to be used for sensitive data between the Agent and the Controller. The most secure method available is used per that <a href="#">agent</a>.</p> <p>Options:</p> <ul style="list-style-type: none"> <li>• 1 or unspecified: Legacy authentication prior to Release 6.5.</li> <li>• 2: Release 6.5 and above using AES encryption strategies.</li> </ul>
<b>Extension Details</b>	This section contains detailed information about Universal Extensions.
API Level Minimum	Minimum extension API level supported.
API Level Maximum	Maximum extension API level supported.

Extensions	List of deployed Universal Extensions and their corresponding checksums.
Accept Extensions	Specification (true or false) for whether or not the Agent will accept deployment of Universal Extensions.
Accept List	If Accept Extensions true; list of specific Universal Extensions that are allowed to be deployed to the agent, or * for no deployment restrictions.
<b>Metadata</b>	This section contains <a href="#">Metadata</a> information about this record.
UUID	Universally Unique Identifier of this record.
Updated By	Name of the user that last updated this record.
Updated	Date and time that this record was last updated.
Created By	Name of the user that created this record.
Created	Date and time that this record was created.
<b>Buttons</b>	This section identifies the buttons displayed above and below the Agent Details that let you perform various actions.
<b>Update</b>	Saves updates to the record.
<b>Suspend Agent</b>	Suspends the Agent's ability to run tasks.
<b>Resume Agent</b>	Resumes the suspended Agent's ability to run tasks.
<b>Delete</b>	Deletes the current record.
<b>Refresh</b>	Refreshes any dynamic data displayed in the Details.
<b>Close</b>	For pop-up view only; closes the pop-up view of this task.
<b>Tabs</b>	This section identifies the tabs across the top of the Agent Details that provide access to additional information about the Agent.
For an Agent-Only installation of Universal Controller, the Agent Clusters, Task Instances, and Tasks tabs do not display.	
<b>Agent Clusters</b>	Lists all <a href="#">agent clusters</a> that this Agent belongs to.
<b>Notifications</b>	Lists all <a href="#">notifications</a> that have been defined for this Agent.
<b>Task Instances</b>	System-supplied; lists all task instances that have run or are ready to run on this Agent since it last started.

<b>Tasks</b>	System-supplied; lists all tasks that specify this Agent in its Details, and lets you create a new task that specifies this Agent.
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# z/OS 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 a Name or click anywhere in the Agent row to display Details for that agent.

The screenshot shows the 'z/OS Agent Details' window for agent 'DVZOS202-640-VIU'. The window has a title bar with 'Update', 'Suspend Agent', 'Delete', 'Refresh', and 'Close' buttons. Below the title bar are tabs for 'z/OS Agent', 'Notifications', 'Task Instances', and 'Tasks'. The main content is divided into three sections:

- Configuration Details:** Includes fields for Name (DVZOS202 - DVZOS202-640-VIU), Agent Id (DVZOS202-640-VIU), Description, Member of Business Services (dropdown), Status (Offline), Log Level (Trace), Heartbeat Interval (120), Task Execution Limit (Unlimited), Credentials (dropdown), Suspended (checkbox), Retrieve Output Prohibited (checkbox), and Heartbeat Grace Period (60).
- Installation Details:** Includes Host Name (DVZOS202), IP Address (192.168.30.84), Operating System (ZOS), Operating System Release (020200), Version (6.6.0.0), Build Id (128), Build Date (2018-11-07 02:19:36 -0500), and CPU (2828).
- System Details:** Includes Started Date, Last Heartbeat, CPU Load (0), OMS Server, PID, Jobs Run (0), and Authentication Version (2).

