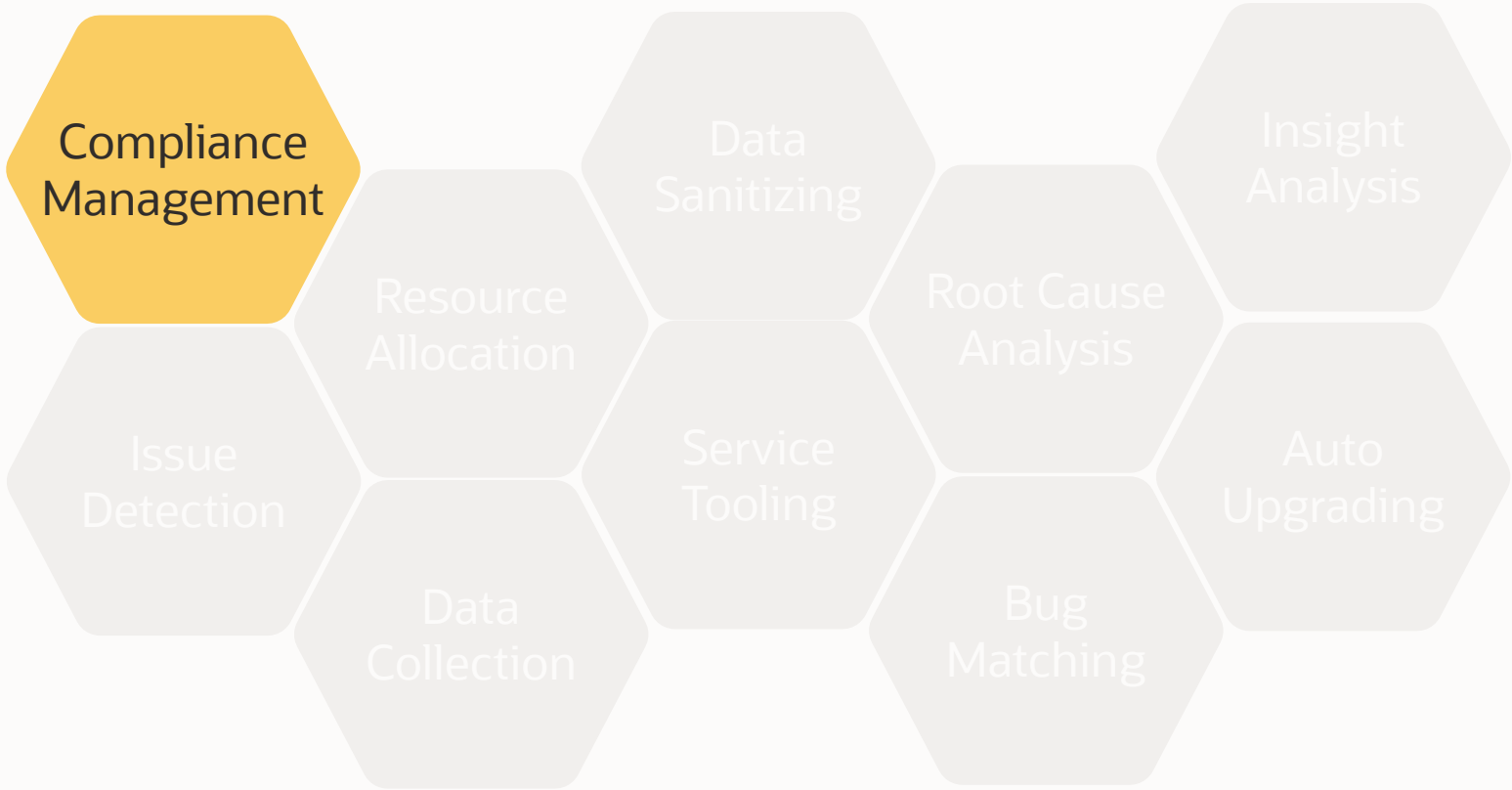
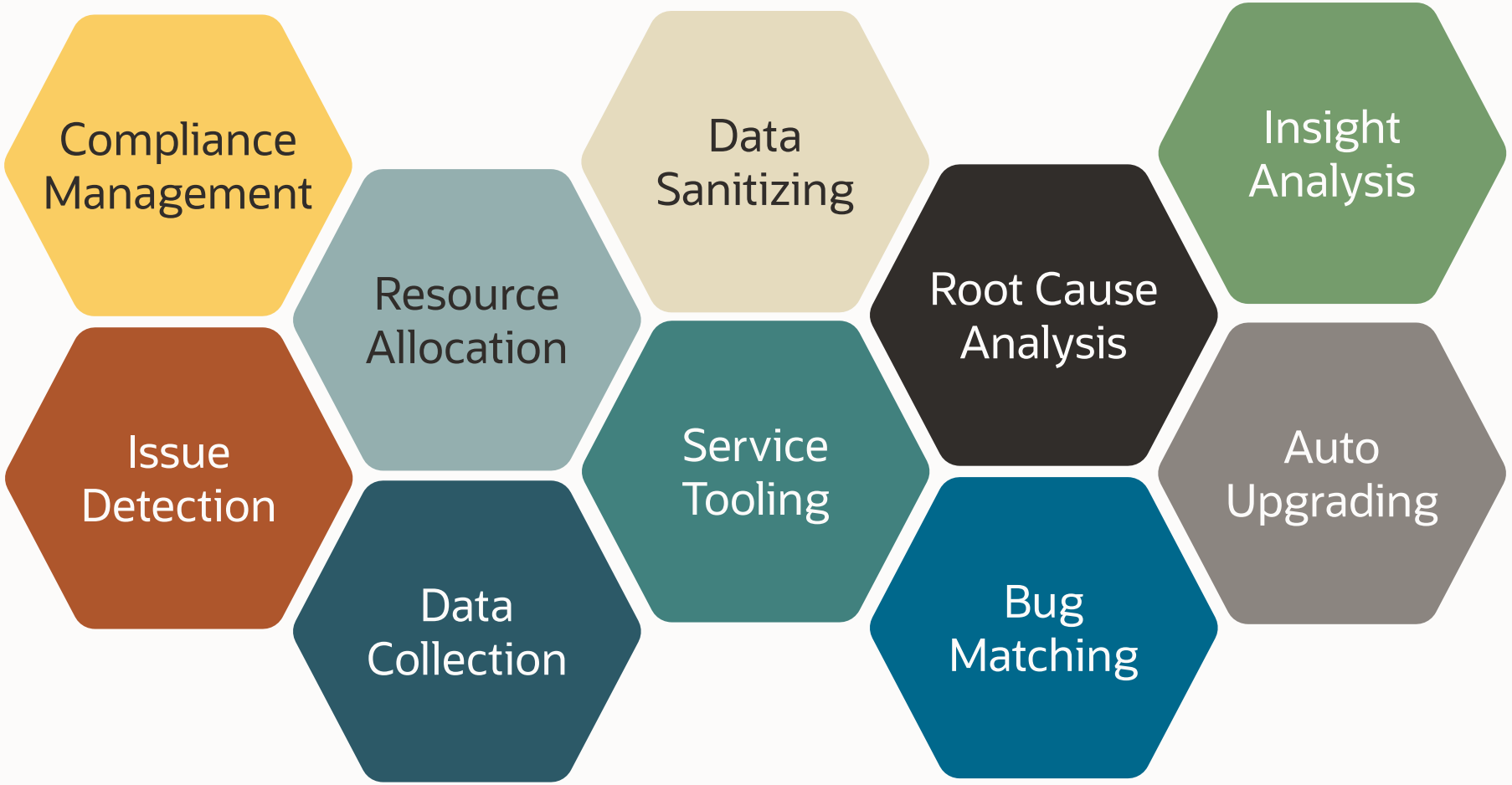
ORACLE

