

NetIQ[®] AppManager[®] for Oracle Solaris Zones

Management Guide

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

Intended Audience

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

Other Information in the Library

The library provides the following information resources:

Installation Guide for AppManager

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

User Guide for AppManager Control Center

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

Administrator Guide for AppManager

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

Upgrade and Migration Guide for AppManager

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

Management guides

Provide information about installing and monitoring specific applications with AppManager.

Help

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

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

About NetIQ Corporation

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

Our Viewpoint

Adapting to change and managing complexity and risk are nothing new

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

Enabling critical business services, better and faster

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

Our Philosophy

Selling intelligent solutions, not just software

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

Driving your success is our passion

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

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1 Introducing AppManager for Oracle Solaris Zones

Oracle Solaris Zones is a mature, highly used OS virtualization technology built into the Solaris operating system.

AppManager for Oracle Solaris Zones provides a set of Knowledge Scripts designed to give you a comprehensive view of how Solaris Zones performs in your environment. This module monitors the resource usage and availability information of Zones requiring the AppManager agent to be installed only on the host running the Solaris Zones. You need not install agent on individual zones. This module focuses on per zone monitoring.

AppManager for Oracle Solaris Zones offers the following:

CPU Utilization

- ♦ Monitor CPU utilization of zones compared to host and pset, and raise an event if the utilization exceeds the threshold you set.
- ♦ Monitor CPU utilization of any process in a zone compared to pset and raise an event if the utilization exceeds the threshold you set.
- ♦ Monitor CPU utilization compared to zone CPU cap value and raise an event if the utilization exceeds the cap value.
- ♦ Monitor CPU utilization of specified processes and raise an event if the utilization exceeds the threshold you set or if any of the specified processes is not running.

Daemon State

- ♦ Monitor the specified daemons and raise an event if any of the specified daemon is down or not down.
- ♦ Monitor the pool daemons and rcap daemons, and raise an event if any of the specified daemons is down.

Inventory

- ♦ Monitor the Zone inventory and raise an event when a zone is added or removed or when a zone attribute, zone memory, and zone processing unit is changed.
- ♦ Monitor the ZFS pool inventory and raise an event when a ZFS pool is added or removed or when a ZFS pool attribute is changed.
- ♦ Monitor the virtual network interface card (VNIC) inventory and raise an event when a VNIC is added or removed or when a VNIC attribute is changed.
- ♦ Monitor CPU and memory and raise an event if their attributes are changed.
- ♦ Monitor Solaris Zones host for limited set of attributes.

Memory Utilization

- ♦ Monitor memory utilization of zones in percentage compared to system memory and raise an event if the utilization exceeds the threshold you set.
- ♦ Monitor memory utilization compared to zone memory cap value and raise an event if the utilization exceeds the cap value.
- ♦ Monitor memory utilization of zones in MB and raise an event if the utilization exceeds the threshold you set.
- ♦ Monitor memory utilization of any process in a zone compared to the system memory and raise an event if the utilization exceeds the threshold you set.
- ♦ Monitor memory utilization of specified processes and raise an event if memory utilization compared to system memory exceeds the threshold you set or if any of the specified processes is not running.

VNIC Statistics

- ♦ Monitor VNICs configured with zone and raise an event if the network utilization exceeds its max value (if set).
- ♦ Monitor the sent and received bytes and raise an event if they exceed the threshold.
- ♦ Monitor the input and output packet drops and raise an event if packet drops exceed the threshold you set.
- ♦ Monitor the interrupt rates and raise an event if the interrupt rates exceed the threshold.

ZFS Health

- ♦ Monitor ZFS pools and raise an event if any of the ZFS pools is not online.

2 Installing AppManager for Oracle Solaris Zones

This chapter provides installation instructions and describes system requirements for AppManager for Oracle Solaris Zones.

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

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

2.1 System Requirements

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

AppManager for Oracle Solaris Zones has the following system requirements:

Item	Requirement
NetIQ AppManager installed on the AppManager repository (QDB) computers, management server, and all console computers.	7.0.1 or later
NetIQ UNIX Agent	7.1 or later
Operating system on the agent computers (Oracle Solaris Host)	10.x, 11.0, or 11.1

AppManager for Oracle Solaris Zones monitors Solaris Zones resources from a UNIX computer using any NetIQ UNIX agent on that computer. The Oracle Solaris account that Solaris Zones Knowledge Scripts uses should have sufficient privileges to monitor each zone.

2.2 Installing the Module

To install the module, do the following:

- ♦ Run the module installer `AM70-SolarisZones-8.0.x.x.msi` on all AppManager repositories that store data for this module to install the Knowledge Scripts.
- ♦ Run the module installer `AM70-SolarisZones-8.0.x.x.msi` on all AppManager Control Center and Operator Console computers you use with this module to install the Help files.

- ♦ Ensure the correct UNIX agent patch level is installed on the monitoring server computer:
 - ♦ UNIX agent 7.5 with patch 7.5.0.1
 - ♦ UNIX agent 7.2 with patch 7.2.0.8
 - ♦ UNIX agent 7.1 with patch 7.1.0.52

Access the `AM70-SolarisZones-8.0.x.x.msi` module installer and the patch files `p71p52.zip`, `p72p8.zip`, or `p75p1.zip` patch from the `AM70_SolarisZones_8.0.x.x` self-extracting installation package on the [AppManager Module Upgrades & Trials](#) page.