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
<b>Configuration Details</b>	This section contains detailed information about the configuration of the 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.
Description	Description of this record. (Maximum = 255 characters.)
Member of Business Services	<p>User-defined; Allows you to select one or more <a href="#">Business Services</a> that this record belongs to. (You also can Check All or Uncheck All Business Services for this record.)</p> <p>You can select up to 62 Business Services for any record type, and enter a maximum of 2048 characters for each Business Service.</p> <p>If the <a href="#">Business Service Visibility Restricted</a> Universal Controller system property is set to true, depending on your assigned (or inherited) <a href="#">Permissions</a> or <a href="#">Roles</a>, Business Services available for selection may be restricted.</p>
Status	System-supplied; status of the Agent.
Suspended	Indication that the Agent's ability to run tasks has been suspended.
Log Level	<p>User-modifiable; level of logging that the Agent will perform.</p> <p><b>Note</b>   You cannot modify a Log Level from a non-active (Passive or Offline) mode.</p> <p>Modifying this field changes the log level of the messages that appear in the <code>agent.log</code> file.</p> <p>Options:</p> <ul style="list-style-type: none"> <li>• Severe Error</li> <li>• Errors</li> <li>• Warning</li> <li>• Informational</li> <li>• Debug</li> <li>• Trace</li> </ul> <p><b>Note</b>   A Trace file is not created when the Trace option is selected.</p>
Retrieve Output Prohibited	If enabled, disallows any <a href="#">Retrieve Output</a> request (automatic or manual) from being performed.

<p>Heartbeat Interval</p>	<p>User-modifiable; heartbeat interval (in seconds). The heartbeat is a status message sent from the Agent to the Controller.</p> <p>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.</p> <p><b>Note</b>   You cannot modify a Heartbeat Interval from a non-active (Passive or Offline) mode.</p>
<p>Heartbeat Grace Period</p>	<p>User-modifiable; grace period, in seconds, that the Controller will allow for a delayed heartbeat message.</p>
<p>Credentials</p>	<p><a href="#">Credentials</a> 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.</p>
<p>Task Execution Limit</p>	<p>Specification for whether a <b>Limited</b> or <b>Unlimited</b> number of task instances can be run concurrently on the Agent. (Default is <b>Unlimited</b>.)</p> <p>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.</p>
<p>Limit Amount</p>	<p>If <a href="#">Task Execution Limit</a> = Limited; Number of tasks that can be running at the same time by the Agent.</p>
<p><b>Installation Details</b></p>	<p>This section contains detailed information about the installation of the Agent.</p>
<p>Host Name</p>	<p>User-provided during installation; IP address or domain/name of the host machine where the resource resides.</p>
<p>IP Address</p>	<p>User-provided during installation; TCP/IP address of the machine where the Agent is running.</p> <p>If the currently logged in user is a non-Administrator (<a href="#">ops_admin</a>) user, and the <a href="#">Agent Address Information Restricted</a> Universal Controller system property is set to true, the IP Address field will display ***** instead of the actual value.</p> <p><b>Note</b>   This also applies to the ipAddress of <a href="#">z/OS secondary Agents</a>.</p>
<p>Operating System</p>	<p>System-supplied; operating system on which the Agent is running.</p>
<p>Operating System Release</p>	<p>System-supplied; release information for the operating system on which the Agent is running.</p>

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.
<b>System Details</b>	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 <a href="#">Task Execution Limit</a> = Limited; Current number of tasks currently being run by this Agent.  (See <a href="#">Resetting the Current Task Count</a> for information on resetting the current task count.)
Authentication Version	This value is used by the Controller to determine what level of encryption is to be used for sensitive data between the Agent and the Controller. The most secure method available is used per that <a href="#">agent</a> .  Options: <ul style="list-style-type: none"> <li>• 1 or unspecified: Legacy authentication prior to Release 6.5.</li> <li>• 2: Release 6.5 and above using AES encryption strategies.</li> </ul>
<b>Extension Details</b>	This section contains detailed information about Universal Extensions.
API Level Minimum	Minimum extension API level supported.
API Level Maximum	Maximum extension API level supported.

Extensions	List of deployed Universal Extensions and their corresponding checksums.
Accept Extensions	Specification (true or false) for whether or not the Agent will accept deployment of Universal Extensions.
Accept List	If Accept Extensions true; list of specific Universal Extensions that are allowed to be deployed to the agent, or * for no deployment restrictions.
<b>Secondary Agent Details</b>	This section contains detailed information about any secondary z/OS Agents.
Secondary Agent Licenses	Number of secondary Agent licenses.
Secondary Agent(s)	List of secondary Agent information.
<b>Metadata</b>	This section contains <a href="#">Metadata</a> information about this record.
UUID	Universally Unique Identifier of this record.
Updated By	Name of the user that last updated this record.
Updated	Date and time that this record was last updated.
Created By	Name of the user that created this record.
Created	Date and time that this record was created.
<b>Buttons</b>	This section identifies the buttons displayed above and below the Agent Details that let you perform various actions.
<b>Update</b>	Saves updates to the record.
<b>Suspend Agent</b>	Suspends the Agent's ability to run tasks.
<b>Resume Agent</b>	Resumes the suspended Agent's ability to run tasks.
<b>Delete</b>	Deletes the current record.
<b>Refresh</b>	Refreshes any dynamic data displayed in the Details.
<b>Close</b>	For pop-up view only; closes the pop-up view of this task.
<b>Tabs</b>	This section identifies the tabs across the top of the Agent Details that provide access to additional information about the Agent.
For an Agent-Only installation of Universal Controller, the Agent Clusters, Task Instances, and Tasks tabs do not display.	

