

# Oracle® Enterprise Manager

## ORAchk Healthchecks Plug-in User's Guide



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The Oracle logo, consisting of a solid red square with the word "ORACLE" in white, uppercase, sans-serif font centered within it.

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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>.

### Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

## 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>
- *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:

<b>Convention</b>	<b>Meaning</b>
<b>boldface</b>	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	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.

# 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](#)

### 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.

### Supported Hardware and Software Versions

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

- [Supported Hardware Versions](#)
- [Supported Software Versions](#)

### 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

## Supported Software Versions

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

## 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.

## 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 *Oracle Enterprise Manager Cloud Control Administrator's Guide* for details on downloading the plug-in in either mode.

## 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 *Oracle Enterprise Manager Cloud Control Administrator's Guide* for instructions on deploying the plug-in.

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

## Undeploying the Plug-in

See the *Managing Plug-ins* chapter in *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](#)

## 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:

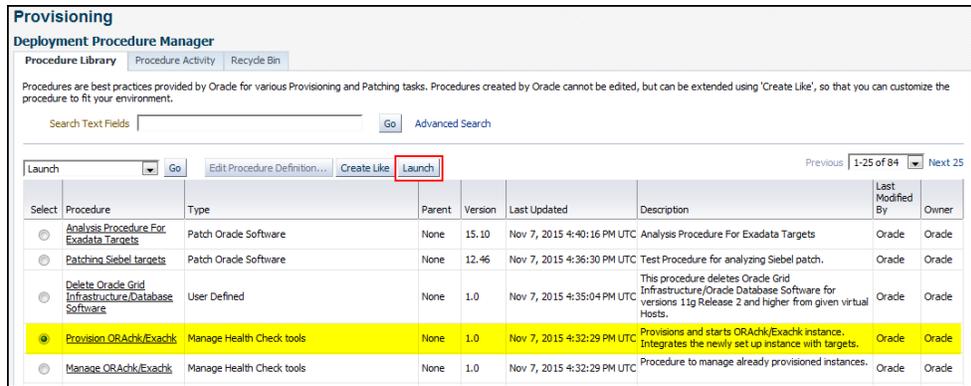
1. All member targets of Engineered and non-Engineered System targets should be discovered and promoted before provisioning ORAchk.
2. From the Enterprise menu, select **Provisioning and Patching**, then **Procedure Library**.

The Provisioning page displays the Deployment Procedure Manager.

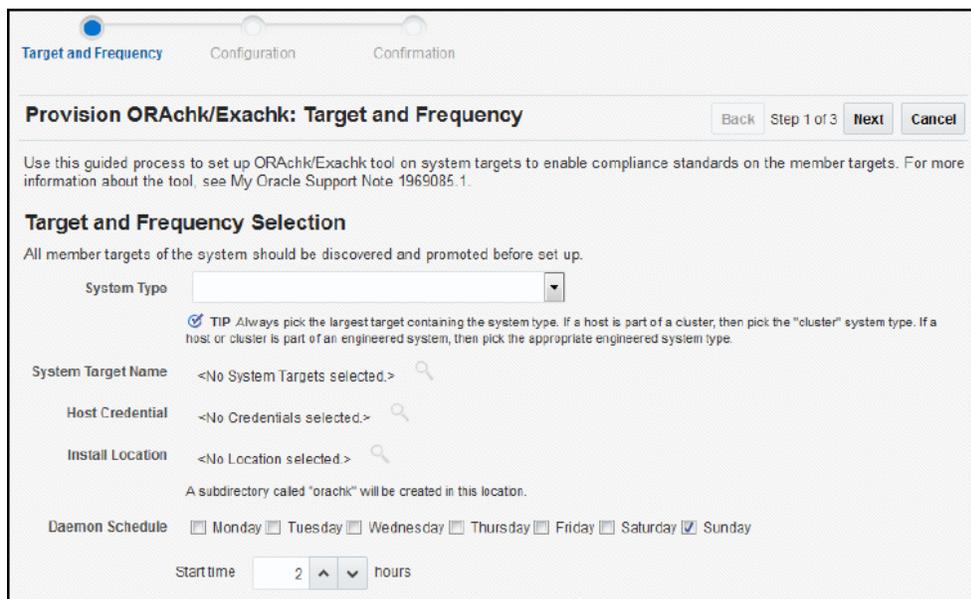
### **Tip:**

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**:



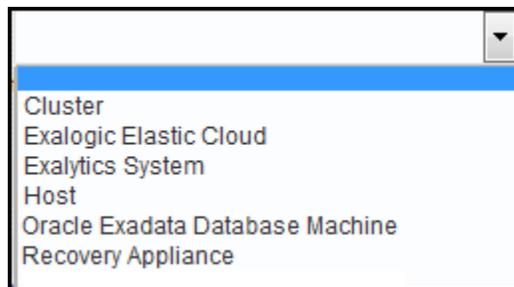
4. After you click Launch, the Provision ORAchK/Exachk wizard begins with the **Target and Frequency**. On this page, you must set up ORAchK/Exachk for the selected target.



