



NetIQ® AppManager® for IBM Systems Director Management Guide

November 2015

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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 NetIQ Web site: www.netiq.com/support/am/extended/documentation/default.asp?version=AMDocumentation.

Conventions

The library uses consistent conventions to help you identify items throughout the documentation. The following table summarizes these conventions.

Convention	Use
Bold	<ul style="list-style-type: none">◆ Window and menu items◆ Technical terms, when introduced
<i>Italics</i>	<ul style="list-style-type: none">◆ Book and CD-ROM titles◆ Variable names and values◆ Emphasized words
Fixed Font	<ul style="list-style-type: none">◆ File and folder names◆ Commands and code examples◆ Text you must type◆ Text (output) displayed in the command-line interface
Brackets, such as <i>[value]</i>	<ul style="list-style-type: none">◆ Optional parameters of a command
Braces, such as { <i>value</i> }	<ul style="list-style-type: none">◆ Required parameters of a command
Logical OR, such as <i>value1 value2</i>	<ul style="list-style-type: none">◆ Exclusive parameters. Choose one parameter.

About NetIQ Corporation

NetIQ, an Attachmate business, is a global leader in systems and security management. With more than 12,000 customers in over 60 countries, NetIQ solutions maximize technology investments and enable IT process improvements to achieve measurable cost savings. The company's portfolio includes award-winning management products for IT Process Automation, Systems Management, Security Management, Configuration Audit and Control, Enterprise Administration, and Unified Communications Management. For more information, please visit www.netiq.com.

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Contacting the Online User Community

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1 Introducing AppManager for IBM Systems Director

This chapter discusses the benefits of using AppManager to monitor IBM servers configured with the IBM Systems Director (previously known as IBM Director) agent.

1.1 Features and Benefits

Installing AppManager agents on IBM Systems Director systems provides system administrators with a more complete view of system resources and status. Using the information provided by the IBM Systems Director agent, the AppManager Operator Console and Control Center can be used as a centralized management console for integrated monitoring of hardware, system, and application components and for reporting performance, event, and fault-management information.

AppManager for IBM Systems Director Knowledge Scripts allow you to monitor hardware components and the health of IBM Systems Director systems and store information in a central repository for reporting and capacity planning, providing better visibility of server operation and potential problems.

Knowledge Scripts allow you greater flexibility in acting on events and degraded system operation. By collecting data on key resources you can track failures and conditions that could otherwise be missed, such as fluctuations in voltage levels or fan speed degradation.

Several Knowledge Scripts monitor the general health and status of IBM Systems Director systems:

- ♦ The current health information and predictive health information of all IBM Systems Director hardware components, including voltage level, temperature, fan speed, and logical disk errors.
- ♦ The up and down status of all IBM Systems Director-related services.
- ♦ Any Windows Event Log entries created by IBM Systems Director. You can filter Event Log entries to look for specific critical messages or specific user or server names.

Other Knowledge Scripts monitor IBM Systems Director status:

- ♦ Speed of a particular fan or all fans on an IBM Systems Director system.
- ♦ Temperature detected by a particular temperature sensor, or all temperature sensors on an IBM Systems Director system.
- ♦ The voltage levels detected by a particular voltage sensor, or all voltage sensors on an IBM Systems Director system.
- ♦ Input and output transmission errors for network interface controllers on an IBM Systems Director system.
- ♦ The operational status of ServeRAID controllers, logical drives, and physical drives.
- ♦ Predicted failures of ServeRAID physical drives.
- ♦ The memory bank errors on an IBM Systems Director system.

2 Installing AppManager for IBM Systems Director

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

This chapter assumes you have AppManager installed. For more information about installing AppManager or about AppManager system requirements, see the *Installation Guide for AppManager*, which is available on the [AppManager Documentation](#) page.

2.1 System Requirements

For the latest information about supported software versions and the availability of module updates, visit the [AppManager Supported Products](#) page. Unless noted otherwise, this module supports all updates, hotfixes, and service packs for the releases listed below.

AppManager for IBM Systems Director has the following system requirements:

Software/Hardware	Version
NetIQ AppManager installed on the AppManager repository (QDB) computers, on the XYZ computers you want to monitor (agents), and on all console computers	7.0 or later Support for Windows Server 2008 on AppManager 7.x requires AppManager Windows Agent hotfix 71704 or later. For more information, see the AppManager Suite Hotfixes page.
Microsoft Windows operating system on agent computers	One of the following: <ul style="list-style-type: none">◆ Windows Server 2012 R2◆ Windows Server 2012◆ Windows Server 2008 R2◆ Windows Server 2008 (32- and 64-bit)◆ Windows Server 2003 R2 (32- and 64-bit)
AppManager for Microsoft Windows module installed on repository, agent, and console computers	Support for Windows Server 2008 R2 on AppManager 7.x requires the AppManager for Windows module, version 7.6.170.0 or later. For more information, see the AppManager Module Upgrades & Trials page.

Software/Hardware	Version
IBM Director or IBM Systems Director installed on the agent computers	<p>One of the following:</p> <ul style="list-style-type: none"> ◆ For Windows Server 2012 and 2012 R2: <ul style="list-style-type: none"> ◆ IBM Systems Director Common Agent version 6.3.5 ◆ IBM Systems Director Platform Agent version 6.3.5 ◆ IBM Systems Director Platform Agent version 6.3.7 (update only) ◆ For Windows Server 2003 and 2008: <ul style="list-style-type: none"> ◆ IBM Director Agent version 5.20.3 ◆ IBM Systems Director Common Agent version 6.1.0, 6.1.1, 6.2.0, or 6.2.1 ◆ IBM Systems Director Platform Agent version 6.1.0, 6.1.1, 6.1.2, 6.2.0, or 6.2.1 ◆ For Windows Server 2008 R2: <ul style="list-style-type: none"> ◆ IBM Systems Director Common Agent version 6.2.0, 6.2.1 ◆ IBM Systems Director Platform Agent version 6.1.2, 6.2.0, or 6.2.1
LSI MegaRAID Controller installed on the agent computers along with the respective provider	<p>To monitor and obtain RAID data using WMI (Windows Management Instrumentation), one of the following:</p> <ul style="list-style-type: none"> ◆ For LSI MegaRAID Adapter systems: LSI MegaRAID provider, which is installed by default with IBM Systems Director versions 6.1.1 or 6.1.2 ◆ For IBM Systems Director versions 6.1.0 and 5.20.3: LSI MegaRAID provider, <code>LSI_MR_HHR-WS32-00.05.0504.exe</code>, which can be downloaded from the IBM Director Download Web site <p>For the following Windows operating systems and versions of IBM Director or IBM Systems Director:</p> <ul style="list-style-type: none"> ◆ For 32-bit or 64-bit Windows Server 2003 and 2008: <ul style="list-style-type: none"> ◆ IBM Director Agent version 5.20.3 ◆ IBM Systems Director Common Agent version 6.1.0 or 6.1.1 ◆ IBM Systems Director Platform Agent version 6.1.0, 6.1.1, or 6.1.2 ◆ For Windows Server 2008 R2: <ul style="list-style-type: none"> ◆ R2 for IBM Systems Director Platform Agent version 6.1.2 <p>NOTE: : If you run IBM Director Agent versions 6.2.0 and 6.2.1, the required providers and extensions are installed by default.</p>