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

# Agent Clusters

- [Overview](#)
- [Creating an Agent Cluster](#)
  - [Agent Cluster Details](#)
  - [Agent Cluster Details Field Descriptions](#)
- [Assigning Agents to the Cluster](#)
- [Suspending Agent Clusters and Agent Cluster Memberships](#)
- [Sending Notifications on Status of an Agent Cluster](#)
  - [Email Notification Details](#)
  - [Email Notification Details Field Descriptions](#)
  - [SNMP Notification Details](#)
  - [SNMP Notification Details Field Descriptions](#)
- [Network Alias](#)

## 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

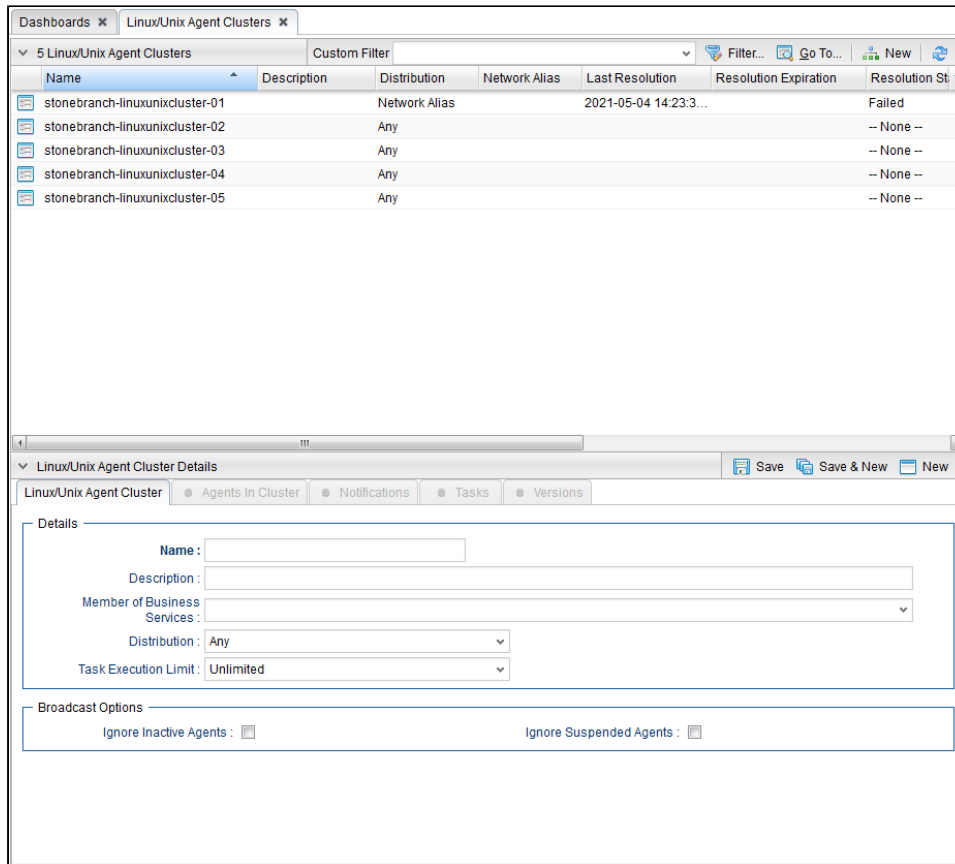


The instructions and illustrations, below, for creating Windows agent clusters and Linux/Unix agent clusters, and assigning Agents to those clusters, are the same.

## 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.



**Step 2** Enter / select Details for a new agent cluster, using the [field descriptions](#) below as a guide.

- Required fields display an asterisk ( \* ) after the field name.
- Default values for fields, if available, display automatically.