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

To install the module:

- 1 Ensure you have the UNIX agent installed on the Solaris Zones host. For information about how to install the agent, see the *AppManager for UNIX and Linux Servers Management Guide*.
- 2 (Conditional) Depending on the version of the UNIX Agent on the monitoring server computer, apply the corresponding patch. For example, if you have UNIX agent 7.1 on the monitoring server computer, then apply patch 7.1.0.52. For more information on how to apply UNIX agent patches, see the *AppManager for UNIX and Linux Servers Management Guide*.
- 3 To install the Knowledge Scripts into the QDB:
 - 3a Select **Install Knowledge Scripts** to install the repository components, including the Knowledge Scripts, object types, and SQL stored procedures.
 - 3b Specify the SQL Server name of the server hosting the QDB, as well as the case-sensitive QDB name.

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

- 4 (Conditional) If you use Control Center 7.x, run the module installer for each QDB attached to Control Center.
- 5 (Conditional) If you use Control Center 8.x, run the module installer only for the primary QDB. Control Center automatically replicates this module to secondary QDBs.
- 6 Run the module installer on all console computers to install the Help and console extensions.
- 7 (Conditional) If you have not discovered Oracle Solaris Zones resources, run the `Discovery_SolarisZones` Knowledge Script on all on all agent computers that you want to monitor. For more information, see [“Discovering AppManager for Oracle Solaris Zones Resources” on page 13](#).

