



# Upgrade Sequencing for System Center 2012 Service Pack 1

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Published: April 24, 2014

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## Applies To

System Center 2012 Service Pack 1 (SP1)

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## Revision History

Release Date	Changes
January 15, 2013	Original release of this guide.
January 23, 2013	Added the topic "Understanding Upgrade Sequencing".
February 7, 2013	Updated the System Center Integration Points map in Appendix B and corrected an error in the Current Update Rollup table.
June 28, 2013	Minor correction, changed Service Manager to System Center 2012 SP1.
March 10, 2014	Updated the UR table. Added content that explains why you must upgrade Configuration Manager in the order given.
March 20, 2014	Provided a link to information about Cumulative Updates for Configuration Manager.
April 24, 2014	Updated the Update Rollup table with the release of UR6.





# Contents

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Upgrade Sequencing for System Center 2012 SP1 .....	6
Orchestrator .....	9
Service Manager .....	10
Data Protection Manager .....	11
Operations Manager .....	11
Configuration Manager.....	12
Virtual Machine Manager and App Controller .....	13
Understanding Upgrade Sequencing.....	14
Appendix A .....	17
Appendix B .....	20

# Upgrade Sequencing for System Center 2012 SP1

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In an environment that includes two or more components of Microsoft System Center 2012, the order in which you upgrade those components to System Center 2012 Service Pack 1 (SP1) is very important. The following is a list of the System Center 2012 SP1 components that are affected by upgrade sequencing:

1. Orchestrator
2. Service Manager
3. Data Protection Manager (DPM)
4. Operations Manager
5. Configuration Manager
6. Virtual Machine Manager (VMM)
7. App Controller

The list of components is presented in order of upgrade priority; the first component to be upgraded is at the top of the list. If you have only one of these System Center components in your environment, then you can proceed directly to the upgrade guide for that component. Otherwise, follow the steps in this guide to make sure that you perform the upgrades in the correct sequence.

The following sections in this guide show you how to prepare for upgrading two or more System Center components and are presented in order of upgrade precedence. Start with the section in this guide for the component you have at the highest position on the list. For example, if you have Operations Manager and VMM, start with the Operations Manager section first, as it is higher in the list, and then proceed to the VMM section.

Read the section in this guide for each component you have to help you prepare for an upgrade before referring to the specific component upgrade guide.

Except for the case of VMM and App Controller, you do not need to upgrade additional components at the same time. As long as you perform the upgrades in the order listed, an upgraded component will continue to function with the other components that have yet to be upgraded.

Except for VMM, which requires Windows Server 2012, it is assumed that no other operating system upgrades have taken place before or during this upgrade. Upgrade the various System Center components before you upgrade the operating system. In addition, we assume that no upgrades to SQL Server have taken place. You can upgrade to SQL Server 2012 after you have upgraded your System Center components.

We recommend that you update all of the System Center 2012 components with the most current update rollups, or newer, if available. The update rollups that were current as of the time this document was published are shown in the following table.



## Note

For information about the cumulative updates for Configuration Manager, see TechNet article [Update System Center 2012 Configuration Manager](#).

Component	Current Update Rollup
Orchestrator	UR6
Service Manager	UR6
DPM	UR6
Operations Manager	UR6
VMM	UR6
App Controller	UR6

## Notes about System Center Versions

In April 2012, Microsoft released the first version of the System Center product, System Center 2012, and is referred to as System Center 2012 in this guide. The next version of System Center product we released was System Center 2012 Service Pack 1 (SP1), the version that you are reading about now. This version is referred to as System Center 2012 SP1 in this guide.

## Notes about Orchestrator

If Orchestrator is part of your environment, then Orchestrator will be the first component that you upgrade. You need to be aware that any System Center component integration packs (IP) that you installed on System Center 2012 will not function with System Center 2012 SP1 components. When upgrading Orchestrator, you will do so leaving the System Center 2012 IPs in place so that current functionality continues until the other components are upgraded. When you upgrade subsequent components, for example System Center 2012 – Service Manager, you will uninstall the System Center 2012 IP. After your component has been upgraded, go back to the Orchestrator computer and install the SP1 version of the IP. This sequence is detailed both in this guide and in the Upgrade Guide for Orchestrator.