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:

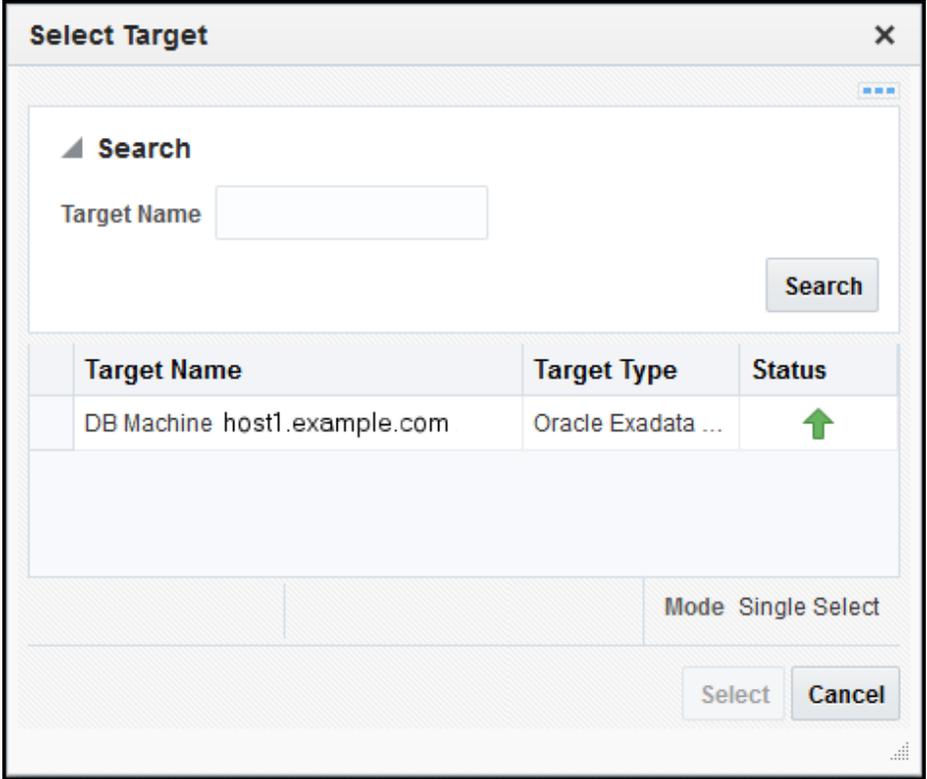


Based on target type selection, more inputs may be needed. For example, if you select Oracle Exadata Database Machine, then you may have to select **Cluster** because one instance of Exachk is required per cluster.

 **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 below, if you select an Exadata Database Machine target type, then all available targets are shown in the list:



The screenshot shows a 'Select Target' dialog box. At the top, there is a search section with a 'Search' button. Below this is a table with the following data:

Target Name	Target Type	Status
DB Machine host1.example.com	Oracle Exadata ...	↑

At the bottom right of the dialog, there is a 'Mode Single Select' label and 'Select' and 'Cancel' buttons.

 **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:

**Host Credentials**

Enter RDBMS owner or root credentials.

Credential  Preferred  Named  New

Credential Name NC\_HOST\_2015-10-13-182020

Attribute	Value
UserName	oracle
Password	*****

[More Details](#)

OK Cancel

If the credentials are not set for the target, then click **New** and enter the information as shown below:

**Host Credentials**

Enter host credentials to configure ORAchk.

Credential  Preferred  Named  New

\* UserName

\* Password

\* Confirm Password

Save As Oracle ORAchk User

Set As Preferred Credentials

Test

OK Cancel

- 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, 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.

Target and Frequency    **Configuration**    Confirmation

**Provision ORAchk/Exachk: Configuration**    Back    Step 2 of 3    Submit    Cancel

Enter the following configuration information:

**General Configuration**

CRS Home    /u01/app/11.2.0.3/grid

**Cell Cluster Configuration**

For evaluating best practices on the storage cells of a cluster, root level privileges are required on the cells. Select one of the following options:

- Specify root password for each storage cell
- Skip checking best practices on storage cells

**InfiniBand Configuration**

For evaluating best practices on the InfiniBand switches of a cluster, root level privileges are required on the switches. Select one of the following options:

- Specify root password for each InfiniBand switch
- Skip checking best practices on InfiniBand switch

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.

