



Cisco UCS C-Series Integration Pack User Guide, Release 1.0

For Microsoft System Center 2012, 2012 SP1 and 2012 R2 Orchestrator
October 2013

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www.cisco.com

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Preface

This preface includes the following sections:

- [Audience, page v](#)
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Audience

This guide is intended primarily for data center administrators with responsibilities and expertise in one or more of the following:

- Server administration
- Storage administration
- Network administration
- Network security

Organization

This guide includes the following sections:

Chapter	Title	Description
1	Overview	Describes a general overview of the product and includes system requirements.
2	Integration Pack Installation	Describes how to install, register, deploy, and uninstall the Integration Pack.
3	Configuring the Integration Pack	Describes how to configure a PSMModule Path and how to configure activity properties.

Chapter	Title	Description
4	Cisco IMC Activities	Describes Cisco UCS C-Series Integration Pack activities.
5	Sample Runbooks	Describes how to use the activities that are available as part of this integration pack by viewing a set of sample runbooks on the Cisco Developer Network.

Conventions

This document uses the following conventions:

Convention	Indication
bold font	Commands and keywords and user-entered text appear in bold font .
<i>italic font</i>	Document titles, new or emphasized terms, and arguments for which you supply values are in <i>italic font</i> .
[]	Elements in square brackets are optional.
{ x y z }	Required alternative keywords are grouped in braces and separated by vertical bars.
[x y z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
<code>courier font</code>	Terminal sessions and information the system displays appear in <code>courier font</code> .
< >	Nonprinting characters such as passwords are in angle brackets.
[]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.



Note

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the manual.



Tip

Means *the following information will help you solve a problem*. The tips information might not be troubleshooting or even an action, but could be useful information, similar to a Timesaver.



Caution

Means *reader be careful*. In this situation, you might perform an action that could result in equipment damage or loss of data.

**Timesaver**

Means *the described action saves time*. You can save time by performing the action described in the paragraph.

**Warning****IMPORTANT SAFETY INSTRUCTIONS**

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device.

SAVE THESE INSTRUCTIONS**Warning**

Statements using this symbol are provided for additional information and to comply with regulatory and customer requirements.

Related Documentation

Cisco UCS Documentation Roadmaps

For a complete list of all C-Series documentation, see the *Cisco UCS C-Series Servers Documentation Roadmap* available at the following URL: <http://www.cisco.com/go/unifiedcomputing/c-series-doc>.

Other Cisco UCS Documentation Resources

An ISO file containing all C-Series documents is available at the following URL: <http://www.cisco.com/cisco/software/type.html?mdfid=283853163&flowid=25821>. From this page, click **Unified Computing System (UCS) Documentation Roadmap Bundle**.

The ISO file is updated after every major documentation release.

Follow [Cisco UCS Docs on Twitter](#) to receive document update notifications.

Cisco UCS Integration Pack User Guide, Release 1.0 for Microsoft System Center 2012 and 2012 SP1 Orchestrator Resources

More information about Cisco UCS C-Series Integration Pack User Guide, Release 1.0 for Microsoft System Center 2012, 2012 SP1 and 2012 R2 Orchestrator is available at the following URL: http://www.cisco.com/en/US/partner/products/ps11724/tsd_products_support_series_home.html

General Cisco UCS Resources

More information about Cisco UCS is available at the following URL: <http://www.cisco.com/en/US/products/ps10265/index.html>

Microsoft System Center 2012 Orchestrator Resources

More information on Microsoft System Center 2012 Orchestrator is available on the Microsoft TechNet site at the following URL: <http://technet.microsoft.com>

Documentation Feedback

To provide technical feedback on this document, or to report an error or omission, please send your comments to ucs-docfeedback@cisco.com. We appreciate your feedback.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation* at: <http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>.

Subscribe to *What's New in Cisco Product Documentation*, which lists all new and revised Cisco technical documentation, as an RSS feed and deliver content directly to your desktop using a reader application. The RSS feeds are a free service.



Overview

This chapter includes the following sections:

- [Cisco UCS C-Series Integration Pack for Microsoft System Center 2012, 2012 SP1 and 2012 R2 Orchestrator, page 1-1](#)
- [System Requirements, page 1-1](#)

Cisco UCS C-Series Integration Pack for Microsoft System Center 2012, 2012 SP1 and 2012 R2 Orchestrator

The Cisco UCS C-Series Integration Pack is an add-on for Microsoft System Center 2012 and 2012 SP1 Orchestrator (SCO) that enables you to automate Cisco UCS C-Series server tasks. You can use Cisco UCS C-Series Integration Pack to create workflows that interact with and transfer information to other Microsoft System Center products such as Microsoft System Center 2012 Operations Manager.