Software/Hardware	Version
Adaptec RAID Controller installed on the agent computers along with the respective extension	<p>To monitor and obtain RAID data using WMI for IBM Systems Director versions prior to 6.3.5 and using SNMP (Simple Network Management Protocol) for IBM Systems Director version 6.3.5 or later:</p> <ul style="list-style-type: none"> ◆ For Adaptec RAID adapter systems: ServeRAID Manager Extension <code>serveraid_9.30_windows.exe</code>, which can be downloaded from the IBM Director Download Web site <p>NOTE: The installation of ServeRAID Manager is necessary on IBM Systems Director Common Agent or Platform Agent version 6.3.5.</p> <p>For the following Windows operating systems and versions of IBM Director or IBM Systems Director:</p> <ul style="list-style-type: none"> ◆ For 32-bit or 64-bit Windows Server 2003 and 2008 <ul style="list-style-type: none"> ◆ IBM Director Agent version 5.20.3 ◆ IBM Systems Director Common Agent or Platform Agent version 6.1.0 <p>NOTE: : If you run IBM Director Agent versions 6.2.0 and 6.2.1, the required providers and extensions are installed by default.</p>

If you encounter problems using this module with a later version of your application, contact [NetIQ Technical Support](#).

2.2 Installing the Module

Run the module installer only once on any computer. The module installer automatically identifies and updates all relevant AppManager components on a computer.

Access the `AM70-NetfinityDir-7.x.x.0.msi` module installer from the `AM70-NetfinityDir-7.x.x.0` self-extracting installation package on the [AppManager Module Upgrades & Trials](#) page.

You can install the Knowledge Scripts into local or remote AppManager repositories (QDBs). Install these components only once per QDB.

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

You can install the module manually, or you can use Control Center to deploy the module on a remote computer where an agent is installed. For more information, see [Section 2.3, “Deploying the Module with Control Center,” on page 14](#). However, if you do use Control Center to deploy the module, Control Center only installs the *agent* components of the module. The module installer installs the QDB and console components as well as the agent components on the agent computer.

To install the module manually:

- 1 Double-click the module installer `.msi` file.
- 2 Accept the license agreement.
- 3 Review the results of the pre-installation check. You can expect one of the following three scenarios:
 - ◆ *No AppManager agent is present.* In this scenario, the pre-installation check fails, and the installer does not install agent components.

- ♦ *An AppManager agent is present, but some other prerequisite fails.* In this scenario, the default is to not install agent components because of one or more missing prerequisites. However, you can override the default by selecting **Install agent component locally**. A missing application server for this particular module often causes this scenario. For example, installing the AppManager for Microsoft SharePoint module requires the presence of a Microsoft SharePoint server on the selected computer.
 - ♦ *All prerequisites are met.* In this scenario, the installer will install the agent components.
- 4 To install the Knowledge Scripts into the QDB:
 - 4a Select **Install Knowledge Scripts** to install the repository components, including the Knowledge Scripts, object types, and SQL stored procedures.
 - 4b Specify the SQL Server name of the server hosting the QDB, as well as the case-sensitive QDB name.
 - 5 **If you use Control Center 7.x**, run the module installer for each QDB attached to Control Center.
 - 6 **If you use Control Center 8.x or later**, run the module installer only for the primary QDB, and Control Center will automatically replicate this module to secondary QDBs.
 - 7 Run the module installer on all console computers to install the Help and console extensions.
 - 8 Run the module installer on the IBM Systems Director computers you want to monitor (agents) to install the agent components.
 - 9 **If you have not discovered IBM Systems Director resources**, run the Discovery_NetfinityDir Knowledge Script on all agent computers where you installed the module. For more information, see [Section 2.5, “Discovering IBM Systems Director Resources,” on page 16](#).
 - 10 To get the updates provided in this release, upgrade any running Knowledge Script jobs. For more information, see [Section 2.6, “Permissions for Running Knowledge Scripts,” on page 16](#).

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

IMPORTANT: To migrate to IBM Systems Director version 6.3.5:

1. Install IBM Systems Director Common Agent version 6.3.5.
 2. Install ServeRAID Manager version 9.30 for the ServeRAID controller.
 3. Run the Discovery_NetfinityDir Knowledge Script to refresh the tree view in the Operator Console.
-

2.3 Deploying the Module with Control Center

You can use Control Center to deploy the module on a remote computer where an agent is installed. This topic briefly describes the steps involved in deploying a module and provides instructions for checking in the module installation package. For more information, see the *Control Center User Guide for AppManager*, which is available on the [AppManager Documentation](#) page.

2.3.1 Deployment Overview

This section describes the tasks required to deploy the module on an agent computer.

To deploy the module on an agent computer:

- 1 Verify the default deployment credentials.

- 2 Check in an installation package.
- 3 Configure an e-mail address to receive notification of a deployment.
- 4 Create a deployment rule or modify an out-of-the-box deployment rule.
- 5 Approve the deployment task.
- 6 View the results.

2.3.2 Checking In the Installation Package

You must check in the installation package, `AM70-NetfinitDir-7.x.x.0.xml`, before you can deploy the module on an agent computer.

To check in a module installation package:

- 1 Log in to Control Center using an account that is a member of a user group with deployment permissions.
- 2 Navigate to the **Deployment** tab (for AppManager 8.x or later) or **Administration** tab (for AppManager 7.x).
- 3 In the Deployment folder, select **Packages**.
- 4 On the Tasks pane, click **Check in Deployment Packages** (for AppManager 8.x or later) or **Check in Packages** (for AppManager 7.x)
- 5 Navigate to the folder where you saved `AM70-NetfinitDir-7.x.x.0.xml` and select the file.
- 6 Click **Open**. The Deployment Package Check in Status dialog box displays the status of the package check in.
- 7 To get the updates provided in this release, upgrade any running Knowledge Script jobs. For more information, see [Section 2.7, "Upgrading Knowledge Script Jobs," on page 17](#).

2.4 Silently Installing the Module

To silently (without user intervention) install a module, create an initialization file (`.ini`) for this module that includes the required property names and values to use during the installation.

To create and use an initialization file for a silent installation:

- 1 Create a new text file and change the filename extension from `.txt` to `.ini`.
- 2 To specify the community string required to access hardware resources, include the following text in the `.ini` file:

```
MO_CommunityString=string name
```

where *string name* is the name of the community string, such as `public`.

