Oracle® Enterprise Manager

ORAchk Healthchecks Plug-in User's Guide

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Preface

This document describes how to use the ORAchk Healthchecks plug-in to leverage features of ORAchk/Exachk for Enterprise Manager targets such as Oracle Exadata Database Machine, Exalogic Elastic Cloud, Cluster Database, Single Instance, and so forth. ORAchk provides functionality for system administrators to automate the assessment of Engineered Systems and non-Engineered Systems for known configuration problems and best practices.

Audience

This document is intended systems and database administrators tasked with monitoring Engineered Systems products.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at `http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc`.

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Related Documents

For more information, see the following documents available in My Oracle Support (`https://support.oracle.com`):

- *Oracle Exadata Best Practices* (Doc ID 757552.1):

  `https://support.oracle.com/rs?type=doc&id=757552.1`

- *Oracle Database Machine Monitoring Best Practices* (Doc ID 1110675.1):

  `https://support.oracle.com/rs?type=doc&id=1110675.1`

- *ORAchk/EXAchk Master Reference* (Doc ID 1969085.1):

  `https://support.oracle.com/rs?type=doc&id=1969085.1`

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

What's Changed

This table provides a brief overview of the document changes for the latest publication of the *Oracle® Enterprise Manager ORAcheck Healthchecks Plug-in User's Guide*:

Part Number	Change Summary
E73557-01	Updated for Enterprise Manager Cloud Control 13*c* Release 13.2.1.0.

1

ORAchk Healthchecks Plug-in Overview and Requirements

This chapter provides an overview description of the ORAchk plug-in and summarizes the prerequisites required before configuration.

- Overview of the ORAchk Healthchecks Plug-in
- Supported Hardware and Software Versions
- ORAchk Plug-in Prerequisites
- Downloading the ORAchk Plug-in
- Deploying the Plug-in
- Upgrading the Plug-in
- Undeploying the Plug-in

1.1 Overview of the ORAchk Healthchecks Plug-in

The ORAchk plug-in integrates ORAchk/Exachk with Oracle Enterprise Manager. Once installed and integrated into Oracle Enterprise Manager Cloud Control, the ORAchk plug-in yields the following benefits:

- Install and set up ORAchk/Exachk from the Enterprise Manager console instead of the command line on individual hosts.
- View ORAchk results as compliance results at the target level.
- Trending, scoring and other compliance standard framework features for ORAchk results.
- Receive notifications in case the ORAchk/EXAchk daemon goes down.

1.2 Supported Hardware and Software Versions

The ORAchk plug-in supports a variety of Oracle hardware and software products:

- Supported Hardware Versions
- Supported Software Versions

1.2.1 Supported Hardware Versions

The ORAchk plug-in supports Engineered Systems hardware, including all variants of Exadata Database Machine and Exalogic Elastic Cloud.

Supported hardware types include:

- Exadata (physical configuration only)
- Recovery appliance
- Exalogic (virtualized configuration)
- Exalogic (physical configuration)

Hardware types currently not supported include:

- Exadata (virtual configuration)
- Oracle SuperCluster
- Oracle Private Cloud Machine

1.2.2 Supported Software Versions

The ORAchk Healthchecks plug-in supports Oracle Enterprise Manager Cloud Control 12*c* Release 12.1.0.5, 13*c* Release 13.1.0.1 and higher. It also supports non-Engineered Systems hardware such as Cluster Database, Single Instance, and so forth.

1.3 ORAchk Plug-in Prerequisites

The following prerequisites must be met before you can deploy the plug-in:

1. Verify that your Engineered Systems hardware and software are at the supported level as described in Supported Hardware and Software Versions.
2. All Engineered System plug-ins should be deployed.
3. InfiniBand switches and storage cells should be an Enterprise Manager-managed target for the respective engineered system.
4. Expect package should be installed on the hosts.

1.4 Downloading the ORAchk Plug-in

You can download plug-ins in online or offline mode. *Online mode* refers to an environment where you have Internet connectivity, and can download the plug-in directly through Enterprise Manager from My Oracle Support. *Offline mode* refers to an environment where you do not have Internet connectivity, or where the plug-in is not available from My Oracle Support.

See the *Managing Plug-ins* chapter in the *Oracle Enterprise Manager Cloud Control Administrator's Guide* for details on downloading the plug-in in either mode.

1.5 Deploying the Plug-in

You can deploy the plug-in to an Oracle Management Service instance using the Enterprise Manager Cloud Control console, or using the EM Command Line Interface (EMCLI). While the console enables you to deploy one plug-in at a time, the command line interface mode enables you to deploy multiple plug-ins at a time, thus saving plug-in deployment time and downtime, if applicable.

See the *Managing Plug-ins* chapter in the *Oracle Enterprise Manager Cloud Control Administrator's Guide* for instructions on deploying the plug-in.

1.6 Upgrading the Plug-in

The Self Update feature allows you to expand Enterprise Manager's capabilities by updating Enterprise Manager components whenever new or updated features become available. Updated plug-ins are made available via the Enterprise Manager Store, an external site that is periodically checked by Enterprise Manager Cloud Control to obtain information about updates ready for download.

See the *Updating Cloud Control* chapter in the *Oracle Enterprise Manager Cloud Control Administrator's Guide* for steps to update the plug-in.

1.7 Undeploying the Plug-in

See the *Managing Plug-ins* chapter in the *Oracle Enterprise Manager Cloud Control Administrator's Guide* for steps to undeploy the plug-in.

2

Manage Health Checks Tools

This chapter explains how to provision and stop the ORAchk plug-in to monitor your Engineered/non-Engineered Systems assets.

Warning:

You should not attempt to associate ORAchk compliance standards to targets directly, but rather follow the below process. Failing to do so will result in incorrect or no results.

The following sections are provided:

- Provisioning ORAchk
- Update the ORAchk Version

2.1 Provisioning ORAchk

Once the plug-in is deployed, follow the steps below to provision ORAchk/Exachk to monitor your Engineered System/Cluster or Hosts running single instance databases assets:

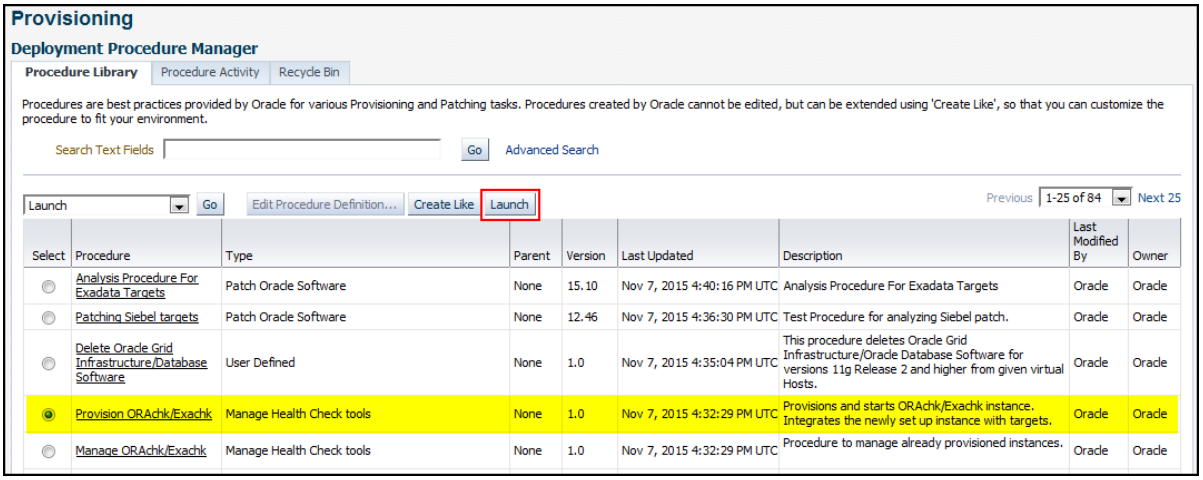
1. All member targets of Engineered and non-Engineered System targets should be discovered and promoted before provisioning ORAchk.
2. From the Enterprise menu, select **Provisioning and Patching**, then **Procedure Library**.

   The Provisioning page displays the Deployment Procedure Manager.

   Tip:

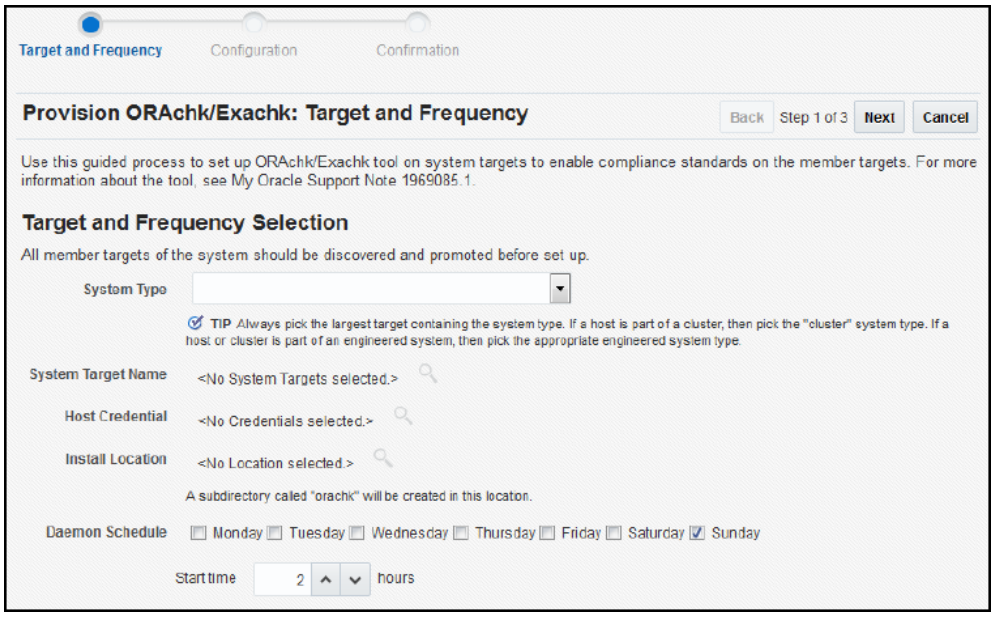
   The Procedure Library contains tools or *procedures* that enable you to enact best practices for effective monitoring and management of your Oracle products.
3. On the Provisioning page, select the **Provision ORAchk/Exachk** procedure and click **Launch**, as shown in Figure 2-1:

Figure 2-1 Launch Provision ORAchk Procedure



4. After you click Launch, the Provision ORAchk/Exachk wizard begins with the Target and Frequency, as shown in Figure 2-2. On this page, you must set up ORAchk/Exachk for the selected target.

