NetIQ® AppManager® for IBM PowerVM

Management Guide

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NetIQ.

Contents

About this Book and the Library

The NetIQ AppManager product (AppManager) is a comprehensive solution for managing, diagnosing, and analyzing performance, availability, and health for a broad spectrum of operating environments, applications, services, and server hardware.

AppManager provides system administrators with a central, easy-to-use console to view critical server and application resources across the enterprise. With AppManager, administrative staff can monitor computer and application resources, check for potential problems, initiate responsive actions, automate routine tasks, and gather performance data for real-time and historical reporting and analysis.

Intended Audience

This guide provides information for individuals responsible for installing an AppManager module and monitoring specific applications with AppManager.

Other Information in the Library

The library provides the following information resources:

Installation Guide for AppManager

Provides complete information about AppManager pre-installation requirements and step-by-step installation procedures for all AppManager components.

User Guide for AppManager Control Center

Provides complete information about managing groups of computers, including running jobs, responding to events, creating reports, and working with Control Center. A separate guide is available for the AppManager Operator Console.

Administrator Guide for AppManager

Provides information about maintaining an AppManager management site, managing security, using scripts to handle AppManager tasks, and leveraging advanced configuration options.

Upgrade and Migration Guide for AppManager

Provides complete information about how to upgrade from a previous version of AppManager.

Management guides

Provide information about installing and monitoring specific applications with AppManager.

Help

Provides context-sensitive information and step-by-step guidance for common tasks, as well as definitions for each field on each window.

The AppManager library is available in Adobe Acrobat (PDF) format from the AppManager Documentation page of the NetIQ Web site.

About NetIQ Corporation

We are a global, enterprise software company, with a focus on the three persistent challenges in your environment: Change, complexity and risk—and how we can help you control them.

Our Viewpoint

Adapting to change and managing complexity and risk are nothing new

In fact, of all the challenges you face, these are perhaps the most prominent variables that deny you the control you need to securely measure, monitor, and manage your physical, virtual, and cloud computing environments.

Enabling critical business services, better and faster

We believe that providing as much control as possible to IT organizations is the only way to enable timelier and cost effective delivery of services. Persistent pressures like change and complexity will only continue to increase as organizations continue to change and the technologies needed to manage them become inherently more complex.

Our Philosophy

Selling intelligent solutions, not just software

In order to provide reliable control, we first make sure we understand the real-world scenarios in which IT organizations like yours operate — day in and day out. That's the only way we can develop practical, intelligent IT solutions that successfully yield proven, measurable results. And that's so much more rewarding than simply selling software.

Driving your success is our passion

We place your success at the heart of how we do business. From product inception to deployment, we understand that you need IT solutions that work well and integrate seamlessly with your existing investments; you need ongoing support and training post-deployment; and you need someone that is truly easy to work with — for a change. Ultimately, when you succeed, we all succeed.

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- Identity & Access Governance
- Access Management
- Security Management
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- Workload Management
- Service Management

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Email:	info@netiq.com
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Our goal is to provide documentation that meets your needs. The documentation for this product is available on the NetIQ Web site in HTML and PDF formats on a page that does not require you to log in. If you have suggestions for documentation improvements, click **comment on this topic** at the bottom of any page in the HTML version of the documentation posted at www.netiq.com/documentation. You can also email Documentation-Feedback@netiq.com. We value your input and look forward to hearing from you.

Contacting the Online User Community

NetIQ Communities, the NetIQ online community, is a collaborative network connecting you to your peers and NetIQ experts. By providing more immediate information, useful links to helpful resources, and access to NetIQ experts, NetIQ Communities helps ensure you are mastering the knowledge you need to realize the full potential of IT investments upon which you rely. For more information, visit community.netiq.com.

1 Introducing AppManager for IBM PowerVM

PowerVM is a secure and scalable virtualization environment for hosting Advanced Interactive eXecutive (AIX), IBM i, and Linux applications on the IBM Power Systems platform.

AppManager for AppManager for IBM PowerVM resource usage, performance, and availability information for the PowerVM managed systems and logical partitions (LPARs) without requiring individual agents on the managed systems and LPARs.

AppManager Unix for PowerVM offers the following:

CPU Pool Utilization

◆ Monitor CPU pool utilization and raise an event when the utilization exceeds the threshold you set.

◆ Monitor the number of LPARs associated with a CPU pool and raise an event when the number exceeds the threshold.

Inventory

◆ Monitor the managed system inventory and raise an event when a managed system is added or removed or when a managed system attribute is changed.

◆ Monitor the LPAR inventory and raise an event when an LPAR is added or removed or when an LPAR attribute is changed.

◆ Monitor the CPU pool inventory and raise an event when a CPU pool is added or removed or when a CPU pool attribute is changed.

◆ Monitor the physical volume group inventory and raise an event when a physical volume group is added or removed or when a physical volume group attribute is changed.

