

Microsoft®
System Center
Operations Manager 2007

**Connectors Management Pack Guide for
Operations Manager 2007 R2**

Microsoft Corporation

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Revision History

Release Date	Changes
December 2008	Original release of this guide
April 2009	RC beta release of this guide

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Connectors Management Pack Guide

The Operations Manager 2007 R2 Connectors management packs include discoveries of Connector services, rules to generate alerts for the Connector services, and knowledge for monitoring the health of installed Operations Manager 2007 R2 Connectors. This information provides a knowledge base of useful information to help resolve Connector failures or other Connector health issues.

With the Connectors management packs, administrators for Operations Manager 2007 R2 Connectors can quickly be notified of specific Connector issues and failures.

Introduction to the Connectors Management Packs

This guide covers all management packs for all Microsoft Connectors for Operations Manager 2007 R2. A common library management pack and a Connector-specific management pack are installed for each Connector that is installed. The management packs for the specific Connector are highly similar and all are dependent on the common library management pack of the Connector. Each Connector-specific management pack monitors discovery of that particular Connector Service. The Connector common library management pack contains rules that are common to all Connector services for monitoring Connector alerts.

After the common library management pack is installed with the first Connector UI installation, it is not reinstalled with subsequent Connector installations for that Operations Manager 2007 R2 management group. Connector-specific management packs are installed with the following currently supported Microsoft Connectors:

- BMC Remedy ARS Connector
- HP Operations Manager Connector (formerly HP OpenView Operations)
- IBM Tivoli Enterprise Console Connector
- Universal Connector

Document Version

This guide was written based on the April 2009 RC Beta version of the Operations Manager 2007 R2 Connectors management packs.

Getting the Latest Management Pack and Documentation

The Operations Manager 2007 R2 Connectors management packs and this document are available from the installation source for the Connectors.

After full product release, the Operations Manager 2007 R2 Connectors management packs will be available in the [System Center Operations Manager 2007 Catalog](http://go.microsoft.com/fwlink/?LinkId=82105) (<http://go.microsoft.com/fwlink/?LinkId=82105>).

Supported Configurations

The Operations Manager 2007 R2 Connectors management packs support the following configurations:

- Operations Manager 2007 R2 Connectors deployed on the following operating systems.
 - Windows Server 2003
 - Windows Server 2008 on x86-based computers
 - 64-bit edition of Windows Server 2008
 - Windows Server 2008 for Itanium-Based Systems

Changes in This Update

The April 2009 RC Beta version of the Connectors management packs include the following changes:

- Single installer for all Connectors, including silent installation and importing for Connector management packs.
- A single Connector common library management pack as a parent management pack for all Connector management packs.
- Inclusion of the BMC Remedy ARS Connector management pack.

Getting Started

Operations Manager 2007 R2 Connector management packs monitor the health of the installed Connector. The specific Connector management pack and the Connectors common library management pack are imported and fully configured when a given Connector is installed. The Connectors management packs are ready for normal operations without further overrides or customizations. For more information about management pack customizations and the default management pack, see [About Management Packs in Operations Manager 2007](http://go.microsoft.com/fwlink/?LinkId=108356) (<http://go.microsoft.com/fwlink/?LinkId=108356>).

For instructions about importing a management pack, see [How to Import a Management Pack in Operations Manager 2007](http://go.microsoft.com/fwlink/?LinkID=98348) (<http://go.microsoft.com/fwlink/?LinkID=98348>).

For more information about sealed and unsealed management packs, see [Management Pack Formats](http://go.microsoft.com/fwlink/?LinkId=108355) (<http://go.microsoft.com/fwlink/?LinkId=108355>).

The Connector Management Pack Files

The following table lists the management pack files that are installed for each Connector and the Connectors common library management pack. The Connector-specific management pack and the Connectors common library management pack are imported to the Operations Manager 2007 R2 root management server (RMS) when a Connector is configured at installation or when the configuration is done at a later time.

Filename	Connector
Microsoft.SystemCenter.Interop.Connector.Common.Library.mp	Parent management pack for all connector management packs
Microsoft.SystemCenter.Interop.Remedy.Connector.mp	Management Pack for BMC Remedy ARS Connector
Microsoft.SystemCenter.Interop.HPOVO.Connector.mp	Management Pack for HP Operations Manager Connector
Microsoft.SystemCenter.Interop.TEC.Connector.mp	Management Pack for IBM Tivoli Enterprise Console Connector
Microsoft.SystemCenter.Interop.Universal.Connector.mp	Management Pack for the Universal Connector

Connectors Management Pack Dependencies

The following table lists management packs that are referenced by and are dependencies of the Connectors common library management pack. Each Connector-specific management pack also references each of these, except the MOMLibrary management pack. Instead of the MOMLibrary management pack, the Connector-specific management packs reference the Connectors common library management pack that is listed last in the table.