## 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](#)

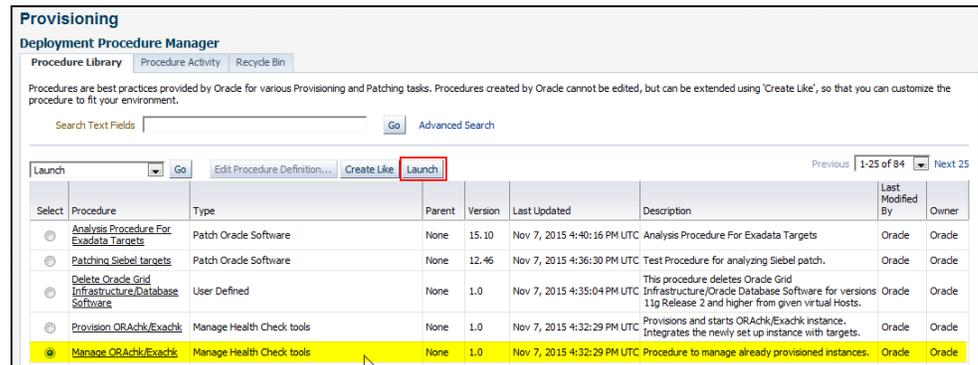
## Stop the ORAchk Daemon

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

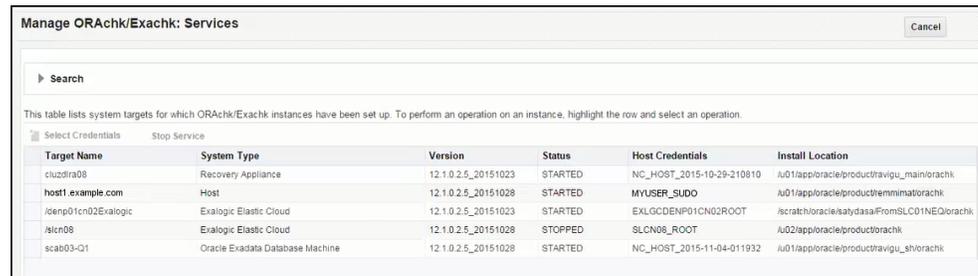
1. From the Enterprise menu, select **Provisioning and Patching**, then **Procedure Library**.

The Provisioning page displays showing the Deployment Procedure Manager.

- On the Provisioning page, select the **Manage ORAchk/Exachk Services** procedure and click **Launch**:



- On the Manage ORAchk Services page, a list of all targets monitored by the ORAchk plug-in is displayed:



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.

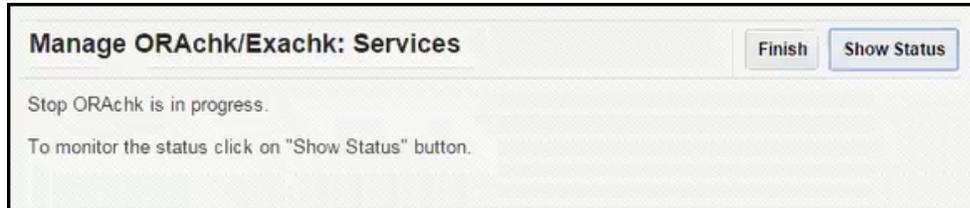
**Collection Enabled** – OMS has been configured to collect Orachk/Exachk results for the system target (or cluster target wherever applicable). Configuration Extensions feature of the platform is used to collect Orachk/Exachk results.

**Started** – The setup process is complete.

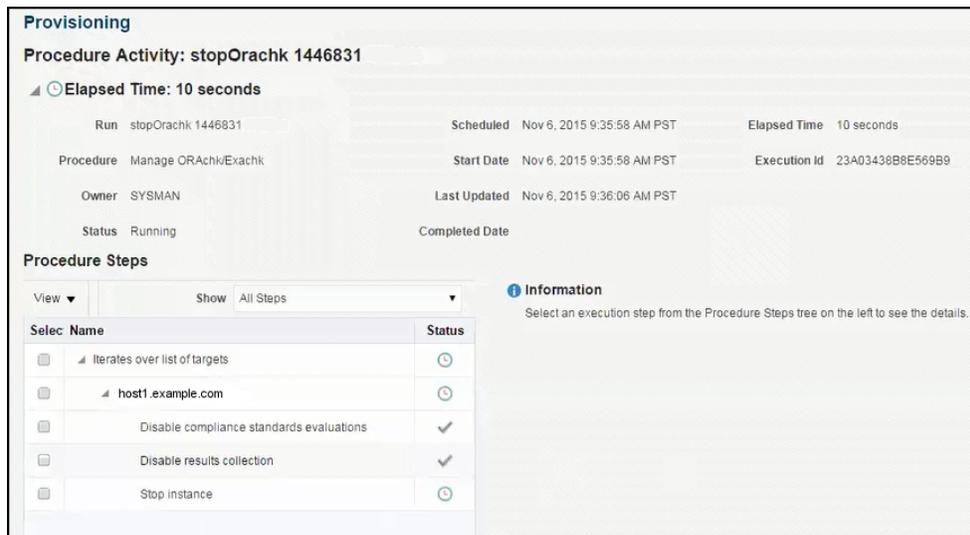
**Stopped** – The Orachk services has been stopped successfully.

Terminal states are **Provisioned**, **Started**, and **Stopped**. If a procedure activity has failed and the status is 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.



5. Click **Show Status** to see the progression. The Procedure Steps show each part of the stop process. A check mark indicates that the step is complete.



