Oracle® Communications Performance Intelligence Center

Patch Installation Guide

Release 10.5.0

G10364-01

June 2024

Oracle® Communications Performance Intelligence Center Patch Installation Guide, Release 10.5.0

CAUTION: Use only the guide downloaded from Oracle Help Center.

Table of Contents

MY ORACLE SUPPORT

My Oracle Support (MOS) is your initial point of contact for any of the following requirements:

- **Product Support:**

  The generic product related information and resolution of product related queries.

- **Critical Situations:**

  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.

Training Need:

Oracle University offers training for service providers and enterprises.

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.

INTRODUCTION

Scope And Audience

This document describes the patch installation procedures for the "Oracle Communications Performance Intelligence Center" system at Release 10.5.0

This document is intended for use by trained engineers in software installation on both Oracle and HP hardware. A working-level understanding of Linux, Oracle Database and command line interface is expected to successfully use this document.

It is strongly recommended that prior to performing an installation of the operating system and applications software, the user read through this document.

Note: The procedures in this document are not necessarily in a sequential order. There are flow diagrams in the Patch Installation Overview chapter that provide the sequence of the procedures for each component of the system to upgrade. Each procedure describes a discrete action. It is expected that the individuals responsible for patching the system should reference these flowcharts during this upgrade process.

Related Publications

Please refer to MOS Information Center: Upgrade Oracle Communications Performance Intelligence Center 1984685.2

Requirements and Prerequisites

Hardware Requirements

Refer document Hardware Guidelines (see chapter Reference Documents).

Software Requirements

The following software is required for Performance Intelligence Center 10.5.0 Patch Installation.

Take in consideration you might need also the software from the installed release in case you would have to proceed a disaster recovery. Refer to Maintenance Guide of the release 10.5.0 for detailed instruction.

Note: For specific versions and part numbers, see the MOS Information Center: Upgrade Oracle Communications Performance Intelligence Center 1984685.2.

The following software is required for the patch installation.

Oracle Communication GBU deliverables:

- Management Server
- Mediation Server
- Mediation Protocol
- Acquisition Server
- TADAPT
- TPD

All the software must be downloaded from Oracle Software Delivery Cloud (OSDC)

https://edelivery.oracle.com/

Please refer to KM notes which are constantly updated with last improvements :

Title	**MOS**
Upgrade Oracle Communications Performance Intelligence Center, is providing some guidances	KM_1984685.2
Patches for Oracle Communications Performance Intelligence Center	KM_1989320.2

In case of engineered system like ODA and ZFS the upgrade of its software is not mandatory, however in case customer want to update ODA or ZFS software following information can be used:

- ODA
  - Oracle Database Appliance - 12.1.2 and 2.X Supported ODA Versions & Known Issues KM_888888.1
  - As reminder, the initial installation documentation is there Database Appliance Getting Started Guide
- ZFS
  - Oracle ZFS Storage Appliance: Software Updates KM_2021771.1
  - As reminder, the initial installation documentation is there ZFS Storage Appliance Installation Guide and ZFS Storage Appliance Administration Guide .

Reference Documents

[1] Platform Configuration Guide, Tekelec Platform release 8.9

[2] Maintenance Guide, G10365-01, Performance Intelligence Center release 10.5.0

[3] HP Solutions Firmware Upgrade Pack, choose the more recent one

[4] Oracle Firmware Upgrade Pack, Tekelec Platform release 8.9

[5] Installation Guide, G10362-01, Performance Intelligence Center release 10.5.0

[6] Tekelec Default Passwords, CGBU_ENG_24_2229 (restricted access, refer to Appendix A: MyOracle Support)

[7] Hardware Guide, G10371-01, Performance Intelligence Center release 10.5.0

[8] MOS Information Center: Upgrade Oracle Communications Performance Intelligence Center 1984685.2

PATCH INSTALLATION OVERVIEW FLOWCHARTS

Flowchart Description

The flowcharts within each section depict the sequence of procedures that need to be executed to install the specified subsystem.

Each flowchart contains the equipment associated with each subsystem, and the required tasks that need to be executed on each piece of equipment. Within each task, there is a reference to a specific procedure within this manual that contains the detailed information for that procedure.

It is recommended to upgrade the firmware needs to the latest Oracle supported levels for all hardware components, however this firmware upgrade is not mandatory. The system on the source release also need to have installed all necessary patches applicable to source release prior the patch installation.

The patches are available at KM_1989320.2

Note: Refer to PIC 10.5.0 Installation Guide for OL based Installation.

Management Patch Installation

This flowchart depicts the sequence of the upgrade procedure to apply for the patch installation on the Management server setup.

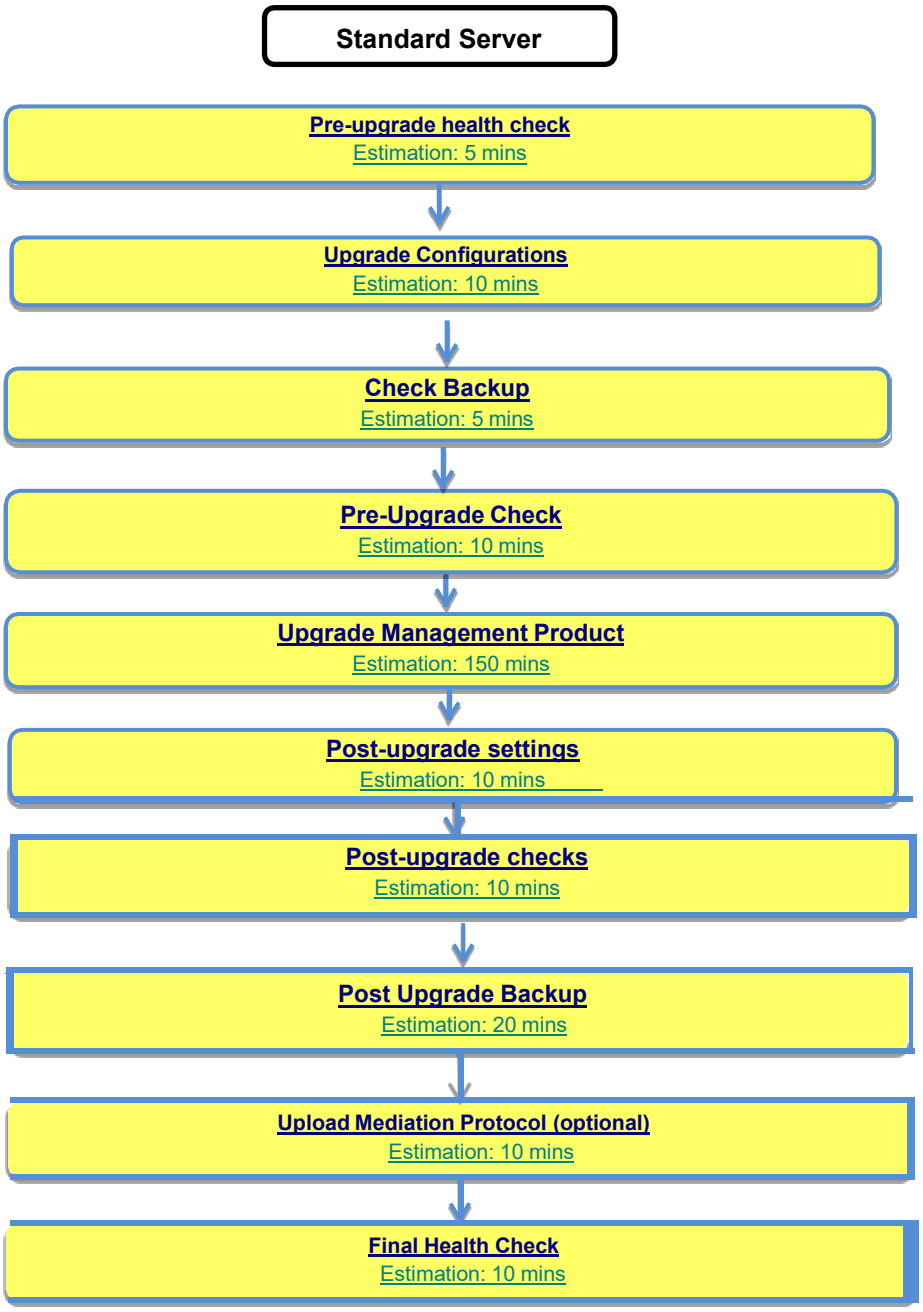


Figure 1. Management Patch Installation

Probed and Integrated Acquisition Patch Installation

This flowchart depicts the sequence of upgrade procedure that must be executed to install the patch on standalone Probed/Integrated Acquisition Server.
For a Standalone Acquisition server, only PMF is to be updated (refer flowchart).
For Integrated Acquisition Sub-system, depending on the number of servers in a sub-system, the required procedures depicted in the flowchart will need to be repeated.