Filename	Alias
Microsoft.SystemCenter.Library.mp	SystemCenter
System.Library.mp	System
System.Health.Library.mp	Health
Microsoft.SystemCenter.DataWarehouse.Library.mp	DataWarehouse
System.Performance.Library.mp	Performance
Microsoft.SystemCenter.Internal.mp	SystemCenterInternal

Filename	Alias
Microsoft.Windows.Library.mp	Windows
Microsoft.SystemCenter.NTService.Library.mp	MicrosoftSystemCenterNTServiceLibrary
Microsoft.SystemCenter.OperationsManager.Library.mp	MOMLibrary
Microsoft.SystemCenter.Interop.Connector.Common.Library.mp	InteropConnector

Understanding Management Pack Operations

This section provides information about the types of objects that Operations Manager 2007 R2 Connector management packs discover, information about classes or views that you can expect in the Operations Manager 2007 R2 console, and monitoring scenarios that are available with the Connector management packs.

Objects That the Management Pack Discovers

The Connector management packs discover only one object, the Connector Service for the given installed Connector. For information about discovering objects, see the "[Object Discoveries in Operations Manager 2007](#)" topic in Operations Manager 2007 Help (<http://go.microsoft.com/fwlink/?LinkId=108505>).

Classes

The Connector common library management pack has one class type:

```
Microsoft.SystemCenter.Interop.ServiceBase
```

This class type is a generic representation of an interop connector service. This class is used as the **Target** for all rules in the Connector common library management pack and as the **Base** for the one **ClassType** that is defined in each of the specific Connector management packs.

Each specific Connector management pack has one class type. For example:

```
Microsoft.SystemCenter.Interop.Remedy.Connector.Service
```

```
Microsoft.SystemCenter.Interop.HPOVO.Connector.Service
```

```
Microsoft.SystemCenter.Interop.TEC.Connector.Service
```

```
Microsoft.SystemCenter.Interop.Universal.Connector.Service
```

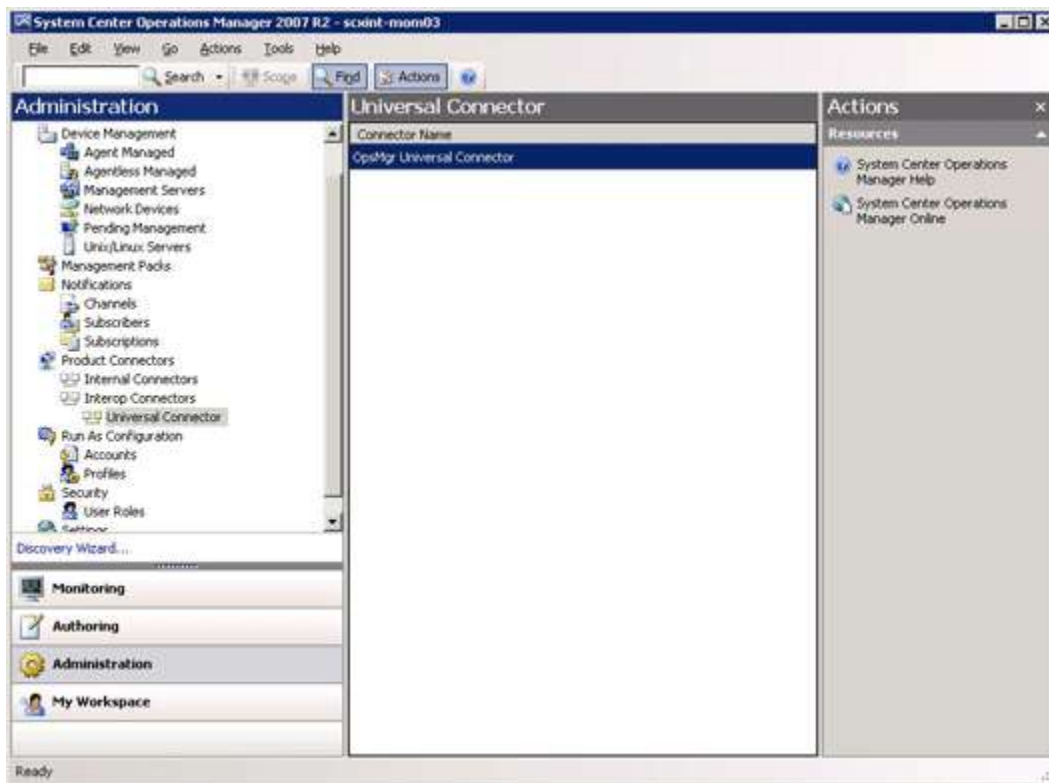
These class types are used in discovery of the Connector services and in **Views**, **Folders**, and **FolderItems** of the **Presentation**, and in some of the **DisplayStrings** of the **LanguagePacks** for each specific Connector management pack.

