



Lenovo Integration Pack for Microsoft System Center 2012 R2 Orchestrator User Guide



Version 6.0.0

Note

Before using this information and the product it supports, read the information in [Appendix B “Notices” on page 47](#).

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About this publication

This book provides instructions for installing Lenovo Integration Pack for Microsoft System Center 2012 R2 Orchestrator.

Conventions and terminology

Paragraphs that start with a bold **Note**, **Important**, or **Attention** are notices with specific meanings that highlight key information.

Note: These notices provide important tips, guidance, or advice.

Important: These notices provide information or advice that might help you avoid inconvenient or difficult situations.

Attention: These notices indicate possible damage to programs, devices, or data. An attention notice appears before the instruction or situation in which damage can occur.

World Wide Web resources

The following websites provide resources for understanding, using, and troubleshooting PureFlex systems, BladeCenter and Systemx servers, and systems management tools.

System Management with Lenovo XClarity Solutions

This website provides an overview of the Lenovo XClarity solutions that integrate System x and Flex System hardware to provide system management capability:

- [System Management with Lenovo XClarity Solution website](#)

Lenovo technical support portal

This website can assist you in locating support for hardware and software:

- [Lenovo Support Portal website](#)

ServerProven websites

The following websites provide an overview of hardware compatibility for BladeCenter, Flex System, Systemx, and xSeries® hardware:

- [Lenovo ServerProven: Compatibility for BladeCenter products](#)
- [Lenovo ServerProven: Compatibility for Flex System Chassis](#)
- [Lenovo ServerProven: Compatibility for System x hardware, applications, and middleware](#)

Flex System Information Center

This website provides complete information about the Flex System product family:

- [Flex System online documentation](#)

Microsoft System Center Orchestrator 2012 website

This website provides an overview of Microsoft System Center Orchestrator 2012 and links to additional information.

- [Microsoft System Center Orchestrator website](#)

Chapter 1. Lenovo Integration Pack for Microsoft System Center 2012 R2 Orchestrator

Lenovo Integration Pack is an add-on for Microsoft System Center Orchestrator 2012 that enables you to automate tasks in a PureFlex environment.

With the Lenovo Integration Pack, you can:

- Discover and get managed components
- Configure CMM/IMM/uEFI using configuration pattern
- Monitor PureFlex events and status
- Get PureFlexPureFlex system inventory information
- Power on, power off, and restart a PureFlex system

Chapter 2. System requirements

Lenovo Integration Pack for Microsoft System Center 2012 R2 Orchestrator has the following hardware and software requirements.

Hardware requirements

A PureFlex system with Flex System Manager 4.1.

Software requirements

The following Microsoft Windows Server software is supported by

- Windows Server 2012
- Windows Server 2012 R2
- Windows Server 2008 R2

The following Microsoft System Center Orchestrator 2012 software is required:

- Microsoft System Center 2012 R2 Orchestrator
- Microsoft System Center 2012 SP1 Orchestrator

Chapter 3. Installing Lenovo Integration Pack

This procedure describes how to download and install Lenovo Integration Pack on Microsoft System Center Orchestrator 2012.

- Step 1. Download Lenovo Integration Pack (IBM_IP_v5.5.zip) from the [Lenovo XClarity Integrator for Microsoft System Center website](#).
- Step 2. Unzip the 1IBM_IP_v5.5.zip file to a local folder.
- Step 3. Register the Integration Pack file named IBM_PureFlex_Integration_Pack_for_System_Center_2012_Orchestrator.oip with the Orchestrator Management Server. For information about registering, see [Chapter 4 “Registering Lenovo Integration Pack with Orchestrator Management Server” on page 7](#).
- Step 4. Deploy the registered Integration Pack to Orchestrator Runbook Server and Orchestrator Runbook Designer. For information about deployment, see [Chapter 5 “Deploying Lenovo Integration Pack to Orchestrator Management Server” on page 13](#).

Chapter 4. Registering Lenovo Integration Pack with Orchestrator Management Server

Lenovo Integration Pack must be registered with the Orchestrator Management Server. This procedure describes how to register Lenovo Integration Pack.

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

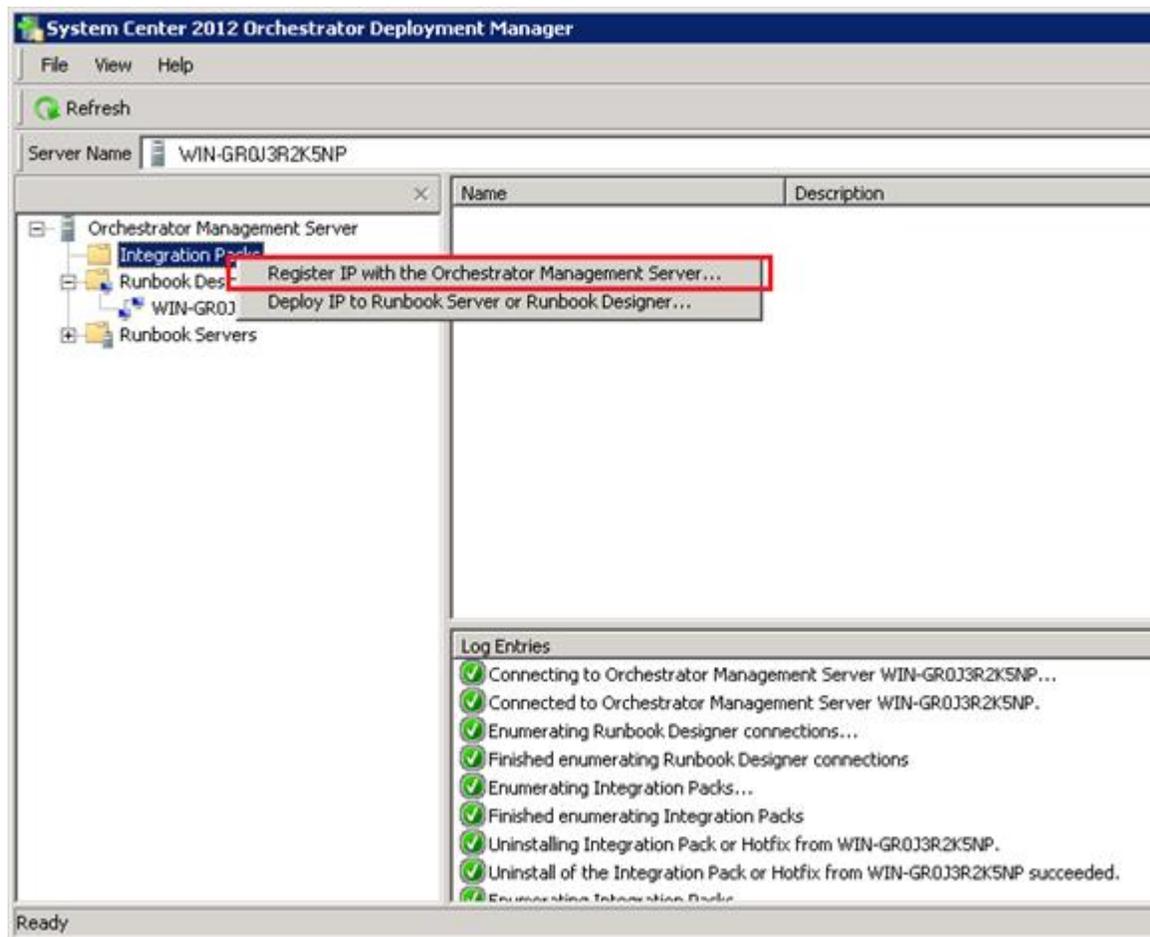


Figure 1. Selecting Register IP with Orchestrator Management Server

The Integration Pack Registration Wizard starts.

- Step 3. Click **Next** to proceed with registration.



Figure 2. Integration Pack Registration Wizard window

Step 4. On the Integration Pack or Hotfix Selection page, click **Add**.

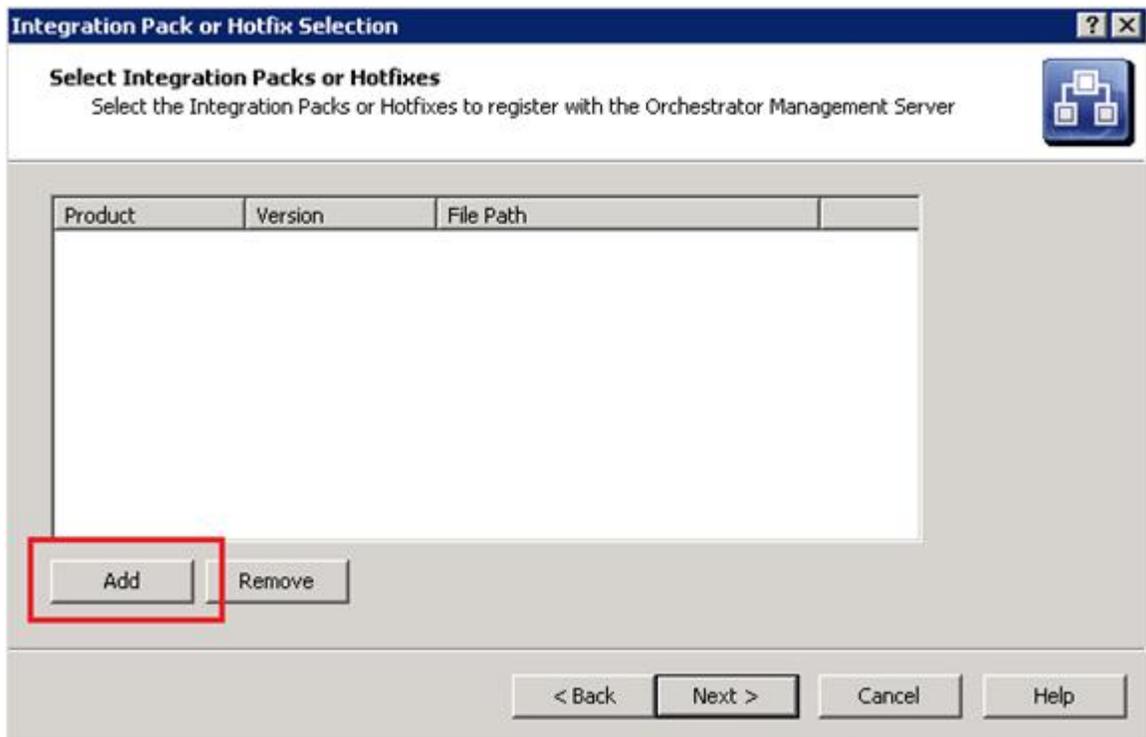
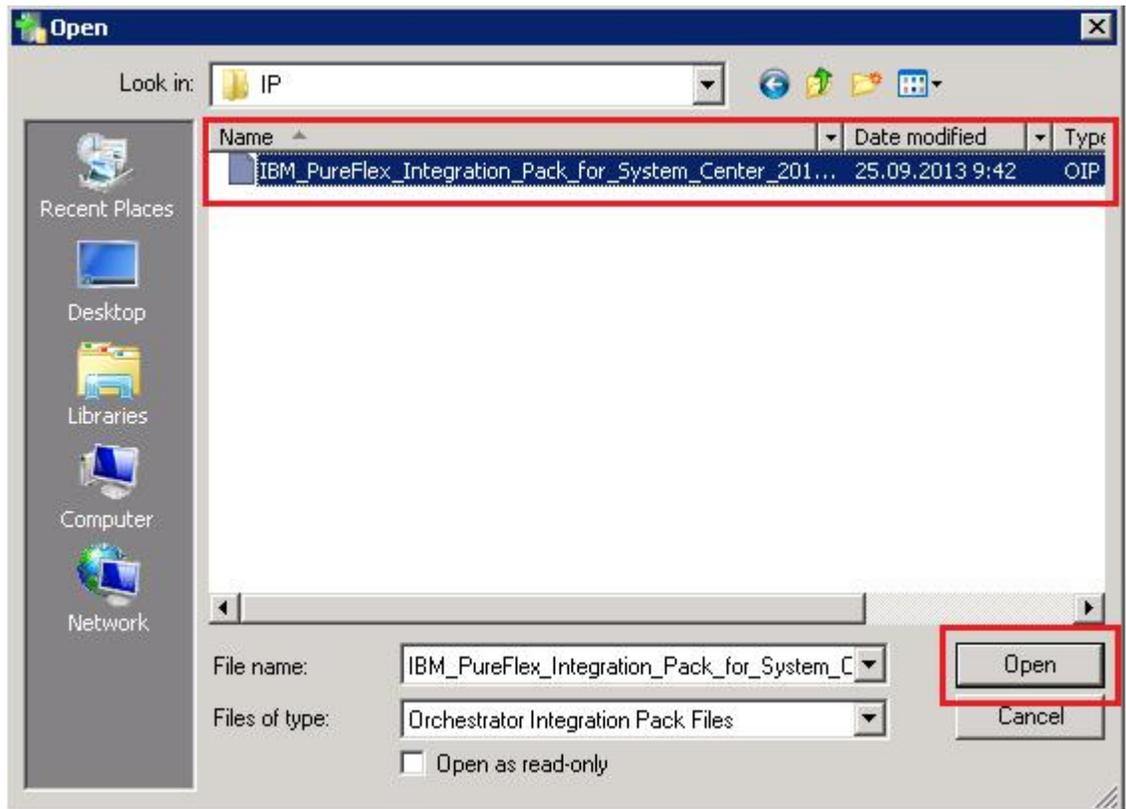