# Autonomous Health Framework

## Compliance Management



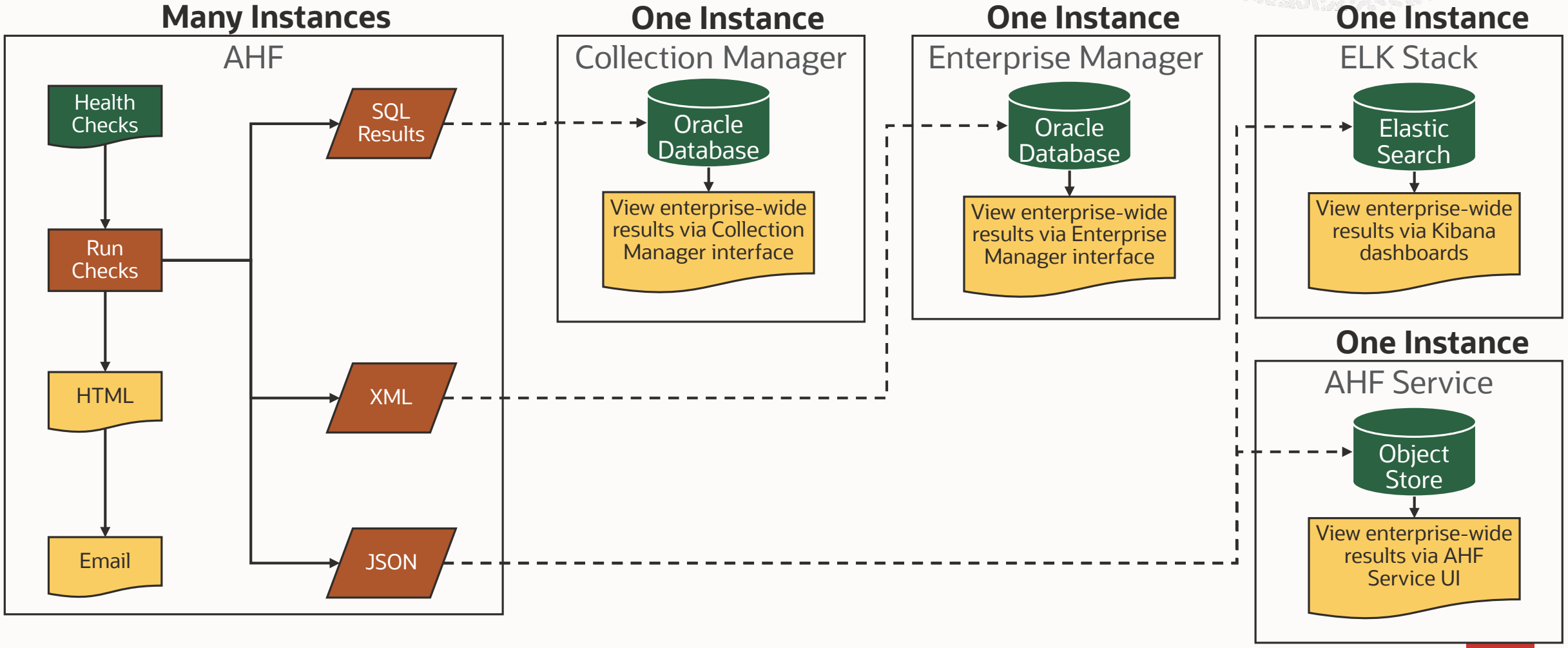
# Oracle Autonomous Health Framework



# Oracle Autonomous Health Framework

Automated compliance tracking & drift warning

# Architecture Options



# AHF compliance use cases

**AUTOMATED** (recommended)
Run automatically and monitor the diffs.

In Virtualized Exadata, autoruns only on domU

**ON-DEMAND**
Run once a month, if in Virtualized Exadata, run on dom0, cells and switches

**CONFIGURATION**
Run before and after configuration changes

**MAINTENANCE**
Run before and after any planned software and hardware maintenance

# Integration

## AHF

AHF is integrated with other Oracle Health Check and compliance management software

## Cluster Verification Utility

CVU checks are run:

- During full EXAchk runs

```
exachk -profile preinstall
```

```
exachk -preupgrade
```

## Enterprise Manager

AHF compliance checks are integrated into the OEM Compliance Check Framework Dashboards and Compliance Standards via the Engineered System plug-in

## AutoUpgrade Utility

AutoUpgrade utility checks are run:

```
exachk -preupgrade
```

## DBSAT

EXAchk is also integrated with DBSAT

```
exachk -profile preinstall
```

# Options

## Run on-demand

`ahfctl compliance`

## Limit checks

`-profile`

One or more of 40+ different component focused check categories

`-preupgrade`

Helps you plan your upgrade

`-postupgrade`

Helps confirm a successful upgrade

## Limit targets

`-cells`

`-clusternodes`

`-ibswitches`

`-dbnames`

## If you need support

`-debug`

# Change AHF scheduler

Critical checks automatically run once a day at 2am, can be changed with:

```
ahfctl compliance -id exachk.autostart_client_exatier1 -set “AUTORUN_SCHEDULE=minute hour day month day_of_week”
```

Full checks run once a week at 3am Sunday, can be changed with:

```
ahfctl compliance -id exachk.autostart_client -set “AUTORUN_SCHEDULE=minute hour day month day_of_week”
```

For example, to change Critical checks to run at 8am every Monday & Thursday use:

```
ahfctl compliance -id exachk.autostart_client_exatier1 -set “AUTORUN_SCHEDULE=* 8 * * 1,4”
```

# Configure email notification

```
ahfctl setsmtp [options]
```

| Parameter | Description |
|---|---|
| -debug | Enable debugging. |
| -all | Set all smtp parameters. |
| -host HOST | Name of the SMTP server, for example, smtphostname. |
| -user USER | Name of the SMTP user, for example, smtpuser. |
| -password | SMTP user password |
| -from FROM | Sender reply email address |
| -to TO | Recipient email address(es) |
| -port PORT | SMTP server port |
| -cc CC | Recipient CC email address(es) |
| -bcc BCC | Recipient BCC email address(es) |
| -ssl SSL | true to enable SSL and false to disable SSL (default: false) |
| -auth AUTH | true to enable SMTP authentication and false to disable SMTP authentication (default: false) |

# Upload to MOS (My Oracle Support)

Store your MOS credentials securely in an encrypted wallet, ready for future upload:

```
ahfctl setupload -name mos -type https –user john.doe@acme.com
-proxy www-proxy.server.com:80 –url https://transport.oracle.com/upload/issue

Enter mos.https.password :
```

Use the wallet to upload a file to your SR:

```
ahfctl upload -name mos -id 3-1234567812
-file /opt/oracle.ahf/data/repository/auto_srdc_ORA-00600_20230421T18:58:09_myserver1.zip
```

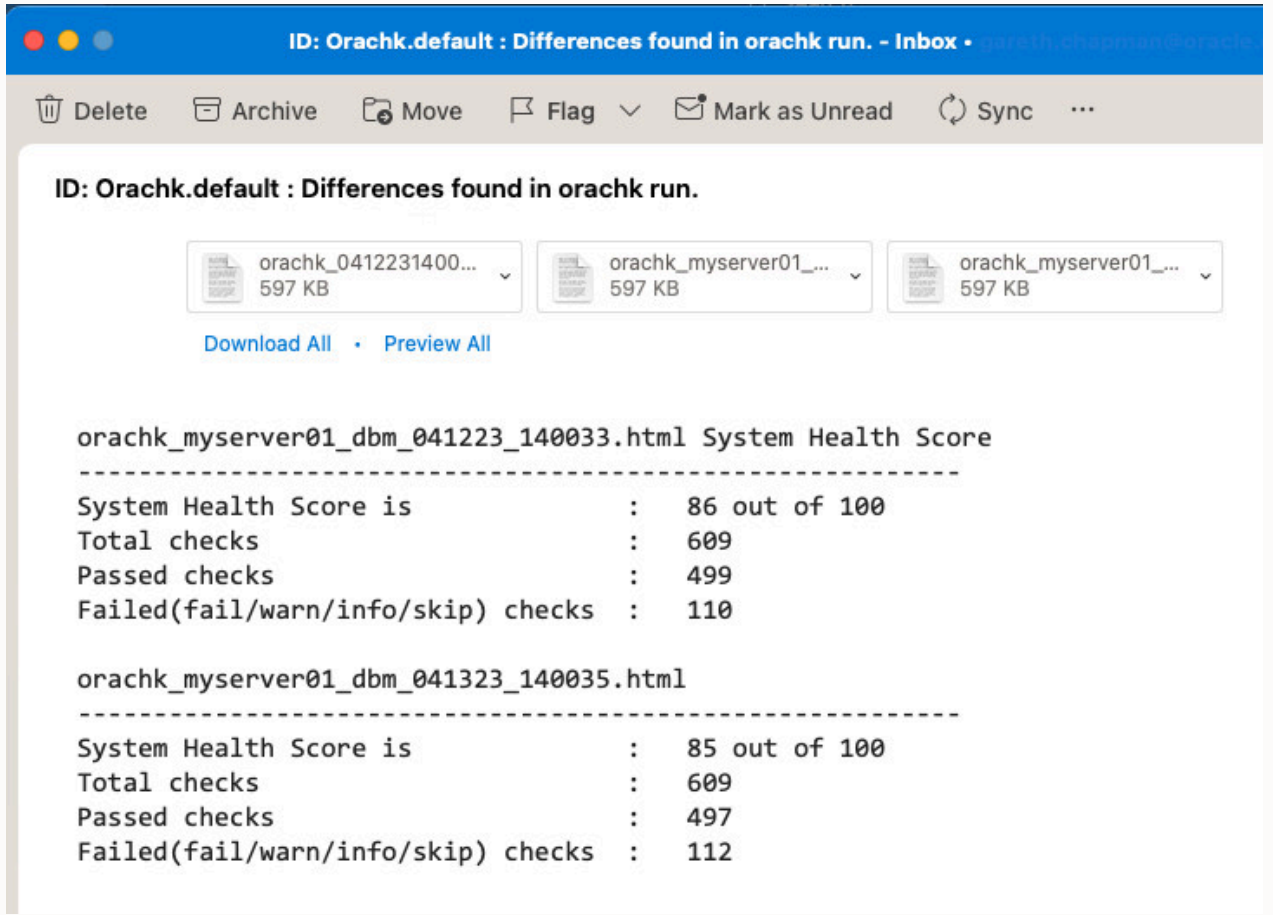
# Email Notification

Subsequent emails compare results to previous run

Easily see if something has changed

Email attachment has:

- Latest report
- Previous report
- Diff Report



# Diff Output

## Summary of this run vs previous

# Exadata Health Check Baseline Comparison Report

## Exadata Health Check Baseline Comparison summary

| | |
|---|---|
| **Report 1** | exachk_myserver01client01_rac12c_042423_124229 |
| Collection Date | 24-Apr-2023 12:48:14 |
| exachk Version | 23.5.0_20230424 |
| System Health Score | system health score is 93 out of 100 |
| Executed by | root |
| **Report 2** | exachk_myserver01client01_rac12c_042423_131642 |
| Collection Date | 24-Apr-2023 13:22:24 |
| exachk Version | 23.3.0_20230405 |
| System Health Score | system health score is 93 out of 100 |
| Executed by | root |
| **Total Checks Reported** | 315 |
| **Differences between Report 1 and Report 2** | 0 |
| **Unique findings in Report 1 (exachk_myserver01client01_rac12c_042423_124229)** | 3 |
| **Unique findings in Report 2 (exachk_myserver01client01_rac12c_042423_131642)** | 0 |
| **Common Findings in Both Reports** | 312 |

## Table of Contents

# Diff Output

## Differences between each run

| Differences between Report 1 (exachk_myserver01client01_rac12c_042423_124229) and Report 2 (exachk_myserver01client01_rac12c_042423_131642) | | | | | |
|---|---|---|---|---|---|
| Type | Check Name | Status On Report 1 (exachk_myserver01client01_rac12c_042423_124229) | | Status On Report 2 (exachk_myserver01client01_rac12c_042423_131642) | |
| | | Status | Status On | Status | Status On |