Figure 2-2 Target Selection for ORAchk/Exachk Provisioning

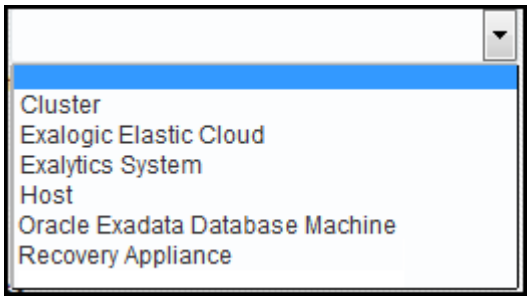


Enter the following information:

a. Select a **System Type**. The target type list is presented for the systems supported by ORAchk/Exachk.

Click the drop-down menu and make a selection of an appropriate system, as shown in Figure 2-3:

Figure 2-3 Select a System Type for ORAchk/Exachk Provisioning



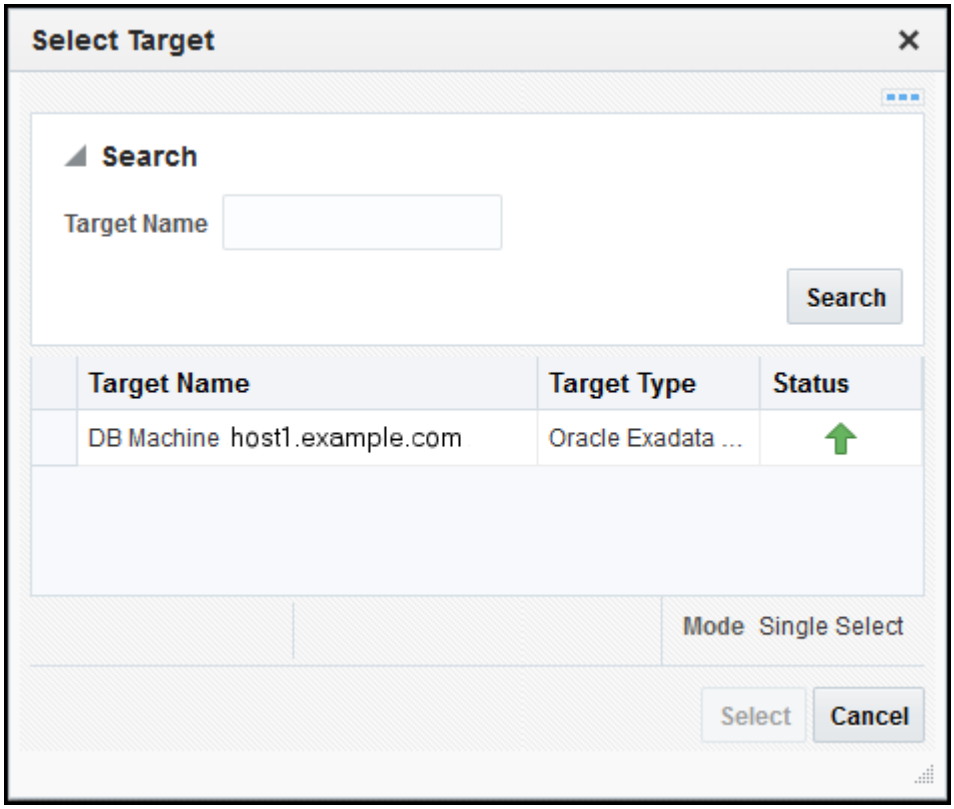
Based on target type selection, more inputs may be needed. For example, if you select Oracle Exadata Database Machine, then you may have to select **Cluster** because one instance of Exachk is required per cluster.

Tip:

Always pick the highest available system type in the topology. If the host is part of cluster, then pick **cluster** system type. If the host or cluster is part of an engineered system, then pick the appropriate engineered system type.

b. After you select the system type, select the **System Target Name**. Click the search icon and select a target name from the list. In the example shown in Figure 2-4, if you select an Exadata Databse Machine target type, then all available targets are shown in the list:

Figure 2-4 Select a Target Name for ORAchk/Exachk Provisioning



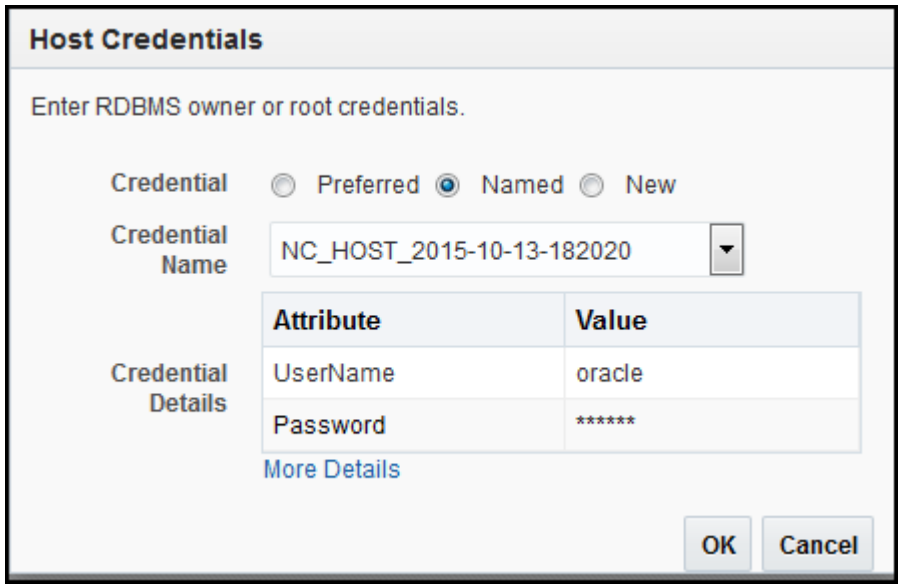
Note:

Only targets that have already been discovered by Enterprise Manager will appear in this list.

c. If the system type you select has a cluster, then choose the cluster on which you want to configure Exachk. One instance of Exachk is needed for each cluster. Select a cluster name from the **Cluster** drop-down menu.

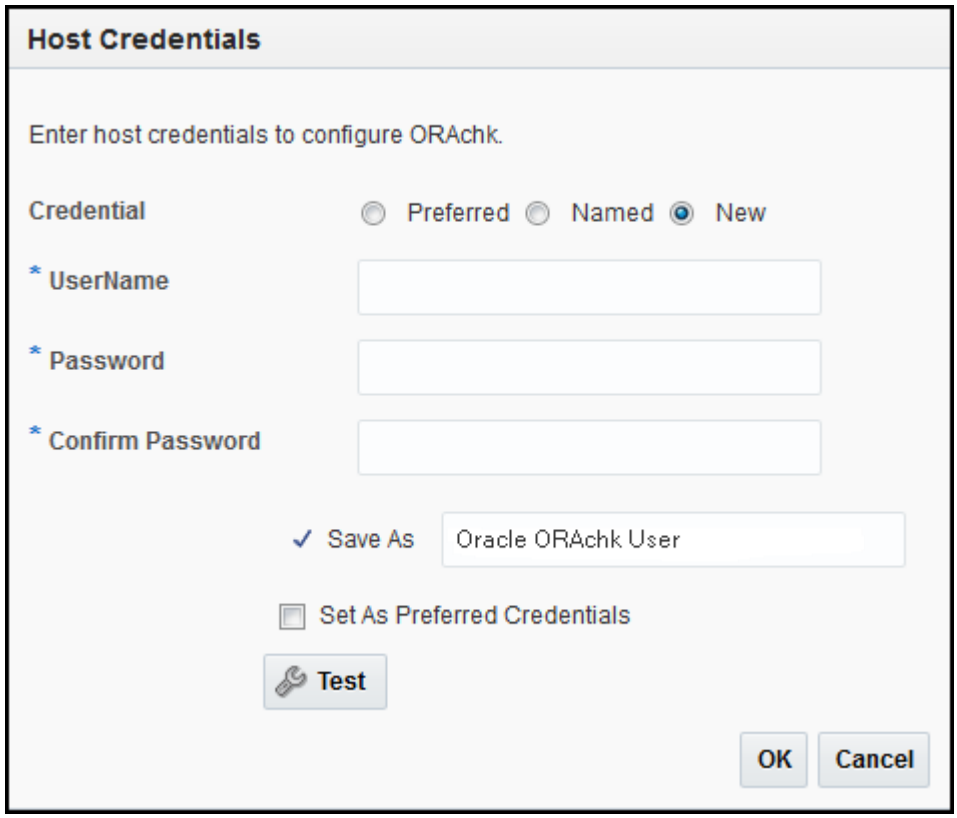
d. Set the Host Credential. Click the search icon and select either **Preferred** or **Named** in the pop-up window, as shown in Figure 2-5:

Figure 2-5 Select Preferred or Named Credentials for ORAchk/Exachk Provisioning



If the credentials are not set for the target, then click **New** and enter the information as shown in Figure 2-6:

Figure 2-6 Set New Credentials for ORAchk/Exachk Provisioning



e. The Install Location should then be populated (by default) with the location for where the `orachk` subdirectory will be created. Click the search icon to change the location.

f. Set the Daemon Schedule. Select the day and the time you want to begin. By default, the schedule is set for 2 am Sunday morning.

Click **Next** to begin the configuration. Provisioning processing takes about 5 minutes.

5. On the Configuration page (Figure 2-7), enter the following configuration information:

- **General Configuration:** Verify the CRS home directory. The ORAchk/Exachk wizard will pre-populate this field with the necessary information.
- **Cell Cluster Configuration:** Select an option to evaluate the best practices on the storage cells of a cluster or to skip the checks for the storage cells.

