



NetIQ® AppManager® for Apache Server UNIX

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 server health for a broad spectrum of operating environments, applications, 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 staffs 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 Apache UNIX

AppManager for Apache UNIX lets you monitor the operation and performance of Apache Web Servers and IBM HTTP Servers through the same console you use to monitor your Windows, UNIX, and Linux environments.

The Knowledge Scripts in the ApacheUNIX category raise events in the AppManager Operator Console or in the Control Center Console when problems arise. These Knowledge Scripts collect information about Apache servers, which you can use for trend analysis and reporting. With AppManager for Apache UNIX, you can monitor the following functions:

- ◆ Real-time performance monitoring

AppManager provides real-time performance and status monitoring of Apache Web Servers and IBM HTTP Servers. The real-time approach lets you take an accurate snapshot of Apache Web Server and IBM HTTP Server performance at any time.

- ◆ Real-time status code monitoring

AppManager monitors status codes generated by client request errors in real time. If a client or virtual host requests a Web page that is unavailable (404-not found), this status code is collected and returned to the AppManager Operator Console or Control Center Console. For more information, see [Section 3.1, "AccessActivity," on page 18](#).

- ◆ Availability of virtual hosts

Virtual hosts, sometimes known as multi-homed servers, let a Web server distinguish between requests made to different IP addresses or names (mapped to the same computer). Apache Web Server supports virtual hosts and also offers dynamically configurable mass-virtual hosting.

AppManager checks the availability of Apache virtual hosts, and monitors the HTTPD processes utilized to service requests from virtual hosts.

- ◆ Remote monitoring across platforms

AppManager lets you monitor the performance of a UNIX server from a computer running Microsoft Windows. The Knowledge Scripts in the ApacheUNIX category let you start, restart, and stop Apache Web Servers remotely, on demand, or at regularly scheduled times.

2 Installing AppManager for Apache UNIX

This chapter provides installation instructions and describes system requirements for AppManager for Apache UNIX.

This chapter assumes you have an AppManager repository, console, management server, and UNIX agent installed. For more information about installing AppManager, see the *Installation Guide for AppManager* and for information about installing the UNIX agent, see the *AppManager for UNIX and Linux Servers Management Guide*, which are available on the [AppManager 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 Apache UNIX has the following system requirements:

Item	Requirement
AppManager repository, management server, and Control Center Console	7.0 or later
NetIQ UNIX Agent	7.1 or later
Operating system on agent computers	One of the following: <ul style="list-style-type: none">◆ CentOS◆ HP-UX◆ IBM AIX◆ Oracle Linux◆ Oracle Solaris◆ Red Hat Enterprise Linux◆ SUSE Linux Enterprise Server
Apache Web Server	One of the following: <ul style="list-style-type: none">◆ Apache Web Server 2.0, 2.2, or 2.4◆ IBM HTTP Server 6.1, 7.0, or 8.5

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

2.2 Installing the Module

To install the module you must:

- ◆ Install the Knowledge Scripts by running the module installer `.msi` on all AppManager repositories that store data for this module.
- ◆ Install the Help files by running the module installer `.msi` on all AppManager Control Center and Operator Console computers you will use with this module.
- ◆ Ensure that UNIX agent 7.1. with patch 7.1.0.46 or UNIX agent 7.2 is installed on the computer you want to monitor.

You can access the `AM70-Apache-7.9.x.x.msi` module installer and the `p71p46.zip` patch from the `AM70_Apache_7.9.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 to 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 managed 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 7.1.0.46 to the computers you want to monitor. For information about how to apply UNIX agent patches, see the *AppManager for UNIX and Linux Servers Management Guide*.
- 3 Install the Knowledge Scripts into the QDB by running the module installer, `AM70-Apache-7.9.x.x.msi`, on the QDB computer:
 - 3a Select **Install Knowledge Scripts** to install the repository components.
 - 3b Specify the SQL Server name of the server hosting the QDB, as well as the case-sensitive QDB name.
- 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, `AM70-Apache-7.9.x.x.msi`, on all console computers to install the Help and console extensions.
- 7 (Conditional) If you want to use Knowledge Scripts that use Server Status and Extended Status Directives, ensure that you have enabled the `mod_status` Apache modules. For more information, see [Section 2.5, “Enabling Server Status and Extended Status Directives,”](#) on [page 15](#).
- 8 (Conditional) If you have not discovered Apache Web Server resources, run the `Discovery_ApacheUNIX` Knowledge Script on all agent computers that you want to monitor. For more information, see [Section 2.3, “Discovering Apache Web Server Resources,”](#) on [page 13](#).
- 9 To get the updates provided in this release, upgrade any running Knowledge Script jobs. For more information, see [Section 2.4, “Upgrading Knowledge Script Jobs,”](#) on [page 14](#).

After the installation has completed, the `Apache_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-Apache-7.9.x.x.msi /qn MO_B_QDBINSTALL=1 MO_B_SQLSVR_WINAUTH=1  
MO_SQLSVR_NAME=[SQLServerName] MO_QDBNAME=[AMRepositoryName]
```

SQL authentication:

```
AM70-Apache-7.9.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 Apache Web Server Resources

Use the Discovery_ApacheUNIX Knowledge Script to discover Apache Web Servers and IBM HTTP Servers installed on UNIX servers. This Knowledge Script returns information about successful, failed, and partial discoveries and raises events with user-specified severity to notify you of errors.

You can use this Knowledge Script to determine if and where Apache Web Servers and IBM HTTP Servers are installed in a UNIX network. Run this Knowledge Script periodically to detect new instances of Apache Web Servers and IBM HTTP Servers and to determine if existing servers have been uninstalled or taken offline.

If you are running the UNIX agent under a non-root account, ensure that the account has access to the Apache installation directory.

By default, this script runs once for each computer.

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

Description	How to Set It
Raise an event for successful discovery? (y/n)	Set to y to raise an event when the Knowledge Script discovers an Apache Web Server or IBM HTTP Server. The default is y.
Event severity when discovery succeeds	Specify a severity level, from 1 to 40, for the event raised by successful discovery of an Apache Web Server or IBM HTTP Server. The default is 25.
Event severity when discovery fails	Specify a severity level, from 1 to 40, for the event raised by failure to discover an Apache Web Server or IBM HTTP Server. The default is 5.
Event severity when discovery is partially successful	Specify a severity level for the event raised when the Knowledge Script starts but does not run to completion. The default is 15.
Path for the Apache binary program (semicolon-separated, no spaces)	Use this variable to expedite the discovery process. Specify a directory path or list of paths separated by a semicolon. The Knowledge Script will limit its search for the Apache binary program to the paths you specify. The default is /usr/local/apache2/bin/httpd.
Path for the Apache configuration files (semicolon-separated, no spaces)	Use this variable to expedite the discovery process. Specify a directory path or list of paths separated by a semicolon. The Knowledge Script will limit its search for the Apache configuration files to the paths you specify. The default is /usr/local/apache2/conf/httpd.conf.