Top

| Unique findings in Report 1 (exachk_myserver01client01_rac12c_042423_124229) | | | |
|---|---|---|---|
| Type | Check Name | Status On Report 1 | |
| | | Status | Status On |
| Cluster Wide Check | Verify minimum requirements for Smart Rebalance | INFO | Cluster Wide |
| Cluster Wide Check | AHF CPU oversubscription check | FAIL | Cluster Wide |
| Cluster Wide Check | AHF Balance check for CPU contention between databases | INFO | Cluster Wide |

Top

| Unique findings in Report 2 (exachk_myserver01client01_rac12c_042423_131642) | | | |
|---|---|---|---|
| Type | Check Name | Status On Report 2 | |
| | | Status | Status On |

Top

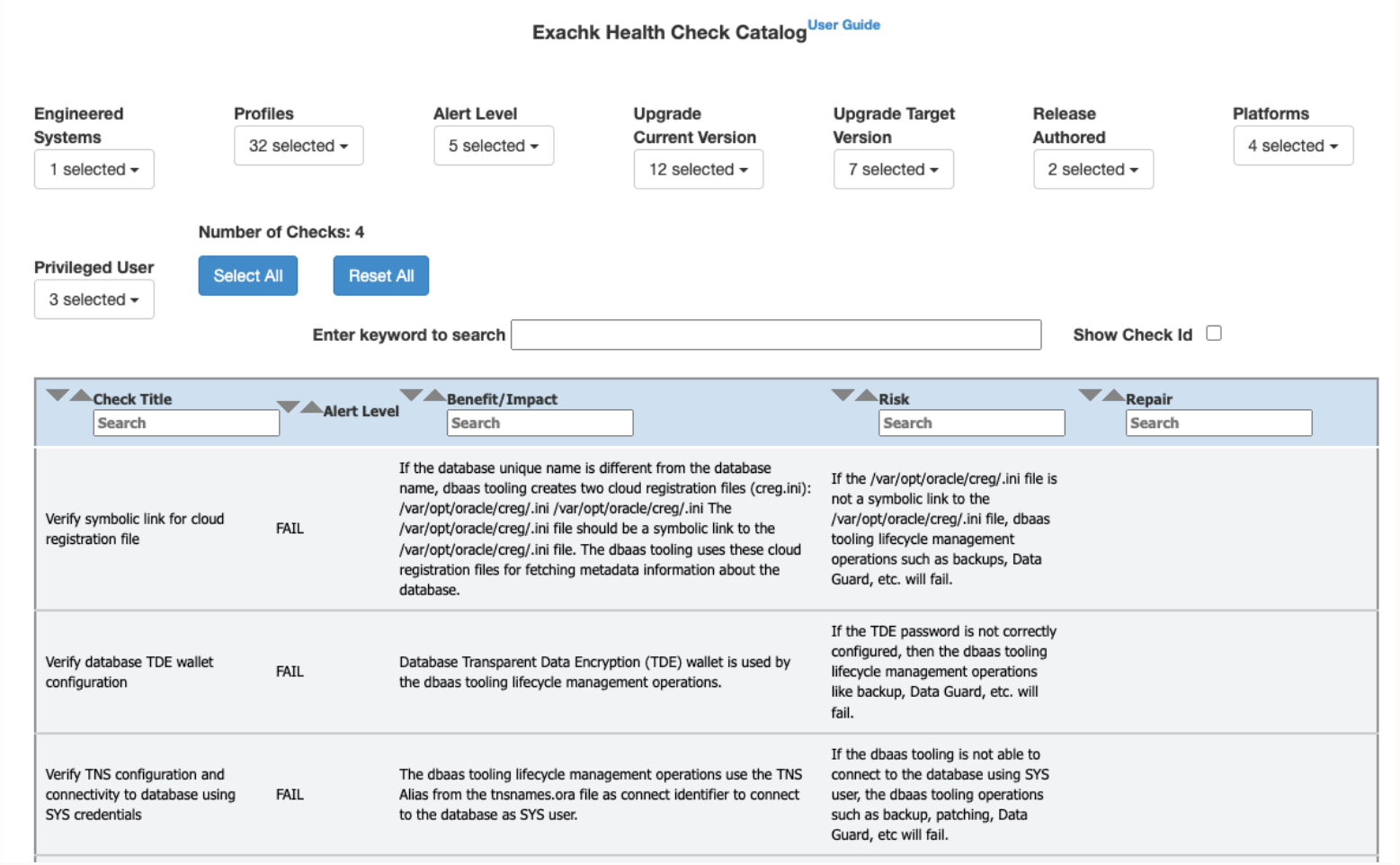
# Health Check Catalog

ORAchk_Health_Check_Catalog.html
EXAchk_Health_Check_Catalog.html
Contains all published checks

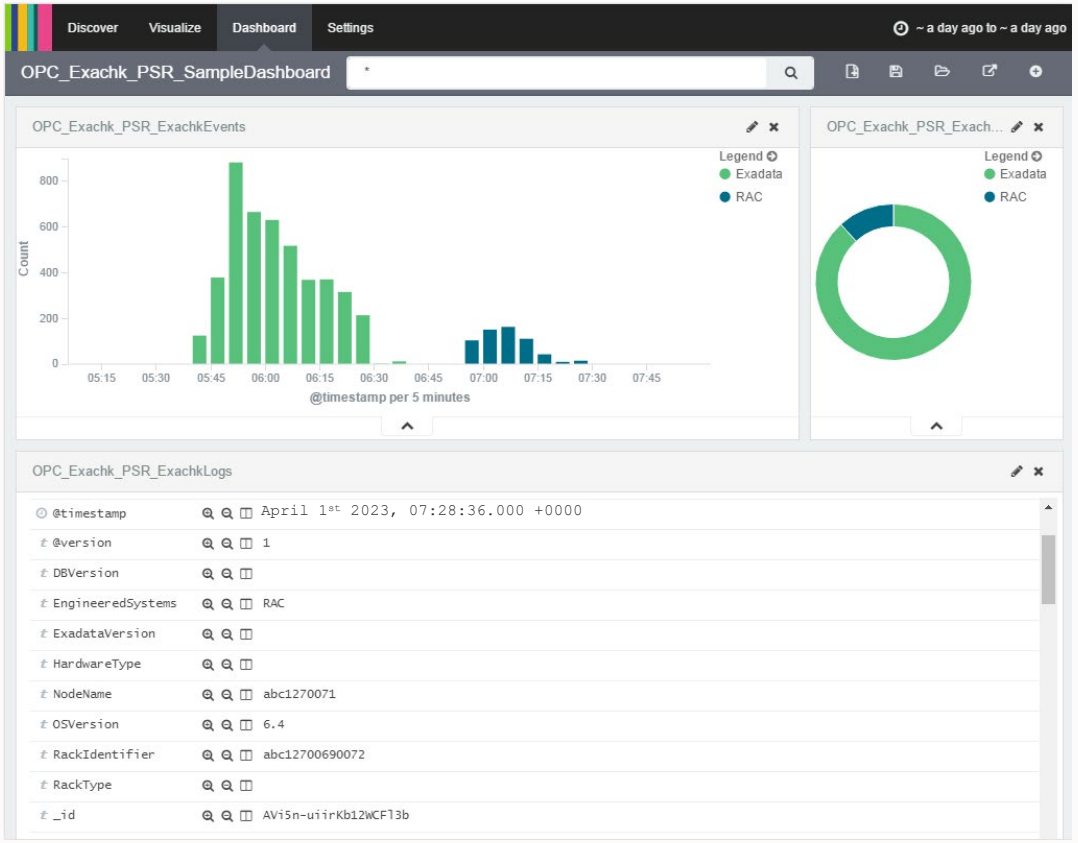
Filterable & searchable

- Product Area / Engineered System
- Profiles
- Alert Level
- Release Check Authored
- Platforms
- Privileged User

Look up check id without running report



# JSON Output to Integrate with Kibana, Elastic Search etc




- The JSON provides many tags to allow dashboard filtering based on facts such as:
  - Engineered System type
  - Engineered System version
  - Hardware type
  - Node name
  - OS version
  - Rack identifier
  - Rack type
  - Database version
  - And more…
- Kibana can be used to view health check compliance across your data center
- Results can also be filtered based on any combination of exposed system attributes

# JSON Result Output

Results are also output in JSON format in the upload directory of the collection

| Name | Kind |
|---|---|
| bestPractice.json | JSON File |
| check_env.json | JSON File |
| CVU.json | JSON File |
| databaseServers.json | JSON File |
| exachk_metadata.json | JSON File |
| exachk_myserver01client01_rac12c_042423_131642.json | JSON File |
| exachk_recommendations.json | JSON File |
| exachk_summary.json | JSON File |
| exachk_valid_recommendations.json | JSON File |
| exachk_versions.json | JSON File |
| fabricSwitches.json | JSON File |
| myserver01client01_exachk_results.json | JSON File |
| myserver01client01_exachk_valid_results.json | JSON File |
| myserver01client02_CVU.json | JSON File |
| recommendedSoftware.json | JSON File |
| storageServer.json | JSON File |
| db_update_042423_131642.sql | SQL source |
| upload_exachk_result_base.sql | SQL source |
| upload_exachk_result.sql | SQL source |
| exachk_recommendations.xml | XML |
| myserver01client01_exachk_exceptions.xml | XML |
| myserver01client01_exachk_results.xml | XML |

## Writing JSON Results With syslog

1. JSON output results can be sent to the syslogd Daemon with –syslog option e.g.:

```
-set “AUTORUN_FLAGS=-syslog”
```

2. Message levels used of “crit”, “err”, “warn” and “info”
3. You can verify syslog configuration by running the following commands:

```
$  logger -p user.crit crit_message
$  logger -p user.err err_message
$  logger -p user.warn warn_message
$  logger -p user.info info_message
```

4. Then verify in your configured message location (e.g. /var/adm/messages) that each test message was written

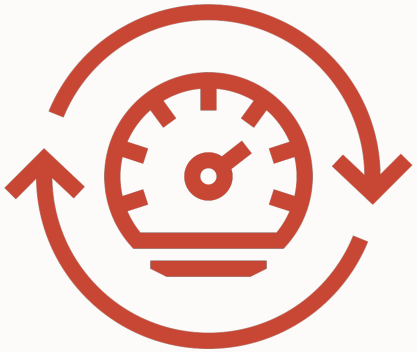
# Additional JSON output options

```
ahfctl switch –status -json
```

```
ahfctl statusahf -json
```