Figure 3. Select Integration Pack or Hotfixes window

Step 5. In the Open file window, select **Lenovo_PureFlex_Integration_Pack_for_System_Center_2012_Orchestrator.oip**, and click **Open**.



Step 6. On the Integration Pack or Hotfix Selection page, click **Next**.

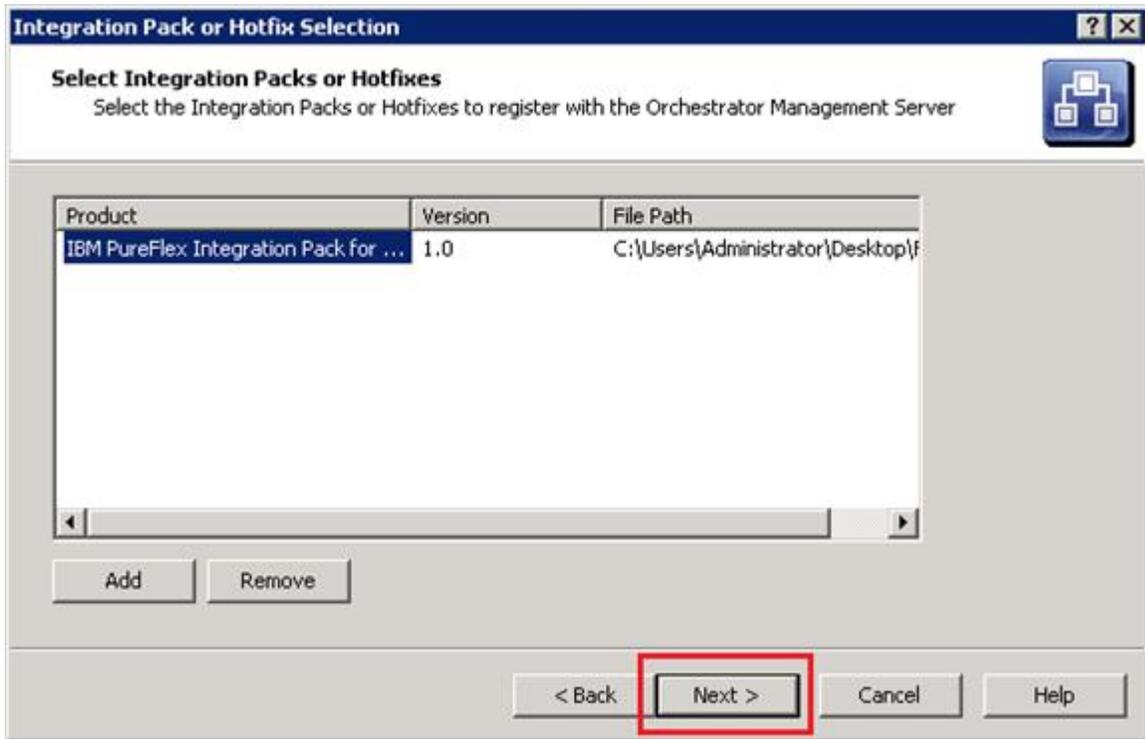


Figure 4. Integration Pack or Hotfix Selection window

Step 7. Click **Finish** to complete the registration of the Integration Pack.

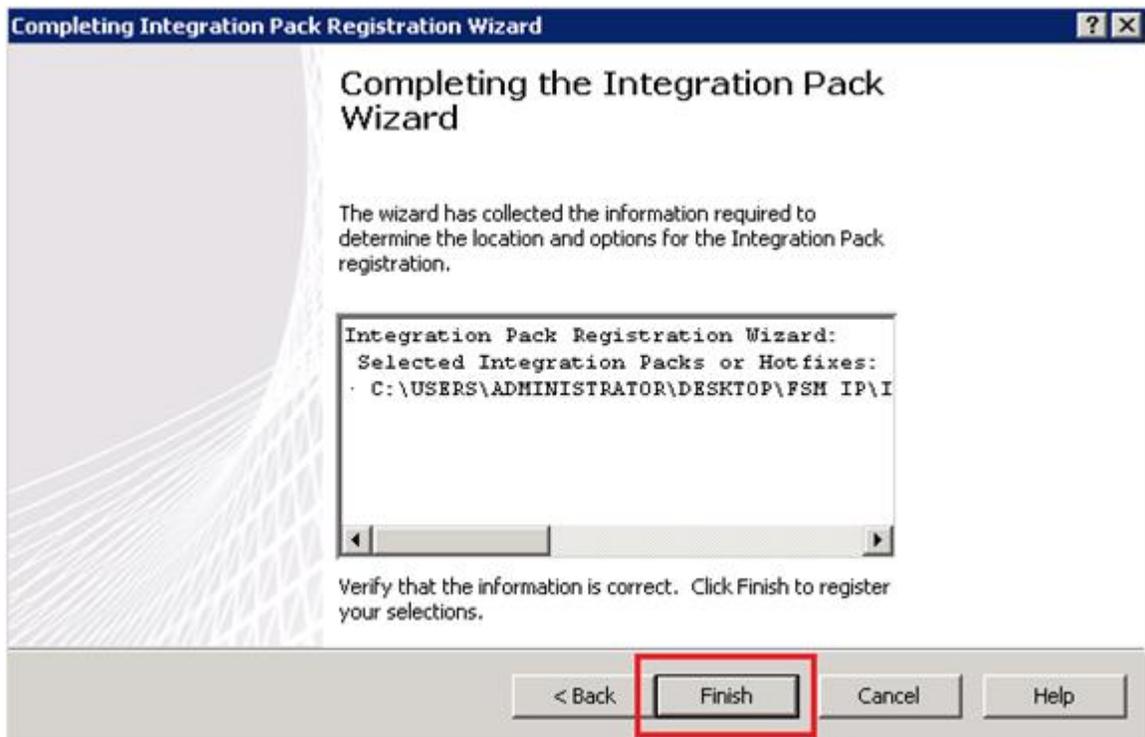


Figure 5. Completing Integration Pack Registration Wizard window

Step 8. After reading the agreement, click **Accept** to complete the registration.

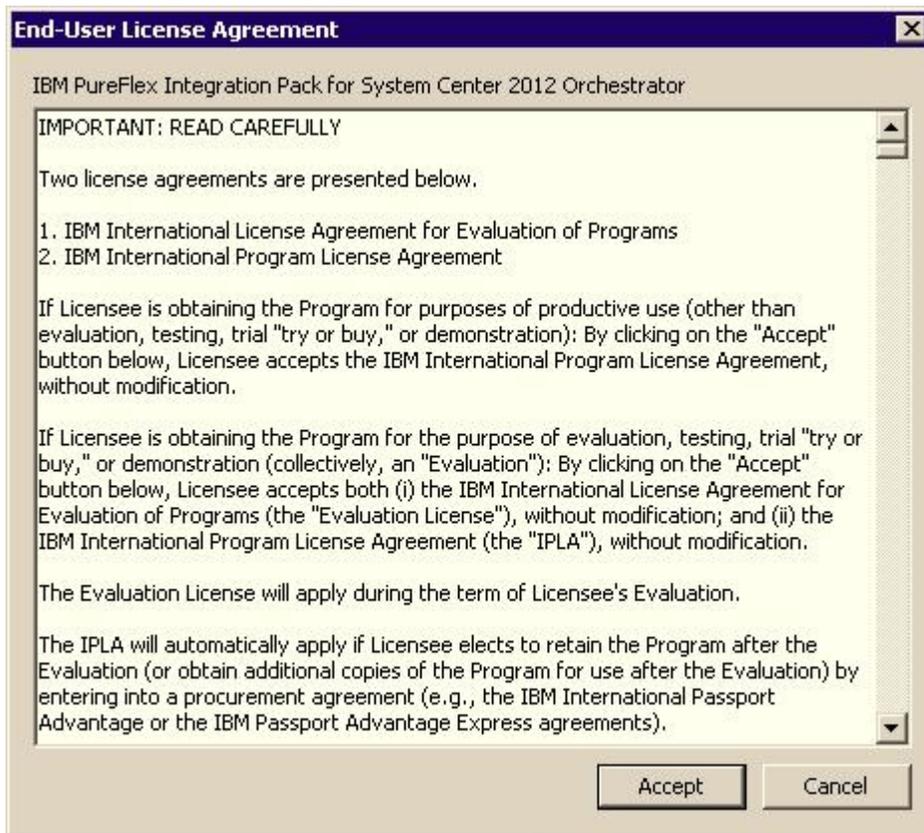


Figure 6. End-User License Agreement window

Chapter 5. Deploying Lenovo Integration Pack to Orchestrator Management Server

This procedure describes how to deploy Lenovo Integration Pack to Orchestrator Management Server.