System Requirements



Note

Refer to the [Release Notes for Cisco UCS C-Series Integration Pack, Release 1.0](#) for the most up-to-date information about Release 1.0 requirements.



Note

You can find installation and upgrade information for Microsoft System Center Orchestrator on the Microsoft website.

Before installing Cisco UCS C-Series Integration Pack, ensure the system meets or exceeds the minimum requirements:

Software Requirements

- Cisco UCS C-Series PowerTool 1.0.1 or later
- Microsoft System Center 2012 or 2012 SP1 or 2012 R2 - Orchestrator
- Windows PowerShell 2.0 or later



Installing the Integration Pack

This chapter includes the following sections:

- [Integration Pack Installation Overview, page 2-1](#)
- [Registering the Integration Pack, page 2-1](#)
- [Deploying the Integration Pack, page 2-2](#)
- [Uninstalling the Integration Pack, page 2-2](#)
- [Unregistering an Integration Pack, page 2-3](#)



Note

For installation information on Microsoft System Center 2012 Orchestrator, refer to the Microsoft TechNet website.

Integration Pack Installation Overview

Installing and running the Integration Pack includes the following tasks:

-
- Step 1** Close any running instances of Microsoft SCO 2012 Runbook Designer.
 - Step 2** Download and unzip the **Cisco_UCS_CSeries_OIP_1.0.zip** file. The compressed **.zip** file includes the Integration Pack **.oip** installation file. The **.zip** file can be downloaded from the [software download](#) site on [Cisco.com](#).
 - Step 3** Register the integration pack with the Orchestrator Management Server. See [Registering the Integration Pack](#).
 - Step 4** Deploy the registered integration pack to the Runbook Servers and Runbook Designer. See [Deploying the Integration Pack](#).
-

Registering the Integration Pack

-
- Step 1** Launch the System Center 2012 Orchestrator Deployment Manager.
 - Step 2** In the left pane, right click **Integration Packs** and choose **Register IP with the Orchestrator Management Server**.

- Step 3** In the **Integration Pack Registration Wizard** window, click **Next**.
 - Step 4** In the **Integration Pack or Hotfix Selection** window, click **Add**.
 - Step 5** In the **Open** window, locate and choose the **Cisco_IMC_OIP_1.0.oip** file that was downloaded earlier and click **Open**.
 - Step 6** In the **Integration Pack or Hotfix Selection** window, click **Next**.
 - Step 7** In the **Completing Integration Pack Registration Wizard**, click **Finish** to complete the Integration Pack registration.
 - Step 8** In the **End User License Agreement** window, click **Accept** after reading the agreement. This completes the Integration Pack registration.
-

Deploying the Integration Pack

- Step 1** Launch the System Center 2012 Orchestrator Deployment Manager.
 - Step 2** In the left pane, right-click **Integration Packs** and choose **Deploy IP to Runbook Server or Runbook Designer**.
 - Step 3** In the **Integration Pack Deployment Wizard** window, click **Next**.
 - Step 4** In the **Integration Pack or Hotfix Deployment** window, select the **Cisco IMC Integration Pack** and click **Next**.
 - Step 5** In the **Computer** field of the **Computer Selection** window, choose the computer on which you wish to deploy the Integration Pack, click **Add**, and then click **Next**.
You can specify more than one computer on which to deploy the Integration Pack.
 - Step 6** In the **Installation Options** window, by default **Stop all running Runbooks before installing the Integration Packs or Hotfixes** is selected. Click **Next**.
 - Step 7** In the **Completing Integration Pack Deployment Wizard**, click **Finish** to complete the process.
-

Uninstalling the Integration Pack

To completely remove the Integration Pack, first uninstall the Integration Pack and then unregister the Integration Pack.

- Step 1** In the left navigation pane, expand **Runbook Servers** and select the server where the Integration Pack is deployed. The Integration Packs are listed in the work pane.
- Step 2** Right-click a Cisco IMC Integration Pack and choose **Uninstall Integration Pack or Hotfix...** from the right-click menu.

After uninstalling the Cisco IMC Integration Pack, continue to unregister the Integration Pack to completely remove the Integration Pack from the server.