- 3 Save and close the `.ini` file.
- 4 Run the following command from the folder in which you saved the module installer:

```
msiexec.exe /i "AM70-NetfinitDir-7.x.x.0.msi" /qn MO_CONFIGOUTINI="full path to the initialization file"
```

where `x.x` is the actual version number of the module installer.

To create a log file that describes the operations of the module installer, add the following flag to the command noted above:

```
/L* "AM70-NetfinitDir-7.x.x.0.msi.log"
```

The log file is created in the folder in which you saved the module installer.

2.5 Discovering IBM Systems Director Resources

Use the `Discovery_NetfinityDir` Knowledge Script to discover the resource and configuration information of IBM Systems Director.

When the discovery process completes successfully, IBM Systems Director Knowledge Scripts appear in the **Netfinity** view of the Operator Console in the NetfinityDir tab of the Knowledge Script pane.

By default, this script is only run once for each computer. To ensure the best performance of this Knowledge Script, NetIQ Corporation recommends that you do not run this script more than once an hour.

Set the Values tab parameters as needed.

Description	How to Set It
Event for successful discovery?	This Knowledge Script always raises an event when the job fails for any reason. In addition, you can set this parameter to <code>y</code> to raise an event when the job succeeds. The default is <code>n</code> .
Raise event when discovery is partial?	Specifies whether this Knowledge Script will raise an event when discovery only partially completes. The default is <code>n</code> .
SNMP community string	Provide the SNMP community name of the IBM Systems Director server. The default is either the community name entered in AppManager Security Manager or <i>public</i> if no community name has been entered.
Event severity when discovery...	<p>Set the event severity level, from 1 to 40, to reflect the importance when the job:</p> <ul style="list-style-type: none">◆ ...succeeds. If you set this Knowledge Script to raise an event when the job succeeds, set the event severity level for a successful discovery. The default is 25.◆ ...is partially done. Set the event severity level for a discovery that returns some data but also generates warning messages. The default is 15.◆ ...fails. The default is 5. <p>NOTE: If required services, such as SNMP and WMI, are not running on the computer you are discovering, you may see a severity 15 event. If you see this type of event, see the detail message for more information about what caused the discovery to fail.</p>

2.6 Permissions for Running Knowledge Scripts

AppManager for IBM Systems Director requires that the NetIQ AppManager Client Resource Monitor (`netiqmc`) and the NetIQ AppManager Client Communication Manager (`netiqccm`) agent services have the following permissions:

- ◆ Ability to log on as a service
- ◆ Local administrative permissions on the IBM Systems Director system

By default, the setup program configures the agent to use the Windows Local System account.

To update the agent services:

- 1 Start the Services Administrative Tool. You can open the Administrative Tools folder in the Control Panel.
- 2 Right-click the **NetIQ AppManager Client Communication Manager** (`netiqccm`) service in the list of services, and select **Properties**.
- 3 On the Logon tab, specify the appropriate account to use.
- 4 Click **OK**.
- 5 Repeat steps 2 through 4 for the **NetIQ AppManager Client Resource Monitor** (`netiqmc`) service.
- 6 Restart both services.

2.7 Upgrading Knowledge Script Jobs

You can push changes for updated scripts to running Knowledge Script jobs in one of the following ways:

- ♦ Use the `AMAdmin_UpgradeJobs` Knowledge Script.
- ♦ Use the Properties Propagation feature.

2.7.1 Running `AMAdmin_UpgradeJobs`

The `AMAdmin_UpgradeJobs` Knowledge Script can push changes to running Knowledge Script jobs. Your AppManager repository (QDB) must be at version 7.0 or later. In addition, the repository computer must have hotfix 72040 installed, or the most recent AppManager Repository hotfix. To download the hotfix, see the [AppManager Suite Hotfixes](#) page.

Upgrading jobs to use the most recent script version allows the jobs to take advantage of the latest script logic while maintaining existing parameter values for the job.

For more information, see the Help for the `AMAdmin_UpgradeJobs` Knowledge Script.

2.7.2 Propagating Knowledge Script Changes

You can propagate script changes to jobs that are running and to Knowledge Script Groups, including recommended Knowledge Script Groups and renamed Knowledge Scripts.

Before propagating script changes, verify that the script parameters are set to your specifications. Customized script parameters may have reverted to default parameters during the installation of the module. New parameters may need to be set appropriately for your environment or application.

You can choose to propagate only properties (specified in the Schedule and Values tabs), only the script (which is the logic of the Knowledge Script), or both. Unless you know specifically that changes affect only the script logic, you should propagate both properties and the script.

For more information about propagating Knowledge Script changes, see the “Running Monitoring Jobs” chapter of the *Operator Console User Guide for AppManager*.

Propagating Changes to Ad Hoc Jobs

You can propagate the properties and the logic (script) of a Knowledge Script to ad hoc jobs started by that Knowledge Script. Corresponding jobs are stopped and restarted with the Knowledge Script changes.

To propagate changes to ad hoc Knowledge Script jobs:

- 1 In the Knowledge Script view, select the Knowledge Script for which you want to propagate changes.
- 2 Click **Properties Propagation > Ad Hoc Jobs**.
- 3 Select the components of the Knowledge Script that you want to propagate to associated ad hoc jobs:

Select	To propagate
Script	The logic of the Knowledge Script.
Properties	Values from the Knowledge Script Schedule and Values tabs, such as schedule, monitoring values, actions, and advanced options.

Propagating Changes to Knowledge Script Groups

You can propagate the properties and logic (script) of a Knowledge Script to corresponding Knowledge Script Group members.

After you propagate script changes to Knowledge Script Group members, you can propagate the updated Knowledge Script Group members to associated running jobs. For more information, see [“Propagating Changes to Ad Hoc Jobs” on page 18](#).

To propagate Knowledge Script changes to Knowledge Script Groups:

- 1 In the Knowledge Script view, select the Knowledge Script Group for which you want to propagate changes.
- 2 On the KS menu, select **Properties propagation > Ad Hoc Jobs**.
- 3 **If you want to exclude a Knowledge Script member from properties propagation**, deselect that member from the list in the Properties Propagation dialog box.
- 4 Select the components of the Knowledge Script that you want to propagate to associated Knowledge Script Groups:

Select	To propagate
Script	The logic of the Knowledge Script.
Properties	Values from the Knowledge Script Schedule and Values tabs, including the schedule, actions, and Advanced properties.

- 5 Click **OK**. Any monitoring jobs started by a Knowledge Script Group member are restarted with the job properties of the Knowledge Script Group member.

3 IBM Systems Director Knowledge Scripts

AppManager for IBM Systems Director provides the following Knowledge Scripts: for monitoring IBM Systems Director resources. From the Knowledge Script view of Control Center, you can access more information about any NetIQ-supported Knowledge Script by selecting it and clicking **Help**. Or in the Operator Console, click any Knowledge Script in the Knowledge Script pane and press F1.