- Step 1. Launch the System Center 2012 Orchestrator Deployment Manager.
- Step 2. In the left pane, right click **Integration Packs** and select **Deploy IP to Runbook Server or Runbook Designer**.

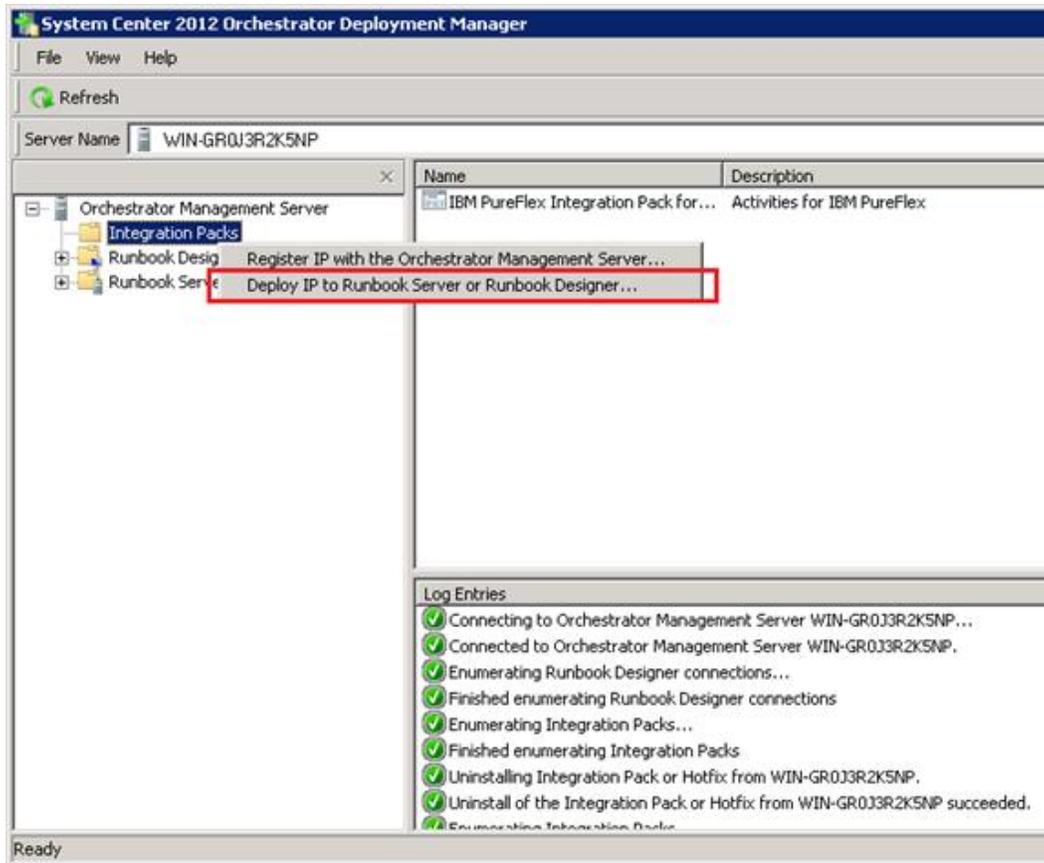


Figure 7. Deploy IP to Runbook Server or Runbook Designer

The Integration Pack Deployment Wizard starts.

- Step 3. Click **Next** to proceed with deployment.

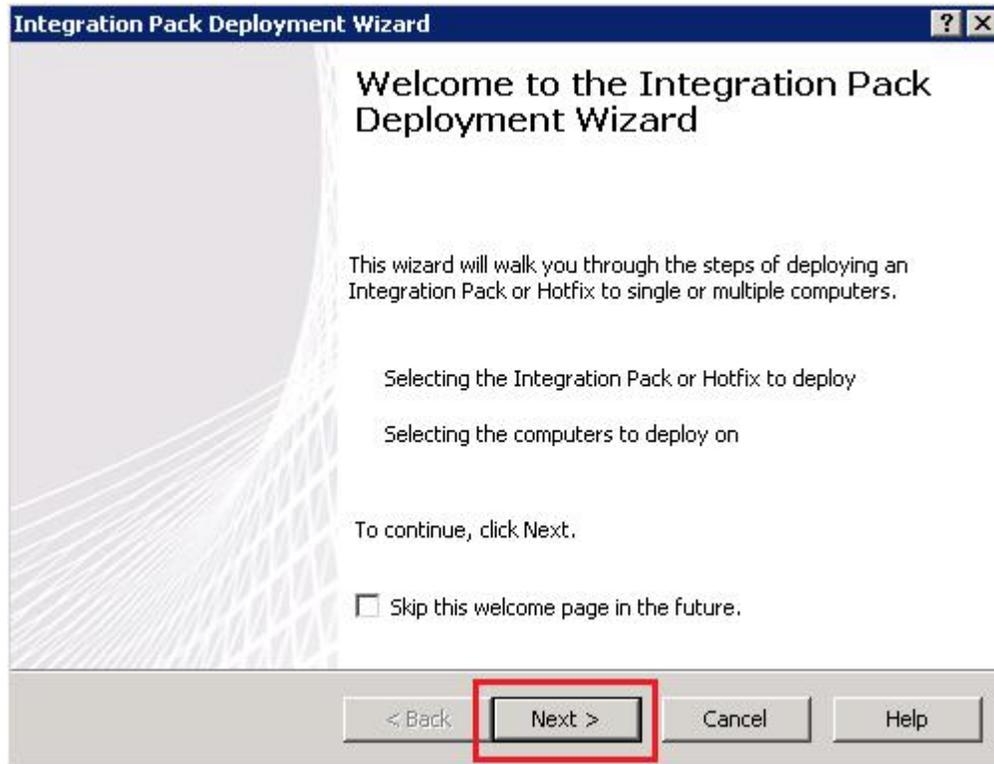


Figure 8. Welcome to the Integration Pack Deployment Wizard

- Step 4. On the Integration Pack or Hotfix Deployment page, select the **Lenovo PureFlex Integration Pack for System Center 2012 Orchestrator** check box and click **Next**.

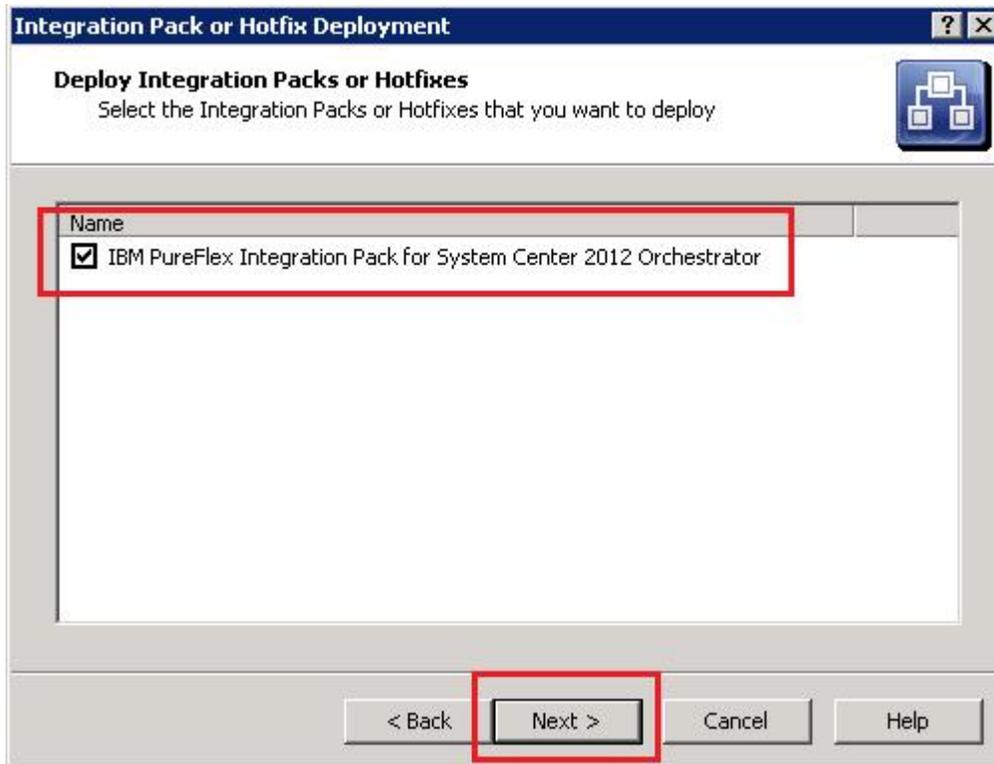


Figure 9. Deploy Integration Packs or Hotfixes

- Step 5. On the Computer Selection page, in the **Computer** field, specify the machine where the Integration Pack will be deployed. You can add multiple computers.

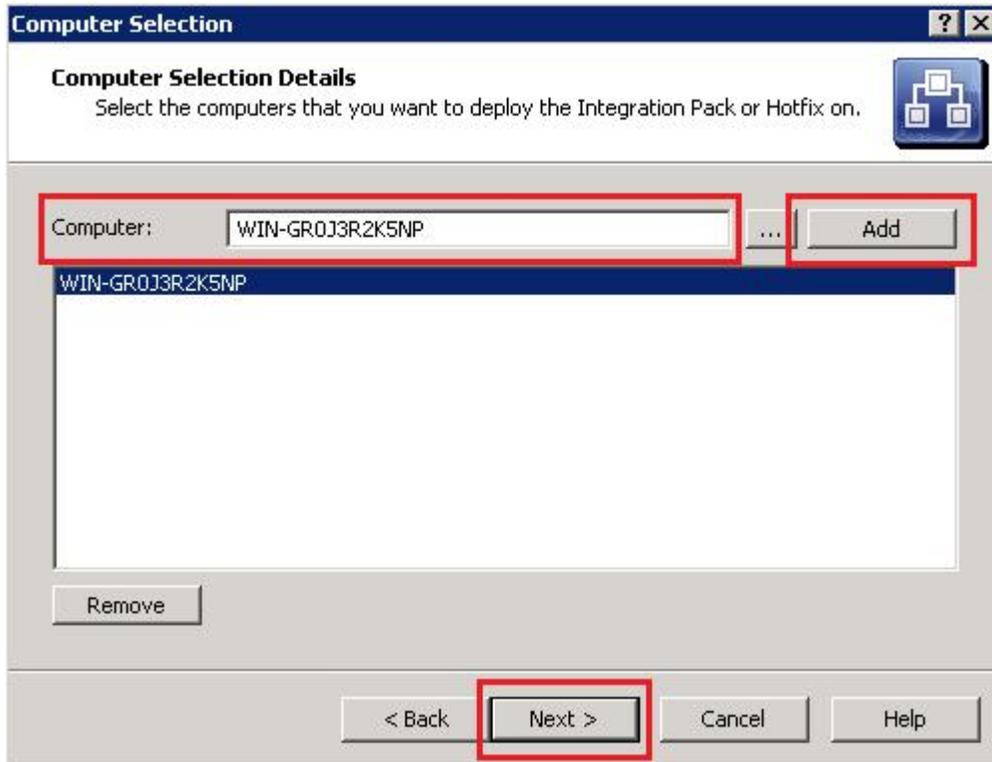


Figure 10. Computer Selection Details

- Step 6. Click **Next** when all of the Computer Selection Details have been entered.
- Step 7. On the Installation Options page, select **Stop all running Runbooks before installing the Integration Packs or Hotfixes** and click **Next**.