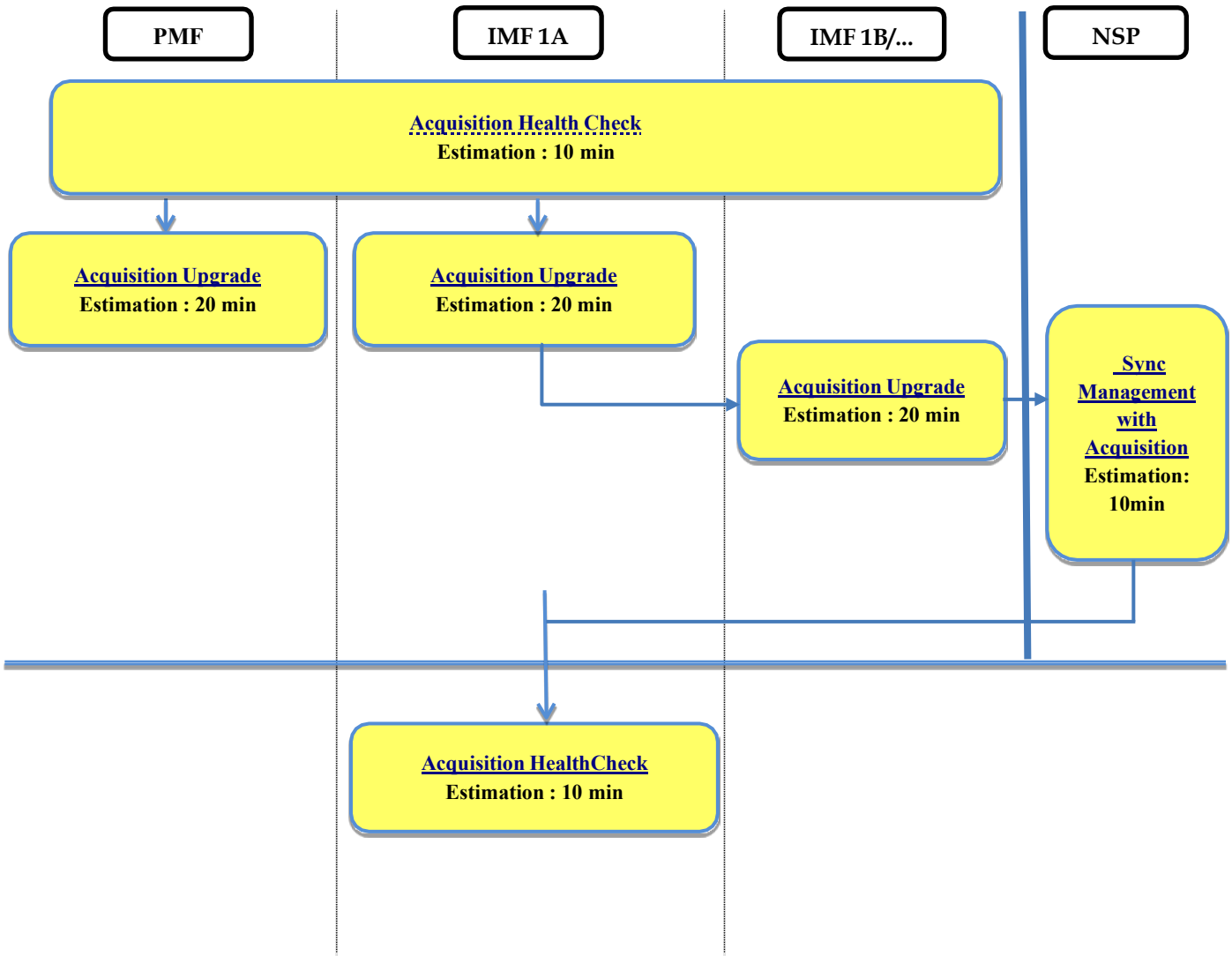


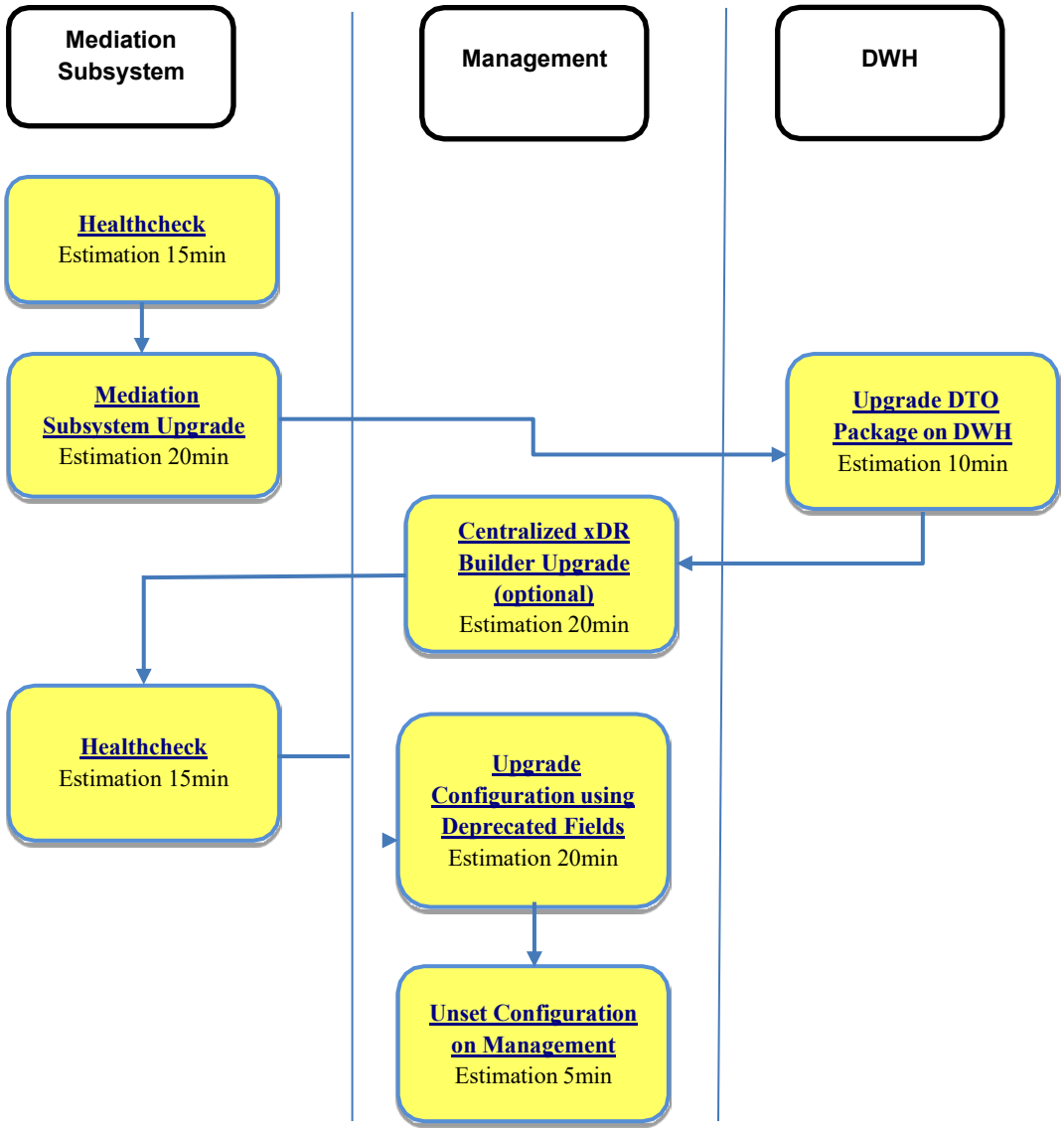
Figure 2. Acquisition Patch Installation

Mediation Patch Installation

This flowchart depicts the sequence of procedures that must be executed to upgrade the Mediation subsystem and associated server functions.
The procedure is triggered from one server in the subsystem and runs in parallel on all servers in the subsystem.

Note: Some of the xDR/KPI sessions are stored on different servers in the Data Record Storage pool. As Centralized Mediation Protocol upgrade is analyzing all session that are configured on particular Mediation subsystem, all Oracle servers where those sessions are stored must be accessible. Otherwise Centralized Mediation Protocol upgrade will fail.

