

**Dell Advanced Infrastructure Manager Integration  
Pack for Microsoft System Center 2012 Orchestrator  
Version 2.0. User's Guide**



# Notes, Cautions, and Warnings



**NOTE:** A NOTE indicates important information that helps you make better use of your computer.



**CAUTION:** A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.



**WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.

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# Contents

<b>Notes, Cautions, and Warnings</b> .....	<b>2</b>
<b>1 Overview</b> .....	<b>5</b>
System Requirements .....	5
Registering and Deploying the Integration Pack .....	5
Configuring the Integration Pack for Dell AIM Configurations .....	6
To set up a Dell AIM configuration.....	6
To set up a Dell AIM Object Type configuration.....	6
Common Configuration Instructions for All Activities .....	7
Activity Properties.....	7
General Tab .....	7
Properties Tab .....	7
Filters Tab .....	7
Run Behavior Tab .....	8
Returned Data .....	8
Using Returned Data.....	8
<b>2 Dell Integration Pack Activities</b> .....	<b>11</b>
Add Object Activity .....	11
Get Object Activity .....	12
Remove Object Activity .....	12
Update Object Activity .....	13
Add Persona Activity .....	14
Get Persona Activity .....	17
Remove Persona Activity .....	22
Update Persona Activity .....	23
Add Relationship Activity .....	26
Get Relationship Activity .....	27
Maintenance Mode Activity .....	28
Run Operation Activity .....	29
Start Activity .....	31
Stop Activity .....	32
<b>3 Configuring Dell Integration Pack Activities</b> .....	<b>35</b>
Configuring the Add Object Activity.....	35
Configure the Properties tab.....	35
Configuring the Get Object Activity.....	35

Configuring the Filters Tab.....	36
Configuring the Remove Object Activity.....	36
Configuring the Update Object Activity.....	36
Configuring the Add Persona Activity.....	37
Configuring the Get Persona Activity.....	37
Configuring the Remove Persona Activity.....	37
Configuring the Update Persona Activity.....	37
Configuring the Add Relationship Activity.....	38
Configuring the Properties tab Add Relationship Activity.....	38
Configuring the Get Relationship Activity.....	38
Configuring the Properties tab Get Relationship Activity.....	39
Configuring the Filters Tab Get Relationship Activity.....	39
Configuring the Maintenance Mode Activity.....	40
Configuring the Run Operation Activity.....	40
Configuring the Start Activity.....	40
Configuring the Stop Activity.....	41
<b>4 Related Reference.....</b>	<b>43</b>
Obtaining Technical Assistance.....	43

# Overview

The Integration Pack for Dell Advanced Infrastructure Manager (AIM) is an add-on for Microsoft System Center 2012 Orchestrator that enables you to automate procedures and processes in the Dell AIM environment.

With this integration pack, you can create workflows that interact with and transfer information to other Microsoft System Center products such as Microsoft System Center 2012 - Operations Manager.

## System Requirements

Before implementing the Integration Pack for Dell AIM, install and configure the following software. For more information about installing and configuring Orchestrator and Dell AIM, refer to the respective product documentation.

- Dell Advanced Infrastructure Manager Version 3.4.2
- Microsoft System Center 2012 Orchestrator

## Registering and Deploying the Integration Pack

After you download the integration pack file, register it with the Orchestrator management server and then deploy it to Runbook servers and Runbook Designer.

To register and deploy the integration pack:

1. Copy the **IP\_Dell\_AIM\_2.0.oip** integration pack file to a location of your choice on the management server on which Orchestrator is running.
2. Confirm that the file is not set to **Read Only** as this can prevent unregistering the integration pack at a later date.
3. Start the Deployment Manager as an administrator. From the **Start** menu, right-click **Deployment Manager**, and then click **Run as Administrator**.
4. In the left pane of the Deployment Manager, expand **Management Server**, right-click **Integration Packs**, and then click **Register IP with the Management Server**. The Integration Pack Registration Wizard is displayed. Click **Next**.
5. In the **Integration Pack or Hotfix Selection** dialog box, click **Add**. Locate and select the **IP\_Dell\_AIM\_2.0.oip** file that you copied in step 1. Click **Open**.
6. Click **Finish**.  
The **End User Agreement** dialog box is displayed.
7. Click **Accept**.  
The **Log Entries** pane displays a confirmation message when the integration pack is successfully registered.
8. In the left pane, right-click **Integration Packs**, and then click **Deploy IP to Runbook Server or Runbook Designer**. Select **Dell Advanced Infrastructure Manager IP**, and then click **Next**.
9. Enter the name of the computer with the Runbook server or Runbook Designer on which you want to deploy the integration pack or click the ellipsis button (...) to browse for computers, click **Add**, and then click **Next**.
10. Select the **Installation Configuration** options that apply to this deployment, and then click **Next**.
11. Click **Finish**.  
The **Log Entries** pane displays a confirmation message when the integration pack is successfully deployed.

# Configuring the Integration Pack for Dell AIM Configurations

A configuration establishes a reusable link between Orchestrator and a Dell AIM server. Create as many configurations as you require to specify links to multiple servers running Dell AIM. You can also create multiple connections to the same server to allow for differences in security permissions for different user accounts and to manage working with different types of Dell AIM objects.

## To set up a Dell AIM configuration

The **Dell AIM** configuration type is used by activities, such as **Add Persona** and **Get Persona**, where object type is implicit, and by activities, such as **Remove Object**, where inputs properties, filters, and returned data are not dependent on object type selection.

1. In the Orchestrator Client, click the **Options** menu, and select **Dell Advanced Infrastructure Manager**.  
The **Dell AIM Prerequisite Configuration** dialog box is displayed.
2. On the **Configurations** tab, click **Add** to begin the configuration setup.  
The **Add Configuration** dialog box is displayed.
3. In the **Name** field, enter a name for the connection. For example, the name of the Dell AIM server or a descriptive name to distinguish the type of connection.
4. Click the **ellipsis** button next to the **Type** field and select **Dell AIM**.
5. In the **AIM Server Location** field, type the name or IP Address of the Dell AIM computer.
6. In the **AIM Server Port** field, type the port used to access the Dell AIM Web Service.
7. In the **Use SSL** field, select **True** if Orchestrator should use SSL to connect to the Dell AIM server; otherwise select **False**.
8. In the **AIM Username** and **AIM Password** fields, type the credentials that Orchestrator will use to connect to the Dell AIM server.
9. Click **OK** to close the configuration dialog box, and then click **Finish**.

## To set up a Dell AIM Object Type configuration

The **Dell AIM Object Type** configuration type is used by activities, such as **Add Object** and **Get Object**, where object type selection is required to dynamically configure the input properties, filters, and returned data used by the activity.

1. In the Orchestrator Client, click the **Options** menu, and select **Dell Advanced Infrastructure Manager**.  
The **Dell AIM Prerequisite Configuration** dialog box is displayed.
2. On the **Configurations** tab, click **Add** to begin the configuration setup.  
The **Add Configuration** dialog box is displayed.
3. In the **Name** field, enter a name for the connection. That is, the name of the Dell AIM Controller or a descriptive name to distinguish the type of connection.
4. Click the **ellipsis** button next to the **Type** field and select **Dell AIM Object Type**.
5. In the **AIM Object Type** field, select the type of Dell AIM object that you want to configure.
6. In the **AIM Server Location** field, type the name or IP Address of the Dell AIM computer.
7. In the **AIM Server Port** field, type the port used to access the Dell AIM Web Service.
8. In the **Use SSL** field, select **True** if Orchestrator should use SSL to connect to the Dell AIM server; or else select **False**.