### Note

When you install an upgrade of an integration pack, you must first uninstall any earlier version of the integration pack from all Runbook servers and Runbook Designers. You then register and deploy the upgrade of the integration pack. If you do not uninstall the previous version of the integration pack prior to registering and deploying the upgrade version, the upgrade version will fail.

## Notes about Configuration Manager

Configuration Manager shares connectors with Operations Manager, has an integration pack with Orchestrator, and has a management pack with Operations Manager. Configuration Manager must be upgraded after Orchestrator, Operations Manager, and Service Manager to ensure continued operations with the connections it shares with other components. Configuration Manager agents for System Center 2012 do not support managing Windows Server 2012 operating systems so Configuration Manager will need to be upgraded before Virtual Machine Manager since Virtual Machine Manager has a mandatory requirement on Windows Server 2012.

For example, if you were to upgrade Configuration Manager before Service Manager, the connectors for Service Manager would fail and you would lose that connector functionality until Service Manager is upgraded to System Center 2012 SP1. As another example, if you were to upgrade

Virtual Machine Manager to System Center 2012 SP1 before Configuration Manager you would not be able to manage the VMM management server as the Configuration Manager for System Center 2012 does not support Windows Server 2012.

## Notes about Operations Manager

After you upgrade Operations Manager, you might have to install the Operations Manager console on some of the down-level components.

There are some new features that are available with Operations Manager that are only available when using Windows Server 2012. It is our recommendation that you first upgrade Operations Manager on the existing operating system before you upgrade to Windows Server 2012.

## Notes about DPM

There are some new features that are available with Data Protection Manager (DPM) that are only available when using Windows Server 2012. It is our recommendation that you first upgrade DPM on the existing operating system before you upgrade to Windows Server 2012.

## Notes about Service Provider Foundation

The current release of Service Provider Foundation provides access to Virtual Machine Manager Web Service, which interacts with VMM. Do not install Service Provider Foundation until all of the other System Center components have been upgraded.

## Upgrade Sequencing Topics

- [Orchestrator](#)  
Describes the sequence for upgrading Orchestrator.
- [Service Manager](#)  
Describes the sequence for upgrading Service Manager.



- [Data Protection Manager](#)  
Describes the sequence for upgrading Data Protection Manager (DPM).
- [Operations Manager](#)  
Describes the sequence for upgrading Operations Manager.
- [Configuration Manager](#)  
Describes the sequence for upgrading Configuration Manager.
- [Virtual Machine Manager and App Controller](#)  
Describes the sequence for upgrading Virtual Machine Manager (VMM) and App Controller.
- [Understanding Upgrade Sequencing](#)  
Describes the dependencies that exist between the System Center 2012 components to help you determine when to follow the upgrade sequence.
- [Appendix A](#)  
Describes the connections between the System Center 2012 components.
- [Appendix B](#)  
A diagram showing the connections between System Center 2012 components

## Orchestrator

System Center 2012 - Orchestrator is first in the list of upgrade precedence.

### ► Orchestrator Upgrade Sequence

1. Put all Orchestrator servers into an Operations Manager maintenance mode
2. Upgrade Orchestrator using the procedures outlined in the Upgrade Guide for Orchestrator.

### ► Post-Orchestrator Upgrade

1. Take the Orchestrator servers out of maintenance mode.



#### **Note**

Do not upgrade the Orchestrator management packs on Operations Manager until after Operations Manager has been upgraded. Existing System Center 2012 - Orchestrator management packs should continue to work.

2. Make sure that the following connections with Operations Manager continue to function:
  - Integration pack
  - Operations Manager agent
  - Operations Manager console (for IP communication)
3. Make sure that the following connections with Service Manager continue to function:
  - Runbook connector
  - Integration pack

4. Make sure that the following connections with Configuration Manager continue to function:
  - Integration pack
  - Configuration Manager agent
5. Make sure that the IP connection with VMM continues to function.
6. Make sure that the IP connection with DPM continues to function.

## Service Manager

System Center 2012 – Service Manager is second in the list of upgrade precedence.

### ► Service Manager Upgrade Sequence

1. Put all Service Manager servers into an Operations Manager maintenance mode
2. On the computer hosting the Orchestrator Deployment Manager, uninstall the IP for System Center 2012 – Service Manager.
3. On the computer hosting the Service Manager management server, upgrade the SQL Server 2008 R2 AMO to SQL Server 2012 AMO.