To display more of the Details fields on the screen, you can either:

- Use the scroll bar.
- Temporarily [hide the list](#) above the Details.
- Click the **New** button above the list to display a pop-up version of the Details.

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

Note

To **open** an existing record on the list, either:

- Click a record in the list to display its record Details below the list. (To clear record Details below the list, click the **New** button that displays above and below the Details.)
- Clicking the **Details icon** next to a record name in the list, or right-click a record in the list and then click **Open** in the **Action menu** that displays, to display a pop-up version of the record Details.
- Right-click a record in the a list, or open a record and right-click in the record Details, and then click **Open In Tab** in the **Action menu** that displays, to display the record Details under a new tab on the record list page (see [Record Details as Tabs](#)).

## Agent Cluster Details

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

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


## Agent Cluster Details Field Descriptions

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

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

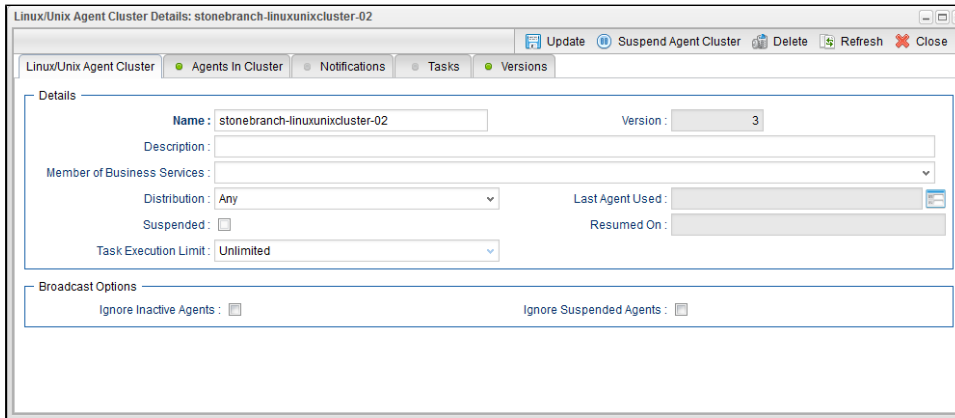
Name	Name used within the Controller to identify this agent cluster. Up to 40 alphanumeric characters. It is the responsibility of the user to develop a workable <a href="#">naming scheme</a> for agent clusters.
Version	System-supplied; version number of the current record, which is incremented by the Controller every time a user updates a record. Click the <a href="#">#Versions tab</a> to view previous versions. For details, see <a href="#">Record Versioning</a> .
Description	Description of this record. (Maximum = 255 characters.)
Member of Business Service	User-defined; Allows you to select one or more <a href="#">Business Services</a> that this record belongs to. (You also can Check All or Uncheck All Business Services for this record.)  You can select up to 62 Business Services for any record type, and enter a maximum of 2048 characters for each Business Service.  If the <a href="#">Business Service Visibility Restricted</a> Universal Controller system property is set to true, depending on your assigned (or inherited) <a href="#">Permissions</a> or <a href="#">Roles</a> , Business Services available for selection may be restricted.
Distribution	Method used to select an Agent.  Options: <ul style="list-style-type: none"> <li>• Any - Select any Agent in the cluster.</li> <li>• Round Robin - Select the next Agent in a round robin series.</li> <li>• Lowest CPU Utilization - Selects the Agent whose CPU utilization is currently the lowest.</li> <li>• <a href="#">Network Alias</a> - Select the Agent based on either an IP or DNS name for an external Load Balancer, or a Virtual IP address.</li> </ul>
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.
Suspended On	Date and time that an Agent Cluster was suspended from running tasks.
Resumed On	Date and time that an Agent Cluster suspended from running tasks has been resumed.
Current Task Count	If <a href="#">Task Execution Limit</a> = Limited; Current number of tasks currently being run by the Agents in this agent cluster.  (See <a href="#">Resetting the Current Task Count</a> for information on resetting the current task count.)
Task Execution Limit	Specification for whether a <b>Limited</b> or <b>Unlimited</b> number of task instances can be run concurrently by the Agents in this agent cluster. (Default is <b>Unlimited</b> .)  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 <a href="#">Task Execution Limit</a> = Limited; Number of tasks that can be running at the same time by the Agents in this agent cluster.
<b>Network Alias Details</b>	If <a href="#">Distribution</a> = Network Alias; This section contains information about the <a href="#">Network Alias</a> .
Network Alias	Network alias (or VIP). If a network alias is not specified, the Name is used as the network alias.
Agent Port	Network alias (or VIP) port that the Agent Cluster Agent Broker is listening on. If a port is not specified, the default is the value of the <a href="#">Agent Cluster Network Alias Query Port</a> Universal Controller system property.
Last Resolution	Last attempted time of Network Alias resolution.
Resolution Expiration	Expiration of Network Alias resolution.
Resolution Status	Status of the last resolution of the Network Alias.
Resolution Description	Description of the last attempted resolution.
<b>Broadcast Options</b>	This section contains information about Cluster Broadcasts.
Ignore Inactive Agents	Specification for whether or not inactive (offline) Agents should be ignored when the agent cluster is used for broadcasting.
Ignore Suspended Agents	Specification for whether or not suspended Agents should be ignored when the agent cluster is used for broadcasting.
<b>Metadata</b>	This section contains <a href="#">Metadata</a> information about this record.
UUID	Universally Unique Identifier of this record.
Updated By	Name of the user that last updated this record.
Updated	Date and time that this record was last updated.
Created By	Name of the user that created this record.
Created	Date and time that this record was created.
<b>Buttons</b>	This section identifies the buttons displayed above and below the Agent Cluster Details that let you perform various actions.
<b>Save</b>	Saves a new task record in the Controller database.
<b>Save &amp; New</b>	Saves a new Agent Cluster record in the Controller database and redisplay empty Details so that you can create another Agent Cluster.
<b>Save &amp; View</b>	Saves a new Agent Cluster record in the Controller database and continues to display that record.
<b>New</b>	Displays empty (except for default values) Details for creating a new record.
<b>Update</b>	Saves updates to the record.
<b>Suspend Agent Cluster</b>	Suspends the ability for this cluster of Agents to run tasks.