9. In the **AIM Username** and **AIM Password** fields, type the credentials that Orchestrator should use to connect to the Dell AIM server.
10. Click **OK** to close the configuration dialog box, and then click **Finish**.

## Common Configuration Instructions for All Activities

The following configuration instructions apply to all activities in this integration pack.

### Activity Properties

Each activity has a set of required or optional properties that define the configuration of that activity. This includes how it connects to other activities or how the activity performs its actions. You can view or modify activity properties in the workflow authoring console.

To configure the properties for an activity:

1. Double-click the activity. Alternatively, right-click the activity, and then click **Properties**.  
In the **Activity Properties** dialog box, several tabs along the left side provide access to general and specific settings for the activity. Although the number of available tabs for activity properties differs from activity to activity, all activities have a **General** tab, a **Properties** tab and/or **Filters** tab, and a **Run Behavior** tab.
2. Modify the configuration entries, click **Finish**.

### General Tab

This tab contains the **Name** and **Description** properties for the activity. By default, the **Name** of the activity is the same as its activity type, and the **Description** is blank. You can modify these properties to create more descriptive names or provide detailed descriptions of the actions of the activity.

### Properties Tab

This tab contains properties that are specific to the activity.

All activities in this integration pack have the **Configuration Name** property at the top of the **Properties** or **Filters** tab. This property is used to specify the Dell AIM or Dell AIM Object Type configuration, depending on the activity that is being defined.

To configure the **Configuration Name** property: Click the ellipsis (...) button next to the **Name** field, and then select the applicable configuration name.

### Filters Tab

The **Get** activities use filters to control which Dell AIM objects are returned. Property values of potential candidates are compared to the values of the filters to determine if they meet the criteria. When matching against values, select one of the available relations:

<b>Equals</b>	the property of the object exactly matches the text or number specified in the filter.
<b>Does not equal</b>	the property of the object does not exactly match the text or number specified in the filter
<b>Is less than or equal to</b>	the property of the object is less than or equal to the number specified in the filter.

<b>Is greater than or equal to</b>	the property of the object is greater than or equal to the number specified in the filter.
<b>Contains</b>	the property of the object contains the exact text specified in the filter. Unlike the <b>Equals</b> behavior, other text can surround the matching text.
<b>Does not contain</b>	the property of the object does not contain the exact text specified in the filter. Unlike the <b>Equals</b> behavior, other text can surround the matching text.
<b>Matches pattern</b>	uses regular expressions to specify a pattern that the text must match.
<b>Does not match pattern</b>	uses regular expressions to specify a pattern that the text must not match

 **NOTE:** You can use the **Filter** properties for a particular field and relation only once in an activity. For example, if the filter criteria for a persona include a filter for **OS Architecture** equals **x86\_32** then you cannot add another filter for **OS Architecture** equals **x86\_64**.

## Run Behavior Tab

This tab contains the properties that determine how the activity handles multi-value returned data and what notifications are sent if the activity fails or runs for an excessive period of time.

### Multi-Value Returned Data Behavior

The **Get** activities retrieve information from another activity or outside source, and can return one or more values in the returned data. For example, when you use the **Get Relationship** activity, the data output may contain the set of **Network Connections** used by a **Persona**. By default, the data from the **Get** activity are passed on as multiple individual outputs. This invokes the next activity as many times as there are items in the output. Alternatively, you can provide a single output for the activity by enabling the **Flatten** option. When you enable this option, choose a formatting option:

<b>Separate with line breaks</b>	Each item is on a new line. This format is useful for creating human-readable text files for the output.
<b>Separate with</b>	Each item is separated by one or more characters.
<b>Use CSV format</b>	All items are in CSV (comma-separated value) format. This format is useful for importing data into spreadsheets or other applications.

The activity creates a new set of data every time it runs. The **Flatten** feature does not flatten data across multiple instances of the same activity.

## Returned Data

Returned data is the foundation of a working runbook. It is the data produced as a result of the actions of an activity. This data is published to an internal data bus that is unique for each runbook. Subsequent activities in the runbook can subscribe to this data and use it in their configuration. Link conditions also use this information to add decision-making capabilities to runbooks.

An activity can only subscribe to data from the activities that are linked before it in the runbook. You can use returned data to automatically populate the property values needed by activities.

## Using Returned Data

To use returned data: For a list of the data elements returned by each activity, see the **Returned Data tables** in the activity topic.

1. Right-click the **property value** field, click **Subscribe**, and then click **Returned Data**.
2. Click the **Object** drop-down and select the activity from which you want to obtain the data.  
To view additional data elements common to all policies, select **Show Common Returned Data**.
3. Click the returned data element, and then click **OK**.



# Dell Integration Pack Activities

This integration pack adds the Dell AIM category to the **Activity** pane in the Runbook Designer. This category contains the following activities:

- Add Object
- Add Persona
- Add Relationship
- Get Object
- Get Persona
- Get Relationship
- Maintenance Mode
- Remove Object
- Remove Persona
- Run Operation
- Start
- Stop
- Update Object
- Update Persona

## Add Object Activity

The **Add Object** activity is used in a policy to add new objects to the Dell AIM environment, such as adding a *Network*, *Server Pool*, or *VM Rack*.

For the procedure to configure this activity, see [Configuring the Add Object Activity](#).

Required and optional properties are generated based on the AIM Object Type that is associated with the Dell AIM Object Type configuration that you select when you define the activity.

The activity publishes all the data from the required and optional properties into returned data. Additional return data is generated based on the AIM **Object Type** that is associated with the Dell AIM Object Type configuration that you select when you define the activity.

**Table 1.**

Name	Description	Value Type
<i>AIM Object Type</i>	<i>The type of Dell AIM object that you can add</i>	<i>String</i>
<i>AIM Server Location</i>	<i>The location of the Dell AIM server</i>	<i>String</i>
<i>AIM Server Port</i>	<i>The port used to connect to the Dell AIM server</i>	<i>Integer</i>
<i>AIM Username</i>	<i>The username used to connect to the Dell AIM server</i>	<i>String</i>

Name	Description	Value Type
<i>Use SSL</i>	<i>Specifies whether or not the SSL protocol was used to connect to the Dell AIM server</i>	<i>True or False</i>

## Get Object Activity

The **Get Object** activity is used in a policy to retrieve objects of a specified type from the Dell AIM environment, such as retrieving all of the *Networks*, *Hosts* or *VMRacks*.

For the procedure to configure this activity, see [Configuring the Get Object Activity](#).

The **Get Object** activity uses filters to determine which Dell AIM objects is returned. Filters are generated based on the AIM Object Type that is associated with the Dell AIM Object Type configuration that you select when you define the activity.

Returned data is generated based on the AIM Object Type that is specified in the Dell AIM Object Type Configuration that you select when you define the activity.