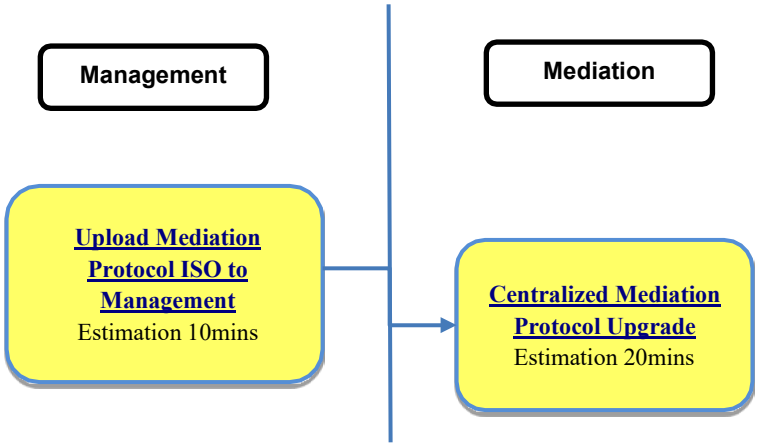
Figure 3. Mediation Patch Installation



Protocol Patch Installation

This flowchart depicts the sequence of procedures that must be executed to upgrade the Protocols.

Figure 4. Protocol Patch Installation



PATCHING BACK OUT OVERVIEW

The **back out is** design to come back to the previous situation and is applicable **only in case of successful upgrade**. The back out sequence would be similar to the upgrade sequence starting with Management, then Acquisition, and Mediation.

Management Patching Back out

Management application patching back out is implemented as a Disaster Recovery procedure. Follow the Management Disaster Recovery Procedure, described in the Maintenance Guide.

Acquisition Patching Back out

Acquisition application patching back out is implemented as a Disaster Recovery procedure. Follow the Acquisition Disaster Recovery Procedure, described in the Maintenance Guide.

Mediation Patching Back out

Mediation application patching back out is implemented as a Disaster Recovery procedure. Follow the Mediation Disaster Recovery Procedure, described in the Maintenance Guide.

HEALTH CHECK

Mediation Subsystem Health check

This procedure describes how to run the automatic health check of the Mediation subsystem.

1. Open a terminal window and log in on any Mediation server in the Mediation subsystem (but not a Data Record Storage server) you want to analyze.

2. As `cfguser`, run:

```
$ analyze subsystem.sh
```

The script gathers the health check information from all the configured servers in the subsystem. A list of checks and associated results is generated. There might be steps that contain a suggested solution. Analyze the output of the script for any errors. Issues reported by this script must be resolved before any further use of this server.
The following examples show the structure of the output, with various checks, values, suggestions, and errors.
Example of overall output:

```
$ analyze_subsystem.sh
------------------------------------------------------------
ANALYSIS OF SERVER ixp2222-1a STARTED
------------------------------------------------------------
12:01:15: STARTING HEALTHCHECK PROCEDURE - SYSCHECK=0
12:01:15: date: 06-21-24, hostname: ixp3102-1a
12:01:15: TPD VERSION: 8.9.0.1.0-130.6.0
12:01:15: IXP VERSION: [ 10.5.0.0.0-2.0.0 ]
12:01:16: XDR BUILDERS VERSION: [ 10.5.0.0.0-2.0.0 ]
12:01:16: ----------------------------------------------
12:01:16: Analyzing server record in /etc/hosts
12:01:16:       Server ixp3102-1a properly reflected in /etc/hosts file
file
12:01:16: Analyzing IDB state
12:01:16:       IDB in START state
...
12:01:17: Analyzing disk usage
...
12:01:22: ENDING HEALTHCHECK PROCEDURE WITH CODE 0
END OF ANALYSIS OF SERVER ixp2222-1b

ixp3102-1a      TPD: [ 8.9.0.1.0-130.6.0 ]      IXP: [ 10.5.0.0.0-
2.0.0 ]        XB: [ 10.5.0.0.0-2.0.0 ]       0 test(s) failed
ixp3102-1b      TPD: [ 8.9.0.1.0-130.6.0 ]      IXP: [ 10.5.0.0.0-
2.0.0 ]        XB: [ 10.5.0.0.0-2.0.0 ]       0 test(s) failed
```

Example of a successful test:

```
12:01:18: Analyzing DaqServer table in IDB
12:01:18:       Server ixp2222-1b reflected in DaqServer table
```

Example of a failed test:

```
12:21:48: Analyzing IDB state
12:21:48: >>> Error: IDB is not in started state (current state X)
12:21:48: >>> Suggestion: Verify system stability and use 'prod.start' to start
 the product
```

3. Remove back out file
   a) Login as root user on each server
   b) Execute the command to check if the back out file exists
      ```
      # ls /var/TKLC/run/backout
      ```
   c) If the above command returns a result, run the below command to delete the file
      ```
      # rm /var/TKLC/run/backout
      ```

Acquisition Health check

This procedure describes how to run the health check script on Acquisition servers.
The script gathers the health check information from each server in the Acquisition subsystem or from standalone server. The script should be run from each of the server of the Acquisition subsystem or on stand-alone. The output consists of a list of checks and results, and, if applicable, suggested solutions.

1. Run analyze_server.sh script as cfguser:
   ```
   $ analyze_server.sh -i
   ```
2. Analyze the output of the script for errors. Issues reported by this script must be resolved before any further usage of this server. Verify no errors are present.
   If the error occurs, refer to **Appendix A: My Oracle Support**
   Example output for a healthy subsystem:

```
04:57:30: STARTING HEALTHCHECK PROCEDURE - SYSCHECK=0
04:57:31: date: 06-21-24, hostname: imf9040-1a
04:57:31: TPD VERSION: 8.9.0.1.0-130.6.0
04:57:31: XMF VERSION: [ 10.5.0.0.0-1.1.9 ]
04:57:32: -----------------------------------------------------
04:57:32: Checking disk free space
04:57:32:         No disk space issues found
04:57:32: Checking syscheck - this can take a while
04:57:43:         No errors in syscheck modules
04:57:44: Checking statefiles
04:57:44:         Statefiles do not exist
04:57:44: Checking runlevel
04:57:45:         Runlevel is OK (4)
04:57:45: Checking upgrade log
04:57:45:         Install logs are free of errors
04:57:45: Analyzing date
04:57:46:         NTP deamon is running
04:57:46:         IP of NTP server is set
04:57:46:         Server is synchronized with ntp server
04:57:47: Analyzing IDB state
04:57:47:         IDB in START state
04:57:47: Checking IDB database
04:57:48:         iaudit has not found any errors
04:57:48: Analyzing processes
04:57:49:         Processes analysis done
04:57:49: Analysing database synchronization
04:57:50:         Either Database synchronization in healthy state or errors found are non-blocking
04:57:50: Checking weblogic server entry
04:57:50:         Appserver is present
04:57:50: All tests passed. Good job!
04:57:51: ENDING HEALTHCHECK PROCEDURE WITH CODE 0
```

Management Pre-Upgrade Health check and Settings

Pre-upgrade health check for Management Server

1. **Pre-Upgrade Verification**

   It is needed to reset the tekelec and TklcSrv password to default. Some python scripts need to have default password, the scripts are needed for deploying the scheduler queues and other resources. The historical KPI application has dependencies on the scheduler queues.

   a) Please verify the system User Password is Default Password.
   b) Please Change the tekelec User Password to Default Password.
      Steps to change tekelec user Password

      I. Connect to Weblogic console.
         http://192.168.1.1:8001/console
         where **192.168.1.1** is the IP address of Management server
      II. Login with User name weblogic
      III. Click on **Security Realms** in left panel of console window
      IV. Click on **myrealm** in right Panel of console window.
      V. Click on **Users& Groups** Tab
      VI. Click on **users** Tab.
      VII. Select **tekelec** user.
      VIII. Select **Password** Tab
      IX. Change the password to Default Password

   Note: If password of tekelec user is not set to default prior to upgrade then upgrade might fail

   c) Please Change the TklcSrv User Password to Default Password.
      Steps to change TklcSrv user Password

      I. Connect to Weblogic console.
         http://192.168.1.1:8001/console
         where **192.168.1.1** is the IP address of Management server
      II. Login with User name weblogic
      III. Click on **Security Realms** in left panel of console window
      IV. Click on **myrealm** in right Panel of console window.
      V. Click on **Users& Groups** Tab
      VI. Click on **users** Tab.
      VII. Select **TklcSrv** user.
      VIII. Select **Password** Tab
      IX. Change the password to Default Password

      Note: If password of TklcSrv user is not set to default prior to upgrade then upgrade might fail

   d) Verify State and Health should be RUNNING and OK for all three servers
   e) Verify the build number should be 10.x.x-X.Y.Z where X.Y.Z is the build number

2. **Check Weblogic console is not locked**

   Weblogic console must not be locked during upgrade. If console is locked upgrade will abort. If it is locked, please release lock from Weblogic console as follows:

a) Connect to Weblogic console.
http://192.168.1.1:8001/console
where 192.168.1.1 is the IP address of Management server.
b) On the left panel click on **Release configuration** button.

