Oracle® Communications Performance Intelligence Center

Upgrade Guide

Release 10.1.5

E56064 Revision 1

August 2015

ORACLE®

Oracle Communications Performance Intelligence Center Upgrade Guide, Release 10.1.5

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CAUTION: Use only the guide downloaded from the Oracle Technology Network (OTN) (http://www.oracle.com/technetwork/indexes/documentation/oracle-comms-tekelec-2136003.html).
Before upgrading your system, access the My Oracle Support web portal (https://support.oracle.com) and review any Knowledge Alerts that may be related to the System Health Check or the Upgrade.

Before beginning this procedure, contact My Oracle Support and inform them of your upgrade plans.

Refer to Section 9 for instructions on accessing My Oracle Support.

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1 Introduction

1.1 Documentation Admonishments

Admonishments are icons and text throughout this manual that alert the reader to assure personal safety, to minimize possible service interruptions, and to warn of the potential for equipment damage.

Table 1: Admonishments

	DANGER: (This icon and text indicate the possibility of *personal injury*.)
	WARNING: (This icon and text indicate the possibility of *equipment damage*.)
	CAUTION: (This icon and text indicate the possibility of *service interruption*.)

1.2 Reference Documents

[1] Platform 7.0 Configuration Procedure References E53486, December 2014

[2] TPD Initial Product Manufacturing E53017, April 2015
[3] PM&C 6.0 Incremental Upgrade E54387-02, Nov 2014
[4] TVOE 3.0.0.0.0 Software Upgrade Procedure E53018, June 2015
[5] HP Solutions Firmware Upgrade Pack 2.2.8, E59723, March 2015
[6] PIC 10.1.5 Installation Guide , E56065
[7] PIC 10.1.5 Maintenance Guide, E56062
[8] PIC 10.1.0 Maintenance Guide, E53511-01
[9] Teklec Default Passwords TR006061
[10] PIC Hardware installation Guidelines, E64544
[11] Oracle Support Document 1984685.2 (Information Center: Upgrade Oracle Communications Performance Intelligence Center)
[12] PIC 10.1.5 Release Notice
[13] PIC 10.1 Installation Guide , E53508-01

1.3 Related Publications

For information about additional publications that are related to this document, refer to the *Release Notice* document. The *Release Notice* document is published as a part of the *Release Documentation*.

1.4 Scope and Audience

This document describes the major upgrade procedures for the PIC system at Release 10.1.5.

This document is intended for use by trained engineers in software upgrade on both rackmount and c-class blades system. A working-level understanding of Linux and command line interface is expected to successfully use this document.

It is strongly recommended that prior to performing an upgrade of the operating system and applications software, on a rackmount or c-class blades system, 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 Upgrade Overview chapter that provide the sequence of the procedures for each component of this PIC system. Each procedure describes a discrete action. It is expected that the individuals responsible for upgrading the PIC system should reference these flow diagrams during this upgrade process.

1.5 Requirements and Prerequisites

1.5.1 Hardware Requirements

Refer PIC Hardware Guidelines

1.5.2 Software Requirements

The following software is required for the PIC 10.1.5 upgrade.

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 PIC 10.1.0 maintenance guide for detailed instruction.

Note: For specific versions and part numbers, see the PIC 10.1.5 Release Notice.

The following software is required for the PIC 10.1.5 upgrade.

Oracle Communication GBU deliverables:

- Management Server
- Mediation Server
- Mediation Protocol
- Acquisition Server
- TADAPT
- TPD
- TVOE
- PM&C
- JAVA
  - jdk-7u76-linux-x64.gz
- Oracle WebLogic Server 11gR1 (10.3.6) Generic and CoherenceWebLogic 10.3.6.0
  - wls1036_generic.jarwls1036_generic.jar
- Oracle Database 11.2.0.4 64bits product patchset
  - p13390677_112040_Linux-x86-64_1of7.zip
  - p13390677_112040_Linux-x86-64_2of7.zip