The following tables list the returned data this is commonly returned for this activity.

### Common Get Object Returned Data

Name	Description	Value Type
AIM Object Type	The type of Dell AIM object you can add	String
AIM Server Location	The location of the Dell AIM server	String
AIM Server Port	The port used to connect to the Dell AIM server	Integer
AIM Username	The username used to connect to the Dell AIM server.	String
Use SSL	Specifies whether or not the SSL protocol was used to connect to the Dell AIM server	True or False

## Remove Object Activity

The **Remove Object** activity is used in a runbook to remove an object from the Dell AIM environment, such as removing a *Network*, *Switch*, or *VMRack*.

For the procedure to configure this activity, see [Configuring the Remove Object Activity](#).

The activity publishes all of the data from the required properties into returned data.

The following tables list the required properties and returned data for this activity.

### Remove Object Required Properties

Element	Description	Valid Values	Look up
AIM Object Type	The type of object whose maintenance mode you want to remove	<b>Chassis</b> <b>External Network</b> <b>Network</b> <b>Persona</b> <b>Server Pool</b> <b>Switch</b>	Yes

Element	Description	Valid Values	Look up
		<b>Tag</b> <b>VMRack</b> <b>VRack</b>	
ID	The ID of the object you want to remove	<b>String</b>	No

#### Remove Object Returned Data

Name	Description	Value Type
AIM Object Type	The type of object whose maintenance mode you want to remove	String
AIM Server Location	The location of the Dell AIM server	String
AIM Server Port	The port used to connect to the Dell AIM server	Integer
AIM Username	The username used to connect to the Dell AIM server.	String
ID	The ID of the object you want to remove	String
Use SSL	Specifies whether or not the SSL protocol was used to connect to the Dell AIM server	True or False

## Update Object Activity

The **Update Object** activity is used in a policy to update existing objects in the Dell AIM environment, such as changing the *Name* of a *Server Pool*.

For the procedure to configure this activity, see [Configuring the Update Object Activity](#).

Optional properties are generated based on the AIM Object Type that is associated with the Dell AIM Object Type configuration that you select when you define the activity.

The activity publishes all of the data from the required and optional properties into returned data. Additional return data is generated based on the AIM Object Type that is associated with the Dell AIM Object Type configuration that you select when you define the activity.

The following tables list the required and optional properties and returned data for this activity.

#### Update Object Required Properties

Element	Description	Valid Values	Look up
ID	The ID of the object that you want to update	String	No

#### Update Object Returned Data

Name	Description	Value Type
AIM Object Type	The type of Dell AIM object that you can update	String
AIM Server Location	The location of the Dell AIM server	String

Name	Description	Value Type
AIM Server Port	The port used to connect to the Dell AIM server	Integer
AIM Username	The username used to connect to the Dell AIM server.	String
ID	The ID of the object that you want to update	
Use SSL	Specifies whether or not the SSL protocol was used to connect to the Dell AIM server	True or False

## Add Persona Activity

The **Add Persona** activity is used in a policy to add a new persona to the Dell AIM environment.

For the procedure to configure this activity, see [Configuring the Add Persona Activity](#).

The activity publishes all of the data from the required and optional properties into returned data. Additional returned data is generated based on the properties of the persona.

The following tables list the required and optional properties and returned data for this activity.

### Add Persona Required Properties

Element	Description	Valid Values	Look up
ID	The ID of the persona	String	No
Name	The name of the persona	String	No

### Add Persona Required Properties

Element	Description	Valid Values	Look up
Agent Exists	If true, then an agent is installed in the persona. If false, the persona is agentless	True or False	Yes
Confirmations Enabled	True if the persona will pause when starting or stopping, waiting for a confirmation to continue; otherwise false	True or False	Yes
Consecutive Failures	The number of times this persona has failed to boot on any host	Integer	No
Default Gateway	The persona's default gateway	String	No
Description	The persona's description	String	No
DNS Search Domain	DNS search domain for the persona	String	No
Extensions Enabled	Specifies whether or not persona extensions are executed for this persona	True or False	Yes

Element	Description	Valid Values	Look up
Health Monitor Enabled	Specifies whether or not the persona is monitored by the Controller	True or False	Yes
Health Monitor Hostname	The specified host (hostname or IP address) that is checked to determine whether or not the persona is running	String	No
Net Boot	Specifies whether or not the persona is network booted	True or False	Yes
Networking Enabled	Specifies whether or not the persona's networking configuration is modifiable via the installed agent	True or False	Yes
Network Mode	Specifies the network mode of the persona	trunk access auto	Yes
OS Architecture	The persona's operating system architecture	x86_32 x86_64 unknown	Yes
OS Family	The persona's operating system family	linux windows	Yes
OS Sub Type	Specific type of the persona's operating system	String	No
OS Version	Specific version of the persona's operating system	String	No
Primary SCN Address	The persona's primary SCN address	String	No
Routing and DNS	Specifies the persona's routing and DNS mode	managed manual dhcp	Yes
SCN Assignment Type	Specifies how the SCN IP addresses are assigned	pool static	Yes
Secondary SCN Address	The persona's secondary SCN address	String	No
Template	Specifies whether the persona is a template	True or False	Yes

 **NOTE:** For more information on Add Persona Optional Properties refer Advanced Infrastructure Manager Developer's Guide.

#### Add Persona Returned Data

Name	Description	Value Type
Agent Exists	If true, then an agent is installed in the persona; otherwise false	True or False
AIM Object Type	The type of Dell AIM object that you can update	String
AIM Server Location	The location of the Dell AIM server	String

Name	Description	Value Type
AIM Server Port	The port used to connect to the Dell AIM server	Integer
AIM Username	The username used to connect to the Dell AIM server	String
AIM Object Type	The type of Dell AIM object that you can add	String
App State	The persona's current state	create cloneDest cloneSrc dormant runnable retargetting goingDormat failed quarantined
Assigned Server Pools	The list of server pools this persona is assigned to	String (CSV)
Confirmations Enabled	True if the persona will pause when starting or stopping, waiting for confirmations to continue; false otherwise	True or False
Consecutive Failures	The number of consecutive times this persona has failed to boot on any host	Integer
Default Gateway	The persona's default gateway	String
Description	The persona's description	String
DNS Addresses	IP addresses of the persona's DNC servers	String (CSV)
Extensions	List of persona extensions assigned to the persona	String (CSV)
Extensions Enabled	True if persona extensions is executed for this persona; otherwise false	True or False
FC San Connections	The list of Fibre-Channel SAN connections assigned to this persona	String (CSV)
Health Monitor Enabled	True if the health of the persona is monitored by the controller; otherwise false	True or False
Health Monitor Hostname	The specified host (hostname or IP address) that is checked to determine whether or not the persona is running	String
ID	The ID of the persona	String
Name	The name of the persona	String
Net Boot	True if the persona is network booted; otherwise false	True or False
Network Connections	List of network connections assigned to the persona	String (CSV)

Name	Description	Value Type
Networking Enabled	True if the persona's networking configuration is modifiable via the installed agent; otherwise false	True or False
Network Mode	The network mode of the persona	trunk access auto
OS Architecture	The persona's operating system architecture	x86_32 x86_64
OS Family	The persona's operating system family	linux windows
OS Sub Type	Specific type of the persona's operating system	String
OS Version	Specified version of the persona's operating system	String
Primary SCN Address	The persona's primary SCN address	String
Routes	List of routes for the persona	String (CSV)
Routing and DNS	The persona's routing and DNS mode	managed manual dhcp
SCN Assignment Type	The persona's SCN assignment type	pool static
Secondary SCN Address	The persona's secondary SCN address	String
Template	True if the persona is a template; otherwise false	True or False
Use SSL	True if the activity uses the SSL protocol to connect to the Dell AIM server; otherwise false	True or False

## Get Persona Activity

The **Get Persona** activity is used in a policy to retrieve information about the personas in the Dell AIM environment.

