

Oracle® Communications
Oracle Firmware Upgrade Pack
Upgrade Guide
Release 3.1.4
E65466 Revision 01

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ORACLE®

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CAUTION: Use only the Upgrade procedure included in the Upgrade Kit.
Before upgrading any system, please access Oracle's Tekelec Customer Support site and review any Technical Service Bulletins (TSBs) that relate to this upgrade.

Contact My Oracle Support and inform them of your upgrade plans prior to beginning this or any upgrade procedure.

Table of Contents

1 Introduction.....	4
1.1 Purpose and Scope	5
1.2 References.....	5
1.3 Software Release Numbering.....	5
1.4 Acronyms	5
1.5 Terminology.....	6
1.6 Documentation Conventions.....	6
2 Upgrade Overview	7
2.1 Required Materials.....	8
2.2 Firmware Upgrade Planning	8
3 Upgrade Preparation	9
3.1 Important Instructions and Warnings.....	10
3.2 Prerequisites.....	10
3.3 Perform System Health Check.....	11
3.3.1 System Health Check for Oracle Servers.....	11
3.4 Determine Firmware Upgrade Procedure	11
3.5 Acquiring Firmware.....	12
3.6 Preparing Firmware Upgrade Media.....	13
3.6.1 Oracle System Assistant Upgrade.....	13
3.6.2 ILOM/BIOS Only Upgrade	13
4 Oracle System Assistant Upgrade.....	14
4.1 Firmware Upgrade Execution	15
4.2 Oracle Rack Mount Server Upgrade	15
5 ILOM/BIOS Only Upgrade	21
5.1 Firmware Upgrade Execution	22
5.2 Oracle Rack Mount Server Upgrade	22
6 Appendices.....	25
Appendix A - Data Collection Worksheet for Oracle RMS Servers.....	25
Appendix D – Contacting Oracle Support	27

1 Introduction

Topics:

- [*Purpose and Scope*](#)
- [*References*](#)
- [*Software Release Numbering*](#)
- [*Acronyms*](#)
- [*Terminology*](#)
- [*Documentation Conventions*](#)

1.1 Purpose and Scope

This document details the procedures used to perform firmware upgrades on Oracle Rack Mount Server environments. Included in the scope are Oracle Rack Mount Servers running Telecom Platform Distribution (TPD) software releases 6.7.1 and 7.0.1 or greater.. The intended audience for this document consists of the following: Software Development, Product Verification, Documentation, and Customer-Service including Software Operations and First Office Application.

1.2 References

1. *Oracle X5 Series Servers Administration Guide*
http://docs.oracle.com/cd/E23161_01/pdf/E52424.pdf
2. *Oracle ILOM Administrator's Guide for Configuration and Maintenance Firmware Release 3.2.X*
http://docs.oracle.com/cd/E37444_01/pdf/E37446.pdf
3. *Oracle Communications© Oracle Firmware Upgrade Pack 3.1.4, Release Notes, E65467*

1.3 Software Release Numbering

Oracle servers contain several firmware components, all of which are versioned differently. Please refer to the *Release Notes* for the specific versions contained.

1.4 Acronyms

Table 1 Acronyms

BIOS	Basic Input Output System
GUI	Graphical User Interface
ILOM	Integrated Lights Out Manager
RMS	Rack Mount Server
ISO	ISO 9660 file system optical disk image
OSA	Oracle System Assistant
USB	Universal Serial Bus

1.5 Terminology

This section describes some of the terminology used in this document.

Table 2 - Terminology

Firmware	Program code and data stored directly into an area of persistent memory for the purpose of controlling the operation of a server or one of its devices
Upgrade	The process of updating the firmware of a server to a newer release.
System Health Check	Procedure used to determine the health and status of a server
Upgrade-Ready	A state that allows for a successful upgrade to be performed.
Oracle System Assistant	A management application stored on an embedded USB drive in the server. This is the application used to store firmware images and to upgrade the server's firmware.
Oracle System Assistant Updater	An ISO image used to update or recover the OSA associated with a particular server.
Integrated Lights Out Manager	The service processor and associated firmware used to provide management services for the server.

1.6 Documentation Conventions

- GUI menu items, action links, and buttons to be clicked on are in bold font
- GUI fields and values to take note of during a step are in bold font
- Each command that the user must enter is formatted in a code block as show below:

```
# ls -al
```

- Command output is formatted in a code block as shown below

```
# ls -al
```

```
Total 32
```

```
drwx----- . 3 admusr admgrp 4096 Dec 2 10:13 .
```

```
drwxr-xr-x. 6 root root 4096 Nov 27 16:01 ..
```

- Variable, user entered command line input is surrounded by angled brackets and formatted in a code block.

2 Upgrade Overview

Topics:

- [*Required Materials*](#)
- [*Firmware Upgrade Planning*](#)

This section presents a list of materials that will be required to perform these procedures as well as the steps to take when planning to perform an upgrade.

2.1 Required Materials

- *Oracle Firmware Upgrade Pack 3.1.4, Release Notes, E65467*
- A local workstation, such as a laptop, running MS Windows 7, WinZip or 7Zip, Java, and one of the following supported browsers:
 - Internet Explorer 9+
 - Firefox 3.6.x +
- User logins, passwords, IP addresses and other administrative data. Refer to [Data Collection Worksheets](#) section.