- p13390677_112040_Linux-x86-64_3of7.zip

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

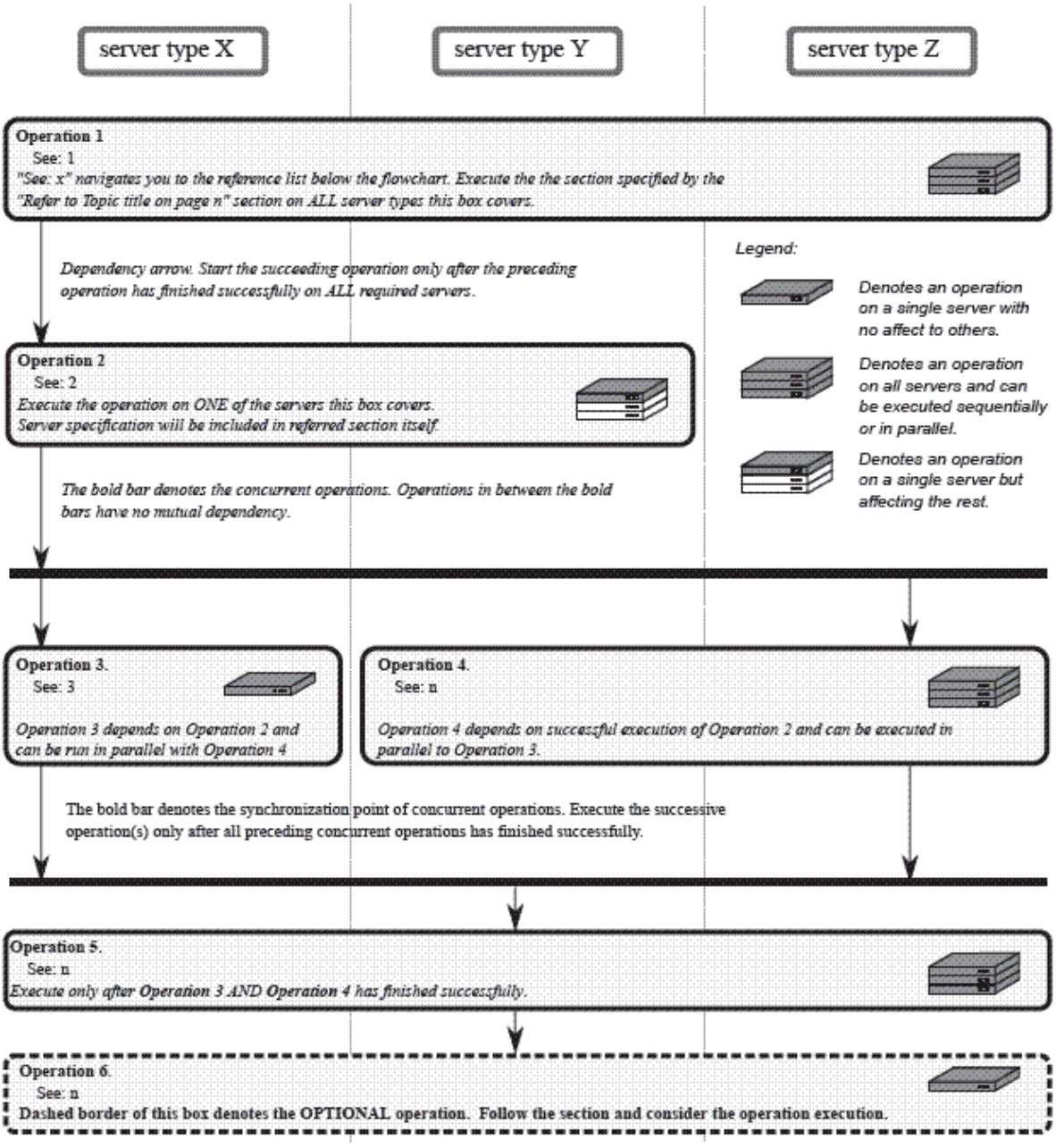
https://edelivery.oracle.com/

Note: The oracle patchset is same as in PIC 10.1.0

2 Major Upgrade Overview Flowcharts

2.1 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.

2.2 PIC High-level Major Upgrade

This flowchart describes the PIC high-level major upgrade overview. Referring to the graphic below the applicable order of each component is depicted and for each component the applicable flowchart is identified by section of this document where it is located.

Described PIC major upgrade procedures are applicable to PIC systems installed in 10.1.0 releases. Following this procedure, the PIC system will be upgraded to 10.1.5 releases

