

NetIQ® AppManager® for Self Monitoring UNIX and Linux Servers (AMHealthUNIX)

Management Guide

September 2014



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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 for Self Monitoring UNIX and Linux Servers provides system administrators with a central, easy-to-use console to view critical server and application resources across the enterprise. With AppManager for Self Monitoring UNIX and Linux Servers, 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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1 Introducing AppManager for Self Monitoring

The AppManager Self Monitoring module, also known as AM Health, provides Knowledge Scripts for monitoring the health and availability of AppManager components.

You can use the AM Health module to monitor the following AppManager components and features:

- ♦ Health and availability of Microsoft SQL Server resources associated with the AppManager repository (QDB) and the management server. These resources include SQL Server services, management server services, and SQL Server queries.
- ♦ Health and availability of Microsoft SQL Server resources associated with AppManager Control Center components. These components include the Cache Manager, the Command Queue Service (CQS), deployment services, and the Control Center repository (NQCCDB).
- ♦ Heartbeat of AppManager Windows agent computers. A *heartbeat* is a periodic signal generated by an AppManager agent computer to indicate that it is still running. If an AppManager agent fails to send either data or an event to the QDB within the specified grace period, AppManager assumes that the agent is offline and generates a corresponding event.
- ♦ Heartbeat of AppManager UNIX agent computers.

2 Installing AppManager for Self Monitoring

This chapter provides installation instructions and describes system requirements for AppManager for Self Monitoring (AM Health).

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.

AM Health requires **NetIQ AppManager 8.0 or later** installed on the AppManager repository (QDB) computer and on all console computers.

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 Windows computer. The module installer automatically identifies and updates all relevant AppManager components on a computer.

Access the AM70-AMHealth-8.x.x.0.msi module installer from the AM70_AMHealth_8.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.

To install the module manually:

- 1 Double-click the module installer .msi file.
- 2 Accept the license agreement.
- 3 Run the module installer on all console computers to install the Help and console extensions.

- 4 To install the Knowledge Scripts into the QDB:
 - 4a Select **Install Knowledge Scripts** to install the repository components, including the Knowledge Scripts.
 - 4b Specify the SQL Server name of the server hosting the QDB, as well as the case-sensitive QDB name.
- 5 Run the module installer only for the primary QDB. Control Center automatically replicates this module to secondary QDBs.
- 6 (Conditional) If you have not discovered AM Health UNIX or Linux resources, run the Discovery_AMHealthUNIX Knowledge Script on all UNIX or Linux agent computers where you installed the module. For more information, see [Section 2.4, "Discovering AppManager Resources for UNIX," on page 13](#).
- 7 To get the updates provided in this release, upgrade any running Knowledge Script jobs. For more information, see [Section 2.5, "Upgrading Knowledge Script Jobs," on page 13](#).

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

2.3 Silently Installing the Module

To silently (without user intervention) install a module using the default settings, run the following command from the folder in which you saved the module installer:

```
msiexec.exe /i "AM70-AMHealth-8.x.x.0.msi" /qn
```

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-AMHealth-8.x.x.0.msi.log"
```

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

NOTE: To perform a silent install on an AppManager agent running Windows 2008 R2, open a command prompt at the administrative level and select **Run as administrator** before you run the silent install command listed above.

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

Windows authentication:

```
AM70-AMHealth-8.x.x.0.msi /qn MO_B_QDBINSTALL=1 MO_B_SQLSVR_WINAUTH=1  
MO_SQLSVR_NAME=[SQL Server Name] MO_QDBNAME=[AM-Repository Name]
```

SQL authentication:

