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# Management Guide

## NetIQ® AppManager® for Oracle RDBMS on UNIX or Linux Servers

December 2019

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# About this Book and the Library

The NetIQ AppManager Suite (AppManager Suite) 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.

## Our Solutions

- ◆ Identity & Access Governance
- ◆ Access Management
- ◆ Security Management
- ◆ Systems & Application Management
- ◆ Workload Management
- ◆ Service Management

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For questions about products, pricing, and capabilities, contact your local partner. If you cannot contact your partner, contact our Sales Support team.

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

## Contacting the Online User Community

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



# 1 Introducing AppManager for Oracle (UNIX)

The Oracle Relational Database Management System (RDBMS) is a powerful database that also offers administration and performance monitoring features to increase its manageability and reliability. Designed for high availability, Oracle RDBMS stores and provides access to electronic data in the form of Online Transaction Processing (OLTP) databases and data warehouses.

## How AppManager Can Help

AppManager for Oracle UNIX/Linux provides numerous Knowledge Scripts designed to give you a comprehensive view of how Oracle RDBMS performs on your UNIX and Linux servers. The Knowledge Scripts in the OracleUNIX category monitor data useful for managing your environment, including the following:

- ◆ Oracle RDBMS alert log for specific entries related to database operations and error conditions.
- ◆ Total number of physical read/write operations per second and the total memory usage for Oracle RDBMS background processes.
- ◆ I/O activity at the block-level.
- ◆ Hit ratios for the buffer cache, library cache, and the data dictionary.
- ◆ Number of database calls from all applications and processes accessing a database instance.
- ◆ Ratio of continued rows fetched to all rows fetched.
- ◆ Database availability.
- ◆ Disk space available for the archive log file, the background process log file, and user log files.
- ◆ Rollback segment contention for a database.
- ◆ Percentage of rows retrieved using full table scans.
- ◆ Most-executed SQL queries on a database.
- ◆ SQL queries consuming the most resources on a database.
- ◆ Number of redo logs that have not been archived.
- ◆ Waits on free lists and buffers.
- ◆ Sort overflow ratio.
- ◆ Percentage of attempted application transactions that are rolled back.

For aspects of Oracle RDBMS that you choose to monitor, you can set thresholds as the boundaries of optimal performance. You can also instruct AppManager for Oracle UNIX/Linux to raise events when the thresholds are crossed.

You can also use the OracleUNIX Knowledge Scripts to collect performance data for use in reports. You can generate reports that range in purpose from evaluating a narrow window of performance data to illustrating trends to aid in capacity planning.

# Monitoring in a Clustered Environment

AppManager for Oracle (UNIX) supports monitoring Oracle in both Real Application Clusters (RAC) and non-RAC clustered environments. Each environment uses a different method for determining whether a node is active or inactive.

## Monitoring in an RAC Clustered Environment

An Oracle RAC consists of a single database shared across multiple Oracle instances. Each instance runs on a separate node. The Oracle RAC software keeps track of both active and inactive instances.

## Monitoring with Oracle RAC UNIX Knowledge Scripts

It is recommended that you use the new Oracle UNIX RAC module for clustered monitoring.

To use this module, you must first discover the Oracle UNIX RAC resources. For additional information about Discovering Oracle RAC UNIX, see [Discovering OracleRACUnix Resources](#).

## Monitoring with Oracle UNIX Knowledge Scripts

While you are still able to monitor clusters using the Oracle UNIX Knowledge Scripts, it is recommended that for cluster monitoring, you use the Oracle UNIX RAC Knowledge Scripts.

---

**NOTE:** This way of discovering clustered environment makes the clustered environment appear as a standalone environment in the treeview

---

To enable monitoring in a RAC environment, use the [SetMonitoringOptions](#) Knowledge Script to provide the following information:

- ◆ Service name for the RAC cluster
- ◆ Directory containing the `tnsnames.ora` file (only if this file is in the non-default location). The default location is `$ORACLE_HOME/network/admin`.

AppManager for Oracle (UNIX) uses this information to prevent the generation of spurious alerts by jobs running on inactive nodes of a cluster.

The [ClusterInstanceDown](#) Knowledge Script lets you know when an instance is inactive. Use this Knowledge Script to raise an event when such a condition occurs on a node in the cluster. This Knowledge Script is primarily useful on nodes of the cluster that should be active.

For more information about Discovering Oracle UNIX Knowledge Scripts, see [Discovering Oracle Resources](#)

## Monitoring Options

The following sections describe the procedure to configure monitoring options with AppManager for Oracle (UNIX) for maintenance and other purposes.

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**NOTE:** The following sections apply only to Oracle Unix Knowledge Scripts. They do not apply to Oracle RAC Unix Knowledge Scripts.

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## Avoiding Events for Databases that are Down for Maintenance

AppManager for Oracle (UNIX) allows you to set up an environment in which jobs will not be run on Oracle databases that are known to be down for maintenance or other purposes. The [SetMonitoringOptions](#) Knowledge Script lets you specify a “blackout” directory on the UNIX host where the AppManager for Oracle (UNIX) component is installed. This directory contains filenames with the names of Oracle databases on which no jobs should be run. These filenames must begin with the name of the database. After the name of the database, these filenames might contain additional characters, possibly to serve as a description. The first of these additional characters, if any, must be a character that is not valid in an Oracle database name (A-Z, 0-9, \_, \$, and # are all valid characters in an Oracle database name).

For example, you can use the [SetMonitoringOptions](#) Knowledge Script to set the folder `/usr/oracle/blackout` as the blackout directory. When the databases `oradb817` and `oradb920` are down over the next few hours, it creates the following empty files:

```
/usr/oracle/blackout/oradb817.maintenance
/usr/oracle/blackout/oradb920.upgrade.
```

Although OracleUNIX jobs continue running on any other Oracle databases on this host whose names do not appear as part of the beginning of a filename in this folder, no jobs are run on `oradb817` and `oradb920`. Once the maintenance period is over, you can remove these files from the blackout directory, and monitoring resumes.

In addition, you can set a parameter in the [DatabaseDown](#) Knowledge Script so that when it runs and finds the selected database is down, it can automatically create a file in the blackout directory identifying the database to exclude from monitoring. In these cases, you must manually remove the files denoting databases down for maintenance in order for jobs to proceed correctly on these databases.

## Other Monitoring Options

You might not want to monitor tablespaces that have temporary contents or whose datafiles are autoextensible. In these cases, the [SetMonitoringOptions](#) Knowledge Script also includes options to enable or disable monitoring for these types of tablespaces. You can enable or disable monitoring while jobs associated with the [TablespaceAvail](#) Knowledge Script are currently running.



# 2 Installing AppManager for Oracle (UNIX)

This chapter describes requirements for installing AppManager for Oracle UNIX/Linux.

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.

## 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 (UNIX) has the following system requirements:

| Item   | Requirement   |
|--|---|
| AppManager repository, management server, and Control Center Console | 7.0 or later  |
| NetIQ UNIX Agent   | 7.5 or later  |
| Operating system on agent computers                                  | One of the following: <ul style="list-style-type: none"><li>◆ CentOS</li><li>◆ HP-UX</li><li>◆ IBM AIX</li><li>◆ Oracle Linux</li><li>◆ Oracle Solaris</li><li>◆ Red Hat Enterprise Linux</li><li>◆ SUSE Linux Enterprise Server</li></ul>                      |
| Oracle   | One of the following: <ul style="list-style-type: none"><li>◆ 9</li><li>◆ 10</li><li>◆ 11</li><li>◆ 12</li><li>◆ 19c</li></ul> <p><b>NOTE:</b> If you are using any 9.2 Oracle home on an HP-UX computer, upgrade the client libraries to 9.2.0.2 or later.</p> |

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

The Oracle RDBMS account used by the OracleUNIX Knowledge Scripts should have sufficient privileges to monitor each Oracle database. The installer provides the appropriate `SELECT` privileges for non-SYSDBA accounts. For more information about the views required to run each Knowledge Script, see [Chapter 3, “Oracle UNIX Knowledge Scripts,” on page 23](#).

## Prerequisites for Installing the Module

Before discovering OracleRACUnix, you must complete the following steps:

- 1 Install the UNIX Agent on any UNIX Machine, preferably on a non-RAC node machine
- 2 Configure passwordless SSH between the agent machine user and grid user in one of the RAC nodes

---

**TIP:** Configure the SSH between agent machine and all RAC nodes without passwords. You can continue monitoring if one of the RAC nodes goes down.

---

- 3 Quickly configure the SSH, without passwords, by completing the steps:
  - 3a Sign in with the user name used for installing agent, run the `ssh-keygen` command to generate keys.
  - 3b Run the command `ssh-copy-id -i id_rsa.pub grid@racnode1`.
  - 3c Repeat steps 3a and 3b for the other RACnodes in the cluster.

---

**NOTE:** : It is recommended that you have one Agent proxy machine for monitoring one Oracle RAC Cluster.

---

- 4 Add the entries in `/etc/hosts` file of the Agent Machine for each RAC node.

---

**NOTE:** The Agent machine must be able to resolve the SCAN IPs.

---

- 5 Use the UNIX Agent Manager (UAM) or `wcPatch` utility, to apply the respective OracleRAC patch for the UNIX Agent. For example, apply the `p75p12` patch for UNIX Agent 7.5.
- 6 Use UAM to configure the OracleRAC options, or run the `AM_HOME/mo/bin/RACConfig.sh` script, and follow the on-screen instructions to complete the configuration. You can find the `AM_HOME` in the `/etc/vsaunix.cfg` file.
- 7 To add the **Security Manager** entries for each Database on the agent machine, select the **Custom** tab, then click **Add**. For each database, complete the following steps:

- ◆ **Label** - Enter `oracleRAC`

---

**TIP:** This is the only case that you will use a lower case o.

---

- ◆ **Sub-Label** - Enter the RAC node hostname/IP Address:DatabaseName. For example, enter `172.16.0.1:CDB`.

---

**NOTE:** The Hostname/IP Address should be same for which SSH, without passwords, which is configured from the Agent Machine

---

- ◆ **Value 1** - Enter the user name. This step is mandatory.
- ◆ **Value 2** - Enter a password. This step is mandatory.
- ◆ Select **Extended application support** to encrypt the data. This step is mandatory.

- 8 To add the **Security Manager** entries for each ASM instance on the agent machine, select the **Custom** tab, then click **Add**. For each ASM instance, complete the following steps:

- ◆ **Label** - Enter `oracleRAC`

---

**TIP:** This is the only case that you will use a lower case o.

---

- ◆ **Sub-Label** - Enter the RAC node hostname/IP Address:ASM instanceName. For example, enter `172.16.0.1:+ASM`.

---

**NOTE:** The Hostname/IP Address should be same for which SSH, without passwords, which is configured from the Agent Machine

---

- ◆ **Value 1** - Enter the user name. This step is mandatory.
- ◆ **Value 2** - Enter a password. This step is mandatory.
- ◆ Select **Extended application support** to encrypt the data. This step is mandatory.

## Installing and Configuring 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 the UNIX agent is installed on the computer you want to monitor.

You can access the `AM70-OracleUNIX-8.0.x.x.msi` module installer from the `AM70_OracleUNIX_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 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 using an account with access to the Oracle home directory. For information about how to install the agent, see the *AppManager for UNIX and Linux Servers Management Guide*.
- 2 (Conditional) If you are using UNIX agent 7.5, ensure you specified that you would be monitoring Oracle with the AppManager component during the agent installation.
- 3 (Conditional) If you are using UNIX agent 7.5, configure the agent for Oracle monitoring by one of the following actions:
  - ◆ In UNIX Agent Manager, click **AM Options > Configure Module > Oracle**.
  - ◆ In the UNIX agent directory `./netiq/bin/`, run the `netiq_oracle_configuration` script.
- 4 Install the Knowledge Scripts into the QDB by running the module installer on the QDB computer:
  - 4a Select **Install Knowledge Scripts** to install the repository components.
  - 4b Specify the SQL Server name of the server hosting the QDB, as well as the case-sensitive QDB name.
- 5 (Conditional) If you use Control Center 7.x, run the module installer for each QDB attached to Control Center.

- 6 (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.
- 7 Run the module installer on all console computers to install the Help and console extensions.
- 8 (Conditional) If you have not discovered Oracle RDBMS resources, run the Discovery\_OracleUNIX Knowledge Script on all agent computers that you want to monitor. For more information, see [“Discovering Oracle Resources” on page 17](#).
- 9 Upgrade any running Knowledge Script jobs. For more information, see [“Upgrading Knowledge Script Jobs” on page 19](#).

After the installation has completed, the `OracleUNIX_Install.log` file, located in the `\NetIQ\Temp\NetIQ_Debug\ folder on the QDB computer, lists any problems that occurred.`

## Configuring Logging Parameters

Prior to running Knowledge Scripts, run the `$PSHOME/netiq/bin/wcAppManConfig` script to restrict the size of Oracle module and Oracle RAC module log files to the specified size.

Run the `$PSHOME/netiq/bin/wcAppManConfig` script to specify the required value for the following logs size in MBs.

- ♦ Oracle Module back-end log max size. The default value is 8MB.
- ♦ Oracle Module Knowledge Scripts log max size. The default value is 2MB.

At any point, you can view two Managed Object (MO) logs for any job. For example, `.OraLog_[JobID]` `OraLog_[JobID]_1.log`. The `OraLog_[JobID]` job contains the current logs.

Also, at any point, you can view two Knowledge Script log files for any job. For example, `[OracleUNIX KS Name]_[JobID]` `[OracleUNIX KS Name]_[JobID]_1.log`. The `[OracleUNIX KS Name]_[JobID]` job contains the latest logs.

---

**NOTE:** You also can change the maximum size setting for the MO and KS logs through UNIX Agent Manager (UAM).

---

## 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-OracleUNIX-8.0.x.x,AppManagerForOracle_UNIX_Reviewmsi /qn MO_B_QDBINSTALL=1
MO_B_SQLSVR_WINAUTH=1 MO_SQLSVR_NAME=[SQLServerName] MO_QDBNAME=[AMRepositoryName]
```

### SQL authentication:

```
AM70-OracleUNIX-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]
```



# Discovering Oracle Resources

Use the Discovery\_OracleUNIX Knowledge Script to discover instances of Oracle RDBMS.

To successfully discover Oracle configuration and resource information, you must use the AppManager Security Manager extension to specify the Oracle user, password, and the Oracle database instance names you want to monitor. Also, the account with which you run this script must have `SELECT` permissions for the following tables:

DBA\_DATA\_FILES

DBA\_SEGMENTS

DBA\_TABLESPACES

DBA\_USERS

V\_\$DATABASE

V\_\$INSTANCE

V\_\$VERSION

By default, this script runs once for each computer.

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

| Description  | How to Set It   |
|--|---|
| Oracle Username  | Enter the Oracle RDBMS username used to access the target databases. If you run this script on more than one computer, configure each database with the same username. The default value is blank.<br><br><b>NOTE:</b> To use SYSDBA authentication, leave the <b>Oracle Username</b> parameter blank.  |
| Discover instances not automatically started on system boot? | Select <b>Yes</b> to discover Oracle instances not started by the <code>dbstart</code> utility upon system boot. This information is obtained from the <code>oratab</code> file. By default, these instances are discovered.  |
| Keep version number in root node?                            | Select <b>Yes</b> to keep the version number in the root node of the discovered tree. The default is unselected.<br><br><b>NOTE:</b> If this option is unselected, the discovered tree does not contain the version number of the Oracle database appended to the root node name. Without the version number attached to the discovered tree, an Oracle module update, when there is a database upgrade, happens seamlessly. If the option is selected, the version number is a part of the root node name. |
| <b>Raise event when discovery fails?</b>                     | Select <b>Yes</b> to raise an event when discovery fails. By default, events are enabled.   |
| Event severity when discovery fails                          | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default value is 5.  |
| <b>Raise event when discovery partially succeeds?</b>        | Select <b>Yes</b> to raise an event when discovery is partially successful. By default, events are enabled.   |
| Event severity when discovery partially succeeds             | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default value is 30.   |

| Description                                 | How to Set It   |
|---|---|
| <b>Raise event when discovery succeeds?</b> | Select <b>Yes</b> to raise an event when discovery succeeds. By default, the job does not raise events.       |
| Event severity when discovery succeeds      | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default value is 40. |

## Discovering OracleRACUnix Resources

Use the Discovery\_OracleRACUnix Knowledge Script to discover Oracle RAC on UNIX computers for all UNIX platforms. To successfully discover Oracle configuration and resource information, you must use the AppManager Security Manager extension to specify the OracleRAC name, a Host name or IP address, Grid User name, and Grid Home.

### Resource Object

This Knowledge Script is supported on all UNIX platforms.

### Default Schedule

By default, this script runs once for each computer.

### Setting Parameter Values

Set the values tab as needed.

| Description                                   | How to Set It   |
|---|---|
| <b>RAC note Settings</b>                      |   |
| Host name or IP address                       | Enter the host name or IP address, separate the names or IP addresses with commas; do not use spaces. At least one entry is required. |
| Grid User name                                | Enter the grid user name, separate the names with commas; do not use spaces. At least one entry is required.                          |
| Grid Home                                     | Enter the grid home name, separate the names with commas; do not use spaces. At least one entry is required.                          |
| <b>Discovery Settings</b>                     |   |
| Discover ASM?                                 | Select <b>Yes</b> to discover instances of Automatic Storage Management (ASM). The default is unselected.                             |
| <b>Event Settings</b>                         |   |
| Event severity when module error or job fails | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).          |
| <b>Raise event when discovery succeeds?</b>   | Select <b>Yes</b> to raise an event when discovery succeeds. The default is unselected.   |
| Event severity when discovery succeeds        | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 25 (blue event indicator).        |

| Description   | How to Set It  |
|---|--|
| <b>Raise event when discovery partially succeeds?</b> | Select <b>Yes</b> to raise an event when discovery partially succeeds. The default is unselected. The default is Yes.            |
| Event severity when discovery partially succeeds      | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 15 (yellow event indicator). |
| <b>Raise event when database instance is down?</b>    | Select <b>Yes</b> to raise an event when the database instance is down. The default is Yes.                                      |
| Event severity when database instance is down         | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 15 (yellow event indicator)  |
| Enable debugging?                                     | Select <b>Yes</b> to enable debugging for Discovery. The default is unselected.  |

## Discovering Components on Clustered UNIX Computers

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**NOTE:** The following sections apply only to Oracle UNIX Knowledge Scripts. They do not apply to Oracle RAC UNIX Knowledge Scripts.

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For both Oracle RAC and non-RAC clustered environments, the database you monitor should be active on a node at the time you configure the Oracle module and when you run discovery on that node. The following instructions assume that you have already installed the UNIX agent on the host and the module on each node in the cluster.

### To discover components on Oracle RAC clusters:

- 1 Ensure each node is active.
- 2 Run the `netiq_oracle_configuration` script and the **Discovery\_OracleUNIX** Knowledge Script on each node.
- 3 Run the **SetMonitoringOptions** Knowledge Script on each node.

### To discover components on non-RAC clusters:

- 1 Run the `netiq_oracle_configuration` script and the **Discovery\_OracleUNIX** Knowledge Script to discover all available Oracle RDBMS resources on the active node.
- 2 Fail over the active node to the passive node.
- 3 Repeat step 1 for the currently active node.
- 4 Run the **SetMonitoringOptions** Knowledge Script on the nodes in the cluster.

## Upgrading Knowledge Script Jobs

This release of AppManager for Oracle 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.

## 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.

## 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 might have reverted to default parameters during the installation of the module. New parameters might 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 that 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 20](#).

### 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.



# 3

## Oracle UNIX Knowledge Scripts

AppManager provides the following Knowledge Scripts for monitoring Oracle RDBMS.

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**NOTE:** Each Knowledge Script is configured to run at a specific interval. While you can change that interval to suit your needs, we recommend that you not use intervals of less than five minutes. Running at shorter intervals might negatively impact system performance.

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

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| Knowledge Script                      | What It Does  |
|---------------------------------------|---|
| <a href="#">ActiveTransactions</a>    | Monitors the number of active transactions that are ongoing as a percentage of the maximum number of transactions that can be executed concurrently (set as an initialization parameter). |
| <a href="#">AlertLog</a>              | Scans the Oracle RDBMS alert log for entries that match a search string that you specify.   |
| <a href="#">BGProc</a>                | Monitors the total memory usage and the total number of physical read/write (I/O) operations per second for Oracle RDBMS background processes.  |
| <a href="#">Block</a>                 | Monitors block-level database activity (visits per transaction and changes per transaction).  |
| <a href="#">BlockingSessions</a>      | Monitors the user sessions that are blocking other sessions and processes from accessing the Oracle RDBMS.  |
| <a href="#">BufferBusyWaits</a>       | Monitors the number of buffer busy waits and the number of logical reads, and computes a ratio between the two numbers (expressed as a percentage).                                       |
| <a href="#">Cache</a>                 | Monitors the frequency with which requested data and resources are retrieved from the cache.  |
| <a href="#">CallRate</a>              | Monitors the demand placed on a database instance from all sources.   |
| <a href="#">CallsPerTransaction</a>   | Monitors the demand placed on a database instance by each transaction.  |
| <a href="#">ClusterInstanceDown</a>   | Monitors Oracle instances in a cluster and notifies you when an instance fails or becomes inactive.   |
| <a href="#">ConsistentChangeRatio</a> | Monitors the extent to which applications exercise the read consistency mechanism to ensure database consistency.   |
| <a href="#">ContinuedRowRatio</a>     | Monitors rows that span more than one database block.   |
| <a href="#">DatabaseConnect</a>       | Checks the connectivity to Oracle databases.  |
| <a href="#">DatabaseDown</a>          | Monitors the status of the background processes of a database.  |
| <a href="#">DataFileSpace</a>         | Monitors the size of the datafile of an Oracle RDBMS.   |

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| <b>Knowledge Script</b>                   | <b>What It Does</b>   |
|---|---|
| <a href="#">DataRatios</a>                | Monitors the Consistent Change Ratio, Continued Row Ratio, Row Source Ratio, and Sort Overflow Ratio.   |
| <a href="#">DiskSpaceAvail</a>            | Monitors the amount of disk space available for the archive log file, the background process log file, and user log files of a database.  |
| <a href="#">FreelistWaits</a>             | Monitors the number of freelist waits and the total number of data requests, and computes a ratio of the two numbers.   |
| <a href="#">HealthCheck</a>               | Monitors Oracle instances in a cluster, the connectivity to Oracle databases, and the status of the background process of Oracle database.  |
| <a href="#">Listener</a>                  | Monitors Oracle listeners running on the host.  |
| <a href="#">Memory</a>                    | Monitors the Oracle background processes, buffer busy waits, cache, and freelist waits.   |
| <a href="#">MostExecutedSQLStatements</a> | Determines which SQL statements are being executed on a given Oracle Database most frequently.  |
| <a href="#">OpenCursors</a>               | Monitors the percentage of cursors opened per session, as well as the total number of cursors open in the system.   |
| <a href="#">Performance</a>               | Monitors the open cursors, CPU time for current user sessions, physical reads and writes (I/O) for current user sessions, the current number of user-held locks on an Oracle Database, and memory usage (User Global Area and Program Global Area) for current user sessions. |
| <a href="#">RedoLog</a>                   | Monitors the number of times that a process tries to write an entry in the redo log buffer, the number of redo logs not archived, if archiving is turned on for a given Oracle Database, and the redo log space wait ratio.   |
| <a href="#">RedoLogContention</a>         | Monitors the number of times that a process tries to write an entry in the redo log buffer.   |
| <a href="#">RedoLogsNotArchived</a>       | Monitors the number of redo logs which are not being archived, if archiving is turned on for a given Oracle Database.   |
| <a href="#">RedoLogSpaceWaitRatio</a>     | Monitors the redo log space wait ratio.   |
| <a href="#">RollbackSegmentContention</a> | Monitors rollback segment contention for a database.  |
| <a href="#">RowSourceRatio</a>            | Monitors the row source ratio.  |
| <a href="#">RunSql</a>                    | Runs a SQL statement.   |
| <a href="#">ScheduledJobs</a>             | Monitors the scheduled job status in the New Oracle Scheduler.  |
| <a href="#">SegmentExtentAvail</a>        | Monitors the percentage of extents (extensions of free space) available to each segment in a tablespace.  |
| <a href="#">SetMonitoringOptions</a>      | Sets the various monitoring options available for OracleUNIX jobs, especially in clustered environments.  |
| <a href="#">SortOverflowRatio</a>         | Monitors the sort overflow ratio.   |
| <a href="#">SysStat</a>                   | Monitors statistics from v_\$SYSSTAT table of an Oracle Database.   |
| <a href="#">TablespaceAvail</a>           | Monitors the disk space used by tablespaces.  |



| <b>Knowledge Script</b>                 | <b>What It Does</b>   |
|---|---|
| <a href="#">TopCpuUsers</a>             | Monitors the CPU time for current user sessions   |
| <a href="#">TopIOUsers</a>              | Monitors physical reads and writes (I/O) for current user sessions.   |
| <a href="#">TopLockUsers</a>            | Monitors the current number of user-held locks on an Oracle RDBMS.  |
| <a href="#">TopMemoryUsers</a>          | Monitors memory usage (User Global Area and Program Global Area) for current user sessions.   |
| <a href="#">TopResourceConsumingSQL</a> | Determines which SQL queries for Oracle Database are consuming the most resources per execution on their UNIX hosts.  |
| <a href="#">Transaction</a>             | Monitors the number of active transactions, the demand placed on a database instance from all sources, the demand placed on a database instance by each transaction, and the transaction rate for an Oracle Database.   |
| <a href="#">TransactionRate</a>         | Monitors the transaction rate for an Oracle RDBMS.  |
| <a href="#">UpdateInstances</a>         | Updates the list of Oracle databases/instances on each UNIX host used to update authentication information in the AppManager Service Manager and for discovery of new databases.  |
| <a href="#">User</a>                    | Monitors the number of user calls per parse, the user rollback ratio for an Oracle RDBMS, the total number of user sessions accessing an Oracle RDBMS, and the user sessions that are blocking other sessions and processes from accessing the Oracle Database. |
| <a href="#">UserCallsPerParse</a>       | Monitors the number of user calls per parse.  |
| <a href="#">UserRollbackRatio</a>       | Monitors the user rollback ratio for an Oracle RDBMS.   |
| <a href="#">UserSessions</a>            | Monitors the total number of user sessions accessing an Oracle RDBMS.   |

## Running All Knowledge Scripts

To run Knowledge Script using SYSDBA authentication, ensure that the user account used to run the UNIX agent is a member of the Oracle Database Administrator (OSDBA) group.

To run all of the Knowledge Scripts in the OracleUNIX category, your account must grant you SELECT permissions for all of the following tables:

DBA\_DATA\_FILES

DBA\_FREE\_SPACE

DBA\_JOBS

DBA\_SCHEDULER\_JOBS

DBA\_SEGMENTS

DBA\_TABLESPACES

DBA\_TEMP\_FILES

DBA\_USERS

GV\_\$INSTANCE (for Oracle RAC monitoring only)

V\_\$ARCHIVE\_DEST  
V\_\$ASM\_ALIAS  
V\_\$ASM\_DISK  
V\_\$ASM\_DISKGROUP  
V\_\$ASM\_FILE  
V\_\$BGPROCESS  
V\_\$DATABASE  
V\_\$DATAFILE  
V\_\$DIAG\_INFO (for Oracle 11g and later)  
V\_\$INSTANCE  
V\_\$LIBRARYCACHE  
V\_\$LOCK  
V\_\$LOG  
V\_\$OSSTAT  
V\_\$PARAMETER  
V\_\$PROCESS  
V\_\$ROWCACHE  
V\_\$SESSION  
V\_\$SESSTAT  
V\_\$SGASTAT  
V\_\$SORT\_SEGMENT  
V\_\$SQLAREA  
V\_\$STATNAME  
V\_\$SYSSTAT  
V\_\$VERSION  
V\_\$WAITSTAT

## ActiveTransactions

Use this Knowledge Script to retrieve the number of active transactions that are ongoing, and the maximum number of transactions that can be executed concurrently (set as an initialization parameter). This script computes a ratio, expressed as a percentage, of the two numbers. When you enable data collection, the percentage is stored in the repository. You can set multiple thresholds for the maximum ratio, and the job raises an event when any of the thresholds exceeds the value you specified.

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$PARAMETER

V\_\$TRANSACTION

V\_\$VERSION

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and collects the number of active transactions and the number of total transactions. The ratio of active transactions over total transactions is then computed.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description   | How to Set It  |
|---|--|
| Oracle Username   | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| Collect data for the ratio of active transactions to maximum concurrent transactions? | Set <b>Yes</b> to collect data for charts and reports. If data collection is enabled, returns the ratio of active transactions to maximum concurrent transactions as a percentage (%). The default is unselected.  |
| <b>Raise event if ratio exceeds threshold?</b>  | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is Yes.  |
| Threshold – ratio of active transactions to max concurrent transactions               | Specify a threshold for the maximum ratio of active transactions to maximum concurrent transactions, expressed as a percentage. The default is 95.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 5 (red event indicator).   |
| <b>Raise event if ratio exceeds threshold?</b>  | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is unselected.   |
| Threshold – ratio of active transactions to max concurrent transactions               | Specify a threshold for the maximum ratio of active transactions to maximum concurrent transactions, expressed as a percentage. The default is 80.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 15 (yellow event indicator).   |
| <b>Raise event if ratio exceeds threshold?</b>  | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is unselected.   |
| Threshold - ratio of active transactions to max concurrent transactions               | Specify a threshold for the maximum ratio of active transactions to maximum concurrent transactions, expressed as a percentage. The default is 60.   |

| Description   | How to Set It   |
|---|---|
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 25 (blue event indicator).    |
| <b>Raise event if ratio exceeds threshold?</b>                          | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is unselected.  |
| Threshold - ratio of active transactions to max concurrent transactions | Specify a threshold for the maximum ratio of active transactions to maximum concurrent transactions, expressed as a percentage. The default is 40.                                |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 35 (magenta event indicator). |
| Event severity for internal failure                                     | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |

## AlertLog

Use this Knowledge Script to scan the Oracle RDBMS alert log for entries that match a specified search string. You can set a maximum threshold for the number of occurrences of the string found during any single scan of the alert log. If during any single scan of the alert log the number of matching entries exceeds the threshold, the job raises an event.

Each database maintains an alert log where it records database operations (such as creating or dropping a database) and error conditions (such as deadlocks). This script provides a general-purpose tool for scanning a database's alert log for specific entries.

The first interval of this script does not scan existing entries and does not collect data. Instead, it sets a pointer to the end of the alert log so that only new entries are read. Each subsequent iteration of the script scans the alert log for entries created since the previous scan. Information in the Event Properties dialog box states the number of occurrences of the search string that were found. The lines containing matches found in the log are also included in the event details.

Scanning a large log, bigger than 1 GB for example, might use more operating system resources than you want this script to use. If that happens, reduce the size of the log.

The account you use to run this script must have `SELECT` permissions for the following tables:

`V_$PARAMETER`

`V_$VERSION`

`V_$DIAG_INFO` (for Oracle 11g and later)

**NOTE:** When the Oracle alert log reaches its maximum size, Oracle renames the file for archiving purposes and creates a new alert log with the original filename. If this script attempts to open the alert log between the time the old file is renamed and the new file is created, the job raises an event because the script cannot find the file. The next iteration of the script (when the alert log is available) should function as expected.

This script attempts to open the alert log associated with the relevant Oracle instance. Oracle instance alert logs use the naming convention `alert_<instance name>`.

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It  |
|--|--|
| Oracle Username  | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username.<br><br>To use <code>SYSDBA</code> authentication, leave this parameter blank.<br><br>The default is blank. |
| Collect data for number of matching log entries?                     | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the number of entries that matched the search string. The default is unselected.   |
| <b>Include Search Options</b>  |  |
| Regular expression specifying the include filter                     | Enter a regular expression in Perl, to identify the pattern you want to look for in the text file being monitored. Strings matching the include filter pattern are returned. The expression, <code>.+</code> , matches all strings. The default is <code>^(ORA-1578 ORA-60)</code> .   |
| Optional file with regular expressions specifying the include filter | If you do not want to enter a regular expression in the <code>Regular expression specifying the include filter</code> parameter, specify the full path to a file containing the regular expression by specifying the include filter.   |
| Modifier for the regular expression include filter                   | Enter any modifier you want to use to change the behavior of the regular expression. For example, specifying <code>i</code> for this parameter makes the include filter case-insensitive. The default is <code>i</code> .  |
| <b>Exclude Search Options</b>  |  |
| Regular expression specifying the exclude filter                     | Enter a regular expression, in Perl, to identify the pattern you want to exclude from matching in the text file being monitored. Strings matching the include filter pattern are returned.   |
| Optional file with regular expressions specifying the exclude filter | Enter the full path to a file containing any additional filter items you want to match. You can also use this parameter if you only want to specify matching expressions in an external file.  |
| Modifier for the regular expression exclude filter                   | Optional modifiers can be used to change the behavior of the regular expression. For example, specifying <code>"i"</code> for this parameter makes the exclude filter case-insensitive.  |
| <b>Raise event if threshold exceeded?</b>                            | Select <b>Yes</b> to raise an event when the number of log entries found that match the search criteria exceeds the threshold you set. The default is Yes.   |

| Description                                 | How to Set It   |
|---|---|
| Threshold - Maximum number of entries found | Enter a threshold for the maximum number of log entries that can be found to match the search criteria during any single scan of the alert log. If the number of entries matches or exceeds the threshold, the job raises an event. The default is 0. |
| Severity                                    | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| Maximum number of entries per event report  | Enter the maximum number of entries per event report. The default is 1000.  |
| Event severity for internal failure         | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |

## BGProc

Use this Knowledge Script to monitor the total number of physical read/write (I/O) operations per second and/or the total memory usage for Oracle RDBMS background processes. If the total number of read/write operations per second or the total memory usage for the list of specified processes exceeds the threshold, the job raises an event.

Oracle RDBMS background processes include CKPT, DBW0, LGWR, PMON, RECO, SMON, SNP0, and others. You can monitor all or individual background processes.

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$BGPROCESS

V\_\$PROCESS

V\_\$SESSION

V\_\$SESSTAT

V\_\$STATNAME

V\_\$VERSION

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

# Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It   |
|--|---|
| Oracle Username  | Enter the username that this script needs to access the target Oracle RDBMSs. If you run this script on more than one database, configure each database with the same username. To use SYSDBA authentication, leave this parameter blank. The default is blank.   |
| Collect data for memory usage and I/O of Oracle processes? | Select <b>Yes</b> to collect data for charts and reports. If data collection is enabled, returns the number of read/write operations per second, or the total memory usage for all monitored background processes. The default is unselected.   |
| Oracle background processes to monitor                     | Enter the names of the background processes you want to monitor. Separate the names with commas; do not use spaces. To monitor all Oracle RDBMS background processes, enter an asterisk (*).<br><br>Possible valid background process names include: <ul style="list-style-type: none"><li>◆ CKPT</li><li>◆ DBW0</li><li>◆ LGWR</li><li>◆ PMON</li><li>◆ RECO</li><li>◆ SMON</li><li>◆ SNP0</li><li>◆ SNP1</li></ul> The default is (*) (all background processes). |
| <b>Monitor read/write operations?</b>                      | Select <b>Yes</b> to monitor the number of physical read/write operations per second by background processes. The default is Yes.   |
| <b>Raise event if threshold is exceeded?</b>               | Select <b>Yes</b> to raise an event when the number of physical read/write operations per second exceeds the threshold you set. The default is Yes.   |
| Threshold - Maximum read/write operations rate             | Enter a threshold for the maximum number of physical read/write operations per second. The default is 5.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 15 (yellow event indicator).  |
| <b>Monitor memory usage?</b>                               | Select <b>Yes</b> to monitor the total memory usage by background processes. The default is Yes.  |
| <b>Raise event if threshold is exceeded?</b>               | Select <b>Yes</b> to raise an event when the memory utilization of the monitored processes exceeds the threshold you set. The default is unselected.  |
| Threshold - Maximum memory usage                           | Enter a threshold (in MB) for the maximum amount of memory used by all background processes you are monitoring. The default is 15.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 15 (yellow event indicator).  |
| Event severity for internal failure                        | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |

# Block

Use this Knowledge Script to monitor block-level database activity. Oracle RDBMS data blocks are the smallest unit of storage for a database. Monitoring I/O activity at the block level can be a key indicator of database performance.

Use this script to monitor any combination of the following statistics:

- ♦ The number of block changes per transaction. This **block change rate** measures the number of SQL Data Manipulation Language (DML) commands that each transaction performs (for example, to create and drop indexes). As the number of block changes increases, the efficiency of the database transaction and database performance decreases.
- ♦ The number of times the Oracle RDBMS buffer manager locates a database per second. This **block get rate** indicates the rate at which an application references the database. An increase in the block get rate suggests an increase in overall server load. A decrease in the block get rate without a decrease in load might indicate that you need to do some database tuning because there has been a slowdown in the number of database blocks requested and located per second.
- ♦ The number of times database blocks are requested per committed transaction. This **block visit rate** measures the database work load per completed transaction (including both successful and aborted database transactions).

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$SYSSTAT

V\_\$VERSION

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description     | How to Set It  |
|-----------------|--|
| Oracle Username | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |



| Description                                  | How to Set It  |
|--|--|
| Collect data for block activity?             | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the statistics you choose to collect: <ul style="list-style-type: none"> <li>◆ The number of block changes per transaction</li> <li>◆ The number of block <code>get</code> operations per second</li> <li>◆ The number of block visits per transaction</li> </ul> The default is unselected. |
| <b>Monitor block change rate?</b>            | Select <b>Yes</b> to monitor the block change rate, the number of block changes per transaction. The default is Yes.   |
| <b>Raise event if threshold is exceeded?</b> | Select <b>Yes</b> to raise an event if the block change rate exceeds the threshold you set. The default is Yes.  |
| Threshold - Maximum block change rate        | Enter a threshold for the maximum number of block changes per transaction before the job raises an event. The default is 100.  |
| Severity                                     | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Monitor block get rate?</b>               | Select <b>Yes</b> to monitor the block get rate, the number of times the Oracle RDBMS buffer manager locates a database block per second. The default is Yes.  |
| <b>Raise event if threshold is exceeded?</b> | Select <b>Yes</b> to raise an event if the block get rate exceeds the threshold you set. The default is Yes.   |
| Threshold - Maximum block get rate           | Enter a threshold for the maximum number of block get operations per second before the job raises an event. The default is 100.  |
| Severity                                     | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Monitor block visit rate?</b>             | Select <b>Yes</b> to monitor the block visit rate, the number of times database blocks are requested per committed transaction. The default is Yes.  |
| <b>Raise event if threshold is exceeded?</b> | Select <b>Yes</b> to raise an event if the block visit rate exceeds the threshold you set. The default is Yes.   |
| Threshold - Maximum block visit rate         | Enter a threshold for the block visit rate, the maximum number of block get operations per committed transaction. The default is 100.  |
| Severity                                     | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| Event severity for internal failure          | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

## BlockingSessions

Use this Knowledge Script to monitor the user sessions that are blocking other sessions and processes from accessing the Oracle Database. You can set a maximum threshold for the number of sessions that are allowed to block other sessions and processes. If the number of blocking sessions exceeds the threshold, the job raises an event.

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$LOCK

V\_\$\$VERSION

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description                                     | How to Set It  |
|---|--|
| Oracle Username                                 | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| Collect data for number of blocking sessions?   | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the number of blocking sessions per interval. The default is unselected.   |
| <b>Raise event if threshold is exceeded?</b>    | Select <b>Yes</b> to raise an event if the number of blocking sessions exceeds the threshold you set. The default is Yes.  |
| Threshold - Maximum number of blocking sessions | Enter a threshold for the maximum number of user sessions allowed to block other user sessions and processes during the monitoring interval. The default is 10.  |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| Event severity for internal failure             | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

## BufferBusyWaits

Use this Knowledge Script to retrieve the number of buffer busy waits and the number of logical reads, and compute a ratio between the two numbers (expressed as a percentage). When you enable data collection, the repository stores the ratio. You can set multiple thresholds for the maximum ratio, and the job raises an event when any of the thresholds exceeds the value you specified. A higher ratio indicates an increased contention for buffers in the SGA memory of Oracle Database.

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$\$SYSTEM\_EVENT

V\_\$\$SYSSTAT

V\_\$\$VERSION

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and collects the number of buffer busy waits and the number of logical reads. The ratio of buffer waits over logical reads is then computed.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description   | How to Set It  |
|---|--|
| Oracle Username   | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username.<br><br>To use <code>SYSDBA</code> authentication, leave this parameter blank.<br><br>The default is blank. |
| Collect data for ratio of buffer busy waits to logical reads?   | Select <b>Yes</b> to collect data for charts and reports. If data collection is enabled, returns the ratio of buffer busy waits to logical reads as a percentage (%).<br>The default is unselected.  |
| <b>Raise event if threshold is exceeded?</b>                    | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified.<br>The default is Yes.   |
| Threshold - Maximum ratio of buffer busy waits to logical reads | Specify a threshold for the maximum ratio of buffer busy waits to logical reads. The default is .95.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 5 (red event indicator).   |
| <b>Raise event if threshold is exceeded?</b>                    | Select <b>Yes</b> to raise an event if the ratio exceeds the threshold specified below. The default is Yes.  |
| Threshold – Maximum ratio of buffer busy waits to logical reads | Specify a threshold for the maximum ratio of buffer busy waits to logical reads. The default is .80.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 15 (yellow event indicator).   |
| <b>Raise event if threshold is exceeded?</b>                    | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified.<br>The default is unselected.  |
| Threshold – Maximum ratio of buffer busy waits to logical reads | Specify a threshold for the maximum ratio of buffer busy waits to logical reads. The default is .60.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 25 (blue event indicator).   |

| Description   | How to Set It   |
|---|---|
| <b>Raise event if threshold is exceeded?</b>                    | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is unselected.  |
| Threshold – Maximum ratio of buffer busy waits to logical reads | Specify a threshold for the maximum ratio of buffer busy waits to logical reads. The default is 40.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 35 (magenta event indicator). |
| Event severity for internal failure                             | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |

## Cache

Use this Knowledge Script to monitor the frequency with which requested data and resources are retrieved from the cache. As this hit ratio (that is, the percentage of time that data or resources are retrieved from the cache) decreases, performance also decreases because data that must be retrieved from disk or library objects must be reinitialized in order to service the requests.

Use this script to monitor any combination of the following statistics:

- ♦ The *buffer cache hit ratio* indicates the percentage of time that requested data you can find in the buffer cache.
- ♦ The *data dictionary hit ratio* indicates the percentage of time that requested data you can find in the data dictionary.
- ♦ The *library cache hit ratio* indicates the percentage of time that the system requests to access objects in the library cache and you can service without re-initializing or reloading library objects. Changes to the library cache hit ratio might occur when an application becomes active, causing more SQL statements and stored procedures to be used.

You can set a threshold for each cache hit ratio you choose to monitor. If a cache hit ratio falls below a threshold you set, the job raises an event.

The account you use to run this script must have `SELECT` permissions for the following tables:

`V_$LIBRARYCACHE`

`V_$ROWCACHE`

`V_$SYSSTAT`

`V_$VERSION`

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

# Setting Parameter Values

Set the following parameters as needed:

| Description                                   | How to Set It   |
|---|---|
| Oracle Username                               | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use SYSDBA authentication, leave this parameter blank. The default is blank.   |
| Collect data for monitored metrics?           | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the statistics you choose to collect: <ul style="list-style-type: none"><li>◆ The buffer cache hit ratio</li><li>◆ The data dictionary hit ratio</li><li>◆ The library cache hit ratio</li></ul> The default is unselected.   |
| <b>Monitor buffer cache hit ratio?</b>        | Select <b>Yes</b> to monitor the percentage of time that requested data you can find in the buffer cache. The default is Yes.   |
| <b>Raise event if threshold is not met?</b>   | Select <b>Yes</b> to raise an event if the buffer cache hit ratio exceeds the threshold you set. The default is Yes.  |
| Threshold - Minimum buffer cache hit ratio    | Enter a minimum threshold for the buffer cache hit ratio. If the actual hit ratio falls below than this threshold, the job raises an event.<br><br>Ideally, you should set this percentage relatively high because the more frequently Oracle RDBMS uses the buffer, the better your database performance. When the actual hit ratio falls below the threshold you set, the event alerts you that database performance has degraded.<br><br>The default is 70%. |
| Severity                                      | Set the event severity level, from 1 to 40, to indicate the importance of the event.<br><br>The default is 10 (red event indicator).  |
| <b>Monitor data dictionary hit ratio?</b>     | Select <b>Yes</b> to monitor the percentage of time that requested data you can find in the data dictionary. The default is Yes.  |
| <b>Raise event if threshold is not met?</b>   | Select <b>Yes</b> to raise an event if the data dictionary hit ratio falls below the threshold you set. The default is Yes.   |
| Threshold - Minimum data dictionary hit ratio | Enter a minimum threshold for the data dictionary hit ratio. If the actual hit ratio falls below this threshold, the job raises an event. set this percentage high because the more frequently Oracle RDBMS uses the data dictionary to service requests, the better your database performance. When the actual hit ratio falls below the threshold you set, the event alerts you that database performance has deteriorated. The default is 90%.               |
| Severity                                      | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).   |
| <b>Monitor library cache hit ratio?</b>       | Select <b>Yes</b> to monitor the percentage of time that system pin requests to access objects in the library cache you can service without re-initializing or reloading library objects. The default is Yes.   |

| Description                                 | How to Set It  |
|---|--|
| <b>Raise event if threshold is not met?</b> | Select <b>Yes</b> to raise an event if the library cache hit ratio falls below the threshold you set. The default is Yes.  |
| Threshold - Minimum library cache hit ratio | Enter a minimum threshold for the library cache hit ratio. If the actual hit ratio falls below this threshold, the job raises an event. Ideally, you should set this percentage extremely high because re-initializing or reloading library objects imposes a significant performance hit. When the actual hit ratio falls below the threshold you set, the event alerts you that database performance has degraded. The default is 95%. |
| Severity                                    | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).  |
| Event severity for internal failure         | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

## CallRate

Use this Knowledge Script to monitor the demand placed on a database instance from all sources. This demand is determined by tracking the number of database calls per second from all applications and processes accessing the database `instance`. The database calls that are tracked include `Parse`, `Execute`, and `Fetch` statements. These calls are sometimes described as **user calls**. When the call rate (and thus the workload demand on the server) exceeds the threshold you set, the job raises an event.

The account you use to run this script must have `SELECT` permissions for the following tables:

`V_$SYSSTAT`

`V_$VERSION`

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description     | How to Set It  |
|-----------------|--|
| Oracle Username | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |

| Description                                  | How to Set It  |
|--|--|
| Collect data for call rate?                  | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the total user calls per second for all work sources. The default is unselected. |
| <b>Raise event if threshold is exceeded?</b> | Select <b>Yes</b> to raise an event if the maximum number of calls per second exceeds the threshold. The default is Yes.   |
| Threshold - Maximum call rate                | Enter a threshold for the maximum number of calls per second allowed before the job raises an event. The default is 100.   |
| Severity                                     | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| Event severity for internal failure          | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

## CallsPerTransaction

Use this Knowledge Script to monitor the demand placed on a database instance by each transaction. This demand is determined by tracking the number of database calls (for example, to parse, execute, and fetch data) per committed transaction. When the number of database requests per transaction exceeds the threshold, the job raises an event.

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$SYSSTAT

V\_\$VERSION

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description                             | How to Set It  |
|---|--|
| Oracle Username                         | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| Collect data for calls per transaction? | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the number of database calls per transaction. The default is unselected.   |

| Description   | How to Set It  |
|---|--|
| <b>Raise event if threshold is exceeded?</b>        | Select <b>Yes</b> to raise an event if the number of calls per transaction exceeds the threshold. The default is Yes.                  |
| Threshold - Maximum number of calls per transaction | Enter a threshold for the maximum number of database calls per transaction allowed before the job raises an event. The default is 100. |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).           |
| Event severity for internal failure                 | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).           |

## ClusterInstanceDown

Use this Knowledge Script to be notified when an Oracle instance in a cluster fails or becomes inactive.

Run this Knowledge Script for Oracle RAC monitoring only. This Knowledge Script uses the `srvctl` command functionality to fetch the statuses of all the cluster instances.

The account you use to run this script must have `SELECT` permissions for the following tables:

`V_$VERSION`

`GV_$INSTANCE` (for Oracle RAC monitoring only)

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and determines if the instance running on that host is active or inactive.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description     | How to Set It   |
|-----------------|---|
| Oracle Username | <p>For RAC cluster monitoring, enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username.</p> <p><b>NOTE:</b> This parameter must not be blank if you are deploying RAC cluster monitoring. If you are deploying non-RAC cluster monitoring, this parameter is ignored.</p> <p>The default is blank.</p> |



|  |   |
|--|---|
| Collect data for instance status?  | Select <b>Yes</b> to collect data for charts and reports. If you enable data collection, the script returns the status of each instance: <ul style="list-style-type: none"> <li>◆ 100--instance is running</li> <li>◆ 0--instance is down</li> </ul> The default is unselected. |
| <b>RAC Instance Exclude Filter</b>   | Select <b>Yes</b> to exclude RAC instances. The default is unselected.  |
| RAC Instance to be excluded for status check [comma separated]               | Enter the names of the RAC instances you want to exclude.   |
| <b>Raise event if instance is down or if unable to check status?</b>         |   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event detecting that an instance is down. The default is 10 (red event indicator).  |
| Fully qualified path for srvctl, if srvctl is not located in ORACLE_HOME/bin | Enter the fully qualified path for srvctl, if srvctl is not located in ORACLE_HOME/bin  |
| Event severity for internal failure  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |

## ConsistentChangeRatio

Use this Knowledge Script to monitor the extent to which applications exercise the read consistency mechanism to ensure database consistency.

The consistent change ratio is based on the number of database changes and database reads. “Consistent changes” refers to the number of times a consistent `Get` had to retrieve an old version of a database block because of updates that occurred after the cursor had been opened. When the ratio of consistent changes to consistent `Gets` exceeds the threshold, the job raises an event. The ratio is recalculated each time the script runs, based on the data collected during that monitoring interval.

The account you use to run this script must have `SELECT` permissions for the following tables:

`V_$SYSSTAT`

`V_$VERSION`

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

The default interval for this script is **Every 1 hour**.

## Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It   |
|--|---|
| Oracle Username  | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username.<br><br>To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| Collect data for <b>consistent change ratio</b> ?        | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the script returns the ratio of consistent changes to consistent gets. The default is unselected.  |
| <b>Raise event if threshold is exceeded?</b>             | Select <b>Yes</b> to raise an event if the consistent change ratio exceeds the threshold you set. The default is Yes.   |
| Threshold - Maximum consistent change ratio (0.0 to 1.0) | Enter a threshold for the maximum ratio of consistent block changes to consistent block gets during the monitoring interval. The is 0.01.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| Event severity for internal failure                      | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |

## ContinuedRowRatio

Use this Knowledge Script to monitor rows that span more than one database block. This script monitors the ratio of continued rows fetched to all rows fetched.

In most cases, this ratio should be close to zero. If the continued row ratio increases over time (indicating that more and more rows span multiple database blocks), the `PCTFREE` storage parameter might be set too low for one or more tables. If the continued row ratio exceeds the threshold, the job raises an event. The ratio is recalculated each time the script runs, based on the data collected during that interval.

The account you use to run this script must have `SELECT` permissions for the following tables:

`V_$SYSSTAT`

`V_$VERSION`

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It  |
|--|--|
| Oracle Username                                      | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username.<br><br>To use SYSDBA authentication, leave this parameter blank. The default is blank. |
| Collect data for continued row ratio?                | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the script returns the continued row ratio. The default is unselected.  |
| Raise event if threshold is exceeded?                | Select <b>Yes</b> to raise an event if the continued row ratio exceeds the threshold. The default is Yes.  |
| Threshold - Maximum continued row ratio (0.0 to 1.0) | Enter a threshold for the maximum ratio of continued rows fetched to all rows fetched. Enter values from 0.0 to 1.0, inclusive. The default is 0.01.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| Event severity for internal failure                  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

## DatabaseConnect

Use this Knowledge Script to monitor the connectivity and login capability of Oracle databases on UNIX and Linux systems. This script attempts to connect to the database you select. If the connection attempt is successful, this script reports the status of the database and of its login capability. If the connection attempt is unsuccessful, an event is raised.

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$INSTANCE

V\_\$VERSION

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It  |
|--|--|
| Oracle Username                                    | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username.<br><br>To use SYSDBA authentication, leave this parameter blank. The default is blank. |
| Collect data for connection and login status?      | Select <b>Yes</b> to collect data for charts and reports. If you enable data collection, the script returns the status of the database and of its login capability. The default is unselected.   |
| <b>Raise event if unable to connect?</b>           | Select <b>Yes</b> to raise an event if an attempt to connect to the Oracle database is unsuccessful. The default is Yes.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Raise event with database and login status?</b> | Select <b>Yes</b> to raise an event providing information on the database and login status. The default is unselected.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 35 (magenta event indicator).  |
| Event severity for internal failure                | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

## DatabaseDown

Use this Knowledge Script to monitor the status of a database. This script checks whether the Oracle RDBMS background processes are running and whether a local connection can be made.

Each Oracle instance has a default set of background processes that must be running. An event is raised if any of the processes that you specified for monitoring in the **Background processes to monitor** parameter are down, or if a connection cannot be made to the database instance.

The account you use to run this script must have `SELECT` permissions for the following table:

```
V_$VERSION
```

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

# Setting Parameter Values

Set the following parameters as needed:

| Description   | How to Set It   |
|---|---|
| Oracle Username   | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use SYSDBA authentication, leave this parameter blank. The default is blank.   |
| Collect data for process and connection status?                         | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the script returns the following values: <ul style="list-style-type: none"><li>◆ 100--all specified processes are running and a connection attempt was successful</li><li>◆ 80--one or more processes was down but a connection attempt was successful</li><li>◆ 0--no processes were running and/or a connection attempt failed</li></ul> This provides a way to report on the percentage of system uptime in any given period.<br>The default is unselected. |
| Background processes to monitor (comma-separated, no spaces)            | Enter the names of Oracle RDBMS background processes you want to monitor, separated by commas and no spaces. The default is:<br>LGWR , PMON , SMON , RECO , DBWO , DBWR .   |
| Create/Delete blackout file for a database if it appears to be down/up? | Select <b>Yes</b> if the script should create a file in the blackout directory so that no further jobs are run on this database. The <a href="#">SetMonitoringOptions</a> script must be run to set the blackout directory before this file can be created. The default is unselected.  |
| <b>Raise event if a process is down or unable to connect?</b>           | Select <b>Yes</b> to raise an event if an Oracle database or background process is detected down. The default is Yes.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 15 (yellow event indicator).  |
| Ignore agent's blackout state and keep monitoring?                      | Select <b>Yes</b> to collect data during the blackout window for scheduled maintenance that you set using the AppManager for UNIX AMAdminUNIX_SchedMaint Knowledge Script. The default is unselected.   |
| Event severity for internal failure                                     | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |

## DataFileSpace

Use this Knowledge Script to monitor the size of an Oracle RDBMS datafile. When the size of the datafile (in MB) exceeds the threshold, the job raises an event.

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$VERSION

V\_\$DATAFILE

## Resource Objects

Individual Oracle RDBMS UNIX Datafiles. When dropped on a single datafile, the script monitors only that datafile.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description                                      | How to Set It  |
|--|--|
| Oracle Username                                  | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| Collect data for datafile size?                  | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the current size of the datafile (in MB). The default is unselected.   |
| Collect data for used space percent of datafile? | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the percent for space used of the datafile. The default is unselected.   |
| <b>Monitor total size of datafile?</b>           |  |
| <b>Raise event if threshold is exceeded?</b>     | Select <b>Yes</b> to raise an event if a datafile exceeds the size threshold you set. The default is Yes.  |
| Threshold - Maximum datafile size                | Enter a threshold for the maximum size a datafile can reach (in MB) before AppManager raises an event. The default is 20 MB.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).  |
| <b>Monitor used space percent of datafile?</b>   |  |
| <b>Raise event if threshold is exceeded?</b>     | Select <b>Yes</b> to raise an event if a datafile exceeds the size threshold you set. The default is unselected.   |
| Threshold - Maximum used space percent           | Enter a threshold for the maximum used space a datafile can reach (in %) before AppManager raises an event. The default is 80.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).  |
| Event severity for internal failure              | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

# DataRatios

Use this Knowledge Script to monitor the following data ratios:

- ♦ **Consistent Change Ratio:** the extent to which applications exercise the read consistency mechanism to ensure database consistency.

The consistent change ratio is based on the number of database changes and database reads. “Consistent changes” refers to the number of times a consistent `Get` had to retrieve an old version of a database block because of updates occurring after the cursor had been opened. When the ratio of consistent changes to consistent `Gets` exceeds the threshold, the job raises an event. The ratio is recalculated each time the script runs, based on the data collected during that monitoring interval.

- ♦ **Continued Row Ratio:** the rows that span more than one database block and the ratio of continued rows fetched to all rows fetched.

In most cases, this ratio should be close to zero. If the continued row ratio increases over time (indicating that more and more rows span multiple database blocks), the `PCTFREE` storage parameter might be set too low for one or more tables. If the continued row ratio exceeds the threshold, the job raises an event. The ratio is recalculated each time the script runs, based on the data collected during that interval.

- ♦ **Row Source Ratio:** the row source ratio for an Oracle RDBMS database. This ratio measures the percentage of rows retrieved using full table scans. Because a full table scan is less efficient than retrieval by row ID, this ratio gives you an indication of potential database performance problems. If you see an increase in this ratio, review other statistics to find the source of the problem. When this ratio exceeds the threshold, the job raises an event.
- ♦ **Sort Overflow Ratio:** the sort overflow ratio. This ratio compares the number of sorts that are using temporary segments to the total number of sorts. If the sort overflow ratio exceeds the threshold you set, the job raises an event.

An increase in the sort overflow ratio indicates that more sort operations are allocating work space on disk. If an excessive number of sorts are allocating work space on disk, you can increase the sort area size.

The account you use to run this script must have `SELECT` permissions for the following tables:

`V_$SYSSTAT`

`V_$VERSION`

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

The default interval for this script is **Every 1 Hour**.

# Setting Parameter Values

Set the following parameters as needed:

| Description   | How to Set It   |
|---|---|
| Oracle Username   | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use SYSDBA authentication, leave this parameter blank. The default is blank.   |
| <b>Ratios</b>   |   |
| Consistent Change Ratio   | Select <b>Yes</b> to monitor Consistent Change Ratio. The default is unselected.  |
| Continued Row Ratio   | Select <b>Yes</b> to monitor Continued Row Ratio. The default is unselected.  |
| Row Source Ratio  | Select <b>Yes</b> to monitor Row Source Ratio. The default is unselected.   |
| Sort Overflow Ratio?  | Select <b>Yes</b> to monitor Sort Overflow Ratio. The default is unselected.  |
| <b>Event Notification</b>   |   |
| Raise event if threshold is exceeded for Consistent Change Ratio? | Select <b>Yes</b> to raise an event if the consistent change ratio exceeds the threshold you set. The default is unselected.  |
| Raise event if threshold is exceeded for Continued Row Ratio?     | Select <b>Yes</b> to raise an event if the continued row ratio exceeds the threshold you set. The default is Yes.   |
| Raise event if threshold is exceeded for Row Source Ratio?        | Select <b>Yes</b> to raise an event if the percentage of rows retrieved using a full table scan exceeds the threshold you set. The default is Yes.  |
| Raise event if threshold is exceeded for Sort Overflow Ratio?     | Select <b>Yes</b> to raise an event if the sort overflow ratio exceeds the threshold you set. The default is Yes.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| <b>Data Collection</b>  |   |
| Collect data for Consistent Change Ratio?                         | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the script returns the ratio of consistent changes to consistent gets. The default is unselected.  |
| Collect data for Continued Row Ratio?                             | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the script returns the continued row ratio. The default is unselected.   |
| Collect data for Row Source Ratio?                                | Select <b>Yes</b> to collect data for graphs and reports. When you enable data collection, the script returns the percentage of rows retrieved using a full tables scan. The default is unselected.   |
| Collect data for Sort Overflow Ratio?                             | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the script returns the ratio of the number of sorts using temporary segments versus the number that of sorts that are not using temporary segments. For example, a ratio of .75 indicates that 3 out of 4 sorts are using temporary segments. The default is unselected. |
| <b>Monitoring</b>   |   |



| Description  | How to Set It  |
|--|--|
| Threshold - Maximum consistent change ratio          | Enter a threshold for the maximum ratio of consistent block changes to consistent block gets during the monitoring interval. The default 0.01.       |
| Threshold - Maximum continued row ratio [0.0 to 1.0] | Enter a threshold for the maximum ratio of continued rows fetched to all rows fetched. Enter values from 0.0 to 1.0, inclusive. The default is 0.01. |
| Threshold - Maximum row source ratio                 | Enter a maximum threshold for the row source ratio. The default ratio is .25.  |
| Threshold - Maximum sort overflow ratio?             | Enter a threshold for the maximum sort overflow ratio allowed before the job raises an event. The default is .75.                                    |
| Event severity for internal failure                  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).                         |

## DiskSpaceAvail

Use this Knowledge Script to monitor the amount of disk space available for the archive log file, the background process log file, and user log files for a database. You can monitor the space available for all three, or for any combination of the three. For example, you could turn off monitoring for the archive log and background process log files and monitor just the disk space available for the user logs.

You can set a minimum threshold for each type of log file. If the amount of available disk space falls below any threshold, the job raises an event.

This Knowledge Script supports Automatic Storage Management (ASM).

The account you use to run this script must have `SELECT` permissions for the following tables:

`V_$ARCHIVE_DEST`

`V_$PARAMETER`

`V_$VERSION`

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It  |
|--|--|
| Oracle Username  | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use SYSDBA authentication, leave this parameter blank. The default is blank.    |
| Collect data for available disk space?                     | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the amount of free disk space for each type of log file that you are monitoring. The default is unselected.                            |
| <b>Monitor space available for the archive log?</b>        | Select <b>Yes</b> to monitor the amount of disk space available for the archive log file of the database. The default is Yes.  |
| Ignore unknown archive location paths?                     | Select <b>Yes</b> if you do not want AppManager to raise an error when an archive log file location is not defined or not accessible. You can use this parameter when monitoring a database used as a backup for disaster recovery. The default is unselected. |
| <b>Raise event if threshold is not met?</b>                | Select <b>Yes</b> to raise an event if space available for the archive log falls below the minimum threshold. The default is Yes.  |
| Threshold - Minimum archive log space                      | Enter a threshold for the minimum available disk space for the archive log file. If the available space falls below this threshold, the job raises an event. The default is 100.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).  |
| <b>Monitor space available for background process log?</b> | Select <b>Yes</b> to monitor the amount of space available for the background process log file of the database. The default is Yes.  |
| <b>Raise event if threshold is not met?</b>                | Select <b>Yes</b> to raise an event if space available for the background process log file falls below the threshold. The default is Yes.  |
| Threshold - Minimum background process log space           | Enter a threshold for the minimum available disk space for the background process log file. If the amount of available space falls below this threshold, the job raises an event. The default is 100.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).  |
| <b>Monitor space available for user logs?</b>              | Select <b>Yes</b> to monitor the amount of space available for the user log files of the database. The default is Yes.   |
| <b>Raise event if threshold is not met?</b>                | Select <b>Yes</b> to raise an event if space available for the user log file falls below the threshold. The default is Yes.  |
| Threshold - Minimum user log space                         | Enter a threshold for the minimum available disk space for user log files. If the amount of available space falls below this threshold, the job raises an event. The default is 100.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).  |
| Event severity for internal failure                        | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

# FreelistWaits

Use this Knowledge Script to retrieve the number of freelist waits and the total number of data requests, and to compute a ratio of the two numbers. You can set multiple thresholds for the ratio of freelist waits to data requests, and the job raises events when any one of the thresholds exceeds the value you specified.

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$SYSSTAT

V\_\$VERSION

V\_\$WAITSTAT

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and collects the number of freelist waits and the number of total data requests. The ratio of freelist waits to total data requests is then computed.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It  |
|--|--|
| Oracle Username  | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| Collect data for ratio of freelist waits to total data requests? | Select <b>Yes</b> to collect data for charts and reports. If data collection is enabled, returns the ratio of freelist waits to total data requests. The default is unselected.  |
| <b>Raise event if ratio exceeds threshold?</b>                   | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is Yes.  |
| Threshold – Maximum ratio of freelist waits to data requests     | Specify a threshold for the maximum ratio of freelist waits to total data requests. The default is .95.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 5 (red event indicator).   |
| <b>Raise event if ratio exceeds threshold?</b>                   | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is unselected.   |
| Threshold – Maximum ratio of freelist waits to data requests     | Specify a threshold for the maximum ratio of freelist waits to total data requests. The default is .80.  |

| Description  | How to Set It   |
|--|---|
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 15 (yellow event indicator).  |
| <b>Raise event if ratio exceeds threshold?</b>               | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is unselected.  |
| Threshold – Maximum ratio of freelist waits to data requests | Specify a threshold for the maximum ratio of freelist waits to total data requests. The default is 60.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 25 (blue event indicator).    |
| <b>Raise event if ratio exceeds threshold?</b>               | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is unselected.  |
| Threshold – Maximum ratio of freelist waits to data requests | Specify a threshold for the maximum ratio of freelist waits to total data requests. The default is 40.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 35 (magenta event indicator). |
| Event severity for internal failure                          | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |

## HealthCheck

Use this Knowledge Script to monitor the following parameters:

- ♦ **Cluster Instance Down:** notify when an Oracle instance in a cluster fails or becomes inactive.

Run this Knowledge Script for Oracle RAC monitoring only. This Knowledge Script uses the `srvctl` command functionality to fetch the statuses of all the cluster instances.

- ♦ **Database Connect:** the connectivity and login capability of Oracle databases on UNIX and Linux systems. This script attempts to connect to the database you select. If the connection attempt is successful, this script reports the status of the database and of its login capability. If the connection attempt is unsuccessful, an event is raised.
- ♦ **Database Down:** the status of a database. This script checks whether the Oracle RDBMS background processes are running and whether a local connection can be made.

Each Oracle instance has a default set of background processes that must be running. An event is raised if any of the processes that you specified for monitoring in the **Background processes to monitor** parameter are down, or if a connection cannot be made to the database instance.

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$(INSTANCE)

V\_\$(VERSION)

GV\_\$(INSTANCE) (for Oracle RAC monitoring only)

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description                                     | How to Set It   |
|---|---|
| Oracle Username                                 | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use SYSDBA authentication, leave this parameter blank. The default is blank.   |
| <b>Health Check</b>                             |   |
| Cluster Instance Down                           | Select <b>Yes</b> to monitor Cluster Instance Down. The default is unselected.  |
| Database Connect                                | Select <b>Yes</b> to monitor Database Connect. The default is unselected.   |
| Database Down                                   | Select <b>Yes</b> to monitor Database Down. The default is unselected.  |
| <b>Data Collection</b>                          |   |
| Collect data for instance status?               | Select <b>Yes</b> to collect data for charts and reports. If you enable data collection, the script returns the status of each instance: <ul style="list-style-type: none"><li>◆ 100--instance is running</li><li>◆ 0--instance is down</li></ul> The default is unselected.  |
| Collect data for connection and login status?   | Select <b>Yes</b> to collect data for charts and reports. If you enable data collection, the script returns the status of the database and of its login capability. The default is unselected.  |
| Collect data for process and connection status? | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the script returns the following values: <ul style="list-style-type: none"><li>◆ 100--all specified processes are running and a connection attempt was successful</li><li>◆ 80--one or more processes was down but a connection attempt was successful</li><li>◆ 0--no processes were running and/or a connection attempt failed</li></ul> This parameter provides a way to report on the percentage of system uptime in any given period.<br>The default is unselected. |
| <b>Event Notification</b>                       |   |

| Description  | How to Set It  |
|--|--|
| <b>Raise event if instance is down or if unable to check status?</b> | Select <b>Yes</b> to raise an event when the instance is down. The default is Yes.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event detecting that an instance is down. The default is 10 (red event indicator).   |
| <b>Raise event if unable to connect?</b>                             | Select <b>Yes</b> to raise an event if an attempt to connect to the Oracle database is unsuccessful. The default is Yes.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Raise event with database and login status?</b>                   | Select <b>Yes</b> to raise an event providing information on the database and login status. The default is unselected.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 35 (magenta event indicator).  |
| <b>Raise event if a process is down or unable to connect?</b>        | Select <b>Yes</b> to raise an event if an Oracle database or background process is detected down. The default is Yes.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 15 (yellow event indicator).   |
| Event severity for internal failure                                  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Monitoring</b>  |  |
| Background processes to monitor (comma-separated, no spaces)         | Enter the names of Oracle RDBMS background processes you want to monitor, separated by commas and no spaces. The default is:<br>LGWR , PMON , SMON , RECO , DBWO , DBWR .  |
| Create blackout file for a database if it appears to be down?        | Select <b>Yes</b> if the script should create a file in the blackout directory so that no further jobs are run on this database. The <a href="#">SetMonitoringOptions</a> script must be run to set the blackout directory before this file can be created. The default is unselected. |

## Listener

Use this Knowledge Script to monitor Oracle listeners running on the host. This script can attempt to connect to each Oracle database using the service name. If the local connection attempt fails, or the service name connection attempt fails, or if an error occurs while running the job, an event is generated.

If you enable the **Restart listeners that are not running?** parameter, you have three options to specify the listeners that should be restarted. If the databases where you plan to drop the script share a single listener, you can specify the Oracle Home where the listener resides and, optionally, the name of the listener in the script itself. If the name is not specified, the job will start the default listener in that Oracle Home.

**NOTE:** If you choose to have this script restart an Oracle listener that is not running, the UNIX account running the NetIQ UNIX agent must have write permissions on the \$ORACLE\_HOME/network/log folder if listener logging is enabled.

If the databases where you plan to drop the script use multiple listeners, you should specify this information in either a file that is created to identify the listeners that each `$ORACLE_SID` uses or in the default `oratab` file. If a file is created for this purpose, the path should be specified in the script, and it should have the following format:

```
$ORACLE_SID:LISTENER HOME:[LISTENER NAME]
```

where `$ORACLE_SID` is the name of the database instance, `LISTENER HOME` is the `$ORACLE_HOME` of the listener that should be restarted for this instance when no listener that can be used to connect to that instance is running, and `LISTENER NAME` is the name of this listener. It is not required to specify the name of the listener, as the default listener in the Oracle Home of the listener specified can be started, but if any text is presented in this column, it will be interpreted as a listener name.

**Example:** A Linux host has two `$ORACLE_HOME` directories, one of version 8.1.7 and one of version 9.2.0. This environment requires that each database use a listener of its own version. Thus, the following file is created for restarting the listeners:

```
Orasid817:/oracle/product/8.1.7
Orasid920:/oracle/product/9.2.0:lsnr_new
```

In this case, the default listener in `$ORACLE_HOME/oracle/product/8.1.7` will be restarted when a listener is not running that knows about the `Orasid817` database. For the `Orasid920` database, the `lsnr_new` listener will be started from the version 9.2.0 Oracle Home.

If the path to a file containing listener information is not specified yet you have selected for listeners to be restarted, the script will use the default `oratab` file on the host to locate listener information. When this is the case, an entry in the `$ORACLE_SID` column labeled `LSNR` must exist, and the `$ORACLE_HOME` value for this identifier will be used to restart the default listener.

**Example:**

```
/etc/oratab file
#
# ORACLE_SID:$ORACLE_HOME:<N:Y>
#
Orasid817:/oracle/product/8.1.7:Y
LSNR:/oracle/product/9.2.0:N
```

In this example, the format of the `oratab` is maintained, and the third column does not specify a listener name. This is because when the `oratab` file is read for listener information, there will be no use of listener names. The default listener in the Oracle Home specified for the `LSNR` entry will always be restarted.

---

**NOTE:** This is an easy but restrictive way to specify the listener information. You should only use this option if you are running a single listener per host, yet are dropping a single job on multiple hosts where you can specify this type of information uniformly.

---

The account you use to run this script must have `SELECT` permissions for the following table:

```
V_$VERSION
```

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It  |
|--|--|
| Oracle Username  | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank.   |
| Collect data for success or failure of listener monitoring?  | Select <b>Yes</b> to collect data for charts and reports, in percent. If data collection is enabled, returns the current status of the listener process based on number of connection to database. The default is unselected.  |
| Location of <code>tnsnames.ora</code> (TNS_ADMIN)            | Specify the directory that can be used to set the <code>\$TNS_ADMIN</code> environment variable so that the <code>tnsnames.ora</code> file can be found during the connection attempt using the service name. This value can be a specific folder, or it can be relative to the <code>\$ORACLE_HOME</code> for the respective database. If <code>\$ORACLE_HOME</code> is specified as part of the path, the script substitutes the appropriate folder path for this variable at the time the job is executed. The default is: <code>\$ORACLE_HOME/network/admin</code> . |
| Use password to execute <code>lsnrctl</code> utility         | Select <b>Yes</b> to use a password to run the <code>lsnrctl</code> utility. If you choose to use a password, AppManager uses the <code>PASSWORDS</code> value from the <code>listener.ora</code> file in the <code>\$ORACLE_HOME/network/admin</code> folder. The default is unselected.  |
| <b>Monitor Oracle background processes?</b>                  | Select <b>Yes</b> to monitor Oracle background processes. The default is Yes.  |
| Background processes to monitor (comma-separated, no spaces) | Enter the names of Oracle RDBMS background processes you want to monitor, separated by commas and no spaces. The default is <code>PMON, LGWR, SMON, RECO</code> .  |
| <b>Attempt a connection using service name?</b>              | Select <b>Yes</b> to attempt a connection using a service name ( <code>tnsnames</code> alias). The default is unselected.  |
| Service Name   | Specify the service name you want to use for the connection attempt. By default, this name is usually the <code>\$ORACLE_SID</code> value for the database. If <code>\$ORACLE_SID</code> is specified as part of the name, the script substitutes the appropriate value for the respective database at the time the job is executed. In addition, domain names may be appended to <code>\$ORACLE_SID</code> or the value specified (for example, <code>\$ORACLE_SID.netiq.eng</code> ). The default is <code>\$ORACLE_SID</code> .                                       |
| Number of databases per host to attempt a service connection | Select the number of databases per host for which a service connection should be attempted. Options include 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 50, or ALL. The default is ALL.   |
| <b>Restart listeners that are not running?</b>               | Select <b>Yes</b> to restart listeners or specified background process(es) that are not running. The default is unselected.  |



| Description  | How to Set It   |
|--|---|
| Number of attempts to restart a given listener   | If you enabled the <b>Restart listeners that are not running?</b> parameter, enter the number of times the job should attempt to restart a listener that is not running before the job raises a failure event (see the <b>Raise event if unable to restart a listener?</b> parameter below). The default is 1.  |
| <b>Options for specifying listener(s) to restart</b>                                     | Enter values below for the following parameters if you enabled the <b>Restart listeners that are not running?</b> parameter. These parameters let you select listeners to restart if they are detected as not running.  |
| Oracle Home of listener to restart   | Enter the Oracle Home where the listener to be restarted resides. The default is blank.   |
| Name of listener to restart  | Enter the name of the listener to restart. If you do not enter a name here, the job attempts to restart the default listener. The default is blank.   |
| Path to file with information on listener(s) to restart (leave blank to use oratab file) | Enter a full path and filename for a file containing the names and Oracle Homes of listeners that should be restarted if they are detected down. Use this parameter to restart multiple listeners.<br><br>If you do not enter a path and filename, the job uses the default <code>oratab</code> file for the Oracle Home listed above for the <b>Oracle Home of listener</b> parameter. |
| <b>Raise event if listener or background process(es) not running?</b>                    | Select <b>Yes</b> to raise an event when the listener or specified background processes are not running. The default is Yes.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| <b>Raise event with status of any restart attempt?</b>                                   | Select <b>Yes</b> to raise an event giving the status of any attempts to restart listeners that are not running. The default is Yes.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 30 (magenta event indicator).   |
| <b>Raise event if connection attempts fail?</b>  | Select <b>Yes</b> to raise an event if the connection attempts fail. The default is Yes.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).   |
| <b>Raise event with status if listener running and connection(s) successful?</b>         | Select <b>Yes</b> to raise an event with uptime information when listener is running and the connection is successful. The default is unselected.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 40 (magenta event indicator).   |
| Event severity for internal failure  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |

# Memory

Use this Knowledge Script to monitor the following parameters:

- ♦ **Freelist Waits:** retrieve the number of freelist waits and the total number of data requests, and to compute a ratio of the two numbers. You can set multiple thresholds for the ratio of freelist waits to data requests, and the job raises events when any one of the thresholds exceeds the value you specified.
- ♦ **Buffer Busy Waits:** retrieve the number of buffer busy waits and the number of logical reads, and compute a ratio between the two numbers (expressed as a percentage). When you enable data collection, the repository stores the ratio. You can set multiple thresholds for the maximum ratio, and the job raises an event when any of the thresholds exceeds the value you specified. A higher ratio indicates an increased contention for buffers in the SGA memory of Oracle database.
- ♦ **Cache:** the frequency with which requested data and resources are retrieved from the cache. As this hit ratio (that is, the percentage of time that data or resources are retrieved from the cache) decreases, performance also decreases because data that must be retrieved from disk or library objects must be reinitialized in order to service the requests.

Use this script to monitor any combination of the following statistics:

- ♦ The *buffer cache hit ratio* indicates the percentage of time that requested data you can find in the buffer cache.
- ♦ The *data dictionary hit ratio* indicates the percentage of time that requested data you can find in the data dictionary.
- ♦ The *library cache hit ratio* indicates the percentage of time that system requests to access objects in the library cache you can service without re-initializing or reloading library objects. Changes to the library cache hit ratio might occur when an application becomes active, causing more SQL statements and stored procedures to be used.

You can set a threshold for each cache hit ratio you choose to monitor. If a cache hit ratio falls below a threshold you set, the job raises an event.

- ♦ **BGProc:** the total number of physical read/write (I/O) operations per second and/or the total memory usage for Oracle RDBMS background processes. If the total number of read/write operations per second or the total memory usage for the list of specified processes exceeds the threshold, the job raises an event.

Oracle RDBMS background processes include CKPT, DBW0, LGWR, PMON, RECO, SMON, SNP0, and others. You can monitor all or individual background processes.

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$SYSSTAT

V\_\$VERSION

V\_\$WAITSTAT

V\_\$LIBRARYCACHE

V\_\$ROWCACHE

V\_\$SYSTEM\_EVENT

V\_\$BGPROCESS

V\_\$PROCESS

V\_\$SESSION

V\_\$\$SESSTAT

V\_\$\$STATNAME

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description                        | How to Set It  |
|------------------------------------|--|
| Oracle Username                    | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| <b>Memory</b>                      |  |
| Freelist Waits                     | Select <b>Yes</b> to monitor the Freelist Waits. The default is unselected.  |
| Buffer busy Waits                  | Select <b>Yes</b> to monitor the Buffer Busy Waits. The default is unselected.   |
| <b>Cache</b>                       |  |
| Monitor buffer cache hit ratio?    | Select <b>Yes</b> to monitor the percentage of time that requested data you can find in the buffer cache. The default is Yes.  |
| Monitor data dictionary hit ratio? | Select <b>Yes</b> to monitor the percentage of time that requested data you can find in the data dictionary. The default is Yes.   |
| Monitor library cache hit ratio?   | Select <b>Yes</b> to monitor the percentage of time that system pin requests to access objects in the library cache you can service without re-initializing or reloading library objects. The default is Yes.  |
| <b>BGProc</b>                      |  |

| Description   | How to Set It   |
|---|---|
| Oracle background processes to monitor  | <p>Enter the names of the background processes you want to monitor. Separate the names with commas; do not use spaces. To monitor all Oracle RDBMS background processes, enter an asterisk (*).</p> <p>Possible valid background process names include:</p> <ul style="list-style-type: none"> <li>◆ CKPT</li> <li>◆ DBW0</li> <li>◆ LGWR</li> <li>◆ PMON</li> <li>◆ RECO</li> <li>◆ SMON</li> <li>◆ SNP0</li> <li>◆ SNP1</li> </ul> <p>The default is (*).</p> |
| Monitor read/write operations?  | Select <b>Yes</b> to monitor the number of physical read/write operations per second by background processes. The default is Yes.   |
| Monitor memory usage?   | Select <b>Yes</b> to monitor the total memory usage by background processes. The default is Yes.  |
| <b>Event Notification</b>   |   |
| <b>Raise event if threshold is exceeded for ratio of freelist waits to total data requests?</b> |   |
| <b>Raise event if threshold is exceeded?</b>  | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is Yes.   |
| Threshold - Maximum ratio of freelist waits to data requests                                    | Specify a threshold for the maximum ratio of freelist waits to total data requests. The default is .95.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 5 (red event indicator).  |
| <b>Raise event if ratio exceeds threshold?</b>  | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is unselected.  |
| Threshold - Maximum ratio of freelist waits to data requests                                    | Specify a threshold for the maximum ratio of freelist waits to total data requests. The default is .80.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 15 (yellow event indicator).  |
| <b>Raise event if ratio exceeds threshold?</b>  | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is unselected.  |
| Threshold - Maximum ratio of freelist waits to data requests                                    | Specify a threshold for the maximum ratio of freelist waits to total data requests. The default is .60.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 25 (blue event indicator).  |

| <b>Description</b>   | <b>How to Set It</b>  |
|--|---|
| <b>Raise event if ratio exceeds threshold?</b>   | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is unselected.  |
| Threshold - Maximum ratio of freelist waits to data requests                                 | Specify a threshold for the maximum ratio of freelist waits to total data requests. The default is .40.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 35 (magenta event indicator). |
| <b>Raise event if threshold is exceeded for ratio of buffer busy waits to logical reads?</b> |   |
| <b>Raise event if threshold is exceeded?</b>   | Select <b>Yes</b> to raise an event if the threshold exceeds the specified limit. The default is Yes.   |
| Threshold - Maximum ratio of buffer busy waits to logical reads                              | Specify a threshold for the maximum ratio of buffer busy waits to logical reads. The default is .95.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 5 (red event indicator).      |
| <b>Raise event if threshold is exceeded?</b>   | Select <b>Yes</b> to raise an event if the ratio exceeds the threshold specified below. The default is unselected.  |
| Threshold - Maximum ratio of buffer busy waits to logical reads                              | Specify a threshold for the maximum ratio of buffer busy waits to logical reads. The default is .80.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 15 (yellow event indicator).  |
| <b>Raise event if threshold is exceeded?</b>   | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is unselected.  |
| Threshold - Maximum ratio of buffer busy waits to logical reads                              | Specify a threshold for the maximum ratio of buffer busy waits to logical reads. The default is .60.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 25 (blue event indicator).    |
| <b>Raise event if threshold is exceeded?</b>   | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is unselected.  |
| Threshold - Maximum ratio of buffer busy waits to logical reads                              | Specify a threshold for the maximum ratio of buffer busy waits to logical reads. The value is .40.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 35 (magenta event indicator). |
| <b>Raise event for cache?</b>  |   |
| <b>Raise event if threshold is not met?</b>  | Select <b>Yes</b> to raise an event if the buffer cache hit ratio exceeds the threshold you set. The default is Yes   |

| Description   | How to Set It  |
|---|--|
| Threshold - Minimum buffer cache ratio              | <p>Enter a minimum threshold for the buffer cache hit ratio. If the actual hit ratio falls below than this threshold, the job raises an event.</p> <p>Set this percentage relatively high because the more frequently Oracle RDBMS uses the buffer, the better your database performance. When the actual hit ratio falls below the threshold you set, the event alerts you that database performance has degraded.</p> <p>The default is 70%.</p>                     |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).  |
| <b>Raise event if threshold is not met?</b>         | Select <b>Yes</b> to raise an event if the data dictionary hit ratio falls below the threshold you set. The default is unselected.   |
| Threshold - Minimum data dictionary hit ratio       | <p>Enter a minimum threshold for the data dictionary hit ratio. If the actual hit ratio falls below this threshold, the job raises an event.</p> <p>Set this percentage high because the more frequently Oracle RDBMS uses the data dictionary to service requests, the better your database performance. When the actual hit ratio falls below the threshold you set, the event alerts you that database performance has deteriorated.</p> <p>The default is 90%.</p> |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).  |
| <b>Raise event if threshold is not met?</b>         | Select <b>Yes</b> to raise an event if the library cache hit ratio falls below the threshold you set. The default is unselected.   |
| Threshold - Minimum library cache hit ratio         | <p>Enter a minimum threshold for the library cache hit ratio. If the actual hit ratio falls below this threshold, the job raises an event.</p> <p>Set this percentage extremely high because re-initializing or reloading library objects imposes a significant performance hit. When the actual hit ratio falls below the threshold you set, the event alerts you that database performance has degraded.</p> <p>The default is 95%.</p>                              |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).  |
| <b>Raise event for Oracle Background processes?</b> |  |
| <b>Raise event if threshold is exceeded?</b>        | Select <b>Yes</b> to raise an event when the number of physical read/write operations per second exceeds the threshold you set. The default is unselected.   |
| Threshold - Maximum read/write operations rate      | Enter a threshold for the maximum number of physical read/write operations per second. The default is 5.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 15 (yellow event indicator).   |
| <b>Raise event if threshold is exceeded?</b>        | Select <b>Yes</b> to raise an event when the memory utilization of the monitored processes exceeds the threshold you set. By default, events are not enabled.  |
| Threshold - Maximum memory usage                    | Enter a threshold (in MB) for the maximum amount of memory used by all background processes you are monitoring. The default is 15.   |

| Description  | How to Set It   |
|--|---|
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 15 (yellow event indicator).  |
| <b>Data Collection</b>   |   |
| Collect data for ratio of freelist waits to total data requests? | Select <b>Yes</b> to collect data for charts and reports. If data collection is enabled, returns the ratio of freelist waits to total data requests. The default is unselected.   |
| Collect data for ratio of buffer busy waits to logical reads?    | Select <b>Yes</b> to collect data for charts and reports. If data collection is enabled, returns the ratio of buffer busy waits to logical reads as a percentage (%). The default is unselected.  |
| Collect data for Cache?  | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the statistics you choose to collect: <ul style="list-style-type: none"> <li>◆ The buffer cache hit ratio</li> <li>◆ The data dictionary hit ratio</li> <li>◆ The library cache hit ratio</li> </ul> The default is unselected. |
| Collect data for memory usage and I/O of Oracle processes?       | Select <b>Yes</b> to collect data for charts and reports. If data collection is enabled, returns the number of read/write operations per second, and/or the total memory usage for all monitored background processes. The default is unselected.   |
| Event severity for internal failure                              | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |

## Most Executed SQL Statements

Use this Knowledge Script to determine which SQL queries or statements are being executed on a given Oracle database most frequently. This script identifies the *N* most frequently executed queries and returns the results in an event. You set a value for *N* using the **Number of SQL statements to retrieve** parameter.

When you enable data collection, the most frequently executed SQL statements are stored in the repository.

The account you use to run this script must have `SELECT` permissions for the following tables:

`V_$SQLAREA`

`V_$VERSION`

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and collects the *N* most executed SQL statements or queries.

## Default Schedule

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

# Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It   |
|--|---|
| Oracle Username                                      | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use SYSDBA authentication, leave this parameter blank. The default is blank.                                 |
| Collect data for most executed SQL statements?       | Select <b>Yes</b> to collect data for charts and reports. If data collection is enabled, returns the top <i>N</i> most frequently executed SQL statements. Set a value for <i>N</i> using the <b>Number of SQL statements to retrieve</b> parameter (see below). The default is unselected. |
| Number of SQL statements to retrieve                 | The number of most frequently executed SQL queries to be retrieved by the job. The default is 10. The maximum is 30.  |
| <b>Raise event if error occurs during retrieval?</b> | Select <b>Yes</b> to raise an event if an error occurs during the retrieval of SQL statements. The default is Yes.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 10 (red event indicator).   |
| <b>Raise event with results from query?</b>          | Select <b>Yes</b> to raise an event with details of the query results. The default is unselected.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 40 (magenta event indicator).   |
| Event severity for internal failure                  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |

## OpenCursors

Use this Knowledge Script to monitor the percentage of cursors opened per session, as well as the total number of cursors open in the system. In the Oracle RDBMS environment, a *cursor* is a type of handle (or pointer) used to identify a query in the system. Cursors can be opened by users or by the system itself. A high number of open cursors can be caused by a programming error, and might cause database performance problems. In the `init.ora` file, you can specify the maximum number of cursors that might be opened by a session.

In this script, you can specify a maximum threshold for the percentage of open cursors allowed per session--a percentage of the number specified for the `open_cursor` parameter in the `init.ora` file. For example, if the `init.ora` file specifies that 60 cursors might be open in a session, and you set a maximum threshold of 75%, the script raises an event when 75% of the 60 allowed cursors (or 45 cursors) are open in any session.

You can also specify a maximum threshold for the total number of open cursors allowed in the system. The job raises an event if either threshold exceeds the value you specified.

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$PARAMETER

V\_\$VERSION



## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It  |
|--|--|
| Oracle Username  | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| Collect data for number of open cursors?                     | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the total number of open cursors in the system. The default is unselected.   |
| <b>Raise event if threshold is exceeded?</b>                 | Select <b>Yes</b> to raise an event if the number of cursors open in the system exceeds the threshold you set. The default is Yes.   |
| Threshold - Maximum number of open cursors in system         | Specify a maximum threshold for the number of cursors that might be open in the system. The default is 1000.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).  |
| <b>Raise event if threshold is exceeded?</b>                 | Select <b>Yes</b> to raise an event if the percentage of cursors opened per session exceeds the threshold you set. The default is Yes.   |
| Threshold - Maximum percentage of cursors opened per session | Specify a maximum threshold for the percentage of open cursors per session. Note that this percentage is based on the number of open cursors allowed per session specified in the <code>init.ora</code> file. The default is 80.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).  |
| Event severity for internal failure                          | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

## Performance

Use this Knowledge Script to monitor the following parameters:

- ♦ **Top CPU Users:** the CPU time for current user sessions. If the CPU utilization exceeds the threshold, the job raises an event.

You can specify the number of user sessions with the highest CPU utilization to display in the Event Properties dialog box. The Event Properties dialog box includes the CPU usage for each of the top *N* sessions, username, session ID, and program name. Enter 0 to display all user sessions.

This script requires that the Oracle `timed_statistics` parameter be turned on (set to `TRUE`) for the database you are monitoring.

- ♦ **Top IO Users:** Physical reads and writes (I/O) for current user sessions. If the number of physical reads/writes per second (the physical read/write operations rate) exceeds the threshold you set, the job raises an event.

You can specify the number of user sessions with the highest physical read/write operations rate to display in the Event Properties dialog box. Information in the Event Properties dialog box includes the physical reads/writes per second for each of the top *N* sessions, username, session ID, and program name.

This script requires that the Oracle `timed_statistics` parameter is turned on for the database you are monitoring.

- ♦ **Top Lock Users:** The current number of user-held locks on an Oracle database. If the number of locks exceeds the threshold, the job raises an event.

You can specify the number of user sessions holding the most locks to display in the Event Properties dialog box, or enter 0 to display all sessions. Information in the Event Properties dialog box includes the number of locks held by each session, username, session ID, and program name.

- ♦ **Top Memory Users:** The memory utilization (User Global Area and Program Global Area) for current user sessions. If the memory utilization exceeds the threshold, the job raises an event.

You can specify the number of user sessions with the highest memory usage to display in the Event Properties dialog box. Information in the Event Properties dialog box includes the memory in bytes for each session, username, session ID, and program name. Enter 0 for the **Number of top user sessions to display** parameter if you want to include memory utilization statistics for all user sessions in the event details.

- ♦ **Open Cursors:** the percentage of cursors opened per session, as well as the total number of cursors open in the system. In the Oracle RDBMS environment, a *cursor* is a type of handle (or pointer) used to identify a query in the system. Cursors can be opened by users or by the system itself. A high number of open cursors can be caused by a programming error, and might cause database performance problems. In the `init.ora` file, you can specify the maximum number of cursors that might be opened by a session.

In this script, you can specify a maximum threshold for the percentage of open cursors allowed per session--a percentage of the number specified for the `open_cursor` parameter in the `init.ora` file. For example, if the `init.ora` file specifies that 60 cursors might be open in a session, and you set a maximum threshold of 75%, the script raises an event when 75% of the 60 allowed cursors (or 45 cursors) are open in any session.

You can also specify a maximum threshold for the total number of open cursors allowed in the system. The job raises an event if either threshold exceeds the value you specified.

The account you use to run this script must have `SELECT` permissions for the following tables:

```
DBA_USERS
V_$SESSION
V_$SESSTAT
V_$STATNAME
V_$VERSION
V_$LOCK
V_$PARAMETER
```

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description   | How to Set It  |
|---|--|
| Oracle Username   | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| <b>Performance</b>  |  |
| Top CPU Users   | Select <b>Yes</b> to monitor the Top CPU Users. The default is unselected.   |
| Top IO Users  | Select <b>Yes</b> to monitor the Top IO Users. The default is unselected.  |
| Top Lock Users  | Select <b>Yes</b> to monitor the Top Lock Users. The default is unselected.  |
| Top Memory Users  | Select <b>Yes</b> to monitor the Top Memory Users. The default is unselected.  |
| Open Cursors  | Select <b>Yes</b> to monitor the Open Cursors. The default is unselected.  |
| <b>Event Notification</b>   |  |
| Raise event if threshold is exceeded for Top CPU Users?                                     | Select <b>Yes</b> to raise an event if the CPU usage of any user session exceeds the threshold you set. The default is Yes.  |
| Raise event if threshold is exceeded for Top IO Users?                                      | Select <b>Yes</b> to raise an event if the physical read/write operations of any single user session exceed the threshold you set. The default is Yes.   |
| Raise event if threshold is exceeded for Top Lock Users?                                    | Select <b>Yes</b> to raise an event if the number of user-held locks on the server exceeds the threshold you set. The default is Yes.  |
| Raise event if threshold is exceeded for Top Memory Users?                                  | Select <b>Yes</b> to raise an event if the total memory usage of any user session exceeds the threshold you set. The default is Yes.   |
| <b>Raise event if threshold is exceeded for Total Number of Open Cursors in the System?</b> | Select <b>Yes</b> to raise an event if the number of cursors open in the system exceeds the threshold you set. The default is Yes.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).  |
| <b>Raise event if threshold is exceeded for Percentage of Cursors Opened per Session?</b>   | Select <b>Yes</b> to raise an event if the percentage of cursors opened per session exceeds the threshold you set. The default is Yes.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).  |

| <b>Description</b>  | <b>How to Set It</b>  |
|---|---|
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| <b>Data Collection</b>  |   |
| Collect data for Top CPU Users?   | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the total CPU time for the top <i>N</i> users. The default is unselected.   |
| Collect data for Top IO Users?  | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the total number of physical reads/writes per second for the top <i>N</i> users. The default is unselected.             |
| Collect data for Top Lock Users?  | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the current number of user-held locks by the user sessions with the highest number of locks. The default is unselected. |
| Collect data for Top Memory Users?  | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the total memory usage (in MB) for the top <i>N</i> user sessions. The default is unselected.                           |
| Collect data for Open Cursor?   | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the total number of open cursors in the system. The default is unselected.  |
| <b>Monitoring</b>   |   |
| Number of user sessions of display [Not Applicable to Open Cursor Counters] | Specify the number of user sessions you want displayed in the Event Properties dialog box. Enter <b>0</b> if you want information for all user sessions. The default is 15.   |
| Threshold - Maximum amount of CPU time for a user session                   | Enter a threshold for the maximum number of CPU cycles per 1/100th of a second that a single user session can use before the job raises an event. The default is 50.  |
| Threshold - Maximum read/write operations for a user session                | Enter a threshold for the maximum number of physical reads/writes per second allowed before the job raises an event. The default is 300.  |
| Threshold - Maximum number of locks held by a user session                  | Enter a threshold for the maximum number of user-held locks on an Oracle RDBMS. The default is 35.  |
| Threshold - Maximum amount of memory for a user session                     | Enter a threshold for the maximum total memory usage (in MB) for any user session. The default is 10.   |
| Threshold - Maximum percentage of cursors opened per session                | Specify a maximum threshold for the percentage of open cursors per session. Note that this percentage is based on the number of open cursors allowed per session specified in the <code>init.ora</code> file. The default is 80.                |
| Threshold - Maximum number of open cursors in system                        | Specify a maximum threshold for the number of cursors that might be open in the system. The default is 1000.  |
| Event severity for internal failure   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |

# RedoLog

Use this Knowledge Script to monitor the following parameters:

- ♦ **Redo Log Contention:** the number of times that a process tries to write an entry in the redo log buffer. The job raises an event and then stores data if the number of tries is different for subsequent iterations of the script.

The number of retries should be low. A high number of retries can adversely affect system performance, as processes must wait for buffers. If a process has to make numerous attempts to write an entry in the redo log buffer, you might need to allocate more space to the redo log buffer.

You can set a threshold value for the maximum number of times a process can try to write an entry in the redo log buffer. If the number of retries exceeds the threshold, an event is raised.

- ♦ **Redo Log Space Wait Ratio:** the redo log space wait ratio. The redo log space wait ratio measures memory allocation. The ratio reflects the number of times the background process was requested to allocate space within the redo file per number of redo log entries. If this ratio increases, you might want to increase the size of the redo log buffer.

When the redo log space wait ratio exceeds the threshold you set, the job raises an event.

- ♦ **Redo Logs Not Archived:** retrieve the number of redo logs that are not being archived, if archiving is turned on for a given Oracle database. The number of redo logs not archived is returned and compared against the thresholds you specify. The Knowledge Script retrieves the archive status for an Oracle database from the AppManager repository, which is updated during discovery. To enable archiving, you must rediscover the Oracle UNIX resources if the redo log archive is enabled after you discover resources.

When you enable data collection, the number of redo logs not archived is stored in the repository. You can set multiple thresholds for the number of redo logs not archived, with varying severities, and the job raises an event when any of these thresholds exceeds the value you specified.

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$SGASTAT

V\_\$SYSSTAT

V\_\$VERSION

V\_\$LOG

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It   |
|--|---|
| Oracle Username  | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use SYSDBA authentication, leave this parameter blank. The default is blank. |
| <b>Redo Log</b>  |   |
| Redo Log Contention  | Select <b>Yes</b> to monitor Redo Log Contention. The default is unselected.  |
| Redo Log Space wait Ratio  | Select <b>Yes</b> to monitor Redo Log Space Wait Ratio. The default is unselected.  |
| Redo Log Not Archived  | Select <b>Yes</b> to monitor Redo Log Not Archived. The default is unselected.  |
| <b>Event Notification</b>  |   |
| <b>Raise event if threshold is exceeded for Redo Log Contention?</b>       | Select <b>Yes</b> to raise an event if the number of times that a process tries to rewrite an entry to the redo log buffer exceeds the threshold you set. The default is Yes.   |
| Threshold - Maximum redo log buffer allocation retries                     | Enter a threshold for the maximum number of times that a process might try to rewrite an entry to the redo log buffer before the job raises an event. The default is 50.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| <b>Raise event if threshold is exceeded for Redo Log Space Wait Ratio?</b> | Select <b>Yes</b> to raise an event if the redo log space wait ratio exceeds the threshold you set. The default is Yes.   |
| Threshold - Maximum redo log space wait ratio                              | Enter a maximum threshold for the redo log space wait ratio. The default is 0.0002.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).   |
| <b>Raise event if threshold is exceeded for Redo Logs not Archived?</b>    | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is Yes.   |
| Threshold - Maximum number of redo logs not archived                       | Specify a threshold for the maximum number of redo logs that have not been archived. The default is 6.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| <b>Raise event if threshold is exceeded for Redo Logs not Archived?</b>    | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is unselected.  |
| Threshold - Maximum number of redo logs not archived                       | Specify a threshold for the maximum number of redo logs that have not been archived. The default is 4.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 15 (yellow event indicator).  |

| Description   | How to Set It  |
|---|--|
| <b>Raise event if threshold is exceeded for Redo Logs not archived?</b> | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is unselected.   |
| Threshold - Maximum number of redo logs not archived                    | Specify a threshold for the maximum number of redo logs that have not been archived. The default is 2.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 25 (blue event indicator).   |
| <b>Raise event if threshold is exceeded for Redo Logs not archived?</b> | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is unselected.   |
| Threshold - Maximum number of redo logs not archived                    | Specify a threshold for the maximum number of redo logs that have not been archived. The default is 1.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 35 (magenta event indicator).  |
| <b>Data Collection</b>  |  |
| Collect data for Redo Log Contention?                                   | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the number of times that processes attempted to write entries to the redo log buffer. The default is unselected. |
| Collect data for Redo Log Space Wait Ratio?                             | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the redo log space wait ratio. The default is unselected.  |
| Collect data for Redo Log not archived?                                 | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the number of redo logs not archived. The default is unselected.   |
| Event severity for internal failure                                     | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

## RedoLogContention

Use this Knowledge Script to monitor the number of times that a process tries to write an entry in the redo log buffer for a scheduled interval of time. The job raises an event and then stores data if the number of tries is different for subsequent iterations of the script.

The number of retries should be low. A high number of retries can adversely affect system performance, as processes must wait for buffers. If a process has to make numerous attempts to write an entry in the redo log buffer, you might need to allocate more space to the redo log buffer.

You can set a threshold value for the maximum number of times a process can try to write an entry in the redo log buffer. If the number of retries exceeds the threshold, the job raises an event.

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$SGASTAT

V\_\$SYSSTAT

V\_\$VERSION

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It  |
|--|--|
| Oracle Username  | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| Collect data for redo log write attempts?              | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the number of times that processes attempted to write entries to the redo log buffer. The default is unselected.                                 |
| <b>Raise event if threshold is exceeded?</b>           | Select <b>Yes</b> to raise an event if the number of times that a process tries to rewrite an entry to the redo log buffer exceeds the threshold you set. The default is Yes.  |
| Threshold - Maximum redo log buffer allocation retries | Enter a threshold for the maximum number of times that a process might try to rewrite an entry to the redo log buffer before the job raises an event. The default is 50.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| Ignore agent's blackout state and keep monitoring?     | Select <b>Yes</b> to collect data during the blackout window for scheduled maintenance that you set using the AppManager for UNIX AMAdminUNIX_SchedMaint Knowledge Script. The default is unselected.  |
| Event severity for internal failure                    | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

## RedoLogsNotArchived

Use this Knowledge Script to retrieve the number of redo logs that are not being archived, if archiving is turned on for a given Oracle database. The number of redo logs not archived is returned and compared against the thresholds you specify. The Knowledge Script retrieves the archive status for an Oracle database from the AppManager repository, which is updated during discovery. To enable archiving, you must rediscover the Oracle UNIX resources if the redo log archive is enabled after you discover resources.

When you enable data collection, the number of redo logs not archived is stored in the repository. You can set multiple thresholds for the number of redo logs not archived, with varying severities, and the job raises an event when any of these thresholds exceed the values you specified.

The account you use to run this script must have `SELECT` permissions for the following tables:



V\_\$\$LOG

V\_\$\$VERSION

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and checks for `ARCHIVING` log mode before proceeding to monitor that database. The job then collects the number of redo logs that have not been archived. This data is collected and stored in the repository if you have enabled data collection.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It  |
|--|--|
| Oracle Username                                      | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| Collect data for number of redo logs not archived?   | Set to <b>y</b> to collect data. If data collection is enabled, returns the number of redo logs not archived. The default is n.  |
| <b>Raise event if threshold is exceeded?</b>         | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is Yes.  |
| Threshold - Maximum number of redo logs not archived | Specify a threshold for the maximum number of redo logs that have not been archived. The default is 6.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Raise event if threshold is exceeded?</b>         | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is unselected.   |
| Threshold - Maximum number of redo logs not archived | Specify a threshold for the maximum number of redo logs that have not been archived. The default is 4.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 15 (yellow event indicator).   |
| <b>Raise event if threshold is exceeded?</b>         | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is unselected.   |
| Threshold - Maximum number of redo logs not archived | Specify a threshold for the maximum number of redo logs that have not been archived. The default is 2.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 25 (blue event indicator).   |
| <b>Raise event if threshold is exceeded?</b>         | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is unselected.   |

| Description  | How to Set It   |
|--|---|
| Threshold - Maximum number of redo logs not archived | Specify a threshold for the maximum number of redo logs that have not been archived. The default is 1.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 35 (magenta event indicator).   |
| Ignore agent's blackout state and keep monitoring?   | Select <b>Yes</b> to collect data during the blackout window for scheduled maintenance that you set using the AppManager for UNIX AMAdminUNIX_SchedMaint Knowledge Script. The default is unselected. |
| Event severity for internal failure                  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The is 5 (red event indicator).  |

## RedoLogSpaceWaitRatio

Use this Knowledge Script to monitor the redo log space wait ratio. The redo log space wait ratio measures memory allocation. The ratio reflects the number of times the background process was requested to allocate space within the redo file per number of redo log entries. If this ratio increases, you might want to increase the size of the redo log buffer.

When the redo log space wait ratio exceeds the threshold you set, the job raises an event.

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$SYSSTAT

V\_\$VERSION

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description                                 | How to Set It  |
|---|--|
| Oracle Username                             | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| Collect data for redo log space wait ratio? | Set to <b>y</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the redo log space wait ratio. The default is <code>n</code> .   |

| Description  | How to Set It   |
|--|---|
| <b>Raise event if threshold is exceeded?</b>       | Select <b>Yes</b> to raise an event if the redo log space wait ratio exceeds the threshold you set. The default is Yes.   |
| Threshold - Maximum redo log space wait ratio      | Enter a maximum threshold for the redo log space wait ratio. The default is 0.0002.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).   |
| Ignore agent's blackout state and keep monitoring? | Select <b>Yes</b> to collect data during the blackout window for scheduled maintenance that you set using the AppManager for UNIX AMAdminUNIX_SchedMaint Knowledge Script. The default is unselected. |
| Event severity for internal failure                | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |

## RollbackSegmentContention

Use this Knowledge Script to monitor rollback segment contention for a database. In the Oracle RDBMS environment, the **rollback segment** is a temporary location where changes are stored until the user makes the changes permanent. This script compares the number of requests waiting to access data from the rollback segment to the total number of requests for data during the monitoring interval.

You can specify the maximum percentage of requests allowed to wait for data from the rollback segment. If the percentage of waiting requests exceeds the threshold you set, the job raises an event. Such an event probably indicates that too many processes are waiting to access the rollback segment, in which case, you might need to create additional rollback segments.

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$SYSSTAT

V\_\$VERSION

V\_\$WAITSTAT

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description   | How to Set It   |
|---|---|
| Oracle Username   | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use SYSDBA authentication, leave this parameter blank. The default is blank. |
| Collect data for rollback segment contention?                 | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the percentage of requests waiting to access the rollback segment. The default is unselected.                                       |
| <b>Raise event if threshold is exceeded?</b>                  | Select <b>Yes</b> to raise an event if the percentage of total requests that are waiting to access the rollback segment exceeds the threshold you set. The default is unselected.   |
| Threshold - Maximum percentage of requests waiting for access | Enter the maximum percentage of total requests that can be waiting to access data from the rollback segment before the job raises an event. The default is 1.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).   |
| Event severity for internal failure                           | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |

## RowSourceRatio

Use this Knowledge Script to monitor the row source ratio for an Oracle RDBMS. This ratio measures the percentage of rows retrieved using full table scans. Because a full table scan is less efficient than retrieval by row ID, this ratio gives you an indication of potential database performance problems. If you see an increase in this ratio, you might want to review other statistics to find the source of the problem. When this ratio exceeds the threshold, the job raises an event.

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$SYSSTAT

V\_\$VERSION

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

# Setting Parameter Values

Set the following parameters as needed:

| Description                                  | How to Set It  |
|--|--|
| Oracle Username                              | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| Collect data for row source ratio?           | Select <b>Yes</b> to collect data for use in graphs and reports. When you enable data collection, the script returns the percentage of rows retrieved using a full table scan. The default is unselected.  |
| <b>Raise event if threshold is exceeded?</b> | Select <b>Yes</b> to raise an event if the percentage of rows retrieved using a full table scan exceeds the threshold you set. The default is unselected.  |
| Threshold - Maximum row source percentage    | Enter a maximum threshold for the row source ratio. The default is 25.   |
| Severity                                     | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| Event severity for internal failure          | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

## RunSql

Use this Knowledge Script to run a SQL statement. The statement can be entered directly in the script or loaded from a file. You specify the column to monitor, by number or name, and whether to monitor the value found in the column or the value's rate of change (changes per second). You can also specify a string that the script can search for in the retrieved rows.

This script is designed to execute simple SQL statements, for example, a statement that returns the size of a table or the number of columns in a table. There is a limit of 10000 characters for the entire statement when it is contained in a file, and a limit of 1000 characters when the statement is entered via the **SQL statement** parameter. Regardless of the source of the SQL statement, there is a limit of 100 columns retrieved by a `SELECT` statement, and a limit of 8 KB for the size of each row retrieved.

This script supports SQL statements using the `number`, `character`, `date`, and `raw data` types. However, only a column returning numeric data can be selected to monitor.

The account you use to run this script must have `SELECT` permissions for `V_$VERSION` and any table the script is run against.

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

# Setting Parameter Values

Set the following parameters as needed:

| Description                                     | How to Set It  |
|---|--|
| Oracle Username                                 | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use SYSDBA authentication, leave this parameter blank. The default is blank.  |
| <b>Collect data specified in the SQL query?</b> | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the number of rows returned from the SQL statement. If you choose to monitor the column's rate of change and set this parameter to y, the script returns the change in the number of rows since the last time the SQL statement was run. The default is Yes.   |
| Legend  | <p>Enter a legend for the output of your SQL statement.</p> <p>For example, if the column number is 0, the constructed legend is "# Result Rows". If the column number is greater than 0, the constructed legend is the specified column heading. If no heading exists, the constructed legend is: "Column &lt;num&gt; Value".</p> <p>If you leave this parameter blank, AppManager constructs a legend based on the column number. The default is blank.</p>  |
| <b>Load SQL script from file?</b>               | Select <b>Yes</b> to load a SQL script from a file. The default is unselected.   |
| SQL script file (full path)                     | If you select <b>Yes</b> for the <b>Load SQL script from file?</b> parameter, enter the complete path to the file that contains the SQL statement. For example: /net1q/Sample.sql. The default is blank.   |
| SQL statement                                   | <p>If the <b>Load SQL script from file?</b> parameter is not selected, enter the SQL statement to be executed. The default statement selects all processes from the V_\$PROCESS table: <code>SELECT * FROM V_\$PROCESS</code></p> <p>Unless you are entering very simple queries, you might find typing a SQL statement into this field is error-prone. To avoid errors, use the <b>Load SQL script from file?</b> parameter. Or, if you have an AppManager Developer's license, you can check this script out of the repository, use the Knowledge Script Editor to paste the desired SQL statement into the <b>SQL statement</b> parameter, then check in the modified script. The default is blank.</p> |
| <b>Select column by number, or name?</b>        | <p>Set to <code>Number</code> or <code>Name</code>:</p> <ul style="list-style-type: none"><li>◆ <code>Number</code>--to select the column by number</li><li>◆ <code>Name</code>--to select the column by name.</li></ul> <p>The default is <code>number</code>.</p>  |
| Column number to retrieve                       | If you set the <b>Select column by number or name?</b> parameter to <code>Number</code> , enter the column number to use as the primary output value. The column you specify must contain numeric data. Entering 0 returns the number of rows returned from the SQL statement. Any other positive value returns the value for the specified column's first row of data. If the specified column is not a numeric field, the job raises an event. The default is 1.   |

| Description  | How to Set It  |
|--|--|
| Column name to retrieve  | If you set the <b>Select column by number or name?</b> parameter to <code>Name</code> , enter the column name to use as the primary output value. The column you specify must contain numeric data. The value for the specified column's first row of data is returned. If the specified column is not a numeric field, the job raises an event. The default is blank.   |
| Number of rows to display  | Enter the number of rows you want displayed in the Event Properties dialog box. The default is 5.<br><br><b>NOTE:</b> You can enter 0 to indicate no limit (keep all output rows). Currently, the message in the Event Properties dialog box is limited to 32K characters.   |
| Monitor the column's value or rate of change?                            | Set to <code>Value</code> to monitor the column's value. Set to <code>Change</code> to monitor the column's rate of change (per second). The default is <code>Value</code> .   |
| <b>Raise event when threshold is exceeded or not met?</b>                | Select <b>Yes</b> to raise an event when a threshold is crossed. The default is unselected.  |
| Condition: <, =, or >  | Indicate the condition (less than, equal to, or greater than) that you want to check. This parameter is used in conjunction with the <b>Threshold - Value</b> or rate of change parameter to control when the job raises events. The default is <code>&gt;</code> , indicating that the job raises an event if the value retrieved exceeds (is greater than) the value specified in the threshold.   |
| Threshold - Value or rate of change                                      | Enter a threshold for the value or rate you are monitoring. Depending on how you set the <b>Monitor the column's value or rate of change?</b> parameter, this might indicate a threshold for the statistic's value or for the number of times the value changes per second. The value you set here is used in conjunction with the <b>Condition: &lt;, =, or &gt;</b> parameter to control when the job raises events. The default is 1,000. |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Raise event for string found in row results?</b>                      | Select <b>Yes</b> to raise an event if the string you specify below you can find in the row results. The default is unselected.  |
| String(s) to find in results (separate multiple strings with semicolons) | Enter a string (text) to search for in row results. If you enter multiple strings, separate them with semicolons (;) and no spaces. The default is blank.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 15 (yellow event indicator).   |
| Event severity for internal failure                                      | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

## ScheduledJobs

Use this Knowledge Script to monitor the scheduled job status in the New Oracle Scheduler. When the scheduled job fails, the job raises an event.

The account you use to run this script must have `SELECT` permissions for the following tables:

`dba_jobs`

`dba_scheduler_jobs`

(use the New Oracle Scheduler with Oracle RDBMS 10g Release 1 and later.)

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description                                       | How to Set It  |
|---|--|
| Oracle Username                                   | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| Collect data for Oracle Scheduled Jobs?           | Select <b>Yes</b> to collect data for Oracle scheduled jobs. When there are no failed jobs, the default is 0. The default is unselected.   |
| Include Jobs Scheduled with New Oracle Scheduler? | Select <b>Yes</b> to include jobs scheduled with the New Oracle Scheduler.<br><br><b>NOTE:</b> You can use the New Oracle Scheduler with Oracle RDBMS 10g Release 1 and later.<br><br>The default is unselected.   |
| Raise event if Jobs Failed?                       | Select <b>Yes</b> to raise an event when the scheduled jobs fail. The default is selected.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| Event severity for internal failure               | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

## SegmentExtentAvail

Use this Knowledge Script to monitor either the percentage or number of extents (extensions of free space) available to each segment in a tablespace. Use the **Minimum percentage of extents available per segment** or **Minimum number of extents available per segment** parameter to define how many available extents a monitored segment should have.

You can then set multiple threshold values for the minimum number or percentage of extents that should be available for each segment. For example, you might want each segment to have at least 1,400 or 70% of extents available. You can set thresholds for the maximum number of segments that can fall below this value before the job raises an event.

In the above example, if you specify that 70% of extents should be available for each segment, and that 4 segments should be the maximum number allowed to have less than 70% of their extents available, then if 4 segments are found to have less than 70% of their extents available, the job raises an event.



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**NOTE:** The job raises an event only when *both* conditions are met. In the example described above, this script would not raise an event until 4 segments were found that had less than 70% of their extents available.

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The account you use to run this script must have `SELECT` permissions for the following tables:

DBA\_SEGMENTS

V\_\$VERSION

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

---

| Description   | How to Set It  |
|---|--|
| Oracle Username   | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank.               |
| Collect data for number of segments with too few extents available?   | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the number of segments with less than the specified percentage or number of extents available. The default is unselected.                                      |
| <b>Units for extents available per segment</b>                        | Set to <b>Percentage</b> to monitor the percentage of available extents per segment. Set to <b>Number</b> to monitor the number of available extents per segment. The default is Percentage.   |
| Minimum percentage of extents available per segment                   | Enter the minimum percentage of extents that should be available for each segment in a tablespace. This parameter is used when you have selected "Percentage" for the Units for available extents per segment parameter (see above). The default is 80.                                |
| Minimum number of extents available per segment                       | Enter the minimum number of extents that should be available for each segment in a tablespace. This parameter is used when you have selected "Number" for the Units for available extents per segment parameter (see above). The default is 10.  |
| <b>Raise event if threshold is exceeded?</b>                          | Select <b>Yes</b> to raise an event when the number of extents that fail to meet the minimum value you set for available extents within a tablespace exceeds the maximum threshold (see below). The default is Yes.  |
| Threshold - Maximum number of segments with too few extents available | Enter a threshold for the maximum number of segments whose number or percentage of available extents failed to meet the minimum requirement specified above. If the number of segments not meeting this requirement exceeds this threshold, the job raises an event. The default is 0. |

---

| Description   | How to Set It   |
|---|---|
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 35 (magenta event indicator).   |
| <b>Raise event if threshold is exceeded?</b>                          | Select <b>Yes</b> to raise an event when the number of extents that fail to meet the minimum value you set for available extents within a tablespace exceeds the maximum threshold (see below). The default is unselected.  |
| Threshold - Maximum number of segments with too few extents available | Enter a threshold for the maximum number of segments whose number or percentage of available extents failed to meet the minimum requirement specified above. If the number of segments not meeting this requirement exceeds this threshold, the job raises an event. The default is 5.  |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 25 (blue event indicator).  |
| <b>Raise event if threshold is exceeded?</b>                          | Select <b>Yes</b> to raise an event when the number of extents that fail to meet the minimum value you set for available extents within a tablespace exceeds the maximum threshold (see below). The default is unselected.  |
| Threshold - Maximum number of segments with too few extents available | Enter a threshold for the maximum number of segments whose number or percentage of available extents failed to meet the minimum requirement specified above. If the number of segments not meeting this requirement exceeds this threshold, the job raises an event. The default is 10. |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 15 (yellow event indicator).  |
| <b>Raise event if threshold is exceeded?</b>                          | Select <b>Yes</b> to raise an event when the number of extents that fail to meet the minimum value you set for available extents within a tablespace exceeds the maximum threshold (see below). The default is unselected.  |
| Threshold - Maximum number of segments with too few extents available | Enter a threshold for the maximum number of segments whose number or percentage of available extents failed to meet the minimum requirement specified above. If the number of segments not meeting this requirement exceeds this threshold, the job raises an event. The default is 50. |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| Event severity for internal failure                                   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |

## SetMonitoringOptions

Use this Knowledge Script to set the various monitoring options available with AppManager for Oracle (UNIX). You can set the location where files reside whose filenames contain the names of databases to be “blackened out” (not monitored) while they are down due to scheduled activities such as maintenance. Enter a full path to a directory containing filenames whose names indicate which databases to exclude from OracleUNIX jobs.

To reset this script, you can enable one or more parameters but leave their values blank and then run the job. For example, if you enable the **Set option for blackout monitoring?** parameter but leave the next parameter, **Full path to directory with database names to exclude**, blank, the next time you run the job, you overwrite the previous value with a blank value. This is the recommended way to reset the blackout monitoring option or any of the clustering options.

This script also lets you specify whether to monitor tablespaces with temporary contents, and/or those with autoextensible datafiles.

---

**NOTE:** Use this script to specify monitoring options for running jobs in a clustered environment. AppManager for Oracle (UNIX) supports monitoring both RAC and non-RAC clustered environments. For details, see the topics below.

---

## Monitoring in a RAC Clustered Environment

An Oracle RAC cluster consists of one database and multiple Oracle instances that share that common database. Each instance runs on a separate node. The Oracle RAC software knows which instances are active and which are inactive.

The following information must be supplied by the SetMonitoringOptions script to enable monitoring in a RAC environment:

- ♦ Service name for the RAC cluster
- ♦ Directory containing the `tnsnames.ora` file (only if this file is in the non-default location). The default location is `$ORACLE_HOME/network/admin`.

---

**NOTE:** AppManager for Oracle (UNIX) requires that you configure Transparent Application Failover (TAF). TAF is an Oracle configuration that allows a client to attempt to connect to an instance, and if that attempt fails, to attempt to connect to a different instance. TAF is configured by default during Oracle RAC installations, but in rare cases might subsequently have been manually disabled. In this scenario, you must reconfigure TAF to enable monitoring by AppManager for Oracle (UNIX). For more information, see the *Oracle Net Services Administrator's Guide*.

---

## Monitoring in a Non-RAC Clustered Environment

You can also use Oracle in non-RAC clusters. In this kind of cluster, third-party cluster software (VERITAS, Sun Cluster, etc.) installed on the nodes controls which Oracle instances are active. This software makes a required resource available only on active nodes. The required available resource is a file, directory, or device that resides in the file system.

The full path to this resource must be supplied by the SetMonitoringOptions script to enable monitoring in a non-RAC environment.

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

# Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It  |
|--|--|
| <b>Set option for blackout monitoring?</b>                                       | Select <b>Yes</b> if you should set blackout location upon executing this job iteration. By default, this parameter is not selected.   |
| Full path to directory with database names to exclude                            | Specify the directory where files reside whose filenames include database names for databases that should not be monitored (databases to “black out”). The default is blank.   |
| <b>Set option for monitoring temporary tablespaces?</b>                          | Select <b>Yes</b> if you should set the option for monitoring tablespaces with temporary contents upon executing this job iteration. The default is unselected.  |
| Monitor temporary tablespaces?   | Select <b>Yes</b> to monitor those tablespaces with temporary contents. Clear the box to skip monitoring such tablespaces. The default is Yes.   |
| <b>Set option for monitoring autoextensible tablespaces?</b>                     | Select <b>Yes</b> to set the option for monitoring tablespaces with autoextensible datafiles upon executing this job iteration. The default is unselected.   |
| Monitor tablespaces with autoextensible datafiles?                               | Select <b>Yes</b> to monitor those tablespaces with datafiles that autoextend. Clear the box to skip monitoring such tablespaces. The default is Yes.  |
| <b>Set option for monitoring Oracle RAC?</b>                                     | Select <b>Yes</b> to monitor computers running Oracle RAC upon executing this job iteration. The default is unselected.  |
| Service name for the RAC cluster   | Enter the service name identifying the Oracle RAC environment upon which the job will run. This allows the Oracle UNIX/Linux managed object to connect to Oracle on the host and determine which nodes are active. The default is blank.   |
| Directory containing <code>tnsnames.ora</code> file (if not in default location) | Enter the path to the folder containing the <code>tnsnames.ora</code> file. This is normally what the <code>\$TNS_ADMIN</code> environment variable is set to for Oracle to resolve service names. The default location is normally: <code>\$ORACLE_HOME/network admin</code> . The default is blank.<br><br><b>NOTE:</b> The default location is used if a directory is not specified here. |
| <b>Set option for monitoring non-RAC cluster?</b>                                | Select <b>Yes</b> to monitor computers running as part of a cluster where Oracle RAC is not installed upon executing this job. The default is unselected.  |
| Path to a required available resource  | Enter the path to a resource (file, directory, device, etc.) that must be available to the computer running the Oracle UNIX/Linux managed object in order for jobs to execute successfully. This can be a resource that a node in a cluster requires in order for that node to have access to Oracle. The default is blank.  |
| <b>Raise event if unable to set monitoring options?</b>                          | Select <b>Yes</b> to raise an event when the monitoring options could not be set. The default is Yes.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 15 (yellow event indicator).   |
| <b>Raise event to display options currently set?</b>                             | Select <b>Yes</b> to raise an event providing a summary of the current settings for monitoring options. The default is unselected.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 40 (magenta event indicator).  |

# SortOverflowRatio

Use this Knowledge Script to monitor the sort overflow ratio. This ratio compares the number of sorts that are using temporary segments to the total number of sorts. If the sort overflow ratio exceeds the threshold you set, the job raises an event.

An increase in the sort overflow ratio indicates that more sort operations are allocating work space on disk. If an excessive number of sorts are allocating work space on disk, you might want to increase the sort area size.

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$SYSSTAT

V\_\$VERSION

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description                             | How to Set It  |
|---|--|
| Oracle Username                         | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank.   |
| Collect data for sort overflow ratio?   | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the script returns the ratio of the number of sorts using temporary segments versus the number that do not. For example, a ratio of <code>.75</code> indicates that 3 out of 4 sorts are using temporary segments. The default is unselected. |
| Raise event if threshold is exceeded?   | Select <b>Yes</b> to raise an event if the sort overflow ratio exceeds the threshold you set. The default is Yes.  |
| Threshold - Maximum sort overflow ratio | Enter a threshold for the maximum sort overflow ratio allowed before the job raises an event. The default is <code>.75</code> .  |
| Severity                                | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).  |
| Event severity for internal failure     | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

# SysStat

Use this Knowledge Script to monitor statistics from a database's `V_$SYSSTAT` table. This table stores all the key statistics for a database. You specify the statistic to monitor, and the value and condition (greater than, less than, or equal to) to check. If the **value** or **change rate** (changes per second) of a monitored statistic crosses a threshold, the job raises an event.

The account you use to run this script must have `SELECT` permissions for the following tables:

`V_$SYSSTAT`

`V_$VERSION`

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It  |
|--|--|
| Oracle Username  | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank.   |
| Collect data for a <code>V_\$SYSSTAT</code> statistic?               | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the current value of the specified statistic at each interval. The default is unselected.  |
| <code>V_\$SYSSTAT</code> statistic to monitor                        | Enter the name of the statistic you want to monitor—for example, <code>USER CALLS</code> .<br><br>For information about the fields in the <code>V_\$SYSSTAT</code> table, see your Oracle RDBMS documentation (for example, in the Oracle8 Reference, see “Appendix C: Statistics Descriptions”).<br><br>The default is <code>execute count</code> . |
| Monitor change rate, or value of statistic?                          | When you select <code>Change rate</code> , the script monitors the number of times the value of the monitored statistic changes per second. When you select <code>Value</code> , the script monitors the value of the statistic. The default is <code>Change Rate</code> .   |
| Raise event if threshold is exceeded?                                | Select <b>Yes</b> to raise an event if the threshold you set is crossed. The default is unselected.  |
| Condition: <code>&lt;</code> , <code>=</code> , or <code>&gt;</code> | Indicate the condition (less than, equal to, or greater than) you want to check. This parameter is used in conjunction with the <b>Threshold - Change rate or value</b> parameter to control when the job raises an event. The default is <code>&gt;</code> (greater than).  |

| Description                         | How to Set It   |
|-------------------------------------|---|
| Threshold - Change rate or value    | Enter a threshold value or rate for the specified statistic. Depending on how you set the <b>Monitor change rate or value of statistic?</b> parameter, this might indicate a threshold for the value of the statistic or for the number of changes in that value per second. The value you set here is used in conjunction with the <b>Condition: &lt;, =, or &gt;</b> parameter to control when the job raises an event. The default is 100. |
| Severity                            | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| Event severity for internal failure | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |

## TablespaceAvail

Use this Knowledge Script to monitor the disk space used by Oracle tablespaces.

This script can monitor the following:

- ◆ The amount of free disk space available for a tablespace (as a percentage, absolute amount, or both)
- ◆ The amount of disk space used by a tablespace (as a percentage, absolute amount, or both)
- ◆ The size of a tablespace

This script monitors only the disk space allocated to an Oracle database, not the total disk space on the computer where Oracle RDBMS is running.

By default, this script is set to monitor the percentage of free disk space available to a tablespace and the percentage of disk space used by a tablespace. You can choose any combination of monitoring options and set multiple thresholds for each one.

The account you use to run this script must have `SELECT` permissions for the following tables:

```
DBA_DATA_FILES
DBA_FREE_SPACE
DBA_TABLESPACES
DBA_TEMP_FILES
V_$SORT_SEGMENT
V_$VERSION
```

## Resource Objects

Individual Oracle RDBMS UNIX Tablespace icons. When run on an individual tablespace, the Knowledge Script job monitors only that tablespace.

## Default Schedule

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

# Setting Parameter Values

Set the following parameters as needed:

| Description   | How to Set It  |
|---|--|
| Oracle Username   | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank.   |
| Collect data for amount of disk space used and free, and total tablespace size? | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, and if monitoring of each metric is enabled, the Knowledge Script returns the following statistics for each tablespace on which the script is running: <ul data-bbox="662 632 1247 831" style="list-style-type: none"><li>◆ percentage of disk space free within the tablespace</li><li>◆ percentage of disk space used within the tablespace</li><li>◆ amount of disk space free within the tablespace</li><li>◆ amount of disk space used within the tablespace</li><li>◆ total size of tablespace</li></ul> The default is unselected. |



| Description  | How to Set It   |
|--|---|
| Absolute path of the file containing comma separated information related to tablespaces to be excluded | <p>This parameter allows you to exclude events for specified tablespaces until a certain threshold is reached (eliminating certain events).</p> <p>Each line in the excludes file should be for a single tablespace and may contain up to 5 threshold values that are to be overridden for the tablespace. Any threshold that is not to be overridden may be left blank.</p> <p>The fields for each line in the exclude file are comma-delimited.</p> <p>Enter the absolute path of the file containing information related to tablespaces that you want to exclude from raising events.</p> <p>Specify the required values in the following token entries:</p> <ul style="list-style-type: none"> <li>◆ 1 - name of the tablespace.</li> <li>◆ 2 - the threshold value for percentage of free space within the tablespace from which you can raise events.</li> <li>◆ 3 - the threshold value for percentage of used space in the tablespace from which you can raise events.</li> <li>◆ 4 - the threshold value for amount of free space within the tablespace from which you can raise events.</li> <li>◆ 5 - the threshold value for amount of used space within the tablespace from which you can raise events.</li> <li>◆ 6 - the threshold value for total size of the tablespace from which you can raise events.</li> </ul> <p>The default is blank.</p> <pre>system, 95, 10, 100,,3000 users,80,10,,5,4000</pre> <p><b>NOTE:</b> In this example, four of the thresholds are overridden for the system tablespace and one is unchanged. By specifying a different threshold, any thresholds specified that are below/above the threshold (depending on whether or not the lower or higher values are good) the one specified in the Values tab will be ignored.</p> <p>As an example, assume that the percentage of free space within a tablespace is being monitored and that the user has specified all four threshold values of 20, 10, 5, and 1.</p> <p>Assume an entry in the excludes file specifies a value of 5 for the threshold for the tablespace system. In this case, for the system tablespace the 20 and 10 thresholds will be ignored (excluded) because an event will only be generated when the percentage of free space for the system tablespace is below one of the thresholds and is also below threshold specified for system in the excludes file.</p> <p>If you do not want to specify a threshold value for a particular token, leave it empty as noted in the preceding example.</p> |
| <b>Monitor percentage of free space within tablespace?</b>   | Select <b>Yes</b> to monitor free space as a percentage. Expand this parameter to see threshold and severity parameters. The default is Yes.  |
| <b>Raise event if threshold is not met?</b>  | Select <b>Yes</b> to raise an event when the percentage of free disk space within a tablespace fails to meet the minimum threshold. The default is Yes.   |

| Description  | How to Set It  |
|--|--|
| Threshold - Minimum percentage of free space               | Enter a threshold for the minimum percentage of free disk space within the tablespace that must be found to prevent an event from being raised. The default is 5                                 |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Raise event if threshold is not met?</b>                | Select <b>Yes</b> to raise an event when the percentage of free disk space within a tablespace fails to meet the minimum threshold (see below). The default is unselected..                      |
| Threshold - Minimum percentage of free space               | Enter a threshold for the minimum percentage of free disk space within the tablespace that must be found to prevent an event from being raised. The default is 20.                               |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 15 (yellow event indicator).   |
| <b>Raise event if threshold is not met?</b>                | Select <b>Yes</b> to raise an event when the percentage of free disk space within a tablespace fails to meet the minimum threshold (see below). The default is unselected.                       |
| Threshold - Minimum percentage of free space               | Enter a threshold for the minimum percentage of free disk space within the tablespace that must be found to prevent an event from being raised. The default is 40.                               |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 25 (blue event indicator).   |
| <b>Raise event if threshold is not met?</b>                | Select <b>Yes</b> to raise an event when the percentage of free disk space within a tablespace fails to meet the minimum threshold (see below). The default is unselected.                       |
| Threshold - Minimum percentage of free space               | Enter a threshold for the minimum percentage of free disk space within the tablespace that must be found to prevent an event from being raised. The default is 60.                               |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 35 (magenta event indicator).  |
| <b>Monitor percentage of space used within tablespace?</b> | Select <b>Yes</b> to monitor used disk space as a percentage. Expand this parameter to see threshold and severity parameters. The default is unselected.   |
| <b>Raise event if threshold is exceeded?</b>               | Select <b>Yes</b> to raise an event when the percentage of used disk space within a tablespace exceeds the maximum threshold. The default is unselected.   |
| Threshold - Maximum percentage of space used               | Enter a threshold for the maximum percentage of disk space that the tablespace can use. If the percentage of used disk space exceeds this threshold, the job raises an event. The default is 95  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Raise event if threshold is exceeded?</b>               | Select <b>Yes</b> to raise an event when the percentage of used disk space within a tablespace exceeds the maximum threshold (see below). The default is unselected.                             |
| Threshold - Maximum percentage of space used               | Enter a threshold for the maximum percentage of disk space that the tablespace can use. If the percentage of used disk space exceeds this threshold, the job raises an event. The default is 80. |

| Description  | How to Set It  |
|--|--|
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 15 (yellow event indicator).   |
| <b>Raise event if threshold is exceeded?</b>           | Select <b>Yes</b> to raise an event when the percentage of used disk space within a tablespace exceeds the maximum threshold (see below). The default is unselected.                             |
| Threshold - Maximum percentage of space used           | Enter a threshold for the maximum percentage of disk space that the tablespace can use. If the percentage of used disk space exceeds this threshold, the job raises an event. The default is 60. |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 25 (blue event indicator).   |
| <b>Raise event if threshold is exceeded?</b>           | Select <b>Yes</b> to raise an event when the percentage of used disk space within a tablespace exceeds the maximum threshold (see below). The default is unselected.                             |
| Threshold - Maximum percentage of space used           | Enter a threshold for the maximum percentage of disk space that the tablespace can use. If the percentage of used disk space exceeds this threshold, the job raises an event. The default is 40. |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 35 (magenta event indicator).  |
| <b>Monitor amount of free space within tablespace?</b> | Select <b>Yes</b> to monitor free space as an amount, in MB. Expand this parameter to see threshold and severity parameters. The default is unselected.  |
| <b>Raise event if threshold is not met?</b>            | Select <b>Yes</b> to raise an event when the percentage of free disk space within a tablespace fails to meet the minimum threshold (see below). The default is unselected.                       |
| Threshold - Minimum amount of free space               | Enter a threshold for the minimum amount of free disk space within the tablespace that must be found to prevent an event from being raised. The default is 50.                                   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Raise event if threshold is not met?</b>            | Select <b>Yes</b> to raise an event when the percentage of free disk space within a tablespace fails to meet the minimum threshold (see below). The default is unselected.                       |
| Threshold - Minimum amount of free space               | Enter a threshold for the minimum amount of free disk space within the tablespace that must be found to prevent an event from being raised. The default is 100.                                  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 15 (yellow event indicator).   |
| <b>Raise event if threshold is not met?</b>            | Select <b>Yes</b> to raise an event when the percentage of free disk space within a tablespace fails to meet the minimum threshold (see below). The default is unselected.                       |
| Threshold - Minimum amount of free space               | Enter a threshold for the minimum amount of free disk space within the tablespace that must be found to prevent an event from being raised. The default is 200 MB.                               |

| Description  | How to Set It   |
|--|---|
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event.<br><br>The default severity level is 25 (blue event indicator).  |
| <b>Raise event if threshold is not met?</b>            | Select <b>Yes</b> to raise an event when the percentage of free disk space within a tablespace fails to meet the minimum threshold (see below). By default, the job does not raise events.    |
| Threshold - Minimum amount of free space               | Enter a threshold for the minimum amount of free disk space within the tablespace that must be found to prevent an event from being raised. The default is 500 MB.                            |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 35 (magenta event indicator).   |
| <b>Monitor amount of space used within tablespace?</b> | Select <b>Yes</b> to monitor used disk space as an amount, in MB. Expand this parameter to see threshold and severity parameters. The default is unselected.                                  |
| <b>Raise event if threshold is exceeded?</b>           | Select <b>Yes</b> to raise an event when the amount of used disk space within a tablespace exceeds the maximum threshold (see below). The default is unselected.                              |
| Threshold - Maximum amount of space used               | Enter a threshold for the maximum amount of disk space that the tablespace can use. If the amount of used disk space exceeds this threshold, the job raises an event. The default is 1000 MB. |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| <b>Raise event if threshold is exceeded?</b>           | Select <b>Yes</b> to raise an event when the amount of used disk space within a tablespace exceeds the maximum threshold (see below). The default is unselected.                              |
| Threshold - Maximum amount of space used               | Enter a threshold for the maximum amount of disk space that the tablespace can use. If the amount of used disk space exceeds this threshold, the job raises an event. The default is 400 MB.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 15 (yellow event indicator).  |
| <b>Raise event if threshold is exceeded?</b>           | Select <b>Yes</b> to raise an event when the amount of used disk space within a tablespace exceeds the maximum threshold (see below). The default is unselected.                              |
| Threshold - Maximum amount of space used               | Enter a threshold for the maximum amount of disk space that the tablespace can use. If the amount of used disk space exceeds this threshold, the job raises an event. The default is 200 MB.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 25 (blue event indicator).  |
| <b>Raise event if threshold is exceeded?</b>           | Select <b>Yes</b> to raise an event when the amount of used disk space within a tablespace exceeds the maximum threshold (see below). The default is unselected.                              |
| Threshold - Maximum amount of space used               | Enter a threshold for the maximum amount of disk space that the tablespace can use. If the amount of used disk space exceeds this threshold, the job raises an event. The default is 100 MB.  |

| Description                                  | How to Set It  |
|--|--|
| Severity                                     | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 35 (magenta event indicator).  |
| <b>Monitor total size of tablespace?</b>     | Select <b>Yes</b> to monitor the total size, in MB, of the tablespace. Expand this parameter to see threshold and severity parameters. The default is unselected.                    |
| <b>Raise event if threshold is exceeded?</b> | Select <b>Yes</b> to raise an event when the total size of the tablespace exceeds the maximum threshold (see below). The default is unselected.                                      |
| Threshold - Maximum size of tablespace       | Enter a threshold for the maximum size (in MB) that the tablespace can reach. If the size of the tablespace exceeds this threshold, the job raises an event. The default is 2000 MB. |
| Severity                                     | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Raise event if threshold is exceeded?</b> | Select <b>Yes</b> to raise an event when the total size of the tablespace exceeds the maximum threshold (see below). The default is unselected.                                      |
| Threshold - Maximum size of tablespace       | Enter a threshold for the maximum size (in MB) that the tablespace can reach. If the size of the tablespace exceeds this threshold, the job raises an event. The default is 800 MB.  |
| Severity                                     | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 15 (yellow event indicator).   |
| <b>Raise event if threshold is exceeded?</b> | Select <b>Yes</b> to raise an event when the total size of the tablespace exceeds the maximum threshold (see below). The default is unselected.                                      |
| Threshold - Maximum size of tablespace       | Enter a threshold for the maximum size (in MB) that the tablespace can reach. If the size of the tablespace exceeds this threshold, the job raises an event. The default is 400 MB.  |
| Severity                                     | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 25 (blue event indicator).   |
| <b>Raise event if threshold is exceeded?</b> | Select <b>Yes</b> to raise an event when the total size of the tablespace exceeds the maximum threshold (see below). The default is unselected.                                      |
| Threshold - Maximum size of tablespace       | Enter a threshold for the maximum size (in MB) that the tablespace can reach. If the size of the tablespace exceeds this threshold, the job raises an event. The default is 200 MB.  |
| Severity                                     | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 35 (magenta event indicator).  |
| Event severity for internal failure          | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

## TopCpuUsers

Use this Knowledge Script to monitor the CPU time for current user sessions. If the CPU utilization exceeds the threshold, the job raises an event.

You can specify the number of user sessions with the highest CPU utilization to display in the Event Properties dialog box. The Event Properties dialog box includes the CPU usage for each of the top *N* sessions, username, session ID, and program name. Enter 0 to display all user sessions.

This script requires that the Oracle `timed_statistics` parameter be turned on (set to `TRUE`) for the database you are monitoring.

The account you use to run this script must have `SELECT` permissions for the following tables:

DBA\_USERS  
V\_\$SESSION  
V\_\$SESSTAT  
V\_\$STATNAME  
V\_\$VERSION

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description   | How to Set It  |
|---|--|
| Oracle Username   | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| Collect data for CPU usage of top N user sessions?        | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the total CPU time for the top <i>N</i> users. The default is unselected.  |
| Number of user sessions to display                        | Specify the number of user sessions you want displayed in the Event Properties dialog box. Enter <b>0</b> if you want information for all user sessions. The default is 15.  |
| <b>Raise event if threshold is exceeded?</b>              | Select <b>Yes</b> raise an event if the CPU usage of any user session exceeds the threshold you set. The default is unselected.  |
| Threshold - Maximum amount of CPU time for a user session | Enter a threshold for the maximum number of CPU cycles per 1/100th of a second that a single user session can use before the job raises an event. The default is 50.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10.  |
| Event severity for internal failure                       | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

# TopIOUsers

Use this Knowledge Script to monitor physical reads and writes (I/O) for current user sessions. If the number of physical reads/writes per second (the physical read/write operations rate) exceeds the threshold you set, the job raises an event.

You can specify the number of user sessions with the highest physical read/write operations rate to display in the Event Properties dialog box. Information in the Event Properties dialog box includes the physical reads/writes per second for each of the top *N* sessions, username, session ID, and program name.

This script requires that the Oracle `timed_statistics` parameter is turned on for the database you are monitoring.

The account you use to run this script must have `SELECT` permissions for the following tables:

DBA\_USERS  
V\_\$SESSION  
V\_\$SESSTAT  
V\_\$STATNAME  
V\_\$VERSION

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description   | How to Set It  |
|---|--|
| Oracle Username                                       | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| Collect data for I/O activity of top N user sessions? | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the total number of physical reads/writes per second for the top <i>N</i> users. The default is unselected.                                      |
| Number of user sessions to display                    | Specify the number of top user sessions you want displayed in the Event Properties dialog box. Enter 0 if you want to see information for all user sessions. The default is 10.  |
| <b>Raise event if threshold is exceeded?</b>          | Select <b>Yes</b> to raise an event if the physical read/write operations of any single user session exceed the threshold you set. The default is Yes.   |

| Description  | How to Set It  |
|--|--|
| Threshold - Maximum read/write operations for a user session | Enter a threshold for the maximum number of physical reads/writes per second allowed before the job raises an event. The default is 300. |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10.                                  |
| Event severity for internal failure                          | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).             |

## TopLockUsers

Use this Knowledge Script to monitor the current number of user-held locks on an Oracle database. If the number of locks exceeds the threshold, the job raises an event.

You can specify the number of user sessions holding the most locks to display in the Event Properties dialog box, or enter 0 to display all sessions. Information in the Event Properties dialog box includes the number of locks held by each session, username, session ID, and program name.

The account you use to run this script must have `SELECT` permissions for the following tables:

DBA\_USERS

V\_\$LOCK

V\_\$SESSION

V\_\$VERSION

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description   | How to Set It  |
|---|--|
| Oracle Username                                     | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| Collect data for locks held by top N user sessions? | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the current number of user-held locks by the user sessions with the highest number of locks. The default is unselected.                          |



| Description  | How to Set It  |
|--|--|
| Number of user sessions to display                         | Specify the number of user sessions with the most locks that you want displayed in the Event Properties dialog box. Enter 0 to display all user sessions. The default is 15. |
| <b>Raise event if threshold is exceeded?</b>               | Select <b>Yes</b> to raise an event if the number of user-held locks on the server exceeds the threshold you set. The default is Yes.  |
| Threshold - Maximum number of locks held by a user session | Enter a threshold for the maximum number of user-held locks on an Oracle RDBMS. The default is 35.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10.  |
| Event severity for internal failure                        | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

## TopMemoryUsers

Use this Knowledge Script to monitor memory utilization (User Global Area and Program Global Area) for current user sessions. If the memory utilization exceeds the threshold, the job raises an event.

You can specify the number of user sessions with the highest memory usage to display in the Event Properties dialog box. Information in the Event Properties dialog box includes the memory in bytes for each session, username, session ID, and program name. Enter 0 for the **Number of top user sessions to display** parameter if you want to include memory utilization statistics for all user sessions in the event details.

The account you use to run this script must have `SELECT` permissions for the following tables:

`DBA_USERS`

`V_$SESSION`

`V_$SESSTAT`

`V_$STATNAME`

`V_$VERSION`

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

# Setting Parameter Values

Set the following parameters as needed:

| Description   | How to Set It   |
|---|---|
| Oracle Username   | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use SYSDBA authentication, leave this parameter blank. The default is blank.   |
| Collect data for memory usage by top N user sessions?   | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the total memory usage (in MB) for the top N user sessions. You determine how many sessions are included in this total by setting the <b>Number of top user sessions to display</b> parameter. The default is unselected. |
| Number of user sessions to display                      | Specify the number of user sessions with the highest memory utilization that you want displayed in the event detail message. Enter 0 if you want to see information for all user sessions. The default is 15.   |
| <b>Raise event if threshold is exceeded?</b>            | Select <b>Yes</b> to raise an event if the total memory usage of any user session exceeds the threshold you set. The default is unselected.   |
| Threshold - Maximum amount of memory for a user session | Enter a threshold for the maximum total memory usage (in MB) for any user session. The default is 10 MB.  |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).   |
| Event severity for internal failure                     | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |

## TopResourceConsumingSQL

Use this Knowledge Script to determine which SQL queries for Oracle database are consuming the most resources on their UNIX hosts. This script identifies the top N queries consuming the most memory, disk I/O, and CPU time. The job raises an event with results of the job, and/or if the job results in a failure to retrieve data.

The account you use to run this script must have `SELECT` permissions for the following tables:

DBA\_USERS

V\_\$SQLAREA

V\_\$VERSION

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and collects the N SQL queries using the most CPU time, disk I/O, and memory.

## Default Schedule

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

# Setting Parameter Values

Set the following parameters as needed:

| Description   | How to Set It  |
|---|--|
| Oracle Username   | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use SYSDBA authentication, leave this parameter blank. The default is blank.  |
| Collect data for top resource-consuming SQL statements? | Set <b>Yes</b> to collect data for charts and reports. If data collection is enabled, returns the top <i>N</i> SQL statements consuming the most resources. The parameters below let you choose which resources to monitor. Set a value for <i>N</i> using the <b>Number of SQL statements to retrieve</b> parameter. The default is unselected. |
| Monitor SQL statements consuming the most disk I/O?     | Select <b>Yes</b> to monitor SQL statements consuming the most disk I/O. The default is Yes.   |
| Monitor SQL statements consuming the most memory?       | Select <b>Yes</b> to monitor SQL statements consuming the most memory. The default is Yes.   |
| Monitor SQL statements consuming the most CPU time?     | Select <b>Yes</b> to monitor SQL statements consuming the most CPU time. The default is Yes.<br><br><b>NOTE:</b> You cannot use this metric on Oracle databases prior to version 9.0   |
| Number of SQL statements to retrieve                    | The number of most executed SQL queries to be retrieved by the job. The default is 10. The maximum is 30.  |
| <b>Raise event if error occurs during retrieval?</b>    | Select <b>Yes</b> to raise an event when an error occurs during job execution. The default is Yes.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 10 (red event indicator).  |
| <b>Raise event with results from query?</b>             | Select <b>Yes</b> to raise an event with the results of the query. The default is unselected.  |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 40 (magenta event indicator).  |
| Event severity for internal failure                     | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

## Transaction

Use this Knowledge Script to monitor the following parameters:

- ♦ **Active Transactions:** retrieve the number of active transactions that are ongoing, and the maximum number of transactions that can be executed concurrently (set as an initialization parameter). This script computes a ratio, expressed as a percentage, of the two numbers. When you enable data collection, the percentage is stored in the repository. You can set multiple thresholds for the maximum ratio, and the job raises an event when any of the thresholds exceeds the value you specified.

- ♦ **Call Rate:** the demand placed on a database instance from all sources. This demand is determined by tracking the number of database calls per second from all applications and processes accessing the database instance. The database calls that are tracked include `Parse`, `Execute`, and `Fetch` statements. These calls are sometimes described as **user calls**. When the call rate (and thus the workload demand on the server) exceeds the threshold you set, the job raises an event.
- ♦ **Calls Per Transaction:** the demand placed on a database instance by each transaction. This demand is determined by tracking the number of database calls (for example, to parse, execute, and fetch data) per committed transaction. When the number of database requests per transaction exceeds the threshold, the job raises an event.
- ♦ **Transaction Rate:** the transaction rate for an Oracle database. This script tracks the number of transactions per second to provide a basic measurement of application workload. In addition, this script raises an event if the number of transactions per second exceeds the threshold you set.

Changes to your applications or to application usage patterns can affect the transaction rate, but in general, an increase in the transaction rate suggests an increase in overall server load. If you see a decrease in the transaction rate with the same number of connected users, it can indicate that you need to do some database tuning or investigate the reasons for the changes.

The account you use to run this script must have `SELECT` permissions for the following tables:

`V_$SYSSTAT`

`V_$VERSION`

`V_$PARAMETER`

`V_$TRANSACTION`

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description                           | How to Set It  |
|---------------------------------------|--|
| Oracle Username                       | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| <b>Monitoring</b>                     |  |
| Monitor ratio of active transactions? | Select <b>Yes</b> to monitor the ratio of active transactions. The default is Yes.   |
| Monitor call rate?                    | Select <b>Yes</b> to monitor the ratio of call rate. The default is Yes.   |

| <b>Description</b>  | <b>How to Set It</b>  |
|---|---|
| Monitor calls made per transaction?   | Select <b>Yes</b> to monitor the calls made per transaction. The default is Yes.  |
| Monitor transaction rate?   | Select <b>Yes</b> to monitor the transaction rate. The default is Yes.  |
| <b>Event Notification</b>   |   |
| <b>Event option for the ratio of active transactions to maximum concurrent transactions</b> |   |
| <b>Raise event if ratio exceeds threshold?</b>  | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is Yes.   |
| Threshold - ratio of active transactions to max concurrent transactions                     | Specify a threshold for the maximum ratio of active transactions to maximum concurrent transactions, expressed as a percentage. The default is 95.                                |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 5 (red event indicator).      |
| <b>Raise event if ratio exceeds threshold?</b>  | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is unselected.  |
| Threshold - ratio of active transactions to max concurrent transactions                     | Specify a threshold for the maximum ratio of active transactions to maximum concurrent transactions, expressed as a percentage. The default is 80.                                |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 15 (yellow event indicator).  |
| <b>Raise event if ratio exceeds threshold?</b>  | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is unselected.  |
| Threshold - ratio of active transactions to max concurrent transactions                     | Specify a threshold for the maximum ratio of active transactions to maximum concurrent transactions, expressed as a percentage. The default is 60%.                               |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 25 (blue event indicator).    |
| <b>Raise event if ratio exceeds threshold?</b>  | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is unselected.  |
| Threshold - ratio of active transactions to max concurrent transactions                     | Specify a threshold for the maximum ratio of active transactions to maximum concurrent transactions, expressed as a percentage. The default is 40%.                               |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 35 (magenta event indicator). |
| <b>Event option for call rate</b>   |   |
| <b>Raise event if threshold is exceeded?</b>  | Select <b>Yes</b> to raise an event if the maximum number of calls per second exceeds the threshold. The default is Yes.  |
| Threshold - Maximum call rate   | Enter a threshold for the maximum number of calls per second allowed before the job raises an event. The default is 100.  |

| Description   | How to Set It   |
|---|---|
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| <b>Event option for calls made per transaction</b>                                    |   |
| <b>Raise event if threshold is exceeded?</b>  | Select <b>Yes</b> to raise an event if the number of calls per transaction exceeds the threshold. The default is Yes.   |
| Threshold - Maximum number of calls per transaction                                   | Enter a threshold for the maximum number of database calls per transaction allowed before the job raises an event. The default is 100.  |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| <b>Event option for transaction rate</b>  |   |
| <b>Raise event if threshold is exceeded?</b>  | Select <b>Yes</b> to raise an event if the transaction rate exceeds the threshold you set. The default is Yes.  |
| Threshold - Maximum transaction rate  | Enter a threshold for the maximum number of transactions per second allowed before an event is raised. The default is 1.  |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).   |
| <b>Collect Data</b>   |   |
| Collect data for the ratio of active transactions to maximum concurrent transactions? | Select <b>Yes</b> to collect data for charts and reports. If you enable data collection, the Knowledge Script returns the ratio of active transactions to maximum concurrent transactions as a percentage (%). The default is unselected. |
| Collect data for call rate?   | Select <b>Yes</b> to collect data for charts and reports. If you enable data collection, the Knowledge Script returns the total user calls per second for all work sources. The default is unselected.                                    |
| Collect data for calls made per transaction?  | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the current transaction rate (transactions/second). The default is unselected.                                    |
| Collect data for transaction rate?  | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the current transaction rate (transactions/second). The default is unselected.                                    |
| Event severity for internal failure   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |

## TransactionRate

Use this Knowledge Script to monitor the transaction rate for an Oracle database. This script tracks the number of transactions per second to provide a basic measurement of application workload. In addition, this script raises an event if the number of transactions per second exceeds the threshold you set.

Changes to your applications or to application usage patterns can affect the transaction rate, but in general, an increase in the transaction rate suggests an increase in overall server load. If you see a decrease in the transaction rate with the same number of connected users, it can indicate that you need to do some database tuning or investigate the reasons for the changes.

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$\$SYSSTAT

V\_\$\$VERSION

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description                                  | How to Set It  |
|--|--|
| Oracle Username                              | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| Collect data for transaction rate?           | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the current transaction rate (transactions/second).The default is unselected.  |
| <b>Raise event if threshold is exceeded?</b> | Select <b>Yes</b> to raise an event if the transaction rate exceeds the threshold you set. The default is Yes.   |
| Threshold - Maximum transaction rate         | Enter a threshold for the maximum number of transactions per second allowed before an event is raised. The default is 1.   |
| Severity                                     | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).  |
| Event severity for internal failure          | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

## UpdateInstances

Use this Knowledge Script to update the list of Oracle databases/instances on each UNIX host.

**NOTE:** This script cannot be run to update environments in all cases. If you do not use a `listener.ora` file to maintain listener information, or if you install a new Oracle version on the host, we recommend that you log in to the host and run the `ckoracle` utility. This utility will prompt you to enter required information for newly added or deleted Oracle databases/instances.

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

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**NOTE:** You must run the Discovery\_OracleUNIX script after running the UpdateInstances script to pick up any changes in the environment.

If databases have been deleted, you must delete the Oracle UNIX objects from the TreeView. This cannot be done by the module or AppManager itself.

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## Default Schedule

The default interval for this script is Run Once.

## Setting Parameter Values

Set the following parameters as needed:

---

| Description  | How to Set It  |
|--|--|
| <b>Required Parameter(s)</b>   |  |
| Oracle Home to use as the client (usually newest Oracle version)   | Specify the Oracle Home directory that should be used as the client. If multiple versions of Oracle RDBMS are installed on the host, this is usually the Oracle Home directory of the newest version of Oracle. The default is blank.  |
| <b>Optional Parameter(s)</b>   |  |
| Location of <code>sqlnet.ora</code> , <code>listener.ora</code> , <code>tnsnames.ora</code> ( <code>TNS_ADMIN</code> ) | Specify the directory where the Oracle Net/Net 8 files reside (such as the <code>tnsnames.ora</code> , <code>listener.ora</code> , and <code>sqlnet.ora</code> ). It is only necessary to set this parameter when the files are not in the default location for each Oracle Home ( <code>\$ORACLE_HOME/network/admin</code> ). The default is blank. |
| Oracle Username  | Enter the username that OracleUNIX jobs will use for authentication with Oracle RDBMS during execution. This username will be passed to the NetIQ Security Manager. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank.   |
| Password for the Oracle Username   | Specify the password for the Oracle Username specified in the previous parameter. This password will be encrypted and passed to the AppManager Security Manager along with the Oracle username. The default is blank.  |
| <b>Are all databases using the same listener?</b>  | Select <b>Yes</b> if one listener is being used on the UNIX host, then specify the details of that listener below. The default is unselected.  |
| Name of listener   | Specify the name of the listener that is being used on the UNIX host. This parameter is only used when you set the <b>Are all databases using the same listener?</b> parameter to <b>Yes</b> . The default is <code>LISTENER</code> .  |
| Port used by listener  | Enter the port number of that the listener is listening on for the UNIX host. This parameter is only used when you set the <b>Are all databases using the same listener?</b> parameter to <b>Yes</b> . The default is 1521.  |
| <b>Raise event if error occurs updating instances?</b>   | Select <b>Yes</b> to raise an event when an error is detected while attempting to update the list of Oracle instances. The default is Yes.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 10 (red event indicator).  |

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| Description  | How to Set It   |
|--|---|
| <b>Raise event with current instance info if successfully updated?</b> | Select <b>Yes</b> to raise an event with the information collected on Oracle instances on the host during the update. The default is unselected.                                  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event for successfully setting the monitoring options. The default is 40 (magenta event indicator). |

## User

Use this Knowledge Script to monitor the following parameters:

- ♦ **User Calls Per Parse:** the ratio of parse count (hard) to the number of user calls as a percentage. The number of user calls that result in a parse indicates how well an application is managing its context area. Changes in this ratio might indicate changes to the application itself, or to changing usage patterns (For example, because users are moving from one module to another, more or less frequently).

Generally, if the ratio of parsed calls to total user calls is low, it indicates that the SQL statements are executing efficiently without frequent reparsing. Otherwise, it can indicate that the private SQL area is too small.

This script raises an event when the percentage of user calls that are parsed exceeds the threshold you set.

- ♦ **User Sessions:** the total number of user sessions accessing an Oracle database. If the total number of user sessions crosses the threshold, the job raises an event.  
You can specify the number of user sessions to display in the Event Properties dialog box. The Event Properties dialog box displays the total number of user sessions exceeding the threshold. Information in the graph includes the number of sessions for each user and the username.
- ♦ **User Rollback Ratio:** the user rollback ratio for an Oracle RDBMS Database. The user rollback ratio indicates the percentage of attempted application transactions that fail. The ratio compares the number of transactions rolled back to the total number of transactions attempted.  
Because rolling back a transaction uses significant system resources, an increase in this ratio suggests resources have been wasted in attempting to execute failed transactions. If you see a continued increase in this ratio, it can indicate serious application or database performance problems. This script raises an event when the rollback ratio exceeds the threshold.
- ♦ **Blocking Sessions:** the user sessions that are blocking other sessions and processes from accessing the Oracle database. You can set a maximum threshold for the number of sessions that are allowed to block other sessions and processes. If the number of blocking sessions exceeds the threshold, the job raises an event.

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$SYSSTAT  
V\_\$LOCK  
V\_\$VERSION  
DBA\_USERS  
V\_\$SESSION

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It  |
|--|--|
| Oracle Username  | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| <b>User</b>  |  |
| User Calls Per Parse   | Select <b>Yes</b> to monitor User Calls Per Parse. The default is unselected.  |
| User Sessions  | Select <b>Yes</b> to monitor User Sessions. The default is unselected.   |
| User Rollback Ratio  | Select <b>Yes</b> to monitor User Callback Ratio. The default is unselected.   |
| Blocking Sessions  | Select <b>Yes</b> to monitor Blocking Sessions. The default is unselected.   |
| <b>Event Notification</b>                                      |  |
| Raise event if threshold is exceeded for User Calls Per Parse? | Select <b>Yes</b> to raise an event if the ratio of parses per user call exceeds the threshold you set. The default is Yes.  |
| Raise event if threshold is exceeded for User Sessions?        | Select <b>Yes</b> to raise an event if the number of user sessions exceeds the threshold. The default is Yes.  |
| Raise event if threshold is exceeded for User Rollback Ratio?  | Select <b>Yes</b> to raise an event if the number of user transaction rollbacks exceeds the threshold. The default is Yes.   |
| Raise event if threshold is exceeded for Blocking Sessions?    | Select <b>Yes</b> to raise an event if the number of blocking sessions exceeds the threshold you set. The default is Yes.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Data Collection</b>   |  |
| Collect data for User Calls Per Parse?                         | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the current percentage of user calls that are parsed. The default is unselected.   |
| Collect data for User Sessions?                                | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the total number of user sessions. The default is unselected.  |

| Description                                     | How to Set It  |
|---|--|
| Collect data for User Rollback Ratio?           | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the current user rollback ratio. The default is unselected.              |
| Collect data for Blocking Sessions?             | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the number of blocking sessions per interval. The default is unselected. |
| <b>Monitoring</b>                               |  |
| Threshold - Maximum Parses Per User Call        | Enter a threshold for the maximum ratio of parsed calls to total user calls allowed before an event is raised. The default is 0.2.   |
| Threshold - Maximum total user sessions         | Enter a threshold for maximum number of user sessions. The default is 75.  |
| Number of user sessions to display              | Specify the number of user sessions you want displayed in the Event Properties dialog box. Enter 0 if you want all user sessions displayed. The default is 10.                                   |
| Threshold - Maximum user rollback ratio         | Enter a threshold for the maximum percentage of transaction rollbacks allowed before the job raises an event. The default is 75.   |
| Threshold - Maximum number of blocking sessions | Enter a threshold for the maximum number of user sessions allowed to block other user sessions and processes during the monitoring interval. The default is 10.                                  |
| Event severity for internal failure             | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

## UserCallsPerParse

Use this Knowledge Script to monitor the ratio of parse count (hard) to the number of user calls as a percentage. The number of user calls that result in a parse indicates how well an application is managing its context area. Changes in this ratio might indicate changes to the application itself, or to changing usage patterns (For example, because users are moving from one module to another, more or less frequently).

Generally, if the ratio of parsed calls to total user calls is low, it indicates that the SQL statements are executing efficiently without frequent reparsing. Otherwise, it might indicate that the private SQL area is too small.

This script raises an event when the percentage of user calls that are parsed exceeds the threshold you set.

The account you use to run this script must have `SELECT` permissions for the following tables:

`V_$SYSSTAT`

`V_$VERSION`

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description                                       | How to Set It  |
|---|--|
| Oracle Username                                   | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| Collect data for parses per user call?            | Set to <b>y</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the current percentage of user calls that are parsed. The default is <b>n</b> .  |
| <b>Raise event if ratio exceeds threshold?</b>    | Select <b>Yes</b> to raise an event if the ratio of parses per user call exceeds the threshold you set. The default is <b>Yes</b> .  |
| Threshold - Maximum ratio of parses per user call | Enter a threshold for the maximum ratio of parsed calls to total user calls allowed before an event is raised. The default is <b>0.2</b> .   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is <b>5</b> (red event indicator).  |
| Event severity for internal failure               | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is <b>5</b> (red event indicator).  |

## UserRollbackRatio

Use this Knowledge Script to monitor the user rollback ratio for an Oracle RDBMS Database. The user rollback ratio indicates the percentage of attempted application transactions that fail. The ratio compares the number of transactions rolled back to the total number of transactions attempted.

Because rolling back a transaction uses significant system resources, an increase in this ratio suggests resources have been wasted in attempting to execute failed transactions. If you see a continued increase in this ratio, it might indicate serious application or database performance problems. This script raises an event when the rollback ratio exceeds the threshold.

The account you use to run this script must have `SELECT` permissions for the following tables:

`V_$SYSSTAT`

`V_$VERSION`

## Resource Objects

Oracle Database folders. When you drop a script on an Oracle Database folder, a job executes on that database and monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description                                  | How to Set It  |
|--|--|
| Oracle Username                              | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use <code>SYSDBA</code> authentication, leave this parameter blank. The default is blank. |
| Collect data for user rollback ratio?        | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the current user rollback ratio. The default is unselected.  |
| <b>Raise event if threshold is exceeded?</b> | Select <b>Yes</b> to raise an event if the number of user transaction rollbacks exceeds the threshold. The default is Yes.   |
| Threshold - Maximum user rollback ratio      | Enter a threshold for the maximum percentage of transaction rollbacks allowed before the job raises an event. The default is 75.   |
| Severity                                     | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| Event severity for internal failure          | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

## UserSessions

Use this Knowledge Script to monitor the total number of user sessions accessing an Oracle database. If the total number of user sessions crosses the threshold, the job raises an event.

You can specify the number of user sessions to display in the Event Properties dialog box. The Event Properties dialog box displays the total number of user sessions exceeding the threshold. Information in the graph includes the number of sessions for each user and the username.

The account you use to run this script must have `SELECT` permissions for the following tables:

`DBA_USERS`

`V_$SESSION`

## Resource Objects

Oracle RDBMS Server icon, or Oracle RDBMS icon. When dropped on the Oracle RDBMS Server icon, a single script job monitors every database on that server. When dropped on an Oracle RDBMS icon, the script monitors only that database.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description                                  | How to Set It   |
|--|---|
| Oracle Username                              | Enter the username that this script needs to access the target databases. If you run this script on more than one database, configure each database with the same username. To use SYSDBA authentication, leave this parameter blank. The default is blank. |
| Collect data for number of user sessions?    | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the total number of user sessions. The default is unselected.   |
| Number of user sessions to display           | Specify the number of user sessions you want displayed in the Event Properties dialog box. Enter 0 if you want all user sessions displayed. The default is 10.  |