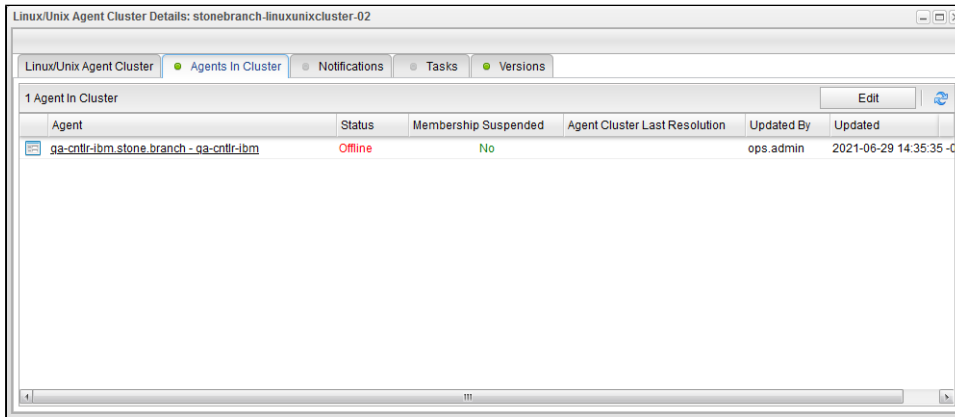
<b>Resume Agent Cluster</b>	Resumes the ability for this suspended cluster of Agents to run tasks.
<b>Resolve Agent Cluster</b>	If <a href="#">Distribution</a> = Network Alias; Resolves the Network Alias for this Agent Cluster.
<b>Delete</b>	Deletes the current record.
<b>Refresh</b>	Refreshes any dynamic data displayed in the Details.
<b>Close</b>	For pop-up view only; closes the pop-up view of this task.
<b>Tabs</b>	This section identifies the tabs across the top of the Agent Cluster Details that provide access to additional information about the agent cluster.
<b>Agents in Cluster</b>	List of Agents assigned to this cluster.
<b>Notifications</b>	Lists all <a href="#">notifications</a> that have been defined for this agent cluster.
<b>Tasks</b>	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.
<b>Versions</b>	<p>Stores copies of all previous versions of the current record. See <a href="#">Record Versioning</a>.</p> <p>Note </p> <p>Updates to the following fields, whether system-supplied or user-supplied (as appropriate), does not affect the version of the Agent Cluster Details:</p> <ul style="list-style-type: none"> <li>• Current Task Count</li> <li>• Execution Limit</li> <li>• Last Agent Used</li> <li>• Limit Amount</li> <li>• Suspended</li> </ul> <p>Additionally, if you restore Agent Cluster Details to a previous version, values for those fields are preserved; they do not revert to their values from the selected previous version.</p>