◆ Monitor the physical volume inventory and raise an event when a physical volume is added or removed or when a physical volume attribute is changed.

LPAR CPU Utilization

◆ Monitor LPAR CPU utilization and raise an event when utilization exceeds the threshold you set.

Managed System CPU Utilization

◆ Monitor managed system CPU utilization and raise an event when utilization exceeds the threshold you set

Managed System Memory Utilization

◆ Monitor managed system memory utilization and raise an event when utilization exceeds the threshold you set.

◆ Monitor managed system free memory and raise an event when free memory falls below the threshold you set.

Physical Volume Disk Space Utilization

- Monitor physical volume disk space utilization and raise an event when the utilization in percent exceeds the threshold you set.
- Monitor physical volume free disk space and raise an event when free disk space falls below the threshold you set.

Physical Volume Group Disk Space Utilization

- Monitor physical volume group disk space utilization and raise an event when the utilization exceeds the threshold you set.
- Monitor physical volume group free disk space and raise an event when the free disk space falls below the threshold you set.

2 Installing AppManager for IBM PowerVM

This chapter provides installation instructions and describes system requirements for AppManager for IBM PowerVM.

This chapter assumes you have an AppManager repository, console, management server, and UNIX agent installed:

- For more information about installing AppManager Windows components, see the *Installation Guide for AppManager*. This document is available on the AppManager Documentation page.
- For information about installing the UNIX agent, see the *AppManager for UNIX and Linux Servers Management Guide*. This document is available on the AppManager Module Documentation page.

2.1 System Requirements

For the latest information about specific supported software versions and the availability of module updates, visit the AppManager Supported Products page.

AppManager for IBM PowerVM has the following system requirements:

Item	Requirement
NetIQ AppManager installed on the AppManager repository (QDB) computers, on the UNIX agent proxy computers (AppManager agents), and on all console computers.	7.0.1 or later
NetIQ UNIX Agent	7.1 or later
Operating system on the proxy agent computers	One of the following: - CentOS - HP-UX - IBM AIX - Oracle Linux - Oracle Solaris - Red Hat Enterprise Linux - SUSE Linux Enterprise Server
IBM PowerVM on the agent computers	8.0
IBM Hardware Management Console	5.0 or later

AppManager for IBM PowerVM uses any NetIQ UNIX agent on a UNIX computer as a proxy monitoring server and from there uses the IBM Hardware Management Console to monitor PowerVM resources. AppManager for IBM PowerVM requires a passwordless trusted SSH connection to the IBM Hardware Management Console from the UNIX agent computer using the same user account used to install the UNIX agent.

2.2 Installing the Module

To install the module you must:

- Install the Knowledge Scripts by running the module installer `AM70-PowerVM-8.0.x.x.msi` on all AppManager repositories that store data for this module.
- Install the Help files by running the module installer `AM70-PowerVM-8.0.x.x.msi` on all AppManager Control Center and Operator Console computers you will use with this module.
- Ensure the correct UNIX agent patch level is installed on the proxy monitoring server computer:
  - UNIX agent 7.1 with patch 7.1.0.51
  - UNIX agent 7.2 with patch 7.2.0.7

You can access the `AM70-PowerVM-8.0.x.x.msi` module installer and the `p71p51.zip` or `p72p7.zip` patch from the `AM70_PowerVM_8.0.x.x` self-extracting installation package on the AppManager Module Upgrades & Trials page.

The module installer now installs Knowledge Scripts for each module directly into the QDB instead of the `\AppManager\qdb\kp` folder as in previous releases of AppManager.

To install the module:

1 Ensure you have the UNIX agent installed on the proxy monitoring server computer or computers. For information about how to install the agent, see the *AppManager for UNIX and Linux Servers* Management Guide.

2 (Conditional) If you have UNIX agent 7.1, apply patch 7.1.0.51 to the proxy monitoring server computers. If you have UNIX agent 7.2, apply patch 7.2.0.7 to the proxy monitoring server computers. For information about how to apply UNIX agent patches, see the *AppManager for UNIX and Linux Servers* Management Guide.

3 To install the Knowledge Scripts into the QDB:

   3a Select **Install Knowledge Scripts** to install the repository components, including the Knowledge Scripts, object types, and SQL stored procedures.

   3b Specify the SQL Server name of the server hosting the QDB, as well as the case-sensitive QDB name.

   NOTE: Microsoft .NET Framework 3.5 is required on the computer where you run the installation program for the QDB portion of the module. For computers running more recent versions of Windows operating systems that use a newer version of .NET, install .NET 3.5 with the Add Roles and Features wizard in Windows Server Manager, as described in this Microsoft article.

4 (Conditional) If you use Control Center 7.x, run the module installer for each QDB attached to Control Center.

5 (Conditional) If you use Control Center 8.x, run the module installer only for the primary QDB. Control Center automatically replicates this module to secondary QDBs.