After the installation has completed, the `SolarisZones_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-SolarisZones-8.0.x.x.msi /qn MO_B_QDBINSTALL=1 MO_B_SQLSVR_WINAUTH=1
MO_SQLSVR_NAME=SQLServerName MO_QDBNAME=AMRepositoryName
```

SQL authentication:

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

2.3 Discovering AppManager for Oracle Solaris Zones Resources

Run the `Discovery_SolarisZones Knowledge Script` to discover SolarisZones host resources: host attributes, zones, processing units, memory units, virtual network interface cards (VNICs), and ZFS pools.

2.3.1 Prerequisites

- Before running the `Discovery_SolarisZones Knowledge Script`, ensure that you run the `Discovery_UNIX Knowledge Script`.
- To run the `Discovery_SolarisZones Knowledge Script` as a non-root user, you must add `/usr/bin/prctl` entry in the `/etc/uroot.cfg` file.

2.3.2 Resource Objects

UNIX_MachineFolder

2.3.3 Default Schedule

By default, this script runs once for each computer.

2.3.4 Setting Parameter Values

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

Description	How to Set It
Discovery Settings	
Event Settings	
Event severity when module error or job fails	Set the severity level, from 1 to 40, to indicate the importance of an event in which a module error occurs or the discovery job fails. The default is 5.
Raise event if discovery succeeds?	Select Yes to raise an event if the discovery job succeeds. The default is unselected.
Event severity	Select the severity level, from 1 to 40, to indicate the importance of an event in which the discovery job succeeds. The default is 25.
Raise event if discovery succeeds partially?	Select Yes to raise an event if the discovery job partially succeeds. The default is Yes.

Description	How to Set It
Event severity	Select the severity level, from 1 to 40, to indicate the importance of an event in which the discovery job partially succeeds. The default is 15.
Discovery Options	
Discover Processing Units?	Select Yes to discover the Solaris Zones Processing Units. The default is Yes.
Discover Memory Units?	Select Yes to discover Solaris Zones Memory Units. The default is Yes.
Discover Virtual Network Interface Cards?	Select Yes to discover the Solaris Zones Virtual Network Interface Cards. The default is Yes. NOTE: The Discovery_SolarisZones KS discovers the VNICs only on Solaris 11 and later, because VNIC feature is available only on Solaris 11.0 and later.
Discover ZFS Pools?	Select Yes to discover the Solaris Zones ZFS pools. The default is Yes.

NOTE: The Zone resources that are discovered are the Zones that are currently running and not the Zones that are configured on a host.

After you successfully run the Discovery_SolarisZones Knowledge Script, the Operator Console or Control Center displays the new SolarisZones Knowledge Script category. You can now start monitoring Oracle Solaris Zones server.

2.4 Attributes of Solaris Zones

When you run the Discovery_SolarisZones Knowledge Script, the script discovers several objects that have different attributes. This section provides information on the attributes of the Solaris Zones objects.

2.4.1 Solaris Zones Host

The Solaris Zones host object is the parent object for the zones and ZFS pool objects and the attributes of Solaris Zones Host objects are as follows:

- ♦ **Name:** Displays the host name. This is the output of the *hostname* command. For example, if the hostname is *uxt2002*, then the name is `SolarisZonesHost:uxt2002`.
- ♦ **Solaris Version:** Displays the attribute divided in to three comma-separated parts:
 - ♦ Solaris version
 - ♦ Release date
 - ♦ Update (if applicable)

If the module is not able to get the Release date and Update, then these values are shown as *(na)*. For example, *10,8/11,U10* indicates that the Solaris version is 10, system release date is 8/11, and has update 10.

- ♦ **Zone Count:** Displays the number of configured zones in a host irrespective of their states.
- ♦ **Architecture:** Displays the architecture of the host. For example, if the host system has a SPARC processor, this attribute display *sun4v*.
- ♦ **CPU Count:** The number of CPUs on a host.

- ♦ **Memory Size:** Displays the memory, in MB, installed on the host.

2.4.2 Zones

In the object hierarchy, the Zones are within the host and displays all the zones that are in *running* state. However, the zones that are not in *running* state are not displayed in the tree. The processing unit and memory are the child objects of Zones. If any of the attributes are not available, then these values are shown as (na).

The attributes of Zones objects are as follows:

- ♦ **Name:** Displays the zone name.
- ♦ **Zone Path:** Displays the path that contains the zone root.
- ♦ **Brand:** Displays the brand of the zone.
- ♦ **Autoboot:** Displays if autoboot for the zone is set or not.
- ♦ **IP Type:** Displays if the IP Type is *shared* or *exclusive*.
- ♦ **CPU Shares:** Displays the number of CPU shares that the zone is assigned to from the current pset.
- ♦ **Scheduling Class:** Displays the scheduling class that the zone belongs to.

2.4.3 Processing Unit

Processing Unit object is a collection of CPU-specific attributes of a Zone. If any of the attributes are not available, these values are displayed as (na).

The attributes of processing unit are as follows:

- ♦ **Name:** Displays the string, *Processing Unit*.
- ♦ **CPU Cap:** Displays the configured CPU cap value of the zone.
- ♦ **pset Name:** Displays the name of the pset that is bound to the zone.
- ♦ **Pool (Name, Mode):** Displays the name of the pool and mode that the pset bound to the zone belongs to. Mode is *default*, *dedicated*, or *shared*. If the pools daemon is not running or if the module fails to get the pools daemon state, then the module considers that all the zones belong to the default pool.
- ♦ **Percent Pool Share:** Displays the relative zone CPU shares, in percent, compared to the number of zones belonging to a pool.

For example, if there are two zones in a pool and the shares of zone01 is 4 CPU and zone02 is 2 CPU, then the Percent Pool Share of zone01 is $(4/(4+2))*100 = 66.67\%$ and Percent Pool Share of zone02 is $(2/(4+2))*100 = 33.33\%$. This calculation is based on the *CPU Shares* attributes of the Zones.

- ♦ **Min CPU:** Displays the minimum number of CPUs that can be assigned to the pset bound to the zone.
- ♦ **Current CPU:** Displays the total number of CPUs that are active in the pset bound to the zone.
- ♦ **Max CPU:** Displays the maximum number of CPUs that can be assigned to the pset bound to the zone.

2.4.4 Memory

Memory object is a collection of memory specific attributes of a Zone. If any of the attributes are not available, these values are displayed as (na).

The attributes of memory are as follows:

- ♦ **Name:** Displays the name, *Memory*.
- ♦ **Max RSS:** Displays the capped physical memory.
- ♦ **Max Swap:** Displays the maximum swap resource value of the zone.
- ♦ **Max Locked Memory:** Displays the maximum locked memory resource cap of the zone.

2.4.5 VNIC

VNIC object displays the VNICs that are configured and the VNICs that are bound to a zone. If any of the VNIC attributes are not available, then these values are shown as (na).