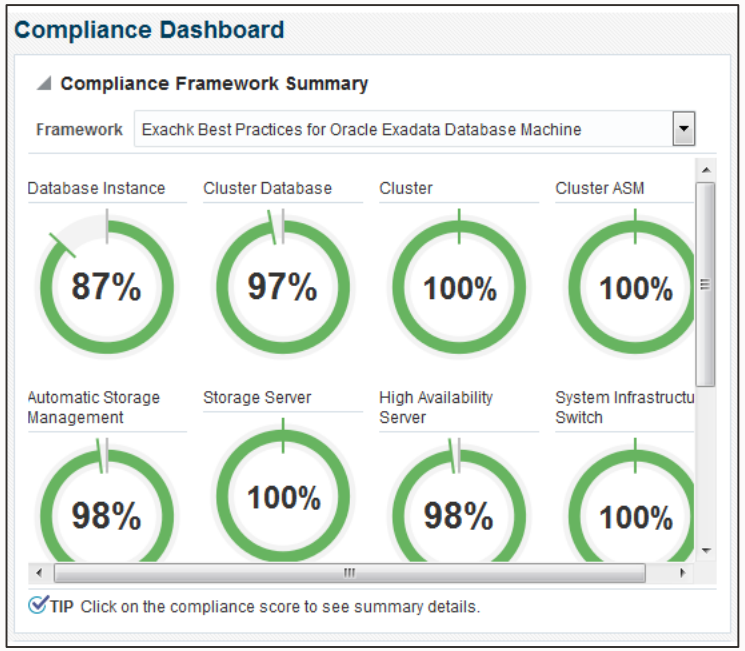
```
ahfctl upgradehistory -json
```

```
ahfctl queryupdate -json
```



To allow other software to easily integrate with AHF, JSON output options have been added to a number of commands

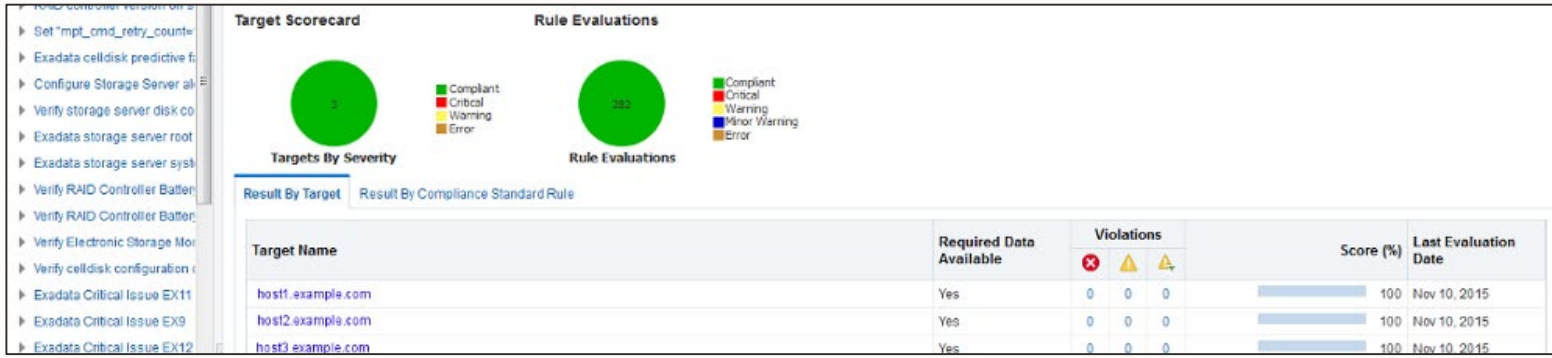
# Enterprise Manager Integration




Related checks grouped into compliance standards

| 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 Server | Production | 0 | 0 | 3 | 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 | 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 Management | 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 Service | 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 |

•View targets checked, violations & average score

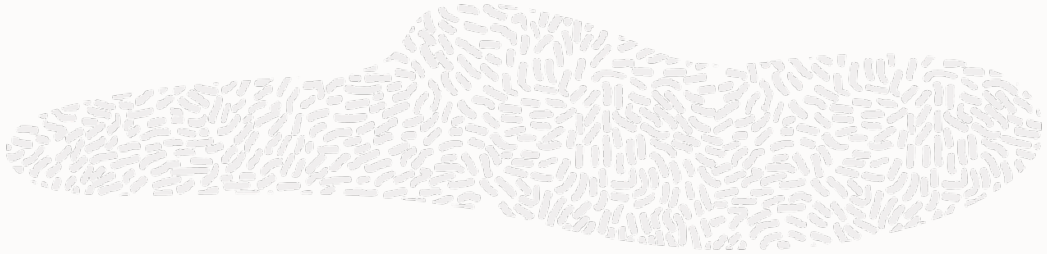



View break down by target

Drill down into compliance standard to see individual check results

# Enterprise Manager Integration

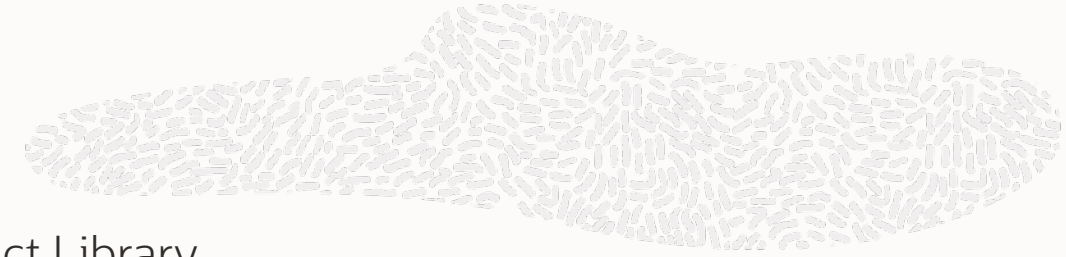
## Configure the Privileged Credentials



1. Go to Security and click on Monitoring Credentials
2. In the new screen under Target select Cluster, and then click on Manage Monitoring Credentials
3. In the Cluster Monitoring Credentials page, select Privilege Monitoring Credentials and click on Set Credentials

# Enterprise Manager Integration

## Associate AHF Standards in Enterprise Manager



1. From the Enterprise menu, select Compliance, then select Library
2. Select the Compliance Standards tab and select the EXAchk standard
3. Select the EXAchk component target to be monitored and click Associate Targets
4. Click Add and select the targets you want to monitor. The targets will appear in the table after you close the selector dialog
5. Click OK to confirm that you want to save the EXAchk association

# Enterprise Manager Integration

## Available AHF Component Standards

| Exadata Component Standard Name |
| --- |
| AHF EXAchk Database Instance Best Practices for Oracle Engineered System |
| AHF EXAchk Cluster Database Best Practices for Oracle Engineered System |
| AHF EXAchk Oracle Home Best Practices for Oracle Engineered System |
| AHF EXAchk Host Best Practices for Oracle Engineered System |
| AHF EXAchk Cluster Best Practices for Oracle Engineered System |
| AHF EXAchk ASM Cluster Best Practices for Oracle Engineered System |
| AHF EXAchk Storage Server Best Practices for Oracle Engineered System |
| AHF EXAchk Infiniband Switch Best Practices for Oracle Engineered System |
| AHF EXAchk Automatic Storage Management Best Practices for Oracle Engineered System |
| AHF EXAchk High Availability Service Best Practices for Oracle Engineered System |
| AHF EXAchk Systems Infrastructure Switch Best Practices for Oracle Engineered System |
| AHF EXAchk Virtual Server Best Practices for Oracle Engineered System |
| AHF EXAchk Virtual Platform Best Practices for Oracle Engineered System |

# Oracle Exadata Assessment Report

# System Health Score is 93 out of 100 (detail)

## Cluster Summary

| Heading | Description |
|---|---|
| **Cluster Name** | Cluster-c1 |
| **OS/Kernel Version** | LINUX X86-64 OELRHEL 7 4.14.35-2047.505.4.4.el7uek.x86_64 |
| **CRS Home - Version** | /u01/app/21.0.0.0/grid - 21.0.0.0.0 |
| **DB Home - Version - Names** | /u01/app/oracle/product/21.0.0.0/dbhome_1 - 21.0.0.0 - cdbm213 database<br>/u01/app/oracle/product/19.0.0.0/dbhome_1 - 19.12.0.0.210720 - cdbm19c database<br>/u01/app/oracle/product/18.0.0.0/dbhome_1 - 18.14.0.0.210420 - cdbm18c database<br>/u01/app/oracle/product/12.2.0.1/dbhome_1 - 12.2.0.1.210720 - cdbm122 database<br>/u01/app/oracle/product/12.1.0.2/dbhome_1 - 12.1.0.2.210720 - 3 databases |
| **Exadata Version** | 21.2.4.0.0.210909 |
| **Number of nodes** | 8 |
| **Database Servers** | 2 |
| **Storage Servers** | 3 |
| **IB Switches** | 3 |
| **EXAchk Version** | 23.3.0_20230405 |
| **Collection** | exachk_myserver01client01_rac12c_042423_131642_label_TFA_AHF23_4_0_GENERIC_230424_0212_with_all_checks |
| **Duration** | 20 mins, 56 seconds |

# Oracle Exadata Assessment Report

## System Health Score is 93 out of 100 (detail)

| Description |
| --- |
| |
| HEL 7 4.14.35-2047.505.4.4.el7uek.x86_64 |
| grid - 21.0.0.0.0 |
| oduct/21.0.0.0/dbhome_1 - 21.0.0.0 - cdbm213 database<br>oduct/19.0.0.0/dbhome_1 - 19.12.0.0.210720 - cdbm19c database<br>oduct/18.0.0.0/dbhome_1 - 18.14.0.0.210420 - cdbm18c database<br>oduct/12.2.0.1/dbhome_1 - 12.2.0.1.210720 - cdbm122 database<br>oduct/12.1.0.2/dbhome_1 - 12.1.0.2.210720 - 3 databases |
| |
| |
| |
| |
| |
| |
| lient01_rac12c_042423_131642_label_TFA_AHF23_4_0_GENERIC_230424_0212_with_all_checks |
| |