For the procedure to configure this activity, see [Configuring the Get Persona Activity](#).

The **Get Persona** activity uses filters to determine which of the persona retrieved from the Dell AIM environment is returned.

The following tables list the filters and returned data for this activity.

### Get Persona Filters

Element	Description	Filters	Valid Values
Agent Exists	If true, then an agent is installed in the persona. If false, the persona is agentless	Equals Does not equal	True or False
Build Number	Build version of the persona's agent	Equals Does not equal Is Less than Is less than or equal to	Integer

Element	Description	Filters	Valid Values
Confirmations Enabled	True if the persona will pause when starting or stopping, waiting for a confirmation to continue; otherwise false	Is Greater than Is greater than or equal to Equals Does not equal	True or False
Consecutive Failures	The number of times this persona has failed to boot on any host	Equals Does not equal Is Less than Is less than or equal to Is Greater than Is greater than or equal to	Integer
Copy Enabled	Specifies whether or not you can close this persona	Equals Does not equal	True or False
Default Gateway	The persona's default gateway	Equals Does not equal Contains Does not contain Matches pattern Does not match pattern	String
Description	The persona's description	Equals Does not equal Contains Does not contain Matches pattern Does not match pattern	String
DNS Search Domain	DNS search domain for the persona	Equals Does not equal Contains Does not contain Matches pattern Does not match pattern	String
Extensions Enabled	Specifies whether or not persona extensions are executed for this persona	Equals Does not equal	True or False
Health Monitor Enabled	Specifies whether or not the persona is monitored by the Controller	Equals Does not equal	True or False
Health Monitor Hostname	The specified host (hostname or IP address) that is checked to determine whether or not the persona is running	Equals Does not equal Contains Does not contain Matches pattern Does not match pattern	String

Element	Description	Filters	Valid Values
ID	The ID of the persona	Equals Does not equal Contains Does not contain Matches pattern Does not match pattern	String
Name	The name of the persona	Equals Does not equal Contains Does not contain Matches pattern Does not match pattern	String
Net Boot	Specifies whether or not the persona is network booted	Equals Does not equal	True or False
Networking Enabled	Specifies whether nor not the persona's networking configuration is modifiable via the installed agent	Equals Does not equal	True or False
Network Mode	Specifies the network mode of the persona	Equals Does not equal	trunk access auto
OS Architecture	The persona's operating system architecture	Equals Does not equal	x86_32 x86_64 unknown
OS Family	The persona's operating system family	Equals Does not equal	linux windows
OS Sub Type	Specific type of the persona's operating system	Equals Does not equal Contains Does not contain Matches pattern Does not match pattern	String
OS Version	Specific version of the persona's operating system	Equals Does not equal Contains Does not contain Matches pattern Does not match pattern	String
Primary SCN Address	The persona's primary SCN address	Equals Does not equal Contains Does not contain Matches pattern Does not match pattern	String

Element	Description	Filters	Valid Values
Release Name	The release name of the persona's agent	Equals Does not equal Contains Does not contain Matches pattern Does not match pattern	String
Routing and DNS	Specifies the persona's routing and DNS mode	Equals Does not equal	managed manual dhcp
SCN Assignment Type	Specifies how the SCN IP addresses are assigned	Equals Does not equal	pool static
Secondary SCN Address	The persona's secondary SCN address	Equals Does not equal Contains Does not contain Matches pattern Does not match pattern	String
Template	Specifies whether the persona is a template	Equals Does not equal	True or False
Version	Specifies the version of the agent installed on the persona	Equals Does not equal Contains Does not contain Matches pattern Does not match pattern	String

#### Get Persona Returned Data

Name	Description	Value Type
Agent Exists	If true, then an agent is installed in the persona; otherwise false	True or False
AIM Object Type	The type of Dell AIM object that you can add	String
AIM Server Location	The location of the Dell AIM server	String
AIM Server Port	The port used to connect to the Dell AIM server	Integer
AIM Username	The username used to connect to the Dell AIM server.	String
AIM Object Type	The type of Dell AIM object you can add	String
App State	The persona's current state	create cloneDest cloneSrc dormant

Name	Description	Value Type
		runnable retargetting goingDormat failed quarantined
Assigned Server Pools	The list of server pools this persona is assigned to	String (CSV)
Build Number	Build version of the persona's agent	Integer
Confirmations Enabled	True if the persona will pause when starting or stopping, waiting for confirmations to continue; false otherwise	True or False
Consecutive Failures	The number of consecutive times this persona has failed to boot on any host	Integer
Copy Enabled	True if the persona is cloneable; otherwise false	True or False
Default Gateway	The persona's default gateway	String
Description	The persona's description	String
DNS Addresses	IP addresses of the persona's DNC servers	String (CSV)
Extensions	List of persona extensions assigned to the persona	String (CSV)
Extensions Enabled	True if persona extensions is executed for this persona; otherwise false	True or False
FC Scan Connections	the list of Fibre-Channel SAN connections assigned to this persona	String (CSV)
Health Monitor Enabled	True if the health of the persona is monitored by the controller; otherwise false	True or False
Health Monitor Hostname	The specified host (hostname or IP address) that is checked to determine whether or not the persona is running	String
ID	The ID of the persona	String
Images	List of images assigned to the persona	String (CSV)
Maintenance Description	The reason the persona was placed in maintenance mod	String
Maintenance Mode	True if the persona is in maintenance mode; otherwise false	True or False
Name	The name of the persona	String
Net Boot	True if the persona is network booted; otherwise false	True or False
Network Connections	List of network connections assigned to the persona	String (CSV)

Name	Description	Value Type
Networking Enabled	True if the persona's networking configuration is modifiable via the installed agent; otherwise false	True or False
Network Mode	The network mode of the persona	trunk access auto
OS Architecture	The persona's operating system architecture	x86_32 x86_64
OS Family	The persona's operating system family	linux windows
OS Sub Type	Specific type of the persona's operating system	String
OS Version	Specified version of the persona's operating system	String
Primary SCN Address	The persona's primary SCN address	String
Release Name	The release name of the persona agent	String
Routes	List of routes for the persona	String (CSV)
Routing and DNS	The persona's routing and DNS mode	managed manual dhcp
SCN Assignment Type	The persona's SCN assignment type	pool static
Secondary SCN Address	The persona's secondary SCN address	String
State	The persona's current state	stopped running booting awaitingConfirmation shuttingDown
Template	True if the persona is a template; otherwise false	True or False
Use SSL	True if the activity uses the SSL protocol to connect to the Dell AIM server; otherwise false	True or False
Version	The version of the agent installed on the persona	String

## Remove Persona Activity

The Remove Persona activity is used in a runbook to remove a persona from the Dell AIM environment.