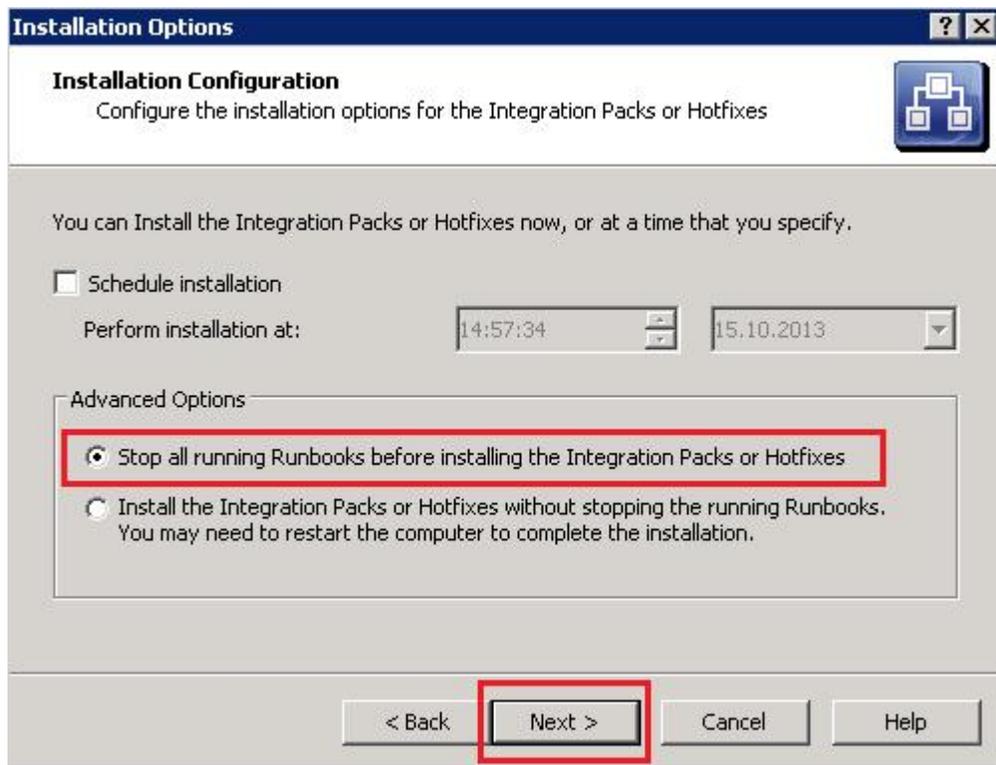


Figure 11. Installation Configuration

- Step 8. On the Completing Integration Pack Deployment Wizard page, click **Finish** to complete the Integration Pack Deployment Wizard.

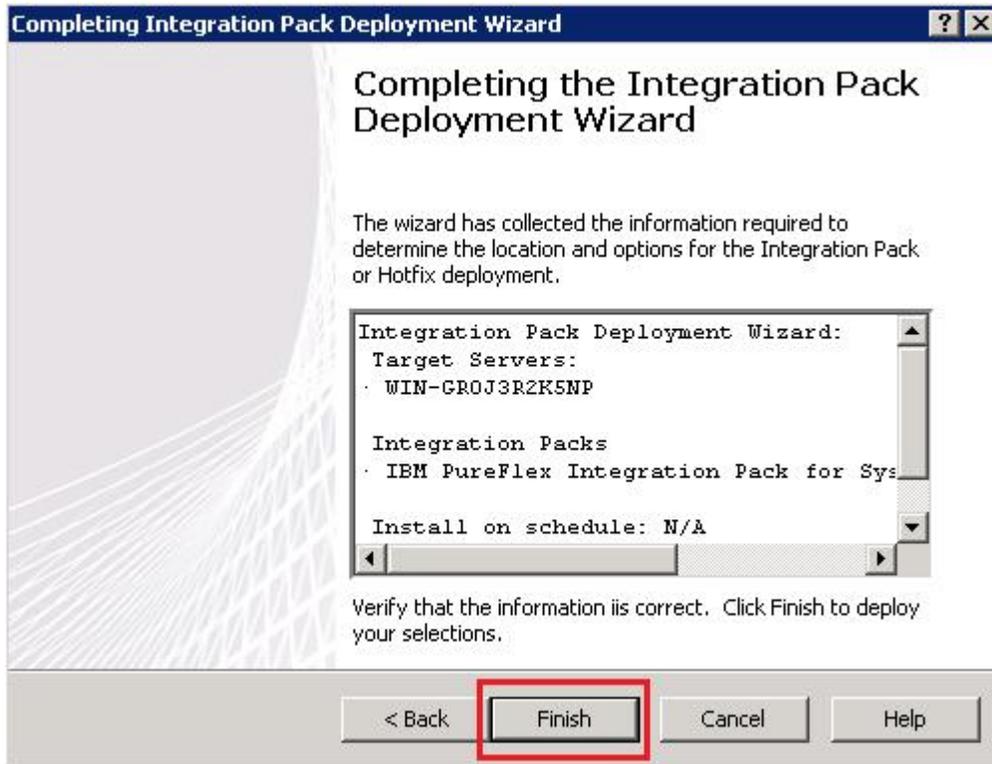


Figure 12. Completing the Integration Pack Deployment Wizard

Chapter 6. Configuring a PureFlex connection for Runbooks

This procedure describes how to configure Lenovo Integration Pack with Orchestrator Management Server.

Step 1. Launch **System Center Orchestrator 2012 → Orchestrator Runbook Designer**.

Step 2. Click **Options** and select **Lenovo PureFlex**.

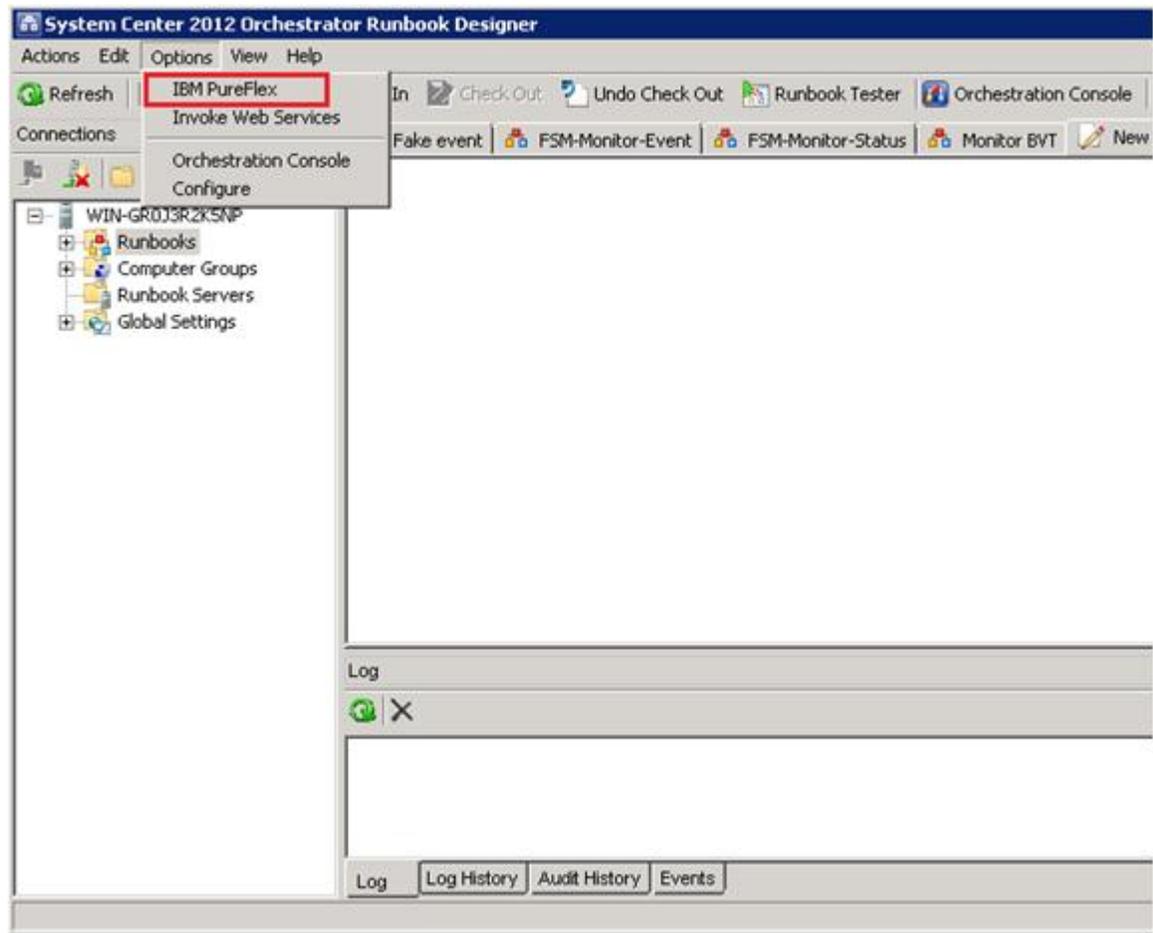


Figure 13. Selecting Lenovo PureFlex

Step 3. On the Prerequisite Configuration page, click **Add**.