#### **Note**

SQL Server 2012 AMO is compatible with SQL Server 2008 R2 Analysis Services.

4. Upgrade Service Manager using the procedures outlined in the Upgrade Guide for Service Manager.

### ► Post-Service Manager Upgrade

1. On the computer hosting the Orchestrator Deployment Manager, install the SP1 version of the Service Manager IP.
2. Take the Service Manager servers out of maintenance mode.
3. Make sure that the following connections with Operations Manager continue to function:
  - Connectors (2)
  - Management pack
  - Agentless monitoring
4. Make sure that the following connections with Configuration Manager continue to function:
  - Connectors (2)
  - Configuration Manager agent
5. Make sure that the following connections with Orchestrator continue to function:
  - Integration pack
  - Runbook connector

# Data Protection Manager

System Center 2012 – Data Protection Manager (DPM) is third in the list of upgrade precedence.

## ► Data Protection Manager Upgrade Sequence

1. Put all DPM servers into an Operations Manager maintenance mode
2. On the computer hosting the Orchestrator Deployment Manager, uninstall the IP for System Center 2012 – Data Protection Manager.
3. Upgrade DPM using the procedures outlined in the Upgrade Guide for DPM.

## ► Post-Service Manager Upgrade

1. On the computer hosting the Orchestrator Deployment Manager, install the SP1 version of the Data Protection Manager IP.
2. Take the DPM servers out of maintenance mode.
3. Make sure that the following connections with Operations Manager continue to function:
  - DPM central console client-side component connector
  - Management pack
  - Agent(s)
4. Make sure that the Configuration Manager agent continues to function with Configuration Manager.
5. Make sure that the DPM IP continues to function with Orchestrator.
6. Make sure that DPM can continue to backup all items previously targeted prior to the upgrade.

# Operations Manager

System Center 2012 – Operations Manager is fourth in the list of upgrade precedence.

## ► Operations Manager Upgrade Sequence

1. If it exists, remove the VMM-to-Operations Manager Integration Pack.



### Note

VMM will not be monitored during the upgrade.

2. Remove the System Center 2012 version of the Operations Manager console from all VMM and Orchestrator servers.
3. On the computer hosting the Orchestrator Deployment Manager, uninstall the IP for System Center 2012 – Operations Manager.

4. Upgrade the following Operations Manager parts in the order listed using the procedures outlined in the Upgrade Guide for Operations Manager.
  - At least one Operations Manager management server.
  - Operations Manager database.
  - Any remaining Operations Manager management servers.
  - Any Operations Manager consoles.
  - Any Operations Manager agents.

### **Post-Operations Manager Upgrade**

1. On the computer hosting the Orchestrator Deployment Manager, uninstall the IP for System Center 2012 – Operations Manager.
2. Install the System Center 2012 Service Pack 1 (SP1) version of the Operations Manager console on Orchestrator and VMM.
3. Re-establish connectivity between System Center 2012 – Virtual Machine Manager (VMM) and System Center 2012 – Operations Manager SP1.
4. Register the Operations Manager SP1 integration packs on System Center 2012 - Orchestrator SP1.
5. Make sure that the Configuration Manager agent continues to function.
6. Make sure that the following connections with VMM continue to function:
  - Management pack
  - Integration using the Operations Manager console (for IP communication)
7. Make sure that the following connections with Service Manager continue to function:
  - Connectors (2)
  - Management pack
  - Agentless monitoring
8. Make sure that the following connections with DPM continue to function:
  - Management pack
  - Central Console Server components
9. Make sure that the following connections with Orchestrator continue to function:
  - Management pack
  - Integration Pack (Operations Manager console (SDK) connection required for IP)
10. Make sure that the management pack continues to function with App Controller.

## **Configuration Manager**

System Center 2012 Configuration Manager is fifth in the list of upgrade precedence.

### **Configuration Manager Upgrade Sequence**

1. Put all Configuration Manager servers into an Operations Manager maintenance mode.
2. On the computer hosting the Orchestrator Deployment Manager, uninstall the IP for Configuration Manager.
3. Upgrade Configuration Manager using the procedures outlined in the Upgrade Guide for Configuration Manager.