Check Management Backup is valid

Refer to the section "**Check Management Server Backup is valid**" from 10.5.0 Upgrade Guide.

Note: the backup is automatically executed each night at 22H00 and depending on the time you start Management upgrade you may execute a manual backup just before to start the upgrade.

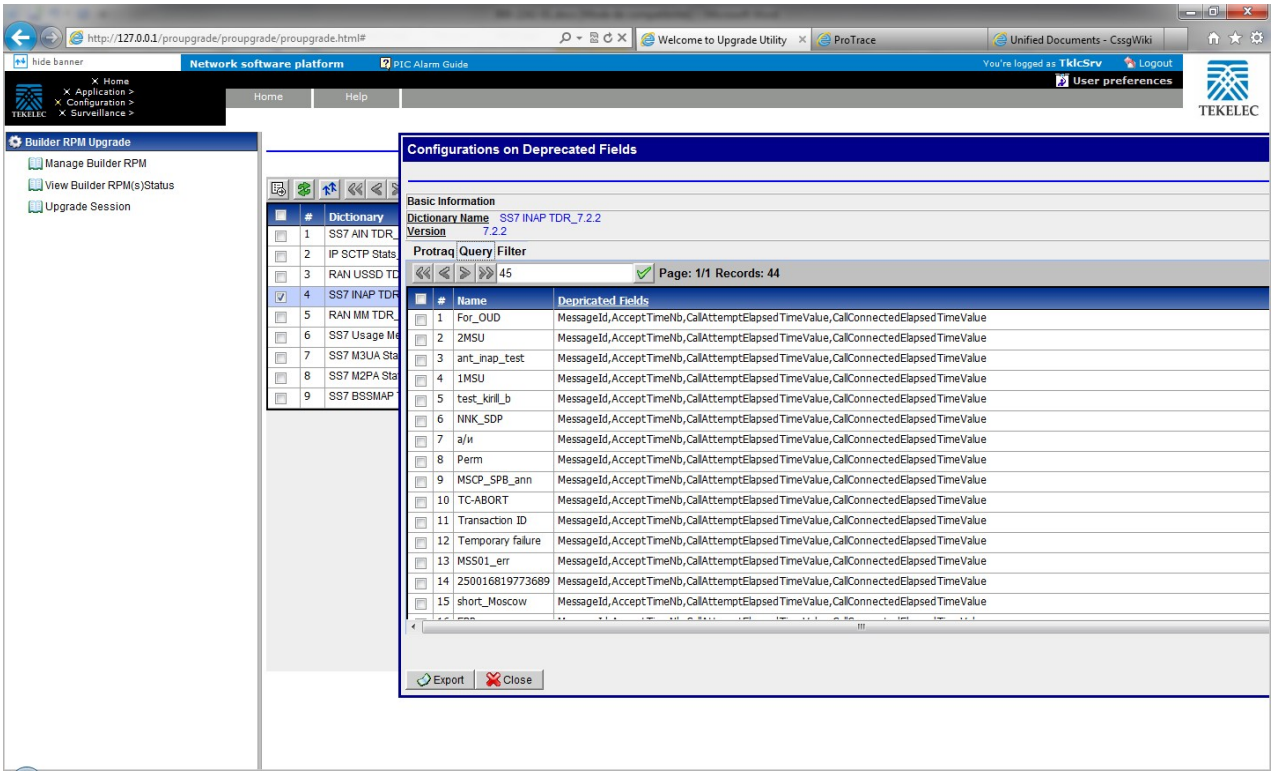
Upgrade Configurations using Deprecated Field(s)

This step is to be performed to upgrade configurations which are using Deprecated field(s) so as to make sure none of the configuration will use Deprecated field which may get removed in later releases.
Note that a patch was never introducing new deprecated field and this procedure should be rarely necessary.

1. Login to Management application interface as TklcSrv user.
2. Click **Upgrade Utility**
3. Click **Dictionaries with Deprecated Field(s)** link on home page, this will a list of dictionaries having deprecated field(s).
4. Select any one of the dictionaries and choose **View Dependent Configurations** icon from tool bar. This will display list of KPIs, Queries and Filters using deprecated fields. You can also export this list by clicking on **Export** button given on that popup. If there are no dependent configurations then this list will be empty.

   Take care to check each Tab and not Only the default one KPI.

   The Screen shot bellow shows an example where the job has not been done at the end of the previous upgrade.



Global Health check

iLO Access

Make sure you can access the iLO interface of all servers and you can open the remote console for each server.

System Cleanup

Discuss with the customer to clean up the system as much as possible in order to reduce the risk and avoid any issue due to some objects that would no more be used.

Engineering Document

Make sure you get the latest available engineering document and it is up to date.
The latest version should be documented on the Customer Info Portal, as well as the current password for the admin users

Troubleshooting Session Status

Navigate from the home screen to Troubleshooting
NOTE: Look for any sessions that are lagging behind the current time.

1. View All records
2. Filter by end date
3. Screen capture the information

Verify which sessions are lagging. Statistics sessions must also be considered but take in consideration records are periodically generated.
Try to access the session it-self and check the session content and especially make sure the PDU are properly recorded.

Systems Alarms

Access the system alarm and fix all alarms on the system. In case some alarms can't be fixed due to overloaded system for example, the remaining alarms before the upgrade must be captured in order to compare with the alarms we would get at the end of the upgrade.

Alarm Forwarding

Connect on Management Primary and Navigate in platcfg menu to check the SNMP and SMTP configuration. Make sure the SNMP and SMTP configuration are up to date in the Engineering Document.

KPI

Access to KPI configuration and check which configuration are NOT-SYNC

Dashboard

Access to Dashboard Application and check each dashboard is working fine

Mediation Data Feed

Access to the Mediation Data Feed configuration and capture the Feed Status
Make sure each Feed configuration is Documented in the Engineering Document

Browser Export Scheduler

Access to the Browser Export Scheduler and check the scheduled tasks configured are working as expected.
Make sure each task is documented in the Engineering Document.

Capacity Management

Access Troubleshooting and open CapacityManagement UsageStats session to verify if normal activity is monitored hourly for probed acquisition, integrated acquisition, mediation and mediation protocol.