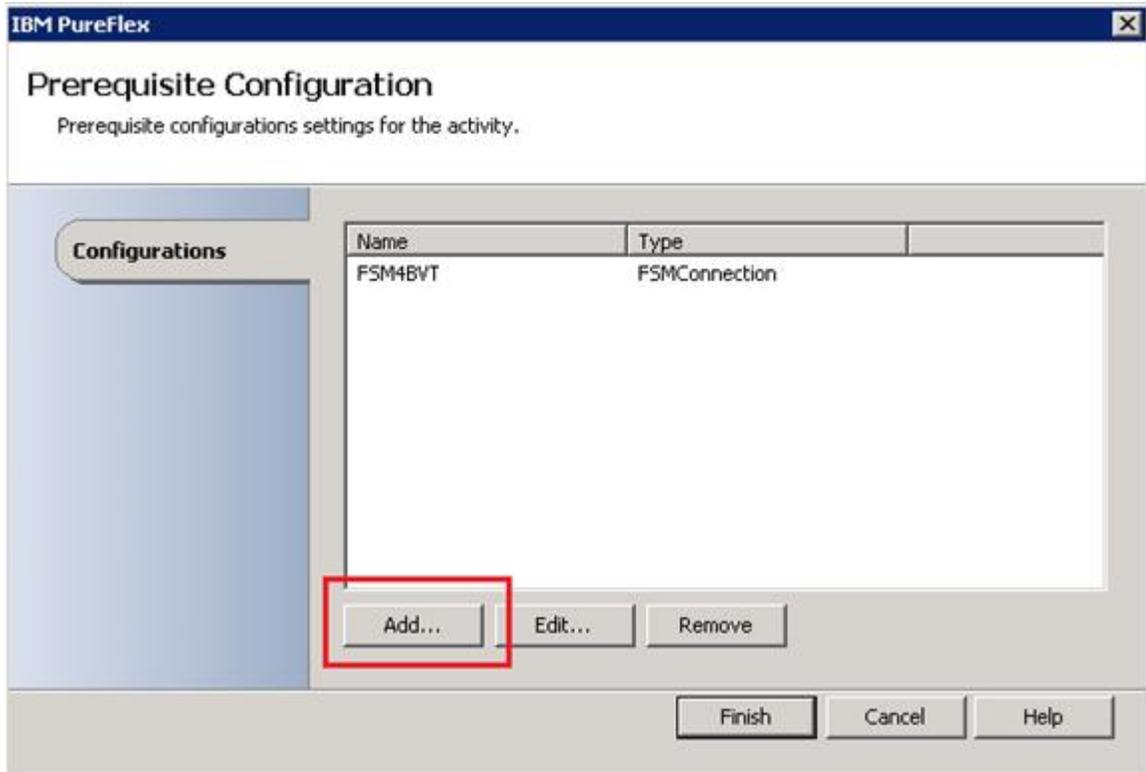


Figure 14. Prerequisite Configuration page

The Add Configuration window opens.

- Step 4. Enter a name for this connection, and click ... (the ellipses button) to select the connection type.

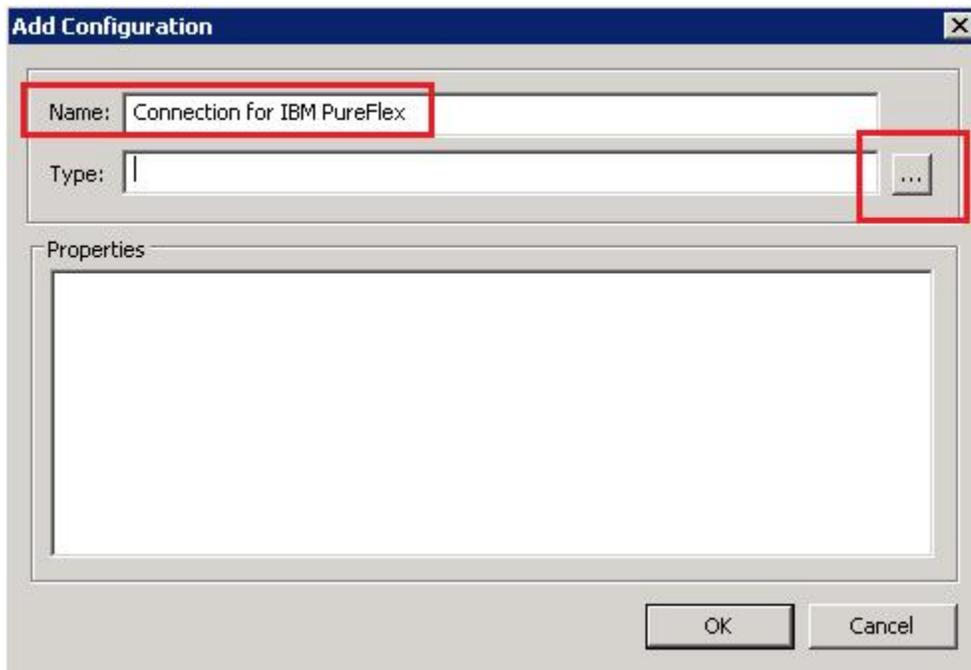


Figure 15. Add configuration window

Step 5. In the Item Selection window, select **FSMConnection** and click **OK**.

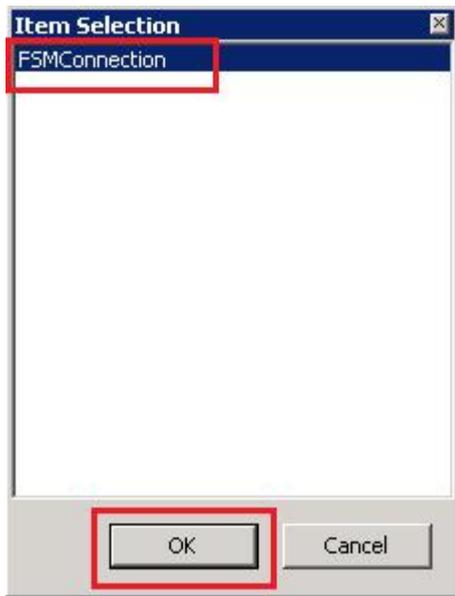


Figure 16. Item selection window

Step 6. In the Add Configuration window, complete the following steps.

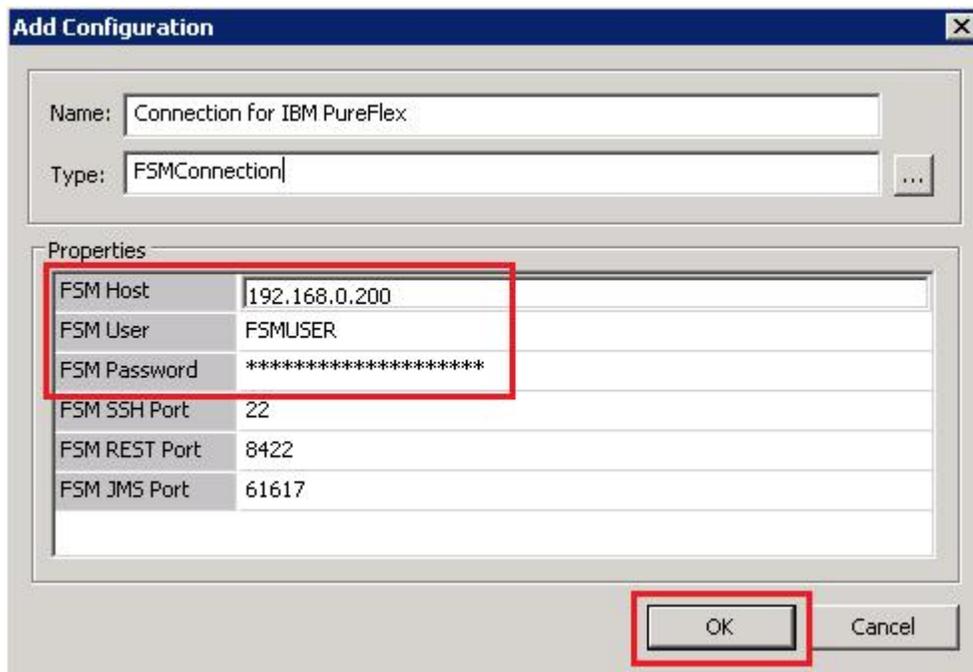


Figure 17. Add configuration window

- a. In the **FSM Host** field, enter an IP address.
- b. In the **FSM User** and **FSM Password** fields, enter a user name and password

Note: (The **FSM SSH Port**, **FSM REST Port**, and **FSM JMS Port** fields are filled with default values and typically do not need to be changed.

c. Click **OK**.

Step 7. If you have finished adding or editing the configuration settings for an activity, click **Finish** to complete the configuration of the FSM connection for Runbooks.

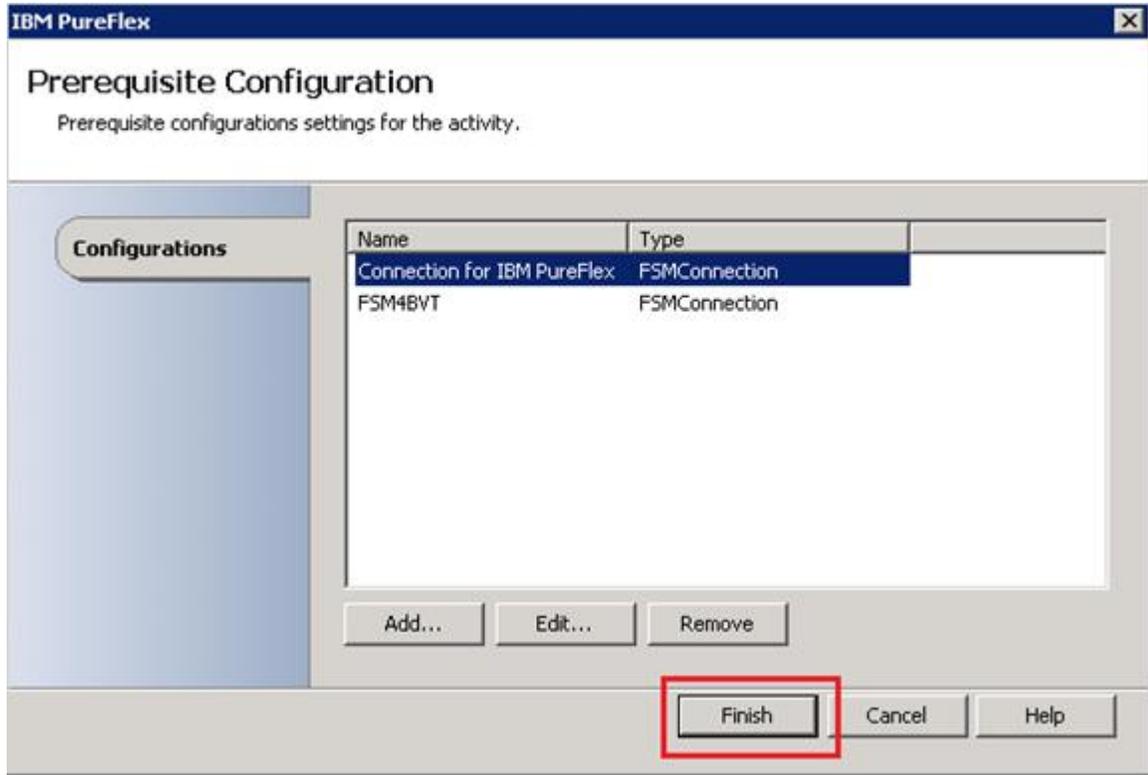


Figure 18. Prerequisite Configuration window

Chapter 7. Uninstalling Lenovo Integration Pack

This procedure describes how to uninstall Lenovo Integration Pack.