Unregistering an Integration Pack

-
- Step 1** In the left navigation pane, expand **Integration Packs**. The Integration Packs are listed in the work pane.
 - Step 2** Right-click a Cisco IMC Integration Pack and choose **Unregister Integration Pack or Hotfix from the Orchestrator Management Server**.



Configuring the Integration Pack

This chapter includes the following sections:

- [Configuring a PSMODULE Path, page 3-1](#)
- [Configuring Activity Properties, page 3-2](#)

Configuring a PSMODULE Path

You can configure a PSMODULE path to establish a link between the Microsoft System Centre 2012 Orchestrator and the Cisco UCS C-Series PowerTool module.

-
- Step 1** Launch the SCO 2012 Runbook Designer.
- Step 2** Choose **Options > Cisco IMC**.
- Step 3** In the **Prerequisite Configuration** window click **Add**.
- Step 4** In the **Add Configuration** window, use the **Name** field to enter a name for the configuration. Click the Ellipsis (...) button to specify a configuration type.
- Step 5** In the **Item Selection** window, select **PSModulePath** and click **OK**.
- Step 6** In the **Properties** field of the **Edit Configuration** window, specify the path for the Cisco UCS C-Series PowerTool module and click **OK**.

For example, you can enter a path such as: `C:\Program Files (x86)\Cisco\Cisco UCS C-Series PowerTool\Modules\CiscoIMCPS\CiscoIMCPS.psd1`.

You can leave the PSMODULE Path Properties field blank to use the default installation location.

- Step 7** In the **Prerequisite Configuration** window, click **Finish**.
-

Configuring Activity Properties

Each Cisco IMC activity has a set of required or optional configuration properties. The properties define the behavior of an activity. For example, the properties may include how to connect to other activities or how the activity performs its actions.

-
- Step 1** In the Runbook Designer window, double-click the activity.
 - Step 2** In the **Export IMC Configuration** window, click the Ellipsis (...) button.
 - Step 3** In the **Item Selection** window, choose the configuration and click **OK**.
 - Step 4** In the **Properties** tab, right-click the **Input** field and choose **Subscribe > Published Data**.
 - Step 5** From the **Activity** drop-down menu in the **Published Data** window, choose the activity whose output data you wish to subscribe to and click **OK**.
For example, select UcsScriptOutput.
 - Step 6** In the **Export IMC Configuration** window, specify the other properties.
 - Step 7** Click **Optional Properties** to include any optional properties you wish to use.
 - Step 8** In the **Add/ Remove Property** window, do the following:
 - a.** In the **Available** column, choose the properties you want to add.
 - b.** Click the >> button to move the chosen properties to the **Selected** column.
 - c.** Click **OK**.
 - Step 9** Click **Finish** to complete the activity configuration.
-



Cisco UCS C-Series Activities

The Cisco UCS C-Series Integration Pack activities described in this chapter are located in the Activity pane of the Runbook Designer.



Note

All parameters in square brackets [] are optional parameters.

This chapter includes the following sections:

- [Connect IMC, page 4-2](#)
- [Disconnect IMC, page 4-2](#)
- [Get IMC ManagedObject, page 4-3](#)
- [Set IMC ManagedObject, page 4-5](#)
- [Export IMC Configuration, page 4-6](#)
- [Add IMC ManagedObject, page 4-7](#)
- [Remove IMC ManagedObject, page 4-8](#)
- [Run IMC PowerTool, page 4-9](#)
- [Export IMC Tech Support, page 4-10](#)
- [Import IMC Configuration, page 4-11](#)
- [Get IMC Child, page 4-12](#)
- [Add IMC Local User, page 4-13](#)
- [Copy IMC ManagedObject, page 4-14](#)

Connect IMC

Definition

This activity establishes a new connection with the Cisco UCS C-Series servers. This activity is required in a runbook if you want to perform an operation on one or more Cisco UCS C-Series servers.

Parameter Set

Host Name <String>, User name <String>, Password <String>, [NoSsl <Boolean>], [Port <UInt16>]

Parameters

Table 4-1 provides details of the parameters available for this activity.

Table 4-1 Parameter Definitions for Connect IMC

Field	Description	Sample Values and Notes
Host name	Comma separated Host name/IP Address of Cisco UCS C-Series servers.	IMC-manager-01 209.165.201.3
User name	Valid login ID for Cisco UCS C-Series server	admin
Password	Password for the username	password
NoSsl	Use if you want to connect to Cisco UCS C-Series server with a non-secure (HTTP) connection	Default value: False Press the ellipsis (...) button to view the acceptable values.
Port	Port number for connections to Cisco UCS C-Series server	445 for HTTPS connections 88 for HTTP connections

Published Data

<ImcHandle>

After successful execution, this activity publishes the ImcHandle object and makes it available for other activities to use through UcsScriptOutput. If an error occurs, an error message is populated in the default Error summary text field in the SCO.