Description	How to Set It
Path for the Apache management script (semicolon-separated, no spaces)	Use this variable to expedite the discovery process. Specify a directory path or list of paths separated by a semicolon and no spaces. The Knowledge Script only searches for the Apache management script, <code>apachect1</code> . The default is <code>/usr/local/apache2/bin/apachect1</code> .

2.4 Upgrading Knowledge Script Jobs

This release of AppManager for Apache UNIX contains 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.

2.4.1 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.

2.4.2 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 the 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 Right-click the script and select **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 Right-click the Knowledge Script Group and select **Properties propagation > Ad Hoc Jobs**.
- 3 (Conditional) 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.

2.5 Enabling Server Status and Extended Status Directives

Some ApacheUNIX Knowledge Scripts require information gathered by modules provided as part of the Apache package. If you do not enable the Apache `mod_status` module on the computers you want to manage, some ApacheUNIX Knowledge Scripts will fail.

You can verify the `mod_status` module is enabled by doing one of the following procedures:

- ♦ Use the `ModuleEnabled` Knowledge Script to verify whether the module is enabled.
- ♦ Use the `StatusModule` Knowledge Script to enable the `mod_status` module.

- ♦ Manually view and, if necessary, change the `apache/conf/httpd.conf` file on your managed UNIX computer. The following is an example of how the `httpd.conf` file can be configured with the directive and security level that AppManager for Apache UNIX requires:

```
<Location /server-status>
    SetHandler server-status
    Order Deny,Allow
    Deny from all
    Allow from 127.0.0.1
</Location>
ExtendedStatus On
```

2.6 Running the UNIX Agent as Non-Root

Most ApacheUNIX Knowledge Scripts function properly with the UNIX agent computer running as non-root as long as you grant permission to the user account running the UNIX agent to access the Apache log and configuration file directories.

The following ApacheUNIX Knowledge Scripts fail on computers where the UNIX agent does not run under the root account:

- ♦ [HealthCheck](#)
- ♦ [InfoModule](#)
- ♦ [KillLongRunningRequests](#)
- ♦ [StartServer](#)
- ♦ [StatusModule](#)
- ♦ [StopServer](#)

3 Apache UNIX Knowledge Scripts

The AppManager category provides the following Knowledge Scripts for monitoring Apache UNIX servers.

From the Knowledge Script view of the Control Center Console, you can access more information about any NetIQ-supported Knowledge Script by selecting it and pressing F1.

Knowledge Script	What It Does
AccessActivity	Monitors requests and the status codes of request errors.
AccessLogEntries	Monitors the number of new entries and content of new entries made to the access logs since last script execution.
Availability	Verifies that the root Apache process is running on an Apache Web Server or IBM HTTP Server.
ConfigFileUpdateCheck	Reports any configuration changes to Apache Web Servers and IBM HTTP Servers.
ConfigTest	Verifies the configuration of an Apache Web Server or IBM HTTP Server.
CoreDumpCheck	Checks for newly created core dump files on an Apache Web Server or IBM HTTP Server and reports the time the last file was created.
CPU	Monitors the percentage of CPU used by Apache processes.
ErrorLogEntries	Monitors the number of new entries and content of new entries made to the error logs since last script execution.
HealthCheck	Verifies Apache processes are running and servers are able to service requests.
InfoModule	Enables the mod_info module on an Apache Web Server or IBM HTTP Server. Most binary distributions disable this module by default.
KillLongRunningRequests	Kills requests that have been running longer than a specified time threshold.
KillProcessesAboveCPU	Kills runaway processes that are using too much CPU.
ModuleEnabled	Reports which Apache modules are enabled, which means they are loaded and active.
ProcessActivity	Monitors the status of HTTPD processes running on Apache Web Servers and IBM HTTP Servers.
Report_ActivitySummary	Generates a report summarizing the requests, requests by virtual hosts, and server utilization on monitored Apache Web Servers and IBM HTTP Servers.

Knowledge Script	What It Does
Report_HealthSummary	Generates a report summarizing the health of monitored Apache Web Servers and IBM HTTP Servers. This report includes information on availability, core files, error log entries, CPU, and virtual memory utilization.
Report_PerformanceSummary	Generates a report summarizing the throughput performance of monitored Apache Web Servers and IBM HTTP Servers.
Requests	Returns statistics on requests and request processing time data
ServerUtilization	Monitors the percentage of busy and idle processes on Apache Web Servers and IBM HTTP Servers.
StartServer	Starts or restarts specified Apache Web Servers or IBM HTTP Servers.
StatusModule	Enables the mod_status module on an Apache Web Server or IBM HTTP Server. Most binary distributions of Apache disable this module by default.
StopServer	Stops specified Apache Web Servers and IBM HTTP Servers.
Throughput	Returns statistics on throughput data.
TopNPageActivity	Lists the most popular Web pages on an Apache Web Server or IBM HTTP Server.
Uptime	Reports the time an Apache Web Server or IBM HTTP Server has been running. Uptime is reset if the Apache root process is killed for any reason.
VirtualMemory	Reports the total memory used by Apache processes, as well as returning this value as a percentage of total available memory.

3.1 AccessActivity

Use this Knowledge Script to monitor access activity on Apache Web Servers and IBM HTTP Servers. This script returns information, such as status codes, about successful and failed requests.

You can use this script to determine which errors clients experience most frequently while accessing a server. This information is critical for maintaining and troubleshooting Web sites. For example, if the script returns multiple instances of status code 404 (file not found), you may have broken links or missing pages on your site.

To use this Knowledge Script, you must have the Apache CustomLog directive configured as `common` or `combined`. For information about how to configure the CustomLog directive, see your Apache documentation.

3.1.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.1.2 Default Schedule

The default interval for this script is **Daily at 2 AM**.

3.1.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise event if any threshold exceeded? (y/n)	Set to y to raise events. The default is y.
Event severity when script fails	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 10, which is the red event indicator.
Event severity when any threshold exceeded	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 25, which is the blue event indicator.
Filter: regular expression	Specify a filter using a regular expression. This version supports filtering by virtual host only. The default is none.
Collect data for total requests? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the total number of requests to the Apache Web Server or IBM HTTP Server. The default is n.
Threshold -- Maximum total requests	Specify a threshold value using an integer greater than or equal to -1. If Total Requests exceed the threshold value, an event is raised. Use -1 to ignore this threshold. The default is 0.
Collect data for successes?	Set to y to collect data for charts and reports. If set to y, this script returns the number of successful requests to the Apache Web Server or IBM HTTP Server. The default is n.
Threshold -- Maximum successes	Specify a threshold value using an integer greater than or equal to -1. If Successes exceed the threshold value, an event is raised. Use -1 to ignore this threshold. The default is 0.
Collect data for failures? (y/n)	Set to y to collect data for charts and reports. If set to y this script returns the number of failed requests to the Apache Web Server or IBM HTTP Server. The default is n.
Threshold--Maximum failures	Specify a threshold value using an integer greater than or equal to -1. If Failures exceed the threshold value, an event is raised. Use -1 to ignore this threshold. The default is 0.
Collect data for 3XX status codes? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the number of 3XX status codes. The default is n.
Threshold -- Maximum 3xx status codes	Specify a threshold value using an integer greater than or equal to -1. If the total number of 3XX status codes exceeds the threshold value, an event is raised. Use -1 to ignore this threshold. The default is 0.
Collect data for 4XX status codes? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the number of 4XX status codes. The default is n.
Threshold -- Maximum 4xx status codes	Specify a threshold value using an integer greater than or equal to -1. If the total number of 4XX status codes exceeds the threshold value, an event is raised. Use -1 to ignore this threshold. The default is 0.
Collect data for 5XX status codes? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the number of 5XX status codes. The default is n.
Threshold -- Maximum 5xx status codes	Specify a threshold value using an integer greater than or equal to -1. If the total number of 5XX status codes exceeds the threshold value, an event is raised. Use -1 to ignore this threshold. The default is 0.