VPN access to the customer's network is required if that is the only method to login to the target servers. The connection into the customer's network must support both *ssh* and *https* as both may be required to perform firmware upgrades. Firmware upgrades should not be attempted in environments where virtual media would be used over slow and/or unreliable connections.

2.2 Firmware Upgrade Planning

The following steps should be done when planning for an execution of the upgrade procedures contained in this document.

1. Identify the servers that are to be upgraded. The upgrade process per server could take up to 40 minutes. This should be taken into account when determining how much time will be required to perform all upgrades.
2. Collect logins, passwords, and ILOM IP addresses for the servers being upgraded. The Data Collection Worksheet provided in *Appendix A* can be used to collect this data.
3. Verify that the workstation that will be used to perform the upgrades has access to the ILOM IP addresses from step 2.

3 Upgrade Preparation

- [*Important Instructions and Warnings*](#)
- [*Prerequisites*](#)
- [*Perform System Health Check*](#)
- [*Determining Firmware Upgrade Procedure*](#)
- [*Acquiring Firmware*](#)
- [*Preparing Firmware Upgrade Media*](#)

This section provides the prerequisites and procedures required to prepare for a firmware upgrade. **They should be executed outside of a maintenance window.**

3.1 Important Instructions and Warnings

Before upgrading, users must perform the system health check in the *Perform System Health Check* section. This check ensures that the servers requiring upgrade are in an upgrade-ready state.

*****WARNING*****

If the server being upgraded is not in an upgrade ready state, as determined by the System Health Check, the server should be brought to this state before an upgrade is attempted.

Before an upgrade is attempted, any applications should be gracefully brought down as per the appropriate application documentation. In addition, it should be verified that any server being upgraded is actually in a position where it can be taken down.

Please read the following notes on upgrade procedures:

Command response outputs are shown accurately as possible. EXCEPTIONS are as follows:

- Session banner information such as time and date
- System-specific configuration information such as hardware locations, IP addresses, and hostnames
- ANY information marked with “XXXX” or “YYYY”
- Aesthetic differences that are unrelated to functionality: i.e. browser attributes, window size, colors, toolbars, and button layouts

After completing each step and at each point where data is recorded from the screen, the technician performing the upgrade must initial each step. The space on either side of the step can be used.

Capturing data is required for future support reference if Oracle Technical Services is not present during the upgrade.

3.2 Prerequisites

Before attempting upgrades, verify that the following prerequisite steps, needed to perform an upgrade, have been completed.

1. Verify all required materials are present.

Materials are listed in the [Required Materials](#) section.

2. Review the *Release Notes*.

Review the Oracle Firmware Upgrade Pack Release Notes for the target release. Take note of any special instructions that may be included.

3. Verify all administrative data needed during upgrade.

Double check that all the information in the required worksheets has been filled-in and is accurate.

4. Contact Oracle Support.

Contact the Oracle Support and inform them of your plans to perform upgrades. Refer to Appendix C for contact information

3.3 Perform System Health Check

These procedures are part of the firmware upgrade preparation process and are used to determine the health and status of Oracle rack mount servers being upgraded. The health checks must be performed once for each server being upgraded within the time frame of 24-36 hours prior to the start of a maintenance window.

3.3.1 System Health Check for Oracle Servers

Repeat this procedure for each Oracle Rack Mount Server to be upgraded.

1. Access the command prompt and login to the server as “admusr”. If the server being upgraded is a TVOE host, be sure to login to the host and not to one of the guests.

```
login as: admusr
```

```
password: <admusr_password>
```

2. Verify integrity of system health by running alarmMgr command

```
$ sudo /usr/TKLC/plat/bin/alarmMgr --alarmStatus
```

- Examine the output of the alarmMgr command to determine if there are any alarms that are currently set
 - If there are any alarms reported by alarmMgr contact Oracle Customer Care for further instructions as to how to proceed.
3. If there are no alarms reported by alarmMgr, continue with the upgrade process.

3.4 Determine Firmware Upgrade Procedure

Depending on what components are in need of upgrade, there are two different procedures to follow. If the ILOM/BIOS are the only components that need to be upgraded, then the Firmware Pack can be used to perform the upgrade via the ILOM web interface. This procedure will be referred to as the ILOM/BIOS Only procedure and can only be used to upgrade that single component (ILOM/BIOS are packaged together and treated as a single component). If any other components need to be updated, the Oracle System Assistant upgrade procedure should be used. This procedure will upgrade the Oracle System Assistant so that it contains all of the latest firmware. The OSA can then be used to upgrade every component, including the ILOM/BIOS. For each server to be upgraded, only one of the two procedures will be required.

Repeat this procedure for each Oracle Rack Mount procedure.