## Assigning Agents to the Cluster

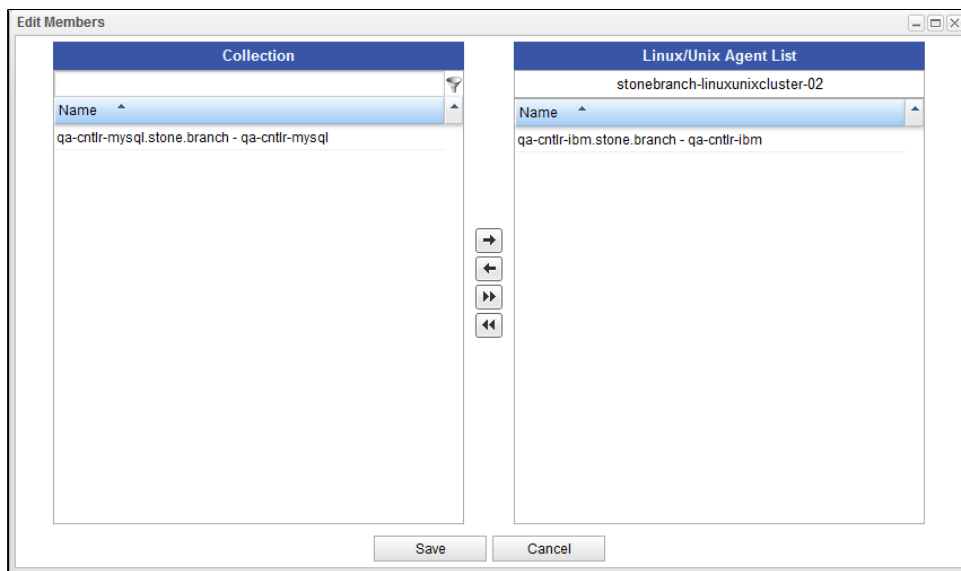
**Step 1** On the Linux/Unix Clusters list (for example), select the cluster to which you want to assign one or more existing Agents.



**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](#).

## Sending Notifications on Status of an Agent Cluster

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

**Step 1** From the [Agents & Connections](#) navigation pane, select **Agent Clusters ><type of agent cluster>**. An Agent Clusters list displays.

**Step 2** Click the icon next to the **Name** of an Agent Cluster, or click anywhere in the Agent Cluster row, to display Details about the Agent Cluster.


<b>Step 3</b>	Click the <b>Notifications</b> tab to display a list of any Email and SNMP notifications configured for the Agent Cluster.
<b>Step 4</b>	Select the type of notification you want the Agent Cluster to send, and then click <b>New</b> . Notification Details for a new Notification displays (See <a href="#">Email Notification Details</a> and <a href="#">SNMP Notification Details</a> , below).
<b>Step 5</b>	<p>Complete the fields as needed (see <a href="#">Email Notification Details Field Descriptions</a> and <a href="#">SNMP Notification Details Field Descriptions</a>, below).</p> <p>Note  <a href="#">Agent built-in variables</a> are available to pass data about the Agent Cluster into the notification. (<a href="#">User-defined variables</a>, including Global variables, are not available for use in Agent Cluster email notifications).</p>
<b>Step 6</b>	Click the <b>Save</b> 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
<b>Criteria</b>	This section contains criteria for sending the notification.