- Step 1. Launch **System Center Orchestrator 2012 Deployment Manager**.
- Step 2. In the left pane, click **Runbook Designers** and select the computer from which you want to uninstall Integration Pack.
- Step 3. In the right pane, right-click **Lenovo PureFlex Integration Pack for System Center 2012 Orchestrator** and select **Uninstall Integration Pack or Hotfix**.

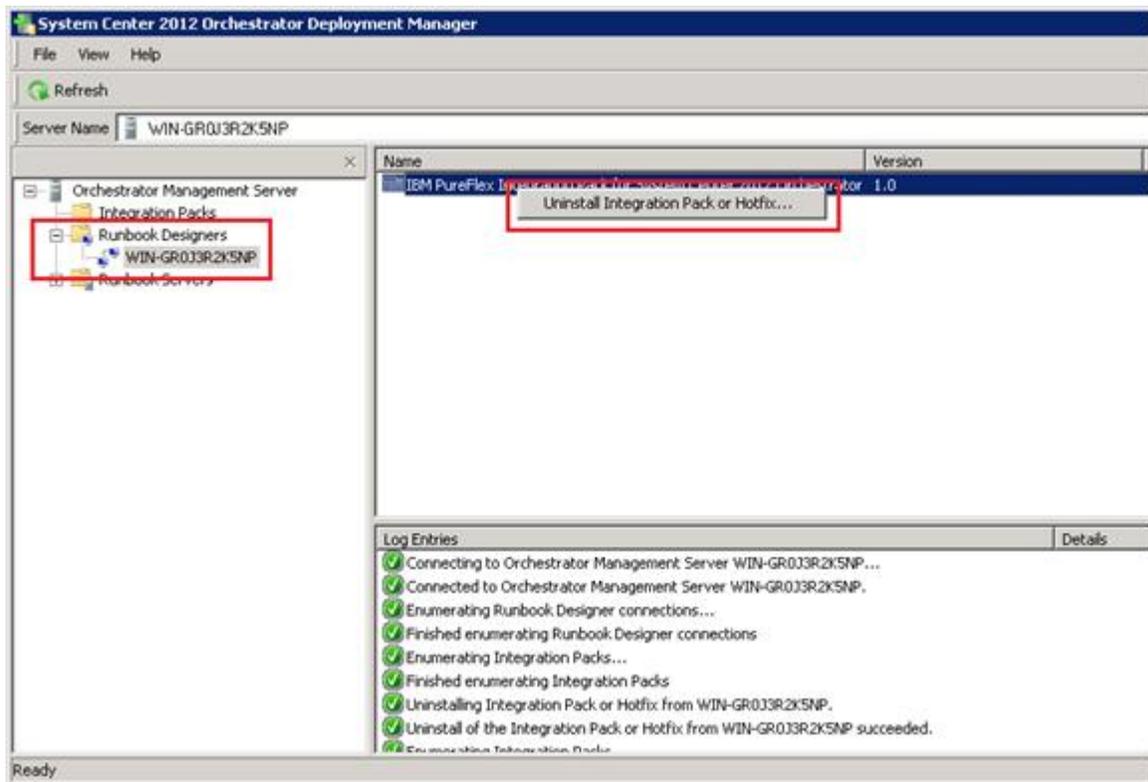


Figure 19. Uninstall Integration Pack or Hotfix

The Confirm Integration Pack uninstall window opens.

- Step 4. Click **OK** to complete the uninstall.

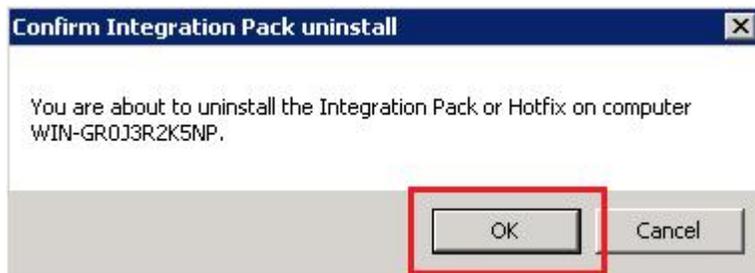


Figure 20. Confirm Integration Pack uninstall window

Chapter 8. Flex System Manager activities

Lenovo Integration Pack adds Lenovo PureFlex activities to Orchestrator Runbook Designer. The topics in this section describe how to use each of the Flex System Manager activities.

Input parameters

The following table lists the conventions for using the input parameters in the Flex System Manager activities.

Table 1. Conventions for input parameters

Input parameter	Indication
x	Parameter x is required.
[x]	Parameter x is optional.
(x)	Parameter x will be shown according to another parameter's value.
{ 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.

Object types

The following table lists the object types for the input parameters and published data in the Flex System Manager activities.

Table 2. Object types for input parameters and published data

Object type	Indication
[Array]	[Array] indicates that the published data is an array.
Boolean	Boolean type
Enum	Enumeration type
Filter	Filter indicates that the published data can be used as an activity filter.
ManagedSystem	ManagedSystem information using the format: name, type, id
String	String type

System types for PureFlex systems

The following table lists the PureFlex system types for the input parameters and published data in the Flex System Manager activities.

Table 3. PureFlex system types

System type	Definition
Chassis	The physical resources that enclose other resources and provide definable functionality, such as a desktop, processing node, UPS, disk or tape storage, or a combination of these resources.
Cluster	A computer system that is made up of two or more computer systems that operate together to increase performance, reliability, availability, and serviceability.
ComputerSystem	A single or multiple computing entity that contains an operating system or firmware.
Farm	A group of systems that share a common goal, such as maintaining High Availability or streamlining processes.
GenericNetworkDevice	This class represents a computer system that has been discovered on a network for which the device type is not known.
HardwareManagementConsole	A computer system that controls managed systems, including logical partitions and the use of Capacity on Demand.
HybridSystem	A system that contains, in the case of zEnterprise, both CECs and BladeCenter.
OperatingSystem	Software responsible for forming an execution environment and allocating resources on a computing entity.
PassThroughModule	A computer system that is dedicated to managing pass-through network traffic rather than performing switching.
PowerUnit	A computing resource that is responsible for distributing or controlling power.
Server	A single node computer system such as a desktop, mobile device, or multipurpose server.
Storage Enclosure	
StorageSubsystem	A computer system dedicated to acting as a storage server or array.
Switch	A computer system dedicated to acting as a switch for network traffic.
SystemChassis	A computer system that represents a modular enclosure containing blades.
SystemPool	A pool of networked systems with integrated virtualization and management software that manages the physical platform, the virtualization layer, and the virtual images that run within that set of systems.

SM-Discover

The `FSM-Discover` activity searches for and discovers resources on networks that are connected to the FSM server. The result of the search is stored in the FSM database. Use the `FSM-Get-SystemList` activity to obtain results from the database.

Input parameters

The following table lists the input parameters that can be used with the `FSM-Discover` activity.

```
FSM-Discover Scope<Enum>,(IPAddress<String>),(StartIP<String>,
EndIP<String>),SystemType<Enum>
```

Table 4. FSM-Discover input parameters

Parameter	Description	Example value
Scope	Scope enumeration values: <ul style="list-style-type: none"> • Single IP address • Range of IPv4 addresses 	Single IP address
IPAddress	Represents an IPv4 or IPv6 address. The IPAddress is displayed when Scope=Single IP address .	9.115.252.33, fec0:0:0:5:fcc6:25e2:37cd:bcbd
StartIP	Represents the starting IPv4 address. The StartIP is displayed when Scope=Range of IPv4 addresses .	9.125.90.10
EndIP	Represents the ending IPv4 address. The EndIP is displayed when Scope=Range of IPv4 addresses .	9.125.90.20
SystemType	SystemType values: <ul style="list-style-type: none"> • All • GenericNetworkDevice • ComputerSystem • SystemPool • PowerUnit • Storage Enclosure • SystemChassis • HybridSystem • HardwareManagementConsole • StorageSubsystem • Farm • PassThroughModule • Switch • Server • OperatingSystem • Cluster • Chassis 	All

Published data

The `FSM-Discover` activity does not have published data.

FSM-Get-SystemList

The `FSM-Get-SystemList` activity gets the managed system list according to the system type.

Input parameters

The following table lists the input parameter that can be used with the `FSM-Get-SystemList` activity.

`FSM-Get-SystemList SystemType<Enum>`

Table 5. FSM-Get-SystemList input parameter

Parameter	Description	Example value
SystemType	SystemType: <ul style="list-style-type: none"> • All • GenericNetworkDevice • ComputerSystem • SystemPool • PowerUnit • Storage Enclosure • SystemChassis • HybridSystem • HardwareManagementConsole • StorageSubsystem • Farm • PassThroughModule • Switch • Server • OperatingSystem • Cluster • Chassis 	All

Published data

The following table lists the published data types that can be used with the FSM-Get-SystemList activity.

[Array] SystemName<String,Filter>, SystemType<Enum,Filter>, SystemID<String,Filter>, System<ManagedSystem>

Table 6. FSM-Get-SystemList published data types

Name	Description	Example value
SystemName	System name	FSM_System_1
SystemType	System type values: <ul style="list-style-type: none"> • GenericNetworkDevice • ComputerSystem • SystemPool • PowerUnit • Storage Enclosure • SystemChassis • HybridSystem • HardwareManagementConsole • StorageSubsystem • Farm • PassThroughModule • Switch • Server • OperatingSystem • Cluster • Chassis 	OperatingSystem
SystemID	System Object ID	0x1036
System	A system in ManagedSystem format (name, type, ID), which can be used as direct input for another activity.	(FSM_System_1, OperatingSystem, 0x1036)

FSM-Get-SystemInfo

The `FSM-Get-SystemInfo` activity gets system information.

Input parameters

The following table lists the input parameters that can be used with the `FSM-Get-SystemInfo` activity.

```
FSM-Get-SystemInfo System<ManagedSystem>,[AdditionalSystemID<String>]
```

Table 7. `FSM-Get-SystemInfo` input parameters

Parameter	Description	Example value
System	A system that can be selected from a managed system list or input manually in ManagedSystem format (name, type, ID).	(9.115.252.102, server, 0x3243f)
AdditionalSystemID	Represents the System ID of additional systems. If there are multiple items, separate each system with a comma. This is an optional parameter.	0x1036, 0x156d

Published data

The following table lists the published data type that can be used with the `FSM-Get-SystemInfo` activity.

```
Array[SystemInfo<String>]
```

Table 8. `FSM-Get-SystemInfo` published data

Name	Description	Example value
SystemInfo	System property list	See the example shown below.

```
FSM_9.115.252.128:  
DisplayName: FSM_System_1  
Description: IBM 8731AC1 23FWD91  
SystemBoardUUID: 9A9654A1-BC42-11E0-98AC-E81D7C3E836B  
CurrentTimeZone: -1  
IPv4Address: { '10.3.0.1', 'fe80:0:0:5ef3:fcff:fe5f:c6c9',  
'9.115.252.128', 'fe80:0:0:5ef3:fcff:fe5f:c6c8', '169.254.95.118' }  
HostName: null  
AccessState: Locked  
CommunicationState: 2  
OperatingState: 8
```

FSM-Get-SystemAccessState

The `FSM-Get-SystemAccessState` activity gets the system access state, which indicates whether FSM can communicate or access the target system.