1. From TPD/TVOE command line execute the fwupdate command to query current firmware versions.

```
$ sudo fwupdate list all
```

2. Examine the output and compare the results to the *Server Firmware Components* section in the *Release Notes*. Sample output is provided below. Please note that this output may be different for any given server. If the ILOM and/or BIOS versions in the sp_bios row are the only components that need to be upgraded then the ILOM/BIOS only procedure can be used. Otherwise, the Oracle System Assistant Upgrade procedure should be followed.

```
=====
SP + BIOS
=====
ID          Product Name          ILOM Version          BIOS/OBP Version      XML
Support
-----
sp_bios     ORACLE SERVER X5-2     v3.2.4.34 r95732     30030800              N/A
=====
CONTROLLER
=====
ID          Type      Manufacturer  Model      Product Name          FW Version      BIOS Version      EFI Version
FCODE Version Package Version NVDATA Version XML Support
-----
c0         SAS      LSI Logic    0x005d    LSI MegaRAID 9361-8i  4.230.40-3739  6.17.04.2        06.06.10.05
4.16.08.00 -              -              N/A
=====
DISKS
=====
ID          Manufacturer  Model          Chassis Slot  Type  Media  Size (GB)  FW Version  XML Support
-----
c0d0       HGST         H101212SESUN1.2T - 0     sas   HDD      1200      A6C0      N/A
c0d1       HGST         H101212SESUN1.2T - 1     sas   HDD      1200      A6C0      N/A
c0d2       HGST         H101212SESUN1.2T - 2     sas   HDD      1200      A6C0      N/A
c0d3       HGST         H101212SESUN1.2T - 3     sas   HDD      1200      A6C0      N/A
c0d4       HGST         HSCAC2DA4SUN400G - 4     sas   SSD      400      A122      N/A
c0d5       HGST         HSCAC2DA4SUN400G - 5     sas   SSD      400      A122      N/A
c0d6       HGST         HSCAC2DA4SUN400G - 6     sas   SSD      400      A122      N/A
c0d7       HGST         HSCAC2DA4SUN400G - 7     sas   SSD      400      A122      N/A
=====
```

Please note that for any controllers showing no entry for the FW Version column, there is no firmware available for that component in this release. **Record the upgrade method that is to be used for each server in the Data Collection Worksheet (Appendix A).**

3.5 Acquiring Firmware

Refer to the *Release Notes* for procedures on how to download the required materials. The file obtained and the procedure being used is dependent on the findings from the *Determining Firmware Upgrade Procedure* section.

If the determined procedure is the Oracle System Assistant based upgrade, then the Oracle System Assistant Updater must be used. Refer to section 2.3.1 of the *Release Notes*.

If the determined procedure is the ILOM/BIOS only upgrade, then the Firmware Pack can be used. Refer to section 2.3.3 of the *Release Notes*.

3.6 Preparing Firmware Upgrade Media

3.6.1 Oracle System Assistant Upgrade

Use whatever means are available to place the software patch zip file on the local workstation that is being used to perform the upgrades. Use the following procedure to extract the Oracle System Assistant Updater from the zip file. Refer to the *Release Notes* to determine which Software Release is required for the model of server being upgraded, as well as procedures on how to obtain the patch from My Oracle Support.

1. Local WorkStation

Locate the software patch zip file on the local workstation. Right-click on the zip file and move the cursor over the **Open With** menu option. If this option shows WinZip or 7-zip File Manager, select one of those options. If neither shows up, select '**Choose Program...**'. In the window that opens there will be an **Other Programs** list. If WinZip or 7-Zip File Manager is there, then select one of them. If they are not there then click the **Browse** button and locate the 7zFM.exe or WinZip.exe file.

2. Extract the Oracle System Assistant Updater

On the local workstation open the folder you are going to copy the OSA updater to. In the extraction utility window find the Oracle System Assistant Updater ISO file. Drag and drop the file or use any other means that are provided by the extraction utility to extract the file to the open folder.

3. Make note of where the file is

Record the location of where the extracted file is on the local workstation. In subsequent parts of this document this location will be referred to as: **<local_OSAU_image_path>**.

3.6.2 ILOM/BIOS Only Upgrade

Refer to the *Release Notes* to determine which file to download and for procedures on how to do so. Note that the ILOM/BIOS only upgrade procedure uses the Firmware Only Upgrade Patch. Note the patch number provided for the type of server being upgraded in the appropriate table for these procedures.

Use whatever means are available to place the software patch zip file on the local workstation that is being used to perform the upgrades.

1. Local Workstation

Locate the software patch zip file on the local workstation. Right-click on the zip file and move the cursor over the **Open With** menu option. If this option shows WinZip or 7-zip File Manager, select one of those options. If neither shows up, select '**Choose Program...**'. In the window that opens there will be an **Other Programs** list. If WinZip or 7-Zip File Manager are there select one of them. If they are not there then click the **Browse** button and locate the 7zFM.exe or WinZip.exe file.

2. Extract the ILOM/BIOS package file.

Navigate to the service_processor folder in the firmware directory. Extract the .pkg file located there.

4 Oracle System Assistant Upgrade

- [*Firmware Upgrade Execution*](#)
- [*Oracle Rack Mount Server Upgrade*](#)

This section provides procedures for upgrading the firmware on Oracle Rack Mount Servers.

4.1 Firmware Upgrade Execution

These procedures are meant to be executed inside a maintenance window. It is assumed that each server to be upgraded has already been properly installed and configured. For new installations please refer to the application specific documentation. It is also assumed that the appropriate upgrade media has been delivered to the local workstation that will be used to perform the upgrades.