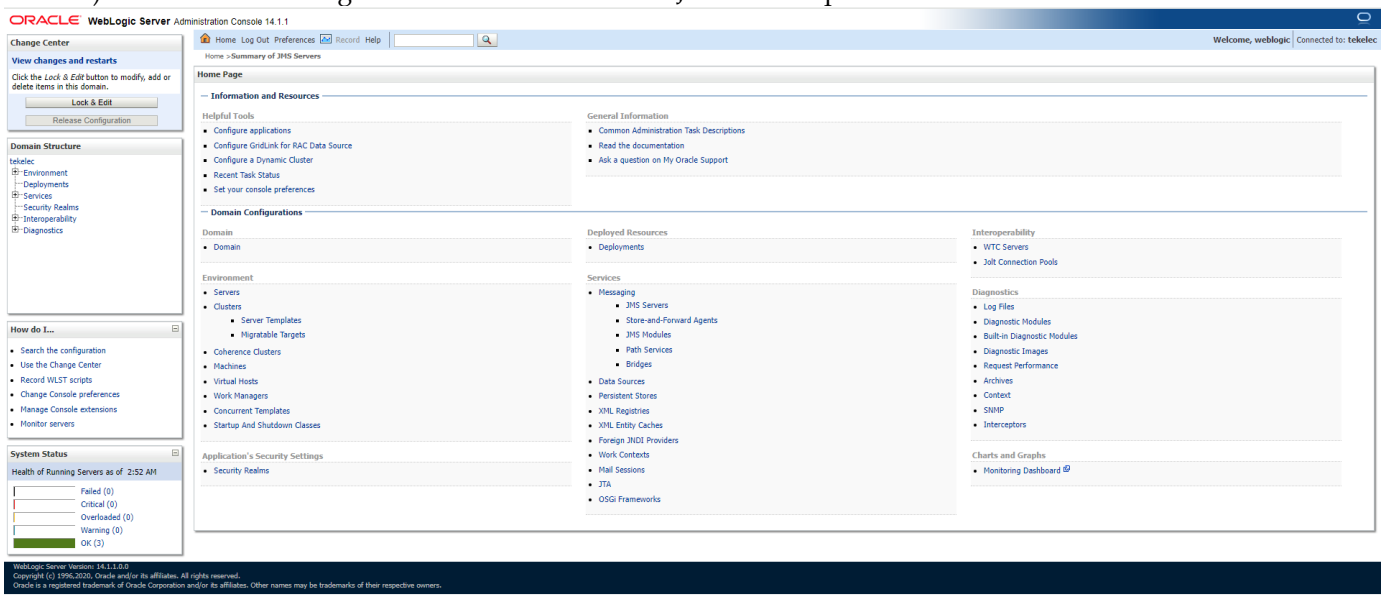
MANAGEMENT PATCH INSTALLATION

Management Pre-Upgrade Check

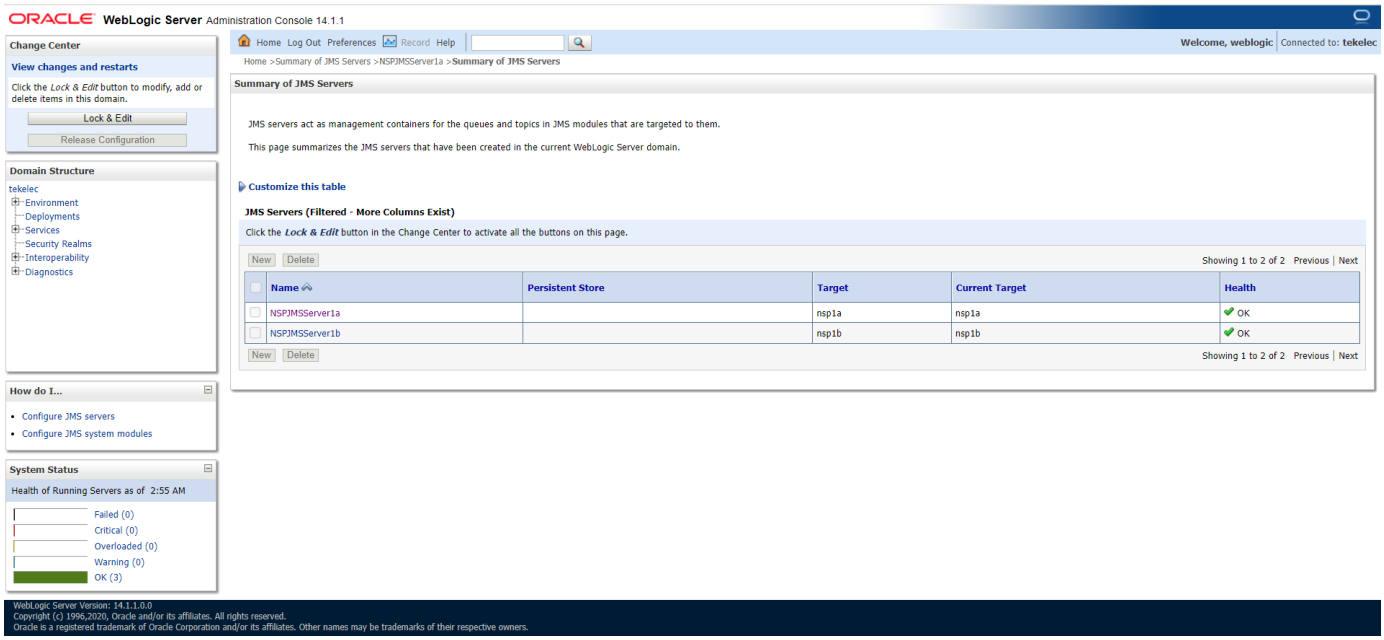
1. **Make sure you executed the sections:**
   a) Management Pre-Upgrade Health check and settings
   b) Upgrade configuration using deprecated fields
   c) Check Management Backup is Valid

2. **Pause JMS and Purge terminated alarm**

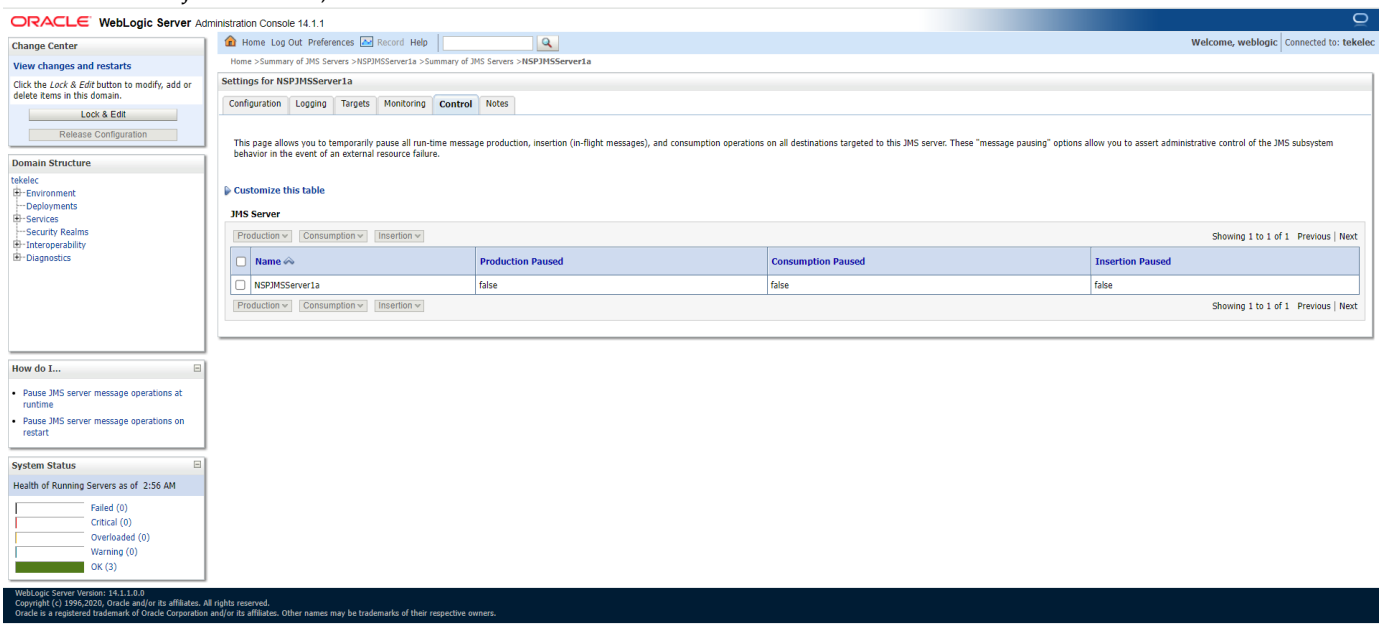
   a) Connect to Weblogic console in order to check JMS consumption .



In the Services section, go to messaging and then JMS Servers menu:

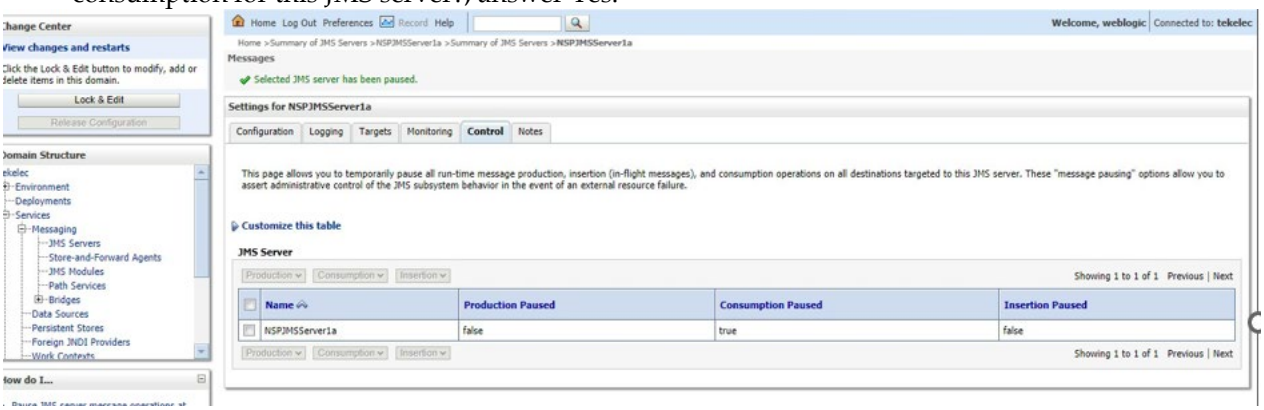


For Each JMS servers, click on the name of the server and then to the menu Control:



If the value in consumption paused is true, this server is paused and you can return to previous step in order to check the status of the next JMS server.
If the value is false like of the screenshot, select the checkbox in order to activate the menu

consumption, and then select pause. When asked to confirm if you Are sure you want to pause consumption for this JMS server?, answer Yes.