Disconnect IMC

Definition

This activity disconnects from one or more Cisco UCS C-Series servers. This activity disconnects all connections to Cisco IMC (ImcHandle connections created by **Connect IMC**) in a runbook.

You must specify the name of the Cisco UCS C-Series server if you want to only disconnect from one domain. If you do not specify the name of the Cisco UCS C-Series server from which you want to disconnect, all ImcHandle are disconnected.

Parameter Set [Input IMC Handle]

Parameters [Table 4-2](#) provides details of the parameters available for this activity.

Table 4-2 Parameter Definitions for Disconnect IMC

Field	Description	Sample Values and Notes
Input IMC Handle	Comma separated names of Cisco UCS C-Series servers from which you want to disconnect. If you leave this value empty, this activity disconnects all handles created using Connect IMC in a runbook.	IMC-manager-01 You can find the name of the Cisco UCS C-Series server in the published output of the Connect IMC activity.

Published Data This activity does not publish output.

Get IMC ManagedObject

Definition This activity is used to get one or more managed objects from a Cisco UCS C-Series server. The output of this activity can be fed to other activities, such as **Set IMC ManagedObject** or **Add IMC ManagedObject**, to perform operations on that managed object. This activity supports filters that you can use to refine your search.

Parameter Set

- Input <ImcHandle>, Dn <String>, [Hierarchy <Boolean>]
- Input < ImcHandle>, ClassId <String>, [Filter <String>]
- Input < ImcHandle>, XmlTag <String>, [Filter <String>]
- Input <ManagedObject>, ClassId <String>, [Filter <String>]
- Input <ManagedObject>, XmlTag <String>, [Filter <String>]

Parameters

Table 4-3 provides details of the parameters available for this activity.

Table 4-3 Parameter Definitions for Get IMC ManagedObject

Field	Description	Sample Values and Notes
Input	<p>Managed Object (Parent) or ImcHandle</p> <p>You can use any value from a previous activity whose output (published data) is of type ImcHandle or Managed Object.</p> <p>A value of type ImcHandle gets the managed object according to the Dn, ClassId, or XmlTag parameters.</p> <p>A value of type Managed Object is considered to be the parent object. This gets the managed object under that subscribed parent object, according to the parameters ClassId or XmlTag.</p>	<p>{UcsScriptOutput from Connect IMC</p> <p>{UcsScriptOutput from Get IMC ManagedObject}</p> <p>For example, you can subscribe from a Get IMC ManagedObject activity, which publishes a boot policy, and also specify a value of IsbootDef for the ClassId parameter. With those values, this activity gets boot devices.</p>
Dn	Distinguished name of the managed object.	sys/rack-unit-1/boot-policy
Hierarchy	Includes children of the managed object as well as the object itself.	Default value: False True
ClassId	Class ID of the managed object	IsbootDef computeRackUnit
Filter	<p>Filter string that you want to use to refine the search.</p> <p>Note Use a PowerTool compatible formatted filter and PowerTool compatible formatted syntaxes and wild cards in the filter strings.</p>	priv -ieq "read-only"
XmlTag	Class ID (case sensitive) of the managed object	IsbootDef computeRackUnit

Published Data

<ManagedObject> or list<ManagedObject>

After successful execution, this activity publishes the managed object or the list of managed objects and makes it available for other activities to use through UcsScriptOutput. If an error occurs, an error message is populated in the default Error summary text field in the SCO.

Set IMC ManagedObject

Definition

This activity is used to modify and configure managed objects. The property map can include values that modify more than one property of the managed object. You can use those modified values to configure the managed object.

Parameter Set

Input <ManagedObject>, PropertyMap <KeyValuePair>
 Input list<ManagedObject>, PropertyMap <KeyValuePair>
 Input <ImcHandle>, ClassId <String>, PropertyMap <KeyValuePair>
 Input <ImcHandle>, XmlTag <String>, PropertyMap <KeyValuePair>

Parameters

Table 4-4 provides details of the parameters available for this activity.