3.2 AccessLogEntries

Use this Knowledge Script to monitor the number of new entries and the content of new entries made to the access logs since the last execution of this script. As long as the script is running as a regularly scheduled job, each time the script runs, AppManager only reports new entries that have appeared since the last time the script ran.

3.2.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.2.2 Default Schedule

The default interval for this script is **Every 12 hours**.

3.2.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise event if new access log entries detected? (y/n)	Set to y to raise events. The default is y.
Event severity when new access log entries detected	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 25, which is the blue event indicator.
Filter: regular expression	Specify a regular expression value that the new entries, if present, must match before being reported as new entries.
Collect data for access log entries? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the number of new entries in the access logs since the last time the script ran. The default is n.
Raise event every time script executes and no new log entries are found? (y/n)?	Set to y to raise an event each time the script executes and no new error log entries are detected. The default is n.

3.2.4 Example of How this Script Is Used

If you want to only report new lines in the access log for 400 errors, you could specify "4[d][d]" for the Filter.

3.3 Availability

Use this Knowledge Script to monitor the availability (up/down status) of Apache Web Servers and IBM HTTP Servers by reporting the percentage of available servers. This script verifies that the root Apache process is running.

If the Apache Web Server or IBM HTTP Server is configured to run multiple root processes, the script reports the server as available (up) if any one of the processes is running, or unavailable (down) if none of the processes is running.

3.3.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.3.2 Default Schedule

The default interval for this script is **Every hour**.

3.3.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise event for server availability? (y/n)	Set to y to raise events. The default is y.
Collect data for server availability? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns 100% if the server is available (up), or 0% if the server is unavailable (down). The default is n.
Event severity for server not running	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 10, which is the red event indicator.

3.4 ConfigFileUpdateCheck

Use this Knowledge Script to monitor changes to the Apache Web Server or IBM HTTP Server configuration files.

3.4.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.4.2 Default Schedule

The default interval for this script is **Every 12 hours**.

3.4.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise event if configuration changes detected? (y/n)	Set to y to raise events. The default is y.
Event severity when configuration changes detected	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 25, which is the blue event indicator.
Raise event every time script executes? (y/n)	Set to y to raise an event at each iteration of the script. The default is n.

3.5 ConfigTest

Use this Knowledge Script to verify the syntax of the configuration file on an Apache Web Server or IBM HTTP Server. Invalid configuration can prevent the server from starting.

This script can be used to pinpoint configuration errors if, for example, the ExtendedStatus directive is on, but the status module is not enabled.

3.5.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.5.2 Default Schedule

The default interval for this script is **Run once**.

3.5.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise event if configuration errors detected? (y/n)	Set to y to raise events. The default is y.
Event severity when script fails	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 10, which is the red event indicator.
Raise event if script succeeds and no configuration errors are detected? (y/n)	Set to y to raise events. The default is y.
Event severity when script succeeds	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 35, which is the magenta event indicator.

3.6 CoreDumpCheck

Use this Knowledge Script to check if an Apache Web Server or IBM HTTP Server has created a core dump file since the last time this script was run. This script is useful to determine when an Apache Web Server or IBM HTTP Server failed.

This script looks for the core dump file in the directory where you installed Apache unless you specify a location of the core dump file using the CoreDumpDirectory Directive in the `httpd.conf` file.

3.6.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.6.2 Default Schedule

The default interval for this script is **Run once**.

3.6.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise event if new core dump file detected? (y/n)	Set to y to raise events. The default is y.
Collect data for presence of core dump file? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns 100 if there is a core dump file, or 0 if there is no core dump file. The default is n.
Event severity when new core dump file detected	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 25, which is the blue event indicator.
Event severity when script succeeds	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 35, which is the magenta event indicator.
Raise event if script succeeds and no new core dump file detected? (y/n)	Set to y to raise events. The default is y.
Path to gdb	This parameter was required for older versions of the UNIX agent. Version 7.1 and later of the UNIX agent do not require the GNU debugger, so this parameter is no longer required.
Regular expression for name of the core dumped files	Specify the expression that defines the naming convention for the core dump files. Only set this parameter if you use a customized naming convention for core dump files. The default is <code>^core(\.\d+)?\$</code> .

3.7 CPU

Use this Knowledge Script to monitor CPU activity by Apache processes.

This script is helpful in determining whether an Apache Web Server or IBM HTTP Server needs a more powerful processor.

3.7.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.7.2 Default Schedule

The default interval for this script is **Every hour**.

3.7.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise event if CPU utilization exceeds any threshold? (y/n)	Set to y to raise events. The default is y.

Description	How to Set It
Event severity when CPU utilization exceeds threshold	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 25, which is the blue event indicator.
Collect data for percentage of CPU load? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the percent of CPU load attributed to Apache processes. The default is n.
Threshold -- Maximum percentage of CPU load	Specify a threshold value using an integer greater than or equal to -1 and less than or equal to 100. If Apache processes exceed this threshold, an event is raised. Use -1 to ignore this threshold. The default is 0.
Collect data for total CPU time? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the total CPU time in seconds consumed by Apache processes. The default is n.
Threshold -- Maximum total CPU time	Specify a threshold value using an integer greater than or equal to -1. If Apache processes exceed this threshold, an event is raised. Use -1 to ignore this threshold. The default is 0.

3.8 ErrorLogEntries

Use this Knowledge Script to monitor the number of new entries and the content of new entries made to the error logs since the last execution of this script. As long as the script is running as a regularly scheduled job, each time the script runs, AppManager only reports new entries that have appeared since the last time the script ran.

3.8.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.8.2 Default Schedule

The default interval for this script is **Every 12 hours**.

3.8.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise event if new error log entries found? (y/n)	Set to y to raise events. The default is y.
Event severity when new error log entries detected	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 25, which is the red event indicator.
Filter: regular expression	Specify a regular expression value that the new entries, if present, must match before being reported as new entries.
Collect data for error log entries? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the number of new error log entries. The default is n.
Raise event every time script executes and no new log entries are found? (y/n)?	Set to y to raise an event each time the script executes and no new error log entries are detected. The default is n.

3.8.4 Example of How this Script is Used

If you want to only report new lines in the error log that are critical, you can specify “crit” for the Filter.