The value in consumption paused is true now as expected, so you can return to the JMS server list in order to check the status of the next one, or continue next step if this was the last one.

3. **Check minimum free disk space in /opt/oracle/backup**

   a) As root run:

   ```
   # df -kh /opt/oracle/backup
   ```

   Example output:

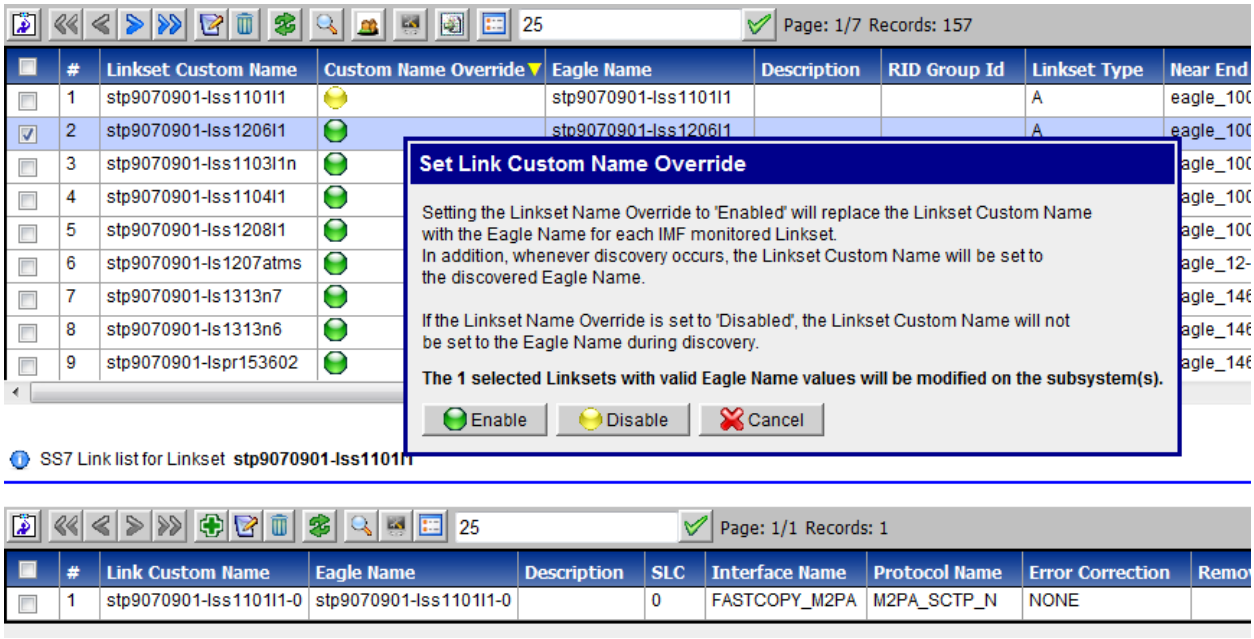
   ```
   Filesystem            Size  Used  Avail  Use%  Mounted on
   /dev/cciss/c0d2p1      67G   11G    57G   16%  /opt/oracle/backup
   ```

   b) Check the space available under Avail column of this table. This should be at least 15-20 GB approx. e.g. in above table shown total space available is 57GB.
   Note: If total available space is less than 2 GB, then do not continue with upgrade. refer to Appendix A: My Oracle Support.

4. **Generate the "Bulk Export Configurations" and "Create Configuration Report"**
   Go to the Centralized Configuration home page and click on the link to generate this files.
   Keep it in a safe place on your laptop in the worst case where even a disaster recovery would not work with would help you to get in information, in order to re-create the configuration.

5. **Synchronize the Integrated Acquisition**
   Go to the Centralized Configuration and synchronize the Integrated Acquisition in the acquisition part before to start any operation in order to avoid discovering new links while the upgrade. Proceed to an "Apply changes" if some are to do.

   Take care if the Custom Name Override feature is enable on the link set, the names would be replaced by the one used on the Eagle.
   The function is available on the Linksets list page tool bar.



Upgrade Management Server

1. **Upgrade Management Server**
   a) Login as root user on terminal console of Management server.
   b) Copy the Management ISO on server.
   c) Mount the ISO file

```
# mount –o loop iso_path /mnt/upgrade
```

where iso_path is the absolute path of the Management ISO image, which includes the name of the image (for example, /var/ORCL/iso_file_name.iso).

d) As root, run:

Note: Run this procedure via iLO or through any disconnectable console only.

```
# /mnt/upgrade/upgrade_nsp.sh
```

Note: /mnt/upgrade is the mount point where Management ISO is mounted

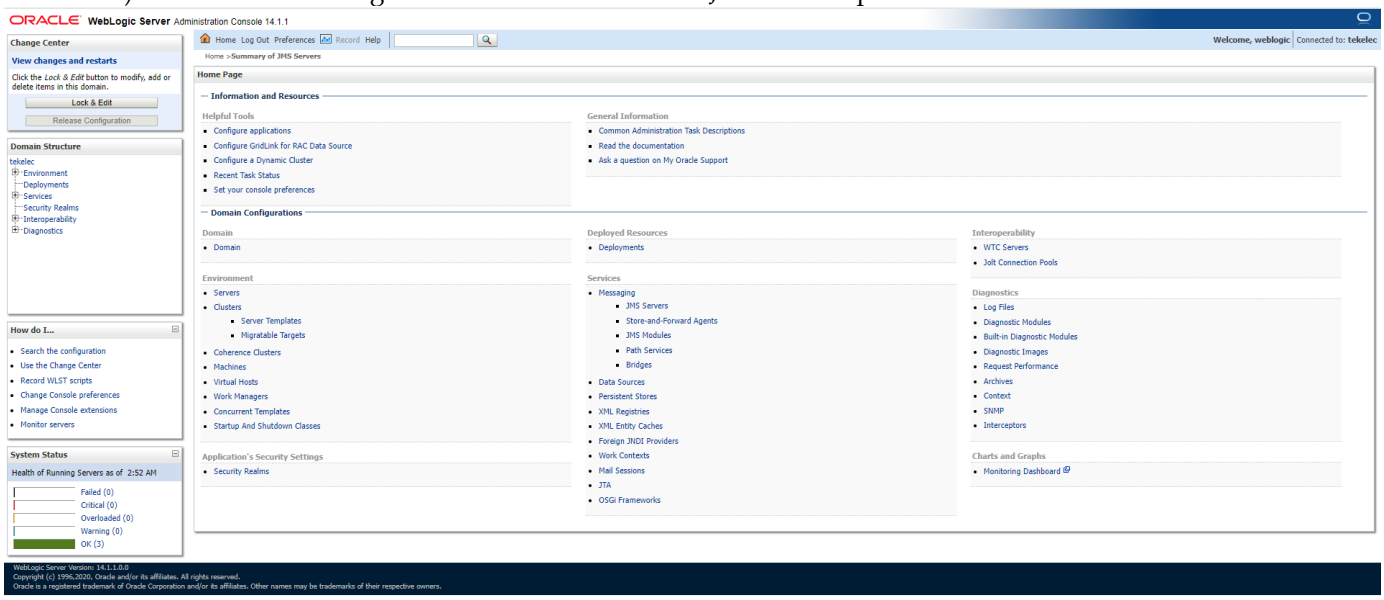
e) Wait for Management upgrade to get complete. Remove this file to save disk space.
As root, run:
rm -f /var/ORCL/iso_file
where iso_file is the absolute path of the ISO image, which includes the name of the image.
After the installation the server will restarts automatically. Log back in and review the Management installation log (/var/log/nsp/install/nsp_install.log. If Management did not install successfully, contact **MOS**