6 Run the module installer on all console computers to install the Help and console extensions.

7 (Conditional) If you have not discovered PowerVM resources through the IBM Hardware Management Console, run the Discovery_PowerVM Knowledge Script on all proxy monitoring server computers. For more information, see .

After the installation has completed, the `PowerVM_Install.log` file, located in the `\NetIQ\Temp\NetIQ_Debug\`*ServerName* folder, lists any problems that occurred.

2.2.1 Silently Installing the Knowledge Scripts

To silently install the module on an AppManager repository, you can use Windows authentication or SQL authentication.

Windows authentication:

```
AM70-PowerVM-8.0.x.x.msi /qn MO_B_QDBINSTALL=1 MO_B_SQLSVR_WINAUTH=1
MO_SQLSVR_NAME=SQLServerName MO_QDBNAME=AMRepositoryName
```

SQL authentication:

```
AM70-PowerVM-8.0.x.x.msi /qn MO_B_QDBINSTALL=1 MO_B_SQLSVR_WINAUTH=0
MO_SQLSVR_USER=SQL login MO_SQLSVR_PWD=SQLLoginPassword
MO_SQLSVR_NAME=SQLServerName MO_QDBNAME=AMRepositoryName
```

2.3 Discovering AppManager for IBM PowerVM Resources

Use the Discovery_PowerVM Knowledge Script to discover PowerVM server resources: managed systems, LPARS, CPU pools, physical volume groups, and physical volumes.

TIP: NetIQ recommends you discover a single IBM Hardware Management Console per UNIX agent proxy monitoring server. Otherwise, event grouping and AppManager console event indicators may be inconsistent.

By default, this script runs once for each computer.

Set the **Values** tab parameters as needed:

Description	How to Set It
Monitor Host Settings	
Host name or IP address	Specify the IBM Hardware Management Console you want to monitor. The discovery job only discovers a single IBM Hardware Management Console at a time. Maximum name length is 256 characters.
User name	Specify the user name for logging on to the IBM Hardware Management Console. Maximum name length is 256 characters.
Discovery Settings	
Event Settings	
Event severity when module error or job fails	Set the severity level, from 1 to 40, to indicate the importance of an event in which a module error occurs or the discovery job fails. The default is 5.

Description	How to Set It
Raise event when discovery succeeds?	Select **Yes** to raise an event if the discovery job succeeds. The default is deselected.
Event severity	Select the severity level, from 1 to 40, to indicate the importance of an event in which the discovery job succeeds. The default is 25.
Raise event when discovery partially succeeds?	Select **Yes** to raise an event if the discovery job partially succeeds. The default is Yes.
Event severity	Select the severity level, from 1 to 40, to indicate the importance of an event in which the discovery job partially succeeds. The default is 15.
Discovery Options	
Discover additional details of managed system?	Select **Yes** to discover additional details about the PowerVM managed system. The default is Yes. The default details discovered are: ◆ Name ◆ State ◆ IP address ◆ Maximum number of LPARs ◆ Monitor host detail If Yes, the additional details discovered are: ◆ Number of cores ◆ Memory
Discover LPARs?	Select **Yes** to discover the PowerVM logical partitions (LPARs). The default is Yes.
Discover additional details of LPARs?	Select **Yes** to discover additional details about the PowerVM LPARs. The default is deselected. The default details discovered are: ◆ Name ◆ LPAR identifier ◆ LPAR environment ◆ Operating system version ◆ Monitor host detail ◆ Managed system If Yes, the additional details discovered are: ◆ Maximum processing units ◆ Number of CPUs ◆ Maximum memory
Discover CPU Pools?	Select **Yes** to discover the PowerVM CPU resource pools. The default is Yes.

Description	How to Set It
Discover additional details of CPU pools?	Select **Yes** to discover additional details about the PowerVM CPU resource pools. The default is deselected.
	The default details discovered are:
	♦ Name ♦ Pool identifier ♦ LPAR names ♦ Monitor host detail ♦ Managed system
	If Yes, the additional details discovered are:
	♦ Configurable processors
Discover physical volume group?	Select **Yes** to discover the PowerVM physical volume group. The default is Yes.
Discover physical volume?	Select **Yes** to discover the PowerVM physical volume. The default is Yes.

After you successfully run the Discovery_PowerVM Knowledge Script, you should see the new PowerVM Knowledge Script category in the Operator Console or Control Center. You are now ready to begin monitoring PowerVM Server.

3 PowerVM Knowledge Scripts

AppManager provides the following Knowledge Scripts for monitoring PowerVM resources.

From the Knowledge Script view of Control Center, you can access more information about any Knowledge Script by selecting it and clicking **Help**. In the Operator Console, select any Knowledge Script in the Knowledge Script pane and press **F1**.