3.9 HealthCheck

Use this Knowledge Script to make sure Apache processes are running and Apache Web Servers and IBM HTTP Servers are able to service requests. This script performs the following checks:

- ◆ Verifies all Apache processes (HTTPD processes) are running.
- ◆ Verifies the default page for each virtual host is available (status code 200).
- ◆ Verifies a list of specified URLs is available (status code 200). This script only checks the target page. This script does not verify pages that are linked from the target page, internal links to other locations in the target page, or pages that appear if the page automatically redirects to another URL when opened.

You can also use the HealthCheck script to:

- ◆ Restart servers if the script determines Apache processes are not running.
- ◆ Set response time thresholds for virtual hosts and URLs.
- ◆ Raise events with user-defined severity levels if Apache services are not running, or a virtual host or URL is not responding.

This Knowledge Script fails if you run the UNIX agent computer as a non-root user.

3.9.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.9.2 Default Schedule

The default interval for this script is **Daily at 2 AM**.

3.9.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise events? (y/n)	Set to y to raise events. The default is y.
Collect data for Web server process status? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns 100 if the HTTPD processes are running, or 0 if those process are not running. The default is n.
Event severity when script fails	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 10, which is the red event indicator.
Event severity when threshold exceeded	You can set thresholds for virtual host and URL response times. Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 25, which is the blue event indicator.

Description	How to Set It
Restart server if process not running? (y/n)	Set to y to restart the server if Apache processes are not running. The default is y.
Event severity when Apache is not running	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 10, which is the red event indicator.
Check default page from each virtual host? (y/n)	Set to y to verify availability (status code 200) of the default pages from each virtual host. The default is y.
Threshold -- Maximum response time of virtual host	Specify a threshold value using an integer greater than or equal to -1. If virtual host response time (in ms) exceeds the threshold value, an event is raised. Use -1 to ignore this threshold. The default is 0 seconds.
Event severity when virtual host not responding	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 15 (yellow event indicator).
List of URLs to check (semicolon-separated, no spaces)	<p>Specify a list of URLs to check for availability (status code 200). You must include full URLs, delimited by semicolons. Redirections, internal, and external links are not verified.</p> <p>When specifying a list of URLs to check, the following characters must be preceded by a backslash (\):</p> <ul style="list-style-type: none"> ◆ & (Ampersand) ◆ ? (Question) ◆ = (Equal) <p>For example, an URL that contains:</p> <pre>login.asp?name=steve&password=pass</pre> <p>Must be specified as:</p> <pre>login.asp\?name\=steve\&password\=pass</pre> <p>The default is none.</p>
Threshold -- Maximum response time for URL	Specify a threshold value using an integer greater than or equal to -1. If URL response time in milliseconds exceeds the threshold value, an event is raised. Use -1 to ignore this threshold. The default is 0 seconds.
Event severity when URL not responding	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 15, which is the yellow indicator.

3.10 InfoModule

Use this Knowledge Script to enable or disable Apache `mod_info` module. You must enable this module to verify Apache Web Server or IBM HTTP Server configuration at run time.

Running this Knowledge Script restarts the Apache Web Server or IBM HTTP Server.

This Knowledge Script fails if you run the UNIX agent computer as a non-root user.

3.10.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.10.2 Default Schedule

The default interval for this script is **Run once**.

3.10.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise event if script succeeds or fails? (y/n)	Set to y to raise events. The default is y.
Enable <code>mod_info</code> ? (y/n)	Set to y to enable Apache <code>mod_info</code> module. The default is y.
Event severity when script succeeds	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 35, which is the magenta event indicator.
Event severity when script fails	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 10, which is the red event indicator.
Path to module (may be relative to server Root; semicolon-separated, no spaces)	Specify the directory path of the <code>mod_info</code> module. The default is <code>modules;libexec</code> .

3.11 KillLongRunningRequests

Use this Knowledge Script to terminate requests that run longer than their allotted threshold. If your web server contains a multi-processing module, such as the worker MPM, each process may contain more than one thread processing a request. If this Knowledge Script terminates a requests on one thread, then the requests on the other threads are also terminated.

This Knowledge Script fails if you run the UNIX agent computer as a non-root user.

3.11.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.11.2 Default Schedule

The default interval for this script is **Every hour**.

3.11.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise event if time request has been running exceeds threshold? (y/n)	Set to y to raise events. The default is y.

Description	How to Set It
Collect data for number of killed requests? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the number of killed requests. If your server uses the multi-processing module, all requests that belong to the same process are terminated together, so this data does not necessarily represent the number of long running requests. The default is y.
Threshold -- Maximum time request can run	Specify a threshold value, in seconds, using an integer greater than or equal to -1. If a single request exceeds the threshold value, the request is killed and an event is raised. Use -1 to ignore this threshold. The default is 900 seconds.
Event severity when processes are killed	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 20, which is the yellow event indicator.

3.12 KillProcessesAboveCPU

Use this Knowledge Script to kill processes that exceed either the CPU time or CPU percentage threshold. For each process that exceeds a threshold, the event detail message includes the process name, the percentage of CPU used, the CPU time used, and whether the attempt to kill the process was successful or not. If your web server contains the multi-processing module, this Knowledge Script terminates all requests that belong to the same process as the request that runs longer than its allotted threshold.

3.12.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.12.2 Default Schedule

The default interval for this script is **Every hour**.

3.12.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise event if any threshold exceeded or process killed? (y/n)	Set to y to raise events. The default is y.
Collect data for number of processes killed? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the number of process that were killed. The default is n.
Number of samples to take	Specify the number of times to sample the CPU process list. The default is 10.
Delay between samples	Specify an interval, in seconds, between each sampling of the CPU process list. The default is 1 second.
Threshold -- Number of samples exceeding threshold before process killed	This threshold determines how many samples, out of the total number of samples specified above, must exceed the threshold of either CPU percentage or CPU time for a process to be killed. The default is 10 samples.

Description	How to Set It
Threshold -- Maximum CPU utilization (percentage)	Specify a threshold value, in percent, using an integer greater than or equal to -1 and less than or equal to 100. If an Apache process exceeds this threshold, an event is raised. Use -1 to ignore this threshold. The default is 95 percent.
Threshold -- Maximum CPU utilization (time)	Specify a threshold value, in seconds, using an integer greater than or equal to -1. If an Apache process exceeds this threshold, an event is raised. Use -1 to ignore this threshold. The default is 100 seconds.
Event severity when processes are killed	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 20, which is the yellow event indicator.
Raise event if script succeeds and no processes killed? (y/n)	Set to y to raise events. The default is y.
Event severity when no processes are killed	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 20, which is the yellow event indicator.

3.13 ModuleEnabled

Use this Knowledge Script to verify whether a specified Apache Web Server or IBM HTTP Server module is enabled, which means the module is loaded and active.

3.13.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.13.2 Default Schedule

The default interval for this script is **Run once**.