Input parameters

The following table lists the input parameters that can be used with the `FSM-Get-SystemAccessState` activity.

```
FSM-Get-SystemAccessState System<ManagedSystem>, [AdditionalSystemID<String>]
```

Table 9. FSM-Get-SystemAccessState input parameters

Parameter	Description	Example value
System	A system that can be selected from a managed system list or input manually in the ManagedSystem format (name, type, ID).	(9.115.252.102, server, 0x3243f)
AdditionalSystemID	<ul style="list-style-type: none"> The System ID of additional systems. If there are multiple systems, separate each system with a comma. The AdditionalSystemID parameter is optional. 	0x1036, 0x156d

Published data

The following table lists the published data types that can be used with the FSM-Get-SystemAccessState activity.

[Array]SystemName<String>, SystemID<String>, IsConnect<Boolean, Filter>, IsFullAccess<Boolean, Filter>

Table 10. FSM-Get-SystemAccessState published data types

Name	Description	Example value
SystemName	The system name.	FSM_System_1
SystemID	The system ID.	0x1036
IsConnect	FSM can communicate with the target system.	True
IsFullAccess	FSM has full access to the target system.	True

FSM-Access-System

The FSM-Access-System activity grants FSM system access.

Input parameters

The following table lists the input parameters that can be used with the FSM-Access-System activity.

FSM-Access-System Username, Password, System<ManagedSystem>, [AdditionalSystemID<String>]

Table 11. FSM-Access-System input parameters

Parameter	Description	Example value
Username	The user name for the target system.	userid
Password	The password for the target system.	password

Table 11. FSM-Access-System input parameters (continued)

Parameter	Description	Example value
System	A system that can be either selected from a managed system list or input manually in the ManagedSystem format (name, type, ID).	(9.115.252.102, server, 0x3243f)
AdditionalSystemID	<ul style="list-style-type: none"> The System ID of additional systems. If there are multiple systems, separate each system with a comma. The AdditionalSystemID parameter is optional. 	0x1036, 0x156d

Published data

The FSM-Access-System activity does not have published data.

FSM-Get-SystemPatterns

The FSM-Get-SystemPatterns activity gets existing system patterns (Configuration Patterns).

Input parameters

Published data

The following table lists the published data parameters that can be used with the FSM-Get-SystemPatterns activity.

[Array]ID<String, Filter>, Name<String, Filter>, IsInUse<Boolean, Filter>, Dependents<String>, FormFactor<String, Filter>

Table 12. FSM-Get-SystemPatterns published data parameters

Parameter	Description	Example value
ID	The configuration pattern ID.	126
Name	The configuration pattern name.	myPattern2
IsInUse	Specifies the pattern is in use.	true
Dependents	Systems that are assigned by the pattern.	B7ADB1E12D92499AA4E984A35637E8A4_ bay2
FormFactor	FormFactor values: <ul style="list-style-type: none"> 1 Bay Compute Node 1 Bay Dual Compute Node 2 Bay Compute Node 2 Bay Compute and I/O Expansion Node 	1 Bay Compute Node

FSM-Get-SystemProfiles

The FSM-Get-SystemProfiles activity gets the existing system profiles.

Input parameters

There are no input parameters for `FSM-Get-SystemProfiles`.

Published data

The following table lists the published data parameters that can be used with the `FSM-Get-SystemProfiles` activity.

[Array]ID<String, Filter>, Name<String, Filter>, SystemId<String,, Filter>,
SystemName<String, Filter>, IsAssigned<Boolean, Filter>,
PatternId<String, Filter>, PatternName<String, Filter>,
FormFactor<String, Filter>

Table 13. `FSM-Get-SystemProfiles` published data parameters

Parameter	Description	Example value
ID	The system profile ID.	142
Name	The system profile name.	myPattern2-profile2
SystemId	A system that is assigned by this profile.	B7ADB1E12D92499AA4E984A35637E8 A4_bay2
SystemName	The name of the system that is assigned by this profile.	TCT_B062
IsAssigned	Specifies whether the profile is assigned.	true/false
PatternId	Related pattern ID	126
PatternName	Related pattern name	myPattern2
FormFactor	FormFactor values: <ul style="list-style-type: none">• 1 Bay Compute Node• 1 Bay Dual Compute Node• 2 Bay Compute Node• 2 Bay Compute and I/O Expansion Node	1 Bay Compute Node

FSM-Deploy-SystemPattern

FSM uses patterns to create profiles and then deploys the profiles to systems. The `FSM-Deploy-SystemPattern` activity deploys and applies the system pattern to a system.

Input parameters

The following table lists the input parameters that can be used with the `FSM-Deploy-SystemPattern` activity.

`FSM-Deploy-SystemPattern` PatternID<Enum>, TargetSystem<Enum>, Restart<Boolean>

Table 14. FSM-Deploy-SystemPattern input parameters

Parameter	Description	Example value
PatternID	The Configuration Pattern ID and name from <smcli configPatterns show -s>, in the format ID, name.	36, myPattern
TargetSystem	A deployable system list for the selected pattern using the format: ChassisName_bay1 ({system name})_[systemid] If one system is already assigned by a pattern, that system is not shown in the list.	CMM26_bay2(TCT_B062)_[B7ADB1E12D92499AA4E984A35637 E8A4_ bay2]
Restart	<p>Restart values:</p> <ul style="list-style-type: none"> • True. (default value) The server is powered on or restarted, activating both IMM and server/UEFI changes. • False Defers the server restart and activates IMM changes, but server/UEFI changes are deferred until the next server restart. <ul style="list-style-type: none"> - --full - --partial <p>Note: This parameter applies only to System x servers.</p>	True

Published data

The FSM-Deploy-SystemPattern activity does not have published data.

FSM-Unassign-SystemProfile

The FSM-Unassign-SystemProfile activity unassigns the profile from the system it is currently assigned to.

Input parameters

The following table lists the input parameter that can be used with the FSM-Unassign-SystemProfile activity.

FSM-Unassign-SystemProfile ProfileID<Enum>

Table 15. FSM-Unassign-SystemProfile input parameter

Parameter	Description	Example value
ProfileID	A profile list with a status is shown as <i>Profile Assigned</i> using the format: <i>id, name or id.</i> <smcli configPatterns show -p -v>	<ul style="list-style-type: none"> • 142, myPattern2-profile1 • 142

Published data

The FSM-Unassign-SystemProfile activity does not have published data.

FSM-Monitor-Event

The FSM-Monitor-Event activity monitors system events.

Input parameters

The following table lists the input parameters that can be used with the `FSM-Monitor-Event` activity.

`FSM-Monitor-Event` System, [AdditionalSystemID], EventType

Table 16. `FSM-Monitor-Event` input parameters

Parameter	Description	Example value
EventType	<p>The following list contains predefined event types based on the event filters in the FSM using the <code>lsevtfltr</code> command:</p> <ul style="list-style-type: none"> • All Events • Fatal Events • Critical Events • Minor Events • Warning Events • Informational Events • Unknown Events • Hardware Predictive Failure Alert Events <p>Note: This is not the complete list of event filters.</p>	Critical Events
System	<ul style="list-style-type: none"> • A system that can be selected from the managed system list or input manually in the ManagedSystem format (name, type, ID). • The System parameter is optional. • If there are no input parameters for System and AdditionalSystemID, the <code>FSM-Monitor-Event</code> activity monitors events for all systems. 	(9.115.252.102, server, 0x3243f)
AdditionalSystemID	<ul style="list-style-type: none"> • The System ID of additional systems. • If there are multiple systems, separate each system with a comma. • The AdditionalSystemID parameter is optional. 	0x1036, 0x156d

Published data

The following table lists the published data parameters that can be used with the `FSM-Monitor-Event` activity.

[Array]EventID<int>, GenerateDate<String>, ComponentCategory<String>, ComponentType<String>, ConditionType<String>, ConditionValue<String>, Mode<Enum>, Severity<Enum>, ResourceOID<String>, EventText<String>, EventDetails<String>

Table 17. `FSM-Monitor-Event` published data parameters

Parameter	Description	Example value
EventID	A unique value must be used for an event to be used as REST URI identifier.	1809
EventText	The text description of the event.	This is a critical event.

Table 17. FSM-Monitor-Event published data parameters (continued)

Parameter	Description	Example value
Severity	Indicates the severity level of an event. A severity value of 6-255 indicates that the severity level was not specified. Valid severity level values are: <ul style="list-style-type: none"> • Critical • Fatal • Harmless • Minor • Unknown • Warning • 6-255 	Critical
SystemID	The identifier for the resource in hexadecimal format.	0x1306
Mode	Indicates the mode. Mode values: <ul style="list-style-type: none"> • ALERT • RESOLUTION 	ALERT
GenerateDate	The date and time that the information was generated.	9/25/2013 2:10:07 AM
ComponentCategory	Identifies the category of the component in the data model that this event applies to. Managed Resource.Managed System Resource.Logical Resource.System	Managed Resource.Managed System Resource.Logical Resource.System
ComponentType	Identifies the type of component in the data model that this event applies to. Managed Resource.Managed System Resource.Logical Resource.System	System
ComponentInstance	The component instance that this event is associated with, in other words, the event target.	0x1306
ConditionType	The condition being signaled by the event. Condition types are specific to the type of event.	User ID Session
ConditionValue	The value of the condition being signaled by the event. A <i>User ID Session</i> could be <i>User ID Logged Off</i> .	User ID Logged Off

FSM-Monitor-Status

The `FSM-Monitor-Status` activity monitors system status.

Input parameters

The following table lists the input parameters that can be used with the `FSM-Monitor-Status` activity.

`FSM-Monitor-Status` System, [AdditionalSystemID], StatusCategory<Enum>

Table 18. FSM-Monitor-Status input parameters

Parameter	Description	Example value
System	A system that can be selected from a managed system list or input manually in a <i>ManagedSystem</i> format (name, type, ID).	(9.115.252.102, server, 0x3243f)
AdditionalSystemID	<ul style="list-style-type: none"> The System ID of additional systems. If there are multiple systems, separate each system with a comma. The AdditionalSystemID parameter is optional. 	0x1036, 0x156d
EventType	<ul style="list-style-type: none"> Indicates that either a new entry was added or an existing entry was deleted from the status set. The default value is <i>Added</i>. EventType values: <ul style="list-style-type: none"> All Added Removed 	Added
Severity	The default value is <i>All</i> . Severity values: <ul style="list-style-type: none"> All Fatal Critical Minor Warning Informational Unknown 	Critical
StatusCategory	Predefined status category Types. The default value is <i>All</i> . StatusCategory values: <ul style="list-style-type: none"> All FSMProblemsStatusCategory HardwareStatusCategory ComplianceStatus ThresholdStatusCategory StoragePoolStatusCategory DPSMStatusCategory StorageSystemPool UpdatesStatusCategory ServiceStatusCategory CCUStatusCategory LocalHealthStatus SharedStoragePoolStatusCategory 	HardwareStatusCategory

Published data

The following table lists the published data parameters that can be used with the `FSM-Monitor-Status` activity.