Jump to section

Checks

Show Failed checks only

Critical

Fail

Warn

Info

Undetermined

Pass

All

Select Sections

Other Settings

Hide/Show All

# Oracle Exadata Assessment Report

## System Health Score is 93 out of 100 (detail)

### ummary

| | Description |
|---|---|
| e | Cluster-c1 |
| | LINUX X86-64 OELRHEL 7 4.14.35-2047.505.4.4.el7uek.x86_64 |
| | /u01/app/21.0.0.0/grid - 21.0.0.0.0 |
| mes | /u01/app/oracle/product/21.0.0.0/dbhome_1 - 21.0.0.0 - cdbm213 database<br>/u01/app/oracle/product/19.0.0.0/dbhome_1 - 19.12.0.0.210720 - cdbm19c database<br>/u01/app/oracle/product/18.0.0.0/dbhome_1 - 18.14.0.0.210420 - cdbm18c database<br>/u01/app/oracle/product/12.2.0.1/dbhome_1 - 12.2.0.1.210720 - cdbm122 database<br>/u01/app/oracle/product/12.1.0.2/dbhome_1 - 12.1.0.2.210720 - 3 databases |
| ion | 21.2.4.0.0.210909 |
| odes | 8 |
| | 2 |
| | 3 |
| | 3 |
| on | 23.3.0_20230405 |
| | exachk_myserver01client01_rac12c_042423_131642_label_TFA_AHF23_4_0_GENERIC_230424_0212_with_all_checks |
| | 20 mins, 56 seconds |

Jump to section

Checks

Select Sections

- [x] Maximum Availability Architecture (MAA) Scorecard
- [x] Infrastructure Software and Configuration Summary
- [x] Platinum Certification
- [x] Findings needing further review
- [x] Cluster Verification Utility(CVU) result
- [ ] Systemwide Automatic Service Request (ASR) healthcheck
- [x] Skipped Checks
- [x] Component Elapsed Times
- [x] Top 10 Time Consuming Checks

Other Settings

Hide/Show All

# Oracle Exadata Assessment Report

## System Health Score is 93 out of 100 (detail)

| Description |
| --- |
| |
| .RHEL 7 4.14.35-2047.505.4.4.el7uek.x86_64 |
| 0/grid - 21.0.0.0.0 |
| product/21.0.0.0/dbhome_1 - 21.0.0.0 - cdbm213 database<br>product/19.0.0.0/dbhome_1 - 19.12.0.0.210720 - cdbm19c database<br>product/18.0.0.0/dbhome_1 - 18.14.0.0.210420 - cdbm18c database<br>product/12.2.0.1/dbhome_1 - 12.2.0.1.210720 - cdbm122 database<br>product/12.1.0.2/dbhome_1 - 12.1.0.2.210720 - 3 databases |
| 9 |
| |
| |
| |
| |
| |
| 1client01_rac12c_042423_131642_label_TFA_AHF23_4_0_GENERIC_230424_0212_with_all_checks |
| ds |

Jump to section

Checks

Select Sections

Other Settings

Show Check Ids

Remove finding from report

Printable View

Hide/Show All

# Oracle Exadata Assessment Report

## System Health Score is 93 out of 100 (detail)

### mmary

| | Description |
|---|---|
| | Cluster-c1 |
| | LINUX X86-64 OELRHEL 7 4.14.35-2047.505.4.4.el7uek.x86_64 |
| | /u01/app/21.0.0.0/grid - 21.0.0.0.0 |
| es | /u01/app/oracle/product/21.0.0.0/dbhome_1 - 21.0.0.0 - cdbm213 database<br>/u01/app/oracle/product/19.0.0.0/dbhome_1 - 19.12.0.0.210720 - cdbm19c database<br>/u01/app/oracle/product/18.0.0.0/dbhome_1 - 18.14.0.0.210420 - cdbm18c database<br>/u01/app/oracle/product/12.2.0.1/dbhome_1 - 12.2.0.1.210720 - cdbm122 database<br>/u01/app/oracle/product/12.1.0.2/dbhome_1 - 12.1.0.2.210720 - 3 databases |
| h | 21.2.4.0.0.210909 |
| es | 8 |
| | 2 |
| | 3 |
| | 3 |
| | 23.3.0_20230405 |
| | exachk_myserver01client01_rac12c_042423_131642_label_TFA_AHF23_4_0_GENERIC_230424_0212_with_all_checks |
| | 20 mins, 56 seconds |

# Exadata Critical Issues

The following Exadata Critical Issues (MOS Note 1270094.1) have been checked in this report:

- This environment has been checked for exposure to the following Exadata Critical Issues from MOS Note 1270094.1
-
- Exadata Database Server and Storage Server : EX1-EX65,EX67,EX69-EX78
- Oracle Database and Grid Infrastructure : DB1-DB4, DB6, DB9-DB50
- Exadata Fabric Switch : IB1-IB3,IB5-IB9

**Note:** Exadata Critical issues which are not shown in the following table are not applicable to the system configuration.

## Exadata Critical Issues on Database Server

| Status | Type | Message | Status On | Details |
|---|---|---|---|---|
| INFO | OS Check | Exadata Critical Issues (Doc ID 1270094.1):- DB1-DB4,DB6,DB9-DB50, EX1-EX65,EX67,EX69-EX78 and IB1-IB3,IB5-IB9 | All Database Servers | View |
| PASS | Database Check | System is not exposed to Exadata Critical Issue EX75 | All Databases | View |
| PASS | OS Check | System is not exposed to Exadata Critical Issue EX69 | All Database Servers | View |
| PASS | OS Check | System is not exposed to Exadata Critical Issue EX64 | All Database Servers | View |
| PASS | OS Check | System is not exposed to Exadata Critical Issue EX62 | All Database Servers | View |
| PASS | OS Check | System is not exposed to Exadata Critical Issue EX58 | All Database Servers | View |
| PASS | OS Check | System is not exposed to Exadata Critical Issue EX57 | All Database Servers | View |
| PASS | OS Check | System is not exposed to Exadata Critical Issue EX56 | All Database Servers | View |
| PASS | OS Check | System is not exposed to Exadata critical issue EX55 | All Database Servers | View |
| PASS | OS Check | System is not exposed to Exadata critical issue EX50 | All Database Servers | View |

## Exadata Critical Issues on Storage Server

| Status | Type | Message | Status On | Details |
|---|---|---|---|---|
| PASS | Storage Server Check | System is not exposed to Exadata Critical Issue EX77 | All Storage Servers | View |
| PASS | Storage Server Check | System is not exposed to Exadata Critical Issue EX70 | All Storage Servers | View |
| PASS | Storage Server Check | System is not exposed to Exadata Critical Issue EX69 | All Storage Servers | View |
| PASS | Storage Server Check | System is not exposed to Exadata Critical Issue EX64 | All Storage Servers | View |
| PASS | Storage Server Check | System is not exposed to Exadata Critical Issue EX58 | All Storage Servers | View |
| PASS | Storage Server Check | System is not exposed to Exadata Critical Issue EX57 | All Storage Servers | View |
| PASS | Storage Server Check | System is not exposed to Exadata Critical Issue EX54 | All Storage Servers | View |
| PASS | Storage Server Check | System is not exposed to Exadata critical issue EX51 | All Storage Servers | View |
| PASS | Storage Server Check | System is not exposed to Exadata critical issue EX47 | All Storage Servers | View |
| PASS | Storage Server Check | System is not exposed to Exadata Critical Issue EX45 | All Storage Servers | View |
| PASS | Storage Server Check | System is not exposed to Exadata Critical Issue EX31 | All Storage Servers | View |
| PASS | Storage Server Check | System is not exposed to Exadata Critical Issue EX28 | All Storage Servers | View |
| PASS | Storage Server Check | System is not exposed to Exadata Critical Issue EX22 | All Storage Servers | View |
| PASS | Storage Server Check | System is not exposed to Exadata critical issue EX16 | All Storage Servers | View |
| PASS | Storage Server Check | System is not exposed to Exadata critical issue EX14 | All Storage Servers | View |

## Exadata Critical Issues on InfiniBand Switch

| Status | Type | Message | Status On | Details |
|---|---|---|---|---|
| PASS | Switch Check | System is not exposed to Exadata Critical Issue IB9 | All InfiniBand Switches | View |
| PASS | Switch Check | System is not exposed to Exadata Critical Issue IB8 | All InfiniBand Switches | View |
| PASS | Switch Check | System is not exposed to Exadata Critical Issue IB7 | All InfiniBand Switches | View |
| PASS | Switch Check | System is not exposed to Exadata Critical Issue IB6 | All InfiniBand Switches | View |
| PASS | Switch Check | System is not exposed to Exadata Critical Issue IB5 | All InfiniBand Switches | View |