#### **Post–Configuration Manager Upgrade**

1. Take the Configuration Manager servers out of maintenance mode.
2. Register the System Center 2012 – Configuration Manager SP1 integration packs on System Center 2012 - Orchestrator SP1
3. Make sure that the following connections with Configuration Manager continue to function:
  - Configuration Manager management agents
  - System Center 2012 Endpoint Protection agents on the component servers
4. Make sure that the two Service Manager connectors continue to function.
5. Make sure that the IP continues to function with Orchestrator.
6. Make sure that the Operations Manager management pack continues to function:

## **Virtual Machine Manager and App Controller**

System Center 2012 – Virtual Machine Manager (VMM) and System Center 2012 - App Controller are the final two components to be upgraded. Because of the hard coded dependencies between the versions of VMM and App Controller, these two components must be upgraded at the same time.

#### **VMM and App Controller Upgrade Sequence**

1. On the Operations Manager computer, place all monitored VMM and App Controller components into maintenance mode.
2. On the computer hosting the Orchestrator Deployment Manager, uninstall the IP for Virtual Machine Manager.
3. Upgrade VMM using the procedures outlined in the Upgrade Guide for VMM.
4. Upgrade App Controller using the procedures outlined in the Upgrade Guide for App Controller.

#### **Post-VMM and App Controller Upgrades**

1. On the Orchestrator computer, install the VMM System Center 2012 SP1 integration pack.
2. On the Operations Manager computer, in the Operations Manager console, import the VMM System Center 2012 SP1 and App Controller System Center 2012 SP1

- management packs.
3. On the VMM computer, make sure that the following connection points continue to function:
    - a. Make sure that the following connections with Operations Manager continue to function:
      - Management pack
      - Operations Manager console
    - b. Make sure that the agents continue to function with Configuration Manager.
    - c. Make sure that the connector continues to function with Service Manager
    - d. Make sure that the IP continues to function with Orchestrator
  4. On the App Controller computer, make sure that the following connection points continue to function:
    - a. Make sure that the agents continue to function with Configuration Manager.
    - b. Make sure that the VMM Administrators Console continues to function with VMM.
    - c. Make sure that the Windows Azure SDK continues to function with Windows Azure.
    - d. Make sure that the agents continue to function with Operations Manager.

## Understanding Upgrade Sequencing

This section describes the connections that exist between the System Center 2012 components. This information can help you determine when to follow the upgrade sequence. In a mixed environment of System Center 2012 and System Center 2012 SP1, not all of the components can integrate with each other. The following table outlines what integration levels are supported and what will work between a System Center 2012 and System Center 2012 SP1 component.

	Orchestrator 2012	Service Manager 2012	DPM 2012	Operations Manager 2012	Configuration Manager 2012	VMM 2012	App Controller 2012
Orchestrator 2012 SP1	No	Yes	Yes	Yes	Yes	Yes	Yes
Service Manager 2012 SP1	No	No	Yes	Yes	Yes	Yes	Yes
DPM 2012 SP1	No	No	No	Yes	Yes	Yes	Yes
Operations Manager 2012 SP1	No	No	No	No	Yes	Yes	Yes

Configuration Manager 2012 SP1	No	No	No	No	No	Yes	Yes
VMM 2012 SP1	No	No	No	No	No	No	No

The following sections provide specifics about each component.

## Orchestrator

Orchestrator shares connections with all System Center components through integration packs and shares a connector with Service Manager. In general, integration packs are not forward compatible, however, when Orchestrator is upgraded to System Center 2012 SP1, you can continue to run the legacy System Center 2012 integration packs. If the component that you plan to upgrade shares a connection with Orchestrator through an integration pack, you should upgrade Orchestrator first so that Orchestrator can support the component.

### Example

If you upgrade any System Center component before Orchestrator, the 2012 integration pack for that component will no longer work. Additionally, you will not be able to load the new component's System Center 2012 SP1 integration packs in Orchestrator 2012.

## Service Manager

Service Manager shares connectors with Operations Manager, Orchestrator, and Configuration Manager. As a rule connectors are not forward compatible. However if Orchestrator is first in the upgrade sequence, an Orchestrator connector will continue to run. If you want to upgrade Operations Manager and Configuration Manager, you must upgrade Service Manager first if you want Service Manager operations to continue during the upgrades.

### Example

If you were to upgrade Operations Manager and Configuration Manager to SP1 before Service Manager, then when you attempt to re-establish a connection, the connectors will not work properly or will completely fail, unless as noted above, if Orchestrator is the first component in the upgrade sequence. If you encounter this situation you should upgrade Service Manager to System Center 2012 SP1.