For the procedure to configure this activity, see [Configuring the Remove Persona Activity](#).

The activity publishes all of the data from the required properties into returned data.

The following tables list the required properties and returned data for this activity.

#### Remove Persona Required Properties

Element	Description	Valid Values	Look up
ID	The ID of the persona you want to remove	String	No

#### Remove Persona Returned Data

Name	Description	Value Type
AIM Server Location	The location of the Dell AIM server	String
AIM Server Port	The port used to connect to the Dell AIM server	Integer
AIM Username	The username used to connect to the Dell AIM server.	String
ID	The ID of the persona you want to remove	String
Use SSL	Specifies whether or not the SSL protocol was used to connect to the Dell AIM server.	True or False

## Update Persona Activity

The Update Persona activity is used in a policy to update an existing persona, such as enabling a health monitor and setting a health monitor hostname.

For the procedure to configure this activity, see [Configuring the Update Persona Activity](#).

The activity publishes all of the data from the required and optional properties into returned data. Additional returned data is generated based on the properties of the persona.

The following tables list the required and optional properties and returned data for this activity.

#### Update Persona Required Properties

Element	Description	Valid Values	Look up
ID	The ID of the persona that is updated	String	No

#### Update Persona Optional Properties

Element	Description	Valid Values	Look up
Agent Exists	If true, then an agent is installed in the persona. If false, the persona is agentless	True or False	Yes
Confirmations Enabled	True if the persona will pause when starting or stopping, waiting for a confirmation to continue; otherwise false	True or False	Yes
Consecutive Failures	The number of times this persona has failed to boot on any host	Integer	No

Element	Description	Valid Values	Look up
Default Gateway	The persona's default gateway	String	No
Description	The persona's description	String	No
DNS Search Domain	DNS search domain for the persona	String	No
Extensions Enabled	Specifies whether or not persona extensions are executed for this persona	True for False	Yes
Health Monitor Enabled	Specifies whether or not the persona is monitored by the Controller	True or False	Yes
Health Monitor Hostname	The specified host (hostname or IP address) is checked to determine whether or not the persona is running	String	No
Name	The name of the persona	String	No
Net Boot	Specifies whether or not the persona is network booted	True or False	Yes
Networking Enabled	Specifies whether or not the persona's networking configuration is modifiable via the installed agent	True or False	Yes
Network Mode	Specifies the network mode of the persona	trunk access auto	Yes
OS Architecture	The persona's operating system architecture	x86_32 x86_64 unknown	Yes
OS Family	The persona's operating system family	linux windows	Yes
OS Sub Type	Specific type of the persona's operating system.	String	No
OS Version	Specific version of the persona's operating system.	String	No
Primary SCN Address	The persona's primary SCN address	String	No
Routing and DNS	Specifies the persona's routing and DNS mode	managed manual dhcp	Yes
SCN Assignment Type	Specifies how the SCN IP addresses are assigned	pool static	Yes
Secondary SCN Address	The persona's secondary SCN address	String	No

Element	Description	Valid Values	Look up
Template	Specifies whether the persona is a template	True or False	Yes

Update Persona Returned Data

Name	Description	Value Type
Agent Exists	If true, then an agent is installed in the persona; otherwise false	True or False
AIM Object Type	The type of Dell AIM object that you can add.	String
AIM Server Location	The location of the Dell AIM server	String
AIM Server Port	The port used to connect to the Dell AIM server	Integer
AIM Username	The username used to connect to the Dell AIM server.	String
App State	The persona's current state	create cloneDest cloneSrc dormant runnable retargetting goingDormat failed quarantined
Assigned Server Pools	The list of server pools this persona is assigned to	String (CSV)
Confirmations Enabled	True if the persona will pause when starting or stopping, waiting for confirmations to continue; false otherwise	True for False
Consecutive Failures	The number of consecutive times this persona has failed to boot on any host	Integer
Default Gateway	The persona's default gateway	String
Description	The persona's description	String
DNS Addresses	IP addresses of the persona's DNC servers	String (CSV)
Extensions	List of persona extensions assigned to the persona	String (CSV)
Extensions Enabled	True if persona extensions is executed for this persona; otherwise false	True or False
FC San Connections	The list of Fibre-Channel SAN connections assigned to this persona	String (CSV)
Health Monitor Enabled	True if the health of the persona is monitored by the controller; otherwise false	True or False

Name	Description	Value Type
Health Monitor Hostname	The specified host (hostname or IP address) that is checked to determine whether or not the persona is running	String
ID	The ID of the persona	String
Name	The name of the persona	String
Net Boot	True if the persona is network booted; otherwise false	True or False
Network Connections	List of network connections assigned to the persona	String (CSV)
Networking Enabled	True if the persona's networking configuration is modifiable via the installed agent; otherwise false	True or False
Network Mode	The network mode of the persona	trunk access auto
OS Architecture	The persona's operating system architecture	x86_32 x86_64
OS Family	The persona's operating system family	linux windows
OS Sub Type	Specific type of the persona's operating system	String
OS Version	Specified version of the persona's operating system	String
Primary SCN Address	The persona's primary SCN address	String
Routes	List of routes for the persona	String (CSV)
Routing and DNS	The persona's routing and DNS mode	managed manual dhcp
SCN Assignment Type	The persona's SCN assignment type	pool static
Secondary SCN Address	The persona's secondary SCN address	String
Template	True if the persona is a template; otherwise false	True or False
Use SSL	True if the activity uses the SSL protocol to connect to the Dell AIM server; otherwise false	True or False
Version	The version of the agent installed on the persona	String

## Add Relationship Activity

The **Add Relationship** activity is used in a policy to add a new child object to an existing Dell AIM object, such as adding a *Network Connection* or *Image to a Persona*.

For the procedure to configure this activity, see [Configuring the Add Relationship Activity](#).

Optional properties are generated based on the AIM Object Type that is specified in the Dell AIM Object Type configuration that you select when you define the activity.

The activity publishes all of the data from the required and optional properties into returned data. Additional returned data is generated based on the AIM Object Type that is specified in the Dell AIM Object Type configuration that you select when you define the activity.

The following tables list the required properties and returned data for this activity.

#### Add Relationship Required Properties

Element	Description	Valid Values	Look up
Parent Object Type	The type of Dell AIM object that the child object is being added to	String	Yes
Parent Object ID	The ID of the object that the child object is being added to	String	No

#### Add Relationship Returned Data

Name	Description	Value Type
AIM Object Type	The type of Dell AIM object you can add.	
AIM Server Location	The location of the Dell AIM server	String
AIM Server Port	The port used to connect to the Dell AIM server	String
AIM Username	The username used to connect to the Dell AIM server	Integer
ID	The ID of the child object that was created	String
Parent Object Type	The type of Dell AIM object that the child object is being added to	String
Parent Object ID	The ID of the object that the child object is being added to	String
Use SSL	Specifies whether or not the SSL protocol was used to connect to the Dell AIM server.	True or False

## Get Relationship Activity

The **Get Relationship** activity is used in a policy to retrieve child objects of a certain type from a specified parent, such as the getting the *Images* assigned to a *Persona* or the *Switches* assigned to a *Rack*.