Post-Upgrade Settings

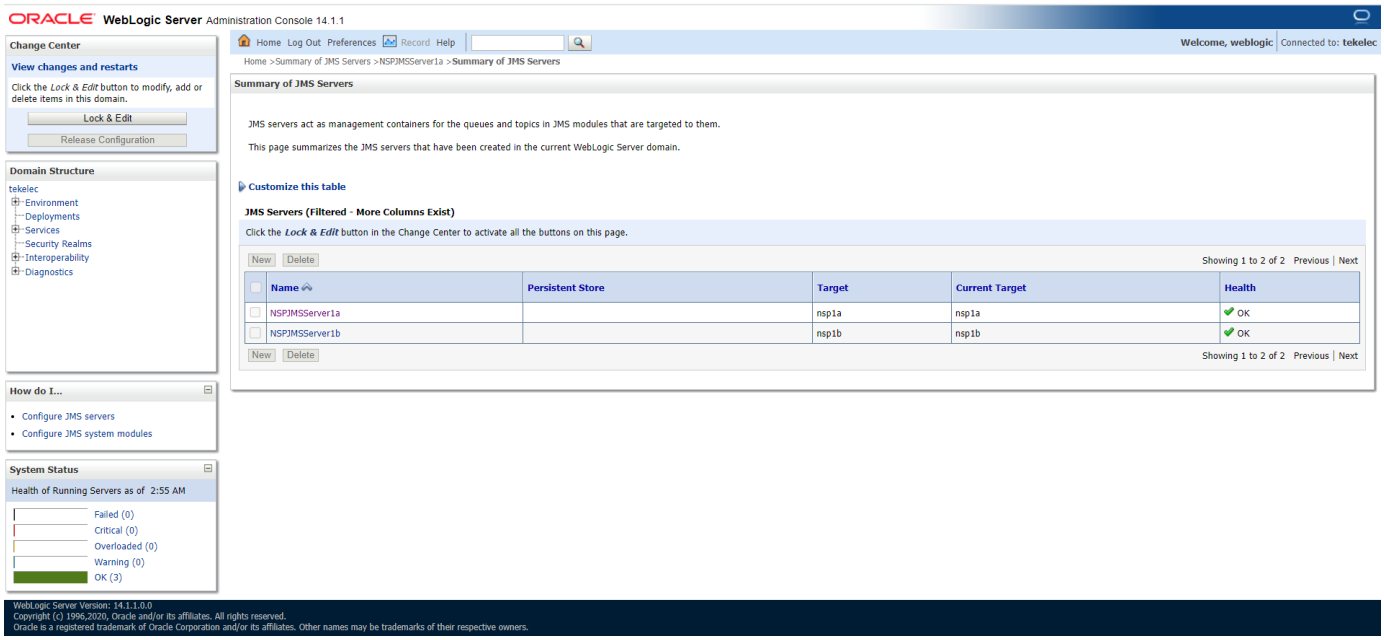
1. **Resume JMS Consumption**

   On Management Standard Server the JMS consumption must be resumed from weblogic console.

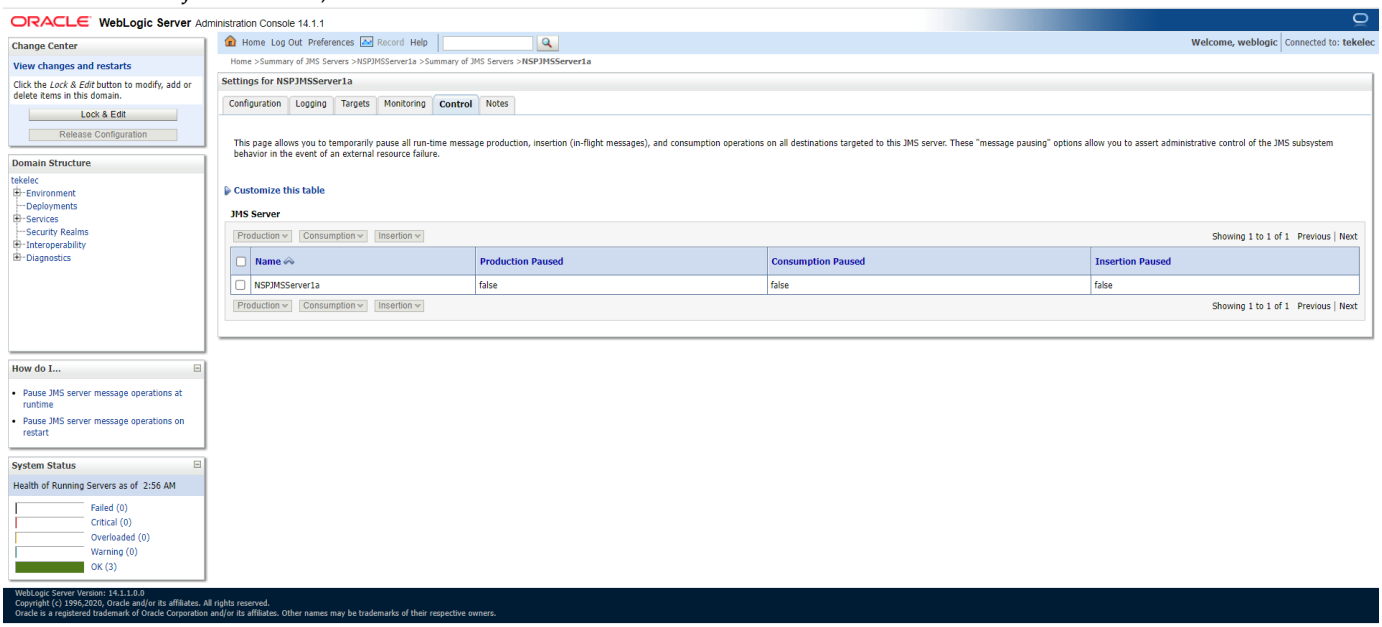
   a) Connect to Weblogic console in order to check JMS consumption .



In the Services section, go to messaging and then JMS Servers menu:



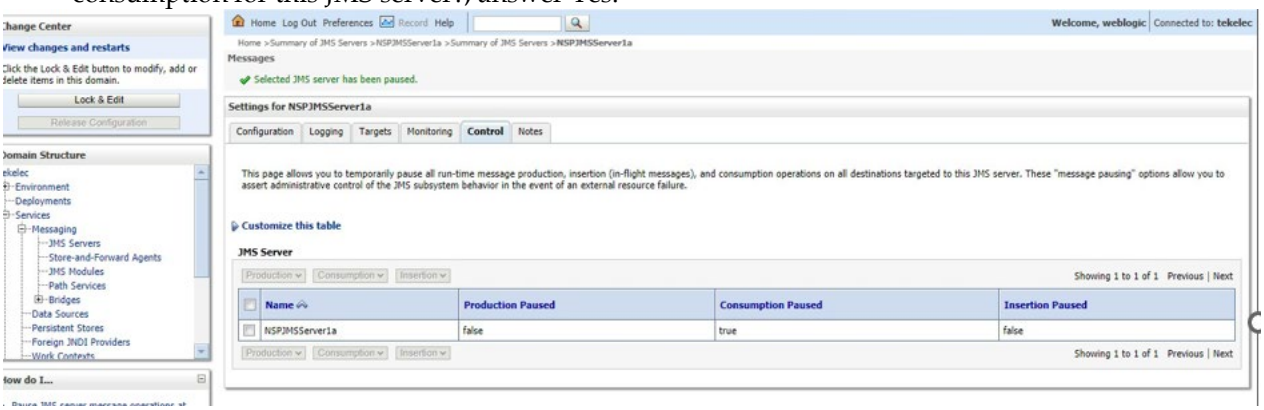
For Each JMS servers, click on the name of the server and then to the menu Control:



If the value in consumption paused is true, this server is paused and you can resume the consumption.

If the value is true like of the screenshot, select the checkbox in order to activate the menu

consumption, and then select resume. When asked to confirm if you Are sure you want to resume consumption for this JMS server?, answer Yes.



The value in consumption paused is false now as expected, so you can return to the JMS server list in order to check the status of the next one, or continue next step if this was the last one.

2. Restrict access of Management frontend to HTTPS (Mandatory)

This action must be done manually and not from installation script as the Apache server is not available in Oracle Linux as it was with TPD based platform.

Disable access to HTTP

a. Open a terminal console and Login as a root user on Management Server One-Box server
b. Edit /etc/httpd/conf/httpd.conf file and search for line "Listen 80"
c. Remove the line "Listen 80"
d. Restart httpd daemon

```
/bin/systemctl restart httpd.service
```

3. Configure host file for Mail Server (Optional)

This configuration is optional and required for Security (password initialization set to AUTOMATIC) and Forwarding (forwarding by mail filter defined and no server address override defined by app).

1. Open a terminal window and log on as root on Standard Server
2. Edit hosts file and make an entry of mail.server as shown below:

```
# vi /etc/hosts

10.248.18.4                mail.server
```

Output of hosts file will be similar as shown beliow. Replace 10.248.18.4 with your mail server IP

```
# cat /etc/hosts

127.0.0.1 localhost

10.248.18.4                mail.server
```

4. **Transfer Ownership of TklcSrv object**
   Note: Follow the steps only if some object belonging to TklcSrv were created in previous version. The ownership is transferred back to other user from TklSrv post upgrade. This action is present as a precautionary procedure and not a mandatory one.
   a) Open a web browser and log in to the Management application interface `TklcSrv` user.
   b) Navigate to **security application ⊙ Transfer ownership value**
   c) Transfer all the TklcSrv object to and other user (tekelec for example)

Management Post-Upgrade Check

Box: must be done from a browser (IE/Mozilla).
This procedure describes the steps for the Sanity Tests of Management.