3.13.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise event if module enabled or disabled? (y/n)	Set to y to raise events. The default is y.
Event severity when module is enabled	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 35, which is the magenta event indicator.
Event severity when module is disabled	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 20.
Source names of modules to test (semicolon-separated, no spaces)	Specify a list of module names, separated by semicolons, to test for enabled status. The default is <code>mod_status;mod_info;mod_nqApache223</code> .

3.14 ProcessActivity

Use this Knowledge Script to monitor the percentage of Apache processes that are serving requests for each virtual host on the server, and for each unique client.

You can use this script to help determine if you are under a denial-of-service attack, for example, if a single client is using an excessive percentage of processes.

3.14.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.14.2 Default Schedule

The default interval for this script is **Every hour**.

3.14.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise event if process usage exceeds any threshold? (y/n)	Set to y to raise events. The default is y.
Event severity when script fails	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 10, which is the red event indicator.
Event severity when process usage exceeds threshold	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 25, which is the blue event indicator.
Time frame to monitor (times less than supplied value are monitored)	Specify an integer less than or equal to 86400. The units are measured in seconds. The default is 60. HTTPD processes whose most recent request is greater than the specified value are ignored. This allows the script to discount HTTPD processes that have not run within the time window of interest. If this parameter is set to 0, the script will consider all requests during the previous 24 hours.
Collect data per virtual host? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the percentage of HTTPD process used by each virtual host. The default is n.
Threshold -- Maximum percentage of processes per virtual host	Specify a threshold value using an integer greater than or equal to -1. If a single virtual host exceeds this threshold (percentage of HTTPD processes), an event is raised. Use -1 to ignore this threshold. The default is 0 percentage of HTTPD processes.
Collect data per common client? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the percentage of HTTPD processes used by each common client. The default is n.
Threshold -- Maximum percentage of processes per common client	Specify a threshold value using an integer greater than or equal to -1. If a common client exceeds this threshold (percentage of HTTPD processes), an event is raised. Use -1 to ignore this threshold. The default is 0 percentage of HTTPD processes.

3.15 Report_ActivitySummary

Use this Report Script to generate a report summarizing the activity of monitored Apache Web Servers and IBM HTTP Servers. The report provides data on the number of total requests and the percentage of processes that are busy and that are on each virtual host.

This Knowledge Script uses data other scripts collect. Before you run this Knowledge Script, you must first run the Throughput, ProcessActivity, and ServerUtilization Knowledge Scripts.

3.15.1 Resource Objects

Report Agent > AM Repositories > *AppManager repository*

3.15.2 Default Schedule

The default schedule is **Run once**.

3.15.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Data source	Use the following parameters to select the data for your report.
Select computer(s)	Click the Browse [...] button to start the data wizard. Use the data wizard to select the computers for your report.
Select time range	Click the Browse [...] button to open the time browser. Set a specific or sliding time range for data included in your report. The default is Sliding Time: 1 Day; End Now = No
Select peak weekday(s)	Click the Browse [...] button to select the days of the week to include in your report. The default is Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday.
Aggregation by	Select the time period (Hour, Minute, or Day) by which the data in your report is aggregated. The default is Hour.
Aggregation interval	Select the interval between aggregations of the data in your report. This parameter uses the time period specified in the Aggregation by parameter to calculate the interval. The default is 1.
Report Component Selection	Use the following parameters to define which data and statistics are displayed in the report.
Include parameter card?	Set to yes to include a card in the report that lists parameter settings for the report script. The default is yes.
Include Total Requests detail table?	Set to yes to include data from the Total Requests detail table in the report. The default is yes.
Include Total Requests chart?	Set to yes to include data from the Total Requests chart in the report. The default is yes.
Threshold on Total Requests chart	Specify an integer to set a threshold for the Total Requests chart. Use -1 to ignore this threshold. The default is 0.

Description	How to Set It
Include Processes per Virtual Host detail table?	Set to yes to include data from the Processes per Virtual Host detail table in the report. The default is yes.
Include Processes per Virtual Host chart?	Set to yes to include data from the Processes per Virtual Host chart in the report. The default is yes.
Threshold on Processes per Virtual Host chart	Specify an integer to set a threshold for the Processes per Virtual Host chart. Use -1 to ignore this threshold. The default is 0.
Include Busy Processes detail table?	Set to yes to include data from the Busy Processes detail table in the report. The default is yes.
Include Busy Processes chart?	Set to yes to include data from the Busy Processes chart in the report. The default is yes.
Threshold on Busy Processes chart	Specify an integer to set a threshold for the Busy Processes chart. Use -1 to ignore this threshold. The default is 0.
Report settings	Use the following parameters to define the graphical presentation of data, the folder where the report is generated, and properties that identify the report.
Customize Chart Appearance	Click the Browse [...] button to open the Chart Settings dialog box. Define the graphic properties of the charts in your report. The default is Ribbon.
Select report location	Click the Browse [...] button to open the Publishing Options dialog box. Define the report filename and specify a default folder for this report. The default is ApacheUNIX_ActivitySummary.
Add job ID to output folder name?	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.
Index-Report Title	Click in the Value column, and click the Browse [...] button to open the Report Properties dialog box. Set the properties parameters as desired. The default title is ApacheUNIX Activity Summary.
Add time stamp to title	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 is useful in order to run consecutive iterations of the same report without overwriting previous output. The default is no.
Event notification	Use the following parameters to raise events associated with generating the report, and to set severity levels for those events.
Raise event for report success?	Set to yes to raise an event when the report is successfully generated. The default is yes.
Severity level for report success	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 35, which is the magenta level indicator.
Severity level for report with no data	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 25, which is the blue level indicator.
Severity level for report failure	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 5, which is the red level indicator.

3.16 Report_HealthSummary

Use this Report Script to generate a report summarizing the health of monitored Apache Web Servers and IBM HTTP Servers. The report provides data on the following:

- ♦ Availability
- ♦ Core Files
- ♦ Error Log Entries
- ♦ CPU
- ♦ Virtual Memory Utilization

This Knowledge Script uses data other scripts collect. Before you run this Knowledge Script, you must first run the Availability, CoreDumpCheck, ErrorLogEntries, CPU, and VirtualMemory Knowledge Scripts.

3.16.1 Resource Objects

Report Agent > AM Repositories > *AppManager repository*

3.16.2 Default Schedule

The default schedule is **Run once**.

3.16.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Data source	Use the following parameters to select the data for your report.
Select computer(s)	Click the Browse [...] button to start the data wizard. Use the data wizard to select the computers for your report.
Select time range	Click the Browse [...] button to open the time browser. Set a specific or sliding time range for data included in your report. The default is Sliding Time: 1 Day; End Now = No.
Select peak weekday(s)	Click the Browse [...] button to select the days of the week to include in your report. The default is Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday.
Aggregation by	Select the time period (Hour, Minute, or Day) by which the data in your report is aggregated. The default is Hour.
Aggregation interval	Select the interval between aggregations of the data in your report. This parameter uses the time period specified in the Aggregation by parameter to calculate the interval. The default is 1.
Report Component Selection	Use the following parameters to define which data and statistics are displayed in the report.
Include parameter card?	Set to yes to include a card in the report that lists parameter settings for the report script. The default is yes.