The attributes of VNIC objects are as follows:

- ♦ **Name:** Displays the VNIC name.
- ♦ **Over:** Displays the datalink on which the VNIC was created.
- ♦ **Speed:** Displays the maximum speed, in megabits per second, of a VNIC.
- ♦ **MAC Address:** Displays the MAC address assigned to a VNIC.
- ♦ **MAC Addrtype:** Displays MAC address type of a VNIC.
- ♦ **VID:** Displays the VLAN ID assigned to a VNIC.

NOTE: The selection of VNIC in the Discovery_SolarisZones Knowledge Script is ignored on Solaris 10, because VNIC feature is not present in Oracle Solaris 10.

2.4.6 ZFS Pools

ZFS Pool object list the pools. If any of the attributes are not available, these values are displayed as (na).

The attributes of memory are as follows:

- ♦ **Name:** Displays the ZFS Pool name.
- ♦ **Pool Size:** Displays the size of a pool.
- ♦ **De-duplication:** Displays the de-duplication rate. Solaris 10 does not support de-duplication. Therefore, this field displays the value as (na).
- ♦ **Alternate Root:** Displays the alternate root for a pool.

3 SolarisZones Knowledge Scripts

AppManager provides the following Knowledge Scripts for monitoring Oracle Solaris Zones resources.

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

Knowledge Script	What It Does
DaemonState	Monitors the state of the specified daemons and raises an event if any specified daemon is running or not running.
Inventory	Monitors inventory changes in the Solaris Zones module objects. Solaris Zones module objects include: SolarisZonesHost, Zones, Zone processing Unit, Zone Memory, Zone VNIC, and ZFS pools.
VnicIO	Monitors network statistics of VNICs configured with Zones and raises an event if the network statistics exceeds threshold.
ZFSHealth	Monitors ZFS pool health and raises an event if a pool is not online.
ZoneCpuByProcess	Monitors CPU utilization of specified processes and raises an event if CPU utilization exceeds threshold.
ZoneCPUUtil	Monitors CPU utilization of Zones and raises an event if CPU utilization exceeds threshold.
ZoneMemByProcess	Monitors memory utilization of specified processes and raises an event if memory utilization exceeds threshold (in percent and in MB).
ZoneMemoryUtil	Monitors memory utilization of Zones and raises an event if memory utilization exceeds threshold (in percent and in MB).

3.1 DaemonState

Use this Knowledge Script to monitor the state of the specified daemons and raises an event if any specified daemon is running or not running.

3.1.1 Resource Object

SolarisZones_HostFolder

3.1.2 Default Schedule

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

3.1.3 Setting Parameter Values

Set the following parameters as needed:

Parameter	How to Set It
Event Settings	
Raise event if daemons specified in the list are down?	Select Yes to raise an event if any of the daemons you specified for monitoring is down. The default is unselected.
Comma-separated list of daemons	Enter one or more daemon names, separated by commas and no spaces. The default is <code>pools</code> .
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which any of the daemons you specified for monitoring is down. The default is 5.
Raise event if daemons specified in the list are not down?	Select Yes to raise an event if any of the daemons that you specified for monitoring is up and running. The default is unselected.
Comma-separated list of daemons	Enter one or more daemon names, separated by commas and no spaces. The default is <code>pools</code> .
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which any of the daemons you specified for monitoring is down. The default is 5.
Raise event if POOLS daemon is down?	Select Yes to raise an event if the POOLS daemon is down. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the POOLS daemon is down. The default is 5.
Raise event if RCAP daemon is down?	Select Yes to raise an event if the RCAP daemon is down. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the RCAP daemon is down. The default is 5.
Raise event if AppManager fails to get metrics?	Select Yes to raise an event if the DaemonState job fails to get the metrics of the specified daemons. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the DaemonState job fails to get the metrics of the specified daemons. The default is 5.
Event severity when job fails	Set the severity level, from 1 to 40, to indicate the importance of an event in which the DaemonState job fails. The default is 5.

3.2 Inventory

Use this Knowledge Script to monitor changes in the Solaris Zones module objects. SolarisZones module objects include: Host running Solaris Zones, Zones, Zone Processing Unit, Zone Memory, Zone VNIC, and ZFS pools. You can configure this Knowledge Script to raise events when SolarisZones objects are added, removed, or if any object attribute changes.

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

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

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

3.2.1 Considerations while Running this Script

The following points should be taken in to consideration while running this script:

- ◆ You cannot monitor the addition or removal of a Solaris Zones Host, because the AppManager agent runs in the host and if the host goes down, the agent will not be able to communicate with the AppManager server.
- ◆ You can only monitor a limited set of attributes for a Solaris Zones Host. If you want to monitor the entire Solaris Zones Host, then run the standard set of AppManager Unix module Knowledge Scripts in the global zone of the Solaris host.
- ◆ You can not add or remove the Zone Processing Unit and Zone Memory explicitly. Therefore, you can not monitor the addition or removal of these two objects. When you add or remove a Zone, the event that is triggered as a result of this action includes these objects.
- ◆ You can monitor only those Zones that are in *running* state. This script assumes that a Zone is removed if the Zone state is changed to any other state than *running* state.
- ◆ You can monitor the addition or removal of a Zone by selecting the *Raise event if Zone state is changed?* parameter. The detailed event message includes the old and new states, other attributes and child object information.

For example, consider that a zone `zone01` is not present at iteration i . At iteration $i+1$, `zone01` is configured and running. For the $i+1$ iteration, the event detailed message displays the current state as *running* and previous state as *not configured*. The *not configured* state is added for this module to indicate that the zone configuration was not present in the system. Such a state is not available in the Oracle Solaris Zones literature.

3.2.2 Object and Attribute Event Options

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

The short and detailed event messages both include the following:

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

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

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

The detailed message contains the information from the short message, but in natural language and in more detail. For example, if a few attributes have changed for an object, then the short message contains only the attribute names, but the detailed message contains both the old and new attribute