Table 4-4 Parameter Definitions of Set IMC ManagedObject

Field	Description	Sample Values and Notes
Input	<p>Managed Object(s) or ImcHandle</p> <p>You can use any value from a previous activity whose output (published data) is of type ImcHandle or Managed Object.</p> <p>If you use a managed object or list of managed objects, such as a list of organizations, the property map includes the modifications that you want to perform on the managed object or all managed objects in the list.</p> <p>If you use an input of type ImcHandle, the property map includes the key-value (modifications) for that ImcHandle.</p>	<p>{UcsScriptOutput from Connect IMC}</p> <p>{UcsScriptOutput from Get IMC ManagedObject}</p>

Table 4-4 Parameter Definitions of Set IMC ManagedObject (continued)

Field	Description	Sample Values and Notes
PropertyMap	<p>PropertyMap contains one or more key-value pairs separated by semi-colons. For example, a property map could be:</p> <pre>propertyName1="propertyValue1";Property Name2="propertyValue2"...</pre> <p>Note If the input is of type ImcHandle, the property map must include the Dn for that ImcHandle. Property names are case insensitive. However, these names must match the properties of the managed object.</p> <p>To find the names for a managed object's properties, see the XML schema or the output of the get cmdlet in PowerTool for that managed object.</p>	dn="sys/rack-unit-1/boot-policy/lan-read-only";order="2"
ClassId	Class ID of the managed object	lsbootLan lsbootStorage
XmlTag	Class ID (case sensitive) of the managed object	lsbootLan lsbootStorage

Published Data

<ManagedObject> or list<ManagedObject>

After successful execution, this activity publishes the managed object or the list of managed objects and makes it available for other activities to use through UcsScriptOutput. If an error occurs, an error message is populated in the default Error summary text field in the SCO.

Export IMC Configuration

Definition

This activity is used to export a Cisco IMC backup file.

Parameter Set

Input IMC Handle <ImcHandle>, Remote Host <String>, Remote File <String>, Export Configuration Protocol <String>, Remote User Name <String>, Remote Password <String>, [Timeout Seconds <Uint32>]

Parameters

Table 4-4 provides details of the parameters available for this activity.

Table 4-5 Parameter Export IMC Configuration

Field	Description	Sample Values and Notes
Input IMC Handle	You can use any value from a previous activity whose output (published data) is of type ImcHandle.	{UcsScriptOutput from Connect IMC}
Remote Host	IP address of the remote server.	204.15.50.0
Remote File	Path of the backup file to export with .xml extension.	/tmp/backup.xml
Export Configuration Protocol	Protocol used for exporting files.	"ftp", "tftp", "sftp", "scp", "http"
Remote User Name	Remote server user name.	root
Remote Password	Remote server password.	password
Timeout Seconds	The operation is aborted if not completed within timeout in seconds. Default value is 600 seconds.	For 5 minutes its value is 300

Published Data

This activity does not publish output.

Add IMC ManagedObject

Definition

This activity is used to add one or more managed objects. To create a managed object, you must provide the classId (type of managed object) and a property map that sets the values of the properties of that managed object.

Parameter Set

Input <ImcHandle>, ClassId <String>, PropertyMap <KeyValuePair>

Input <ImcHandle>, XmlTag <String>, PropertyMap <KeyValuePair>

Input <ManagedObject>, ClassId <String>, PropertyMap <KeyValuePair>

Input <ManagedObject>, XmlTag <String>, PropertyMap <KeyValuePair>]

Input <ManagedObject>, ClassId <String>, PropertyMap <KeyValuePair>]

**Note**

You can input more than one managed objects for the preceding parameter set.

Input <ManagedObject>, XmlTag <String>, PropertyMap <KeyValuePair>

**Note**

You can input more than one managed objects for the preceding parameter set.

Parameters

Table 4-6 provides details of the parameters available for this activity.

Table 4-6 Parameter Definitions of Add IMC ManagedObject

Field	Description	Sample Values and Notes
Input	<p>Managed Object(s) or ImcHandle</p> <p>You can use any value from a previous activity whose output (published data) is of type ImcHandle or Managed Object.</p> <p>If you use a managed object or list of managed objects (parent), a new managed object of the specified classId/XMLTag is created under the subscribed managed object(s).</p> <p>If you use an input of type ImcHandle, a new managed object with the specified classId/XMLTag is created using the subscribed ImcHandle.</p>	<p>{UcsScriptOutput from Connect IMC}</p> <p>{UcsScriptOutput from Get IMC ManagedObject}</p>
ClassId	Class ID of the managed object	<p>IsbootLan</p> <p>IsbootStorage</p>
PropertyMap	<p>PropertyMap contains one or more key-value pairs separated by semi-colons. These keys and values denote the properties and their values for the managed object that you want to create. For example, a property map could be:</p> <p>propertyName1="propertyValue1";Propertyname2="propertyValue2"...</p> <p>Note If the input is of type ImcHandle, the property map must include the Dn for that ImcHandle.</p>	dn="sys/rack-unit-1/boot-policy/lan-re ad-only";order="2"
XmlTag	Class ID (case sensitive) of the managed object	<p>IsbootLan</p> <p>IsbootStorage</p>