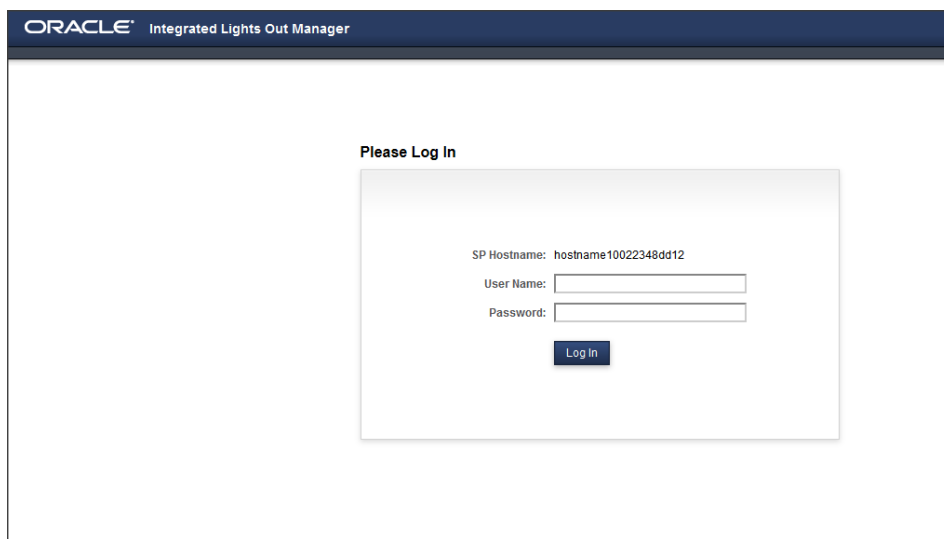
4.2 Oracle Rack Mount Server Upgrade

1. Local Workstation

Using one of the supported browsers listed in the *Required Materials* section, navigate to the ILOM Web Gui by typing its address into the browser's address bar: (https://<ILOM_IP>).

2. ILOM Web GUI:

Login to the ILOM as an “administrator” user.



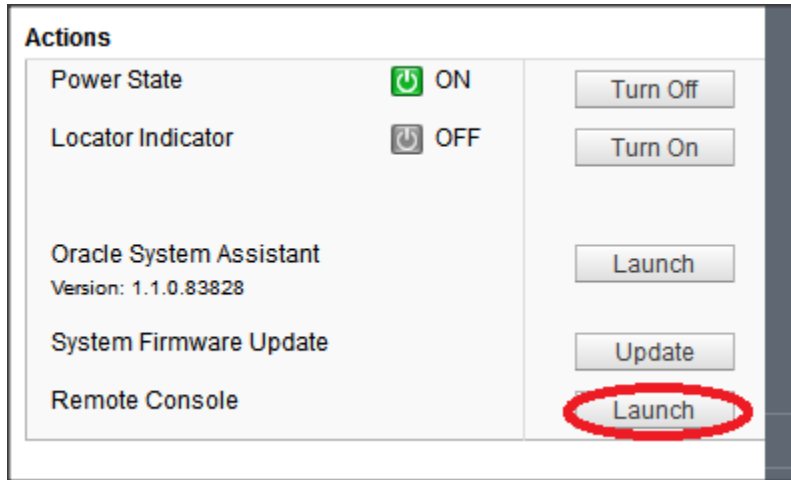
The screenshot shows the Oracle Integrated Lights Out Manager (ILOM) login interface. At the top, the Oracle logo and 'Integrated Lights Out Manager' are visible. The main content area is titled 'Please Log In' and contains a login form. The form displays the SP Hostname as 'hostname10022348dd12'. Below this, there are two input fields: one for 'User Name' and one for 'Password'. A 'Log In' button is positioned below the password field.

User name = <ILOM_admin_user>

Password =<ILOM_admin_password>

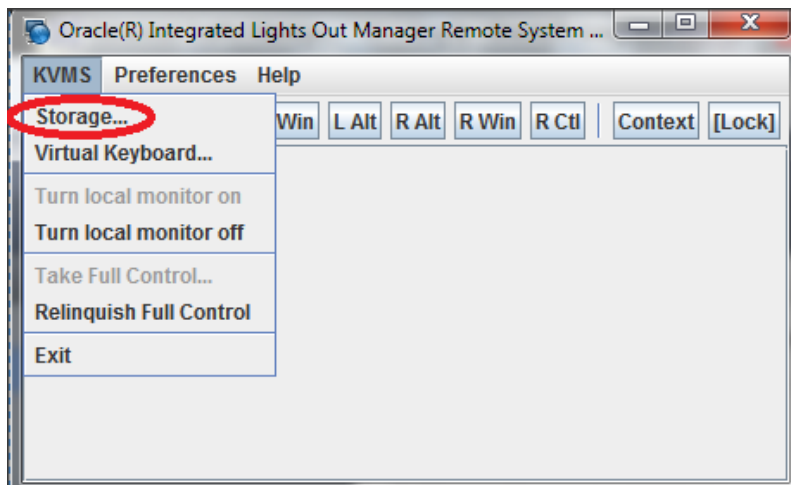
3. ILOM Web GUI:

On the System Summary page click on the Remote Console **Launch** button in the Actions Pane.