values. In case of addition/removal, the short message contains the object name and location which was removed. The detailed message contains the last captured attributes before removal and the first captured attributes after addition, if available.

The changes monitored for each of the objects are listed below:

SolarisZones module object names	Explicit add/remove monitor	Explicit attribute change monitor
SolarisZonesHost	No	Yes
Zones	Yes	Yes
Zone Processing Unit	No	Yes
Zone Memory	No	Yes
Zone VNIC	Yes	Yes
ZFS Pools	Yes	Yes

Script Actions when Objects are Added or Removed

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

	Attribute=No	Attribute=Yes
Object=No	No event	Create an attribute change event: <ul style="list-style-type: none"> ◆ If an object is removed, report that monitored attributes have changed from a finite value to empty ◆ If an object is added, report that monitored attributes have changed from empty to a finite value.
Object=Yes	Create an object added or removed event. Attribute values for the added or removed object are not listed in the event detailed message. For Zones, the child instances are also added or removed and reported in the event detailed message	Create an object added or removed event and list the latest recorded attribute values in the event detailed message. For Zones, the child instances are also added or removed and reported in the event detailed message.

You initially select to monitor a specific attribute change or object addition/removal, and let the script run till iteration i . For iteration $i+1$, you change monitoring options by selecting or deselecting some specific option. The script will not create events for the newly changed monitoring objects when it compares snapshot $i+1$ to snapshot i . The first change comparison related to a specific option will start at iteration $i+1$ and $i+2$. If there are any changes, it will be detected and reported in iteration $i+2$.

For example, you first select not to monitor VNIC addition/removal or attribute change till iteration i . At iteration $i+1$, you change the options to monitor VNIC addition/removal and attribute change. The script captures the first monitored VNIC change between iterations $i+1$ and $i+2$.

When a Zone object is added or removed, the Knowledge Script also adds or removes its child objects, Zone Processing Unit, Zone Memory, and VNIC. In this case, the child objects do not generate individual events. Instead, the top-level event detailed message includes that these child objects have been added or removed.

The event detailed message also lists the latest recorded attributes of the Zone and all the monitored child objects and their attributes. If a child object has its own **Object=No** option selected, it is not included in the top-level event description. Instead, the top-level event includes a message indicating the child object type is not being monitored.

NOTE: If you select not to monitor any of the zone objects (Zone state change, Zone attribute, Zone Process Unit attribute, and Zone memory attribute) and select to monitor only the associated VNIC, and the zone is added or removed, AppManager raises an event only for the VNIC.

If you select to monitor any one of the Zone objects, then AppManager raises an event for the Zone including the VNIC attribute changes.

Script Actions when Object Attributes are Changed

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

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

You initially select to monitor a specific attribute change or object addition/removal, and let the script run till iteration i . For iteration $i+1$, you change monitoring options by selecting or deselecting some specific option. The script will not create events for the newly selected monitoring objects when it compares snapshot $i+1$ to snapshot i . The first change comparison related to a specific option will start at iteration $i+1$ and $i+2$. If there are any changes, it will be detected and reported in iteration $i+2$.

Aggregate Events

This Knowledge Script can create events either separately or in aggregate. Each inventory object includes a parameter to raise separate events and there are three kinds of aggregation:

- ♦ **Aggregate by host:** This option aggregates all the changes that were captured between two iterations as one single event. The detailed message contains all the changes that occurred. If you select this option, there will be only one event that captures the inventory changes other than the default notifications event and error reporting events.

If you aggregate events based on host, the script generates a single event for the changes to Zone, Host, and VNIC. Selecting this option overrides all the other aggregate options and the severity is based on the host attribute change severity.

- ♦ **Aggregate by Zone:** This option aggregates multiple changes in one Zone as a single event. If you select this option, the maximum events generated between two iterations are equivalent to the number of *running* zones. If you do not select this option, then there will be one event for each object type change in a zone.

For example, if there are changes in the attribute and processing unit attribute of `zone01` and also changes in the attribute and memory attribute of `zone02`, the script generates two events, one for `zone01` and the other one for `zone02`. The `zone01` event contains the attribute change and processing attribute change. Similarly, the `zone02` event contains both the attribute change and memory attribute change. If you do not select this option, then there will be four events, two per zone, indicating each of the changes.

The aggregation of events under this option includes changes to a Zone, Zone Processing Unit, Zone Memory, and VNIC. The severity for this event is based on the Zone severity value.

- ♦ **Aggregate by ZFS:** This option is similar to zone aggregation except that the script generates aggregate events for ZFS Pools. If you select this option, this script generate a single event for changes in different ZFS Pools.

You can use this feature to selectively reduce the number of events the Knowledge Script creates and aggregate events by inventory object type.

3.2.3 Snapshot Persistence

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

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

3.2.4 Snapshot Error Recovery

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

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

3.2.5 Resource Objects

SolarisZones_HostFolder

3.2.6 Default Schedule

By default, this script runs daily.

3.2.7 Setting Parameter Values

Set the following parameters as needed:

Parameter	How to Set It
Event Settings	
Raise event if AppManager fails to get metrics?	Select Yes to raise an event when the Inventory job fails to get metrics. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the Inventory job fails to get metrics. The default is 5.
Event severity when job fails	Set the severity level, from 1 to 40, to indicate the importance of an event in which the Inventory job fails. The default is 5.