Knowledge Script	What It Does
PowerVM_CpuPoolUtil	Monitors CPU pool utilization.
PowerVM_Inventory	Monitors changes to the managed systems, LPARs, CPU Pools, physical volume groups, and physical volumes on the PowerVM server.
PowerVM_LPARCpuUtil	Monitors CPU utilization by LPAR.
PowerVM_ManagedSystemCpuUtil	Monitors CPU utilization of the management server.
PowerVM_ManagedSystemMemUtil	Monitors memory utilization of the management server.
PowerVM_PhysicalVolumeDiskSpaceUtil	Monitors PowerVM disk space utilization for physical volumes.
PowerVM_PhysicalVolumeGroupDiskSpaceUtil	Monitors PowerVM disk space utilization for physical volume groups.

3.1 PowerVM_CpuPoolUtil

Use this Knowledge Script to monitor the PowerVM CPU pool utilization. This script raises an event if CPU pool utilization exceeds the thresholds you set.

3.1.1 Resource Objects

PowerVM_CPUPoolFolder
PowerVM_CPUPoolObj

3.1.2 Default Schedule

By default, this script runs every 15 minutes.

3.1.3　Setting Parameter Values

Set the following parameters as needed:

Parameter	How to Set It
Event Settings	
Raise event when CPU pool utilization exceeds threshold?	Select **Yes** to raise an event when CPU pool utilization exceeds the threshold you set. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the CPU resource pool utilization exceeds the threshold you set. The default is 5.
Raise event when number of LPARs associated with CPU pool exceeds threshold?	Select **Yes** to raise an event when the number of LPARs associated with the CPU resource pool exceeds the threshold you set. The default is deselected.
Event severity	Set the event severity, from 1 to 40, to indicate the importance of an event in which the number of LPARs associated with the CPU resource pool exceeds the threshold you set. The default is 5.
Raise event when AppManager fails to get metrics?	Select **Yes** to raise an event when the PowerVM_CpuPoolUtil job fails to get CPU pool resource metrics. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the PowerVM_CpuPoolUtil job fails to get CPU resource pool metrics. The default is 5.
Event severity when job fails	Set the severity level, from 1 to 40, to indicate the importance of an event in which the PowerVM_CpuPoolUtil job fails. The default is 5.
Data Collection Options	
Collect data for CPU pool utilization in percent?	Select **Yes** to collect CPU resource pool usage as a percent value. The default is deselected.
Monitoring Options	
Threshold - Maximum total CPU pool utilization in percent	Specify the maximum percent of CPU resource pool utilization during any interval before an event is raised. The default is 80.
Threshold - Maximum number of LPARs associated with CPU pool	Specify the maximum number of LPARs that may be associated with the CPU resource pool during any interval before an event is raised. The default is 0.

3.2　PowerVM_Inventory

Use this Knowledge Script to monitor changes to the managed system, CPU pool, LPAR, volume group, and physical volume objects on PowerVM servers. You can configure this Knowledge Script to raise events when PowerVM objects are added or removed, or when an object attribute changes.

This Knowledge Script detects inventory changes by comparing snapshots of monitored objects from successive iterations. The first time you run this script, it creates an inventory snapshot. A snapshot reflects the current state of the monitored objects on the PowerVM server. In the second and

subsequent iterations, this Knowledge Script creates a new inventory snapshot, compares it to the previous snapshot, and generates events based on selected options and differences between the snapshots.

Running this Knowledge Script once provides no information, you must run it at least twice for it to detect any inventory changes. NetIQ Corporation recommends you run this Knowledge Script immediately after discovery, then continue to run it regularly, either periodically or asynchronously, to monitor inventory changes.

3.2.1 Object and Attribute Event Options

Each inventory object has two event options that can generate an event when:

- An object is added or removed
- An object attribute is changed

The Knowledge Script action depends on the combination of event options you select and the inventory object or attribute change that occurs.

The short and detailed event messages both include the following:

- The hierarchy where the change occurred
- The Knowledge Script iteration count where the change was detected

Each snapshot is given an iteration count, beginning with 1. The iteration count is indicated by a # character. For example, if the Knowledge Script detects an LPAR attribute change when comparing snapshot six to snapshot five, it adds [# 6] to the event short and long messages.

For objects added or removed, the short message contains the object name, its position in the object hierarchy, and the iteration number where the change was detected. For object attribute changes, the short message contains the object name and the attribute that changed.

The detailed message contains the information from the short message, but in natural language. If available, the detailed message also lists the attribute values.

Script Actions when Objects are Added or Removed

The following table summarizes possible script actions when an inventory object is added or removed. **Object** represents the option to raise an event when an inventory object is added or removed. **Attribute** represents the option to raise an event when an inventory object attribute is changed.

	Attribute=No	Attribute=Yes
Object=No	No event	Create an attribute change event: - If an object is removed, report that monitored attributes have changed from a finite value to empty - If an object is added, report that monitored attributes have changed from empty to a finite value.