Description	How to Set It
Include Availability detail table?	Set to yes to include data from the Availability detail table in the report. The default is yes.
Include Availability chart?	Set to yes to include data from the Availability chart in the report. The default is yes.
Threshold on Availability chart	Specify an integer to set a threshold for the Availability chart. Use -1 to ignore this threshold. The default is 0.
Include Core Files detail table?	Set to yes to include data from the Core Files detail table in the report. The default is yes.
Include Core Files chart?	Set to yes to include data from the Core Files chart in the report. The default is yes.
Threshold on Core Files chart	Specify an integer to set a threshold for the Core Files chart. Use -1 to ignore this threshold. The default is 0.
Include Error Log Entries detail table?	Set to yes to include data from the Error Log Entries detail table in the report. The default is yes.
Include Error Log Entries chart?	Set to yes to include data from the Error Log Entries chart in the report. The default is yes.
Threshold on Error Log Entries chart	Specify an integer to set a threshold for the Error Log Entries chart. Use -1 to ignore this threshold. The default is 0.
Include CPU Utilization detail table?	Set to yes to include data from the CPU Utilization detail table in the report. The default is yes.
Include CPU Utilization chart?	Set to yes to include data from the CPU Utilization chart in the report. The default is yes.
Threshold on CPU Utilization chart	Specify an integer to set a threshold for the CPU Utilization chart. Use -1 to ignore this threshold. The default is 0.
Include Virtual Memory detail table?	Set to yes to include data from the Virtual Memory detail table in the report. The default is yes.
Include Virtual Memory chart?	Set to yes to include data from the Virtual Memory chart in the report. The default is yes.
Threshold on Virtual Memory chart	Specify an integer to set a threshold for the Virtual Memory chart. Use -1 to ignore this threshold. The default is 0.
Report Settings	Use the following parameters to define the graphical presentation of data, the folder where the report is generated, and properties that identify the report.
Customize Chart Appearance	Click the Browse [...] button to open the Chart Settings dialog box. Define the graphic properties of the charts in your report. The default is Ribbon.
Select report location	Click the Browse [...] button to open the Publishing Options dialog box. Define the report filename and specify a default folder for this report. The default is ApacheUNIX_HealthSummary
Add job ID to output folder name?	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.
Index-Report Title	Click in the Value column, and click the Browse [...] button to open the Report Properties dialog box. Set the properties parameters as desired. The default title is ApacheUnix Health Summary.

Description	How to Set It
Add time stamp to title	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 is useful in order to run consecutive iterations of the same report without overwriting previous output. The default is no.
Event notification	Use the following parameters to raise events associated with generating the report, and to set severity levels for those events.
Raise event for report success?	Set to yes to raise an event when the report is successfully generated. The default is yes.
Severity level for report success	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 35, which is the magenta level indicator.
Severity level for report with no data	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 25, which is the blue level indicator.
Severity level for report failure.	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 5, which is the red level indicator.

3.17 Report_PerformanceSummary

Use this Report Script to generate a report summarizing the throughput performance of monitored Apache Web Servers and IBM HTTP Servers.

This Knowledge Script uses data other scripts collect. Before you run this Knowledge Script, you must first run the Throughput Knowledge Script.

3.17.1 Resource Objects

Report Agent > AM Repositories > *AppManager repository*

3.17.2 Default Schedule

The default schedule is **Run once**.

3.17.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Data source	Use the following parameters to select the data for your report.
Select computer(s)	Click the Browse [...] button to start the data wizard. Use the data wizard to select the computers for your report.
Select time range	Click the Browse [...] button to open the time browser. Set a specific or sliding time range for data included in your report. The default is Sliding Time: 1 Day; End Now = No.

Description	How to Set It
Select peak weekday(s)	Click the Browse [...] button to select the days of the week to include in your report. The default is Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday.
Aggregation by	Select the time period (Hour, Minute, or Day) by which the data in your report is aggregated. The default is Hour.
Aggregation interval	Select the interval between aggregations of the data in your report. This parameter uses the time period specified in the Aggregation by parameter to calculate the interval. The default is 1.
Report Component Selection	Use the following parameters to define which data and statistics are displayed in the report.
Include parameter help card?	Set to yes to include a card in the report that lists parameter settings for the report script. The default is yes.
Include Throughput (req/s) detail table?	Set to yes to include data from the Throughput (req/s) detail table in the report. The default is yes.
Include Throughput (req/s) chart?	Set to yes to include data from the Throughput (req/s) chart in the report. The default is yes.
Threshold on Throughput (req/s) chart	Specify an integer to set a threshold for the Throughput (req/s) chart. Use -1 to ignore this threshold. The default is 0.
Include Throughput (bytes/s) detail table?	Set to yes to include data from the Throughput (bytes/s) detail table in the report. The default is yes.
Include Throughput (bytes/s) chart?	Set to yes to include data from the Throughput (bytes/s) chart in the report. The default is yes.
Threshold on Throughput (bytes/s) chart	Specify an integer to set a threshold for the Throughput (bytes/s) chart. Use -1 to ignore this threshold. The default is 0.
Report Settings	Use the following parameters to define the graphical presentation of data, the folder where the report is generated, and properties that identify the report.
Customize Chart Appearance	Click the Browse [...] button to open the Chart Settings dialog box. Define the graphic properties of the charts in your report. The default is Ribbon.
Select report location	Click the Browse [...] button to open the Publishing Options dialog box. Define the report filename and specify a default folder for this report. The default is ApacheUNIX_PerformanceSummary.
Add job ID to output folder name?	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.
Index-Report Title	Click in the Value column, and click the Browse (...) button to open the Report Properties dialog box. Set the properties parameters as desired. The default title is ApacheUNIX Performance Summary.
Add time stamp to title?	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 is useful in order to run consecutive iterations of the same report without overwriting previous output. The default is no.
Event notification	Use the following parameters to raise events associated with generating the report, and to set severity levels for those events.

Description	How to Set It
Raise event for report success?	Set to yes to raise an event when the report is successfully generated. The default is yes.
Severity level for report success	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 35, which is the magenta level indicator.
Severity level for report with no data	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 25, which is the blue level indicator.
Severity level for report failure.	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 5, which is the red level indicator.

3.18 Requests

Use this Knowledge Script to monitor:

- ♦ Maximum processing time
- ♦ Average processing time
- ♦ Average accesses per connection

You can use this script in capacity planning. For example, if processing time for requests is too long, you may want to upgrade the computer to support the level of Web traffic, or limit the number of other applications running on the computer.

You can also use this script to determine whether enough child processes are being spawned to handle the number of requests. If the data returned for average accesses per connection indicates that each child process is handling too many requests, you can alter your configuration of the server.

3.18.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.18.2 Default Schedule

The default interval for this script is **Daily at 2 AM**.

3.18.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise event if any threshold exceeded? (y/n)	Set to y to raise events. The default is y.
Event severity when script fails	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 10, which is the red event indicator.
Event severity when threshold exceeded	Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 25, which is the blue event indicator.