Host Monitoring Settings	
Raise event if host system attribute is changed?	Select Yes to raise an event when a host system attribute is changed on the SolarisZones server. The default is unselected.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the host system attribute is changed on the SolarisZones server. The default is 5.
Zone Monitoring Settings	
Raise event if Zone state is changed?	Select Yes to raise an event if a Zone state is changed on the SolarisZones server. The default is Yes.
Raise event if Zone attribute is changed?	Select Yes to raise an event if a Zone attribute is changed on the SolarisZones server. The default is Yes.
Raise event if Zone CPU attribute is changed?	Select Yes to raise an event if a Zone CPU attribute is changed for the SolarisZones server. The default is Yes.
Raise event if Zone memory attribute is changed?	Select Yes to raise an event when a Zone memory attribute is changed for the SolarisZones server. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which one of the following changes occur on a Zone on the SolarisZone server: <ul style="list-style-type: none"> ◆ A Zone state is changed ◆ A Zone attribute is changed ◆ A Zone CPU attribute is changed ◆ A Zone memory is changed The default is 5.
Raise event if VNIC is added or removed?	Select Yes to raise an event when a VNIC is added to or removed from the SolarisZones server. The default is Yes.
Raise event if Zone VNIC attribute is changed?	Select Yes to raise an event when a Zone VNIC attribute is changed for the SolarisZones. The default is Yes.

Parameter	How to Set It
Event severity	<p>Set the event severity, from 1 to 40, to indicate the importance of an event in which one of the following changes occur on the SolarisZones server:</p> <ul style="list-style-type: none"> ◆ A VNIC is added to or removed ◆ A Zone VNIC attribute is changed <p>The default is 5.</p>
Aggregate events under host?	Select Yes to raise a single aggregate event for all the changes on a SolarisZones host. The default is unselected.
Aggregate events per Zone?	Select Yes to raise a single aggregate event for all the changes on a Zone. The default is unselected.
Raise event if ZFS pool is added or removed?	Select Yes to raise an event if a ZFS pool is added to or removed from the SolarisZones server. The default is Yes.
Raise event if ZFS pool attribute is changed?	Select Yes to raise an event if ZFS pool attribute is changed on the SolarisZones server. The default is Yes.
Aggregate ZFS events?	Select Yes to raise a single aggregate event for all the changes on a ZFS pools. The default is Yes.
Event severity	<p>Set the severity level, from 1 to 40, to indicate the importance of an event in which one of the following ZFS pool changes occur on the Solaris Zones server:</p> <ul style="list-style-type: none"> ◆ A ZFS pool is added to or removed ◆ A ZFS pool attribute is changed <p>The default is 5.</p>

3.3 VnicIO

Use this Knowledge Script to monitor the network statistics of VNICs configured with Zones. This Knowledge Script raises an event if the network statistics exceeds the threshold, if set. If you have not set the max bandwidth, AppManager raises an event specifying that the max bandwidth for the specific VNIC is not set.

NOTE: VNIC feature is available only on Solaris 11.0 and later. Therefore, this Knowledge Script is supported only on Solaris 11 and later. You cannot run this Knowledge Script on Solaris 10.0.

The runtime data for default VNIC is not present in Solaris 11.0. Therefore, this Knowledge Script does not generate event for the default VNIC.

3.3.1 Resource Object

SolarisZones_VNICObj

3.3.2 Default Schedule

The default interval for this script is **Every 15 minutes**.

3.3.3 Setting Parameter Values

Set the following parameters as needed:

Parameter	How to Set It
Event Settings	
Raise event if sent bytes exceeds threshold?	Select Yes to raise an event if the sent bytes of a VNIC exceeds the threshold you set. The default is Yes.
Threshold value (bytes/sec)	Specify the maximum bytes that a VNIC can send in a second before an event is raised. The default is 8000000 bytes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the VNIC send bytes per second exceeds the threshold you set. The default is 5.
Raise event if received bytes exceeds threshold?	Select Yes to raise an event if the received bytes of a VNIC exceeds the threshold you set. The default is Yes.
Threshold value (bytes/sec)	Specify the maximum bytes that a VNIC can receive in a second before an event is raised. The default is 8000000 bytes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the VNIC received bytes per second exceeds the threshold you set. The default is 5.
Raise event if network bandwidth utilization exceeds its max value (if set)?	Select Yes to raise an event if the network bandwidth of a VNIC exceeds the maximum value you set. The default is unselected. If you select this parameter and max bandwidth value is not set, AppManager raises an event specifying that the max bandwidth for that specific VNIC has not been set.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the network bandwidth utilization of a VNIC exceeds the maximum value you set. The default is 5.
Raise event if interrupt rate exceeds threshold?	Select Yes to raise an event if the interrupts per second of a VNIC exceeds the threshold you set. The default is unselected.
Threshold value (interrupts/sec)	Specify the maximum interrupt rates of a VNIC in a second before an event is raised. The default is 1000000.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the VNIC interrupt rates per second exceed the threshold you set. The default is 5.
Raise event if input packet drops exceed threshold?	Select Yes to raise an event if the input packet drops of a VNIC exceed the threshold you set. The default is unselected.
Threshold value (in percent)	Specify the maximum input packet drops (in percent) compared to input packets of a VNIC in a second before an event is raised. The default is 50 percent.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the input packet drops of a VNIC exceed the threshold you set. The default is 5.
Raise event if output packet drops exceed threshold?	Select Yes to raise an event if the output packet drops of a VNIC exceed the threshold you set. The default is unselected.

Parameter	How to Set It
Threshold value (in percent)	Specify the maximum output packet drops (in percent) compared to output packets of a VNIC in a second before an event is raised. The default is 50 percent.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the output packet drops of a VNIC exceed the threshold you set. The default is 5.
Raise event if AppManager fails to get metrics?	Select Yes to raise an event if the VnicIO job fails to get VNIC metrics. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the VnicIO job fails to get VNIC metrics. The default is 5.
Event severity when job fails	Set the severity level, from 1 to 40, to indicate the importance of an event in which the VnicIO job fails. The default is 5.
Data Collection	