For the procedure to configure this activity, see [Configuring the Get Relationship Activity](#).

The **Get Relationship** activity uses filters to determine which objects retrieved from Dell AIM are published. Filters are generated based on the AIM Object Type that is associated with the Dell AIM Object Type configuration that you select when you define the activity.

Returned data is generated based on the AIM Object Type that is specified in the Dell AIM Object Type Configuration that you select when you define the activity.

The following tables list the required and optional properties and returned data for this activity.

#### Get Relationship Required Properties

Element	Description	Valid Values	Look up
Parent Object Type	The type of Dell AIM object that the children are being retrieved from	String	Yes
Parent Object ID	The ID of the parent object that the children are being retrieved from	String	No

#### Get Relationship Returned Data

Name	Description	Value Type
AIM Object Type	The type of Dell AIM object you can add	String
AIM Server Location	The location of the Dell AIM server	String
AIM Server Port	The port used to connect to the Dell AIM server	Integer
AIM Username	The username used to connect to the Dell AIM server.	String
Parent Object Type	The type of Dell AIM object that the children are being retrieved from	String
Parent Object ID	The ID of the parent object that the children are being retrieved from	String
Use SSL	Specifies whether or not the SSL protocol was used to connect to the Dell AIM server	True or False

## Maintenance Mode Activity

The **Maintenance Mode** activity is used in a runbook to set the maintenance mode of a host, persona or VM Rack.

For the procedure to configure this activity, see [Configuring the Maintenance Mode Activity](#).

The activity publishes all of the data from the required and optional properties into returned data.

The following tables list the required and optional properties and returned data for this activity.

#### Maintenance Mode Required Properties

Element	Description	Valid Values	Look up
AIM Object Type	The type of object whose maintenance mode you want to change	Host Persona VM Rack	Yes
ID	The ID of the object whose maintenance mode you want to change	String	No
Maintenance Mode	Specifies whether you are enabling or disabling maintenance mode	True or False	Yes

#### Maintenance Mode Optional Properties

Element	Description	Valid Values	Look up
Maintenance Description	The reason for enabling maintenance mode	String	No

#### Maintenance Mode Returned Data

Name	Description	Value Type
AIM Object Type	The type of object whose maintenance mode you want to change	String
AIM Server Location	The location of the Dell AIM server	String
AIM Server Port	The port used to connect to the Dell AIM server	Integer
AIM Username	The username used to connect to the Dell AIM server.	String
ID	The ID of the object whose maintenance mode you want to change	Host Persona VMRack
Maintenance Mode	Specifies whether you are enabling or disabling maintenance mode	True or False
Maintenance Description	The reason for enabling maintenance mode	String
Use SSL	Specifies whether or not the SSL protocol was used to connect to the Dell AIM server	True or False

## Run Operation Activity

The **Run Operation** activity is used in a runbook to invoke an AimWS method, such as locking a persona to the server it has been assigned to or disabling a network connection.

For the procedure to configure this activity, see [Configuring the Run Operation Activity](#).

The activity publishes all of the data from the required and optional properties into returned data.

The following tables list the required and optional properties and returned data for this activity.

#### Run Operation Required Properties

Element	Description	Valid Values	Look up
Method Name	The name of the invoked AimWS method	String	Yes

#### Run Operation Optional Properties

Element	Description	Valid Values	Look up
Parameter 1	The first parameter to pass to the method.	String	No
Parameter 2	The second parameter to pass to the method	String	No

Element	Description	Valid Values	Look up
Parameter 3	The third parameter to pass to the method	String	No
Parameter 4	The fourth parameter to pass to the method	String	No
Parameter 5	The fifth parameter to pass to the method	String	No
Parameter 6	The sixth parameter to pass to the method	String	No
Parameter 7	The seventh parameter to pass to the method	String	No
Parameter 8	The eighth parameter to pass to the method	String	No
Parameter 9	The ninth parameter to pass to the method	String	No

#### Run Operation Returned Data

Name	Description	Value Type
AIM Server Location	The location of the Dell AIM server	String
AIM Server Port	The port used to connect to the Dell AIM server	Integer
AIM Username	The username used to connect to the Dell AIM server.	String
Method Name	The name of the invoked AimWS method	String
Parameter 1	The first parameter passed to the method.	String
Parameter 2	The second parameter passed to the method	String
Parameter 3	The third parameter passed to the method	String
Parameter 4	The fourth parameter passed to the method	String
Parameter 5	The fifth parameter passed to the method	String
Parameter 6	The sixth parameter passed to the method	String
Parameter 7	The seventh parameter passed to the method	String
Parameter 8	The eighth parameter passed to the method	String
Parameter 9	The ninth parameter passed to the method	String
Use SSL	Specifies whether or not the SSL protocol was used to connect to the Dell AIM server.	True or False

# Start Activity

The **Start activity** is used in a runbook to start a persona or VM Rack that is currently stopped.

For the procedure to configure this activity, see [Configuring the Start Activity](#).

The activity publishes all of the data from the required and optional properties into returned data.

The following tables list the required and optional properties and returned data for this activity

## Start Required Properties

Element	Description	Valid Values	Look up
AIM Object Type	The type of object that you want to start.	Persona VM Rack	Yes
ID	The ID of the object that you want to start	String	No

## Start Optional Properties

Element	Description	Valid Values	Look up
Host	The ID of the Host that you want to start the persona or VM Rack on	String	No
Timeout	The number of seconds to wait for the persona or VM Rack to start. If not specified, the activity does not wait	Integer	No

## Start Returned Data

Name	Description	Value Type
AIM Object Type	The type of object that you want to start	String
AIM Server Location	The location of the Dell AIM server	String
AIM Server Port	The port used to connect to the Dell AIM server	Integer
AIM Username	The username used to connect to the Dell AIM server.	String
Host	The ID of the Host that you want to start the persona or VM Rack on.	Persona VM Rack
ID	The ID of the persona or VM Rack that you want to start	True or False
State	The state of the persona or VM Rack activity when the activity finishes	stopped running booting awaitingConfirmation shuttin down

Name	Description	Value Type
Timeout	The number of seconds to wait for the persona or VM Rack to start. If not specified, the activity does not wait.	Integer
Use SSL	Specifies whether or not the SSL protocol was used to connect to the Dell AIM server	True or False

## Stop Activity

The **Stop activity** is used in a runbook to stop persona or VM Rack that is currently running.

For the procedure to configure this activity, see [Configuring the Stop Activity](#).

The activity publishes all of the data from the required and optional properties into returned data.

The following tables list the required and optional properties and returned data for this activity.