Published Data

<ManagedObject> or list<ManagedObject>

After successful execution, this activity publishes the managed object or the list of managed objects and makes it available for other activities to use through UcsScriptOutput. If an error occurs, an error message is populated in the default Error summary text field in the SCO.

Remove IMC ManagedObject

Definition

This activity is used to remove one or more managed objects. You can identify the managed object to be removed by providing the managed object or its Dn and classId.

Parameter Set

Input <ManagedObject>
 Input list<ManagedObject>
 Input <ImcHandle>, ClassId <String>, Dn <String>
 Input <ImcHandle>, XmlTag <String>, Dn <String>

Parameters

Table 4-7 provides details of the parameters available for this activity.

Table 4-7 Parameter Definitions of Remove IMC ManagedObject

Field	Description	Sample Values and Notes
Input	Managed Object(s) or ImcHandle You can use any value from a previous activity whose output (published data) is of type ImcHandle or Managed Object. If you use a managed object or list of managed objects, this activity removes those managed object(s). If you use an input of type ImcHandle, the specified Dn and classId determines which managed object is removed.	{UcsScriptOutput from Connect IMC} {UcsScriptOutput from Get IMC ManagedObject}
ClassId	Class ID of the managed object	lsbootLan
Dn	Distinguished name of the managed object.	sys/rack-unit-1/boot-policy/lan-read-only
XmlTag	Class ID (case sensitive) of the managed object	lsbootLan

Published Data

<ManagedObject> or list<ManagedObject>

After successful execution, this activity publishes the managed object or the list of managed objects and makes it available for other activities to use through UcsScriptOutput. If an error occurs, an error message is populated in the default Error summary text field in the SCO.

Run IMC PowerTool

Definition

This activity is used to run a PowerTool script. You can subscribe a ImcHandle from the **Connect IMC** activity and use that handle in the PowerTool script. You can also connect or disconnect the ImcHandle in the script itself. The output of this activity can be passed to another activity if you want to perform additional operations.

Parameter Set

Input<object>, Script<String>

Parameters

Table 4-8 provides details of the parameters available for this activity.

Table 4-8 Parameter Definitions of Run IMC PowerTool

Field	Description	Sample Values and Notes
Input	<p>Managed Object(s) or ImcHandle</p> <p>You can use any value from a previous activity whose output (published data) is of type ImcHandle or Managed Object.</p> <p>You can access the subscribed object/handle in the Script parameter directly using special '\$ucsInput' variable. For more information, see the "Get Inventory" and "Get Server Details" examples in the Sample Runbooks.</p>	<p>{UcsScriptOutput from Connect IMC}</p> <p>{UcsScriptOutput from Get IMC ManagedObject}</p>
Script	<p>PowerTool script to run.</p> <p>You can paste an existing PowerTool script in this parameter and execute that script.</p> <p>Note In the PowerTool script, '\$ucsInput' contains the input object(s) from a subscribed activity. Add any output object(s) to be published in '\$ucsOutput', such as \$ucsOutput.Add(\$obj).</p>	<pre>foreach(\$ucsCSeriesInput in \$ucsInput) { \$ManagementInterfaceNetworkSettings = Get-ImcManagedObject -Dn "sys/rack-unit-1/mgmt/if-1" -Imc \$ucsCSeriesInput \$ucsOutput.add(\$ManagementInterfaceNetworkSettings) }</pre>

Published Data

<ManagedObject> or list<ManagedObject>

After successful execution, this activity publishes the managed object or the list of managed objects and makes it available for other activities to use through UcsScriptOutput. If an error occurs, an error message is populated in the default Error summary text field in the SCO.

Export IMC Tech Support

Definition

This activity is used to create and download a tech support file for a Cisco UCS C-Series server.

