



Windows Scheduled Tasks Management Pack Guide for Operations Manager 2019

Published: *06 Dec 2019*

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Contents

Windows Scheduled Tasks Management Pack Guide	5
Supported Configurations	6
Getting Started	7
Before You Import the Management Pack	7
Files in This Management Pack	7
How to Import the Progel Windows Scheduled Tasks Management Pack	8
Create a New Management Pack for Customizations	8
Optional Configuration	9
Including or excluding jobs from discovery	9
Non standard exit codes tuning	9
Security Considerations	10
Low-Privilege Environments	10
Understanding Management Pack Operations	10
Objects the Management Pack Discovers.....	11
Classes	11
How Health Rolls Up.....	11
Troubleshooting.....	12
Appendix: Scripts	13

Windows Scheduled Tasks Management Pack Guide

The Progel Windows Scheduled Tasks Management Pack consists of the following six management packs: Progel Windows Scheduled Tasks Library, Progel Windows Server 2016 , Progel Windows Server 2012 , Progel Windows Server 2008 Scheduled Tasks, Progel Windows Server 2003 Scheduled Tasks and Progel Windows Server 2000 Scheduled Tasks. The Progel Windows Scheduled Tasks management packs monitor the performance, health, and availability of scheduled tasks on Windows Server 2016, Windows Server 2012 R2, Windows Server 2012, Windows Server 2008 R2, Windows Server 2008, Windows Server 2003, and Windows 2000 Server.

By detecting, alerting on, and automatically responding to critical events and performance indicators, management packs reduce resolution times for issues and increase the overall availability and performance of your scheduled tasks on Windows Server 2016, Windows Server 2012 R2, Windows Server 2012, Windows Server 2008 R2, Windows Server 2008, Windows Server 2003, and Windows 2000 Server operating systems, thereby helping to reduce the total cost of ownership.

Document Version

This guide was written based on the 6.1.7221.23 version of the Windows Scheduled Tasks Management Pack.

Revision History

Release Date	Changes
June 30, 2009	Original release of this guide
November 11,2009	Released version 6.1.7221.10, fixes extended character set locales (ie. Traditional Chinese)
December 01,2009	Released version 6.1.7221.20, fixes Display Strings and Scripts Timeout
February 14,2010	Released version 6.1.7221.21, fixes characters in KB and Alert Description replacement strings problem on Win 2000/2003
March 07,2010	Released version 6.1.7221.22, changed the alert description to include ExitCode in Hex format
May 01,2010	Released version 6.1.7221.23, fixed error in the monitoring script for 2000 and 2003. Filtered some exit code in the monitoring script for 2008 to handle some scheduled

Release Date	Changes
	task specific return code that should not be considered error condition. Suggested by a user and based on the Raphael Burri MP.
Oct 01,2017	Added Windows Server 2016 Scheduled Task MP

Getting the Latest Management Pack and Documentation

You can find the Windows Scheduled Tasks Management Pack in the [Windows Scheduled Tasks Management Pack](#) web Page.

Supported Configurations

The Windows Scheduled Tasks Management Pack for Operations Manager supports the following configurations:

- Windows 2000 Server x86
- Windows 2003 Server x86
- Windows 2003 Server x64
- Windows 2008 Server x86
- Windows 2008 Server x64
- Windows 2008 Server R2
- Windows 2012 Server
- Windows 2012 Server R2
- Windows 2016 Server

Support for these operating systems is also subject to Microsoft's overall support lifecycle (<http://go.microsoft.com/fwlink/?Linkid=26134>).

The Management Pack supports:

- System Center Operations Manager 2007
- System Center Operations Manager 2007 R2
- System Center Operations Manager 2012
- System Center Operations Manager 2012 R2
- System Center Operations Manager 2016
- System Center Operations Manager 2019

Getting Started

This section provides information about importing Windows Scheduled Tasks Management Pack files.