Knowledge Script	What It Does
EventLog	Scans the Application log for IBM Systems Director entries.
FanSpeed	Monitors the speed of some or all fans on an IBM Systems Director server.
HealthCheckHW	Monitors the overall health of IBM Systems Director hardware components.
HealthCheckMgmtSrv	Monitors IBM Systems Director-related services.
MemoryErrors	Monitors the memory bank errors on an IBM Systems Director system.
NICError	Monitors the network interface controllers on an IBM Systems Director server for transmission errors.
ServeRAIDControllerStat	Monitors the operational status of ServeRAID controllers.
ServeRAIDLogicalDriveStat	Monitors the operational status of ServeRAID logical drives.
ServeRAIDPhysicalDrivePFA	Monitors for predicted failures of RAID physical drives.
ServeRAIDPhysicalDriveStat	Monitors the operational status of ServeRAID physical drives.
Temperature	Monitors the temperature on a IBM Systems Director server.
Voltage	Monitors the voltage levels on a IBM Systems Director server.

3.1 EventLog

Use this Knowledge Script to scan the Application log for entries created by IBM Systems Director server.

In the first interval, the value you specify for the *Start with events in past N hours* option determines how far back in the log to check for matching entries. As the script continues to run at subsequent intervals, it checks for any new entries since the last log check.

You can further restrict the types of log entries that generate an event in two ways:

- Use the *Monitor for events of type* options to search only certain types of events, such as Warning events.
- Use the *Filter the [...] field for* options to search only for specific information, such as events with a specific ID.

Each time this script runs, it checks the Application log for entries matching your selection criteria and raises an event if matching entries are found. The event detail message returns the text of the log entries found. When this script is set to collect data, it returns the number of log entries found, and the data point detail message returns the text of the log entries.

3.1.1 Resource Object

Netfinity Director

3.1.2 Default Schedule

The default interval for this script is **Every 10 minutes**.

3.1.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Event?	Set to y to raise an event when the event log contains entries that match the criteria you specify. The default is y .
Collect data?	Set to y to collect data for charts and reports. If set to y , this script returns the number of new event log entries matching your selection criteria. The detail message returns the text of the log entries. The default is n .
Start with events in past N hours	<p>Set this option to determine which existing entries in the System log are scanned when the script starts to run:</p> <ul style="list-style-type: none"> ◆ -1 scan all existing entries ◆ 0 do not scan existing entries ◆ N scan entries created in the past <i>N</i> hours (for example, 8 for the past 8 hours) <p>The default is 0.</p>
Monitor for Error events?	Set to y to monitor the event log for Error events. The default is y .
Monitor for Warning events?	Set to y to monitor the event log for Warning events. The default is y .
Monitor for Information events?	Set to y to monitor the event log for Information events. The default is y .
Filter the Event ID field for	<p>To monitor for particular Event IDs, enter an appropriate search string. The script looks for matching entries in the Event Log's Event field. Multiple IDs and ranges can be entered separated by commas. For example: 1,2,10-15,202.</p> <p>The search string can contain criteria used to include entries, exclude entries, or both. Separate include and exclude criteria with a colon (:). If you are specifying only include criteria, the colon is not necessary.</p>

Description	How to Set It
Filter the Event Description field for	To monitor for events with a particular detail description or containing keywords in the description, enter an appropriate search string. The looks for matching entries in the Event Log's Description field. Multiple strings can be entered separated by commas. The search string can contain criteria used to include entries, exclude entries, or both. Separate include and exclude criteria with a colon (:). If you are specifying only include criteria, the colon is not necessary.
Maximum number of entries per event message	Specify the maximum number of entries to be recorded into each event's detail message. If the script finds more matching entries in the log than can be put into a single event message, it raises multiple events to return all the log entries. The default is 30 entries.
Event severity level	Set the event severity level, from 1 to 40, to indicate the importance of an event in which the event log contains entries that match your selection criteria. The default is 8.

3.2 FanSpeed

Use this Knowledge Script to monitor the speed of a particular fan or all fans on an IBM Systems Director server. This script is useful for collecting data on all fans on an IBM Systems Director server. To raise events on the overall health of an IBM Systems Director system, including fan speed-related events, use the [HealthCheckHW](#) Knowledge Script.

IBM Systems Director defines the upper and lower operating thresholds for fan speed. Use the IBM Systems Director-specified threshold values to monitor all fans or a particular fan and raise a Warning event when the fan speed is less than the upper threshold and a Critical event when the fan speed is less than the lower threshold. You can also set a parameter to raise an event if the fan speed is normal.

Alternatively, this script allows you to specify custom values for upper and lower thresholds. Check your IBM Systems Director documentation to determine the minimum speed for a fan and set the custom thresholds in this Knowledge Script accordingly. When using this script to raise events based on a custom threshold, to avoid raising false events on fans that run normally at different speeds, run the script on a particular fan sensor.

3.2.1 Resource Objects

Fan folder or a fan icon on a Netfinity Director server

3.2.2 Default Schedule

The default interval for this script is **Every 5 minutes**.

3.2.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Event?	Set to y to raise an event when fan speed exceeds the threshold you specify. The default is y .
Raise event when fan speed is normal?	Set to y to raise an event when fan speed is normal. The default is n .
Collect data?	Set to y to collect data for charts and reports. If set to y , data collection records fan speed information for each fan you are monitoring. The default is n .
Threshold option (0 for standard, 1 for custom)	<p>Specify a threshold option for raising events. Enter:</p> <ul style="list-style-type: none">◆ 0 to use the IBM Systems Director-specified threshold values for normal operation. Based on these threshold values, this Knowledge Script can raise a Warning event when the fan speed is below the upper threshold and a Critical event when the fan speed is below the lower threshold.◆ 1 to specify custom threshold values for the fan speed thresholds. <p>The default is 0.</p>
Custom threshold for a Warning event	<p>Specify an upper threshold, in revolutions per minute, for raising a Warning event. For example, to raise a Warning event when the fan speed is less than 1,300 RPM, specify 1300. The default is 750 RPM.</p> <p>To use this option, the <i>Threshold option</i> must be configured to raise an event based on custom thresholds (option 1).</p>
Custom threshold for a Critical event	<p>Specify a lower threshold, in revolutions per minute, for raising a Critical event. For example, to raise a Critical event when the fan speed is less than 1,100 RPM, specify 1100.</p> <p>The default is 500 RPM.</p> <p>To use this option, the <i>Threshold option</i> must be configured to raise an event based on custom thresholds (option 1).</p>
Event severity levels...	<p>Set the event severity level, from 1 to 40, to indicate the importance of the following events:</p> <ul style="list-style-type: none">◆ ...Normal event. Fan speed is normal. The default is 30.◆ ...Warning event. Fan speed is lower than the upper threshold. The default is 15.◆ ...Critical event. Fan speed is lower than the lower threshold. The default is 5.◆ ...Threshold information is not available. This can occur when the IBM Systems Director threshold or a custom threshold is 0. The default is 25.