<p>Notification State</p>	<p>Criteria (one or more states) for which the notification will be delivered:</p> <ul style="list-style-type: none"> <li>• Agents Unavailable: All Agents in the Agent Cluster are unavailable.</li> <li>• Agents Available: One or more Agents in the Agent Cluster that had no available Agents now are available.</li> <li>• Suspended: Agent Cluster is suspended</li> <li>• Resumed: Agent Cluster suspension has ended.</li> </ul>
<p><b>Details</b></p>	<p>This section contains assorted detailed information about the notification.</p>
<p>Email Template</p>	<p>Name of an <a href="#">Email template</a> 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.</p> <p>Every <a href="#">Email template</a> specifies an Email connection. If you do not specify an Email template in this field, you must specify an Email connection in the <a href="#">Email Connection</a> field.</p> <p>If you specify both an Email template (in this field) and an <a href="#">Email Connection</a>, the Email server specified in the <a href="#">Email Connection</a> field overrides the Email server specified in this field.</p> <p>(Any information specified in an Email task overrides what is specified in an Email template.)</p>
<p>Email Connection</p>	<p>Required if an Email Template is not specified in the <a href="#">Email Template</a> field; Name of an outgoing <a href="#">Email Connection</a> (Type = Outgoing). An Email Connection specifies information about an outgoing or incoming email server. Enter the name of an existing outgoing Email Connection, select an existing outgoing Email Connection from the drop-down list, or clear the Email Connection field and click the Details icon to create a new Email Connection (Outgoing will be pre-selected in the Type field).</p> <p>If you specify both an <a href="#">Email Template</a> and an Email Connection (in this field), the Email Connection specified in this field overrides the Email Connection specified in the <a href="#">Email Template</a> field.</p>
<p>Reply-To</p>	<p>Email address of the sender. Use commas to separate multiple recipients. <a href="#">Variables and functions</a> supported.</p>
<p>To</p>	<p>Email address of the recipient. Use commas to separate multiple recipients. <a href="#">Variables and functions</a> supported.</p>
<p>CC</p>	<p>Email address of the party being sent a copy of the email, if any. Use commas to separate multiple recipients. <a href="#">Variables and functions</a> supported.</p>
<p>BCC</p>	<p>Email address of the party being sent a blind (hidden) copy of the email, if any. Use commas to separate multiple recipients. <a href="#">Variables and functions</a> supported.</p>
<p>Subject</p>	<p>Subject line of the email. <a href="#">Variables and functions</a> supported.</p>
<p>Body</p>	<p>Text of the email message. <a href="#">Variables and functions</a> supported.</p> <p>Note  If both the Email Template and the Email Task (or Email Notification) contain text in the Body, the text in the Email Template is appended to the text in the Email Task (or Email Notification).</p>

<b>Buttons</b>	This section identifies the buttons displayed above and below the Notification Details that let you perform various actions.
<b>Save</b>	Submits the new record to the database.
<b>Save &amp; New</b>	Saves a new record in the Controller database and redisplay empty Details so that you can create another new record.
<b>Save &amp; View</b>	Saves a new record in the Controller database and continues to display that record.
<b>Update</b>	Saves updates to the record.
<b>Delete</b>	Deletes the current record.
<b>Refresh</b>	Refreshes any dynamic data displayed in the Details.
<b>Close</b>	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
<b>Criteria</b>	This section contains criteria for sending the notification.

<b>Notification State</b>	<p>Criteria (one or more states) for which the notification will be delivered:</p> <ul style="list-style-type: none"> <li>• Agents Unavailable: All Agents in the Agent Cluster are unavailable.</li> <li>• Agents Available: One or more Agents in the Agent Cluster that had no available Agents now are available.</li> <li>• Suspended: Agent Cluster is suspended</li> <li>• Resumed: Agent Cluster suspension has ended.</li> </ul>
<b>Details</b>	This section contains assorted detailed information about the notification.
<b>SNMP Manager</b>	The <a href="#">SNMP Manager</a> that will receive the SNMP notification. Enter the name of an existing SNMP Manager, select an existing SNMP Manager from the drop-down list, or clear the SNMP Manager field and click the Details icon to create a new SNMP Manager.
<b>Notification Severity</b>	<p>Severity of this notification.</p> <p>Options:</p> <ul style="list-style-type: none"> <li>• Normal (1)</li> <li>• Warning (2)</li> <li>• Minor (3)</li> <li>• Major (4)</li> <li>• Critical (5)</li> </ul>
<b>Buttons</b>	This section identifies the buttons displayed above and below the Notification Details that let you perform various actions.
<b>Save</b>	Submits the new record to the database.
<b>Save &amp; New</b>	Saves a new record in the Controller database and redisplay empty Details so that you can create another new record.
<b>Save &amp; View</b>	Saves a new record in the Controller database and continues to display that record.
<b>Update</b>	Saves updates to the record.
<b>Delete</b>	Deletes the current record.
<b>Refresh</b>	Refreshes any dynamic data displayed in the Details.
<b>Close</b>	For pop-up view only; closes the pop-up view of this notification.

## Network Alias

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

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

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

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

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