4. ILOM Remote Console:

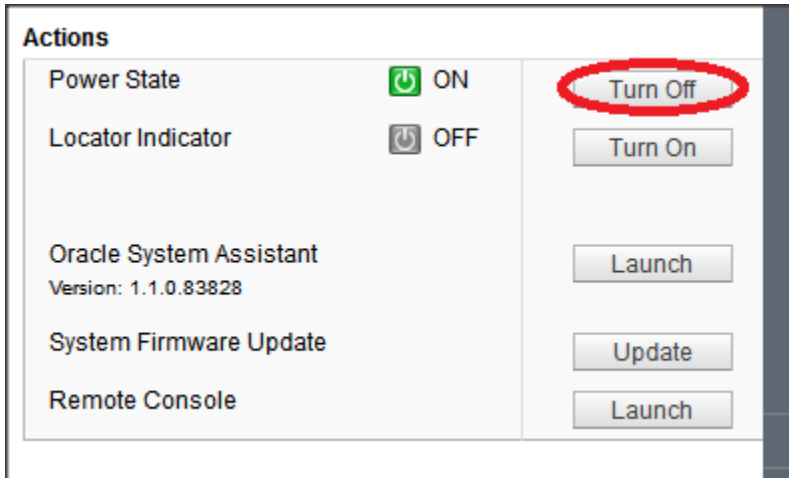
In the KVMS menu, select the *Storage....* option.



5. A window entitled Storage Devices will open up. Click the **Add..** button and navigate to the location of the ISO on the local workstation. Select the ISO and then click the **Select** button
6. The ISO file will now be included in the list of available storage devices. Select it in the Storage Devices window and then click the **Connect** button.

7. ILOM Web GUI:

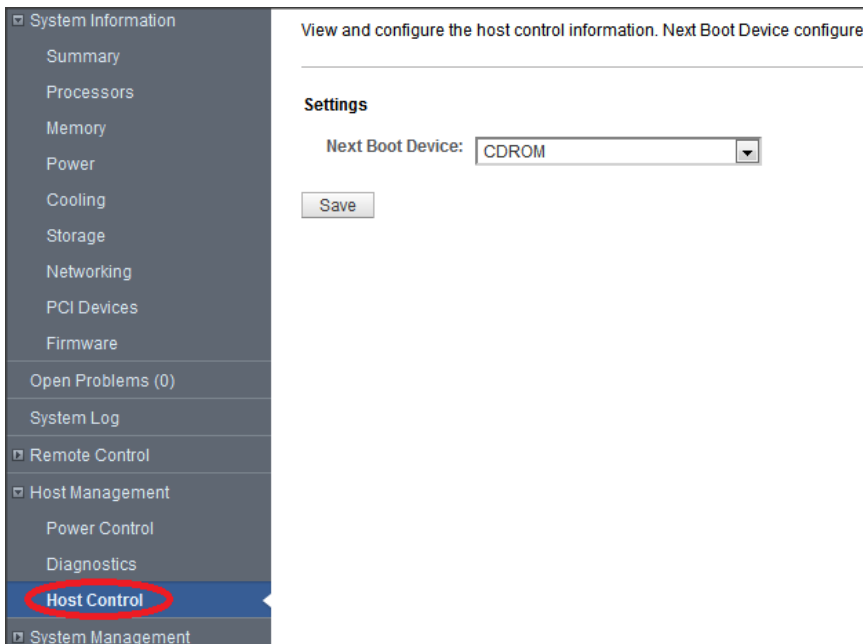
On the System Summary page click on the Power State **Turn Off** button in the Actions Pane. Click **OK** at the confirmation prompt. This will perform a graceful shutdown of the operating system prior to powering off the host server. Wait for the indicator to signify that the server is powered down before proceeding to the next step.



****Note: If at any point the internet connection on the local workstation is lost or the browser being used is closed and the OSA has not yet been updated, the Oracle System Assistant Updater ISO must be remounted using the previous steps.**

8. ILOM Web GUI

Under the Host Management tab select the Host Control option. From the drop-down menu for Next Boot Device, select the CDROM option and then click the **Save** button.



9. ILOM Web GUI:

On the System Summary page click on the Power State **Turn On** button in the Actions Pane to boot into the Oracle System Assistant Updater ISO. Click OK at the confirmation prompt.

10. ILOM Remote Console:

Go back to the window that contains the Remote Console. If the window was closed, re-launch the console in the Actions Pane. Wait for the Oracle System Assistant Updater ISO to boot up and reply ‘yes’ to the prompt.

Would you like to proceed? [yes or no] **yes**

11. ILOM Remote Console:

Wait for the Oracle System Assistant to finish updating. Reply ‘yes’ to the verification prompt.