3.3 HealthCheckHW

Use this Knowledge Script to monitor the current health information and predictive health information of IBM Systems Director hardware components, including voltage level, temperature, fan speed, and logical disk errors. This script raises an event when the status of a server component is considered by IBM Systems Director to be in a Warning or Critical state.

IBM Systems Director defines the operating thresholds for these components. You can use the default event severity levels for Warning and Critical events or set your own.

This script is useful for monitoring all of the voltage, temperature and fan sensors, and logical disks on an IBM Systems Director server.

3.3.1 Resource Object

Netfinity Director server

3.3.2 Default Schedule

The default interval for this script is **Every 5 minutes**.

3.3.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Event?	Set to y to raise an event when a server component is in Warning or Critical state. The default is y.
Collect data?	Set to y to collect data for charts and reports. If set to y, data collection records the overall status of voltage levels, temperature, fan speed, and logical disk errors. The default is n.
Event severity levels...	Set the event severity level, from 1 to 40, to indicate the importance of the following events: <ul style="list-style-type: none">◆ ...Warning event. The default is 15.◆ ...Critical event. The default is 5.

3.4 HealthCheckMgmtSrv

Use this Knowledge Script to monitor the up and down status of IBM Systems Director-related services. If a service is not running, an event is raised and the service can be automatically restarted.

This script is useful for monitoring some or all of the IBM Systems Director-related services on an IBM Systems Director server.

3.4.1 Resource Object

Netfinity Director server

3.4.2 Default Schedule

The default interval for this script is **Every 5 minutes**.

3.4.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Auto-start a service?	Set to y to automatically restart down services. The default is y .
Collect data?	Set to y to collect data for service status. If set to y , data collection records the service availability. The default is n .
Event severity level for...	Set the event severity level, from 1 to 40, to indicate the importance of: <ul style="list-style-type: none">◆ ...Failed to restart. The default is 5.◆ ...Successful restart. The default is 25.◆ ...Do not restart. The default is 18.

3.5 MemoryErrors

Use this Knowledge Script to monitor the memory errors of an IBM Systems Director server. You can monitor the errors of an individual memory bank or all the memory banks of an IBM Systems Director system. An event is raised if the number of bits of memory errors exceeds the threshold.

3.5.1 Resource Objects

Physical Memory or a DIMM icon on a Netfinity Director server

3.5.2 Default Schedule

The default interval for this script is **Every 5 minutes**.

3.5.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Event?	Set to y to raise an event if a threshold is exceeded. The default is y .
Collect data?	Set to y to collect data for memory bank errors. If set to y , data collection records the memory bank errors with the details of the memory slot. The default is n .
Threshold level	Specify the maximum amount of memory errors that can occur before an event is raised. The default is 1 bit.

Description	How to Set It
Event severity levels...	Set the event severity level, from 1 to 40, to indicate the importance of the following events: <ul style="list-style-type: none"> ◆ ...Critical event. The default is 5. ◆ ...Severity normal. The default is 25.

3.6 NICError

Use this Knowledge Script to monitor the number of network interface controller (NIC) transmission errors on an IBM Systems Director server. Both input and output errors are reported and compared to respective thresholds. By default, if the number of NIC errors per minute exceeds the threshold you set, an event is raised.

This script is useful for collecting data and raising events on some or all NICs on an IBM Systems Director server.

3.6.1 Resource Objects

NIC folder NIC icon on a Netfinity Director server

3.6.2 Default Schedule

The default interval for this script is **Every 30 minutes**.

3.6.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Event?	Set to y to raise an event if a threshold is exceeded. The default is y .
Collect data?	Set to y to collect data for charts and reports. If set to y , data collection records the number of input and output errors per minute at each monitoring interval. The default is n .
Maximum threshold for input errors	Specify the maximum number of input errors that can occur per minute before an event is raised. The default is 2 errors per minute.
Maximum threshold for output errors	Specify the maximum number of output errors that can occur per minute before an event is raised. The default is 4 errors per minute.
Event severity level for...	Set the event severity level, from 1 to 40, to indicate the importance of: <ul style="list-style-type: none"> ◆ ...input errors per minute exceed the threshold. The default is 10. ◆ ...output errors per minute exceed the threshold. The default is 10.

3.7 ServeRAIDControllerStat

Use this Knowledge Script to monitor the operational status of ServeRAID controllers. If the RAID controller has failed or its status cannot be determined, an event is raised.

NOTE: This Knowledge Script attempts to query the metrics using SNMP, and if that fails, it uses WMI. An event is raised if both attempts fail.

3.7.1 Resource Object

RAID controller

3.7.2 Default Schedule

The default interval for this script is **Every 10 minutes**.

3.7.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Event?	Set to y to raise an event if the RAID controller has failed or its status cannot be determined. The default is y .
Collect data?	Set to y to collect data for charts and reports. If set to y , this Knowledge Script returns: <ul style="list-style-type: none">◆ 100 if the RAID controller is functioning properly◆ 0 if the RAID controller has failed or the state cannot be determined The default is n .
Community	Provide the SNMP community name of the RAID device. The default is either the community name entered in AppManager Security Manager or <i>public</i> if no community name has been entered.
Event severity level for...	Set the event severity level, from 1 to 40, to indicate the importance of: <ul style="list-style-type: none">◆ ...SNMP and WMI, or IBM Director Agent failure. The default is 9.◆ ...critical condition. The default is 8.◆ ...unknown status. The default is 15.

3.8 ServeRAIDLogicalDriveStat

Use this Knowledge Script to monitor the operational status of ServeRAID logical drives. If the RAID logical drive is offline, migrating, free, or in critical condition or unknown state, an event is raised.

NOTE: This Knowledge Script attempts to query the metrics using SNMP, and if it fails, it uses the WMI. An event is raised if both attempts fail.

3.8.1 Resource Objects

RAID logical drives

3.8.2 Default Schedule

The default interval for this script is **Every 10 minutes**.

3.8.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Event?	Set to y to raise an event if the RAID logical drive is offline, migrating, free, or in a critical or unknown state. The default is y .
Collect data?	Set to y to collect data for charts and reports. If set to y , this Knowledge Script returns: <ul style="list-style-type: none">◆ 100 if the RAID logical drive is functioning properly◆ 50 if the RAID logical drive is offline, migrating, free, or degraded◆ 0 if the RAID logical drive is in critical condition or the state cannot be determined The default is n .
Community	Provide the SNMP community name of the RAID device. The default is either the community name entered in AppManager Security Manager or <i>public</i> if no community name has been entered.
Event severity level for...	Set the event severity level, from 1 to 40, to indicate the importance of: <ul style="list-style-type: none">◆ ...SNMP and WMI, or IBM Director Agent failure. The default is 9.◆ ...critical condition. The default is 8.◆ ...drive offline, migrating, or free. The default is 18.◆ ...unknown status. The default is 15.