## Update Entities

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

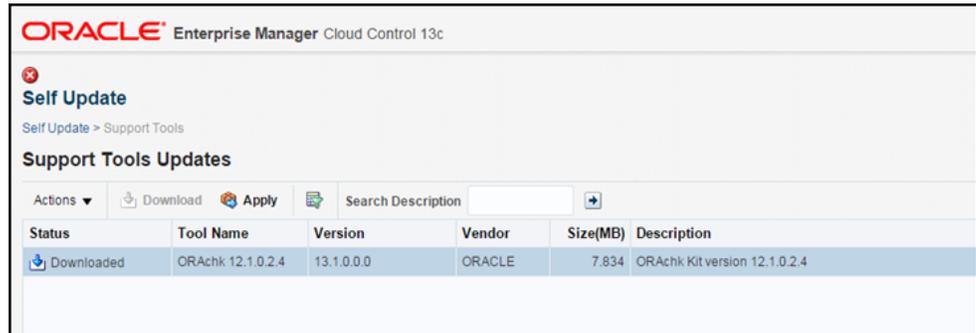
1. [Updating Diagnostic Tools Updates Entity](#)
2. [Updating Compliance Content Entity](#)
3. [Updating ORAchk Metadata Entity](#)

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

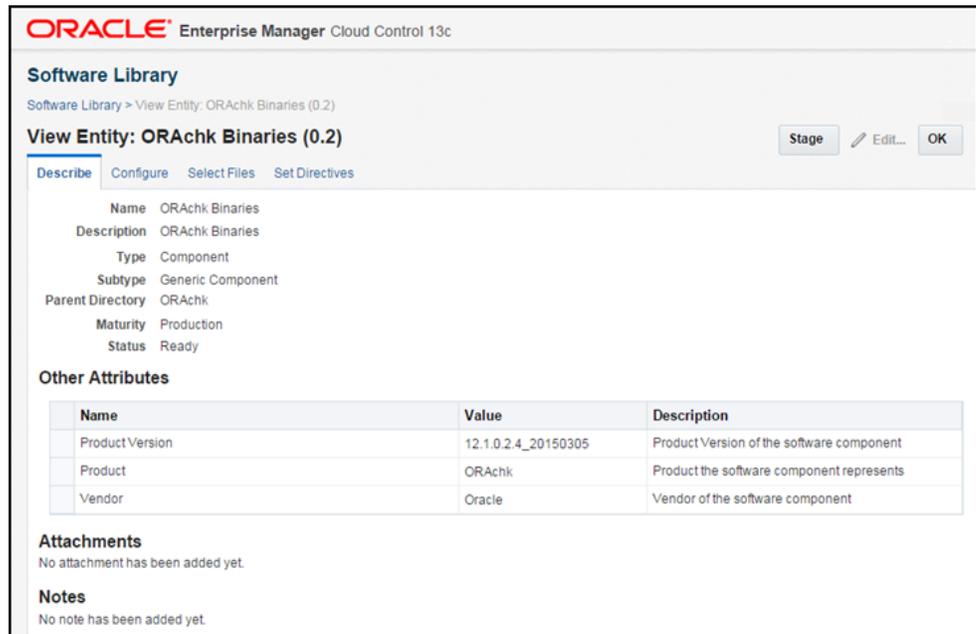
## Updating Diagnostic Tools Updates Entity

This entity is used for updating ORAchk binaries:

1. Download the available update for Support Tool entity. The image below shows an example of what the ORAchk entries will look like:



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.



## 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. The image below shows how the ORAchk entries look:

**ORACLE** Enterprise Manager Cloud Control 13c

**Self Update**  
Self Update > Compliance Content

**Compliance Content Updates**

Actions: Download, Apply, Compliance Content, Search Description

Status	Name	Version	Vendor	Size(MB)	Description
Downloaded	Exalogic Compliance Content for ORAchK v12.1.0.2.4	13.1.0.0.0	ORACLE	0.001	Exalogic Compliance Content for ORAchK v12.1.0.2.4
Downloaded	Analytics Compliance Content for ORAchK v12.1.0.2.4	13.1.0.0.0	ORACLE	0.001	Analytics Compliance Content for ORAchK v12.1.0.2.4

**Past Activities**

Actions	Status	Name	Version	Administrator	Start Time	Elapsed Time(Sec)
Download	Succeeded	Exalogic Compliance Content for ORAchK v12.1...	13.1.0.0.0	SYSMAN	Jul 31, 2015 3:05:06 PM IST	1.66
Available	Succeeded	Exalogic Compliance Content for ORAchK v12.1...	13.1.0.0.0	SYSMAN	Jul 31, 2015 3:05:05 PM IST	4.1

2. Apply these updates.

## Updating ORAchK Metadata Entity

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

1. Download the available update. The image below shows a sample entry:

**ORACLE** Enterprise Manager Cloud Control 13c

**Self Update**  
Self Update > ORAchK Metadata

**ORAchK Metadata Updates**

Actions: Download, Apply, Search Description

Status	Supported ORAchK Version	Version	Vendor	Size(MB)	Description
Downloaded	12.1.0.2.4	13.1.0.0.0	Oracle	0.000	ORAchK Integration Metadata for ORAchK v12.1.0.2.4

**Past Activities**

Actions	Status	Supported ORAchK Version	Version	Administrator	Start Time	Elapsed Time(Sec)
Download	Succeeded	12.1.0.2.4	13.1.0.0.0	SYSMAN	Jul 31, 2015 3:05:32 PM IST	0.25
Available	Succeeded	12.1.0.2.4	13.1.0.0.0	SYSMAN	Jul 31, 2015 3:05:32 PM IST	0.06