## Database Server

| Status | Type | Message | Status On | Details |
|---|---|---|---|---|
| FAIL | OS Check | Free space in root(/) filesystem is less than recommended. | myserver01client02 | View |
| FAIL | OS Check | One or more database servers have stateful alerts that have not been cleared | myserver01client02 | View |
| FAIL | OS Check | One or more InfiniBand network parameters on Database Servers are not as expected | All Database Servers | View |
| FAIL | ASM Check | The ASM failure group configuration is not as recommended | All ASM Instances | View |
| FAIL | SQL Check | Table AUD$[FGA_LOG$] should use Automatic Segment Space Management | All Databases | View |
| FAIL | OS Check | Hardware and firmware profile check is not successful. [Database Server] | All Database Servers | View |
| FAIL | SQL Check | Some data or temp files are not autoextensible | cdbm122 | View |
| FAIL | OS Check | RAID Controller Battery Condition is not "Optimal" | myserver01client01 | View |
| FAIL | Database Check | Hidden database Initialization Parameter usage is not correct | myserver01client01:rac12c, myserver01client02:cdbm18c, myserver01client02:rac12c | View |
| WARN | Database Check | Local listener init parameter is not set to local node VIP | myserver01client02:cdbm18c | View |
| WARN | Database Check | There exists one or more underscore parameters without a comment | myserver01client01:cdbm213, myserver01client02:cdbm18c, myserver01client02:cdbm19c, myserver01client02:cdbm213 | View |
| WARN | OS Check | Multiple Oracle database instances discovered, observe database consolidation best practices | All Database Servers | View |
| WARN | OS Check | ExaWatcher should be running | myserver01client01 | View |
| WARN | Database Check | Some Auto Extensible datafiles are not expanding by at least one stripe width | All Databases | View |
| WARN | SQL Check | SYS or SYSTEM objects were found to be INVALID | cdbm121, cdbm122 | View |
| WARN | SQL Check | SYS or SYSTEM objects were found to be INVALID | rac1 | View |
| WARN | Database Check | One or more open PDBs have failed service verification checks | myserver01client01:cdbm19c, myserver01client01:cdbm213, myserver01client02:cdbm19c, myserver01client02:cdbm213 | View |

## Storage Server

| Status | Type | Message | Status On | Details |
|---|---|---|---|---|
| FAIL | Storage Server Check | One or more griddisks examined were not configured as recommended | myserver01celadm01 | View |
| FAIL | Storage Server Check | One or more storage server has non-test stateless alerts with null "examinedby" fields. | All Storage Servers | View |
| FAIL | Storage Server Check | Hardware and firmware profile check is not successful on one or more storage servers. | All Storage Servers | View |
| FAIL | Storage Server Check | Free space in root(/) filesystem is less than recommended on one or more storage servers. | All Storage Servers | View |
| FAIL | Storage Server Check | One or more storage servers have stateful alerts that have not been cleared. | All Storage Servers | View |
| WARN | Storage Server Check | ExaWatcher is not running on one or more storage servers | All Storage Servers | View |
| PASS | Storage Server Check | $OSSCONF/cellinit.ora matches across storage servers | All Storage Servers | View |
| PASS | Storage Server Check | ILOM Power Up Configuration for HOST_LAST_POWER_STATE is set to recommended value | All Storage Servers | View |
| PASS | Storage Server Check | ILOM Power Up Configuration for HOST_AUTO_POWER_ON is set to recommended value | All Storage Servers | View |
| PASS | Storage Server Check | Disk scrubbing is enabled. | All Storage Servers | View |
| PASS | Storage Server Check | Storage Server Flash Memory is configured as Exadata Smart Flash Cache | All Storage Servers | View |
| PASS | Storage Server Check | Package exadata-sun-cellnode is installed | All Storage Servers | View |
| PASS | Storage Server Check | The Subnet Manager is not executing | All Storage Servers | View |
| PASS | Storage Server Check | Release tracking bug matches on all storage servers | All Storage Servers | View |
| PASS | Storage Server Check | Exadata software version is compatible with Oracle RDBMS software version | All Storage Servers | View |
| PASS | Storage Server Check | Smart flash log is created on all storage server | All Storage Servers | View |
| PASS | Storage Server Check | No unacceptable storage server hidden parameters were discovered | All Storage Servers | View |
| PASS | Storage Server Check | imageinfo version matches on all storage servers | All Storage Servers | View |
| PASS | Storage Server Check | No flash or hard disks were found with metric CD_IO_ST_RQ beyond target value | All Storage Servers | View |
| PASS | Storage Server Check | All InfiniBand network cables are connected on all Storage Servers | All Storage Servers | View |
| PASS | Storage Server Check | Management network is separate from data network on all storage servers | All Storage Servers | View |
| PASS | Storage Server Check | All Exadata storage server meet system model number requirement | All Storage Servers | View |

## InfiniBand Switch

| Status | Type | Message | Status On | Details |
|---|---|---|---|---|
| PASS | Switch Check | There were no opensm logs found containing AutomaticHighErrorRate messages | All InfiniBand Switches | View |
| PASS | Switch Check | sminfo_polling_timeout is set to recommended value of 300 | All InfiniBand Switches | View |
| PASS | Switch Check | polling_retry_number is set to recommended value of 5 | All InfiniBand Switches | View |
| PASS | Switch Check | Infiniband switch firmware version is compatible with Exadata software version | All InfiniBand Switches | View |
| PASS | Switch Check | controlled_handover is set to recommended value of TRUE | All InfiniBand Switches | View |
| PASS | Switch Check | log_flags is set to recommended value of 0x03 | All InfiniBand Switches | View |
| PASS | Switch Check | routing_engine is set to recommended value of ftree | All InfiniBand Switches | View |
| PASS | Switch Check | NTP configuration has been changed from default | All InfiniBand Switches | View |
| PASS | Switch Check | HOSTNAME is set in /etc/sysconfig/network | All InfiniBand Switches | View |
| PASS | Switch Check | There are no unhealthy InfiniBand switch sensors | All InfiniBand Switches | View |

## Cluster Wide

| Status | Type | Message | Status On | Details |
|---|---|---|---|---|
| PASS | Cluster Wide Check | ASM Operations are not blocked by the Clusterware State | Cluster Wide | View |
| PASS | Cluster Wide Check | The storage servers in use configuration matches across the cluster | Cluster Wide | View |
| PASS | Cluster Wide Check | "flashcachemode" attribute matches across all storage servers | Cluster Wide | View |
| PASS | Cluster Wide Check | Time services are properly configured | Cluster Wide | View |
| PASS | Cluster Wide Check | The griddisk count matches across all storage servers where a given prefix name exists | Cluster Wide | View |
| PASS | Cluster Wide Check | All $ORACLE_HOMEs have same patches across database servers | Cluster Wide | View |
| PASS | Cluster Wide Check | RDBMS and GRID software owner UID matches across cluster | Cluster Wide | View |
| PASS | Cluster Wide Check | RDBMS software version matches across cluster. | Cluster Wide | View |
| PASS | Cluster Wide Check | Firmware version matches on all Infiniband switches | Cluster Wide | View |
| PASS | Cluster Wide Check | Clusterware software version matches across cluster. | Cluster Wide | View |

# Maximum Availability Architecture (MAA) Scorecard

| Outage Type | Status | Type | Message | Status On | Details |
|---|---|---|---|---|---|
| . | | | | | |

| | |
|---|---|
| | Proactive hardware and software maintenance helps avoid critical issues and helps maintain the highest stability an availability of your system.<br><br>By running the latest version of exachk manually or via Enterprise Manager, automatic detection occurs for the following:<br><br>• Software version mismatches on the system.<br>• Known critical issue exposure for your specific environment.<br>• Software releases that are older than recommended versions.<br><br>Furthermore, the suggested "Recommended Versions" can be leveraged when planning for your next planned maintenance window. Note that not all Exadata Software components need to be upgraded during one planned maintenance window; however it is advised to maintain a regular maintenance schedule. The recommended frequency is 3 to 12 months depending on security and business requirements. Oracle recommends patching and upgrading in the following order:<br><br>1. Grid Infrastructure Software and Oracle Database Software. Grid Infrastructure should always be equal to or higher than the highest Oracle Database Software version.<br>2. Exadata Database Server Software. For Exadata Database Server Software upgrades, run and evaluate exachk and dbnodeupdate precheck outputs.<br>3. Exadata Storage Server Software. For Exadata Storage Server Software upgrades, run and evaluate exachk and patchmgr precheck outputs.<br>4. InfiniBand Switch Software. For InfiniBand Switch Software upgrades, run and evaluate exachk and patchmgr precheck outputs. |
| FAIL | |

| Component | Host/Location | Found version | Recommended | Status |
|---|---|---|---|---|

| | | |
|---|---|---|
| STORAGE FAILURES PREVENTION BEST PRACTICES | PASS | The Oracle Storage Grid is implemented using either Oracle Automatic Storage Management (ASM) and Oracle Exadata Storage Server Software or ASM and third-party storage. The Oracle Storage Grid with Exadata seamlessly supports MA related technology, improves performance, provides unlimited I/O scalability, is easy to use and manage, and delive mission-critical availability and reliability to your enterprise.<br><br>A properly configured storage grid eliminates single point of failure for storage components, including disk, disk controller, network connections or switches. The Exadata Database Machine default configuration is an example of a properly configured storage grid with additional advanced HA capabilities such as Exadata HARD, Exadata Automatic Disk Scrub and Repair,Exadata I/O Latency Capping, and Identification of underperforming disks for example.<br><br>Key HA Benefits:<br><br>• Zero database downtime for storage related failures and maintenance.<br><br>• Oracle Grid Infrastructure and ASM rolling upgrade. |
| | . | |
| DATA CORRUPTION PREVENTION BEST | FAIL | To achieve the most comprehensive data corruption prevention and detection , use Oracle Active Data Guard and configure DB_BLOCK_CHECKSUM,DB_LOST_WRITE_PROTECT and DB_BLOCK_CHECKING database initialization parameters on the primary database and all standby databases in a Data Guard environment. Workload specific testing is required to assess whether the performance overhead with especially DB_BLOCK_CHECKING is acceptable.<br><br>Using ASM, RMAN, Exadata Storage and Zero Data Loss Recovery Appliance (Recovery Appliance) provide additional data protection checks and repair for Oracle databases and backups.<br><br>Key HA Benefits<br><br>• Application downtime due to data corruptions can be reduced from hours and days to seconds to no downtime.<br><br>• Prevention, quick detection and fast repair of data block corruptions.<br><br>• With Active Data Guard, physical data block corruptions can be repaired automatically using current blocks fro primary or standby databases. |

| | | | | |
|---|---|---|---|---|
| PASS | Database Check | Database parameter DB_BLOCK_CHECKSUM is set to recommended value | All Databases | Vi |