3.9 ServeRAIDPhysicalDrivePFA

Use this Knowledge Script to monitor for predicted failures of RAID physical drives. If a failure is predicted, an event is raised.

NOTE: This Knowledge Script attempts to query the metrics using SNMP, and if that fails, it uses WMI. An event is raised if both attempts fail.

3.9.1 Resource Objects

RAID disk drives

3.9.2 Default Schedule

The default interval for this script is **Every 10 minutes**.

3.9.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Event?	Set to y to raise an event if a failure is predicted for the RAID physical drive. The default is y .
Collect data?	Set to y to collect data for charts and reports. If set to y , this Knowledge Script returns: <ul style="list-style-type: none">◆ 100 if the RAID physical drive is functioning properly◆ 0 if a failure is predicted for the RAID physical drive The default is n .
Community	Provide the SNMP community name of the RAID device. The default is either the community name entered in AppManager Security Manager or <i>public</i> if no community name has been entered.
Event severity level for...	Set the event severity level, from 1 to 40, to indicate the importance of: <ul style="list-style-type: none">◆ ...SNMP and WMI, or IBM Director Agent failure. The default is 9.◆ ...failure predicted. The default is 8.

3.10 ServeRAIDPhysicalDriveStat

Use this Knowledge Script to monitor the operational status of ServeRAID physical drives. If the RAID physical drive is ready, on standby, being rebuilt, not present, or in an unknown state, an event is raised.

NOTE: This Knowledge Script attempts to query the metrics using SNMP, and if that fails, it uses WMI. An event is raised if both attempts fail.

3.10.1 Resource Objects

RAID disk drives

3.10.2 Default Schedule

The default interval for this script is **Every 10 minutes**.

3.10.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Event?	Set to y to raise an event if a RAID physical drive is ready, on standby, being rebuilt, not present, or in an unknown state. The default is y .
Collect data?	Set to y to collect data for charts and reports. If set to y , this Knowledge Script returns: <ul style="list-style-type: none">◆ 100 if the RAID physical drive is online, or is a spare drive◆ 50 if the RAID physical drive is ready, on standby, or being rebuilt◆ 0 if the RAID physical drive is down, not present, or the state cannot be determined The default is n .
Community	Provide the SNMP community name of the RAID device. The default is either the community name entered in AppManager Security Manager or <i>public</i> if no community name has been entered.
Event severity level for...	Set the event severity level, from 1 to 40, to indicate the importance of: <ul style="list-style-type: none">◆ ...SNMP and WMI, or IBM Director Agent failure. The default is 9.◆ ...drive is down. The default is 8.◆ ...drive on standby, being rebuilt, or ready. The default is 18.◆ ...unknown status. The default is 15.

3.11 Temperature

Use this Knowledge Script to monitor a particular temperature sensor or all temperature sensors on an IBM Systems Director server. This script is useful for collecting data on all temperature sensors on an IBM Systems Director server. To raise events on the overall health of an IBM Systems Director system, including temperature-related events, use the [HealthCheckHW](#) Knowledge Script.

IBM Systems Director defines the lower and upper operating thresholds for temperature. Use the IBM Systems Director-specified threshold values to monitor all temperature sensors or a particular temperature sensor and raise a Warning event when the temperature is higher than the lower threshold and a Critical event when the temperature is higher than the upper threshold.

Alternatively, this script allows you to specify custom values for lower and upper thresholds. Check your IBM Systems Director documentation to determine an acceptable lower and upper threshold for temperature and set the custom thresholds in this script accordingly. When using this script to raise events based on a custom threshold, to avoid raising false events on temperature sensors that run normally at different temperatures, run the script on a particular temperature sensor.

3.11.1 Resource Objects

Temperature folder or a temperature icon on a Netfinity Director server

3.11.2 Default Schedule

The default interval for this script is **Every 5 minutes**.

3.11.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Event?	Set to y to raise an event if a value exceeds the threshold you set. The default is y .
Collect data?	Set to y to collect data for charts and reports. If set to y , this Knowledge Script records the temperature detected by the sensor in Celsius. The default is n .
Threshold option (0 for standard, 1 for custom)	<p>Specify a threshold for raising events. Enter:</p> <ul style="list-style-type: none">◆ 0 to use the IBM Systems Director-specified threshold values for normal operation. Based on these thresholds, this Knowledge Script can raise a Warning event when the temperature is above the lower threshold and a Critical event when the temperature is above the upper threshold.◆ 1 to specify custom threshold values for lower and upper temperature thresholds. <p>The default is 0.</p>
Custom threshold for a Warning event	<p>Specify a lower threshold, in Celsius, for raising a Warning event. For example, to raise a Warning event when the operating temperature is higher than 60° Celsius, specify 60. The default is 65° Celsius.</p> <p>To use this option, the <i>Threshold option</i> must be configured to raise an event based on custom thresholds (option 1).</p>
Custom threshold for a Critical event	<p>Specify an upper threshold, in Celsius, for raising a Critical event. For example, to raise a Critical event when the operating temperature is higher than 85° Celsius, specify 85.</p> <p>The default is 80° Celsius.</p> <p>To use this option, the <i>Threshold option</i> must be configured to raise an event based on custom thresholds (option 1).</p>
Event severity levels...	<p>Set the event severity level, from 1 to 40, to indicate the importance of the following events:</p> <ul style="list-style-type: none">◆ ...Warning event. Temperature is above the lower threshold. The default is 15.◆ ...Critical event. Temperature is above the upper threshold. The default is 5.◆ ...Threshold information is not available. This can occur when the IBM Systems Director threshold or a custom threshold is 0. The default is 25.

3.12 Voltage

Use this Knowledge Script to monitor the voltage levels for a particular voltage sensor or all voltage sensors on an IBM Systems Director server. To raise events on the overall health of an IBM Systems Director system, including voltage-related events, use the [HealthCheckHW](#) Knowledge Script.

IBM Systems Director defines the operating range for voltage sensors. Use this script to monitor all voltage sensors or a particular voltage sensor and raise an event when the voltage level is above the upper threshold or below the lower threshold specified by IBM Systems Director. You can also set a parameter to raise an event when the voltage level is normal.

3.12.1 Resource Objects

Voltage folder or a voltage icon on a Netfinity Director server

3.12.2 Default Schedule

The default interval for this script is **Every 5 minutes**.