Before You Import the Management Pack

Before you import the Windows Scheduled Tasks Management Pack, know the following:

- The Windows Scheduled Tasks Management Pack provides the fundamental monitoring basics for monitoring scheduled tasks running on the Microsoft Windows operating system.
- You must import the Windows Server Operating System Management Pack before importing the Windows Scheduled Tasks Management Pack. The minimum required version is 6.1.7221.0 for Windows Server 2000,2003,2008, 2008 R2, 2012, 2012 R2.
- You must import the “Windows Server 2016 and 1709+ Operating Systems (Discovery)” Management Pack before importing the Windows Scheduled Tasks Management Pack. The minimum required version is 10.0.8.0 for Windows Server 2016
- Agents must be deployed to all systems to which you wish to apply this management pack.

Before you import the Windows Scheduled Tasks Management Pack, note the following limitations of the management pack:

- the Windows Scheduled Tasks doesn't support agentless monitoring

Files in This Management Pack

To monitor Windows Scheduled Tasks, you must first download the Progel Windows Scheduled Tasks Management Pack from the [Management Pack Catalog](http://go.microsoft.com/fwlink/?LinkId=82105), located at <http://go.microsoft.com/fwlink/?LinkId=82105>. The Progel Windows Scheduled Tasks Management Pack includes the following files:

- **Progel.Windows.ScheduledTasks.Library.mp**: Displayed as “Windows Scheduled Tasks Library”, this management pack is the library management pack that defines all of the features and components that are common to all versions of the Windows Scheduled Tasks. This management pack contains no monitoring configuration and is a prerequisite for all other Windows Scheduled Tasks management packs. Therefore, this management pack must be imported at the same time or prior to the version-specific management packs.
- **Progel.Windows.ScheduledTasks.2016.mp**: Displayed as “Windows Server 2016 Scheduled Tasks”, this management pack discovers scheduled tasks on the Windows

Server 2016 platform and defines the rules, monitors, views and tasks that are used for monitoring the Windows Server 2012 and 2012 R2 Scheduled Tasks

- **Progel.Windows.ScheduledTasks.2012.mp:** Displayed as “Windows Server 2012 Scheduled Tasks”, this management pack discovers scheduled tasks on the Windows Server 2012 platform and defines the rules, monitors, views and tasks that are used for monitoring the Windows Server 2012 and 2012 R2 Scheduled Tasks
- **Progel.Windows.ScheduledTasks.2008.mp:** Displayed as “Windows Server 2012 Scheduled Tasks”, this management pack discovers scheduled tasks on the Windows Server 2008 platform and defines the rules, monitors, views and tasks that are used for monitoring the Windows Server 2008 And 2008 R2 Scheduled Tasks
- **Progel.Windows.ScheduledTasks.2003.mp:** Displayed as “Windows Server 2003 Scheduled Tasks”, this management pack discovers scheduled tasks on the Windows Server 2003 platform and defines the rules, monitors, views and tasks that are used for monitoring the Windows Server 2003 Scheduled Tasks.
- **Progel.Windows.ScheduledTasks.2000.mp:** Displayed as “Windows 2000 Server Scheduled Tasks”, this management pack discovers scheduled tasks on the Windows Server 2000 platform and defines the rules, monitors, views and tasks that are used for monitoring the Windows Server 2000 Scheduled Tasks.

How to Import the Progel Windows Scheduled Tasks Management Pack

For instructions about importing a management pack, see [How to Import a Management Pack in Operations Manager 2007](http://go.microsoft.com/fwlink/?LinkId=142351) (<http://go.microsoft.com/fwlink/?LinkId=142351>).

After the Windows Scheduled Tasks Management Pack is imported, follow these procedures to finish your initial configuration:

1. Create a new management pack in which you store overrides and other customizations.

Create a New Management Pack for Customizations

Most vendor management packs are sealed so that you cannot change any of the original settings in the management pack file. However, you can create customizations, such as overrides or new monitoring objects, and save them to a different management pack. By default, Operations Manager 2007 saves all customizations to the default management pack. As a best practice, you should instead create a separate management pack for each sealed management pack you want to customize.