Collect data for bytes sent per second?	Select Yes to collect data for the sent bytes per second of VNICs. The default is unselected.
Collect data for bytes received per second?	Select Yes to collect data for the received bytes per second of VNICs. The default is unselected.

3.4 ZFSHealth

Use this Knowledge Script to monitor ZFS pool health. If a pool is not online, AppManager raises an event.

3.4.1 Resource Object

SolarisZones_ZFSPoolObj

3.4.2 Default Schedule

The default interval for this script is **Every 15 minutes**.

3.4.3 Setting Parameter Values

Set the following parameters as needed:

Parameter	How to Set It
Event Settings	
Raise event if ZFS pool is not online?	Select Yes to raise an event if a ZFS pool is not online. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the ZFS pool is not online. The default is 5.
Raise event if AppManager fails to get metrics?	Select Yes to raise an event if the ZFSHealth job fails to get the ZFS pool metrics. The default is Yes.

Parameter	How to Set It
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the ZFSHealth job fails to get the ZFS pool metrics. The default is 5.
Event severity when job fails	Set the severity level, from 1 to 40, to indicate the importance of an event in which the ZFSHealth job fails. The default is 5.

3.5 ZoneCpuByProcess

Use this Knowledge Script to monitor the CPU utilization for specified processes in a Zone. If a process is not found, the Knowledge Script assumes that the process is not currently running. If the CPU utilization for any monitored process exceeds the threshold you set, AppManager raises an event.

NOTE: This Knowledge Script does not detect invalid process names or process IDs. If you enter an invalid process name or process ID, the Knowledge Script assumes that the process is not running.

3.5.1 Resource Object

SolarisZones_ZoneObjFolder

3.5.2 Default Schedule

The default interval for this script is **Every 15 minutes**.

3.5.3 Setting Parameter Values

Set the following parameters as needed:

Parameter	How to Set It
Monitoring Options	
Comma-separated list of process names or regular expressions	Enter one or more process names or regular expressions, separated by commas and no spaces. The default is <code>init</code> . NOTE: You can either specify this parameter or <i>Comma-separated list of process IDs</i> parameter to monitor the processes in a Zone.
Comma-separated list of process IDs	Enter one or more process IDs, separated by commas and no spaces. The default is 1.
Event Settings	
Raise event if CPU utilization compared to pset exceeds threshold?	Select Yes to raise an event if the CPU utilization by the specified Zone processes compared to the pset exceeds the threshold you set. The default is Yes.
Threshold value (in percent)	Specify the maximum percent of CPU compared to pset that can be utilized by the specified Zone processes during any interval before an event is raised. The default is 99 percent.

Parameter	How to Set It
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the CPU utilization by the specified Zone processes compared to pset exceeds the threshold you set. The default is 5.
Raise event if any process is not running?	Select Yes to raise an event if any of the specified processes in a Zone is not running. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which any process in a Zone is not running. The default is 5.
Raise event if AppManager fails to get metrics?	Select Yes to raise an event if the ZoneCpuByProcess job fails to get CPU utilization metrics. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the ZoneCpuByProcess job fails to get CPU utilization metrics. The default is 5.
Event severity when job fails	Set the severity level, from 1 to 40, to indicate the importance of an event in which the ZoneCpuByProcess job fails. The default is 5.
Data Collection	
Collect data for CPU utilization compared to pset?	Select Yes to collect data for the CPU utilization of the specified Zone processes compared to pset as a percent value. The default is unselected.

3.6 ZoneCPUUtil

Use this Knowledge Script to monitor the CPU utilization of the zones. This script raises an event if CPU utilization exceeds the threshold you set and also raises an event if CPU utilization exceeds the configured CPU cap that you set for the zone. This script monitors and collects data for the amount of actively used CPU utilization of the zones in percentage.

3.6.1 Resource Object

SolarisZones_ZoneObjFolder

3.6.2 Default Schedule

The default interval for this script is **Every 15 minutes**.

3.6.3 Setting Parameter Values

Set the following parameters as needed:

Parameter	How to Set It
Event Settings	
Raise event if CPU utilization compared to pset exceeds threshold?	Select Yes to raise an event if CPU utilization of the Zones compared to the pset exceeds the threshold you set. The default is Yes.

Parameter	How to Set It
Threshold value (in percent)	Specify the maximum percent of CPU that can be utilized by the Zones during any interval before an event is raised. The default is 99 percent.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the CPU utilization by the Zones compared to the pset exceeds the threshold you set. The default is 5.
Raise event if CPU utilization compared to host exceeds threshold?	Select Yes to raise an event if CPU utilization of the Zones compared to the host exceeds the threshold you set. The default is unselected.
Threshold value (in percent)	Specify the maximum percent of CPU that can be utilized by the Zones during any interval before an event is raised. The default is 99 percent.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the CPU utilization of the Zones compared to the host exceeds the threshold you set. The default is 5.
Raise event if CPU utilization exceeds Zone CPU cap value?	Select Yes to raise an event if CPU utilization of a Zone exceeds the CPU cap value set for the Zone. The default is unselected.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the CPU utilization of a Zone exceeds the CPU cap value set for the Zone. The default is 5.
Raise event if CPU utilization of any process compared to pset exceeds threshold?	Select Yes to raise an event if CPU utilization of any process in a Zone compared to pset exceeds the threshold you set. The default is unselected.
Threshold value (in percent)	Specify the maximum percent of memory compared to pset that can be utilized by any process in a Zone during any interval before an event is raised. The default is 99 percent.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the CPU utilization of a Zone process compared to the pset exceeds the threshold you set. The default is 5.
Raise event if AppManager fails to get metrics?	Select Yes to raise an event if the ZoneCPUUtil job fails to get memory utilization metrics. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the ZoneCPUUtil job fails to get memory utilization metrics. The default is 5.
Event severity when job fails	Set the severity level, from 1 to 40, to indicate the importance of an event in which the ZoneCPUUtil job fails. The default is 5.
Data Collection	
Collect data for CPU utilization compared to pset?	Select Yes to collect data for the total CPU utilization compared to the pset. The default is unselected.