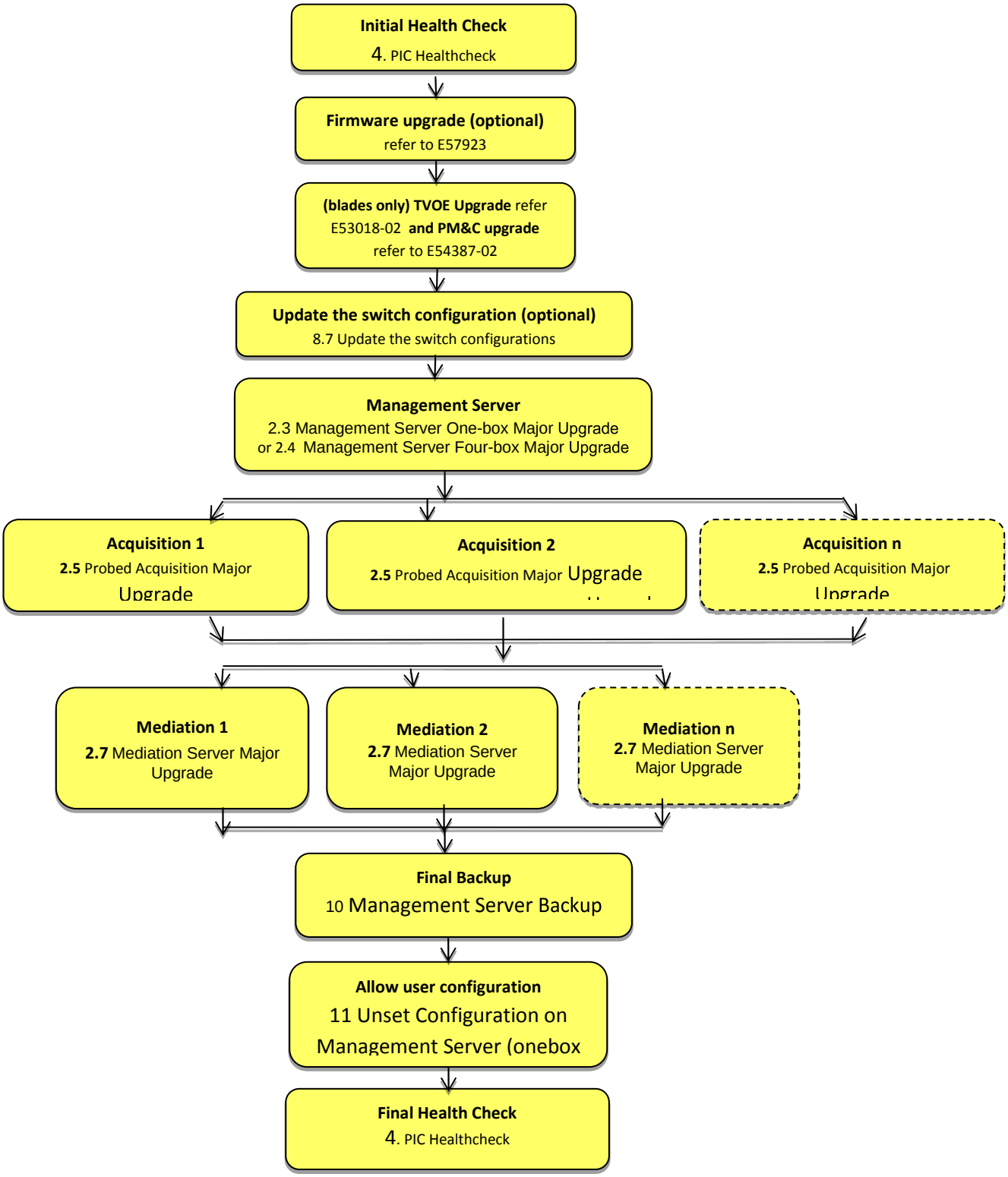
Prior to starting upgrade the firmware needs to be at the latest Oracle supported levels for all hardware components. The system on the source release also need to have installed all necessary patches applicable to source release prior the major upgrade. The latest patch are listed on Oracle Support Document 1989320.2 (Information Center: Patches for Oracle Communications Performance Intelligence Center) and are available at Appendix: My Oracle Support (MOS)

It is advised to have a look on the latest upgrade issue discovered after this manual was published on Oracle Support Document 1984685.2 (Information Center: Upgrade Oracle Communications Performance Intelligence Center)

If running the PIC Major Upgrade on HP C-Class Blade platform, then TVOE and PM&C application must be upgraded prior to PIC applications upgrade. Follow
TVOE 3.0.0.0.0 Software Upgrade Procedure E53018, June 2015 and PM&C 6.0 Incremental Upgrade E54387-02, Nov 2014
.