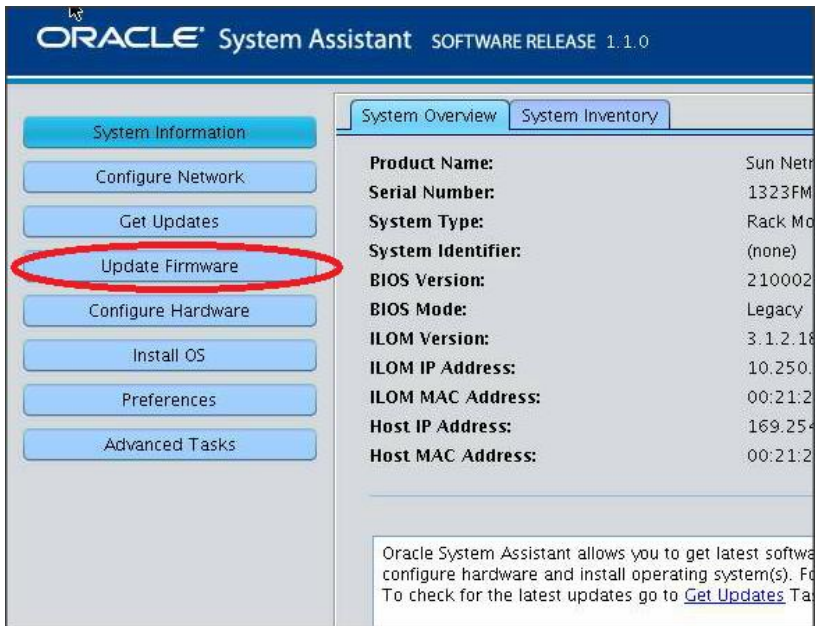
Would you like to verify the device? [yes or no] **yes**

12. ILOM Remote Console:

When verification is complete, the system will reboot and launch the Oracle System Assistant. After the Oracle System Assistant has launched, press the **Accept** button in the License Agreement Window and then close the Oracle System Assistant Help widow.

13. OSA GUI:

Click the **Update Firmware** button on the left-hand side of the OSA GUI and then click **Check for Firmware Updates**.



14. OSA GUI:

After the OSA has finished determining what needs to be updated, click the **Install All Updates** button to proceed with the upgrade.

15. Depending on whether the ILOM is being upgraded, a prompt may be displayed to enter credentials for activation of the internal LAN over USB interconnect between the host server and the ILOM service processor. Supplying a valid ILOM user account with Administrator privileges will result in the interconnect being activated for faster upgrade of the ILOM. If there is no prompt ignore this step and move on to the next one.

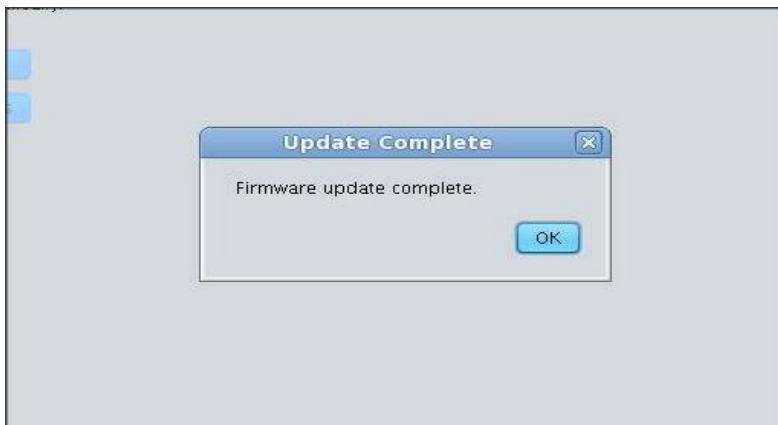


****Note: If the server requires a reboot as part of the upgrade process it will reboot automatically.**

****Note: If ILOM is being upgraded there will be a temporary loss of connection with it while it resets. Wait a few minutes and then log back into the ILOM Web Gui and re-launch the Remote Console.**

16. OSA GUI:

Wait for the firmware upgrade process to complete. One or more reboots may be part of this process and, as noted, will take place automatically. When the upgrade is complete the following output will be shown in the OSA GUI.



17. OSA GUI:

Click on the **OK** button. The OSA will then run another Firmware Update Check. Review the output to ensure that the installed versions are correct as per the *Release Notes* and then click on the **Cancel** button.

18. OSA GUI:

Click on the **Exit** button in the bottom right corner of the OSA GUI and then press the **reboot** option to reboot the server.

5 ILOM/BIOS Only Upgrade

<ul style="list-style-type: none">• <i>Firmware Upgrade Execution</i>• <i>Oracle Rack Mount Server Upgrade</i>	This section contains procedures for upgrading the ILOM/BIOS on Oracle Rack Mount Servers
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5.1 Firmware Upgrade Execution

These procedures are meant to be executed inside a maintenance window. It is assumed that each server to be upgraded has already been properly installed and configured. For new installations please refer to the application specific documentation. It is also assumed that the appropriate upgrade media has been delivered to the local workstation that will be used to perform the upgrades.