## Data Protection Manager

There is some flexibility on the placement of DPM in the upgrade sequence. Some of the placement constraints are related to DPM's Administrator Console that relies on Operations Manager. The Administrator Console is not forward compatible therefore, if the Administrator

Console will be needed after the upgrade, you must upgrade DPM before you upgrade Operations Manager. If there is no Administrator Console integration with Operations Manager then DPM must be upgraded after Orchestrator and prior to Virtual Machine Manager. This will ensure continued integration with Orchestrator post upgrade and deployment of the DPM agent for Windows Server 2012 that was added in Service Pack 1.

## **Examples**

1. Administrator Console will no longer function if you upgrade Operations Manager to SP1 prior to DPM.
2. If you upgrade Virtual Machine Manager to System Center 2012 SP1 prior to DPM, you will not be unable to use DPM to load an agent using the upgraded Virtual Machine Manager server because in System Center 2012 SP1, the DPM agent is not supported on Windows Server 2012. In addition, you will not be able to back up Virtual Machine Manager until upgrading DPM.

If you encounter these situations you should upgrade DPM to System Center 2012 SP1.

## **Operations Manager**

Operations Manager integrates with all System Center components through management packs. Operations Manager also has SDK connections with Service Manager, Orchestrator, and Virtual Machine Manager. Management packs are not forward compatible with Service Manager and Orchestrator. The Operations Manager management packs will continue to monitor Service Manager and Orchestrator when Service Manager and Orchestrator are upgraded first and second in sequence. In addition, Operations Manager must be upgraded prior to Virtual Machine Manager due to the mandatory Windows Server 2012 operating system requirement for Virtual Machine Manager and the Operations Manager 2012 Console as SDK integration is not supported on Windows Server 2012.

## **Examples**

1. Management packs for SP1 will not load in Operations Manager 2012, except for those noted above. You will be able to monitor those components after Operations Manager is upgraded.
2. If you upgrade Virtual Machine Manager to System Center 2012 SP1 before Operations Manager then the Operations Manager console in System Center 2012 SP1 will not load on Windows Server 2012. This means is that you will be unable re-establish integration between Virtual Machine Manager and Operations Manager.

If you encounter these situations you should upgrade Operations Manager to System Center 2012 SP1.

## **Configuration Manager**

Configuration Manager shares connectors with Operations Manager, has an integration pack with Orchestrator, and has a management pack with Operations Manager. Configuration Manager must be upgraded after Orchestrator, Operations Manager, and Service Manager to ensure



continued operations with the connections it shares with other components. Configuration Manager agents for System Center 2012 do not support managing Windows Server 2012 operating systems so Configuration Manager will need to be upgraded before Virtual Machine Manager since Virtual Machine Manager has a mandatory requirement on Windows Server 2012.

## Examples

1. If you upgrade Configuration Manager before Service Manager, the connectors for Service Manager will fail and you will lose that connector functionality until Service Manager is upgraded to System Center 2012 SP1.
2. If you upgrade Virtual Machine Manager to System Center 2012 SP1 before Configuration Manager you will not be able to manage the VMM management server as the Configuration Manager for System Center 2012 does not support Windows Server 2012.

If you encounter these situations you should upgrade Configuration Manager to System Center 2012 SP1.

## Virtual Machine Manager and App Controller

Virtual Machine Manager shares connections with Service Manager, Orchestrator, Configuration Manager, and Operations Manager. Virtual Machine Manager has an operating system requirement to run on Windows Server 2012. DPM and Configuration Manager manage and back up the Virtual Machine Manager server. Neither of those agents are forward compatible to manage and back up Windows Server 2012. The Operations Manager 2012 console, which is required for VMM integration, is not forward compatible to run on Windows Server 2012 so Operations Manager must be upgraded first. App Controller has a hard-coded version dependency on the version of Virtual Machine Manager, therefore Virtual Machine Manager and App Controller must always be at the same version level to ensure that integration continues to function.

## Examples

1. If you upgrade Virtual Machine Manager to System Center 2012 SP1 prior to any other component you will lose the ability to back up with DPM, monitor and integrate with Operations Manager, manage with Configuration Manager, orchestrate run books with Orchestrator, and you will lose integration with Service Manager.
2. If you upgrade Virtual Machine Manager to System Center 2012 SP1 and don't upgrade App Controller at the same time you will be unable to re-establish the integration until App Controller is upgraded.