### Stop Required Properties

Element	Description	Valid Values	Look up
AIM Object Type	The type of object that you want to stop	Persona VM Rack	Yes
ID	The ID of the object that you want to stop	String	No

### Stop Optional Properties

Element	Description	Valid Values	Look up
Timeout	The number of seconds to wait for the persona or VM Rack to stop. If not specified, the activity does not wait	Integer	No

### Stop Returned Data

Name	Description	Value Type
AIM Object Type	The type of object that you want to stop	String
AIM Server Location	The location of the Dell AIM server	String
AIM Server Port	The port used to connect to the Dell AIM server	Integer
AIM Username	The username used to connect to the Dell AIM server	String
ID	The ID of the persona or VM Rack that you want to stop	True or False
State	The state of the persona or VM Rack activity when the activity finishes	stopped running booting awaitingConfirmation

Name	Description	Value Type
Timeout	The number of seconds to wait for the persona or VM Rack to stop. If not specified, the activity does not wait.	Integer
Use SSL	Specifies whether or not the SSL protocol was used to connect to the Dell AIM server	True or False



# Configuring Dell Integration Pack Activities

Describes the various activities configuration.

## Configuring the Add Object Activity

To configure the Add Object activity:

1. From the **Activities** pane, drag an **Add Object** activity to the active policy.
2. Double-click the **Add Object** activity.  
The **Properties** dialog box is displayed.
3. Configure the **Properties** tab. For more information, see [Configure the Properties tab](#).
4. For information about the settings on the **General** and **Run Behavior** tabs, see [Common Configuration Instructions for All Activities](#).
5. Click **Finish**.

### Configure the Properties tab

You can also use returned data to automatically populate the value of the property from the data output by a previous activity in the workflow.

1. In the **Configuration** section, click the ellipsis button (...), and then select the Dell AIM Object Type configuration that you want to use for this activity. Click **OK**.
2. In the **Properties** section, enter a value for each of the required properties and the applicable optional properties. If the property is Lookup-enabled, you can click the ellipsis (...) button next to the text field to browse for a value.

### To use returned data

For a list of the data elements returned by each activity, see the Returned Data tables in the activity topic.

1. Right-click the property value box, click **Subscribe**, and then click **Returned Data**.
2. Click the **Activity** drop-down box and select the activity from which you want to obtain the data.
3. To view additional data elements common across the runbook, select **Show Common Returned Data**.
4. Click the returned data element you want to use, and then click **OK**.

## Configuring the Get Object Activity

To configure the Get Object activity:

1. From the **Activities** pane, drag a **Get Object** activity to the active policy.
2. Double-click the **Get Object** activity icon.  
The **Properties** dialog is displayed.
3. Configure the settings in the **Filters** tab for more information, see [Configuring the Filters Tab](#).

4. To make changes to a filter, click the filter and then click **Edit**. Make the changes, and then click **OK**.  
To remove a filter, click the filter and then click **Remove**.
5. For information about the settings on the **General** and **Run Behavior** tabs, see [Common Configuration Instructions for All Activities](#).
6. Click **Finish**.

## Configuring the Filters Tab

1. In the **Configuration** section, click the ellipsis button (...), and select the Dell AIM Object configuration that you want to use for this activity. Click **OK**.
2. In the **Filters** section click **Add**. In the **Name** field, click the down arrow and select a property from the list.
3. In the **Relation** field, click the down arrow and select a filter type.
4. In the **Value** field, enter the value you want to use.  
You can also use returned data to automatically populate the value of the property from the data output by a previous activity in the workflow. For more information see [Filters Tab](#).

### Using Returned Data — Configuring the Filters Tab

Add additional filters as needed, and then click Finish.

1. Right-click the property value field, click **Subscribe**, and then click **Returned Data**.
2. Click the **Activity** drop-down and select the activity from which you want to obtain the data.
3. To view additional data elements common across the runbook, select **Show Common Returned Data**.
4. Click the returned data element you want to use, and then click **OK**.  
For a list of the data elements published by each activity, see the Returned Data tables in the activity topic.
5. Click **OK** to save the filter settings.

## Configuring the Remove Object Activity

To configure the Remove Object activity:

1. From the **Activities** pane, drag a **Remove Object** activity to the active runbook.
2. Double-click the **Remove Object** activity.  
The **Properties** dialog box is displayed.
3. Configure the **Properties** tab, for more information see [Configure the Properties tab](#).
4. For information about the settings on the **General** and **Run Behavior** tabs, see [Common Configuration Instructions for All Activities](#).
5. Click **Finish**.

## Configuring the Update Object Activity

To configure the Update Object activity:

1. From the **Activities** pane, drag an **Update Object** activity to the active policy.
2. Double-click the **Update Object** activity.  
The **Properties** dialog box is displayed.
3. Configure the **Properties** tab. For more information see [Configure the Properties tab](#).

4. For information about the settings on the **General** and **Run Behavior** tabs, see [Common Configuration Instructions for All Activities](#).
5. Click **Finish**.

## Configuring the Add Persona Activity

To configure the Add Persona activity:

1. From the **Activities** pane, drag an **Add Persona** activity to the active policy.
2. Double-click the **Add Persona** activity.  
The **Properties** dialog box is displayed.
3. Configure the **Properties** tab, for more information, see [Configure the Properties tab](#).
4. For information about the settings on the **General** and **Run Behavior** tabs, see [Common Configuration Instructions for All Activities](#).
5. Click **Finish**.

## Configuring the Get Persona Activity

To configure the Add Persona activity:

1. From the **Activities** pane, drag a **Get Persona** activity to the active policy.
2. Double-click the **Get Persona** activity icon. The **Properties** dialog is displayed.
3. Configure the settings in the **Filters** tab, for more information see, [Configuring the Filters Tab](#).
4. To make changes to a filter, click the filter and then click **Edit**. Make the changes, and then click **OK**.  
To remove a filter, click the filter and then click **Remove**.
5. For information about the settings on the **General** and **Run Behavior** tabs, see [Common Configuration Instructions for All Activities](#).
6. Click **Finish**.

## Configuring the Remove Persona Activity

To configure the Remove Persona activity:

1. From the **Activities** pane, drag a **Remove Persona** activity to the active runbook.
2. Double-click the **Remove Persona** activity.  
The **Properties** dialog box is displayed.
3. Configure the **Properties** tab, for more information, see [Configure the Properties tab](#).
4. For information about the settings on the **General** and **Run Behavior** tabs, see [Common Configuration Instructions for All Activities](#).
5. Click **Finish**.

## Configuring the Update Persona Activity

To configure the Update Persona activity:

1. From the **Activities** pane, drag an **Update Persona** activity to the active policy.
2. Double-click the **Update Persona** activity.  
The **Properties** dialog box is displayed.

3. Configure the **Properties** tab, for more information see [Configure the Properties tab](#).
4. For information about the settings on the General and Run Behavior tabs, see [Common Configuration Instructions for All Activities](#).
5. Click **Finish**.

## Configuring the Add Relationship Activity

To configure the Add Relationship activity:

1. From the **Activities** pane, drag an **Add Relationship** activity to the active policy.
2. Double-click the **Add Object** activity.  
The **Properties** dialog box is displayed.
3. Configure the **Properties** tab, for more information, see [Configuring the Properties tab Add Relationship Activity](#).
4. For information about the settings on the General and Run Behavior tabs, see [Common Configuration Instructions for All Activities](#).
5. Click **Finish**.

## Configuring the Properties tab Add Relationship Activity

To configure the Properties tab of Add Relationship activity.