Description	How to Set It
Collect data for maximum processing time? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the maximum request processing time (in ms) for the last interval. The default is n.
Threshold -- Maximum processing time	Specify a threshold value using an integer greater than or equal to -1. If the maximum processing time in milliseconds exceeds this threshold, an event is raised. Use -1 to ignore this threshold. The default is 0 milliseconds.
Collect data for average processing time? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the average processing time in milliseconds per request during the last interval. The default is n.
Threshold -- Maximum average processing time	Specify a threshold value using an integer greater than or equal to -1. If the average processing time in milliseconds exceeds this threshold, an event is raised. Use -1 to ignore this threshold. The default is 0 milliseconds.
Collect data for average accesses per connection? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the average number of accesses per connection, which is the average number of requests handled by each child process. The default is n.
Threshold -- Maximum average accesses per connection	Specify a threshold value using an integer greater than or equal to -1. If the average accesses per connection exceeds this threshold, an event is raised. Use -1 to ignore this threshold. The default is 0.

3.19 ServerUtilization

Use this Knowledge Script to monitor the utilization statistics for Apache Web Servers and IBM HTTP Servers. This Knowledge Script tracks the percentage of busy and idle processes on specified servers.

You can use this Knowledge Script to track how busy a server is at a given time. For example, if a server is overutilized, you may want to increase the number of HTTPD processes it is running.

3.19.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.19.2 Default Schedule

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

3.19.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise event if any threshold exceeded? (y/n)	Set to y to raise events. The default is y.
Event severity when script fails	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 10, which is the red event indicator.

Description	How to Set It
Event severity when any threshold exceeded	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 25, which is the blue event indicator.
Collect data for percentage of processes busy? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the percentage of busy processes. The default is n.
Threshold -- Maximum percentage of processes busy	Specify a threshold value using an integer greater than or equal to -1. If the percentage of busy processes exceeds this threshold, an event is raised. Use -1 to ignore this threshold. The default is 0 percent.
Collect data for number of busy processes? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the number of busy processes. The default is n.
Threshold -- Maximum number of busy processes	Specify a threshold value using an integer greater than or equal to -1. If the number of busy processes exceeds this threshold, an event is raised. Use -1 to ignore this threshold. The default is 0 busy processes.
Collect data for number of idle processes? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the number of idle processes. The default is n.
Threshold -- Maximum number of idle processes	Specify a threshold value using an integer greater than or equal to -1. If the number of idle processes exceeds this threshold, an event is raised. Use -1 to ignore this threshold. The default is 0 idle processes.
Collect data for percentage of allowed requests per child? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the percentage of allowed requests. The default is n.
Threshold -- Maximum percentage allowed requests per child	Specify a threshold value using an integer greater than or equal to -1. If the percentage of allowed requests per child exceeds this threshold, an event is raised. Use -1 to ignore this threshold. The default is 0 percent.
Collect data for percentage of allowed servers? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the percentage of allowed servers. The default is n.
Threshold -- Maximum percentage of allowed servers	Specify a threshold value using an integer greater than or equal to -1. If the percentage of allowed servers realized exceeds this threshold, an event is raised. Use -1 to ignore this threshold. The default is 0 percent.

3.20 StartServer

Use this Knowledge Script to start or restart Apache Web Servers and IBM HTTP Servers.

You can use this Knowledge Script as a maintenance tool for remote restarting of Apache Web Servers and IBM HTTP Servers. For example, you can use the default schedule to stop and restart all Apache Web Servers each day at 3:00 A.M. to halt runaway processes.

This Knowledge Script fails if you run the UNIX agent computer as a non-root user.

3.20.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.20.2 Default Schedule

The default interval for this script is **Daily at 3 AM**.

3.20.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise event if script succeeds or fails? (y/n)	Set to y to raise events. The default is y.
Collect data for job successful or unsuccessful? (y/n)	Set to y to collect data for reports and graphs. If set to y, this script returns 100 if a restart is successful, or 0 if it is unsuccessful. The default is n.
Event severity when script fails	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 10, which is the red event indicator.
Event severity when script succeeds	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 35, which is the magenta event indicator.
Method to use when starting Apache server	Specify a method for starting the specified server: <ul style="list-style-type: none">◆ Start: starts the server.◆ Restart: stops running processes immediately and restarts the server.◆ Graceful: allows running processes to finish requests, then restarts the server. The default is Graceful.

3.21 StatusModule

Use this Knowledge Script to enable or disable the `mod_status` module on an Apache Web Server or IBM HTTP Server. You must enable this module for some monitoring Knowledge Scripts to return data. Running this Knowledge Script will restart the Apache Web Server or IBM HTTP Server.

This Knowledge Script fails if you run the UNIX agent computer as a non-root user.

3.21.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.21.2 Default Schedule

The default interval for this script is **Run once**.

3.21.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise event if script succeeds or fails? (y/n)	Set to y to raise events. The default is y.
Enable <code>mod_status</code> ? (y/n)	Set to y to enable Apache <code>mod_status</code> module. The default is y.

Description	How to Set It
Event severity when enabling or disabling succeeds	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 35, which is the magenta event indicator.
Event severity when enabling or disabling fails	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 10, which is the red event indicator.
Path to module (may be relative to Server Root; semicolon-separated, no spaces)	Specify the directory path of the <code>mod_status</code> module. The default is <code>modules;libexec</code> .

3.22 StopServer

Use this Knowledge Script to stop an Apache Web Server or IBM HTTP Server that is currently running.

This Knowledge Script lets you specify whether to kill running processes and stop the server immediately, or allow processes to finish requests before stopping the server.

You can use this Knowledge Script in conjunction with another script as a troubleshooting tool. For example, if the ProcessActivity Knowledge Script determines that a server is experiencing a denial-of-service attack, the StopServer script can be invoked to stop the server immediately.

This Knowledge Script fails if you run the UNIX agent computer as a non-root user.

3.22.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.22.2 Default Schedule

The default interval for this script is **Daily at 3 AM**.

3.22.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise event if script succeeds or fails? (y/n)	Set to y to raise events. The default is y.
Collect data for job successful or unsuccessful? (y/n)	Set to y to collect data for charts and reports. If set to y, the script returns 100 if a server is stopped, or 0 if a server is not stopped. The default is n.

Description	How to Set It
Method to use when stopping Apache server	<p>Specify a method for starting the specified servers:</p> <ul style="list-style-type: none"> ◆ Stop: stops running processes, finalizes dependencies, then closes dependencies. ◆ Graceful-stop: allows running processes to finish requests, then stops the server. This option is not supported on Apache Web Server 2.0. ◆ Enforced: stops running processes and dependencies immediately, without properly finalizing dependencies. <p>The default is Stop.</p>
Event severity when script fails	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 10, which is the red event indicator.
Event severity when script succeeds	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 35, which is the magenta event indicator.

3.23 Throughput

Use this Knowledge Script to monitor throughput statistics for Apache Web Servers and IBM HTTP Servers. This Knowledge Script collects data on total bytes, total accesses, requests per second, bytes per second, and bytes per request.

You can use this Knowledge Script to monitor how quickly and efficiently requested data is returned to clients by the Apache Web Server or IBM HTTP Server.