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| | | |
|---|---|---|
| LOGICAL CORRUPTION PREVENTION BEST PRACTICES | FAIL | Oracle Flashback Technology enables fast logical failure repair. Oracle recommends that you use automatic undo management with sufficient space to attain your desired undo retention guarantee, enable Oracle Flashback Database, and allocate sufficient space and I/O bandwidth in the fast recovery area. Application monitoring is required for early detection. Effective and fast repair comes from leveraging and rehearsing the most common application specific logical failures and using the different flashback features effectively (e.g flashback query, flashback version query, flashback transaction query, flashback transaction, flashback drop, flashback table, and flashback database, and 12.2 flashback pluggable database (PDB)).<br><br>Key HA Benefits:<br><br>• With application monitoring and rehearsed repair actions with flashback technologies, application downtime can reduce from hours and days to the time to detect the logical inconsistency.<br><br>• Fast repair for logical failures caused by malicious or accidental DML or DDL operations.<br><br>• Effect fast point-in-time repair at the appropriate level of granularity: transaction, table, pluggable database, or database.<br><br>Questions that need to be addressed by your application and operations team:<br><br>1. Can your application or monitoring infrastructure detect logical inconsistencies?<br><br>2. Is your operations team prepared to use various flashback technologies to repair quickly and efficiently?<br><br>3. Is security practices enforced to prevent unauthorized privileges that can result logical inconsistencies? |

| | | | | |
|---|---|---|---|---|
| FAIL | SQL Check | Flashback on primary is not configured | All Databases | View |
| PASS | SQL Parameter Check | RECYCLEBIN on PRIMARY is set to the recommended value | All Instances | View |
| PASS | SQL Parameter Check | Database parameter UNDO_RETENTION on PRIMARY is not null | All Instances | View |

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|---|---|---|
| CLIENT FAILOVER OPERATIONAL BEST PRACTICES | WARN | A highly available architecture requires the ability of the application tier to transparently fail over to a surviving instance or database advertising the required service. This ensures that applications are generally available or minimally impacted in the event of node failure, instance failure, or database failures. |

| | | | | |
|---|---|---|---|---|
| WARN | Database Check | Non-default database Services are not configured | myserver01client01:rac12c, myserver01client02:rac12c | Vie |
| PASS | SQL Check | In-memory database tables are duplicated across nodes | All Databases | Vie |
| PASS | Database Check | Non-default database Services are configured | myserver01client01:rac1 | Vie |
| PASS | OS Check | Clusterware is running | All Database Servers | Vie |

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| | | |
|---|---|---|
| ORACLE RECOVERY | FAIL | Oracle Recovery Manager (RMAN) is an Oracle Database utility to manage database backup and, more importantly, the recovery of the database. RMAN eliminates operational complexity while providing superior performance and availability of the database.<br><br>RMAN determines the most efficient method of executing the requested backup, restoration, or recovery operation and then submits these operations to the Oracle Database server for processing. RMAN and the server automatically identify modifications to the structure of the database and dynamically adjust the required operation to adapt to th changes.<br><br>RMAN has many unique HA capabilities that can be challenging or impossible for third party backup and restore utilities to deliver such as<br><br>• In-depth Oracle data block checks during every backup or restore operation<br>• Efficient block media recovery<br>• Automatic recovery through complex database state changes such as resetlogs or past Data Guard role transitions<br>• Fast incremental backup and restore operations<br>• Integrated retention policies and backup file management with Oracle's fast recovery area<br>• Online backups without the need to put the database or data file in hot backup mode. |

| | | |
|---|---|---|
| ORACLE RECOVERY MANAGER(RMAN) BEST PRACTICES | FAIL | Oracle Recovery Manager (RMAN) is an Oracle Database utility to manage database backup and, more importantly, the recovery of the database. RMAN eliminates operational complexity while providing superior performance and availability of the database.<br><br>RMAN determines the most efficient method of executing the requested backup, restoration, or recovery operation and then submits these operations to the Oracle Database server for processing. RMAN and the server automatically identify modifications to the structure of the database and dynamically adjust the required operation to adapt to th changes.<br><br>RMAN has many unique HA capabilities that can be challenging or impossible for third party backup and restore utilities to deliver such as<br><br>• In-depth Oracle data block checks during every backup or restore operation<br>• Efficient block media recovery<br>• Automatic recovery through complex database state changes such as resetlogs or past Data Guard role transitions<br>• Fast incremental backup and restore operations<br>• Integrated retention policies and backup file management with Oracle's fast recovery area<br>• Online backups without the need to put the database or data file in hot backup mode.<br><br>RMAN backups are strategic to MAA so a damaged database (complete database or subset of the database such as a data file or tablespace, log file, or controlfile) can be recovered but for the fastest recovery, use Data Guard or GoldenGate. RMAN operations are also important for detecting any corrupted blocks from data files that are not frequently accessed.<br><br>Oracle also now has the Zero Data Loss Recovery Appliance (Recovery Appliance) which provides the following key benefits:<br><br>• Eliminate or Minimize Data Loss.<br>• Minimal Impact Backups by offloading reduplication, compression, recovery+merge, and validation to Recovery Appliance.<br>• Database Level Recoverability and Validation. |

| | | |
|---|---|---|
| ORACLE GOLDENGATE FAILURE PREVENTION BEST PRACTICES | PASS | Oracle GoldenGate is Oracle's strategic logical replication solution for data distribution and data integration. Unlike replication solutions from other vendors, Oracle GoldenGate is more closely integrated with Oracle Database while also providing an open, modular architecture ideal for replication across heterogeneous database management systems. This combination of attributes eliminates compromise, making Oracle GoldenGate the preferred replication solution for addressing requirements that span Oracle Database and non-Oracle Database environments.<br><br>Key HA Benefits:<br><br>• Potential zero or near zero application downtime for platform migration, database or application upgrades.<br>• Active/Active environment with the ability to update both databases. Conflict resolution techniques will need t be considered.<br><br>To achieve the highest levels of availability resulting in zero or near-zero downtime for both unplanned outages an all planned maintenance activities, customers use the combination of Oracle Active Data Guard and Oracle GoldenGate.<br><br>Oracle Active Data Guard and Oracle GoldenGate are essential components of the Gold and Platinum MAA tiers. |
| | . | |
| OPERATIONAL BEST PRACTICES | PASS | Operational best practices are an essential prerequisite to high availability. |
| | . | |
| DATABASE CONSOLIDATION BEST PRACTICES | PASS | Database consolidation requires additional planning and management to ensure HA requirements are met. |

| | | | | |
|---|---|---|---|---|
| PASS | OS Check | There were no database server kernel out of memory errors in the past 24 hours. | All Database Servers | View |

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## Infrastructure Software and Configuration Summary

NOTE: This table displays the configuration summary of the system. It is for informational purposes only. No action is required.

# Infrastructure Software and Configuration Summary

NOTE: This table displays the configuration summary of the system. It is for informational purposes only. No action is required.

| Component | Attribute | Host | Value |
|---|---|---|---|
| | Exadata image version | myserver01client01,myserver01client02 | 21.2.4.0.0.210909 |
| | Operating system | myserver01client01,myserver01client02 | Linux x86_64 |
| | Operating system version | myserver01client01,myserver01client02 | 4.14.35-2047.505.4.4.el7uek.x86_64 |
| | Hardware model | myserver01client01,myserver01client02 | SUN SERVER X4-2 |
| | Disk configuration | myserver01client01 | |
| | | myserver01client02 | Model is SUN SERVER X4-2<br>Number of LSI controllers: 1<br>Physical disks found: 4 (252:0 252:1 252:2 252:3)<br>Logical drives found: 1<br>Linux logical drive: 0<br>RAID Level for the Linux logical drive: 5<br>Physical disks in the Linux logical drive: 4 (252:0 252:1 252:2 252:3)<br>Dedicated Hot Spares for the Linux logical drive: 0<br>Global Hot Spares: 0<br>Valid. Disks configuration: RAID5 from 4 disks with no global and dedicated hot spare disks.<br>Valid. Booted: Linux. Layout: Linux. |
| | | myserver01client01 | Volume groups<br>VG VSize VFree PV PSize PFree Used Fmt<br>VGExaDb 834.89g <259.52g /dev/sda3 834.89g <259.52g <575.38g lvm2<br>Logical volumes<br>LV VG LSize<br>LVDbOra1 VGExaDb 250.00g<br>LVDbSwap1 VGExaDb 24.00g<br>LVDbSys1 VGExaDb 150.00g<br>LVDbSys2 VGExaDb 150.00g<br>LVDbVdmyserver01CLIENT01DATAC1 VGExaDb 128.00m<br>LVDbVdmyserver01CLIENT01DBFSC1 VGExaDb 128.00m<br>LVDbVdmyserver01CLIENT01RECOC1 VGExaDb 128.00m |

# Cluster Verification Utility (CVU 21.3.0.0.0 ) result

- This version of Cluster Verification Utility (CVU) was released on 08-Jul-2021 and it is older than 180 days. It is highly recommended that you download the latest version of CVU from MOS patch 30839369 to ensure the highest level of accuracy of the data contained within the report

| Status | Type | Message | Status On | Details |
|---|---|---|---|---|
| FAIL | OS Check | Software home check failed | All Database Servers | View |
| PASS | OS Check | Node Connectivity check passed | All Database Servers | View |
| PASS | OS Check | Multicast or broadcast check check passed | All Database Servers | View |
| PASS | OS Check | Time zone consistency check passed | All Database Servers | View |
| PASS | OS Check | Vendor cluster check check passed | All Database Servers | View |
| PASS | OS Check | Path existence, ownership, permissions and attributes check passed | All Database Servers | View |
| PASS | OS Check | Cluster Manager Integrity check passed | All Database Servers | View |
| PASS | OS Check | Cluster Integrity check passed | All Database Servers | View |
| PASS | OS Check | OCR Integrity check passed | All Database Servers | View |
| PASS | OS Check | CRS Integrity check passed | All Database Servers | View |
| PASS | OS Check | Node Application Existence check passed | All Database Servers | View |
| PASS | OS Check | Single Client Access Name (SCAN) check passed | All Database Servers | View |
| PASS | OS Check | OLR Integrity check passed | All Database Servers | View |
| PASS | OS Check | ASM Integrity check passed | All Database Servers | View |
| PASS | OS Check | ASM Network check passed | All Database Servers | View |
| PASS | OS Check | User Not In Group "root" check passed | All Database Servers | View |
| PASS | OS Check | VIP Subnet configuration check check passed | All Database Servers | View |
| PASS | OS Check | Network configuration consistency checks check passed | All Database Servers | View |
| PASS | OS Check | Package check passed | All Database Servers | View |
| PASS | OS Check | File system mount options for path GI_HOME check passed | All Database Servers | View |
| PASS | OS Check | Cleanup of communication socket files check passed | All Database Servers | View |