1. In the **Configuration** section, click the ellipsis button (...), and then select the Dell AIM Object Type configuration that you want to use for this activity. Click **OK**.  
 **NOTE:** The **AIM Object Type** specified in the Dell AIM Object Type configuration you select when you define the activity represents the type of Dell AIM object that you are adding to the parent object. For example, if you want to add an image to a persona then you will require a configuration with the AIM Object Type set to *Image*.
2. In the **Properties** section, enter a value for each of the required properties and the applicable optional properties. If the property is Lookup-enabled, you can click the ellipsis (...) button next to the text field to browse for a value.  
You can also use returned data to automatically populate the value of the property from the data output by a previous activity in the workflow.

### Using Returned Data — Configuring the Properties tab Add Relationship Activity

To use returned data.

For a list of the data elements returned by each activity, see the Returned Data tables in the activity topic.

1. Right-click the property value field, click **Subscribe**, and then click **Returned Data**.
2. Click the **Activity** drop-down and select the activity from which you want to obtain the data.
3. To view additional data elements common across the runbook, select **Show Common Returned Data**.
4. Click the returned data element you want to use, and then click **OK**.

## Configuring the Get Relationship Activity

To configure the Get Relationship activity:

1. From the **Activities** pane, drag a **Get Relationship** activity to the active policy.
2. Double-click the **Get Relationship** activity icon.  
The **Properties** dialog is displayed.
3. Configure the **Properties** tab, for more information, see [Configuring the Properties tab Get Relationship Activity](#).

4. Configure the settings in the **Filters** tab, for more information.
5. To make changes to a filter, click the filter and then click **Edit**. Make the changes, and then click **OK**.
6. To remove a filter, click the filter and then click **Remove**.  
For information about the settings on the **General** and **Run Behavior** tabs, see [Common Configuration Instructions for All Activities](#).
7. Click **Finish**.

## Configuring the Properties tab Get Relationship Activity

1. In the **Configuration** section, click the ellipsis button (...), and then select the Dell AIM Object Type configuration that you want to use for this activity. Click **OK**.  
 **NOTE:** The **AIM Object Type** specified in the Dell AIM Object Type configuration you select when you define the activity represents the type of Dell AIM object that you are retrieving from the parent object. For example, to retrieve the images associated with a persona, you require a configuration with the AIM Object Type set to *Image*.
2. In the **Properties** section, enter a value for each of the required properties and the applicable optional properties. If the property is Lookup-enabled, you can click the ellipsis (...) button next to the text field to browse for a value.  
You can also use returned data to automatically populate the value of the property from the data output by a previous activity in the workflow.

### Using Returned Data — Configuring the Properties tab Get Relationship Activity

1. Right-click the property value field, click **Subscribe**, and then click **Returned Data**.
2. Click the **Activity** drop-down and select the activity from which you want to obtain the data.
3. To view additional data elements common across the runbook, select **Show Common Returned Data**.
4. Click the returned data element you want to use, and then click **OK**.  
For a list of the data elements returned by each activity, see the Returned Data tables in the activity topic.

## Configuring the Filters Tab Get Relationship Activity

1. In the **Filters** section click **Add**. In the **Name** field, click the down arrow and select a property from the list.
2. In the **Relation** field, click the down arrow and select a filter type.
3. In the **Value** field, enter the value you want to use. For more information about using filters see [Filters Tab](#).  
Use returned data to automatically populate the value of the property from the data output by a previous activity in the workflow.

### Using Returned Data — Configuring the Filters Tab Get Relationship Activity

Add additional filters as needed, and then click **Finish**.

1. Right-click the property value field, click **Subscribe**, and then click **Returned Data**.
2. Click the **Activity** drop-down and select the activity from which you want to obtain the data.
3. To view additional data elements common across the runbook, select **Show Common Returned Data**.
4. Click the returned data element you want to use, and then click **OK**.  
For a list of the data elements published by each activity, see the Returned Data tables in the activity topic.
5. Click **OK** to save the filter settings.

## Configuring the Maintenance Mode Activity

To configure the Maintenance Mode activity:

1. From the **Activities** pane, drag a **Maintenance Mode** activity to the active runbook.
2. Double-click the **Maintenance Mode** activity.  
The **Properties** dialog box is displayed.
3. Configure the **Properties** tab, for more information, see [Configure the Properties tab](#).
4. For information about the settings on the **General** and **Run Behavior** tabs, see [Common Configuration Instructions for All Activities](#).
5. Click **Finish**.

## Configuring the Run Operation Activity

To configure the Run Operation activity:

 **NOTE:** Excluding the initial **Auth** parameter, which is handled by the **Run Operation** activity, you must match the AimWS parameters exactly. For example, when invoking the LockPersona method you must include optional property **Parameter 1** and enter the ID of the persona that you want to lock. For more information on the parameters required for each AimWS method refer to the Dell Advanced Infrastructure Manager Developer's Guide.

1. From the **Activities** pane, drag a **Run Operation** activity to the active runbook.
2. Double-click the **Run Operation** activity.  
The **Properties** dialog box is displayed.
3. Configure the **Properties** tab, for more information, see [Configure the Properties tab](#).
4. For information about the settings on the **General** and **Run Behavior** tabs, see [Common Configuration Instructions for All Activities](#).
5. Click **Finish**.

## Configuring the Start Activity

To configure the Start activity:

 **NOTE:** If you do not include the optional **Timeout** property the activity does not wait for the specified persona or VM Rack to start. Since persona booting takes some time, you can choose to poll the state if you are not using the timeout property.

1. From the **Activities** pane, drag a **Start activity** to the active runbook.
2. Double-click the **Start** activity.  
The **Properties** dialog box is displayed.
3. Configure the **Properties** tab, for more information, see [Configure the Properties tab](#).
4. For information about the settings on the **General** and **Run Behavior** tabs, see [Common Configuration Instructions for All Activities](#).
5. Click **Finish**.

## Configuring the Stop Activity

To configure the Stop activity:

 **NOTE:** If you do not include the optional **Timeout** property the activity does not wait for the specified persona or VM Rack to stop. Since persona booting takes some time, you can choose to poll the state if you are not using the timeout property.

1. From the **Activities** pane, drag a **Stop** activity to the active runbook.
2. Double-click the **Stop** activity.  
The **Properties** dialog box is displayed.
3. Configure the **Properties** tab, for more information, see [Configure the Properties tab](#).
4. For information about the settings on the **General** and **Run Behavior** tabs, see [Common Configuration Instructions for All Activities](#).
5. Click **Finish**.



## Related Reference

For more information about Dell AIM, see the related product brochure, whitepaper, and product demo available on the Dell Infrastructure Management website at [dell.com/dell-aim](http://dell.com/dell-aim). For more information on virtual integrated systems, see the Dell Virtual Integrated System website at [content.dell.com/us/en/enterprise/converged-infrastructure.aspx](http://content.dell.com/us/en/enterprise/converged-infrastructure.aspx).

For more information on Orchestrator, its installation, or features and functionalities. See the Microsoft TechNet site at [technet.microsoft.com](http://technet.microsoft.com) and [Orchestrator.codeplex.com](http://Orchestrator.codeplex.com) for details on Orchestrator.

## Obtaining Technical Assistance

If at any time you do not understand a procedure in this guide, or if your product does not perform as expected, there are different types of help available. For more information, see *Getting Help* in your system's *Hardware Owner's Manual*.