Viewing Information in the Operations Manager Console

After a Operations Manager 2007 R2 Connector is installed and configured, the Connector common library management pack and the specific Connector management pack are imported, and the following additions are made to Operations Manager 2007 R2 console views.

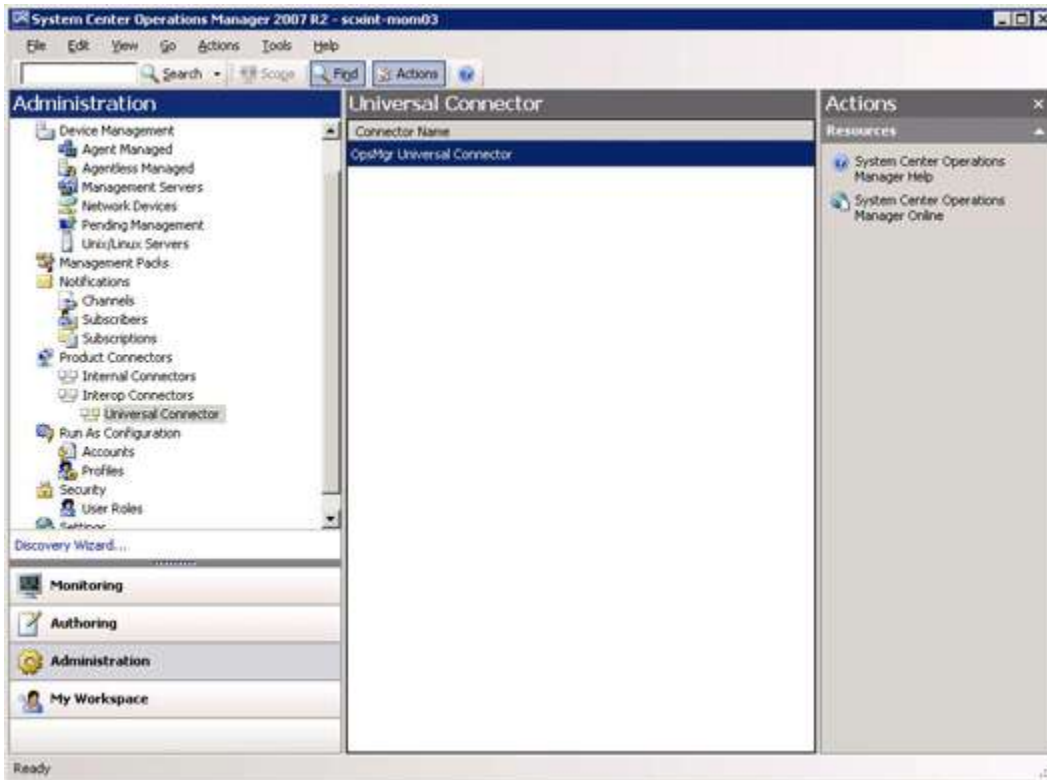
Monitoring Pane

The **Interop Connectors** folder is always present in the **Monitoring** navigation pane. When a Connector is installed and its management packs are imported into Operations Manager 2007 R2, folders appear for the installed Connector under the **Interop Connectors** folder.



Administration Pane

The **Interop Connectors** node is under the **Product Connectors** node. These nodes are always present in the **Administration** navigation pane. When a Connector is installed and its management packs are imported into Operations Manager 2007 R2, the Connector object appears under the **Interop Connectors** node.



Key Monitoring Scenarios

Each Operations Manager 2007 R2 Connector management pack system provides health monitoring information for the associated Connector. The following table provides health monitoring scenarios for Connectors. Each scenario lists alerts that can be generated in that scenario.

Open an alert from the **Monitoring** pane to find product knowledge for that alert. You can also find product knowledge from the **Authoring** pane by expanding **Management Pack Objects** and selecting **Rules**. Double-click a rule in the **Rules** pane, or right-click a rule and then click **Properties** to open the **Properties** dialog box for that rule. That **Properties** dialog box has a **Product Knowledge** tab.