If you encounter these situations you should upgrade all components that are impacted to System Center 2012 SP1.

## Appendix A

The following table lists the connection points between various System Center 2012 SP1 components.

## Orchestrator

Operations Manager	<ul style="list-style-type: none"><li>• Integration Pack</li><li>• Operations Manager Agent</li><li>• Operations Manager Console (for IP communication)</li></ul>
Service Manager	<ul style="list-style-type: none"><li>• Runbook Connector</li><li>• Integration Pack</li></ul>
Configuration Manager	<ul style="list-style-type: none"><li>• Integration Pack</li><li>• CM Agent</li></ul>
Virtual Machine Manager	<ul style="list-style-type: none"><li>• Integration Pack</li></ul>
Data Protection Manager	<ul style="list-style-type: none"><li>• Integration Pack</li></ul>

## Service Manager

Configuration Manager	<ul style="list-style-type: none"><li>• Connectors (2)</li><li>• Configuration Manager agent</li></ul>
Operations Manager	<ul style="list-style-type: none"><li>• Connectors (2)</li><li>• Management Pack</li><li>• Agentless monitoring</li></ul>
Orchestrator	<ul style="list-style-type: none"><li>• Runbook Connector</li><li>• Integration Pack</li></ul>

## Data Protection Manager

Operations Manager	<ul style="list-style-type: none"><li>• DPM Central Console Client-Side Component Connector</li><li>• Operations Manager Agent/Management Pack</li></ul>
Orchestrator	<ul style="list-style-type: none"><li>• DPM Integration Pack</li></ul>
Configuration Manager	<ul style="list-style-type: none"><li>• CM Agent</li></ul>

## Operations Manager

Configuration Manager	<ul style="list-style-type: none"> <li>• CM Agent</li> </ul>
Virtual Machine Manager	<ul style="list-style-type: none"> <li>• Management Pack</li> <li>• Integration through the Operations Manager console (SDK)</li> </ul>
Service Manager	<ul style="list-style-type: none"> <li>• Connectors (2)</li> <li>• Management Pack</li> <li>• Agentless monitoring</li> </ul>
Data Protection Manager	<ul style="list-style-type: none"> <li>• Management Pack</li> <li>• Central Console Server Components</li> </ul>
Orchestrator	<ul style="list-style-type: none"> <li>• Integration Pack (OM Console (SDK) connection required for IP)</li> <li>• Management Pack</li> </ul>
App Controller	<ul style="list-style-type: none"> <li>• Management Pack</li> </ul>

## Configuration Manager

Configuration Manager	<ul style="list-style-type: none"> <li>• Configuration Manager management agents and System Center 2012 Endpoint Protection agents on the component servers.</li> </ul>
Service Manager	<ul style="list-style-type: none"> <li>• Connectors (2)</li> </ul>
Orchestrator	<ul style="list-style-type: none"> <li>• Integration Pack</li> </ul>
Operations Manager	<ul style="list-style-type: none"> <li>• Management Pack</li> </ul>

## Virtual Machine Manager

Configuration Manager	<ul style="list-style-type: none"> <li>• Agents</li> </ul>
Service Manager	<ul style="list-style-type: none"> <li>• Connector (1)</li> </ul>
Orchestrator	<ul style="list-style-type: none"> <li>• Integration Pack</li> </ul>
Operations Manager	<ul style="list-style-type: none"> <li>• Management Pack</li> <li>• Operations Manager Console</li> </ul>

## App Controller

Virtual Machine Manager (VMM)	<ul style="list-style-type: none"><li>• VMM Administrator Console</li></ul>
Operations Manager	<ul style="list-style-type: none"><li>• Operations Manager Agent</li></ul>
Azure	<ul style="list-style-type: none"><li>• Azure SDK</li></ul>
Configuration Manager	<ul style="list-style-type: none"><li>• Agents</li></ul>

### See Also

[System Center 2012 Integration Guide](#)

## Appendix B

The System Center Integration Points map is available in a full size version (11" x 17") in both a [docx](#) and [pdf](#) format.

### See Also

[System Center 2012 Integration Guide](#)