The general upgrade strategy is as follows:

1. Initial health check at least 2 weeks before the planned operation in order to have time to replace defective hardware
2. Optional Firmware upgrade to the latest release available.
3. PM&C Platform upgrade and update the enclosure switches configuration
4. Management Server upgrade (four-box or one-box configuration)
5. Acquisition subsystems upgrade (IMFs and PMFs)
6. Mediation subsystems upgrade
7. Final Health check

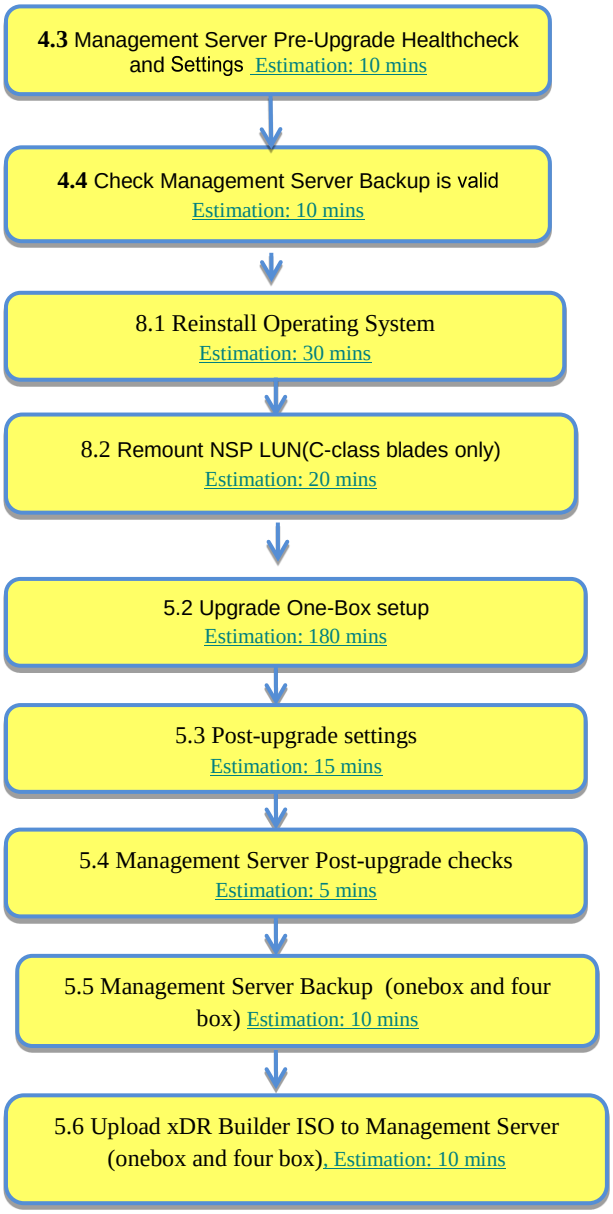


Note: In Final Health Check, procedures 4.3, 4.4 , 4.5 must be skipped.