Note:

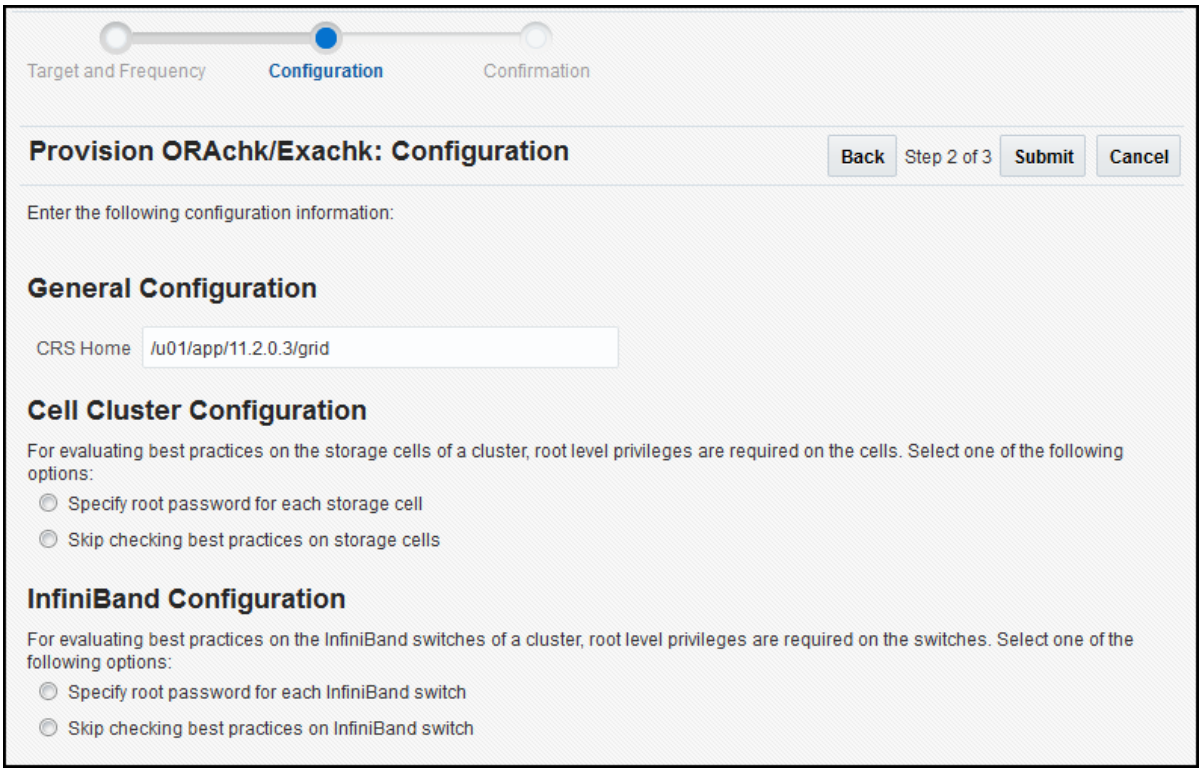
For evaluating best practices on the storage cells of a cluster, root level privileges are required on the cells. You can select an option to use the same root password on all storage cells. Otherwise, enter the password for each storage cell.

- **InfiniBand Configuration:** Select an option to evaluate the best practices on the InfiniBand switch of the cluster or to skip the checks on the InfiniBand switch.

Note:

For evaluating best practices on the InfiniBand switch of a cluster, root level privileges are required. You can select an option to use the same root password on all InfiniBand switches. Otherwise, enter the password for each InfiniBand switch.

Figure 2-7 Configuration Page



6. Click **Submit**.
7. On the Confirmation page, the Exachk setup begins. Click **Show Status** to view the setup details as the process continues.
8. Click **Finish**.

Note:

Repeat these steps for each Engineered Systems target to set up ORAchk.

The steps described above can vary from engineered system to system. The questions/details asked for will vary.

2.2 Update the ORAchk Version

ORAchk versions will be made available through the Self Update feature of Enterprise Manager. To update the ORAchk plug-in:

- Stop the ORAchk Daemon

- Update Entities

2.2.1 Stop the ORAchk Daemon

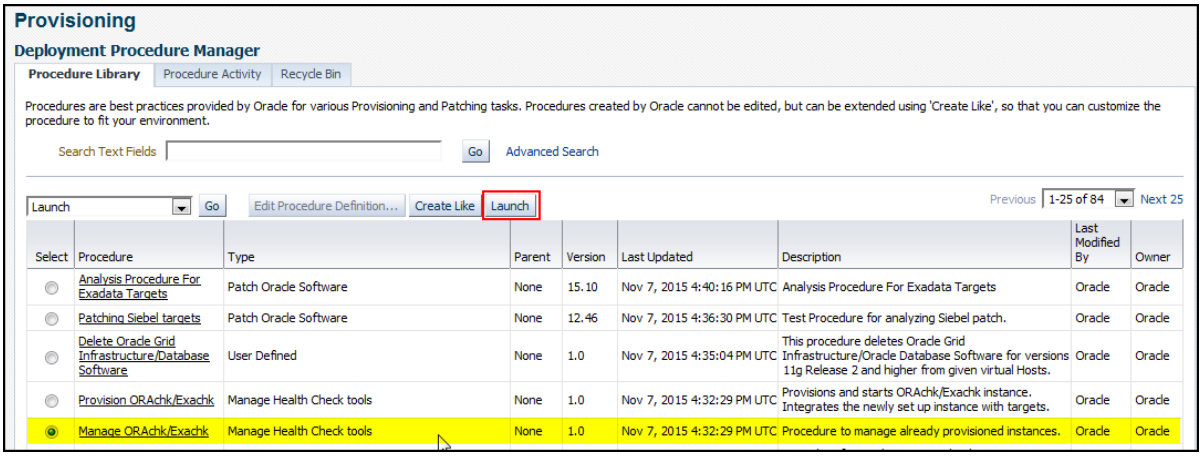
Once ORAchk has been set up as the daemon, you can stop it, as needed:

1. From the Enterprise menu, select **Provisioning and Patching**, then **Procedure Library**.

   The Provisioning page displays showing the Deployment Procedure Manager.

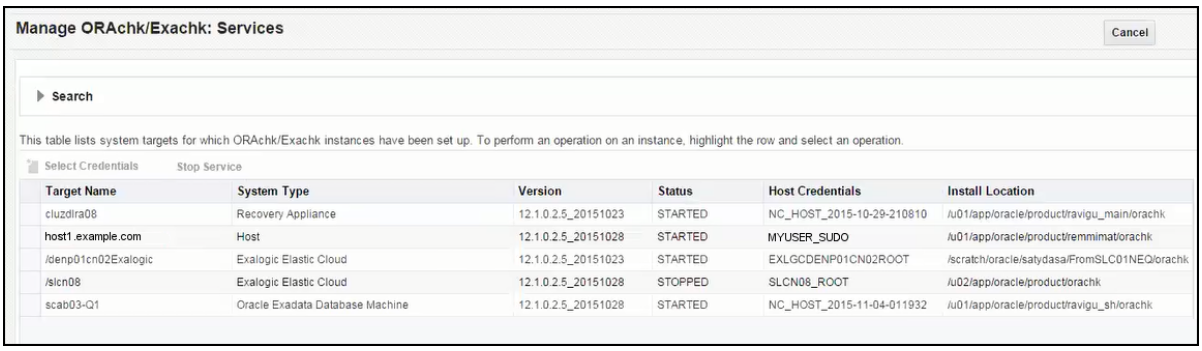
2. On the Provisioning page, select the **Manage ORAchk/Exachk Services** procedure and click **Launch** as shown in Figure 2-8:

Figure 2-8 Manage ORAchk/Exachk



3. On the Manage ORAchk Services page, a list of all targets monitored by the ORAchk plug-in is displayed, as shown in Figure 2-9:

Figure 2-9 Targets Monitored by ORAchk/Exachk



The table contains the following information:

- **Target Name:** The target name as recognized by Enterprise Manager.
- **System Type:** The type of the system you set during the provisioning (see Provisioning ORAchk).
- **Version:** The release version of the ORAchk plug-in running for a particular target.

- **Status:** The current monitoring status of the plug-in. The status field is provided to help users track progress of setup activities and are described below:

  Provisioned – Tool bits have been staged on mentioned location. However, configuration data has not been provided to start the daemon process.

  Processing – Daemon setup is in progress.

  Collection Enabled – OMS has been configured to collect Orachk/Exachk results for the system target (or cluster target wherever applicable). Configuration Extensions feature of the platform is used to collect Orachk/Exachk results.

  Started – The setup process is complete.

  Stopped – The Orachk services has been stopped successfully.

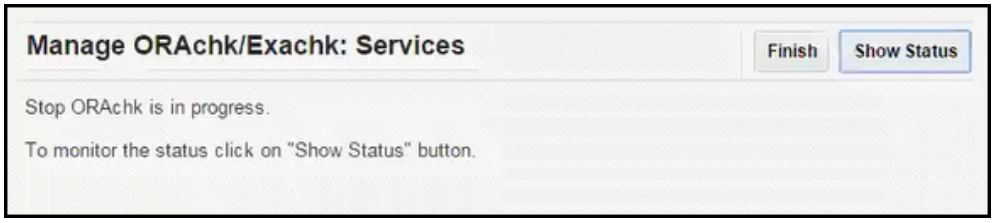
  Terminal states are **Provisioned**, **Started**, and **Stopped**. If a procedure activity has failed and the status in not amongst these terminal states, refer to Troubleshooting the ORAchk Plug-in to recover.

- **Host Credentials:** The host credentials of the target that were last used during the provisioning. This user must have the privileges to stop the ORAchk plug-in.

- **Location:** The directory location of the ORAchk plug-in.