	Attribute=No	Attribute=Yes
Object=Yes	Create an object added or removed event. Attribute values for the added or removed object are not listed in the event detailed message. For managed systems or physical volume groups, the child instances are also added or removed and reported in the event detailed message	Create an object added or removed event and list the last recorded attribute values in the event detailed message. For managed systems and physical volume groups, the child instances are also added or removed and reported in the event detailed message.

If you initially select **Object=Yes** and **Attribute=No** for an inventory object, then after some iteration i select **Attribute=Yes** and restart the script before iteration $i + 1$, the script will not create events for the option change when it compares snapshot $i + 1$ to snapshot i. Changes will be detected and reported beginning with the comparison of snapshot $i + 2$ to snapshot $i + 1$ in iteration $i + 2$.

If you initially select **Object=No** and/or **Attribute=No** for an inventory object, then later select **Object=Yes** and/or **Attribute=Yes** between iteration i and $i + 1$, the script will not create events for the option change when it compares snapshot $i + 1$ to snapshot i. Changes will be detected and reported beginning with the comparison of snapshot $i + 2$ to snapshot $i + 1$ in iteration $i + 2$.

Managed systems and physical volume groups are top-level objects that have child objects. When a managed system or physical volume group object is added or removed, the Knowledge Script also adds or removes its child objects. The event detailed message lists the child objects and their monitored attributes.

Child objects do not generate individual events. If a child has its own **Object=No** option selected, it is not included in the top-level event. Instead, the top-level event includes a message indicating the child object type is not being monitored.

For example, consider the following inventory option settings:

- ◆ Raise event when managed systems are added or removed
- ◆ Raise event when LPARs, physical volume groups, and physical volumes are added or removed, and when their attributes are changed
- ◆ Do not raise an event when CPU pools are added or removed or when their attributes are changed

If a managed system is removed, the Knowledge Script creates one removal event for the managed system. The LPARs, physical volume groups, and physical volumes that are children to the managed system are also reported as removed in the event detailed message and will not create additional events. CPU pools subordinate to the managed system are not reported because CPU pool monitoring is deselected, but the event detailed message includes a message stating that CPU pools are not being monitored.

Physical volume groups exhibit a similar behavior. When the Knowledge Script adds or removes a physical volume group, it also adds or removes its child physical volumes and lists them in the event detailed message.

Script Actions when Object Attributes are Changed

The following table summarizes possible script actions when an inventory object attribute is changed. **Object** represents the option to raise an event when an inventory object is added or removed. **Attribute** represents the option to raise an event when an inventory object attribute is changed.

	Attribute=No	Attribute=Yes
Object=No	No event	Create an attribute change event with the changes in the detailed message
Object=Yes	No event	Create an attribute change event with the changes in the detailed message

If you initially select **Object=No** and/or **Attribute=No** for an inventory object, then later select **Object=Yes** and/or **Attribute=Yes** between iteration i and $i + 1$, the script will not create events for the option change when it compares snapshot $i + 1$ to snapshot i. Changes will be detected and reported beginning with the comparison of snapshot $i + 2$ to snapshot $i + 1$ in iteration $i + 2$.

Aggregate Events

This Knowledge Script can create events either separately or in aggregate. Each inventory object includes a parameter to raise separate events:

- If deselected, the Knowledge Script will create a single event for all changes that occur to the inventory object type.
- If selected, the Knowledge Script will create a separate event for each change and each affected object in the inventory object type.

For example, if five LPAR attributes change during an iteration:

- If **Raise separate events for each LPAR** is **deselected** (the default), the Knowledge Script creates one event whose event detailed message includes each LPAR and attribute affected by the change.
- If **Raise separate events for each LPAR** = **Yes**, the Knowledge Script creates five attribute change events for each affected LPAR. If the change affects six LPARs, the Knowledge Script creates 30 events.

By default, the parameters are deselected and the Knowledge Script creates a single event for each inventory object type. You can use this feature to selectively reduce the number of events the Knowledge Script creates and aggregate events by inventory object type.

3.2.2   Snapshot Persistence

This Knowledge Script stores its last snapshot persistently in the UNIX agent. If you restart the agent, the Knowledge Script will continue to work with the snapshot last saved by the agent and the snapshot it creates when it resumes.

You can use snapshot persistence to review cumulative inventory changes that occur when the Knowledge Script is not running. Start the Knowledge Script with a set of options, take a snapshot, and stop the job. When you restart the Knowledge Script at some later time, it compares its first snapshot with the snapshot persistent in the UNIX agent and reports the inventory differences between the time the job stopped and the time it started again.

3.2.3 Snapshot Error Recovery

If there is an error fetching the snapshot or any part of the snapshot, the Knowledge Script does not compare or raise events for objects affected by the error. Instead, it creates an event for the error it encountered and discards the portion of the snapshot with the error, replacing it with the last known valid information. When the Knowledge Script can successfully fetch the part of the snapshot that previously had an error, it compares the part of the current snapshot to the corresponding part from the last valid snapshot.