Parameter Set

Input IMC Handle <ImcHandle>, Remote Host <String>, Remote File <String>, Tech Support Protocol <String>, Remote User Name <String>, Remote Password <String>, [Timeout Seconds <UInt32>]

Parameters

Table 4-9 provides details of the parameters available for this activity.

Table 4-9 Parameter Export IMC Tech Support

Field	Description	Sample Values and Notes
Input IMC Handle	You can use any value from a previous activity whose output (published data) is of type ImcHandle.	{UcsScriptOutput from Connect IMC}
Remote Host	IP address of the remote server.	204.15.50.0
Remote File	Path of the backup file to import with extension as .xml. First character of the remote file in case of Tech Support should not be forward slash '/	home/<user>/tmp/TechSupport.tar.gz
Tech Support Protocol	Protocol used for exporting files.	"ftp", "tftp", "sftp", "scp", "http"
Remote User Name	Remote server user name.	root
Remote Password	Remote server password.	password
Timeout Seconds	The operation is aborted if not completed within timeout in seconds. Default value is 600 seconds.	For 5 minutes its value is 300

Published Data

This activity does not publish output.

Import IMC Configuration

Definition

This activity is used to import a Cisco IMC backup file.

**Note**

You cannot import a full-state configuration file.

Parameter Set

Input IMC Handle <ImcHandle>, Remote Host <String>, Remote File <String>, Import Configuration Protocol <String>, Remote User Name <String>, Remote Password <String>

Parameters

Table 4-10 provides details of the parameters available for this activity.

Table 4-10 Parameter Definitions of Import IMC Configuration

Field	Description	Sample Values and Notes
Input IMC Handle	ImcHandle You can use any value from a previous activity whose output (published data) is of type ImcHandle.	{UcsScriptOutput from Connect IMC}

Table 4-10 Parameter Definitions of Import IMC Configuration (continued)

Field	Description	Sample Values and Notes
Remote Host	IP address of the remote server.	204.xx.50.0
Remote File	Path of the backup file to import with .xml extension.	/tmp/backup.xml
Import Configuration Protocol	Protocol used for importing files.	"ftp", "tftp", "sftp", "scp", "http"
Remote User Name	Remote server user name.	root
Remote Password	Remote server password.	password

Published Data

This activity does not publish output.

Get IMC Child

Definition

This activity is used to get the child objects of a managed object. If you subscribe a managed object in the 'Input Managed Object' parameter, you get all the immediate children of that managed object.

Parameter Set

Input Managed Object <ManagedObject >, [ClassId<String>], [Hierarchy<Boolean>]

Parameters

Table 4-11 provides details of the parameters available for this activity.

Table 4-11 Parameter Definitions of Get IMC Child

Field	Description	Sample Values and Notes
Input Managed Object	Managed Object You can use any value from a previous activity whose output (published data) is of type Managed Object.	{UcsScriptOutput from Get IMC ManagedObject}
ClassId	The classId of the child objects.	IsbootVirtualMedia
Hierarchy	If this parameter is set to True, the activity includes the child objects at all levels of the hierarchy. Use the ellipsis (...) to choose a value for this parameter.	True False Default: False

Published Data <ManagedObject> or list<ManagedObject>

After successful execution, this activity publishes the managed object or the list of managed objects and makes it available for other activities to use through UcsScriptOutput. If an error occurs, an error message is populated in the default Error summary text field in the SCO.

Add IMC Local User

Definition This activity searches for available free entry in local user list and add the new user in the first available slot. There can be maximum 15 users.

Parameter Set Input<ImcHandle>, Local Users name<String>, Password<String>, Enabled<Boolean>, Role<String>

Parameters [Table 4-12](#) provides details of the parameters available for this activity.

Table 4-12 Parameter Definitions of Add IMC Local User

Field	Description	Sample Values and Notes
Input	ImcHandle. You can use any value from a previous activity whose output (published data) is of type ImcHandle	{UcsScriptOutput from Connect IMC}
Local Users name	Any valid name that match the “[a-zA-Z0-9\._+]{0,16}\$” pattern	username
Password	Password for the username	password
Enabled	Drop-down with values ‘active’ and ‘inactive’	active
Role	Drop-down with values ‘admin’, ‘read-only’, ‘user’	read-only

Published Data

<AaaUser>.

After successful execution, this activity publishes the managed object AaaUser and makes it available for other activities to use through UcsScriptOutput. If an error occurs, an error message is populated in the default Error summary text field in the SCO.