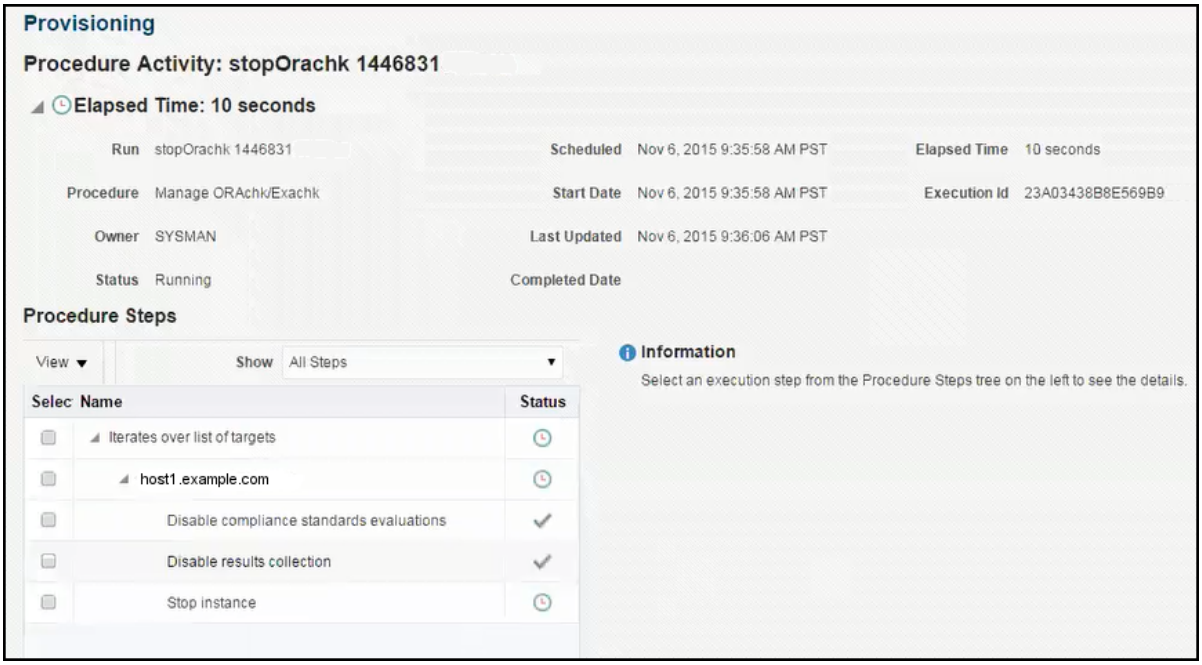
4. Select the target you want to exclude from ORAchk monitoring and click **Stop Service**. A stop job will be submitted to Enterprise Manager.

Figure 2-10 Stop ORAchk



5. Click **Show Status** to see the progression, as shown in Figure 2-11. The Procedure Steps show each part of the stop process. A check mark indicates that the step is complete.

Figure 2-11 Status of Stop Job



2.2.2 Update Entities

Three entities must be updated to use the latest version of ORAchk:

1. Updating Diagnostic Tools Updates Entity
2. Updating Compliance Content Entity
3. Updating ORAchk Metadata Entity

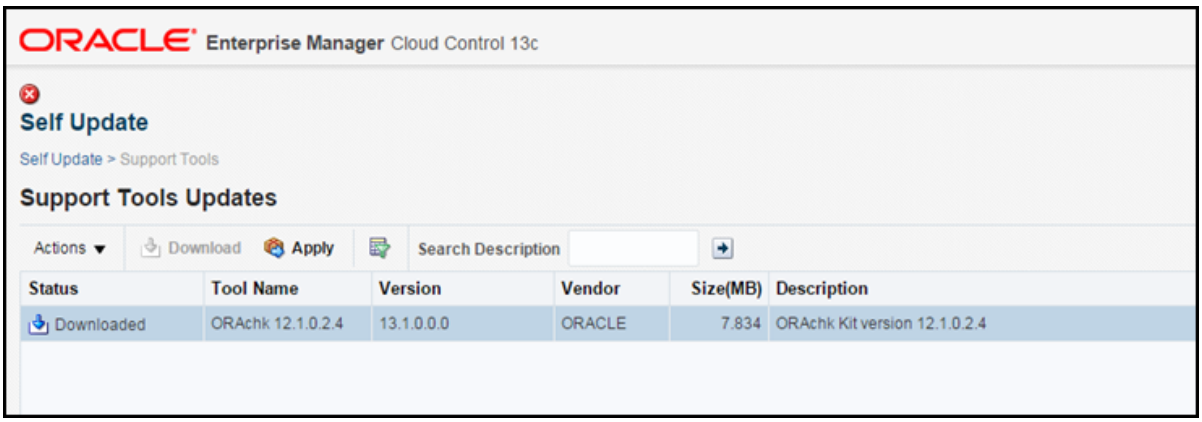
After applying these entities, every subsequent setup will use the new ORAchk. Older instances will continue to use older version of ORAchk.

2.2.2.1 Updating Diagnostic Tools Updates Entity

This entity is used for updating ORAchk binaries:

1. Download the available update for Support Tool entity. Figure 2-12 shows an example of what the ORAchk entries will look like:

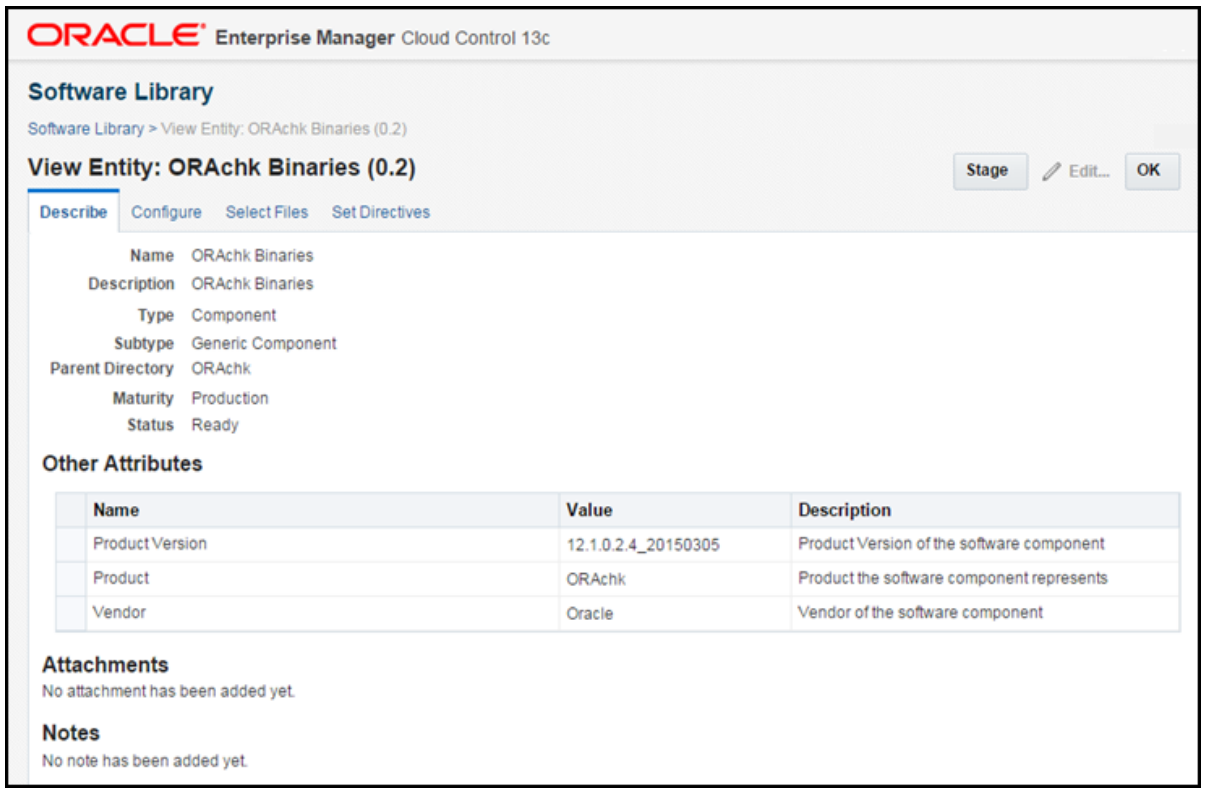
Figure 2-12 Support Tools Updates Example



2. Download the available update of other two entities. This is to ensure that all updates related to ORAchk versions are applied together.

3. Apply the update and verify in software library if correct version has been updated (Figure 2-13).

Figure 2-13 Software Library Example

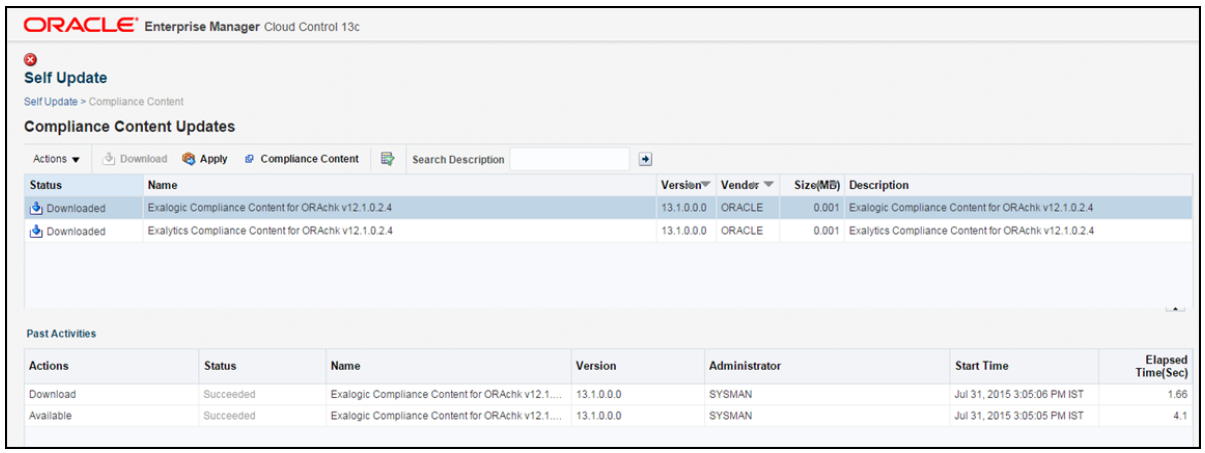


2.2.2.2 Updating Compliance Content Entity

All new/modified ORAchk compliance standards and rules will be shipped using this entity:

1. Download the available update for Support Tool entity. Figure 2-14 shows how the ORAchk entries will look:

Figure 2-14 Self Update Compliance Content Updates Example



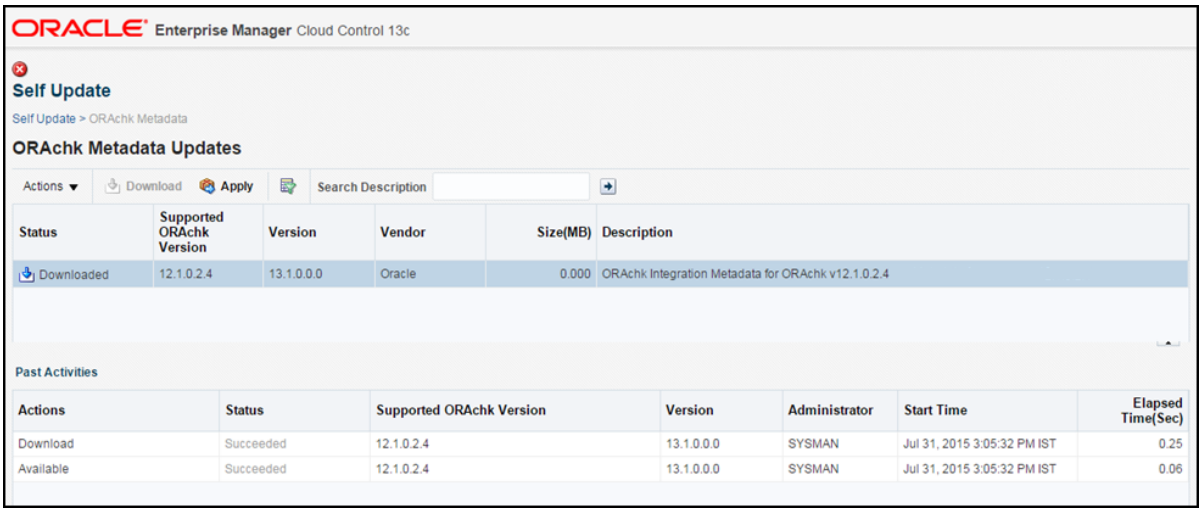
2. Apply these updates.

2.2.2.3 Updating ORAchk Metadata Entity

This entity is used to keep mapping of ORAchk checks on Enterprise Manager targets:

1. Download the available update. Figure 2-15 shows a sample entry:

Figure 2-15 Self Update ORAchk Metadata Updates Example



2. Apply these updates.

3

Using the ORAchk Plug-in

This chapter describes how to use the ORAchk plug-in, including how to access compliance results and general troubleshooting steps.

The following sections are provided:

- Accessing Compliance Results Details
- Compliance Standards for All Supported System Types
- Self Updates
- Troubleshooting the ORAchk Plug-in

3.1 Accessing Compliance Results Details

The Compliance Results shows a listing of all targets including targets that are 100% compliant to a particular standard and targets that have compliance issues. ORAchk results are included in this list to show any Engineered Systems target that may be out of compliance.

You can access the Compliance Results for ORAchk/Exachk by:

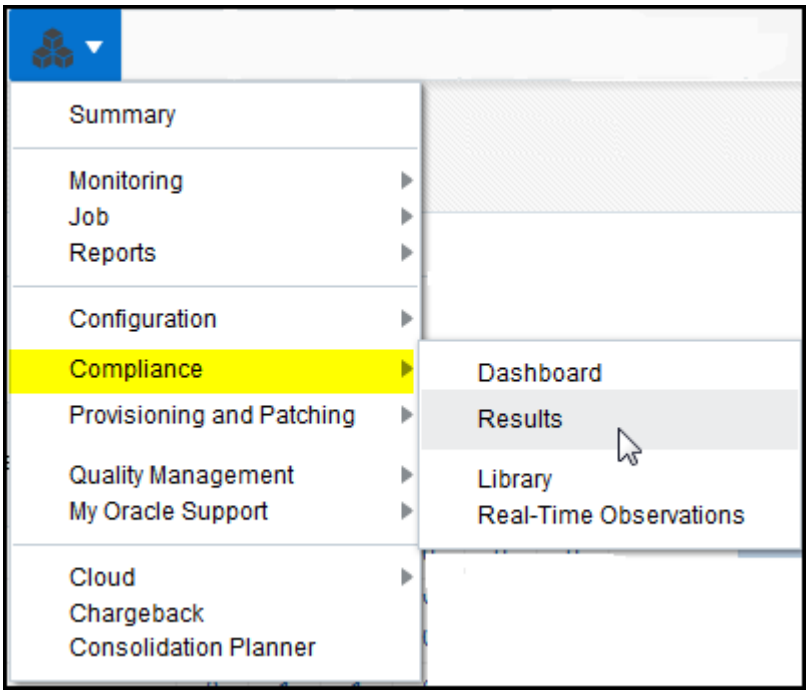
- Accessing ORAchk/Exachk Compliance Results through the Enterprise Menu
- Accessing ORAchk/Exachk Compliance Results through the Target Home Page
- Accessing ORAchk/Exachk Compliance Framework Details through the Compliance Dashboard
- Compliance Content for Optional Targets

3.1.1 Accessing ORAchk/Exachk Compliance Results through the Enterprise Menu

To view the Compliance Results for ORAchk/Exachk:

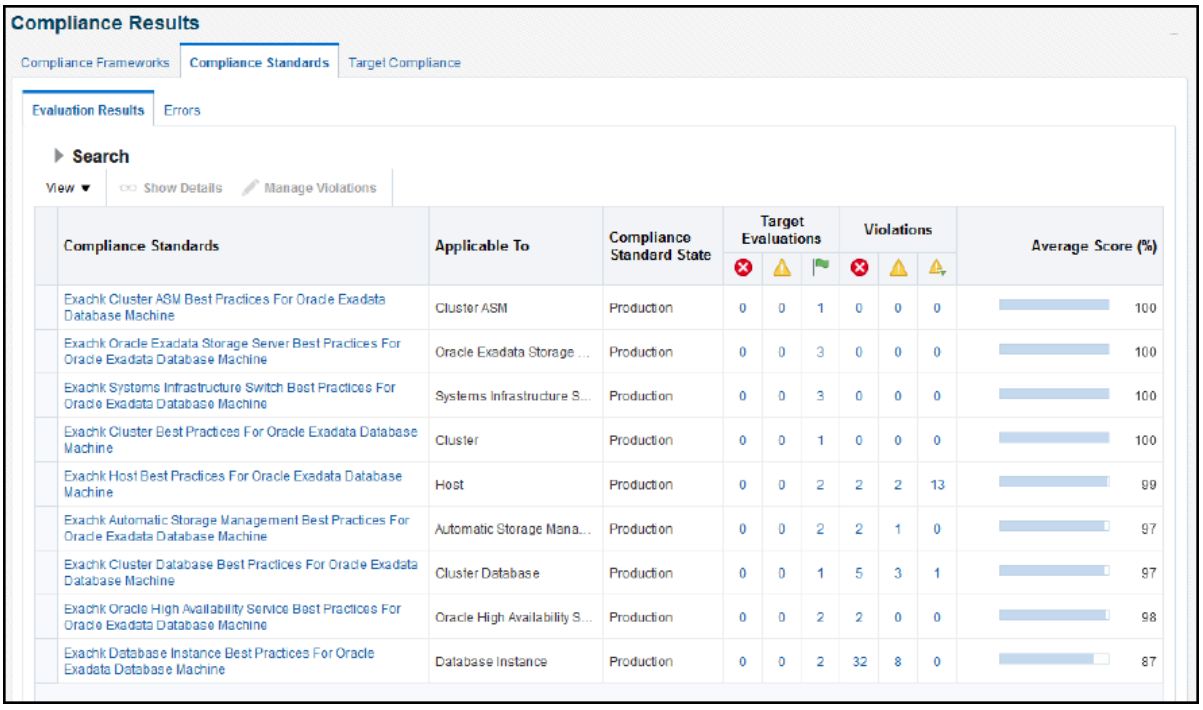
1. From the Enterprise menu, select Compliance, then select Results (Figure 3-1):

Figure 3-1 Compliance Results Menu



2. The Compliance Results page displays showing the evaluation results for all targets (Figure 3-2). By default, the Compliance Standards and Evaluation Results are shown.

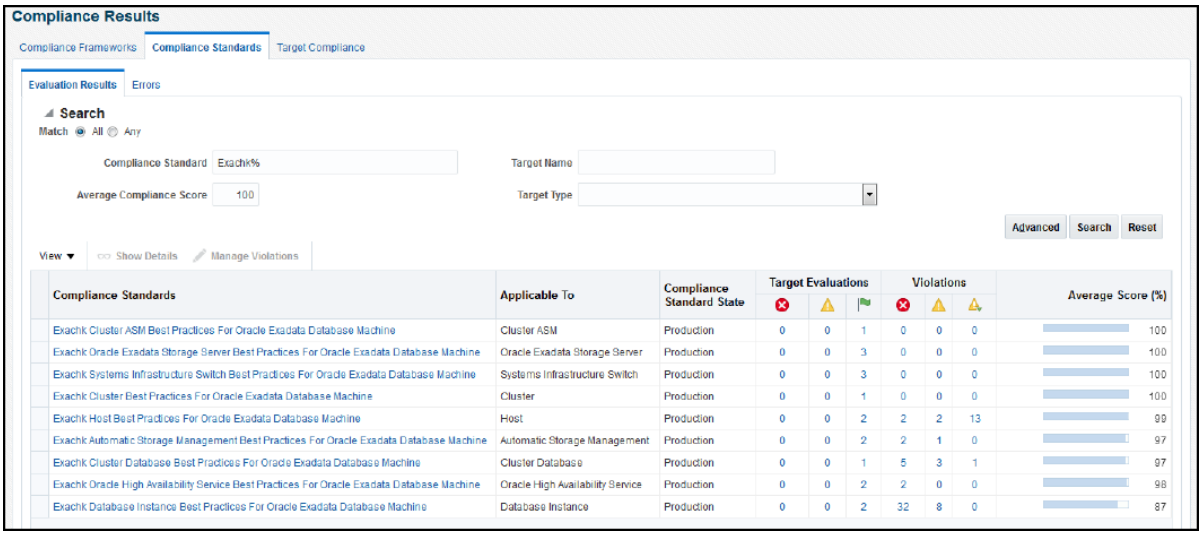
Figure 3-2 Evaluation Results



Compliance Standards	Applicable To	Compliance Standard State	Target Evaluations			Violations			Average Score (%)
Exachk Cluster ASM Best Practices For Oracle Exadata Database Machine	Cluster ASM	Production	0	0	1	0	0	0	100
Exachk Oracle Exadata Storage Server Best Practices For Oracle Exadata Database Machine	Oracle Exadata Storage ...	Production	0	0	3	0	0	0	100
Exachk Systems Infrastructure Switch Best Practices For Oracle Exadata Database Machine	Systems Infrastructure S...	Production	0	0	3	0	0	0	100
Exachk Cluster Best Practices For Oracle Exadata Database Machine	Cluster	Production	0	0	1	0	0	0	100
Exachk Host Best Practices For Oracle Exadata Database Machine	Host	Production	0	0	2	2	2	13	99
Exachk Automatic Storage Management Best Practices For Oracle Exadata Database Machine	Automatic Storage Mana...	Production	0	0	2	2	1	0	97
Exachk Cluster Database Best Practices For Oracle Exadata Database Machine	Cluster Database	Production	0	0	1	5	3	1	97
Exachk Oracle High Availability Service Best Practices For Oracle Exadata Database Machine	Oracle High Availability S...	Production	0	0	2	2	0	0	98
Exachk Database Instance Best Practices For Oracle Exadata Database Machine	Database Instance	Production	0	0	2	32	8	0	87