Creating a new management pack for storing overrides has the following advantages:

- It simplifies the process of exporting customizations that were created in your test and pre-production environments to your production environment. For example, instead of exporting a default management pack that contains customizations from multiple management packs, you can export just the management pack that contains customizations of a single management pack.

- You can delete the original management pack without first needing to delete the default management pack. A management pack that contains customizations is dependent on the original management pack. This dependency requires you to delete the management pack with customizations before you can delete the original management pack. If all of your customizations are saved to the default management pack, you must delete the default management pack before you can delete an original management pack.
- It is easier to track and update customizations to individual management packs.

Optional Configuration

This section contains information about optional configuration changes you can make to the management pack features.

Including or excluding jobs from discovery

By default, Windows Server Scheduled Tasks management packs do not discover system jobs and Internet Explorer feed synchronizations jobs. If you want to monitor these jobs or exclude other jobs from discovery, you can do so by overriding the “Jobs To Exclude” property in the “Scheduled tasks” discovery. After the property has been overridden the jobs will be included or excluded within one hour, after which they will become monitored. The Jobs To Exclude property is a regular expression string, for more info on regular expressions see <http://msdn.microsoft.com/en-us/library/ms974570.aspx>.

Non standard exit codes tuning

The task scheduler service executes almost everything and returns the executed command exit code as the task result. Actually there can be two kinds of failures, firstly the task scheduler could be unable to execute the command, secondly the executed command could fail. Both these conditions are caught by the “Scheduled Task Last Run Status” monitor. The monitor assumes a 0 exit code as a successful run and anything not 0 as a failed run. Since this is command dependent the expected exit codes can be overridden on a task by task basis. The exit code property is a regular expression so that more than one exit code can be specified, , for more info on regular expressions see <http://msdn.microsoft.com/en-us/library/ms974570.aspx>.

For example to consider **0**, **3010** and **2010** as valid exit code for a task it is possible to create an override for this task and specify **^(0|3010|2010)\$** in the Override Value for ExpectedExitCode parameter.

<input type="checkbox"/>	Enabled	Boolean	True	True	True	[No change]
<input checked="" type="checkbox"/>	ExpectedExitCode	String	^0\$	^(0 3010 2010)\$	^0\$	[Added]
<input type="checkbox"/>	Generates Alert	Boolean	True	True	True	[No change]

For more information, see [How to Override a Monitor](http://go.microsoft.com/fwlink/?LinkId=108556) (<http://go.microsoft.com/fwlink/?LinkId=108556>).

Security Considerations

You may need to customize your management pack. Certain accounts cannot be run in a low-privilege environment or must have minimum permissions.

This section provides information about using a low-privilege account with the Windows Scheduled Tasks Management Pack. The management packs do not define any “run as profile” all the rules and monitors are executed in the context of the default action account. The whole security is dependent on the security set on every single job. So to be able to discover and monitor the jobs the action account must be in the ACL of the jobs. By default the local Administrators group and System are in this ACL.

Low-Privilege Environments

The Windows Operating System Management Pack uses the agent action account to perform discovery and run rules, tasks, and monitors. The agent action account can run as Local System or as a named account. When running as Local System, the agent action account has all of the privileges needed to perform discovery and run rules, tasks, and monitors.

Important

- A low-privilege account can be used only on computers running Windows Server 2008 or Windows Server 2003. On computers running Windows 2000 Server, the action account must be a member of the local administrator security group or Local System.
- Using a low-privilege domain account requires password updating that is consistent with your password expiration policies

A low-privilege agent action account must meet the following requirements:

- Member of the local users group
- Member of the local Performance Monitor Users group
- Granted Log On Locally rights
- Granted at least change privileges on the jobs to be monitored
- Granted read, write and execute privileges in the System Center Operations Manager installation directory (required for Windows 2003)

Understanding Management Pack Operations

This section provides information about the objects that are discovered, how health rollup works, key monitoring scenarios, and additional views that you can expect in the Operations Manager 2007 user interface as a result of importing this management pack. The management pack is designed to be as quiet as possible and in this version is composed by just one monitor and a few rules. The monitor checks for execution results.