1. **WebLogic Console**
   From Internet Explorer, connect to the WebLogic console using the following URL:
   http://192.168.1.1:8001/console
   where **192.168.1.1** is the IP address of the Management Server (In case of One-box configuration)
2. **Login**
   You should be prompted to "Log in to work with the WebLogic Server domain ".
   Connect with User **weblogic**
3. **Console Display**
   Under the **Environment** heading, click on the "**Servers**".
4. **Health Check**
   a) On clicking the "Servers" link in the last step, the console would display the **Summary of Servers**, with a list of the three servers, nsp1a, nsp1b and nspadmin (In case of One-box configuration)
   b) Entries in the columns **State** and **Health** should be **RUNNING** and **OK** for all three servers (In case of One-box configuration)
5. **Management GUI**
   From Internet Explorer, connect to the Management Application GUI using the following URL:
   http://192.168.1.1/
   where 192.168.1.1 is the IP address of the Management Server (in case of One-box configuration)
6. **Login**
   Login to the Application with User name **tekelec**
7. **Portal**
   a) In the top frame, on mouse-over on the link **Portal**, click on the **About** link that will be displayed.
   b) A pop-up window with the build information will be displayed.
8. **Build Verification**
   The build version should display "Portal 10.5.0-X.Y.Z". Where 10.5.0-X.Y.Z should be the new build number.

Post Upgrade

1. Open a terminal window and log in as root on the Management.
2. As root, run:

```
# /opt/nsp/scripts/procs/post_upgrade_sanity_check.sh
```

3. Review the Management installation logs (/var/log/nsp/install/nsp_install.log).

Verify the following:

- Oracle server health is OK
- WebLogic health for ports 5556, 7001, 8001 is OK

Management Backup

Refer section **Management Server Backup** from Upgrade Guide.
Note: For Patch Installation, please ignore the step to disable crontab entry for launch_pic_global_backup.sh.

Unset Configuration on Management (onebox)

Unset configuration application access restriction automatically set during Management upgrade by performing the below steps.
Note: Configuration application are automatically restricted to TklcSrv and tekelec user during Management upgrade. After required reconfiguration, Management shall return to normal.

1. **Open a web browser and log in to the NSP application interface as TklcSrv user.**
2. **Navigate to security application ⊙ Filter access**
3. **Select None for Restricted configuration setting.**
4. **Apply modification.**

ACQUISITION PATCH INSTALLATION

Acquisition Upgrade

CAUTION: Please perform step2 using ILO or any non-disconnectable media..

Before starting the upgrade, please take care to add xmf_install_mode parameter in the bulkconfig file. This parameter should be added for the virtualized mode integrated acquisition sub-system to differerntiate between pass-thru mode and OVS mode. Refer Appendix B from Installation Guide for more details on the parameter

1. **Copy ISO image to the server**
   Copy ISO image to the `/var/TKLC/upgrade` directory of the server.
2. **Upgrade the server**
   a) As root on the Acquisition server
   b) Enter platcfg configuration menu
   ```
   # su - platcfg
   ```
   c) Navigate to Maintenance ➢Upgrade
   d) Select Initiate Upgrade
   e) Select the desired upgrade media
3. **Upgrade completed**
   The server will reboot and after the reboot, login prompt will be displayed.
4. **Check the log**
   a) In platcfg navigate to Diagnostics > View Upgrade Logs > Upgrade Log
   b) Check on the bottom of the file the upgrade is complete

Sync Management with Acquisition

1. **Apply Changes Acquisition**

   a) To Apply Changes for each subsystem go to **Acquisition ⊙ Sites ⊙ XMF.**
   b) Right click on subsystem and click on **Apply Changes** option on menu.

2. **Test the VIP function.**
   a) After sync from Management, the VIP will be available to access the active master server in the site. In order to verify the VIP setup please login to any server in the subsystem and execute the `iFoStat` command. As `cfguser` run:
   ```
   $ iFoStat
   ```
   Example of correct output:

```
query 10.236.2.79 for failover status
+------------+---------+-------+--------------+-------------+--------+----------------------------
+
| name     | state | loc | role       | mGroup    | assg | HbTime               |
+------------+---------+-------+--------------+-------------+--------+----------------------------
+
| IMF-1a   | IS    | 1A  | ActMaster | sde_m2pa |    8 | 2024-06-19 23:14:08 |
| IMF-1b   | IS    | 1B  | StbMaster | sde_stc  |    6 | 2024-06-19 23:14:06 |
| IMF-1c   | IS    | 1C | Slave      |           |    0 | 2024-06-19 23:14:06 |
+------------+---------+-------+--------------+-------------+--------+----------------------------
+
```

b) The state should be 'IS' for all servers and the HbTime time should be updated every few seconds.

MEDIATION PATCH INSTALLATION

Mediation Subsystem

This procedure describes the patch installation of Mediation application. Be aware of each step. This procedure is executed on each server in the subsystem in parallel. The parallel installation is triggered from one server in the subsystem; it cannot be triggered more than once per subsystem. The procedure must be triggered from any dis-connectable medium or using ILO.

1. **Permit root ssh login**

   On each Mediation server permit root ssh login.

   a) As `root` run:

   ```
   # /usr/TKLC/plat/sbin/rootSshLogin --permit
   ```

2. **Distribute the Mediation ISO**

   Note: Choose one of the servers in the subsystem. From this server you will trigger the parallel Mediation subsystem patch installation.
   Distribute the Mediation ISO file to `/var/TKLC/upgrade` directory using the scp command.

3. **Run parallel Mediation subsystem patch installation**

   Note: Run this step on where server where you distributed the Mediation ISO. This step will trigger the parallel patch installation on all servers in the subsystem.

   b) As `root` run:

   ```
   # misc_upgrade_subsystem.sh -i iso_filename
   ```

   where *`iso_filename`* is the name of the Mediation ISO file that has been previously distributed on this server.

   c) You will be prompted to confirm the upgrade; then, you will be asked to enter the root password.
   The **patch installation** is triggered on all the servers of the subsystem.

4. **Monitor parallel Mediation patch installation**

   Note: The whole subsystem is upgrading now. Keep logged on the server where you have triggered the parallel upgrade, as you will see the progression. The server will reboot after successful upgrade.

   a) Once the server where you have triggered the parallel upgrade is accessible again, start monitoring script: it will apply some subsystem post-upgrade settings, after all the servers have successfully upgraded (and rebooted). As `root` run:

   ```
   # misc_upgrade_subsystem.sh --postsync
   ```

   b) You will see the regular monitoring of the upgrade progress. Keep this script running and look for successfully upgraded servers. **Do not interrupt** the script. Wait until the results of upgrade are shown and synchronization is restored. Monitor the script output for any errors. The logs for the upgrade must be verified at /var/TKLC/log/upgrade/upgrade.log on the server from where the upgrade is triggered. If any error appears, refer to Appendix A: My Oracle Support. The script will only finish once all servers in the subsystem have finished the upgrade.

5. **Discover Mediation application in Centralized Configuration**

   This procedure describes how to discover Mediation application in the Management Centralized Configuration application.

Discover all Mediation servers in Centralized Configuration application.

a) Open a web browser and go to the Management application interface main page.
b) Click Centralized Configuration.
c) Navigate to **Equipment registry** view.
d) Open **Sites**, open the site, open **IXP** and then click on the particular Mediation subsystem.
e) The list of all Mediation servers in the Mediation subsystem will appear. Check the check box of the first server and click the **Discover Applications** button. Wait until the Mediation application will be discovered. Then repeat this step for all servers in the subsystem.
f) Navigate to Mediation and Apply the changes on the Mediation subsystem.

6. **Verify ssh keys are exchanged between management server's tekelec user and mediation servers' cfguser**

   a. As tekelec user on management server, perform ssh using cfguser on each of the mediation server in the sub-system. The user should be able to login to mediation server without asking any password.

   b. If keys are not exchanged then run "Sync Database Credentials" procedure from PIC 10.5 Maintenance Guide

7. **Revoke root ssh login**

   On each Mediation server revoke root ssh login.

   a) As `root` run:

```
# /usr/TKLC/plat/sbin/rootSshLogin --revoke
```

Upgrade DTO Package

Refer to Upgrade DTO Package from 10.5.0 Upgrade Guide.

PROTOCOL UPGRADE

The protocol upgrade consists of two steps, described below,which involve procedures executed on the management server. The protocol upgrade involves upgrade of xDR builder RPM on mediation server.

Upload Mediation Protocol ISO to Management

Refer section " Upload xDR Builder ISO to Management Server" from 10.5.0 Upgrade Guide .

Centralized Mediation Protocol Upgrade

Refer section "Install xDR Builders " of the 10.5.0 Upgrade Guide.