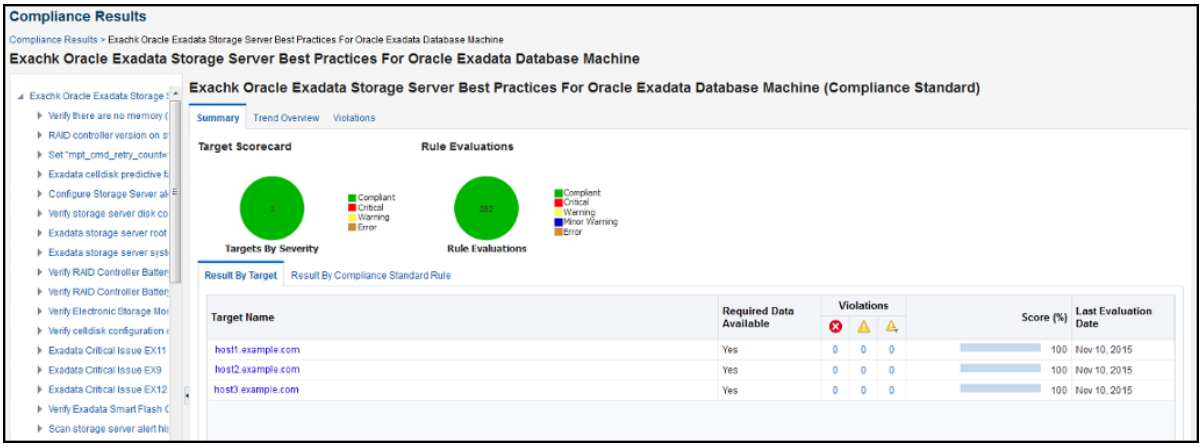
3. To limit the results to ORAchk or Exachk, expand the Search area, enter **ORAchk%** or **Exachk%** in the Compliance Standard field, and click **Search**. The page will refresh and show the filtered compliance standards (Figure 3-3):

Figure 3-3 ORAchk Compliance Standards



4. Click a link in the Compliance Standards column to view details about the standard (Figure 3-4). In the navigation tree, all rules for the standard are listed.

Figure 3-4 Results by Target

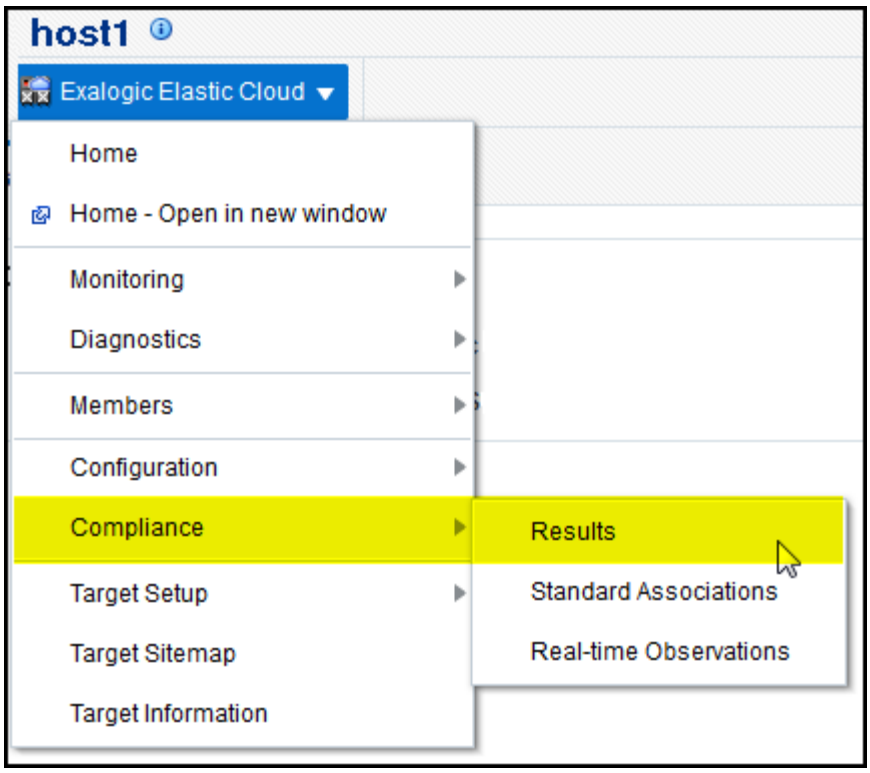


3.1.2 Accessing ORAchk/Exachk Compliance Results through the Target Home Page

To access Compliance Results for ORAchk/Exachk from the target home page:

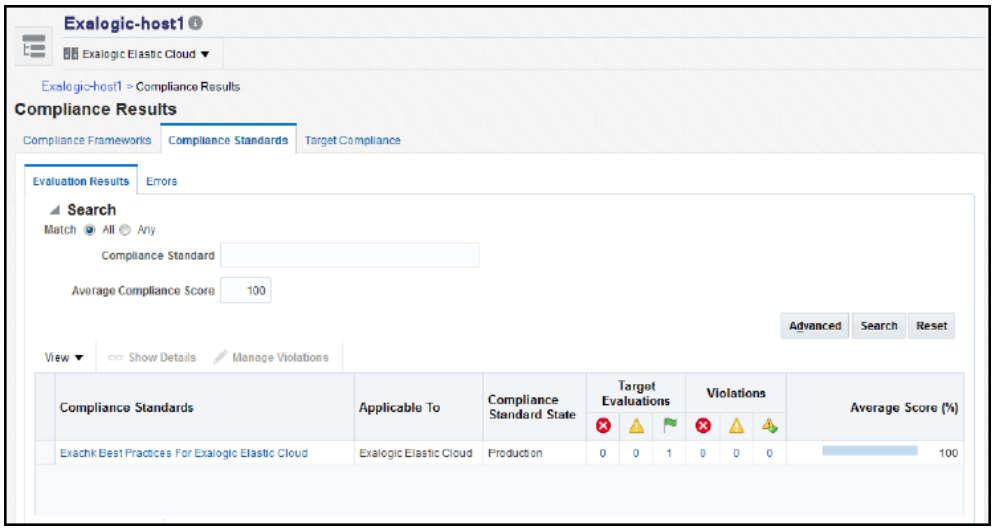
1. From the target's menu, select **Compliance**, then select **Results**:

Figure 3-5 Target Menu - Compliance Results



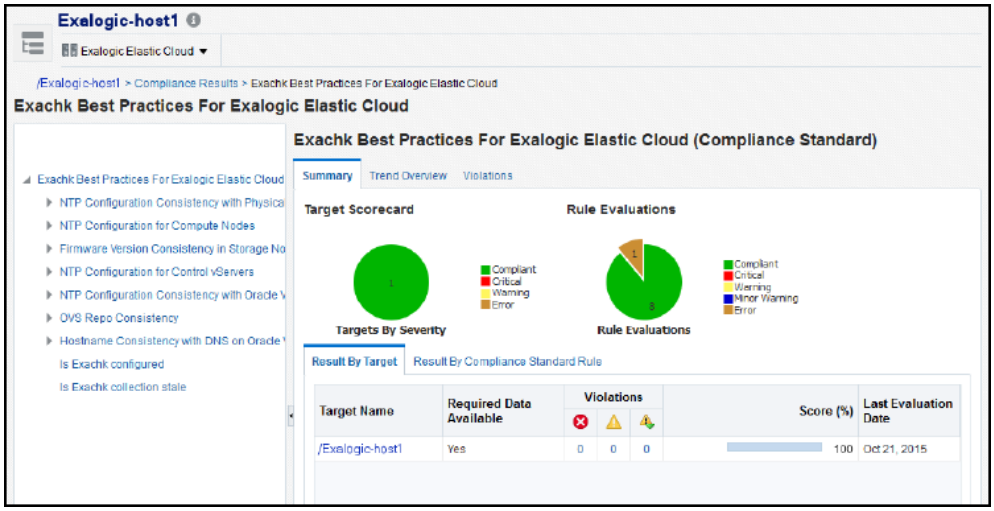
2. The Compliance Results page shows all ORAchk/Exachk evaluation results for the target (Figure 3-6):

Figure 3-6 ORAchk Results for a Single Target



3. Click a link in the Compliance Standards column to view details about the standard (Figure 3-7) as it applies to the target. In the navigation tree, all rules for the standard are listed.