| <b>Raise event if threshold is exceeded?</b> | Select <b>Yes</b> to raise an event if the number of user sessions exceeds the threshold. The default is unselected.  |
| Threshold - Maximum total user sessions      | Enter a threshold for maximum number of user sessions. The default is 75.   |
| Severity                                     | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| Event severity for internal failure          | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |

# 4

## Oracle RAC UNIX Knowledge Scripts

AppManager provides the following Knowledge Scripts for monitoring Oracle UNIX Real Application Clusters (RAC).

**NOTE:** Each Knowledge Script is configured to run at a specific interval. While you can change that interval to suit your needs, we recommend that you not use intervals of less than five minutes. Running at shorter intervals might negatively impact system performance.

After the successful discovery of Oracle RAC and while running the Knowledge Scripts if you receive the `ssh_exchange_identification: Connection closed by remote host` error, try to increase the value of `MaxStartups` in the file `/etc/ssh/sshd_config`.

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

| Knowledge Scripts                        | What It Does   |
|--|--|
| <a href="#">AlertLog</a>                 | Scans the Oracle RAC database instance, ASM instance, and cluster alert logs for specified entries.  |
| <a href="#">ASMDiskIOStat</a>            | Monitors the ASM Disk IO statistics.   |
| <a href="#">ASMDiskUtilization</a>       | Monitors the ASM Disk usage.   |
| <a href="#">ClusterwareStatus</a>        | Monitors the status of the Oracle RAC Clusterware daemon services including: <ul style="list-style-type: none"><li>◆ Cluster Ready Services (CRS)</li><li>◆ Cluster Synchronization Services (CSS)</li><li>◆ Event Management (EVM)</li><li>◆ Oracle High Availability Services (OHAS)</li></ul> |
| <a href="#">DataFileSpace</a>            | Monitors the size and usage Oracle RAC datafiles.  |
| <a href="#">IntelligentDataPlacement</a> | Lists the files that have the most number of cold reads and cold writes.   |
| <a href="#">RACHealthCheck</a>           | Monitors health for Oracle RAC.  |
| <a href="#">RACNodeCPUUtil</a>           | Monitors RAC Node CPU utilization.   |
| <a href="#">RedoLog</a>                  | Monitors the Redo Log Contention, the number of Redo Log files that are not archived, and the Redo Log Space wait ratio for an Oracle RAC database.  |
| <a href="#">SysStat</a>                  | Retrieves statistics of a database instance from the <code>V_\$SYSSTAT</code> table of the database.   |
| <a href="#">TablespaceAvail</a>          | Monitors the amount of disk space available to the tablespace of an Oracle RAC database.   |
| <a href="#">TopResourceConsumingSQL</a>  | Monitors the most resource intensive SQL statements.   |
| <a href="#">TopResourceUsers</a>         | Monitors the resource usage of current user sessions.  |

| Knowledge Scripts | What It Does                                       |
|-------------------|--|
| User              | Monitors various user ratios.                      |
| VotingDiskStatus  | Monitors the voting disks status in an Oracle RAC. |

## Running All Knowledge Scripts

To run a Knowledge Script using SYSDBA authentication, ensure that the user account used to run the UNIX agent is a member of the Oracle Database Administrator (OSDBA) group.

To run all of the Knowledge Scripts in the OracleRACUNIX category, your account must grant you SELECT permissions for all of the following tables:

DBA\_DATA\_FILES

DBA\_FREE\_SPACE

DBA\_JOBS

DBA\_SCHEDULER\_JOBS

DBA\_SEGMENTS

DBA\_TABLESPACES

DBA\_TEMP\_FILES

DBA\_USERS

GV\_\$INSTANCE (for Oracle RAC monitoring only)

V\_\$ARCHIVE\_DEST

V\_\$ASM\_ALIAS

V\_\$ASM\_DISK

V\_\$ASM\_DISKGROUP

V\_\$ASM\_FILE

V\_\$BGPROCESS

V\_\$DATABASE

V\_\$DATAFILE

V\_\$DIAG\_INFO (for Oracle 11g and later)

V\_\$INSTANCE

V\_\$LIBRARYCACHE

V\_\$LOCK

V\_\$LOG

V\_\$OSSTAT

V\_\$PARAMETER

V\_\$PROCESS



V\_\$ROWCACHE  
V\_\$SESSION  
V\_\$SESSTAT  
V\_\$SGASTAT  
V\_\$SORT\_SEGMENT  
V\_\$SQLAREA  
V\_\$STATNAME  
V\_\$SYSSTAT  
V\_\$VERSION  
V\_\$WAITSTAT

## AlertLog

Use this Knowledge Script to scan the Oracle RAC alert logs for entries that match a specified search string. You can set a maximum threshold for the number of occurrences of the string found during any single scan of the alert log. If during any single scan of the alert log the number of matching entries exceeds the threshold, the job raises an event.

This Knowledge Script monitors three alert logs. The following is the name of each alert logs:

- ◆ Database Instance Alertlog-alert.SID.log
- ◆ ASM Instance Alertlog-alert\_ASMInstanceID.log
- ◆ Clusterware Alertlog-alerthostname.log/alert.log

This Knowledge Script scans the three alert logs for specific entries.

The first interval of this script scans all the existing entries in each alert log file. It sets a pointer to the end of the alert log so that only new entries are read. In order to enable the script to event in the first iteration with all entries that match the search criteria in the full file. Each subsequent iteration of the script scans the alert log for entries created since the previous scan. To view all entries, set the parameter `Override scan from beginning of the log for first iteration`.

Information in the Event Properties states the number of occurrences of the search string that were found. The lines containing matches found in the log are also included in the event details.

Scanning a large log, bigger than 1 GB for example, might use more operating system resources than you want this script to use. If that happens, reduce the size of the log.

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$PARAMETER  
V\_\$VERSION  
V\_\$DIAG\_INFO (for Oracle 11g and later)

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**NOTE:** When the Oracle RAC alert log reaches its maximum size, Oracle renames the file for archiving purposes and creates a new alert log with the original filename. If this script attempts to open the alert log between the time the old file is renamed and the new file is created, the job raises an event because the script cannot find the file. The next iteration of the script (when the alert log is available) should function as expected.

This Knowledge Script runs on the remote cluster node to retrieve the matching entries. To connect to the remote cluster node, the script assumes the grid username of every node in the cluster is the same as the grid username given for one or more cluster nodes during Discovery.

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This Knowledge Script is supported on Oracle 11gR2 and Oracle 12c.

## Resource Objects

Individual Oracle RAC Database Instances, ASM Instances and Clusterware icons under each node. When you drop the script on an Oracle RAC Database/ASM Instance/Clusterware icon, a job executes on that Instance/Clusterware and monitors only that item.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It  |
|--|--|
| <b>General Settings</b>                                |  |
| Cluster(s) to exclude                                  | Enter the cluster names to exclude with a comma (,) between each cluster name, to exclude the cluster from all jobs.         |
| Event severity when job fails                          | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator). |
| Enable debugging?                                      | Select <b>Yes</b> to enable debugging. The default is unselected.  |
| <b>Raise event if AppManager fails to get metrics?</b> | Select <b>Yes</b> to raise an event when AppManager fails to get the metrics. The default is Yes.                            |
| Event severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator). |
| <b>Event Settings</b>                                  |  |
| <b>Monitor DB Instances Alert logs?</b>                |  |

| Description   | How to Set It   |
|---|---|
| <b>Include Search Options</b>   | <p>Enter a regular expression with one of the following options;</p> <ul style="list-style-type: none"> <li>◆ <b>Regular expression specifying the include filter:</b> Enter a regular expression in Perl, to identify the pattern you want to look for in the text file being monitored. Strings matching the include filter pattern are returned. The expression, <code>.+</code>, matches all strings. The default is <code>^(ORA-00603 ORA-00257 ORA-01157 ORA-27048 ORA-0060 ORA-7445 ORA-16038 ORA-4030 ORA-4031 ORA-353 ORA-604)</code></li> <li>◆ <b>Optional file with regular expressions specifying the include filter:</b> If you do not want to enter a regular expression in the Regular expression specifying the include filter parameter, specify the full path to a file containing the regular expression specifying the include filter. The default is blank.</li> <li>◆ <b>Modifier for the regular expression include filter:</b> Enter any modifier you want to use to change the behavior of the regular expression. For example, specifying <code>i</code> for this parameter makes the include filter case-insensitive. The default is <code>i</code>.</li> </ul> |
| <b>Exclude Search Options</b>   | <p>Enter a regular expression with one of the following options;</p> <ul style="list-style-type: none"> <li>◆ <b>Regular expression specifying the exclude filter:</b> Enter a regular expression in Perl, to identify the pattern you want exclude from the text file being monitored. Strings matching the include filter pattern are returned. The default is blank.</li> <li>◆ <b>Optional file with regular expressions specifying the exclude filter:</b> Enter the full path to a file containing any additional filter items you want to exclude. Strings matching the include filter pattern are returned. The default is blank.</li> <li>◆ <b>Modifier for the regular expression exclude filter:</b> Enter any modifier you want to use to change the behavior of the regular expression. For example, specifying <code>i</code> for this parameter makes the exclude filter case-insensitive. The default is blank.</li> </ul>  |
| <b>Raise event if threshold exceeded for DB instances alert logs?</b> | <p>Select <b>Yes</b> to raise an event when the number of DB instances alert log entries found that match the search criteria exceeds the threshold you set. The default is Yes.</p>  |
| Threshold - Maximum number of entries found                           | <p>Enter a threshold for the maximum number of log entries that can be found to match the search criteria during any single scan of the alert log. If the number of entries matches or exceeds the threshold, the job raises an event. The default is 0.</p>  |
| Severity  | <p>Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).</p>   |
| <b>Monitor Cluster Alert logs?</b>                                    |   |

| Description  | How to Set It   |
|--|---|
| <b>Include Search Options</b>                                    | <p>Enter a regular expression with one of the following options;</p> <ul style="list-style-type: none"> <li>◆ <b>Regular expression specifying the include filter:</b> Enter a regular expression in Perl, to identify the pattern you want to look for in the text file being monitored. Strings matching the include filter pattern are returned. The expression, <code>.+</code>, matches all strings. The default is <code>^(CRS-1607 CRS-1805 CRS-1009)</code></li> <li>◆ <b>Optional file with regular expressions specifying the include filter:</b> If you do not want to enter a regular expression in the <code>Regular expression specifying the include filter</code> parameter, specify the full path to a file containing the regular expression specifying the include filter. The default is blank.</li> <li>◆ <b>Modifier for the regular expression include filter:</b> Enter any modifier you want to use to change the behavior of the regular expression. For example, specifying <code>i</code> for this parameter makes the include filter case-insensitive. The default is <code>i</code>.</li> </ul> |
| <b>Exclude Search Options</b>                                    | <p>Enter a regular expression with one of the following options;</p> <ul style="list-style-type: none"> <li>◆ <b>Regular expression specifying the exclude filter:</b> Enter a regular expression in Perl, to identify the pattern you want exclude from the text file being monitored. Strings matching the include filter pattern are returned. The default value is blank.</li> <li>◆ <b>Optional file with regular expressions specifying the exclude filter:</b> Enter the full path to a file containing any additional filter items you want to exclude. Strings matching the include filter pattern are returned. The default is blank.</li> <li>◆ <b>Modifier for the regular expression exclude filter:</b> Enter any modifier you want to use to change the behavior of the regular expression. For example, specifying <code>i</code> for this parameter makes the exclude filter case-insensitive. the default is blank.</li> </ul>  |
| <b>Raise event if threshold exceeded for Cluster alert logs?</b> | <p>Select <b>Yes</b> to raise an event when the number of Cluster alert log entries found that match the search criteria exceeds the threshold you set. The default is Yes.</p>   |
| Threshold - Maximum number of entries found                      | <p>Enter a threshold for the maximum number of log entries that can be found to match the search criteria during any single scan of the alert log. If the number of entries matches or exceeds the threshold, the job raises an event. The default is 0.</p>  |
| Severity   | <p>Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).</p>   |
| <b>Monitor ASM Instance Alert logs?</b>                          |   |

| Description  | How to Set It  |
|--|--|
| <b>Include Search Options</b>  | <p>Enter a regular expression with one of the following options;</p> <ul style="list-style-type: none"> <li>◆ <b>Regular expression specifying the include filter:</b> Enter a regular expression in Perl, to identify the pattern you want to look for in the text file being monitored. Strings matching the include filter pattern are returned. The expression, <code>.+</code>, matches all strings. The default is <code>^(ASM-1578)</code>.</li> <li>◆ <b>Optional file with regular expressions specifying the include filter:</b> If you do not want to enter a regular expression in the <code>Regular expression specifying the include filter</code> parameter, specify the full path to a file containing the regular expression specifying the include filter. The default is blank.</li> <li>◆ <b>Modifier for the regular expression include filter:</b> Enter any modifier you want to use to change the behavior of the regular expression. For example, specifying <code>i</code> for this parameter makes the include filter case-insensitive. The default is <code>i</code>.</li> </ul> |
| <b>Exclude Search Options</b>  | <p>Enter a regular expression with one of the following options;</p> <ul style="list-style-type: none"> <li>◆ <b>Regular expression specifying the exclude filter:</b> Enter a regular expression in Perl, to identify the pattern you want exclude from the text file being monitored. Strings matching the include filter pattern are returned. The default is blank.</li> <li>◆ <b>Optional file with regular expressions specifying the exclude filter:</b> Enter the full path to a file containing any additional filter items you want to exclude. Strings matching the include filter pattern are returned. The default is blank.</li> <li>◆ <b>Modifier for the regular expression exclude filter:</b> Enter any modifier you want to use to change the behavior of the regular expression. For example, specifying <code>i</code> for this parameter makes the exclude filter case-insensitive. The default is blank.</li> </ul>   |
| <b>Raise event if threshold exceeded for ASM instance alert logs?</b>        | <p>Select <b>Yes</b> to raise an event when the number of ASM instance alert log entries found that match the search criteria exceeds the threshold you set. The default is Yes.</p>   |
| Threshold - Maximum number of entries found                                  | <p>Enter a threshold for the maximum number of log entries that can be found to match the search criteria during any single scan of the alert log. If the number of entries matches or exceeds the threshold, the job raises an event. The default is 0.</p>   |
| Severity   | <p>Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).</p>  |
| Override scan from beginning of the log for first iteration?                 | <p>Select <b>Yes</b> to override the scan from the beginning of the log for the first iteration. The default is unselected.</p>  |
| Maximum number of entries per event report                                   | <p>Enter the maximum number of entries per event report. The default is 1000.</p>  |
| <b>Data Collection</b>   |  |
| Collect data for number of matching log entries for DB instances alert logs? | <p>Select <b>Yes</b> to collect data for the number of matching log entries for DB instances alert logs. The default is Yes.</p>   |

| Description   | How to Set It   |
|---|---|
| Collect data for number of matching entry log entries for Cluster alert logs? | Select <b>Yes</b> to collect data for the number of matching log entries for Cluster alert logs. The default is Yes.      |
| Collect data for number of matching log entries for ASM instances alert logs? | Select <b>Yes</b> to collect data for the number of matching log entries or ASM instances alert logs. The default is Yes. |

## ASMDiskIOStat

Use this Knowledge Script to monitor ASM disk reads per second, writes per second, throughput per second, read errors per second, write errors per second, and total error per second.

This Knowledge Script is supported on Oracle 11gR2 and Oracle 12c.

## Resource Objects

ASM Disk Group resource objects. When you drop a script on an ASM Disk Group resource object, a job executes on and monitors only that ASM Disk Group object.

## Default Schedule

The default schedule is **Every 15 minutes**.

## Setting Parameter Values

Use this Knowledge Script to monitor the ASM disk I/O status.

| Description  | How to Set It  |
|--|--|
| <b>General Settings</b>                                |  |
| Cluster(s) to exclude                                  | Enter the cluster names to exclude with a comma (,) between each cluster name, to exclude the cluster from all jobs.   |
| ASM disk group(s) to exclude                           | Enter the ASM disk group names to exclude with a comma (,) between each ASM disk group names, to exclude the ASM disk group from all jobs.                                       |
| Event severity when job fails                          | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| Event detail format                                    | Select one of the following formats in which to view all events: <ul style="list-style-type: none"> <li>◆ HTML Table</li> <li>◆ Plain Text</li> </ul> The default is HTML Table. |
| Enable debugging?                                      | Select <b>Yes</b> to enable debugging. The default is unselected.  |
| <b>Raise event if AppManager fails to get metrics?</b> | Select <b>Yes</b> to raise an event when AppManager fails to get the metrics. The default is Yes.  |

| Description  | How to Set It  |
|--|--|
| Event severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator). |
| <b>Event Settings</b>  |  |
| <b>Raise event if reads per second exceeds threshold?</b>        | Select <b>Yes</b> to raise an event if reads per threshold seconds exceeds the threshold.<br><br>The default is unselected.  |
| Threshold - Maximum reads per second                             | Enter a threshold for the maximum reads per second. The default is 300 reads per second.                                     |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator)  |
| <b>Raise event if writes per second exceeds threshold?</b>       | Select <b>Yes</b> to raise an event if writes per threshold seconds exceeds the threshold.<br><br>The default is unselected. |
| Threshold - Maximum writes per second                            | Enter a threshold for the maximum writes per second. The default is 300 writes per second.                                   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator)  |
| <b>Raise event if throughput per second exceeds threshold?</b>   | Select <b>Yes</b> to raise an event if throughput per threshold seconds exceeds the threshold.<br><br>The default is Yes.    |
| Threshold - Maximum throughput per second                        | Enter a threshold for the maximum throughput per second. The default is 400 throughput per second.                           |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator)  |
| <b>Raise event if read errors per second exceeds threshold?</b>  | Select <b>Yes</b> to raise an event if read errors per threshold seconds exceeds the threshold.<br><br>The default is Yes.   |
| Threshold - Maximum read errors per second                       | Enter a threshold for the maximum read errors per second. The default is 50 read errors per second.                          |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator)  |
| <b>Raise event if write errors per second exceeds threshold?</b> | Select <b>Yes</b> to raise an event if write errors per threshold seconds exceeds the threshold.<br><br>The default is Yes.  |
| Threshold - Maximum write errors per second                      | Enter a threshold for the maximum write errors per second. The default is 50 write errors per second.                        |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator)  |
| <b>Raise event if total errors per second exceeds threshold?</b> | Select <b>Yes</b> to raise an event if total errors per second exceeds the threshold.<br><br>The default is unselected.      |

| Description                                 | How to Set It  |
|---|--|
| Threshold - Maximum total errors per second | Enter a threshold for the maximum total errors per second. The default is 100 total errors per second.   |
| Severity                                    | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator)  |
| <b>Data Collection</b>                      |  |
| Collect data for...?                        | <p>Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, and if monitoring of each metric is enabled, the Knowledge Script returns the following statistics for each instance on which the script is running:</p> <ul style="list-style-type: none"> <li>◆ reads per second - the default is unselected.</li> <li>◆ writes per second - the default is unselected.</li> <li>◆ throughput per second - the default is Yes.</li> <li>◆ read errors per second - the default is Yes.</li> <li>◆ write errors per second - the default is Yes.</li> <li>◆ total errors per second - the default is unselected.</li> </ul> |

## ASMDiskUtilization

Use this Knowledge Script to monitor the ASM disk free space, the percentage of ASM disk space, or both.

This Knowledge Script is supported on Oracle 11gR2 and Oracle 12c.

## Resource Objects

Oracle RAC ASM Disk Group resource objects under Shared Resources. When you drop a script on an Oracle RAC ASM Diskgroup resource object, a job executes on any ASM Instance.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description                   | How to Set It  |
|-------------------------------|--|
| <b>General Settings</b>       |  |
| Cluster(s) to exclude         | Enter the cluster names to exclude with a comma (,) between each cluster name, to exclude the cluster from all jobs.                 |
| ASM disk group(s) to exclude. | Enter the ASM disk groups to exclude with a comma (,) between each ASM disk group name, to exclude the ASM disk group from all jobs. |



| Description   | How to Set It  |
|---|--|
| Event severity when job fails   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| Event detail format   | Select one of the following formats in which to view all events: <ul style="list-style-type: none"> <li>◆ HTML Table</li> <li>◆ Plain Text</li> </ul> The default is HTML Table. |
| Enable debugging?   | Select <b>Yes</b> to enable debugging. The default is unselected.  |
| <b>Raise event when AppManager fails to get metrics?</b>                      | Select <b>Yes</b> to raise an event when AppManager fails to get the metrics. The default is Yes.  |
| Event severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Event Settings</b>   |  |
| <b>Raise event when percentage of ASM Disk space usage exceeds threshold?</b> | Select <b>Yes</b> to raise an event if the percentage of the ASM disk space exceeds the threshold. The default is Yes.   |
| Threshold - Maximum percentage of space used                                  | Enter a threshold for the maximum percentage the ASM disk space can reach before AppManager raises an event. The default is 80.  |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Raise event if ASM Disk free space is below threshold?</b>                 | Select <b>Yes</b> to raise an event if the ASM disk free space falls below the threshold. The default is unselected.   |
| Threshold - Minimum free space  | Enter a threshold for the minimum free disk space can reach (in GB) before AppManager raises an event. The default is 5.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Data Collection</b>  |  |
| Collect data for percentage of ASM Disk space usage?                          | Select <b>Yes</b> to collect data for the percentage of ASM disk space usage. The default is Yes.  |
| Collect data for ASM Disk free space?   | Select <b>Yes</b> to collect data for ASM disk free space. The default is unselected.  |

## ClusterwareStatus

Use this Knowledge Script to monitor the status of the following Clusterware daemon processes.

- ◆ Cluster Ready Services (CRS)
- ◆ Cluster Synchronization Services (CSS)
- ◆ Event Management (EVM)
- ◆ Oracle High Availability Services (OHAS)

You can raise an event when the daemon services are not running and collect data about the status of the clusterware processes.

This Knowledge Script is supported on Oracle 11gR2 and Oracle 12c.

## Resource Objects

Oracle RAC clusterware object. When you drop a script on an Oracle clusterware object, a job executes on that object and monitors status of the daemon processes.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description   | How to Set It   |
|---|---|
| <b>General Settings</b>                                     |   |
| Cluster(s) to exclude                                       | Enter the cluster names to exclude with a comma (,) between each cluster name, to exclude the cluster from all jobs.  |
| Event severity when job fails                               | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| Enable debugging?   | Select <b>Yes</b> to enable debugging. The default is unselected.   |
| <b>Raise event when AppManager fails to get metrics?</b>    | Select <b>Yes</b> to raise an event when AppManager fails to get the metrics. The default is Yes.   |
| Event severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| <b>Event Settings</b>                                       |   |
| <b>Raise an event when daemon services are not running?</b> | Select <b>Yes</b> to raise an event when the daemon services are not running. The default is Yes.   |
| Event severity then services are down                       | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).   |
| <b>Data Collection</b>                                      |   |
| Collect data about the status of the clusterware processes? | Select <b>Yes</b> to collect data for charts and reports. If you enable data collection, the script returns the status of each daemon process: <ul style="list-style-type: none"><li>◆ 100-process is running</li><li>◆ 0-process is down</li></ul> The default is Yes. |

# DataFileSpace

Use this Knowledge Script to monitor the size of an Oracle RAC datafile. When the size of the datafile (in MB) or the used space percent of the datafile exceeds the threshold, the job raises an event.

The account you use to run this script must have `SELECT` permissions for the following tables:

`V_$VERSION`

`V_$DATAFILE`

This Knowledge Script is supported on Oracle 11gR2 and Oracle 12c.

## Resource Objects

Individual Oracle RACUNIX Datafiles. When dropped on a single datafile, the script monitors only that datafile.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It   |
|--|---|
| <b>General Settings</b>                                  |   |
| Cluster(s) to exclude                                    | Enter the cluster names to exclude with a comma (,) between each cluster name, to exclude the cluster from all jobs.  |
| Database(s) to exclude                                   | Enter the database names to exclude with a comma (,) between each database name, to exclude the database from all jobs.   |
| Event detail format                                      | Select one of the following formats in which to view all events: <ul style="list-style-type: none"><li>◆ HTML Table</li><li>◆ Plain Text</li></ul> The default is HTML Table. |
| Event severity when job fails                            | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| Enable debugging?  | Select <b>Yes</b> to enable debugging. The default is unselected.   |
| <b>Raise event when AppManager fails to get metrics?</b> | Select <b>Yes</b> to raise an event when AppManager fails to get the metrics. The default is Yes.   |
| Event severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| <b>Event Settings</b>                                    |   |
| <b>Monitor total size of datafile?</b>                   |   |

| Description                                      | How to Set It  |
|--|--|
| <b>Raise event if threshold is exceeded?</b>     | Select <b>Yes</b> to raise an event if a datafile exceeds the size threshold you set. The default is unselected.   |
| Threshold - Maximum datafile size                | Enter a threshold for the maximum size a datafile can reach (in MB) before AppManager raises an event. The default is 100 MB.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).  |
| <b>Monitor used space percent of datafile?</b>   |  |
| <b>Raise event if threshold is exceeded?</b>     | Select <b>Yes</b> to raise an event if a datafile exceeds the size threshold you set. The default is Yes.  |
| Threshold - Maximum used space percent           | Enter a threshold for the maximum used space a datafile can reach (in %) before AppManager raises an event. The default is 80.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).  |
| <b>Data Collection</b>                           |  |
| Collect data for datafile size?                  | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the current size of the datafile (in MB). The default is unselected. |
| Collect data for used space percent of datafile? | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the percent for space used of the datafile. The default is Yes.      |

## IntelligentDataPlacement

The Knowledge Script lists the files that have the most number of cold reads and cold writes from an ASM Instance on a node.

This Knowledge Script is supported on Oracle 11g and 12c.

## Resource Objects

Oracle RAC ASM Instance. When you drop a script on an Oracle RAC ASM Instance, a job executes on that ASM Instance and the top files having the most cold reads and cold writes will be listed.

## Default Schedule

The default schedule is **Every Hour**.

## Setting Parameter Values

Set the following parameters as needed.

| Description           | How to Set It  |
|-----------------------|--|
| Cluster(s) to exclude | Enter the cluster names to exclude with a comma (,) between each cluster name, to exclude the cluster from all jobs. |

| Description  | How to Set It   |
|--|---|
| Number or rows to be retrieved                                       | Set the number of rows to be retrieved, from 0 to 9999. The default is 10   |
| Event severity when job fails  | Set the event severity level, from 1 to 40, to indicate the importance of an event in which the job fails. The default is 5 (red event indicator).                                      |
| Event detail format  | Select one of the following formats in which to view all events: <ul style="list-style-type: none"> <li>◆ HTML Table</li> <li>◆ Plain Text</li> </ul> <p>The default is HTML Table.</p> |
| Enable debugging   | Select <b>Yes</b> to enable debugging. The default is unselected.   |
| <b>Raise event when AppManager fails to the metrics?</b>             | Select <b>Yes</b> to raise an event when AppManager fails to get the metrics. The default is Yes.   |
| Event severity when AppManager fails to get metrics                  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| <b>Event Settings</b>  |   |
| <b>Raise an event with the top files that have most cold reads?</b>  | Select <b>Yes</b> to raise an event for the top files that have the most cold reads. The default is Yes.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 25 (blue event indicator).  |
| <b>Raise an event with the top files that have most cold writes?</b> | Select <b>Yes</b> to raise an event for the top files that have the most cold writes. The default is Yes.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 25 (blue event indicator).  |

## RACHealthCheck

Use this Knowledge Script to monitor the following Oracle RAC parameters:

- ◆ **Database Instances:** Notifies the user when an Oracle RAC database instance is not running.
- ◆ **Database Services:** Monitors the status of the given database services. Notifies the user when any of the services are not running.
- ◆ **Nodeapps and Automatic Storage Management Instances on cluster nodes:** Monitors the status of nodeApps and ASM instances of cluster nodes

This Knowledge Script is supported on Oracle 11gR2 and Oracle 12c.

## Resource Objects

Oracle RAC Database folders. When you drop a script on an Oracle RAC Database folder, a job executes on that database and monitors the status of the instances of that database and its services. It also monitors the status of nodeApps and the ASM instances of all the nodes in the cluster.

# Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It  |
|--|--|
| <b>General Settings</b>                                  |  |
| Cluster(s) to exclude                                    | Enter the cluster names to exclude with a comma (,) between each cluster name, to exclude the cluster from all jobs.   |
| NODES Exclusion list                                     | Enter a list of Nodes to exclude from RAC, separating each Node name with a comma (.). Use the format <code>clusterName:NodeName , clusterName:NodeName , ...</code>   |
| Instances Exclusion list                                 | Enter a list of RAC database instances to exclude from RAC, separating each database instance name with a comma (.). Use the format <code>clusterName:DBInstanceName , clusterName:DBInstanceName ,</code>   |
| RAC Services list to be monitored                        | Enter a list of RAC database services to monitor. Use the format <code>clusterName:DBName:s1,s2,s3 ; clusterName:DBName:s4,s5,s6 ; ..</code> (separated by semicolon(:) where <code>s1,s2,s3,..</code> are the names of the services to be monitored.) |
| Event severity when job fails                            | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| Enable debugging?  | Select <b>Yes</b> to enable debugging. The default is unselected.  |
| <b>Raise event when AppManager fails to get metrics?</b> | Select <b>Yes</b> to raise an event when AppManager fails to get the metrics. The default is Yes.  |
| Event Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Event Settings</b>                                    |  |
| <b>Raise event if database instance is down?</b>         | Select <b>Yes</b> to raise an event when the database instance is down. The default is Yes.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event detecting that an instance is down. The default severity level is 10 (red event indicator).  |
| <b>Raise event if services are not running?</b>          | Select <b>Yes</b> to raise an event if the RAC database services are not running. The default is unselected.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).  |
| <b>Raise event if NodeApps are down?</b>                 | Select <b>Yes</b> to raise an event if the Nodeapps are down. The default is Yes.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).  |

| Description                                 | How to Set It   |
|---|---|
| <b>Raise event if ASM instance is down?</b> | Select <b>Yes</b> to raise an event if the ASM instance is detected down. The default is Yes.   |
| Severity                                    | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 10 (red event indicator).   |
| <b>Data Collection</b>                      |   |
| Collect data for Status of instances        | Select <b>Yes</b> to collect data for charts and reports. If you enable data collection, the script returns the status of each database instance: <ul style="list-style-type: none"> <li>◆ 100--database instance is running</li> <li>◆ 0--database instance is down</li> </ul> The default is Yes. |
| Collect data for RAC Services               | Select <b>Yes</b> to collect data for charts and reports. If you enable data collection, the script returns the status of each database service entered in the RAC service list parameter. The default is unselected.   |
| Collect data for Nodeapps                   | Select <b>Yes</b> to collect data for Nodeapps. When you enable data collection, the script returns the following values for all the nodeApps: <ul style="list-style-type: none"> <li>◆ 100--NodeApps are running.</li> <li>◆ 0--NodeApps are not running.</li> </ul> The default is Yes.           |
| Collect data for ASM instances              | Select <b>Yes</b> to collect data for ASM instances. When you enable data collection, the script returns the following values: <ul style="list-style-type: none"> <li>◆ 100-ASM is running</li> <li>◆ 0-ASM is not running</li> </ul> The default is Yes.   |

## RACNodeCPUUtil

Use this Knowledge Script to monitor CPU utilization of RAC Node. CPU utilization is measured in percentage.

This Knowledge Script is supported on Oracle 11gR2 and Oracle 12c.

### Resource Object

Oracle RAC Node. When you drop a script on an Oracle RAC Node, a job executes on that node and monitors only that node.

### Default Schedule

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

# Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It   |
|--|---|
| <b>General Settings</b>  |   |
| Cluster(s) to exclude  | Enter the cluster names to exclude with a comma (,) between each cluster name, to exclude the cluster from all jobs.  |
| RAC Nodes(s) to exclude  | Enter the RAC Node names to exclude with a comma (,) between each Rac Node name, to exclude the RAC Node Name from all jobs.  |
| Event severity when job fails  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| Event detail format  | Select one of the following formats in which to view all events: <ul style="list-style-type: none"><li>◆ HTML Table</li><li>◆ Plain Text</li></ul> The default is HTML Table. |
| Enable debugging?  | Select <b>Yes</b> to enable debugging. The default is unselected.   |
| <b>Raise event when AppManager fails to get metrics?</b>                 | Select <b>Yes</b> to raise an event when AppManager fails to get the metrics. The default is Yes.   |
| Event severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| <b>Event Settings</b>  |   |
| <b>Raise event if CPU utilization in user space exceeds threshold?</b>   | Select <b>Yes</b> to raise an event when CPU utilization in user space exceeds the threshold. The default is unselected.  |
| Threshold - Maximum CPU utilization in user space                        | Specify a maximum threshold for the percentage of CPU utilization in the user space. The default is 80%   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| <b>Raise event if CPU utilization in system space exceeds threshold?</b> | Select <b>Yes</b> to raise an event if the CPU utilization in the system space exceeds the threshold. The default is unselected.  |
| Threshold - Maximum CPU utilization in system space                      | Specify a maximum threshold for the percentage of CPU utilization in the system space. The default is 80%   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| <b>Raise event if CPU in idle state exceeds threshold?</b>               | Select <b>Yes</b> to raise an event if the CPU utilization in the idle state exceeds the threshold. The default is unselected.  |
| Threshold - Maximum CPU in idle state                                    | Specify a maximum threshold for the percentage of CPU utilization in idle state. The default is 90%   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |



| Description  | How to Set It  |
|--|--|
| <b>Raise event if total CPU utilization exceeds threshold?</b> | Select <b>Yes</b> to raise an event if the total CPU utilization in the system exceeds the threshold. The default is Yes.  |
| Threshold - Maximum CPU utilization                            | Specify a maximum threshold for the percentage of CPU utilization in the system space. The default is 80%  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Data Collection</b>   |  |
| Collect data for...  | <p>Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, and if monitoring of each metric is enabled, the Knowledge Script returns the following statistics for each CPU on which the script is running:</p> <ul style="list-style-type: none"> <li>◆ <b>CPU utilization in user space percent?</b></li> <li>◆ <b>CPU utilization in system space percent?</b></li> <li>◆ <b>CPU in idle state in percent?</b></li> <li>◆ <b>CPU utilization in percent?</b></li> </ul> <p>The default for all the parameters except for <code>Collect data for total CPU utilization in percent?</code> is unselected.</p> |

## RedoLog

Use this Knowledge Script to monitor the following parameters for Oracle RAC:

- ◆ **Redo Log Contention:** the number of times that a process tries to write an entry in the redo log buffer. The job raises an event and then stores data if the number of tries is different for subsequent iterations of the script.

The number of retries should be low. A high number of retries can adversely affect system performance, as processes must wait for buffers. If a process has to make numerous attempts to write an entry in the redo log buffer, you might need to allocate more space to the redo log buffer.

You can set a threshold value for the maximum number of times a process can try to write an entry in the redo log buffer. If the number of retries exceeds the threshold, an event is raised.

- ◆ **Redo Log Space Wait Ratio:** the redo log space wait ratio. The redo log space wait ratio measures memory allocation. The ratio reflects the number of times the background process was requested to allocate space within the redo file per number of redo log entries. If this ratio increases, you might want to increase the size of the redo log buffer.

When the redo log space wait ratio exceeds the threshold you set, the job raises an event.

- ◆ **Redo Logs Not Archived:** retrieve the number of redo logs that are not being archived, if archiving is turned on for a given Oracle database. The number of redo logs not archived is returned and compared against the thresholds you specify. The Knowledge Script retrieves the archive status dynamically for an Oracle RAC database.

When you enable data collection, the number of redo logs not archived is stored in the repository.

The account you use to run this script must have `SELECT` permissions for the following tables:

V\_\$SGASTAT

V\_\$SYSSTAT

V\_\$VERSION

V\_\$LOG

This Knowledge Script is supported on Oracle 11gR2 and Oracle 12c.

## Resource Objects

Oracle RAC Database Instance. When you drop a script on an Oracle RAC Database Instance, a job executes on that database Instance and monitors only that database Instance.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It  |
|--|--|
| <b>General Settings</b>  |  |
| Cluster(s) to exclude  | Enter the cluster names to exclude with a comma (,) between each cluster name, to exclude the cluster from all jobs.   |
| Database Instance(s) to exclude                                      | Enter the database instances to exclude with a comma (,) between each database name, to exclude the database from all jobs.  |
| Event detail format  | Select one of the following formats in which to view all events: <ul style="list-style-type: none"><li>◆ HTML Table</li><li>◆ Plain Text</li></ul> The default is HTML Table.        |
| Event severity when job fails  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| Enable debugging?  | Select <b>Yes</b> to enable debugging. The default is deselected.  |
| <b>Raise event when AppManager fails to get metrics?</b>             | Select <b>Yes</b> to raise an event when AppManager fails to get the metrics. The default is Yes.  |
| Event severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Event Settings</b>  |  |
| <b>Raise event if threshold is exceeded for Redo Log Contention?</b> | Select <b>Yes</b> to raise an event if the number of times that a process tries to rewrite an entry to the redo log buffer exceeds the threshold you set. The default is unselected. |
| Threshold - Maximum redo log buffer allocation retries               | Enter a threshold for the maximum number of times that a process might try to rewrite an entry to the redo log buffer before the job raises an event. The default is 50 retries.     |

| Description  | How to Set It  |
|--|--|
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Raise event if threshold is exceeded for Redo Log Space Wait Ratio?</b> | Select <b>Yes</b> to raise an event if the redo log space wait ratio exceeds the threshold you set. The default is Yes.  |
| Threshold - Maximum redo log space wait ratio                              | Enter a maximum threshold for the redo log space wait ratio. The default ratio is 0.0002.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Raise event if threshold is exceeded for Redo Logs not Archived?</b>    | Select <b>Yes</b> to raise an event if the threshold exceeds the value you specified. The default is Yes.  |
| Threshold - Maximum number of redo logs not archived                       | Specify a threshold for the maximum number of redo logs that have not been archived. The default is 6 redo logs.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default severity level is 5 (red event indicator).  |
| <b>Data Collection</b>   |  |
| Collect data for...  | <p>Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, and if monitoring of each metric is enabled, the Knowledge Script returns the following statistics for each Redo script that is running:</p> <ul style="list-style-type: none"> <li>◆ <b>Redo Log Contention:</b> Returns the number of times that processes attempted to write entries to the redo log buffer. The default is unselected.</li> <li>◆ <b>Redo Log Space Wait Ratio:</b> Returns the redo log space wait ratio. The default is Yes.</li> <li>◆ <b>Redo Log not archived:</b> returns the number of redo logs not archived. The default is Yes.</li> </ul> |

## SysStat

Use this Knowledge Script to monitor statistics of a database instance through the `V_$SYSSTAT` table of the database. This table stores all the key statistics for a database. You specify the statistic to monitor, and the value and condition (greater than, less than, or equal to) to check. If the **value** or **change rate** (changes per second) of a monitored statistic crosses a threshold, the job raises an event.

This Knowledge Script is supported on Oracle 11gR2 and Oracle 12c.

The account you use to run this script must have `SELECT` permissions for the following tables:

`V_$SYSSTAT`

`V_$VERSION`

## Resource Objects

Oracle RAC Database Instance. When you drop a script on an Oracle RAC Database Instance, a job executes on that database instance and monitors the statistic specified from that instance.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It  |
|--|--|
| <b>General Settings</b>                                  |  |
| Cluster(s) to exclude                                    | Enter the cluster names to exclude with a comma (,) between each cluster name, to exclude the cluster from all jobs.   |
| Database Instance(s) to exclude                          | Enter the database instance names to exclude with a comma (,) between each database instance name, to exclude the database instance name from all jobs.  |
| V_\$\$SYSSTAT statistic to monitor                       | <p>Enter the name of the statistic you want to monitor—for example, USER CALLS.</p> <p>For information about the fields in the V_\$\$SYSSTAT table, see your Oracle RDBMS documentation (for example, in the Oracle8 Reference, see “Appendix C: Statistics Descriptions”).</p> <p>The default statistic is execute count.</p> |
| Monitor change rate or value of statistic?               | When you select <i>Change rate</i> , the script monitors the number of times the value of the monitored statistic changes per second. When you select <i>Value</i> , the script monitors the value of the statistic. The default is <i>Change Rate</i> .   |
| Event severity when job fails                            | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| Event detail format                                      | <p>Select one of the following formats in which to view all events:</p> <ul style="list-style-type: none"><li>◆ HTML Table</li><li>◆ Plain Text</li></ul> <p>The default is HTML Table.</p>  |
| Enable debugging?  | Select <b>Yes</b> to enable debugging. The default is unselected.  |
| <b>Raise event when AppManager fails to get metrics?</b> | Select <b>Yes</b> to raise an event when AppManager fails to get the metrics. The default is Yes.  |
| Event severity when AppManager fails to get metrics      | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Event Settings</b>                                    |  |
| <b>Raise event if threshold is exceeded?</b>             | Select <b>Yes</b> to raise an event if the threshold you set is crossed. The default is Yes.   |

| Description                              | How to Set It   |
|--|---|
| Condition: <, =, or >                    | Indicate the condition (less than, equal to, or greater than) you want to check. This parameter is used in conjunction with the <b>Threshold - Change rate or value</b> parameter to control when the job raises an event. The default is greater than (>).   |
| Threshold - Change rate or value         | Enter a threshold value or rate for the specified statistic. Depending on how you set the <b>Monitor change rate or value of statistic?</b> parameter, this might indicate a threshold for the value of the statistic or for the number of changes in that value per second. The value you set here is used in conjunction with the <b>Condition: &lt;, =, or &gt;</b> parameter to control when the job raises an event. The default is 100. |
| Severity                                 | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| <b>Data collection options</b>           |   |
| Collect data for a V\$SYSSTAT statistic? | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the current value of the specified statistic at each interval from that database instance. The default is unselected.   |

## TablespaceAvail

Use this Knowledge Script to monitor the disk space used by Oracle RAC tablespaces.

This script can monitor the following:

- ♦ The amount of free disk space available for a tablespace (as a percentage, absolute amount, or both)
- ♦ The amount of disk space used by a tablespace (as a percentage, absolute amount, or both)
- ♦ The total size of a tablespace

This script monitors only the disk space allocated to an Oracle RAC database, not the total disk space on the computer where Oracle RDBMS is running.

By default, this script is set to monitor the percentage of free disk space available to a tablespace and the percentage of disk space used by a tablespace. You can choose any combination of monitoring options and set multiple thresholds for each one.

The account you use to run this script must have `SELECT` permissions for the following tables:

```
DBA_DATA_FILES
DBA_FREE_SPACE
DBA_TABLESPACES
DBA_TEMP_FILES
V_$SORT_SEGMENT
V_$VERSION
```

This Knowledge Script is supported on Oracle 11gR2 and Oracle 12c.

## Resource Objects

Individual Oracle RAC UNIX Tablespace icons. When run on an individual tablespace, the Knowledge Script job monitors only that tablespace.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It  |
|--|--|
| <b>General Settings</b>  |  |
| Cluster(s) to exclude  | Enter the cluster names to exclude with a comma (,) between each cluster name, to exclude the cluster from all jobs.   |
| Database(s) to exclude   | Enter the database names to exclude with a comma (,) between each database name, to exclude the database from all jobs.  |
| Absolute path of the file containing information related to tablespaces to be excluded | <p>This parameter allows you to exclude events for specified tablespaces until a certain threshold is reached (eliminating certain events).</p> <p>Each line should be for a single tablespace and may contain up to 5 threshold values that are to be overridden for the tablespace. Any threshold that is not to be overridden may be left blank.</p> <p>Specify one or more tables to exclude, separating each table name with a comma (,) and no space. For example:</p> <p>Sample exclude file: /tmp/List.txt</p> <pre>rac-cluster:CDB:SYSTEM,SYSAUX racqe-cluster:TESTCDB:TEMP,SYSAUX racqe-cluster:ORCL:TEMP,SYSAUX,USERS</pre> <p>Specify each cluster and databases on separate line. Specify each line of the Cluster name, Database name and Tablespace name separating each with a comma (,). For example,</p> <pre>rac-cluster:CDB:SYSTEM,SYSAUX,&lt;TablespaceName1&gt;, &lt;TablespaceName2&gt;</pre> |
| Monitor AutoExtend enabled tablespace?   | Select <b>Yes</b> to enable monitoring of AutoExtend enabled tablespaces. The default is Yes.  |
| Monitor Temporary tablespace?  | Select <b>Yes</b> to enable monitoring of Temporary tablespaces. The default is unselected.  |
| Event severity when job fails  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |

| Description  | How to Set It  |
|--|--|
| Event detail format  | Select one of the following formats in which to view all events: <ul style="list-style-type: none"> <li>◆ HTML Table</li> <li>◆ Plain Text</li> </ul> <p>The default is HTML Table.</p>                                      |
| Enable debugging?  | Select <b>Yes</b> to enable debugging. The default is unselected.  |
| <b>Raise event when AppManager fails to get metrics?</b>                             | Select <b>Yes</b> to raise an event when AppManager fails to get the metrics. The default is Yes.  |
| Event severity when AppManager fails to get metrics                                  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).   |
| <b>Event Settings</b>  |  |
| <b>Raise event if percentage of free space within tablespace is below threshold?</b> | Select <b>Yes</b> to raise an event when the percentage of free disk space within a tablespace fails to meet the minimum threshold (see below). The default is Yes.  |
| Threshold - Minimum percentage of free space   | Enter a threshold for the minimum percentage of free disk space within the tablespace that must be found to prevent an event from being raised. The default is 20%.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default severity level is 5 (red event indicator).  |
| <b>Raise event if percentage of space used within tablespace exceeds threshold?</b>  | Select <b>Yes</b> to raise an event when the percentage of used disk space within a tablespace exceeds the maximum threshold (see below). The default is unselected.   |
| Threshold - Maximum percentage of free space   | Enter a threshold for the maximum percentage of free disk space within the tablespace that must be found to prevent an event from being raised. The default is 95%.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default severity level is 5 (red event indicator).  |
| <b>Raise event if amount of free space within tablespace is below threshold?</b>     | Select <b>Yes</b> to raise an event when the amount of free disk space within a tablespace fails to meet the minimum threshold (see below). The default is unselected.   |
| Threshold - Minimum amount of free space   | Enter a threshold for the minimum amount of free disk space within the tablespace that must be found to prevent an event from being raised. The default is 50 MB.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default severity level is 5 (red event indicator).  |
| <b>Raise event if amount of space used within tablespace exceeds threshold?</b>      | Select <b>Yes</b> to raise an event when the amount of used disk space within a tablespace exceeds the maximum threshold (see below). The default is unselected.   |
| Threshold - Maximum percentage of free space   | Enter a threshold for the <b>maximum amount of used space within a tablespace</b> that must be found to prevent an event from being raised. This threshold is <i>not</i> a percentage of free space. The default is 1000 MB. |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default severity level is 5 (red event indicator).  |

| Description   | How to Set It   |
|---|---|
| <b>Raise event if total size of tablespace exceeds threshold?</b> | Select <b>Yes</b> to raise an event when the total size of used disk space within a tablespace exceeds the threshold (see below). The default is Yes.   |
| Threshold - Maximum size of tablespace                            | Enter the total size of disk space that the tablespace can use. If the total size of used disk space exceeds this threshold, the job raises an event. The default is 2000 MB.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default severity level is 5 (red event indicator).   |
| <b>Data collection options</b>                                    |   |
| Collect data for ...  | <p>Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, and if monitoring of each metric is enabled, the Knowledge Script returns the following statistics for each tablespace on which the script is running:</p> <ul style="list-style-type: none"> <li>◆ percentage of disk space free within the tablespace? The default is Yes.</li> <li>◆ percentage of disk space used within the tablespace? The default is unselected.</li> <li>◆ amount of disk space free within the tablespace? The default is unselected.</li> <li>◆ amount of disk space used within the tablespace? The default is unselected.</li> <li>◆ total size of tablespace? The default is Yes.</li> </ul> |

## TopResourceConsumingSQL

Use this Knowledge Script to determine which SQL queries for Oracle database instances are consuming the most resources on their UNIX hosts. This script identifies the top *N* queries consuming the most memory, disk I/O, and CPU time. The job raises an event with results of the job, and/or if the job results in a failure to retrieve data.

The account you use to run this script must have `SELECT` permissions for the following tables:

`DBA_USERS`

`V_$SQLAREA`

`V_$VERSION`

This Knowledge Script is supported on Oracle 11gR2 and Oracle 12c.

### Resource Objects

Oracle RAC Database Instance. When you drop a script on that Oracle Database Instance, a job executes on that database and collects the *N* SQL queries using the most CPU time, disk I/O, and memory.

### Default Schedule

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



# Setting Parameter Values

Set the following parameters as needed:

| Description   | How to Set It   |
|---|---|
| <b>General Settings</b>   |   |
| Cluster(s) to exclude   | Enter the cluster names to exclude with a comma (,) between each cluster name, to exclude the cluster from all jobs.                        |
| Instances(s) to exclude   | Enter the database instances names to exclude with a comma (,) between each database instance name, to exclude the database from all jobs.  |
| Event severity when job fails   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default severity level is 5 (red event indicator). |
| Enable debugging?   | Select <b>Yes</b> to enable debugging. The default is unselected.   |
| <b>Raise event when AppManager fails to get metrics?</b>                | Select <b>Yes</b> to raise an event when AppManager fails to get the metrics. The default is Yes.   |
| Event severity when AppManager fails to get metrics                     | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).                |
| Number of SQL statements to retrieve                                    | The number of most executed SQL queries to be retrieved by the job. The default is 10. The maximum is 30.                                   |
| <b>Event Settings</b>   |   |
| <b>Raise Event with top SQL statements consuming the most disk I/O?</b> | Select <b>Yes</b> to raise an event for top SQL statements that consume the most disk I/O space. The default is Yes.                        |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).                |
| <b>Raise Event with top SQL statements consuming the most memory?</b>   | Select <b>Yes</b> to raise an event for top SQL statements that consume the most disk memory space. The default is Yes.                     |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).                |
| <b>Raise Event with top SQL statements consuming the most CPU time?</b> | Select <b>Yes</b> to raise an event for top SQL statements that consume the most CPU time. The default is Yes.                              |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).                |
| <b>Data Collection</b>  |   |

| Description   | How to Set It   |
|---|---|
| Collect data for top SQL statements consuming the most... | <p>Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, and if monitoring of each metric is enabled, the Knowledge Script returns the following statistics for each instance on which the script is running:</p> <ul style="list-style-type: none"> <li>◆ disk I/O?</li> <li>◆ memory?</li> <li>◆ CPU time?</li> </ul> <p>The default for all parameters is unselected.</p> |

## TopResourceUsers

Use this Knowledge Script to monitor the following parameters:

- ◆ **Top CPU Users:** the CPU time for current user sessions. If the CPU utilization exceeds the threshold, the job raises an event.

This script requires that the Oracle **timed\_statistics** initialization parameter be turned on (set to TRUE).

You can specify the number of user sessions with the highest CPU utilization to display in the Event Properties dialog box. The Event Properties dialog box includes the CPU usage for each of the top *N* sessions, username, session ID, and program name. Enter 0 to display all user sessions.

- ◆ **Top IO Users:** Physical reads and writes (I/O) for current user sessions. If the number of physical reads/writes per interval (the physical read/write operations rate) exceeds the threshold you set, the job raises an event.

You can specify the number of user sessions with the highest physical read/write operations rate to display in the Event Properties dialog box. Information in the Event Properties dialog box includes the physical reads/writes per second for each of the top *N* sessions, username, session ID, and program name.

This script requires that the Oracle **timed\_statistics** parameter is turned on for the database you are monitoring

- ◆ **Top Lock Users:** The current number of user-held locks on an Oracle database. If the number of locks exceeds the threshold, the job raises an event.

You can specify the number of user sessions holding the most locks to display in the Event Properties dialog box, or enter 0 to display all sessions. Information in the Event Properties dialog box includes the number of locks held by each session, username, session ID, and program name.

- ◆ **Top Memory Users:** The memory utilization (User Global Area and Program Global Area) for current user sessions. If the memory utilization exceeds the threshold, the job raises an event.

You can specify the number of user sessions with the highest memory usage to display in the Event Properties dialog box. Information in the Event Properties dialog box includes the memory in bytes for each session, username, session ID, and program name. Enter 0 for the **Number of top user sessions to display** parameter if you want to include memory utilization statistics for all user sessions in the event details.

- ◆ **Open Cursors:** the percentage of cursors opened per session, as well as the total number of cursors open in the system. In the Oracle RDBMS environment, a cursor is a type of handle (or pointer) used to identify a query in the system. Cursors can be opened by users or by the system

itself. A high number of open cursors can be caused by a programming error, and might cause database performance problems. In the `init.ora` file, you can specify the maximum number of cursors that might be opened by a session.

In this script, you can specify a maximum threshold for the percentage of open cursors allowed per session--a percentage of the number specified for the `open_cursor` parameter in the `init.ora` file. For example, if the `init.ora` file specifies that 60 cursors might be open in a session, and you set a maximum threshold of 75%, the script raises an event when 75% of the 60 allowed cursors (or 45 cursors) are open in any session.

You can also specify a maximum threshold for the total number of open cursors allowed in the system. The job raises an event if either threshold exceeds the value you specified.

This Knowledge Script is supported on Oracle 11gR2 and Oracle 12c.

## Resource Objects

Oracle RAC Database instance. When you drop a script on an Oracle RAC Database Instance, a job executes on that database instance.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description   | How to Set It  |
|---|--|
| <b>General Settings</b>   |  |
| Cluster(s) to exclude   | Enter the cluster names to exclude with a comma (,) between each cluster name, to exclude the cluster from all jobs.   |
| Database Instance(s) to exclude   | Enter the database instances to exclude with a comma (,) between each database name, to exclude the database from all jobs.  |
| Event severity when job fails   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default value is 5 (red event indicator).   |
| Enable debugging?   | Select <b>Yes</b> to enable debugging. The default is unselected.  |
| <b>Raise event when AppManager fails to get metrics?</b>                    | Select <b>Yes</b> to raise an event when AppManager fails to get the metrics. The default is Yes.  |
| Event severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default value is 5 (red event indicator).   |
| <b>Event Settings</b>   |  |
| Number of user sessions of display (Not Applicable to Open Cursor Counters) | Specify the number of user sessions you want displayed in the Event Properties dialog box. Enter 0 if you want information for all user sessions. The default value is 15 user sessions. |
| <b>Raise event if threshold is exceeded for Top CPU Users?</b>              | Select <b>Yes</b> to raise an event if the CPU usage of any user session exceeds the threshold you set. The default is Yes.  |

| Description   | How to Set It   |
|---|---|
| Threshold - Maximum amount of time for a user session                                       | Enter a threshold for the maximum number of CPU cycles per 1/100th of a second that a single user session can use before the job raises an event. The default value is 50 CPU cycles per 1/100th of a second. |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default value is 5 (red event indicator).  |
| <b>Raise event if threshold is exceeded for Top Memory Users?</b>                           | Select <b>Yes</b> to raise an event if the total memory usage of any user session exceeds the threshold you set. The default is Yes.  |
| Threshold - Maximum amount of memory for a user session                                     | Enter a threshold for the maximum total memory usage (in MB) for any user session. The default value is 10 MB.  |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default value is 5 (red event indicator).  |
| <b>Raise event if threshold is exceeded for Top IO Users?</b>                               | Select <b>Yes</b> to raise an event if the physical read/write operations of any single user session exceed the threshold you set. The default is Yes.  |
| Threshold - Maximum read/write operations per user session                                  | Enter a threshold for the maximum number of read/write Operations per Interval allowed before the job raises an event. The default value is 300 read/write Operations per Interval.                           |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default value is 5 (red event indicator).  |
| <b>Raise event if threshold is exceeded for Top Lock Users?</b>                             | Select <b>Yes</b> to raise an event if the number of user-held locks on the server exceeds the threshold you set. The default is Yes.   |
| Threshold - Maximum number of locks held by a user session                                  | Enter a threshold for the maximum number of user-held locks on per user session. The default value is 35 locks.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default value is 5 (red event indicator).  |
| <b>Raise event if threshold is exceeded for Total Number of Open Cursors in the System?</b> | Select <b>Yes</b> to raise an event if the number of cursors open in the system exceeds the threshold you set. The default is unselected.   |
| Threshold - Maximum number of open cursors in system  | Specify a maximum threshold for the number of cursors that might be open in the system. The default value is 1000 open cursors.   |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default value is 5 (red event indicator).  |
| <b>Raise event if threshold is exceeded for Percentage of Cursors Opened per Session?</b>   | Select <b>Yes</b> to raise an event if the percentage of cursors opened per session exceeds the threshold you set. The default is unselected.   |
| Threshold - Maximum percentage of cursor opened per session                                 | Specify a maximum threshold for the percentage of cursors that might be open per session. The default is 80.  |
| Severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default value is 5 (red event indicator).  |
| <b>Data Collection</b>  |   |

| Description                        | How to Set It   |
|------------------------------------|---|
| Collect data for Top CPU Users?    | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the total CPU time for the top N users. The default is unselected.  |
| Collect data for Top Memory Users? | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the total memory usage (in MB) for the top N user sessions. The default is unselected.                                  |
| Collect data for Top I/O Users?    | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the total number of physical reads/writes per interval for the top N users. The default is unselected.                  |
| Collect data for Top Lock Users?   | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the current number of user-held locks by the user sessions with the highest number of locks. The default is unselected. |
| Collect data for Open Cursor?      | Select <b>Yes</b> to collect data for charts and reports. When you enable data collection, the Knowledge Script returns the total number of open cursors in the system. The default is unselected.  |

## User

### Resource Objects

Use this Knowledge Script to monitor the following parameters:

- ♦ **User Calls Per Parse:** the ratio of parse count (hard) to the number of user calls as a percentage. The number of user calls that result in a parse indicates how well an application is managing its context area. Changes in this ratio might indicate changes to the application itself, or to changing usage patterns (For example, because users are moving from one module to another, more or less frequently).

Generally, if the ratio of parsed calls to total user calls is low, it indicates that the SQL statements are executing efficiently without frequent reparsing. Otherwise, it can indicate that the private SQL area is too small.

This script raises an event when the percentage of user calls that are parsed exceeds the threshold you set.

- ♦ **User Sessions:** the total number of user sessions accessing an Oracle database. If the total number of user sessions crosses the threshold, the job raises an event.  
You can specify the number of user sessions to display in the Event Properties dialog box. The Event Properties dialog box displays the total number of user sessions exceeding the threshold. Information in the graph includes the number of sessions for each user and the username.
- ♦ **User Rollback Ratio:** the user rollback ratio for an Oracle RDBMS Database. The user rollback ratio indicates the percentage of attempted application transactions that fail. The ratio compares the number of transactions rolled back to the total number of transactions attempted.

Because rolling back a transaction uses significant system resources, an increase in this ratio suggests resources have been wasted in attempting to execute failed transactions. If you see a continued increase in this ratio, it can indicate serious application or database performance problems. This script raises an event when the rollback ratio exceeds the threshold.

- ♦ **Blocking Sessions:** the user sessions that are blocking other sessions and processes from accessing the Oracle database. You can set a maximum threshold for the number of sessions that are allowed to block other sessions and processes. If the number of blocking sessions exceeds the threshold, the job raises an event.

The account you use to run this script must have `SELECT` permissions for the following tables:

```
DBA_USERS
V_$LOCK
V_$SESSION
V_$SYSSTAT
V_$VERSION
```

This Knowledge Script is supported on Oracle 11gR2 and Oracle 12c.

## Resource Objects

Oracle RAC Database Instance. When you drop a script on an Oracle RAC database Instance, a job executes on that database Instance and monitors only that database Instance.

## Default Schedule

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

| Description   | How to Set It  |
|---|--|
| <b>General Settings</b>   |  |
| Cluster(s) to exclude   | Enter the cluster names to exclude with a comma (,) between each cluster name, to exclude the cluster from all jobs.                                   |
| Database Instance(s) to exclude.                                      | Enter the database instances to exclude with a comma (,) between each database instance name, to exclude the database instance from all jobs.          |
| Event severity when job fails   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default value is 5 (red event indicator).                     |
| Enable debugging?   | Select <b>Yes</b> to enable debugging. The default is unselected.  |
| <b>Raise event when AppManager fails to get metrics?</b>              | Select <b>Yes</b> to raise an event when AppManager fails to get the metrics. The default is Yes.  |
| Event severity  | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default value is 5 (red event indicator).                     |
| <b>Event Settings</b>   |  |
| <b>Raise event if threshold is exceeded for User Calls Per Parse?</b> | Select <b>Yes</b> to raise an event if the ratio of parses per user call exceeds the threshold you set. The default is unselected.                     |
| Threshold - Maximum Parses per user call                              | Enter the maximum parses per user call. If the maximum parses per user call exceeds this threshold, the job raises an event. The default value is 0.2. |

| Description  | How to Set It  |
|--|--|
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default value is 5 (red event indicator).   |
| <b>Raise event if threshold is exceeded for User Sessions?</b>       | Select <b>Yes</b> to raise an event if the number of user sessions exceeds the threshold. The default is Yes.  |
| Number of user sessions to display                                   | Enter the number of user session to display. The default value is 10 user sessions.  |
| Threshold - Maximum total user sessions                              | Enter the total number of user session that exceed the threshold. If the total number of user sessions exceeds this threshold, the job raises an event. The default value is 75 sessions.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default value is 5 (red event indicator).   |
| <b>Raise event if threshold is exceeded for User Rollback Ratio?</b> | Select <b>Yes</b> to raise an event if the user rollback ratio exceeds the threshold. The default is unselected.   |
| Threshold - Maximum user rollback ratio                              | Enter the user rollback ratio that exceed the threshold. If the total number of user sessions exceeds this threshold, the job raises an event. The default value is 75%.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default value is 5 (red event indicator).   |
| <b>Raise event if threshold is exceeded for Blocking Sessions?</b>   | Select <b>Yes</b> to raise an event if the number of blocking sessions exceeds the threshold you set. The default is Yes.  |
| Threshold - Maximum number of blocking sessions                      | Enter the maximum number of blocking session that exceed the threshold. If the total number of blocking sessions exceeds this threshold, the job raises an event. The default value is 10 sessions.  |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default value is 5 (red event indicator).   |
| <b>Data Collection</b>   |  |
| Collect data for   | <p>Select <b>Yes</b> check box to collect data for charts and reports. When you enable data collection, and if monitoring of each metric is enabled, the Knowledge Script returns the following statistics for each instance on which the script is running:</p> <ul style="list-style-type: none"> <li>◆ User Calls Per Parse? The default is unselected.</li> <li>◆ User Sessions? The default is Yes.</li> <li>◆ User Rollback Ratio? The default is unselected.</li> <li>◆ Blocking Sessions? The default is Yes.</li> </ul> |

# VotingDiskStatus

Use this Knowledge Script to monitor the status of voting disks in a RAC.

This Knowledge Script is supported on Oracle 11gR2 and Oracle 12c.

## Resource Objects

Oracle RAC. When you drop a script on an Oracle RAC, a job executes on that cluster and monitors voting disk status of that cluster.

## Default Schedule

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

## Setting Parameter Values

Set the following parameters as needed:

| Description  | How to Set It   |
|--|---|
| <b>General Settings</b>                                  |   |
| Cluster(s) to exclude                                    | Enter the cluster names to exclude with a comma (,) between each cluster name, to exclude the cluster from all jobs.  |
| Event severity when job fails                            | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default severity level is 5 (red event indicator).                                   |
| Event detail format                                      | Select one of the following formats in which to view all events: <ul style="list-style-type: none"><li>◆ HTML Table</li><li>◆ Plain Text</li></ul> The default is HTML Table. |
| Enable debugging?  | Select <b>Yes</b> to enable debugging. The default is unselected.   |
| <b>Raise event when AppManager fails to get metrics?</b> | Select <b>Yes</b> to raise an event when AppManager fails to get the metrics. The default is Yes.   |
| Event severity when AppManager fails to get metrics      | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| <b>Event Settings</b>                                    |   |
| <b>Raise event when voting disks are not online?</b>     | Select <b>Yes</b> to raise an event when voting disks are not online. The default is Yes.   |
| Severity   | Set the event severity level, from 1 to 40, to indicate the importance of the event. The default is 5 (red event indicator).  |
| <b>Data Collection</b>                                   |   |



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| Description                              | How to Set It  |
|--|--|
| Collect data for status of voting disks? | Select <b>Yes</b> to collect for the status of the voting disks. The default is Yes. <ul style="list-style-type: none"><li>◆ 100 - Voting Disk is online</li><li>◆ 0 - Voting Disk is not online</li></ul> |

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