For example, if the Knowledge Script successfully collects CPU pool information through iteration i and fails to collect CPU pool information in iteration $i + 1$ because of an error, it replaces the CPU pool information in snapshot $i + 1$ with the last valid information from snapshot i. Note that the entire snapshot is not replaced, only the part with the error. If the CPU pool information becomes available at some later iteration $i + k$, the CPU pool comparison will resume by comparing snapshot $i + k$ to snapshot $i + k - 1$, which contains the last valid CPU pool information from snapshot i.

3.2.4 Resource Objects

PowerVM_MonitorHostFolder

3.2.5 Default Schedule

By default, this script runs daily.

3.2.6 Setting Parameter Values

Set the following parameters as needed:

Parameter	How to Set It
General Settings	
Raise event when AppManager fails to get metrics?	Select **Yes** to raise an event when the PowerVM_Inventory job fails to get metrics. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the PowerVM_Inventory job fails to get metrics. The default is 5.
Event severity when job fails	Set the severity level, from 1 to 40, to indicate the importance of an event in which the PowerVM_Inventory job fails. The default is 5.
Managed System Monitoring Settings	
Raise event when managed system is added or removed?	Select **Yes** to raise an event when a managed system is added to or removed from the PowerVM server. The default is Yes.
Raise event when managed system attribute is changed?	Select **Yes** to raise an event when a managed system default or additional attribute is changed on the PowerVM server. The default is deselected.
Raise separate events for each managed system?	Select **Yes** to raise a separate event for each managed system in instances where condition changes affect multiple managed systems on the PowerVM server. The default is deselected.

Parameter	How to Set It
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which one of the following changes occur on the PowerVM server: ◆ A managed system is added to or removed ◆ A managed system attribute is changed The default is 5.
LPAR Monitoring Settings	
Raise event when LPAR is added or removed?	Select **Yes** to raise an event when an LPAR is added to or removed from a managed system on the PowerVM server. The default is Yes.
Raise event when LPAR attribute is changed?	Select **Yes** to raise an event when an LPAR default or additional attribute is changed on the PowerVM server. The default is deselected.
Raise separate events for each LPAR?	Select **Yes** to raise a separate event for each LPAR in instances where condition changes affect multiple LPARs on the PowerVM server. The default is deselected.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which one of the following changes occur on the PowerVM server: ◆ An LPAR is added to or removed ◆ An LPAR attribute is changed The default is 5.
CPU Pool Monitoring Settings	
Raise event when CPU pool is added or removed?	Select **Yes** to raise an event when a CPU pool is added to or removed from the PowerVM server. The default is Yes.
Raise event when CPU pool attribute is changed?	Select **Yes** to raise an event when a CPU default or additional attribute is changed for the PowerVM server. The default is deselected.
Raise separate events for each CPU pool?	Select **Yes** to raise a separate event for each CPU memory pool in instances where conditions affect multiple CPU pools on the PowerVM server. The default is deselected.
Event severity	Set the event severity, from 1 to 40, to indicate the importance of an event in which one of the following changes occur on the PowerVM server: ◆ A CPU pool is added to or removed ◆ A CPU attribute is changed The default is 5.
Physical Volume Group Monitoring Settings	
Raise event when physical volume group is added or removed?	Select **Yes** to raise an event when a physical volume group is added to or removed from the PowerVM server. The default is Yes.
Raise event when physical volume group attribute is changed?	Select **Yes** to raise an event when a physical volume group attribute is changed on the PowerVM server. The default is deselected.
Raise separate events for each volume group?	Select **Yes** to raise a separate event for each physical volume group in instances where condition changed affect multiple physical volume groups. The default is deselected.

Parameter	How to Set It
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which one of the following changes occur on the PowerVM server: ◆ A physical volume group is added to or removed ◆ A physical volume group attribute is changed The default is 5.
Physical Volume Monitoring Settings	
Raise event when physical volume is added or removed to volume group?	Select **Yes** to raise an event when a physical volume is added to or removed from a physical volume group on the PowerVM server. The default is Yes.
Raise event when physical volume attributes is changed?	Select **Yes** to raise an event when a physical volume attribute is changed on the powerVM server. The default is deselected.
Raise separate events for each physical volume?	Select **Yes** to raise a separate event for each physical volume in instances where condition changes affect multiple physical volumes on the PowerVM server. The default is deselected.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which one of the following occur on the PowerVM server: ◆ A physical volume is added to or removed from a physical volume group ◆ A physical volume attribute is changed The default is 5.

3.3 PowerVM_LPARCpuUtil

Use this Knowledge Script to monitor PowerVM CPU utilization by LPAR. This script raises an event if LPAR CPU utilization exceeds the threshold you set.

3.3.1 Resource Objects

PowerVM_LPARFolder
PowerVM_LPARObj

3.3.2 Default Schedule

By default, this script runs every 15 minutes.