Figure 3-7 Target Compliance Standard Details

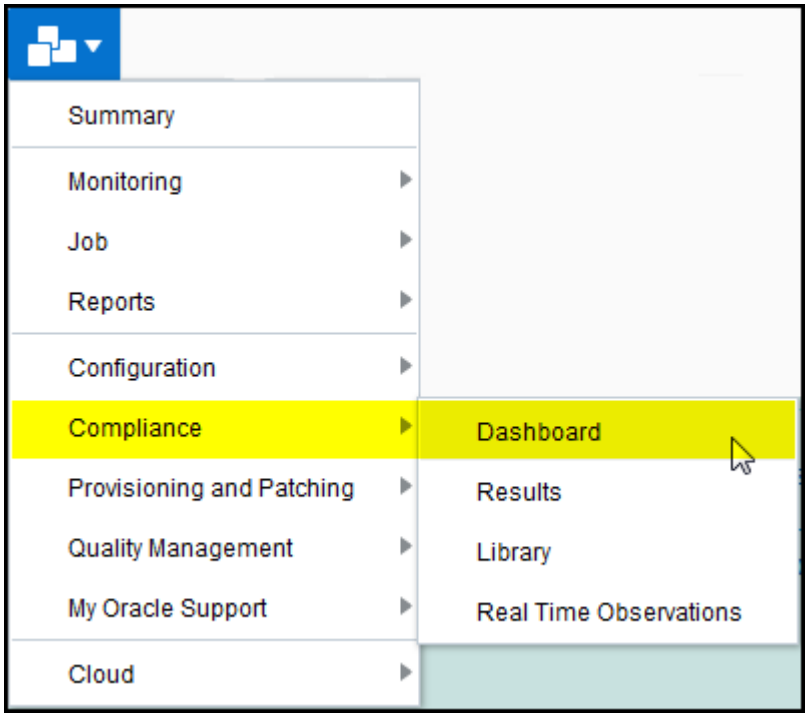


3.1.3 Accessing ORAchk/Exachk Compliance Framework Details through the Compliance Dashboard

To access the compliance framework details through the compliance dashboard:

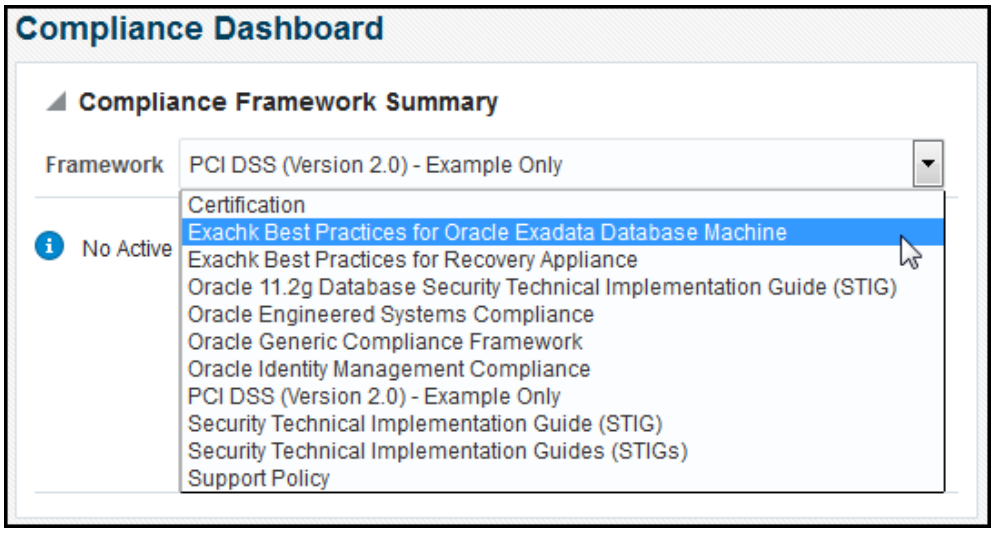
1. From the **Enterprise** menu, select **Compliance**, then select **Dashboard** as shown in Figure 3-8:

Figure 3-8 Dashboard Menu



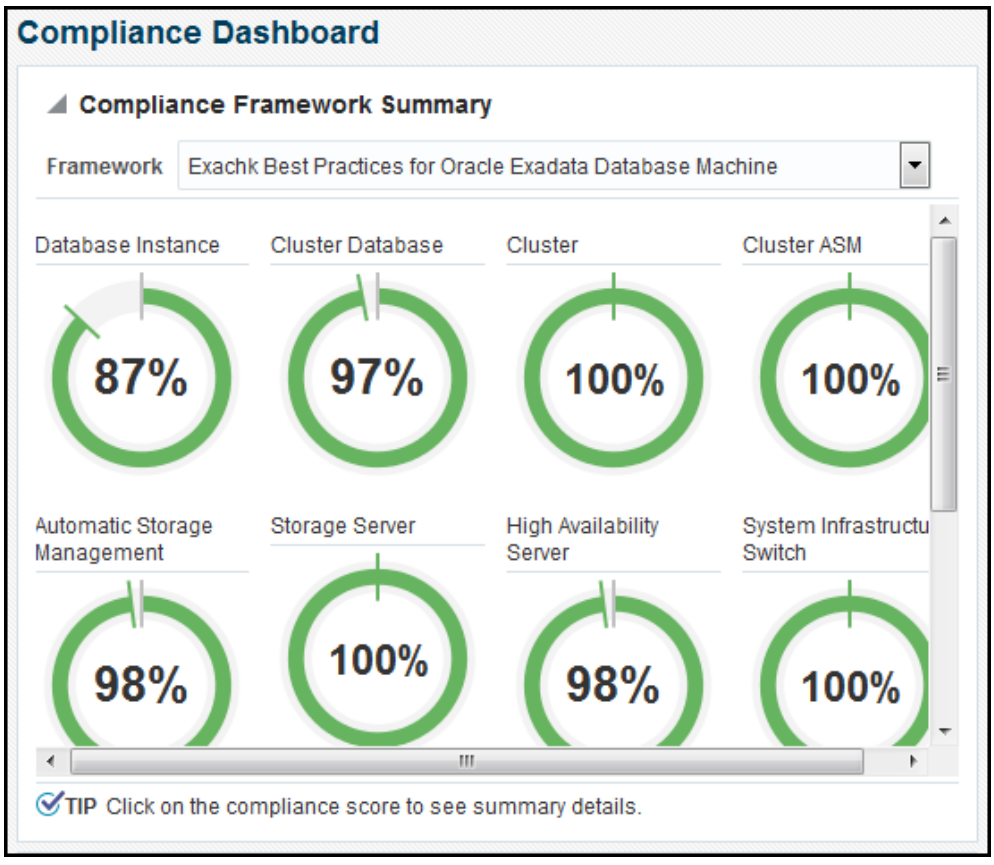
2. On the Compliance Dashboard page, select a Framework from the drop-down menu (for example, select **Exachk Best Practices for Oracle Exadata Database Machine**) as shown in Figure 3-9:

Figure 3-9 Select Framework



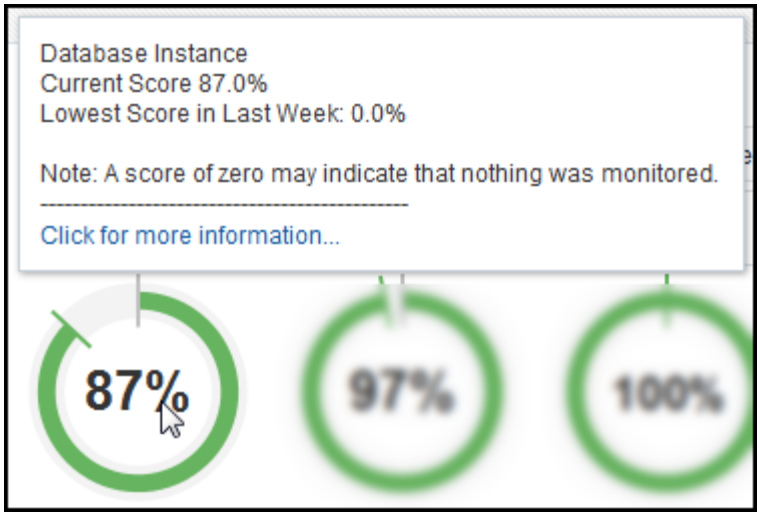
3. The Compliance Framework Summary will refresh with a graphic overview of the components of the framework you have selected (Figure 3-10). These dials provide a high-level overview of the system component, including the score:

Figure 3-10 Framework Dials



4. Click a dial to see additional information (Figure 3-11):

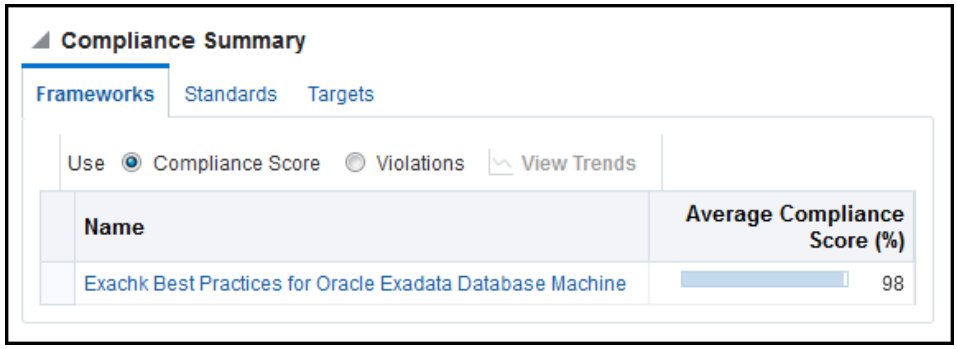
Figure 3-11 Dial Details



5. In the Compliance Summary section, there are three areas where you can drill down for details:

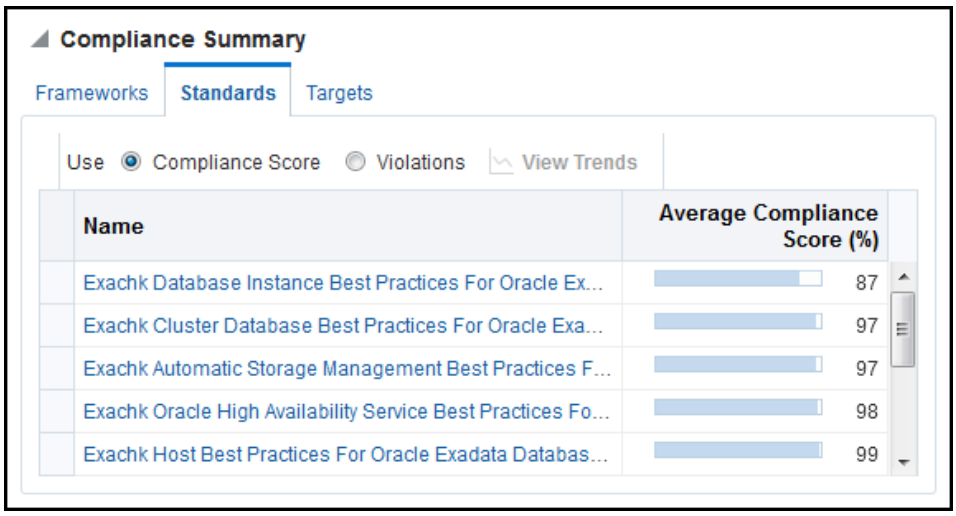
   - **Frameworks** shows the Compliance Frameworks you have selected (Figure 3-12):