## Findings needing further review

NOTE: This section contains best practices that exachk can only do a partial check for because a complete check requires information it cannot gather (ex: data outside of exachk run scope, requires customer knowledge, etc). Please investigate the partial finding that exachk reports in this section, paying particular attention to the details, to determine if any action is required.

| Status | Type | Message | Status On | Details |
|---|---|---|---|---|
| WARN | OS Check | Key InfiniBand fabric error counters should not be present | All Database Servers | View |
| INFO | Database Check | The Optimizer fixes for 19c database version is disabled by default for bugs with status value 0 | All Databases | View |
| INFO | Database Check | Please refer to data and guidance provided for database parameter processes | All Databases | View |
| PASS | SQL Parameter Check | Database parameter DB_FILES is set to a value greater than or equal to 1024. See detailed notes to verify | All Instances | View |
| PASS | OS Check | Average ping times to DNS nameserver should not be negatively impacting SSH operations | All Database Servers | View |
| PASS | Storage Server Check | Average ping times to DNS nameserver should not be negatively impacting SSH operations | All Storage Servers | View |
| PASS | Switch Check | Average ping times to DNS nameserver should not be negatively impacting SSH operations | All InfiniBand Switches | View |
| PASS | ASM Check | All disk groups have compatible.rdbms attribute set to recommended values | All ASM Instances | View |
| PASS | OS Check | There are no non-Exadata components in use on the InfiniBand fabric | All Database Servers | View |
| PASS | Database Check | All automated maintenance tasks are enabled | All Databases | View |
| PASS | OS Check | All installed rpm(s) kernel type match the active kernel version | All Database Servers | View |
| PASS | SQL Check | DB_UNIQUE_NAME on primary has been modified from the default, confirm that database name is unique across your Oracle enterprise | All Databases | View |

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## Platinum Certification

| Status | Type | Message | Status On | Details |
|---|---|---|---|---|
| FAIL | Database Check | Oracle database does not meet certified platinum configuration | All Databases | View |
| FAIL | Storage Server Check | Exadata software version on storage server does not meet certified platinum configuration | All Storage Servers | View |

## Platinum Certification

| Status | Type | Message | Status On | Details |
|---|---|---|---|---|
| FAIL | Database Check | Oracle database does not meet certified platinum configuration | All Databases | View |
| FAIL | Storage Server Check | Exadata software version on storage server does not meet certified platinum configuration | All Storage Servers | View |
| FAIL | OS Check | Exadata software version on database server does not meet certified platinum configuration | All Database Servers | View |

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## Skipped Checks

```
[myserver01client02:cdbm18c] skipping audit check Verify open PDBs to target_pdbs configured(checkid:-BDBF09D11651504EE053D198EB0A4E84) because
audit check execution was killed.
```

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## Component Elapsed Times

| Component Name | Component Type | Elapsed Time |
|---|---|---|
| myserver01client01 | Database Server | 3 mins, 11 seconds |
| myserver01client02 | Database Server | 4 mins, 2 seconds |
| myserver01celadm01 | Storage Server | 3 mins, 45 seconds |
| myserver01celadm02 | Storage Server | 3 mins, 49 seconds |
| myserver01celadm03 | Storage Server | 3 mins, 42 seconds |
| myserver01sw-ibs0 | IB Switch | 23 seconds |
| myserver01sw-ibb0 | IB Switch | 23 seconds |
| myserver01sw-iba0 | IB Switch | 24 seconds |

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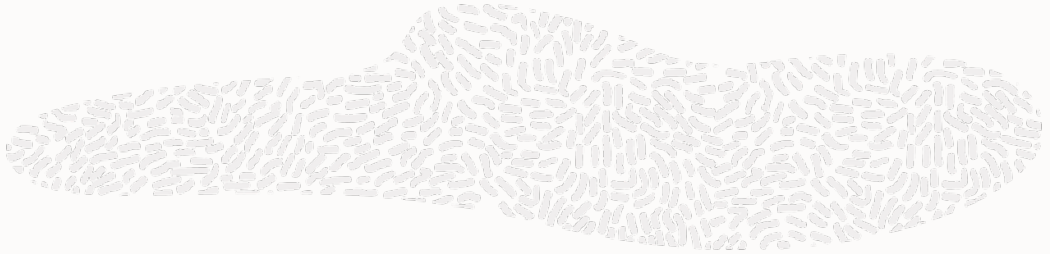
## Top 10 Time Consuming Checks



| | | | | | |
|---|---|---|---|---|---|
| 8300E0A2FFE48253E053D298EB0A76CC | FAIL | OS Check | The stix-fonts package is installed | All Database Servers | Hide |

**Verify stix-fonts RPM**

Check ID

| | |
|---|---|
| Recommendation | **Benefit / Impact:**<br>ridSetup.sh/runInstaller.sh Fails to Launch No Error Messages.<br><br>On Linux 7, when the Stix Font package is installed, it is set as the default font package for the OS.<br>This exposes Java <Bug 28522678> resulting in the java.lang.ArrayIndexOutOfBoundsException when initializing the fonts.<br>This subsequently causes gridSetup.sh and runInstaller.sh to fail to launch with no error messages or warnings displayed on the screen.<br><br>**Risk:**<br>Inability to install or upgrade<br><br>**Action / Repair:**<br>Workaround #1 – Remove the stix-fonts package:<br><br># rpm -e stix-fonts<br>Or you can run ORAchk -repair all -preupgrade -check 8300E0A2FFE48253E053D298EB0A76CC -dbnone -showpass to repair this check on all nodes in cluster<br><br>Workaround #2 – Modify the Default Font Package as follows:<br><br>Note: This workaround is applicable to those who have requirements on installation of the stix-fonts package<br><br>Create a file named /etc/fonts/local.conf with the following contents:<br><br><?xml version='1.0'?><br><!DOCTYPE fontconfig SYSTEM 'fonts.dtd'><br><fontconfig><br><alias><br><family>serif</family><br><prefer><family>Utopia</family></prefer><br></alias><br><alias><br><family>sans-serif</family><br><prefer><family>Utopia</family></prefer><br></alias><br><alias><br><family>monospace</family><br><prefer><family>Utopia</family></prefer><br></alias><br><alias><br><family>dialog</family><br><prefer><family>Utopia</family></prefer><br></alias><br><alias><br><family>dialoginput</family><br><prefer><family>Utopia</family></prefer><br></alias><br></fontconfig><br><br>Once one of the above workarounds are in place, gridSetup.sh will launch without issue. |
| Links | 1. Note: 2497357.1 – Doc ID: 2497357.1 – gridSetup.sh 18.1+: Returns Without Launching, No Errors Are Displayed |
| Needs attention on | qzh024703246tsa1 |
| Passed on | – |

Repair command

| | | | |
|---|---|---|---|
| 8300E0A2FFE48253E053D298EB0A76CC | FAIL | OS Check | The stix-fonts package is installed |

**Verify stix-fonts RPM**

Check ID

**Benefit / Impact:**
gridSetup.sh/runInstaller.sh Fails to Launch No Error Messages.

On Linux 7, when the Stix Font package is installed, it is set as the default font package for the OS.
This exposes Java <Bug 28522678> resulting in the java.lang.ArrayIndexOutOfBoundsException when initializing the fonts.
This subsequently causes gridSetup.sh and runInstaller.sh to fail to launch with no error messages or warnings displayed on the screen.

**Risk:**
Inability to install or upgrade

**Action / Repair:**
Workaround #1 – Remove the stix-fonts package:

Repair command

# rpm -e stix-fonts
Or you can run ORAchk -repair all -preupgrade -check 8300E0A2FFE48253E053D298EB0A76CC -dbnone -showpass to repair this check on al

Workaround #2 – Modify the Default Font Package as follows:

Note: This workaround is applicable to those who have requirements on installation of the stix-fonts package

```
</alias>
<alias>
<family>sans-serif</family>
<prefer><family>Utopia</family></prefer>
</alias>
<alias>
<family>monospace</family>
<prefer><family>Utopia</family></prefer>
</alias>
<alias>
<family>dialog</family>
<prefer><family>Utopia</family></prefer>
</alias>
<alias>
<family>dialoginput</family>
<prefer><family>Utopia</family></prefer>
</alias>
</fontconfig>
```

Once one of the above workarounds are in place, gridSetup.sh will launch without issue.

| | |
|---|---|
| Links | 1. Note: 2497357.1 – Doc ID: 2497357.1 – gridSetup.sh 18.1+: Returns Without Launching, No Errors Are Displayed |
| Needs attention on | qzh024703246tsa1 |
| Passed on | - |

# Understand what the repair command does

Understand what the repair command will do with:

```
ahfctl compliance -showrepair 8300E0A2FFE48253E053D298EB0A76CC


TFA using ORAchk : /opt/oracle.ahf/orachk/orachk


Repair Command:
currentUserName=$(whoami)
if [ "$currentUserName" = "root" ]
then
      repair_report=$(rpm -e stix-fonts 2>&1)
else
      repair_report="$currentUserName does not have priviedges to run $CRS_HOME/bin/crsctl set resource
use 1"
fi
echo -e "$repair_report"
```

# Run the repair command

Run the checks again and repair everything that fails

```
ahfctl compliance -repaircheck all
```

Run the checks again and repair only the specified checks

```
ahfctl compliance –preupgrade -sanitize
```

Run the checks again and repair all checks listed in the file

```
ahfctl compliance -repaircheck <check_id_1>,<check_id_2>
```

```
ahfctl compliance -repaircheck <file>
```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