3.3.3 Setting Parameter Values

Set the following parameters as needed:

Parameter	How to Set It
Event Settings	
Raise event when CPU utilization exceeds threshold?	Select **Yes** to raise an event when an LPAR CPU utilization percentage exceeds the threshold you set. The default is Yes.

Parameter	How to Set It
Event severity	Set the severity, from 1 to 40, to indicate the importance of an event in which an LPAR CPU utilization percentage exceeds the threshold you set.
Raise event when AppManager fails to get metrics?	Select **Yes** to raise an event when the PowerVM_LPARCpuUtil job fails to get LPAR CPU utilization metrics. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the PowerVM_LPARCpuUtil job fails to get LPAR CPU utilization metrics. The default is 5.
Event severity when job fails	Set the severity level, from 1 to 40, to indicate the importance of an event in which the PowerVM_LPARCpuUtil job fails.The default is 5.
Data Collection Options	
Collect data for LPAR CPU utilization in percent?	Select **Yes** to collect LPAR CPU utilization as a percent value. The default is deselected.
Collect data for LPAR CPU utilization in proc units?	Select **Yes** to collect LPAR CPU utilization as a number of processing units. The default is deselected.
Monitoring Options	
Threshold - Maximum LPAR CPU utilization in percent	Set the maximum percent of LPAR CPU utilization during any interval before an event is raised. The default is 80.

3.4   PowerVM_ManagedSystemCpuUtil

Use this Knowledge Script to monitor the PowerVM management server CPU utilization. This script raises an event if the management server CPU utilization exceeds the threshold you set.

3.4.1   Resource Objects

PowerVM_ManagedSystemFolder

3.4.2   Default Schedule

By default, this script runs every 15 minutes.

3.4.3   Setting Parameter Values

Set the following parameters as needed:

Parameter	How to Set It
Event Settings	
Raise event when total CPU utilization in percent exceeds threshold?	Select **Yes** to raise an event when the managed system total CPU utilization exceeds the threshold you set. The default is Yes.

Parameter	How to Set It
Event severity	Set the severity level, from 1 to 40, to indicate the importance of event in which the managed system total CPU utilization exceeds the threshold you set. The default is 5.
Raise event when total CPU utilization in proc units exceeds threshold?	Select **Yes** to raise an event when the total CPU utilization in processing units (cores) exceeds the threshold you set. The default is deselected.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the CPU utilization for any LPAR exceeds the threshold you set. The default is 5.
Raise event when AppManager fails to get metrics?	Select **Yes** to raise an event when the PowerVM_ManagedSystemCpuUtil job fails to get CPU utilization metrics. The default is Yes.
Event severity	Set the event severity, from 1 to 40, to indicate the importance of an event in which the PowerVM_ManagedSystemCpuUtil job fails to get CPU utilization metrics. The default is 5.
Event severity when job fails	Set the event severity, from 1 to 40, to indicate the importance of an event in which the PowerVM_ManagedSystemCpuUtil job fails. The default is 5.
Data Collection Options	
Collect data for total CPU utilization in percent	Select **Yes** to collect CPU utilization data as a percent value. The default is deselected.
Collect data for total CPU utilization in proc units	Select **Yes** to collect CPU utilization data as a processing units (cores) value. The default is deselected.
Monitoring Options	
Threshold - Maximum managed system total CPU utilization in percent	Set the maximum percentage of managed system CPU utilization before an event is raised. The default is 80.
Threshold - Maximum managed system total CPU utilization in proc units	Set the maximum amount of managed system CPU utilization in processing units before an event is raised. There is no default.

3.5   PowerVM_ManagedSystemMemUtil

Use this Knowledge Script to monitor the PowerVM management server memory utilization. This script raises an event if management server memory utilization exceeds the threshold you set.

3.5.1   Resource Objects

PowerVM_ManagedSystemFolder

3.5.2   Default Schedule

By default, this script runs every 15 minutes.

3.5.3   Setting Parameter Values

Set the following parameters as needed:

Parameter	How to Set It
Event Settings	
Raise event when memory utilization in percent exceeds threshold?	Select **Yes** to raise an event when the managed system memory utilization exceeds the threshold you set. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the managed system memory utilization exceeds the threshold you set. The default is 5.
Raise event when free memory is below threshold?	Select **Yes** to raise an event when the managed system free memory amount falls below the threshold you set. The default is deselected.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the managed system free memory amount falls below the threshold you set. The default is 5.
Raise event when AppManager fails to get metrics?	Select **Yes** to raise an event when the PowerVM_ManagedSystemMemUtil job fails to get managed system memory utilization metrics. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which he PowerVM_ManagedSystemMemUtil job fails to get managed system memory utilization metrics. The default is 5.
Event severity when job fails	Set the severity level, from 1 to 40, to indicate the importance of an event in which the PowerVM_ManagedSystemMemUtil job fails. The default is 5.
Data Collection Options	
Collect data for used memory in percent?	Select **Yes** to collect managed system memory utilization as a percent value. The default is deselected.
Collect data for free memory in MB?	Select **Yes** to collect managed system free memory as a megabyte (MB) value. The default is deselected.
Monitoring Options	
Threshold - Maximum managed system total memory utilization in percent	Specify the managed system total memory utilization percentage during any interval before an event is raised. The default is 80.
Threshold - Minimum managed system free memory in MB	Specify the amount of managed system free memory in MB during any interval below which an event is raised. The default is 100.