     Figure 3-12 Compliance Summary: Frameworks

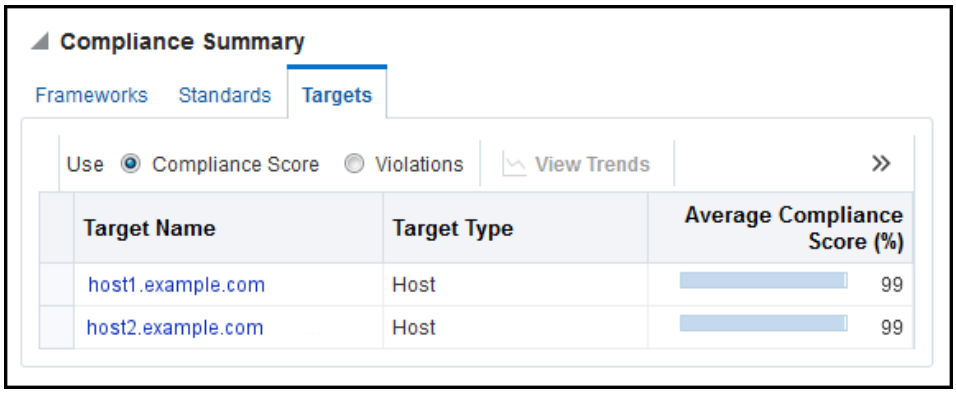
   - **Standards** show all of the best practices standards being monitored for your target (Figure 3-13):

Figure 3-13 Compliance Summary: Standards



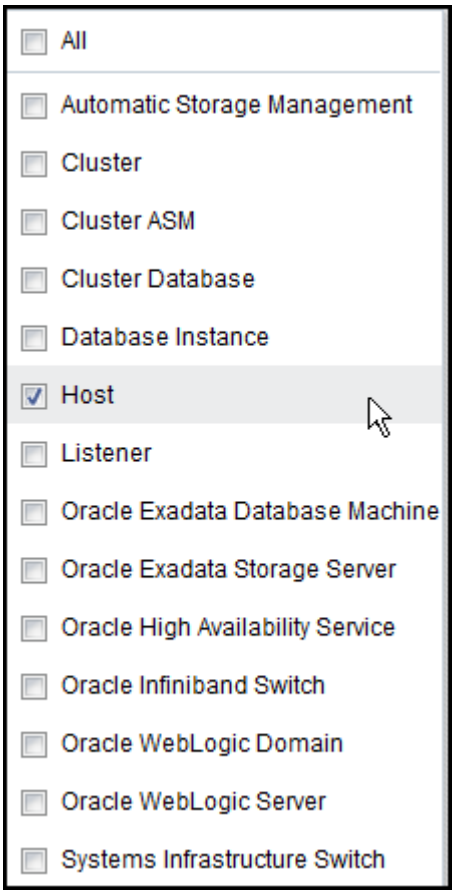
- **Targets** show the compliance score for the targets monitored by ORAchk/ Exachk (Figure 3-14):

Figure 3-14 Compliance Summary: Targets



For additional target types to appear in this section, click **>>** and select the target types from the list (Figure 3-15):

Figure 3-15 Compliance Summary: Target Types



3.1.4 Compliance Content for Optional Targets

The ORAchk Healthchecks plug-in registers compliance content for all supported target types. In cases where users have not deployed optional plug-ins that ships some of the supported target types, compliance content will not be registered for such types.

For example, for target types such as TimesTen Database for Exalytics System, Oracle ZFS Storage Appliance target for Exalogic System, and so forth, if you deploy such plug-ins later, then you can download the compliance content from Self update and apply later.

Note:

Compliance contents for the same ORAchk version should be deployed as available in the Software library.

3.2 Compliance Standards for All Supported System Types

The following sections list the compliance standards for all supported system types:

- Oracle Exadata Database Machine Compliance Standards
- Exalogic Elastic Cloud Compliance Standards
- Exalytics System Compliance Standards

- Cluster Compliance Standards
- Recovery Appliance Compliance Standards
- Host Compliance Standards

3.2.1 Oracle Exadata Database Machine Compliance Standards

- Exachk Cluster Best Practices For Oracle Exadata Database Machine
- Exachk Oracle High Availability Service Best Practices For Oracle Exadata Database Machine
- Exachk Host Best Practices For Oracle Exadata Database Machine
- Exachk Database Instance Best Practices For Oracle Exadata Database Machine
- Exachk Oracle Exadata Storage Server Best Practices For Oracle Exadata Database Machine
- Exachk Oracle Infiniband Switch Best Practices For Oracle Exadata Database Machine
- Exachk Systems Infrastructure Switch Best Practices For Oracle Exadata Database Machine
- Exachk Cluster ASM Best Practices For Oracle Exadata Database Machine
- Exachk Automatic Storage Management Best Practices For Oracle Exadata Database Machine
- Exachk Cluster Database Best Practices For Oracle Exadata Database Machine

3.2.2 Exalogic Elastic Cloud Compliance Standards

- Exachk Best Practices For Exalogic Elastic Cloud
- Exachk Host Best Practices For Exalogic Elastic Cloud
- Exachk Oracle Infiniband Switch Best Practices For Exalogic Elastic Cloud
- Exachk Systems Infrastructure Switch Best Practices For Exalogic Elastic Cloud
- Exachk Oracle ZFS Storage Server Best Practices For Exalogic Elastic Cloud
- Exachk Oracle VM Guest Best Practices For Exalogic Elastic Cloud
- Exachk Oracle VM Server Best Practices For Exalogic Elastic Cloud
- Exachk Sun ZFS Storage 7000 Best Practices For Exalogic Elastic Cloud

3.2.3 Exalytics System Compliance Standards

- Exachk Best Practices For Exalytics System
- Exachk Host Best Practices For Exalytics System
- Exachk Oracle BI Instance Best Practices For Exalytics System
- Exachk TimesTen In Memory Database 11g Best Practices For Exalytics System

3.2.4 Cluster Compliance Standards

- ORAchk Best Practices For Cluster
- ORAchk Oracle High Availability Service Best Practices For Cluster
- ORAchk Host Best Practices For Cluster
- ORAchk Database Instance Best Practices For Cluster
- ORAchk Automatic Storage Management Best Practices For Cluster
- ORAchk Cluster Database Best Practices For Cluster

3.2.5 Recovery Appliance Compliance Standards

- Exachk Cluster Best Practices For Recovery Appliance
- Exachk Oracle High Availability Service Best Practices For Recovery Appliance
- Exachk Host Best Practices For Recovery Appliance
- Exachk Database Instance Best Practices For Recovery Appliance
- Exachk Oracle Exadata Storage Server Best Practices For Recovery Appliance
- Exachk Oracle Infiniband Switch Best Practices For Recovery Appliance
- Exachk Systems Infrastructure Switch Best Practices For Recovery Appliance
- Exachk Automatic Storage Management Best Practices For Recovery Appliance
- Exachk Cluster Database Best Practices For Recovery Appliance

3.2.6 Host Compliance Standards

- ORAchk Oracle High Availability Service Best Practices For Host
- ORAchk Best Practices For Host
- ORAchk Database Instance Best Practices For Host
- ORAchk Automatic Storage Management Best Practices For Host

3.3 Self Updates

The regular updates for compliance standards, for each ORAchk/Exachk release, will be provided through Enterprise Manager Cloud Control's Self Update feature. For every ORAchk/Exachk release, the following self update downloads will be available:

- ORAchk/Exachk Generic Compliance Content
- Exachk Exalogic Compliance Content
- Exachk Exalogic Virtualization Compliance Content
- Exachk Exalogic Sun ZFS Compliance Content
- Exachk Exalytics Compliance Content

- Exachk Exalytics TimesTen Compliance Content

All updates are organized into multiple downloads to allow users to choose among these depending upon the applicability for an Enterprise Manager instance. For example, all users may not need the Exalytics update because they do not have an Exalytics target.

3.4 Troubleshooting the ORAchk Plug-in

This section describes common problems you may encounter with the ORAchk plug-in, including:

- Special Purpose Compliance Rules
- Failures in Provisioning the ORAchk/Exachk Procedure Activity

3.4.1 Special Purpose Compliance Rules

Two compliance rules, which are available in the ORAchk plug-in, help users to self service some of the issues that your system may encounter:

- **"Is ORAchk configured" or "Is Exachk Configured"**

  This rule aids in identifying if users associate the compliance standard meant for ORAchk/Exachk directly with a target. The ORAchk/Exachk standards can be associated only using deployment steps explained in Provisioning ORAchk.

- **"Is Exachk collection stale" or "Is ORAchk collection stale"**

  This rule violates if ORAchk/Exachk results are older than the expected date (based on configuration frequency). Incidents will be created whenever this compliance rule is violated.

3.4.2 Failures in Provisioning the ORAchk/Exachk Procedure Activity

Problem: Deployment procedure activities can fail due to environment issues in target system or incorrect information provided by the user.

Resolution: Depending upon the situation, correct remedial actions can be taken. Primarily these actions involve retrying the activities from failed step or recover from failed setup attempts by using stop Orachk service and start the provisioning process from beginning.

To facilitate the latter, the system allows users to stop Orachk irrespective of the state of the instance. It automatically skips the steps depending upon the failure point during provisioning activity.

Moreover, multiple stop activities can be submitted in succession. For example, if users provide a wrong password in the "stop Orachk" activity, which caused failures in third step, they can submit another activity by providing correct password.

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