Copy IMC ManagedObject

Definition

This activity is use to get a managed object from source server and then either add managed object or set the managed object in destination server. If the destination server does not has this managed object then the object is added and if the destination server has this managed object then properties of the managed object are modified.

Parameter Set

Source Input <ImcHandle>, Destination Input <ImcHandle>, Dn <String>

Parameters

Table 4-13 provides details of the parameters available for this activity.

Table 4-13 Parameter Definitions of Copy IMC ManagedObject

Field	Description	Sample Values and Notes
Source Input	ImcHandle of source server. You can use any value from a previous activity whose output (published data) is of type ImcHandle	{UcsScriptOutput from Connect IMC}
Destination Input	ImcHandle of source server. You can use any value from a previous activity whose output (published data) is of type ImcHandle	{UcsScriptOutput from Connect IMC}
Dn	Distinguished name of the managed object.	sys/rack-unit-1/board/Resume-on-A C-power-loss

Published Data

<ManagedObject>

After successful execution, this activity publishes the managed object and makes it available for other activities to use through UcsScriptOutput. If an error occurs, an error message is populated in the default Error summary text field in the SCO.



Sample Runbooks

This chapter describes how to use the activities that are available as part of this integration pack by viewing a set of sample runbooks on the [Cisco UCS Communities](#). You can import these sample runbooks into Microsoft System Center (SCO) Runbook Designer and understand how the activities can be used to publish data, use data, and execute an action on your Cisco UCS C-Series servers.

These sample runbooks provide examples of how to use the activities included in Cisco UCS C-Series Integration Pack. For more information about the available activities, see [Cisco UCS C-Series Activities, page 4-1](#).

Here are the list of sample runbooks available in CDN:

Runbook	Description
Add IMC Local User	This runbook searches for available free entry in local user list and add the new user in the first available slot. There can be maximum 15 users. Local Users name is any valid name that match the "[a-zA-Z0-9\._\\+\\-]{0,16}\$" pattern. Enabled is a drop-down with values 'active' and 'inactive'. Role is a drop-down with values 'admin', 'read-only', 'user'
Copy Power Restore Policy	This runbook is use to get managed object 'biosVfResumeOnACPowerLoss' from the reference/source server and then set that managed object in destination servers. This runbook uses the activity Copy IMC ManagedObject . If the managed object doesn't exist in the destination servers then the object is added and if it already exist in the destination servers then it will copy the values for the properties of the managed object from reference/source server.
Export IMC Tech Support	This runbook creates and downloads the IMC technical support backup file on remote server.
Get Children For Boot Policy	This runbook gets children objects of a managed object 'IsbootDef'. It then sorts the boot order and creates a htm report which user can see in browser.

Runbook	Description
Get Inventory	The runbook creates a inventory report for the given IMC. The script connects to the given IMC IP Address. It extracts basic inventory list from the IMC like top level system, Identifiers, Bios/boot settings, storage controllers, hardware and version information. It then creates an htm report and uses `send output to browser` for display.
Get Read-Only Users	This runbook gets all the users from local user list that have role as read-only. It then creates an htm report and uses `send output to browser` for display.
Get Server Details	This runbook demonstrate how to use Run IMC PowerTool activity. This runbook gets the server description(hostname, IP, MAC address, server health). It then creates a htm Report and uses `send output to browser` for display.
Modify Boot Order	This runbook illustrates the modification of the boot order policy in the IMC configuration. It adds Network Device (PXE) and HDD to the boot order.
Modify Description	This runbook sets description of servers. Description is `usrLbl` field of managed object `computeRackUnit`.
Configure BIOS Settings Rules', 'FRB-2 Timer' etc.	This runbook updates BIOS settings for some of the BIOS parameters like 'OS Watchdog Timer Policy', 'Boot Order
Configure Boot Policy	This runbook updates boot order of IMC. Boot order need not be specified for every device as empty ones will be removed. User needs to take care that if boot order n is set for some device then the boot order 1 to n-1 must also be set for some other devices. For example if boot order of 3 is set for some device then the boot order 1 and boot order 2 also should be assigned to some device.
Configure SNMP Settings	This runbook sets SNMP viz `Access Community String`, `System Contact`, `SNMP Community Access`, `System Location`, `SNMP Enabled`, `Trap Community String`.
Export IMC Configuration	This runbook create and download the IMC configuration backup file on a remote server. The output format is xml.
Get Fault Data	This runbook gets the IMC faults and uses `send output to browser` for display.
Import IMC Configuration	This runbook imports the IMC configuration backup file.