3.6 PowerVM_PhysicalVolumeDiskSpaceUtil

Use this Knowledge Script to monitor disk space utilization for a PowerVM physical volume. This Knowledge Script raises an event if total physical volume disk space utilization exceeds the threshold you set.

3.6.1 Resource Objects

PowerVM_PhysicalVolumeObj

3.6.2 Default Schedule

By default, this script runs every hour.

3.6.3 Setting Parameter Values

Set the following parameters as needed:

Parameter	How to Set It
Event Settings	
Raise event when disk space utilization in percent exceeds threshold?	Select **Yes** to raise an event when physical volume disk space utilization in percent exceeds the threshold you set. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the physical volume disk space utilization in percent exceeds the threshold you set. The default is 5.
Raise event when free disk space is below threshold?	Select **Yes** to raise an event when physical volume free disk space falls below the threshold you set. The default is deselected.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which physical volume free disk space falls below the threshold you set. The default is 5.
Raise event when AppManager fails to get metrics?	Select **Yes** to raise an event when the PowerVM_PhysicalVolumeDiskSpaceUtil job fails to get physical volume disk space utilization metrics. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the PowerVM_PhysicalVolumeDiskSpaceUtil job fails to get physical volume disk space utilization metrics. The default is 5.
Event severity when job fails	Set the severity level, from 1 to 40, to indicate the importance of an event in which the PowerVM_PhysicalVolumeDiskSpaceUtil fails. The default is 5.
Data Collection Options	
Collect data for used disk space in percent?	Select **Yes** to collect physical volume used disk space as a percent value. The default is deselected.
Collect data for free disk space in MB?	Select **Yes** to collect data for physical volume free disk space as a megabyte (MB) value. The default is deselected.
Monitoring Options	

Parameter	How to Set It
Threshold - Maximum physical volume total disk space utilization in percent	Set the maximum percentage of physical volume disk space utilization during any interval before an event is raised. The default is 80.
Threshold - Minimum physical volume free disk space in MB	Set the minimum physical volume free disk space in MB during any interval before an event is raised. The default is 100.

3.7 PowerVM_PhysicalVolumeGroupDiskSpaceUtil

Use this Knowledge Script to monitor disk space utilization for a PowerVM physical volume group. This knowledge script raises an event if the total disk space utilization exceeds the threshold you set.

3.7.1 Resource Objects

PowerVM_PhysicalVolumeGroupFolder
PowerVM_PhysicalVolumeGroupObj

3.7.2 Default Schedule

By default, this script runs every hour.

3.7.3 Setting Parameter Values

Set the following parameters as needed:

Parameter	How to Set It
Event Settings	
Raise event when disk space utilization in percent exceeds threshold?	Select **Yes** to raise an event when the physical volume group disk space utilization in percent exceeds the threshold you set. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the physical volume group disk space utilization in percent exceeds the threshold you set. The default is 5.
Raise event when free disk space is below threshold?	Select **Yes** to raise an event when the physical volume group free disk space falls below the threshold you set. The default is deselected.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the physical volume group free disk space falls below the threshold you set. The default is 5.
Raise event when AppManager fails to get metrics?	Select **Yes** to raise an event when the PowerVM_PhysicalVolumeGroupDiskSpaceUtil job fails to get physical volume group disk space utilization metrics. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the PowerVM_PhysicalVolumeGroupDiskSpaceUtil job fails to get physical volume group disk space utilization metrics. The default is 5.

Parameter	How to Set It
Event severity when job fails	Set the severity level, from 1 to 40, to indicate the importance of an event in which the PowerVM_PhysicalVolumeGroupDiskSpaceUtil job fails. The default is 5.
Data Collection Options	
Collect data for used disk space in percent?	Select **Yes** to collect physical volume group disk space utilization as a percent value. The default is deselected.
Collect data for free disk space in MB?	Select **Yes** to collect data for physical volume group free disk space as a megabyte (MB) value. The default is deselected.
Monitoring Options	
Threshold - Maximum physical volume group total disk space utilization in percent	Set the maximum physical volume group disk space utilization in percent during any interval before an event is raised. the default is 80.
Threshold - Minimum physical volume group free disk space in MB	Set the minimum physical volume group free disk space in MB during any interval before an event is raised. The default is 100.