3.23.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.23.2 Default Schedule

The default interval for this script is **Every hour**.

3.23.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise event if any threshold exceeded? (y/n)	Set to y to raise events. The default is y.
Event severity when script fails	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 10, which is the red event indicator.
Event severity when threshold exceeded	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 25, which is the blue event indicator.
Source of throughput data	This parameter was required for older versions of the UNIX agent. Version 7.1 and later of the UNIX agent automatically use the appropriate source of throughput data, so this parameter is no longer required.

Description	How to Set It
Collect data for total bytes? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the total number of bytes. The default is n.
Threshold -- Maximum total bytes	Specify a threshold value using an integer greater than or equal to -1. If total bytes exceed the threshold value, an event is raised. Use -1 to ignore this threshold. The default is 0 bytes.
Collect data for total accesses? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the total number of accesses. The default is n.
Threshold -- Maximum total accesses	Specify a threshold value using an integer greater than or equal to -1. If total accesses exceed the threshold value, an event is raised. Use -1 to ignore this threshold. The default is 0 accesses.
Collect data for requests per second? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the number of requests per second. The default is n.
Threshold--Maximum requests per second	Specify a threshold value using an integer greater than or equal to -1. If requests per second exceed the threshold value, an event is raised. Use -1 to ignore this threshold. The default is 0 requests.
Collect data for bytes per second? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the number of bytes per second. The default is n.
Threshold--Maximum bytes per second	Specify a threshold value using an integer greater than or equal to -1. If bytes per second exceed the threshold value, an event is raised. Use -1 to ignore this threshold. The default is 0 bytes.
Collect data for bytes per request? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the number of bytes per request. The default is n.
Threshold--Maximum bytes per request	Specify a threshold value using an integer greater than or equal to -1. If bytes per request exceed the threshold value, an event is raised. Use -1 to ignore this threshold. The default is 0 bytes.

3.24 TopNPageActivity

Use this Knowledge Script to monitor the pages with the most activity on an Apache Web Server or IBM HTTP Server.

To use this Knowledge Script, you must have the Apache CustomLog directive configured as `common` or `combined`. For information about how to configure the CustomLog directive, see your Apache documentation.

3.24.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.24.2 Default Schedule

The default interval for this script is **Every hour**.

3.24.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise events? (y/n)	Set to y to raise events. The default is y.
Collect data for number of times each page accessed? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the number of times each monitored page was accessed during the interval. The default is n.
Number of pages with highest activity to monitor	Specify the number of most popular Web pages, which are the pages with the most activity, to list. The default is 5.
Filter: virtual hostname or filename of requests	Specify a filter using a regular expression for matching against the virtual host name and filename of requests. If you are using a virtual host, you must specify an access log for the virtual host using the Apache CustomLog directive.

3.25 Uptime

Use this Knowledge Script to monitor the time that an Apache Web Server or IBM HTTP Server has been running.

3.25.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.25.2 Default Schedule

The default interval for this script is **Every hour**.

3.25.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise event if server uptime counter resets? (y/n)	Set to y to raise events. The default is y.
Source of uptime data	This parameter was required for older versions of the UNIX agent. Version 7.1 and later of the UNIX agent automatically use the appropriate source of throughput data, so this parameter is no longer required.
Collect data for server uptime? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the amount of time in seconds the server has been running since its last start. The default is n.
Event severity when uptime counter resets	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 30.

3.26 VirtualMemory

Use this Knowledge Script to monitor virtual memory use, in percent and kilobytes, on an Apache Web Server or IBM HTTP Server.

3.26.1 Resource Objects

Apache Web Server or IBM HTTP Server

3.26.2 Default Schedule

The default interval for this script is **Every hour**.

3.26.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise event if any threshold exceeded? (y/n)	Set to y to raise events. The default is y.
Event severity when virtual memory utilization exceeds threshold	Set the severity level, from 1 to 40, to indicate the importance of the event. The default is 25.
Collect data for percentage of virtual memory used? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the percentage of virtual memory used by the Apache Web Server or IBM HTTP Server. The default is n.
Threshold -- Maximum virtual memory utilization (%)	Specify a threshold value using an integer greater than or equal to -1 and lesser than or equal to 100. If Apache processes exceed the percentage threshold, an event is raised. Use -1 to ignore this threshold. The default is 0 percent.
Collect data for total virtual memory used? (y/n)	Set to y to collect data for charts and reports. If set to y, this script returns the amount of virtual memory in kilobytes used by the Apache Web Server or IBM HTTP Server. The default is n.
Threshold -- Maximum virtual memory utilization (KB)	Specify a threshold value using an integer greater than or equal to -1. If Apache processes exceed the KB threshold value, an event is raised. Use -1 to ignore this threshold. The default is 0 KB.

3.27 Discovery_ApacheUNIX

Use this Knowledge Script to discover Apache Web Servers and IBM HTTP Servers installed on UNIX servers. This Knowledge Script returns information about successful, failed, and partial discoveries and raises events with user-specified severity to notify you of errors.

You can use this Knowledge Script to determine if and where Apache Web Servers and IBM HTTP Servers are installed in a UNIX network. Run this Knowledge Script periodically to detect new instances of Apache Web Servers and IBM HTTP Servers and to determine if existing servers have been uninstalled or taken offline.

3.27.1 Resource Object

UNIX computer with Apache Web Server or IBM HTTP Server.

3.27.2 Default Schedule

The default interval for this script is **Run once**.

3.27.3 Setting Parameter Values

Set the following parameters as needed:

Description	How to Set It
Raise an event for successful discovery? (y/n)	Set to y to raise an event when the Knowledge Script discovers an Apache Web Server or IBM HTTP Server. The default is n.
Event severity when Discovery succeeds	Specify a severity level for the event raised by successful discovery of an Apache Web Server or IBM HTTP Server. The default is 25.
Event severity when Discovery fails	Specify a severity level for the event raised by failure to discover an Apache Web Server or IBM HTTP Server. The default is 5.
Event severity when Discovery is partially successful	Specify a severity level for the event raised when the Knowledge Script starts but does not run to completion. The default is 15.
Paths to search for the Apache binary program (semicolon-separated, no spaces)	Use this variable to expedite the discovery process. Specify a directory path or list of paths separated by a semicolon. The Knowledge Script will limit its search for the Apache binary program to the paths you specify. The default is <code>/usr/local/apache2/bin/httpd</code> .
Paths for the Apache configuration files (Semicolon-separated, no spaces)	Use this variable to expedite the discovery process. Specify a directory path or list of paths separated by a semicolon. The Knowledge Script will limit its search for the Apache configuration files to the paths you specify. The default is <code>/usr/local/apache2/conf/httpd.conf</code> .
Paths to search for the Apache management script (semicolon-separated, no spaces)	Use this variable to expedite the discovery process. Specify a directory path or list of paths separated by a semicolon. The Knowledge Script will limit its search for the Apache management script, <code>apachectl</code> . The default is <code>/usr/local/apache2/bin/apachectl</code> .