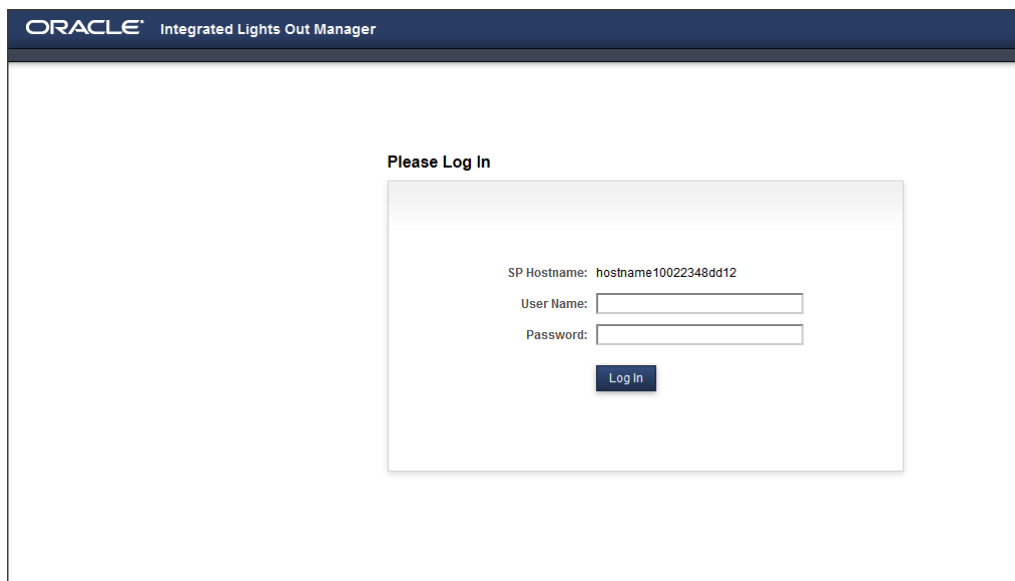
5.2 Oracle Rack Mount Server Upgrade

1. Local Workstation

Using one of the supported browsers listed in *2.1 Required Materials*, navigate to the ILOM Web Gui by typing its address into the browser's address bar: (https://<ILOM_IP>).

2. ILOM Web GUI:

Login to the ILOM as an “administrator” user.

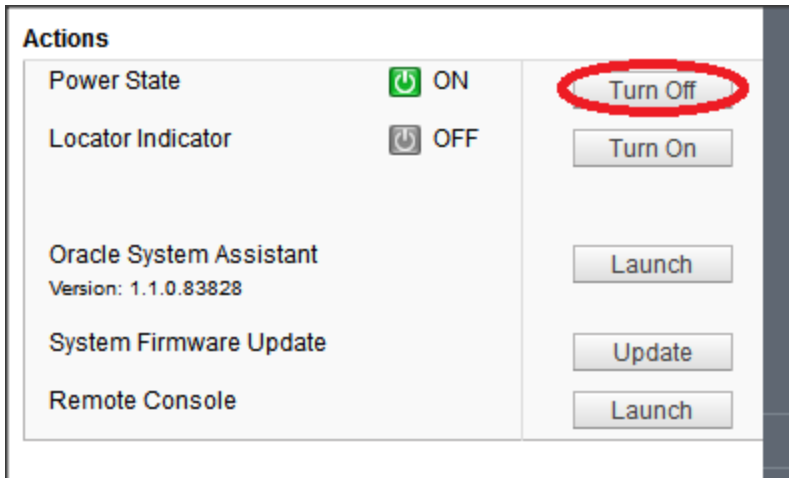


User name = <ILOM_admin_user>

Password =<ILOM_admin_password>

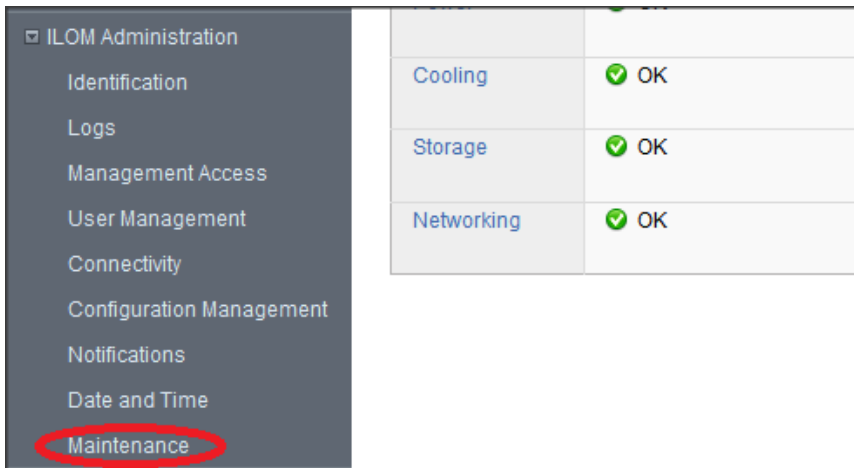
3. ILOM Web GUI:

On the **System Summary** page click on the Power State **Turn Off** button in the **Actions Pane**. Click **OK** at the confirmation prompt. This will perform a graceful shutdown of the operating system prior to powering off the host server. Wait for the indicator to signify that the server is powered down before proceeding to the next step.



4. ILOM Web GUI:

From the ILOM Administration drop-down list, select the **Maintenance** link.



5. Click on the **Enter Update Mode** button.
6. Click on the **Browse ...** button to locate the firmware package file on the local workstation and click **Open**.
7. Click on the **Upload** button. This step may take a few minutes while the file is being transferred.