3.12.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Event?	Set to y to raise an event if a value exceeds or falls below the threshold. The default is y .
Raise an event when the voltage level is normal?	Set to y to raise an event when the voltage level is normal. The default is n .
Collect data?	Set to y to collect data for charts and reports. If set to y , this Knowledge Script records the voltage level detected by each sensor you monitor. The default is n .
Event severity levels...	Set the event severity level, from 1 to 40, to indicate the importance of the following events: <ul style="list-style-type: none">◆ ...Voltage level is normal. Voltage level is normal. The default is 30.◆ ...Low level threshold. Voltage level is below the lower threshold. The default is 5.◆ ...High level threshold. Voltage level is above the upper threshold. The default is 5.◆ ...Threshold information is not available. This can occur when the IBM Systems Director threshold is 0. The default is 25.

4 IBM Director Report Knowledge Scripts

AppManager for IBM Systems Director provides a set of Knowledge Scripts for reporting on data collected from IBM Systems Director servers. From the Knowledge Script view of Control Center, you can access more information about any NetIQ-supported Knowledge Script by selecting it and clicking **Help**. Or in the Operator Console, click any Knowledge Script in the Knowledge Script pane and press F1.

Knowledge Script	What It Does
Report_NICErrors	Generates a report about transmission errors in network interface controllers on an IBM Systems Director server.
Report_ServerTemperature	Generates a report based on the data collected on all temperature sensors of an IBM Systems Director server.
Report_ServerVoltage	Generates a report about the Voltage on an IBM Systems Director Server.

4.1 Report_NICErrors

Use this script to generate a report about the number of network interface controller (NIC) transmission errors on an IBM Systems Director server.

This report uses data collected by the NICError Knowledge Script.

4.1.1 Resource Objects

Report agent

4.1.2 Default Schedule

The default schedule is **Run once**.

Run this report script every 30 minutes for optimal report generation.

4.1.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Data source	
Select computer(s)	Select the computers for your report.
Select time range	Set a specific or sliding time range for data included in your report.
Select peak weekday(s)	Select the days of the week to include in your report.

Description	How to Set It
Select the style	<p>Select the style for the first page of the report:</p> <ul style="list-style-type: none"> ◆ By computer displays one value for each computer you selected. ◆ By legend displays one value for each different legend (the legend is a truncated form of the data stream legend visible in the Operator Console). ◆ By computer and legend displays one value for each unique legend from each computer. <p>The default is By computer and legend.</p>
Data settings	
Statistics to show	<p>Select a statistical method by which to display data in the report:</p> <ul style="list-style-type: none"> ◆ Average: The average value of data points for the period covered by the report ◆ Minimum: The minimum value of data points for the period covered by the report ◆ Maximum: The maximum value of data points for the period covered by the report ◆ Min/Avg/Max: The minimum, average, and maximum values of data points for the period covered by the report ◆ Range: The range of values in the data stream (maximum - minimum = range) ◆ Standard Deviation: The measure of how widely values are dispersed from the mean ◆ Sum: The total value of data points for the period covered by the report ◆ Close: The last value for the period covered by the report ◆ Change: The difference between the first and last values for the period covered by the report (close - open = change) ◆ Count: The number of data points for the period covered by the report
Select sorting/display option	<p>Select whether data is sorted, or the method of display:</p> <ul style="list-style-type: none"> ◆ No sort: Data is not sorted ◆ Sort: Data is sorted by value (lowest to highest from front to back; highest to lowest from left to right) ◆ Top %: Chart only the top N percent of selected data (sorted by default) ◆ Top N: Chart only the top N of selected data (sorted by default) ◆ Bottom %: Chart only the bottom N percent of data (sorted by default) ◆ Bottom N: Chart only the bottom N of selected data (sorted by default)
Percentage/count for top/bottom	<p>Enter a number for either the percent or count defined in the previous parameter (for example, Top 10%, or Top 10). The default is 25.</p>
Truncate top/bottom? (yes/no)	<p>If set to yes, then the data table shows only the top or bottom N or percent (for example, only the top 10 percent). Otherwise, the table shows all data. The default is no.</p>

Description	How to Set It
Show totals on the table? (yes/no)	<p>If set to yes, additional calculations are made for each column of numbers in a table, and the following values are listed at the end of the table:</p> <ul style="list-style-type: none"> ◆ Report Average: An average of all values in a column ◆ Report Minimum: The minimum value in a column ◆ Report Maximum: The maximum value in a column ◆ Report Total: The total of all values in a column <p>The default is no.</p>
Report settings	
Include parameter help card? (yes/no)	Set to yes to include a table in the report that lists parameter settings for the report script. The default is yes.
Include table? (yes/no)	Set to yes to include a table of data stream values in the report. The default is yes.
Include chart? (yes/no)	Set to yes to include a chart of data stream values in the report. The default is yes.
Select chart style	Define the graphic properties of the charts in your report.
Select output folder	Set parameters for the output folder.
Add job ID to output folder name? (yes/no)	<p>Set to yes to append the job ID to the name of the output folder.</p> <p>This is helpful to make the correlation between a specific instance of a Report Script and the corresponding report.</p> <p>The default is no.</p>
Select properties	Set miscellaneous report properties as needed.
Add time stamp to title? (yes/no)	<p>Set to yes to append a time stamp to the title of the report, making each title unique. The time stamp is made up of the date and time the report was generated.</p> <p>Adding a time stamp lets you run consecutive iterations of the same report without overwriting previous output.</p> <p>The default is no.</p>
Event notification	
Event for report success? (yes/no)	Set to yes to raise an event when the report is successfully generated. The default is yes.
Severity level for report success	Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 35.
Severity level for report with no data	Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 25.
Severity level for report failure	Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5.

4.2 Report_ServerTemperature

Use this report script to generate a report based on the data collected on all temperature sensors of an IBM Systems Director Server.

This report uses data collected by the Temperature Knowledge Script.

4.2.1 Resource Objects

Report agent

4.2.2 Default Schedule

The default schedule is **Run once**.

Run this report script every 30 minutes for optimal report generation.