Collect data for CPU utilization compared to host?	Select Yes to collect data for the total CPU utilization compared to host. The default is unselected.

3.7 ZoneMemByProcess

Use this Knowledge Script to monitor memory usage for specified processes in a Zone. If a process is not found, the Knowledge Script assumes that the process is not currently running. If the memory usage for any monitored process exceeds the threshold you set, AppManager raises an event.

NOTE: This Knowledge Script does not detect invalid process names or process IDs. If you enter an invalid process name or process ID, the Knowledge Script assumes that the process is not running.

3.7.1 Resource Object

SolarisZones_ZoneObjFolder

3.7.2 Default Schedule

The default interval for this script is **Every 15 minutes**.

3.7.3 Setting Parameter Values

Set the following parameters as needed:

Parameter	How to Set It
Monitoring Options	
Comma-separated list of process names or regular expressions	Enter one or more process names or regular expressions, separated by commas and no spaces. The default is <i>init</i> . NOTE: You can either specify this parameter or <i>Comma-separated list of process IDs</i> parameter to monitor the processes in a Zone.
Comma-separated list of process IDs	Enter one or more process IDs, separated by commas and no spaces. The default is 1.
Event Settings	
Raise event if memory utilization compared to system memory exceeds threshold?	Select Yes to raise an event if memory utilization by the specified Zone processes compared to the system memory exceeds the threshold you set. The default is Yes.
Threshold value (in percent)	Specify the maximum percent of memory that can be utilized by the specified Zone processes during any interval before an event is raised. The default is 30 percent.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the memory utilization by the specified Zone processes compared to the system resource exceeds the threshold you set. The default is 5.
Raise event if memory utilization exceeds threshold?	Select Yes to raise an event if memory utilization by the specified Zone processes exceeds the threshold you set. The default is unselected.
Threshold value (in MB)	Specify the maximum memory that can be utilized by the specified processes in a Zone during any interval before an event is raised. The default is 50 MB.
Event severity	Set the event severity, from 1 to 40, to indicate the importance of an event in which the memory utilization by the Zone processes exceeds the threshold you set. The default is 5.
Raise event if any process is not running?	Select Yes to raise an event if any of the specified processes in a Zone is not running. The default is Yes.

Parameter	How to Set It
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which any process in a Zone is not running. The default is 5.
Raise event if AppManager fails to get metrics?	Select Yes to raise an event if the ZoneMemByProcess job fails to get memory utilization metrics. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the ZoneMemByProcess job fails to get memory utilization metrics. The default is 5.
Event severity when job fails	Set the severity level, from 1 to 40, to indicate the importance of an event in which the ZoneMemByProcess job fails. The default is 5.
Data Collection	
Collect data for memory utilization compared to system memory in percent?	Select Yes to collect data for the memory utilization of the specified Zone processes compared to system memory as a percent value. The default is unselected.

3.8 ZoneMemoryUtil

Use this Knowledge Script to monitor the memory utilization of the Zones. This script raises an event if memory utilization exceeds the threshold you set and also raises an event when the Zone memory usage exceeds the configured memory cap set for the Zone. This script monitors and collects data for the amount of actively used Zone memory in MB and also in percentage of total system memory.

3.8.1 Resource Object

SolarisZones_ZoneObjFolder

3.8.2 Default Schedule

The default interval for this script is **Every 15 minutes**.

3.8.3 Setting Parameter Values

Set the following parameters as needed:

Parameter	How to Set It
Event Settings	
Raise event if memory utilization compared to system memory exceeds threshold?	Select Yes to raise an event if memory utilization of the Zones compared to the system memory exceeds the threshold you set. The default is Yes.
Threshold value (in percent)	Specify the maximum percent of memory that can be utilized by the Zones during any interval before an event is raised. The default is 80 percent.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the memory utilization by the Zones compared to the system memory exceeds the threshold you set. The default is 5.

Parameter	How to Set It
Raise event if memory utilization exceeds Zone memory cap value?	Select Yes to raise an event if memory utilization of a Zone exceeds the memory cap value set for the Zone. The default is unselected.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the memory utilization of a Zone exceeds the memory cap value set for the Zone. The default is 10.
Raise event if memory utilization exceeds threshold?	Select Yes to raise an event if memory utilization of the Zones exceeds the threshold you set. The default is unselected.
Threshold value (in MB)	Specify the maximum memory that can be utilized by the Zones during any interval before an event is raised. The default is 100 MB.
Event severity	Set the event severity, from 1 to 40, to indicate the importance of an event in which the memory utilization by the Zones exceeds the threshold you set. The default is 5.
Raise event if memory utilization of any process compared to system memory exceeds threshold?	Select Yes to raise an event if memory utilization of any process in a Zone compared to the system memory exceeds the threshold you set. The default is unselected.
Threshold value (in percent)	Specify the maximum percent of memory compared to system memory that can be utilized by any process in a Zone during any interval before an event is raised. The default is 30 percent.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the memory utilization of a Zone process compared to the system memory exceeds the threshold you set. The default is 5.
Raise event if AppManager fails to get metrics?	Select Yes to raise an event if the ZoneMemoryUtil job fails to get memory utilization metrics. The default is Yes.
Event severity	Set the severity level, from 1 to 40, to indicate the importance of an event in which the ZoneMemoryUtil job fails to get memory utilization metrics. The default is 5.
Event severity when job fails	Set the severity level, from 1 to 40, to indicate the importance of an event in which the ZoneMemoryUtil job fails. The default is 5.
Data Collection	
Collect data for memory utilization compared to system memory in percent?	Select Yes to collect data for the total memory utilization compared to the system memory as a percent value. The default is unselected.
Collect data for memory utilization in MB?	Select Yes to collect data for the total memory utilization as a megabyte (MB) value. The default is unselected.