```
AM70-AMHealth-8.x.x.0.msi /qn MO_B_QDBINSTALL=1 MO_B_SQLSVR_WINAUTH=0  
MO_SQLSVR_USER=[SQL login] MO_SQLSVR_PWD=[SQL Login Password] MO_SQLSVR_NAME=[SQL  
Server Name] MO_QDBNAME=[AM-Repository Name]
```

2.4 Discovering AppManager Resources for UNIX

Use the `Discovery_AMHealthUNIX` Knowledge Script to discover AppManager resources installed on UNIX and Linux servers. This Knowledge Script returns information about successful, failed, and partial discoveries, and it raises events to notify you of errors.

Run the `Discovery_AMHealthUNIX` script on AppManager UNIX agents.

By default, this script is only run once for each computer.

Set the following parameters as needed:

Parameter	How to Set It
Raise event if discovery succeeds?	Set to y to raise an event when discovery succeeds. The default is n .
Event severity when discovery succeeds	Set the event severity level, from 1 to 40, to reflect the importance of an event in which discovery succeeds. The default is 25.
Event severity when discovery fails	Set the event severity level, from 1 to 40, to reflect the importance when the discovery fails. The default is 5.
Event severity when discovery partially succeeds	Set the event severity level, from 1 to 40, to reflect the importance when the discovery partially succeeds. This type of situation usually occurs when the target computer does not have all the prerequisites installed. The default is 15.

2.5 Upgrading Knowledge Script Jobs

This release of AM Health may contain updated Knowledge Scripts. You can push the 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.

2.5.1 Running AMAdmin_UpgradeJobs

The `AMAdmin_UpgradeJobs` Knowledge Script can push changes to running Knowledge Script jobs.

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.

2.5.2 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 14](#).

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 (Condition) 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 UNIX and Linux AM Health Knowledge Scripts

The AppManager for Self Monitoring UNIX and Linux Servers module, also known as UNIX and Linux AM Health, provides Knowledge Scripts for monitoring the health and availability of AppManager components.

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**. In the Operator Console, click any Knowledge Script in the Knowledge Script pane and press **F1**.

Knowledge Script	What It Does
HeartbeatUNIX	Monitors the AppManager agent heartbeat in a UNIX or Linux environment.

3.1 HeartbeatUNIX

Use this Knowledge Script to test the heartbeat of the AppManager agent computer running UNIX or Linux. A *heartbeat* is a periodic signal generated by an AppManager agent computer to indicate that it is still running. If an AppManager agent fails to send either data or an event to the QDB within the specified grace period, the AMHealth_HeartbeatUNIX job considers the agent to be offline.

You can set this script to raise an event for the following conditions:

- ♦ The heartbeat fails.
- ♦ An agent is healthy, such as when the heartbeat returns after failing.
- ♦ The agent heartbeat fails a user-specified number of times.

If you use this Knowledge Script with the AppManager Operator Console, you can access the Actions and Advanced tab, but the options on those two tabs will not function.

This script generates data for consolidated events, which can be managed with the Health Check options found in Control Center. To access Health Check, click **Options** on the **Main** tab, and then click **Health Check**. For more information, see the online Help for Health Check.

3.1.1 Resource Objects

UNIX and Linux servers

3.1.2 Default Schedule

The default interval for this script is **every five minutes**.

3.1.3 Setting Parameter Values

Set the following parameters as needed:

Parameter	How to Set It
Heartbeat Options	
Raise event if the agent heartbeat fails?	Select Yes to raise an event if the heartbeat for the AppManager agent server stops. The default is Yes.
Event severity when the agent heartbeat fails	Set the event severity level, from 1 to 40, to indicate the importance of an event in which the heartbeat stops. The default is 5.
Raise an event when agent heartbeat restarts?	Select Yes to raise an event if the heartbeat starts again after stopping. The default is Yes.
Event severity when the agent heartbeat restarts	Set the event severity level, from 1 to 40, to indicate the importance of an event in which the heartbeat starts again after stopping. The default is 25.
Number of consecutive heartbeat failures before raising an event	Specify the number of times the heartbeat must fail before raising an event. The default is 1.
Generate heartbeat data?	Select Yes to enable the heartbeat check. If you select Yes and the data point from this job is missing, AppManager raises an event. If you select No, the heartbeat check will not look for the data point from this job. The default is Yes.
Job Monitoring Options	
Monitor individual jobs?	Select Yes to monitor individual AppManager jobs. The default is Yes.
Raise an event if jobs take longer than their schedule to execute?	Select Yes to raise an event when a monitored AppManager job takes longer than its scheduled time to execute. The default is Yes.
Event severity	Set the event severity level, from 1 to 40, to indicate the importance of an event in which a monitored Appmanager job took longer than its scheduled time to execute. The default is 5.
Raise an event if job exceeds maximum job run time?	Select Yes to raise an event when a monitored AppManager job exceeds the maximum job run time you set. The default is Yes.
List of Knowledge Scripts to skip (comma separated)	Enter one or more comma-separated Knowledge Script names to exempt from job monitoring.
Maximum job run time	Set the number of seconds, from 1 to 32767, to indicate the maximum run time for a monitored Knowledge Script job before an event is raised. The default is 180 seconds.
Event severity	Set the event severity level, from 1 to 40, to indicate the importance of an event where a monitored Knowledge Script job exceeded the maximum job run time you set. The default is 5.
Knowledge Script Options	
Event severity when unexpected error occurs	Set the event severity level, from 1 to 40, to indicate the importance of an event where an unexpected error occurs in the HeartbeatUNIX Knowledge Script. The default is 35.
Heartbeat Investigation Steps (Used by Management Server)	

Parameter	How to Set It
Attempt to contact agent computer by ICMP ping?	Select Yes to send an ICMP ping request to the agent computer. If AppManager cannot contact an agent with an ICMP ping, the agent computer might have been shut down or disconnected from the network, or a firewall is blocking the ICMP communication. The default is Yes.
Perform tracert diagnostic if ICMP ping fails?	Select Yes to run a tracert (traceroute) diagnostic test if the ping request fails. The default is Yes. A traceroute test helps you troubleshoot network routing problems that can block ICMP traffic. This script raises an event if the tracert fails.