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](#)

### 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.

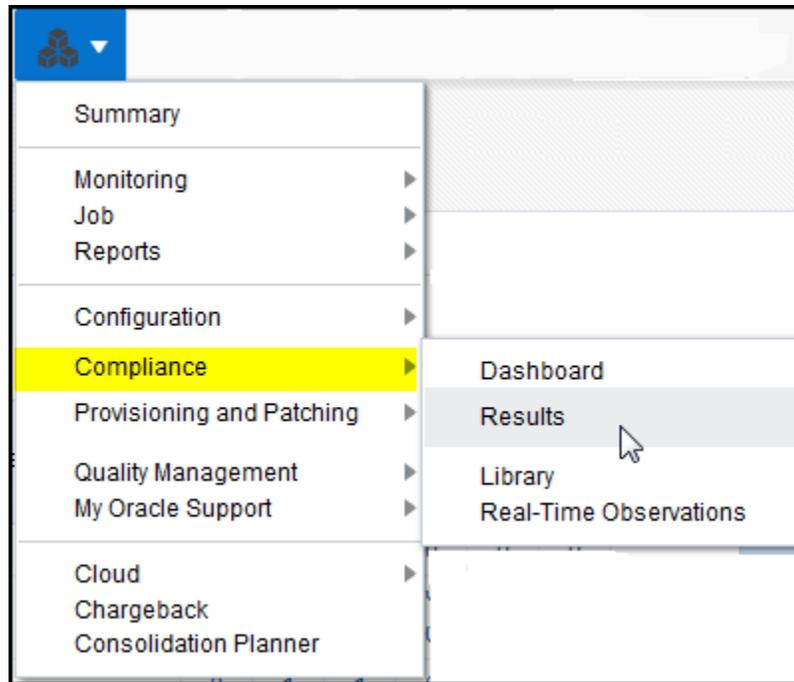
You can access the Compliance Results for ORAchk/Exachk by:

- [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](#)

### 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:



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

**Compliance Results**

Compliance Frameworks **Compliance Standards** Target Compliance

Evaluation Results Errors

Search

View Show Details Manage Violations

Compliance Standards	Applicable To	Compliance Standard State	Target Evaluations			Violations			Average Score (%)
			Pass	Warn	Fail	Pass	Warn	Fail	
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

- 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:

**Compliance Results**

Compliance Frameworks | **Compliance Standards** | Target Compliance

Evaluation Results | Errors

Search

Match: All Any

Compliance Standard: Exachk% Target Name:

Average Compliance Score: 100 Target Type:

View: Show Details Manage Violations

Advanced Search Reset

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	0 0 0	100
Exachk Oracle Exadata Storage Server Best Practices For Oracle Exadata Database Machine	Oracle Exadata Storage Server	Production	0 0 3 0 0 0	0 0 0	100
Exachk Systems Infrastructure Switch Best Practices For Oracle Exadata Database Machine	Systems Infrastructure Switch	Production	0 0 3 0 0 0	0 0 0	100
Exachk Cluster Best Practices For Oracle Exadata Database Machine	Cluster	Production	0 0 1 0 0 0	0 0 0	100
Exachk Host Best Practices For Oracle Exadata Database Machine	Host	Production	0 0 2 2 2 13	0 0 0	99
Exachk Automatic Storage Management Best Practices For Oracle Exadata Database Machine	Automatic Storage Management	Production	0 0 2 2 1 0	0 0 0	97
Exachk Cluster Database Best Practices For Oracle Exadata Database Machine	Cluster Database	Production	0 0 1 5 3 1	0 0 0	97
Exachk Oracle High Availability Service Best Practices For Oracle Exadata Database Machine	Oracle High Availability Service	Production	0 0 2 2 0 0	0 0 0	98
Exachk Database Instance Best Practices For Oracle Exadata Database Machine	Database Instance	Production	0 0 2 32 8 0	0 0 0	87

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

**Compliance Results**

Compliance Results > Exachk Oracle Exadata Storage Server Best Practices For Oracle Exadata Database Machine

**Exachk Oracle Exadata Storage Server Best Practices For Oracle Exadata Database Machine**

Exachk Oracle Exadata Storage Server Best Practices For Oracle Exadata Database Machine (Compliance Standard)