Objects the Management Pack Discovers

The Progel Scheduled Tasks Management Pack discovers the object types described in the following table. Not all of the objects are automatically discovered, for more info see section "Including or excluding jobs from discovery" . For information about discovering objects, see the "[Object Discoveries in Operations Manager 2007](http://go.microsoft.com/fwlink/?LinkId=108505)" topic in Operations Manager 2007 Help (<http://go.microsoft.com/fwlink/?LinkId=108505>).

Object Type	Description
<i>Scheduled Tasks Scheduler</i>	There will be one scheduler per agent, the scheduler hosts the jobs
<i>Scheduled Tasks Job</i>	The single scheduled jobs

Classes

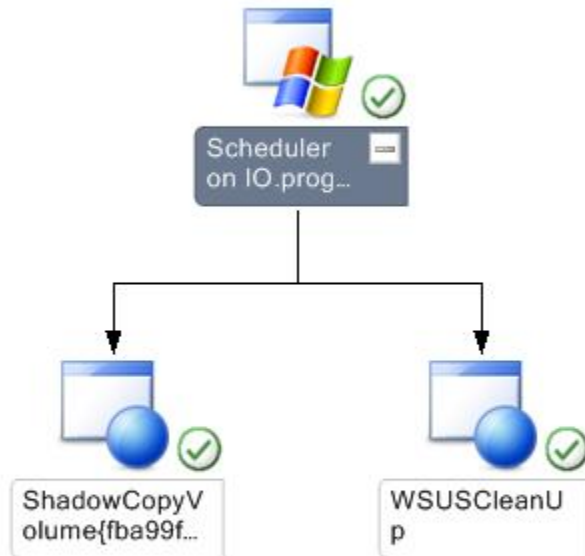
The Scheduled Tasks Job class adds the following properties:

Property	Description
<i>Job Name</i>	The job name as displayed in the operating system
<i>Application</i>	The command line for the job
<i>Application parameters</i>	The command line parameters for the job
<i>Working Directory</i>	The working directory for the job
<i>Task Creator</i>	The task creator account name
<i>Runas Account</i>	The run as account name for the job

The Scheduled Tasks Scheduler hosts the Scheduled Tasks Jobs.

How Health Rolls Up

The following diagram shows how the health states of components roll up in this management pack.



Key Monitoring Scenarios

The Windows Scheduled Tasks Management Pack for Operations Manager 2007 includes a number of key monitoring scenarios that are configurable. The following table lists those scenarios and indicates the elements of the monitoring scenario that can be modified.

Scenario	Configurable Elements
A task fails to run	Modify the exit code for successful runs for non standard commands
A non standard user account is used as a runas account	Nothing, the check can be manually performed through the appropriate view

Troubleshooting

Issue	Cause	Resolution
A job/task is not discovered	The job/task is disabled.	By default disabled task are not discovered since there's nothing to monitor in this case. Just enable the task and wait for the next discovery cycle (by default every 12 hours)
An error is returned during the discovery process	The executables or the interfaces used for the discovery process are faulty	Follow the discovery product knowledge base
A job/task is	The task command line returns	Override the monitor for that task

Issue	Cause	Resolution
running correctly but I got an alert in console saying otherwise	an exit code not equal to 0	specifying the expected exit code

Appendix: Scripts

In the following table 2008 can be replaced with 2000 and 2003 to identify the related scripts in the various OS versions. In the 2000 and 2003 management packs, the discovery script creates an helper executable in the Operations Manager installation directory, the file name is TaskUtil.exe.

Script	Purpose	Rule / Monitor	Frequency
Progel.Windows.ScheduledTasks.2008.Discovery.vbs	Discovers the management pack objects	Windows 2008 Scheduled tasks discovery	12 hours
Progel.Windows.ScheduledTasks.2008.Monitoring.vbs	Monitors scheduled tasks execution status configuration settings that you want to apply to your environment.	Scheduled Task Last Run Status	30 mins