[Array]StatusID<String>, Severity<Enum>, CategoryID<String>, EventType<String>, ResourceOID<String>

Table 19. FSM-Monitor-Status published data parameters

Parameter	Description	Example value
StatusID	Identifies the specific status entry.	
Name		

Table 19. FSM-Monitor-Status published data parameters (continued)

Parameter	Description	Example value
Severity	Severity	Critical
Details	Status details	
Date	Status date and time	9/23/2013 3:10:17 AM
CategoryID	Identifies the status category.	LedStatusCategory
EventType	Indicates that either a new entry was added or an existing entry was deleted from the status set. EventType values: <ul style="list-style-type: none"> • Added • Removed 	Added
SystemID	Identifies the resource on which the status change occurred.	0x1306
SystemName		FSM_System_1

FSM-Get-ActiveStatus

The `FSM-Get-ActiveStatus` activity gets the active status of the target system.

Input parameters

The following table lists the input parameters that can be used with the `FSM-Get-ActiveStatus` activity.

`FSM-Get-ActiveStatus` System, [AdditionalSystemID], StatusCategory<Enum>

Table 20. FSM-Get-ActiveStatus input parameters

Parameter	Description	Example value
System	A system that can be selected from a managed system list or input manually in a ManagedSystem format (name, type, ID).	(9.115.252.102, server, 0x3243f)
StatusCategory	Predefined status category types (from: <code>/ibm/director/rest/status/categories/</code>): <ul style="list-style-type: none"> • All • FSMProblemsStatusCategory • HardwareStatusCategory • ComplianceStatus • ThresholdStatusCategory • StoragePoolStatusCategory • DPSMStatusCategory • StorageSystemPool • UpdatesStatusCategory • ServiceStatusCategory • CCUStatusCategory • LocalHealthStatus • SharedStoragePoolStatusCategory 	HardwareStatusCategory

Published data

The following table lists the published data parameters that can be used with the `FSM-GetActive-Status` activity.

<Array>SystemID<String>, StatusID<String>, CategoryID<String>, Filter<, DisplayName<String>, Severity<Enum, Filter>, ComponentName<String>, Details<String>, Date<String>

Table 21. FSM-GetActive-Status published data parameters

Parameter	Description	Example value
SystemID	System OID	0x3b7c (from decimal to hexadecimal)
StatusID	Status ID	Information:476473,476473
CategoryID	Category ID	LedStatusCategory
DisplayName	Status name	LED.Status.Informational
Severity	Severity warnings: <ul style="list-style-type: none"> • Fatal • Critical • Minor • Warning • Informational • Unknown 	Critical
ComponentName	The component to which the status belongs.	LED Status
Details	Status details	LED Status detail
Date	Status date and time	9/22/2013 2:14:27 AM

FSM-Collect-Inventory

The `FSM-Collect-Inventory` activity collects the system inventory, which can then be retrieved by the `FSM-Get-Inventory` activity.

Input parameters

The following table lists the input parameters that can be used with the `FSM-Collect-Inventory` activity.

`FSM-Collect-Inventory` System, InventoryType<Enum>

Table 22. FSM-Collect-Inventory input parameters

Parameter	Description	Example value
System	A system that can be selected from a managed system list or input manually in a ManagedSystem format (name, type, ID).	(9.115.252.102, server, 0x3243f)
InventoryProfile	InventoryProfile values: <ul style="list-style-type: none"> • All Inventory • All Hardware Inventory • All Software Inventory • Basic System Information • ... 	All Hardware Inventory

Published data

The `FSM-Collect-Inventory` activity does not have published data.

FSM-Get-Inventory

The `FSM-Get-Inventory` activity gets the system inventory that is collected by the `FSM-Collect-Inventory` activity. The inventory result can be viewed in either plain text or in html format.

Prerequisite

Before the `FSM-Get-Inventory` activity can be used, the system must first be discovered using the `FSM-Discover` activity. For more information, see [“SM-Discover” on page 26](#).

Input parameters

The following table lists the input parameters that can be used with the `FSM-Get-Inventory` activity.

`FSM-Get-Inventory System<ManagedSystem>, InventoryType<Enum>`

Table 23. `FSM-Get-Inventory` input parameters

Parameter	Description	Example value
System	A system that can be selected from a managed system list or input manually in a ManagedSystem format (name, type, ID).	(9.115.252.102, server, 0x3243f)
InventoryProfile	InventoryProfile values: <ul style="list-style-type: none">• All Inventory• All Hardware Inventory• All Software Inventory• Basic System Information• ...	All Hardware Inventory

Published data

The following table lists the published data parameters that can be used with the `FSM-Get-Inventory` activity.

`SystemId<String>, Inventory(txt)<String>, Inventory(html)<String>`

Table 24. `FSM-Get-Inventory` published data parameters

Parameter	Description	Example value
SystemId	System OID	0x1306
Inventory(txt)	A system inventory list based on the selected inventory profile, in TXT format.	
Inventory(html)	A system inventory list based on the selected inventory profile, in HTML format. (readable format)	

FSM-List-Chassis

The `FSM-List-Chassis` activity lists all of the known chassis.

Input parameters

Enter `FSM-List-Chassis` as the input parameter.

Published data

The following table lists the published data parameters that can be used with the `FSM-List-Chassis` activity.

```
[Array]ID<String, Filter>, Name<String, Filter>,  
SerialNumber<String, Filter>, UUID<String, Filter>,  
IPv4<String, Filter>, IPv6<String, Filter>, State<String,  
Filter>
```

Table 25. `FSM-List-Chassis` published data parameters

Parameter	Description	Example value
ID	Chassis object ID	0x77E3C
Name	Chassis name	my chassis
SerialNumber	Serial number	23ENY12
UUID	System Board UUID	458E3A3222CD11DD890300145EE13268
IPv4	Chassis IPv4 address	9.115.252.25
IPv6	Chassis IPv6 address	fec0:0:0:5:5ef3:fcff:fe25:edd5
State	Managed state	Managed/Sibling Managed/Unmanaged

FSM-Restart-CMM

The `FSM-Restart-CMM` activity can either restart or initiate a failover of one or both of the CMMs of a Flex System Chassis.

Input parameters

The following table lists the input parameters that can be used with the `FSM-Restart-CMM` activity.

```
FSM-Restart-CMM, ManagedSystem>, RestartOperation<Enum>
```

Table 26. `FSM-Restart-CMM` input parameters

Parameter	Description	Example value
CMM	A (CMM) system that can be selected from the list browser. <ul style="list-style-type: none">The system uses the format (name, type, ID).The system must be chassis.	(9.115.252.102, systemchassis, 0x3243f)
RestartOperation	RestartOperation values: <ul style="list-style-type: none">RestartPrimary. Restarts the primary CMM. <i>RestartPrimary</i> is the default.RestartStandby. Restarts the standby CMMSwitchOverCMMCalledByPrimary. Failover to the standby CMM and restart the primary CMMSwitchOverCMMCalledByStandBy. Reboots the primary CMM as the non-active module, then switches over to the standby CMMVirtualReseatPrimary. Virtually reseal the primary CMM	RestartPrimary

Published data

The `FSM-Restart-CMM` activity does not have published data.

FSM-Run-Task

The `FSM-Run-Task` activity executes noninteractive tasks that are available to the target system.

Non-interactive tasks

`FSM-Run-Task` noninteractive tasks include:

- LED Flash
- LED Off
- LED On
- Power Off Now
- Power On
- Shut Down
- Shut Down and Power Off
- Restart Now
- Wake on LAN
- Restart Primary CMM
- Restart Standby CMM

Input parameters

The following table lists the input parameters that can be used with the `FSM-Run-Task` activity.

`FSM-Run-Task System<ManagedSystem>, Task<Enum>`

Table 27. `FSM-Run-Task` input parameters

Parameter	Description	Example value
System	A system that can be selected from a managed system list or input manually in a <code>ManagedSystem</code> format (name, type, ID).	(9.115.252.102, server, 0x3243f)
Task	Task values: <ul style="list-style-type: none">• LED Flash• LED Off• LED On• Power Off Now• Power On• Shut Down• Shut Down and Power Off• Restart Now• Wake on LAN• Restart CMM	Shut Down

Published data

The `FSM-Run-Task` activity does not have published data.

FSM-Run-SMCLI

The `FSM-Run-SMCLI` activity can run any `smcli` command on FSM. Manually enter the `smcli` command and its parameters.

Input parameter

The following table lists the input parameter that can be used with the `FSM-Run-SMCLI` activity.

`FSM-Run-SMCLI SmcliCommand<String>`

Table 28. `FSM-Run-SMCLI` input parameters

FSM-Run-SMCLI

Parameter	Description	Example value
SmcliCommand	Full <code>smcli</code> command with parameters	<code>smcli lssys -n mySystem</code>

Published data

The following table lists the published data parameters that can be used with the `FSM-Run-SMCLI` activity.

`ExitCode<Int>`, `SmcliOutput<String>`

Table 29. `FSM-Run-SMCLI` published data parameters

Parameter	Description	Example value
ExitStatus	<code>smcli</code> command exit status	0
SmcliOutput	<code>smcli</code> command console output	

FSM-Upload-File

The `FSM-Upload-File` activity uploads a local file (or folder) to the FSM server using the `scp` command. The file or folder is uploaded to the `\home\userid\` path on the FSM. This activity fails if a the file with the same name already exists on the FSM.

Input parameters

The following table lists the input parameters that can be used with the `FSM-Upload-File` activity.

`FSM-Upload-File SourceType<Enum>`, (`LocalFile<String>`),
(`LocalFolder<String>`) (`Overwrite<Boolean>`)

Table 30. `FSM-Upload-File` input parameters

Parameter	Description	Example value
SourceType	SourceType values: <ul style="list-style-type: none">• File• Folder	File
LocalFile	The local folder path is displayed when SourceType is <i>File</i>	<code>c:\file1.txt</code>
LocalFolder	The local folder path is displayed when SourceType is <i>Folder</i> .	<code>c:\folder1</code>
Overwrite	Overwrites the file that has the same name. <ul style="list-style-type: none">• The default value is <i>false</i>.• When the SourceType= <i>File</i>, the local folder path is displayed.	False

Published data

The following table lists the published data parameters that can be used with the `FSM-Upload-File` activity.

[Array]

Table 31. FSM-Upload-File published data parameters

Parameter	Type	Description	Example value
Destination file path	string	File path on FSM	\home\UIMTEST\file1.txt
Destination folder path	string	Folder path on FSM	\home\UIMTEST\folder1

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