8. In the Firmware Verification Table make sure that the following options are checked.

- Preserve existing SP configuration
- Preserver existing BIOS configuration

Firmware Update	
To initiate firmware update select the Start Update button. To cancel the upgrade select Cancel.	
Firmware Verification	
Module Name	
Service Processor Firmware	<input checked="" type="checkbox"/> Preserve existing SP configuration
Service Processor BIOS	<input checked="" type="checkbox"/> Preserve existing BIOS configuration <input type="checkbox"/> Delay BIOS upgrade until next server poweroff or reset
<input type="button" value="Start Update"/> <input type="button" value="Cancel"/>	

9. Click the **Start Upgrade** button. Once the upgrade is started, it is important that the process not be interrupted. After the ILOM has been upgraded, it will reset. This will cause the current connection to the ILOM to be lost. Refresh the page or click on the **Reconnect** link in the **Upgrade Complete** dialog box to reestablish connection with the ILOM.

Appendix A - Data Collection Worksheet for Oracle RMS Servers

For convenience, this worksheet provides space to record information for up to 12 target servers. If more are to be upgraded, you should print another copy.

Oracle RMS Server Common Information

ILOM Administrator User

<ILOM_admin_user> _____

ILOM Administrator Password

<ILOM_admin_password> _____

Oracle RMS Sever ILOM IP Addresses

Server 1 ILOM IP Address

<ILOM_IP> _____

<Upgrade Procedure> _____

Server 2 ILOM IP Address

<ILOM_IP> _____

<Upgrade Procedure> _____

Server 3 ILOM IP Address

<ILOM_IP> _____

<Upgrade Procedure> _____

Server 4 ILOM IP Address

<ILOM_IP> _____

<Upgrade Procedure> _____

Server 5 ILOM IP Address

<ILOM_IP> _____

<Upgrade Procedure> _____

Server 6 ILOM IP Address

<ILOM_IP> _____

<Upgrade Procedure> _____

Server 7 ILOM IP Address

<ILOM_IP> _____

<Upgrade Procedure> _____

Server 8 ILOM IP Address

<ILOM_IP> _____

<Upgrade Procedure> _____

Server 9 ILOM IP Address

<ILOM_IP> _____

<Upgrade Procedure> _____

Server 10 ILOM IP Address

<ILOM_IP> _____

<Upgrade Procedure> _____

Server 11 ILOM IP Address

<ILOM_IP> _____

<Upgrade Procedure> _____

Server 12 ILOM IP Address

<ILOM_IP> _____

<Upgrade Procedure> _____

Appendix D – Contacting Oracle Support

My Oracle Support (MOS)

MOS (<https://support.oracle.com>) is your initial point of contact for all product support and training needs. A representative at Customer Access Support (CAS) can assist you with MOS registration.

Call the CAS main number at **1-800-223-1711** (toll-free in the US), or call the Oracle Support hotline for your local country from the list at <http://www.oracle.com/us/support/contact/index.html>. When calling, make the selections in the sequence shown below on the Support telephone menu:

1. Select 2 for New Service Request
2. Select 3 for Hardware, Networking and Solaris Operating System Support
3. Select 2 for Non-technical issue

You will be connected to a live agent who can assist you with MOS registration and provide Support Identifiers. Simply mention you are a Tekelec Customer new to MOS. MOS is available 24 hours a day, 7 days a week, 365 days a year.

Emergency Response

In the event of a critical service situation, emergency response is offered by the Customer Access Support (CAS) main number at **1-800-223-1711** (toll-free in the US), or by calling the Oracle Support hotline for your local country from the list at <http://www.oracle.com/us/support/contact/index.html>. The emergency response provides immediate coverage, automatic escalation, and other features to ensure that the critical situation is resolved as rapidly as possible.

A critical situation is defined as a problem with the installed equipment that severely affects service, traffic, or maintenance capabilities, and requires immediate corrective action. Critical situations affect service and/or system operation resulting in one or several of these situations:

- A total system failure that results in loss of all transaction processing capability
- Significant reduction in system capacity or traffic handling capability
- Loss of the system's ability to perform automatic system reconfiguration
- Inability to restart a processor or the system
- Corruption of system databases that requires service affecting corrective actions
- Loss of access for maintenance or recovery operations
- Loss of the system ability to provide any required critical or major trouble notification

Any other problem severely affecting service, capacity/traffic, billing, and maintenance capabilities may be defined as critical by prior discussion and agreement with Oracle.

Locate Product Documentation on the Oracle Technology Network Site

Oracle customer documentation is available on the web at the Oracle Technology Network (OTN) site, <http://docs.oracle.com>. You do not have to register to access these documents. Viewing these files requires Adobe Acrobat Reader, which can be downloaded at www.adobe.com.

1. Log into the Oracle Technology Network site at <http://docs.oracle.com>.
2. Under **Applications**, click the link for **Communications**. The **Oracle Communications Documentation** window opens with Tekelec shown near the top.
3. Click **Oracle Communications Documentation for Tekelec Products**.
4. Navigate to your Product and then the Release Number, and click the **View** link (the **Download** link will retrieve the entire documentation set).
5. To download a file to your location, right-click the PDF link and select **Save Target As**.