Summary Trend Overview Violations

Target Scorecard Rule Evaluations

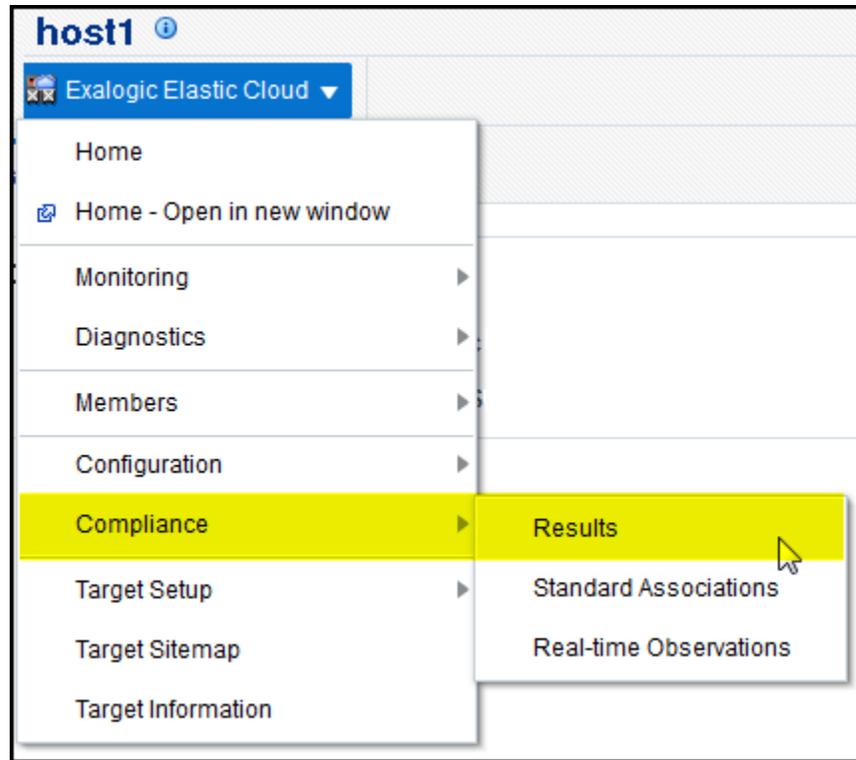
Targets By Severity Rule Evaluations

Target Name	Required Data Available	Violations	Score (%)	Last Evaluation Date
host1.example.com	Yes	0 0 0	100	Nov 10, 2015
host2.example.com	Yes	0 0 0	100	Nov 10, 2015
host3.example.com	Yes	0 0 0	100	Nov 10, 2015

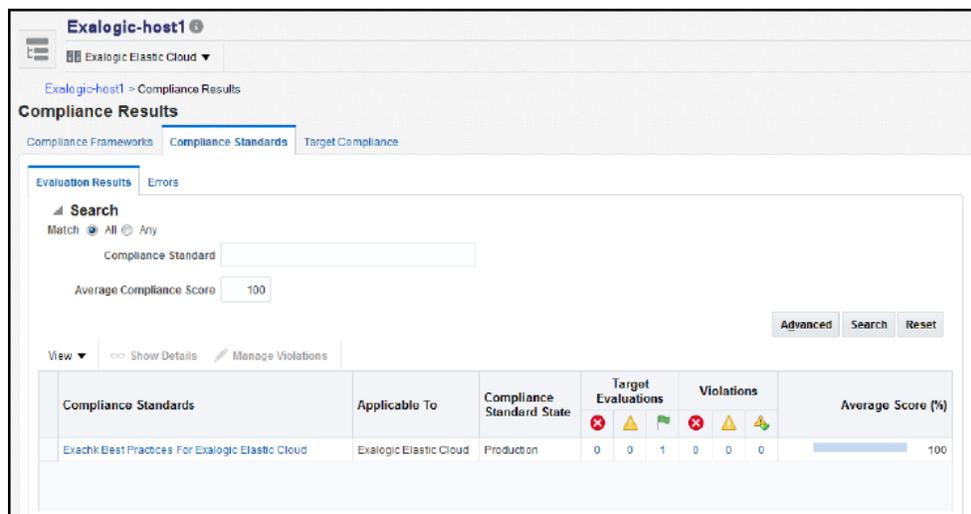
## Accessing ORAchk/Exachk Compliance Results through the Target Home Page

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

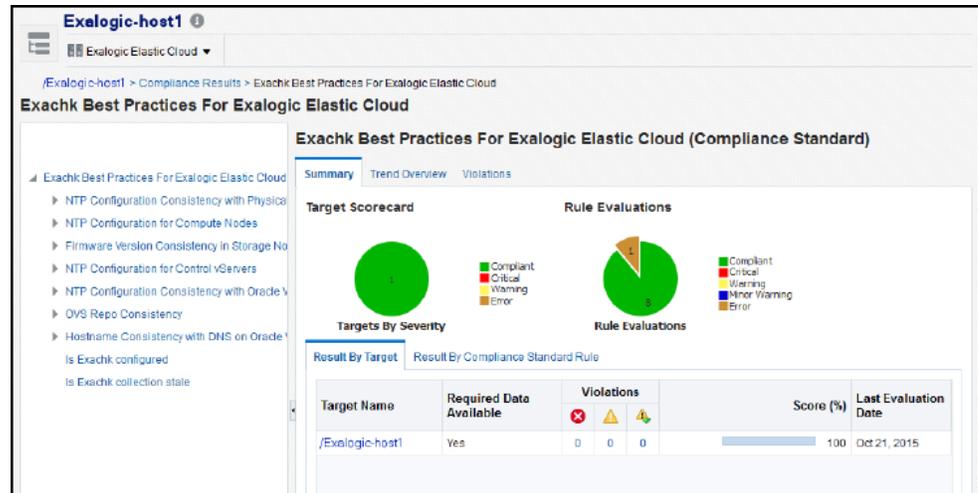
- From the target's menu, select **Compliance**, then select **Results**:



2. The Compliance Results page shows all ORAchK/Exachk evaluation results for the target:



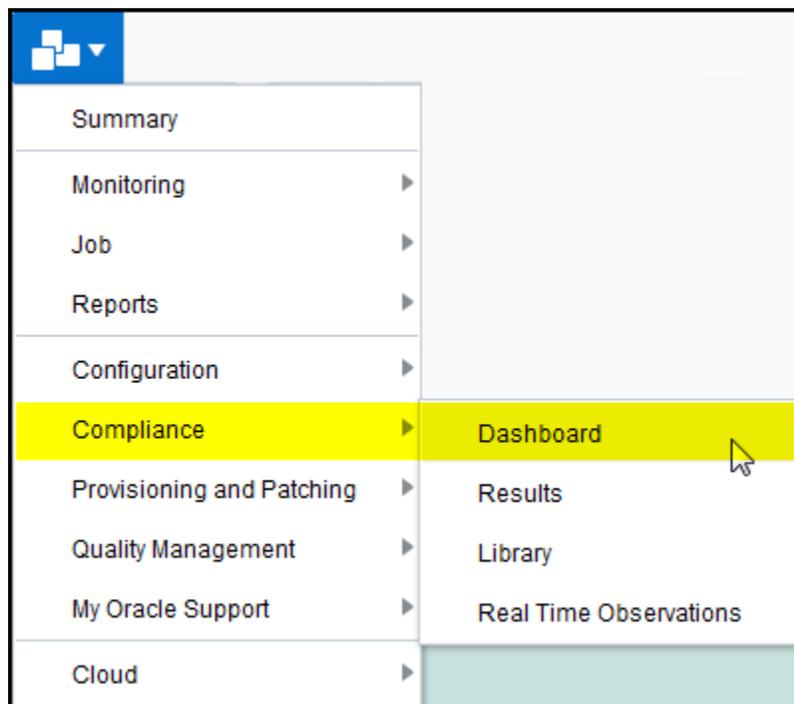
3. Click a link in the Compliance Standards column to view details about the standard as it applies to the target. In the navigation tree, all rules for the standard are listed.



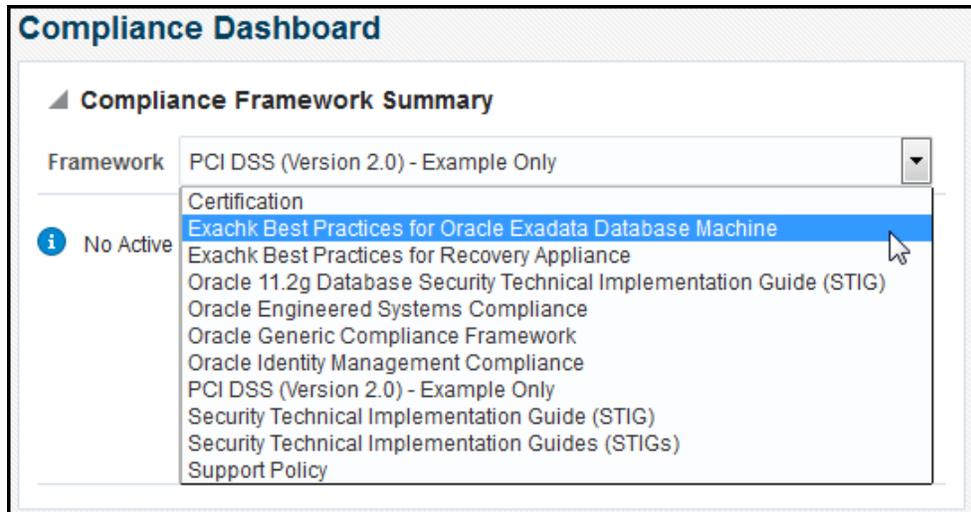
## Accessing ORAchK/Exachk Compliance Framework Details through the Compliance Dashboard

To access the compliance framework details through the compliance dashboard:

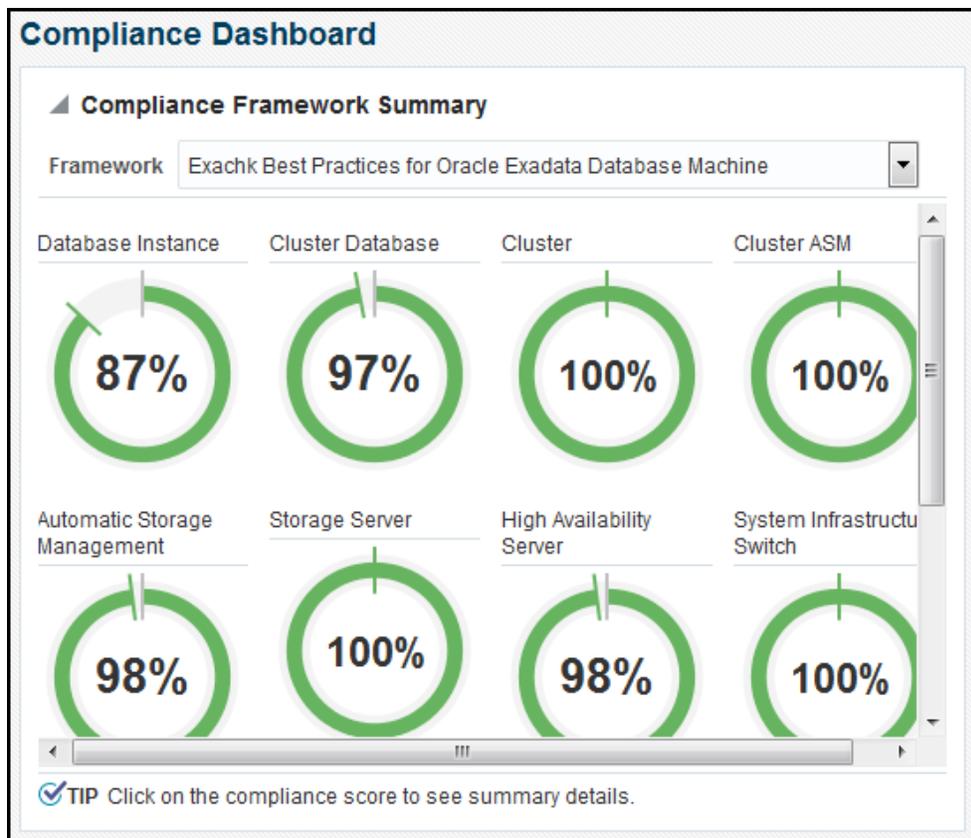
1. From the **Enterprise** menu, select **Compliance**, then select **Dashboard**:



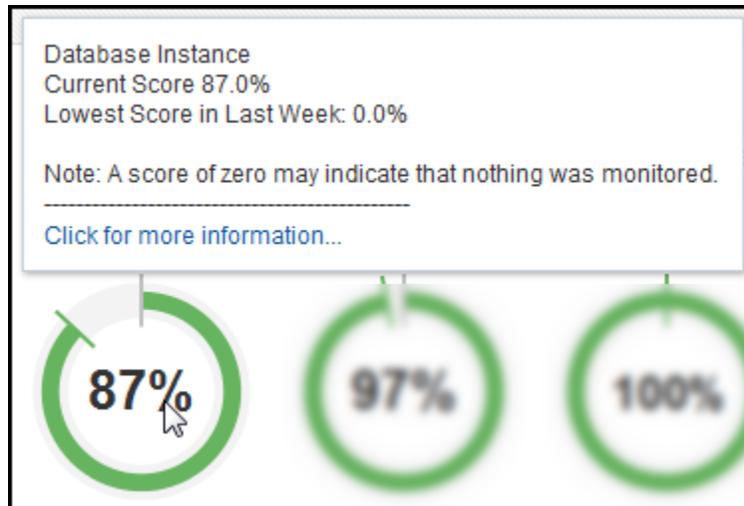
2. On the Compliance Dashboard page, select a Framework from the drop-down menu (for example, select **Exachk Best Practices for Oracle Exadata Database Machine**):



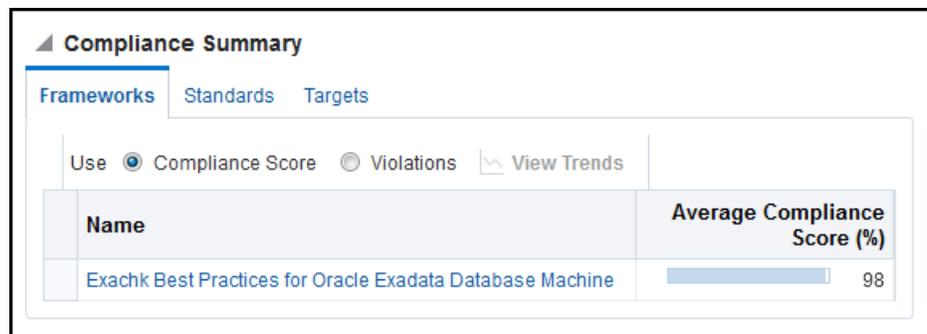
3. The Compliance Framework Summary will refresh with a graphic overview of the components of the framework you have selected. These dials provide a high-level overview of the system component, including the score:



4. Click a dial to see additional information:



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:



- **Standards** show all of the best practices standards being monitored for your target:



- **Targets** show the compliance score for the targets monitored by ORAchk/Exachk:

**Compliance Summary**

Frameworks Standards **Targets**

Use  Compliance Score  Violations  >>

Target Name	Target Type	Average Compliance Score (%)
host1.example.com	Host	99
host2.example.com	Host	99

For additional target types to appear in this section, click >> and select the target types from the list:

- All
- Automatic Storage Management
- Cluster
- Cluster ASM
- Cluster Database
- Database Instance
- Host
- Listener
- Oracle Exadata Database Machine
- Oracle Exadata Storage Server
- Oracle High Availability Service
- Oracle Infiniband Switch
- Oracle WebLogic Domain
- Oracle WebLogic Server
- Systems Infrastructure Switch

## 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.

## 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](#)

### 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

## 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

## 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

## 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

## 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

## 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

## 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.

## 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](#)

## 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.

## 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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