Scenario	Alert Names
Alerts are generated when the Connector Service starts.	<ul style="list-style-type: none"> Starting the connector service Successfully started the connector service Connector service failed to start Stopping the connector service Error creating config The connectorname property was not

Scenario	Alert Names
	defined in the configuration file
Alerts are generated from internal Connector exceptions.	<ul style="list-style-type: none"> • Interop exception caught • Interop exception starting agent • SQL exception caught while starting modules
Alerts are generated from SQL cache exceptions.	<ul style="list-style-type: none"> • SQL Exception occurred while adding cache data to storage • SQL Exception occurred while removing cache data from storage • SQL Exception occurred while retrieving cache data • The connector received an empty payload for the FileAlerts • Error constructing the cache id • Received an empty payload in the XFormAcks • Error getting cache id
Alerts are generated from Operations Manager 2007 R2 SDK issues.	<ul style="list-style-type: none"> • OpsMgr module configuration has Null exception error • Value too big/small in OpsMgr module configuration • OpsMgr module configuration has Argument exception error • GetMonitoringAlerts returned a null collection of ConnectorMonitoringAlerts • Null arguments received from AckOpsMgrSdk • Alert xml was not received • Alert input did not contain an Id • Alert id is not a GUID • Interop exception in HandleUpdateFailures • Null arguments received form XFormInboundAlerts • Null arguments received from CacheAcks • Could not find alert to update • Server disconnect exception

Scenario	Alert Names
	<ul style="list-style-type: none"> • Service not running exception • Unauthorized access monitoring exception • Could not read alert history • Failed to connect to any OpsMgr servers • Failed to acquire MonitoringConnector • OpsMgr SDK service threw an exception • Received a message with invalid EventType • Received a message with invalid EventType • Attempt to forward a message with invalid EventType • Attempt to forward a message with invalid EventType • Service not running exception - IsConnected method • Unauthorized access monitoring exception - IsConnected method
Alerts are generated from WS-Man issues.	<ul style="list-style-type: none"> • No providers could be contacted • Could not deliver some events • COM exception - WSMANConfig • WSMAN create session exception - WSMANConfig • Unauthorized access exception - WSMANConfig • Null/Empty EventType - wsEventXmlString • Invalid EventType - wsEventXmlString • WSMAN create session exception - GetEvents • Unauthorized access exception - GetEvents • WSMAN COM exception - GetEvents • Could not retrieve wsSession.Error message - GetEvents • WSMAN COM extended exception - GetEvents

Scenario	Alert Names
	<ul style="list-style-type: none"> • Null/Empty wsSession - CreateEvents • ERROR in wsSession - CreateEvents • WSMAN create session exception - CreateEvents • Unauthorized access exception - CreateEvents • WSMAN COM exception - CreateEvents • WSMANType exception - GetWSMANType • WSMAN create session exception - CreateSession • Null/Empty EventType exception - AckMessage • Invalid EventType exception - AckMessage
Alerts are generated from the High Availability feature.	<ul style="list-style-type: none"> • Heartbeat exception • SQL exception - HA Register • SQL exception - HA Unregister • SQL exception - Sending Heartbeat • SQL exception - Setting Priority • SQL exception - Retrieving info
Alerts are generated from configuration issues.	<ul style="list-style-type: none"> • Lower case exception - Config • SQL exception - Retrieving Config EMSType • SQL exception - Retrieving Config String • SQL exception - Stored Procedure • Error validating XML doc - Config
Alerts are generated from logging issues.	<ul style="list-style-type: none"> • TickCallback Error - SmartTimer • AppConfigUtility exception • Error accessing log file

Placing Monitored Objects in Maintenance Mode

When a Connector Service is stopped, either intentionally or unintentionally, Operations Manager 2007 R2 detects that no agent heartbeat is being received. As a result, Operations Manager 2007 R2 might generate numerous alerts and notifications. To prevent alerts and notifications, place that particular Connector Service into maintenance mode. In maintenance mode, alerts,

notifications, rules, monitors, automatic responses, state changes, and new alerts are suppressed at the agent.

For general instructions about placing a monitored object in maintenance mode, see [How to Put a Monitored Object into Maintenance Mode in Operations Manager 2007](http://go.microsoft.com/fwlink/?LinkId=108358) (<http://go.microsoft.com/fwlink/?LinkId=108358>).