4.2.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Data source	
Select computer(s)	Select the computers for your report.
Select time range	Set a specific or sliding time range for data included in your report.
Select peak weekday(s)	Select the days of the week to include in your report.
Select the style	Select the style for the first page of the report: <ul style="list-style-type: none">♦ By computer displays one value for each computer you selected.♦ By legend displays one value for each different legend (the legend is a truncated form of the data stream legend visible in the Operator Console).♦ By computer and legend displays one value for each unique legend from each computer. <p>The default is By computer and legend.</p>
Data settings	

Description	How to Set It
Statistics to show	<p>Select a statistical method by which to display data in the report:</p> <ul style="list-style-type: none"> ◆ Average: The average value of data points for the period covered by the report ◆ Minimum: The minimum value of data points for the period covered by the report ◆ Maximum: The maximum value of data points for the period covered by the report ◆ Min/Avg/Max: The minimum, average, and maximum values of data points for the period covered by the report ◆ Range: The range of values in the data stream (maximum - minimum = range) ◆ Standard Deviation: The measure of how widely values are dispersed from the mean ◆ Sum: The total value of data points for the period covered by the report ◆ Close: The last value for the period covered by the report ◆ Change: The difference between the first and last values for the period covered by the report (close - open = change) ◆ Count: The number of data points for the period covered by the report
Select sorting/display option	<p>Select whether data is sorted, or the method of display:</p> <ul style="list-style-type: none"> ◆ No sort: Data is not sorted ◆ Sort: Data is sorted by value (lowest to highest from front to back; highest to lowest from left to right) ◆ Top %: Chart only the top N percent of selected data (sorted by default) ◆ Top N: Chart only the top N of selected data (sorted by default) ◆ Bottom %: Chart only the bottom N percent of data (sorted by default) ◆ Bottom N: Chart only the bottom N of selected data (sorted by default)
Percentage/count for top/bottom	<p>Enter a number for either the percent or count defined in the previous parameter (for example, Top 10%, or Top 10). The default is 25.</p>
Truncate top/bottom? (yes/no)	<p>If set to yes, then the data table shows only the top or bottom N or percent (for example, only the top 10 percent). Otherwise, the table shows all data. The default is no.</p>
Show totals on the table? (yes/no)	<p>If set to yes, additional calculations are made for each column of numbers in a table, and the following values are listed at the end of the table:</p> <ul style="list-style-type: none"> ◆ Report Average: An average of all values in a column ◆ Report Minimum: The minimum value in a column ◆ Report Maximum: The maximum value in a column ◆ Report Total: The total of all values in a column <p>The default is no.</p>
Report settings	
Include parameter help card? (yes/no)	<p>Set to yes to include a table in the report that lists parameter settings for the report script. The default is yes.</p>

Description	How to Set It
Include table? (yes/no)	Set to yes to include a table of data stream values in the report. The default is yes.
Include chart? (yes/no)	Set to yes to include a chart of data stream values in the report. The default is yes.
Select chart style	Define the graphic properties of the charts in your report.
Select output folder	Set parameters for the output folder.
Add job ID to output folder name? (yes/no)	Set to yes to append the job ID to the name of the output folder. This is helpful to make the correlation between a specific instance of a Report Script and the corresponding report. The default is no.
Select properties	Set miscellaneous report properties.
Add time stamp to title? (yes/no)	Set to yes to append a time stamp to the title of the report, making each title unique. The time stamp is made up of the date and time the report was generated. Adding a time stamp lets you run consecutive iterations of the same report without overwriting previous output. The default is no.
Event notification	
Event for report success? (yes/no)	Set to yes to raise an event when the report is successfully generated. The default is yes.
Severity level for report success	Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 35.
Severity level for report with no data	Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 25.
Severity level for report failure	Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5.

4.3 Report_ServerVoltage

Use this report script to generate a report based on the data collected on the Voltage folder or a Voltage icon of an IBM Systems Director Server.

This report uses data collected by the Voltage Knowledge Script.

4.3.1 Resource Objects

Report agent

4.3.2 Default Schedule

The default schedule is **Run once**.

Run this report script every 30 minutes for optimal report generation.

4.3.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Data source	
Select computer(s)	Select the computers for your report.
Select time range	Set a specific or sliding time range for data included in your report.
Select peak weekday(s)	Select the days of the week to include in your report.
Select the style	Select the style for the first page of the report: <ul style="list-style-type: none">◆ By computer displays one value for each computer you selected.◆ By legend displays one value for each different legend (the legend is a truncated form of the data stream legend visible in the Operator Console).◆ By computer and legend displays one value for each unique legend from each computer. The default is By computer and legend.
Data settings	
Statistics to show	Select a statistical method by which to display data in the report: <ul style="list-style-type: none">◆ Average: The average value of data points for the period covered by the report◆ Minimum: The minimum value of data points for the period covered by the report◆ Maximum: The maximum value of data points for the period covered by the report◆ Min/Avg/Max: The minimum, average, and maximum values of data points for the period covered by the report◆ Range: The range of values in the data stream (maximum - minimum = range)◆ Standard Deviation: The measure of how widely values are dispersed from the mean◆ Sum: The total value of data points for the period covered by the report◆ Close: The last value for the period covered by the report◆ Change: The difference between the first and last values for the period covered by the report (close - open = change)◆ Count: The number of data points for the period covered by the report

Description	How to Set It
Select sorting/display option	Select whether data is sorted, or the method of display: <ul style="list-style-type: none"> ◆ No sort: Data is not sorted ◆ Sort: Data is sorted by value (lowest to highest from front to back; highest to lowest from left to right) ◆ Top %: Chart only the top N percent of selected data (sorted by default) ◆ Top N: Chart only the top N of selected data (sorted by default) ◆ Bottom %: Chart only the bottom N percent of data (sorted by default) ◆ Bottom N: Chart only the bottom N of selected data (sorted by default)
Percentage/count for top/bottom	Enter a number for either the percent or count defined in the previous parameter (for example, Top 10%, or Top 10). The default is 25.
Truncate top/bottom? (yes/no)	If set to yes, then the data table shows only the top or bottom N or percent (for example, only the top 10 percent). Otherwise, the table shows all data. The default is no.
Show totals on the table? (yes/no)	If set to yes, additional calculations are made for each column of numbers in a table, and the following values are listed at the end of the table: <ul style="list-style-type: none"> ◆ Report Average: An average of all values in a column ◆ Report Minimum: The minimum value in a column ◆ Report Maximum: The maximum value in a column ◆ Report Total: The total of all values in a column The default is no.
Report settings	
Include parameter help card? (yes/no)	Set to yes to include a table in the report that lists parameter settings for the report script. The default is yes.
Include table? (yes/no)	Set to yes to include a table of data stream values in the report. The default is yes.
Include chart? (yes/no)	Set to yes to include a chart of data stream values in the report. The default is yes.
Select chart style	Define the graphic properties of the charts in your report.
Select output folder	Set parameters for the output folder.
Add job ID to output folder name? (yes/no)	Set to yes to append the job ID to the name of the output folder. <p>This is helpful to make the correlation between a specific instance of a Report Script and the corresponding report.</p> The default is no.
Select properties	Set miscellaneous report properties.

Description	How to Set It
Add time stamp to title? (yes/no)	<p>Set to yes to append a time stamp to the title of the report, making each title unique. The time stamp is made up of the date and time the report was generated.</p> <p>Adding a time stamp lets you run consecutive iterations of the same report without overwriting previous output.</p> <p>The default is no.</p>
Event notification	
Event for report success? (yes/no)	Set to yes to raise an event when the report is successfully generated. The default is yes.
Severity level for report success	Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 35.
Severity level for report with no data	Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 25.
Severity level for report failure	Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5.