2.3 Management Server One-box Major Upgrade

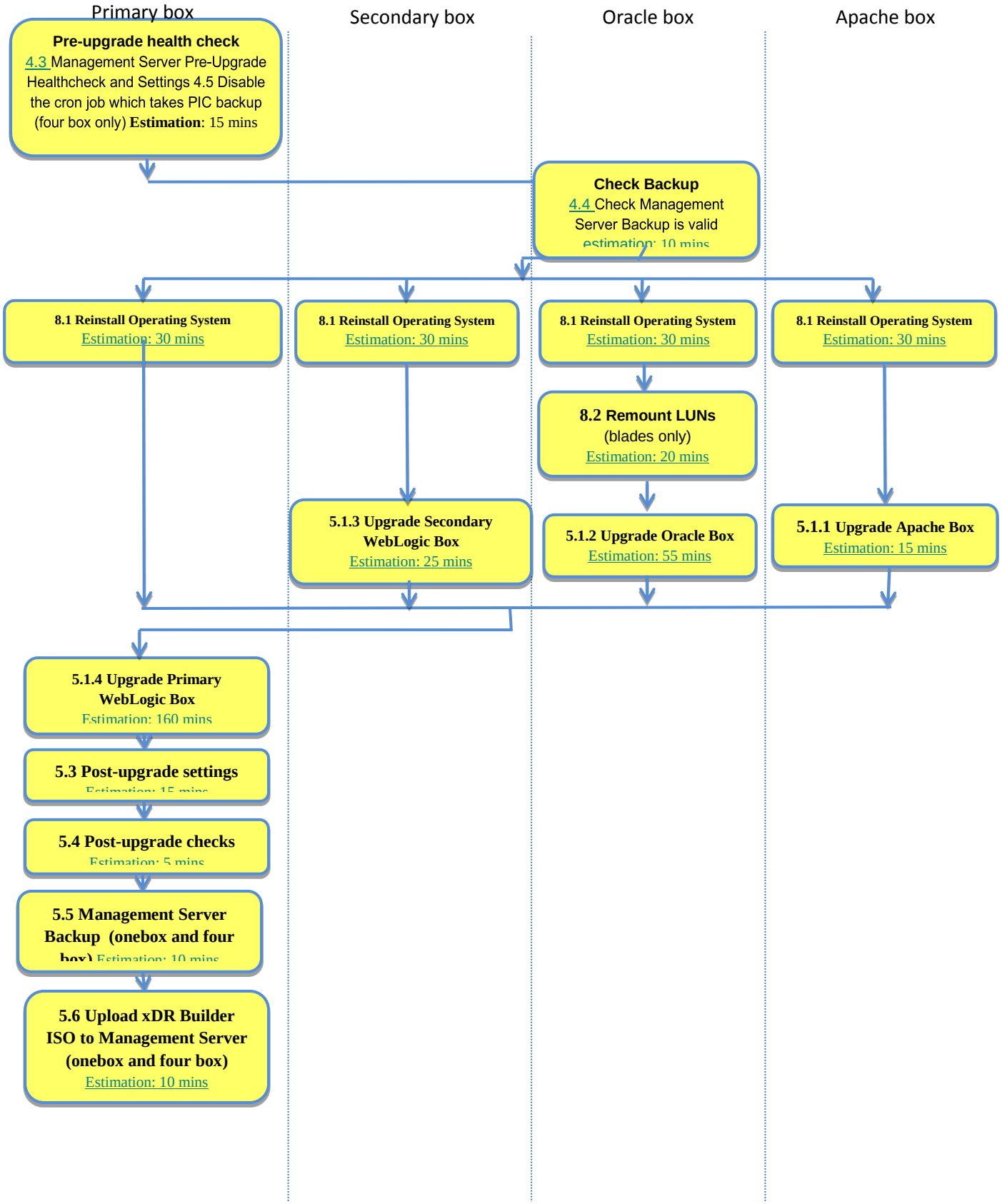
This flowchart depicts the sequence of procedures that must be executed to upgrade Management Server One-box setup.

Note: On One box, time taken during upgrade of NSP product may vary depending upon the size of Management Server backup



2.4 Management Server Four-box Major Upgrade

This flowchart depicts the sequence of procedures that must be

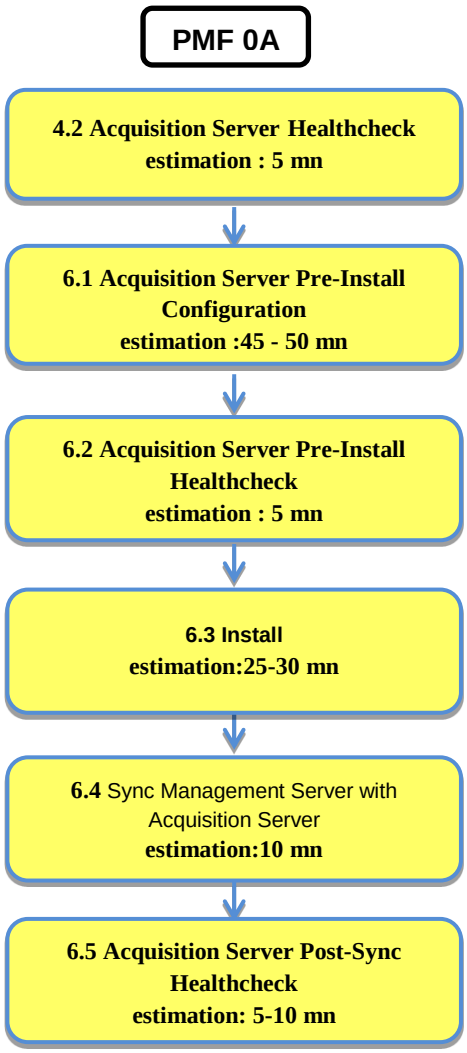


executed to upgrade the Management Server Four-box setup.
Note: On Oracle box, time taken during upgrade of NSP product may vary depending upon the size of Management Server backup

Note: The upgrade sequence must be followed, Apache, Oracle, Secondary and Primary**.**

2.5 Probed Acquisition Major Upgrade

This flowchart depicts the sequence of procedures that must be executed to upgrade standalone Probed Acquisition Server.
The procedures depicted in the flowchart pertain to standalone Probed Acquisition server type. Depending on the number of servers for a particular function, the required procedures depicted in the flowchart will need to be repeated.

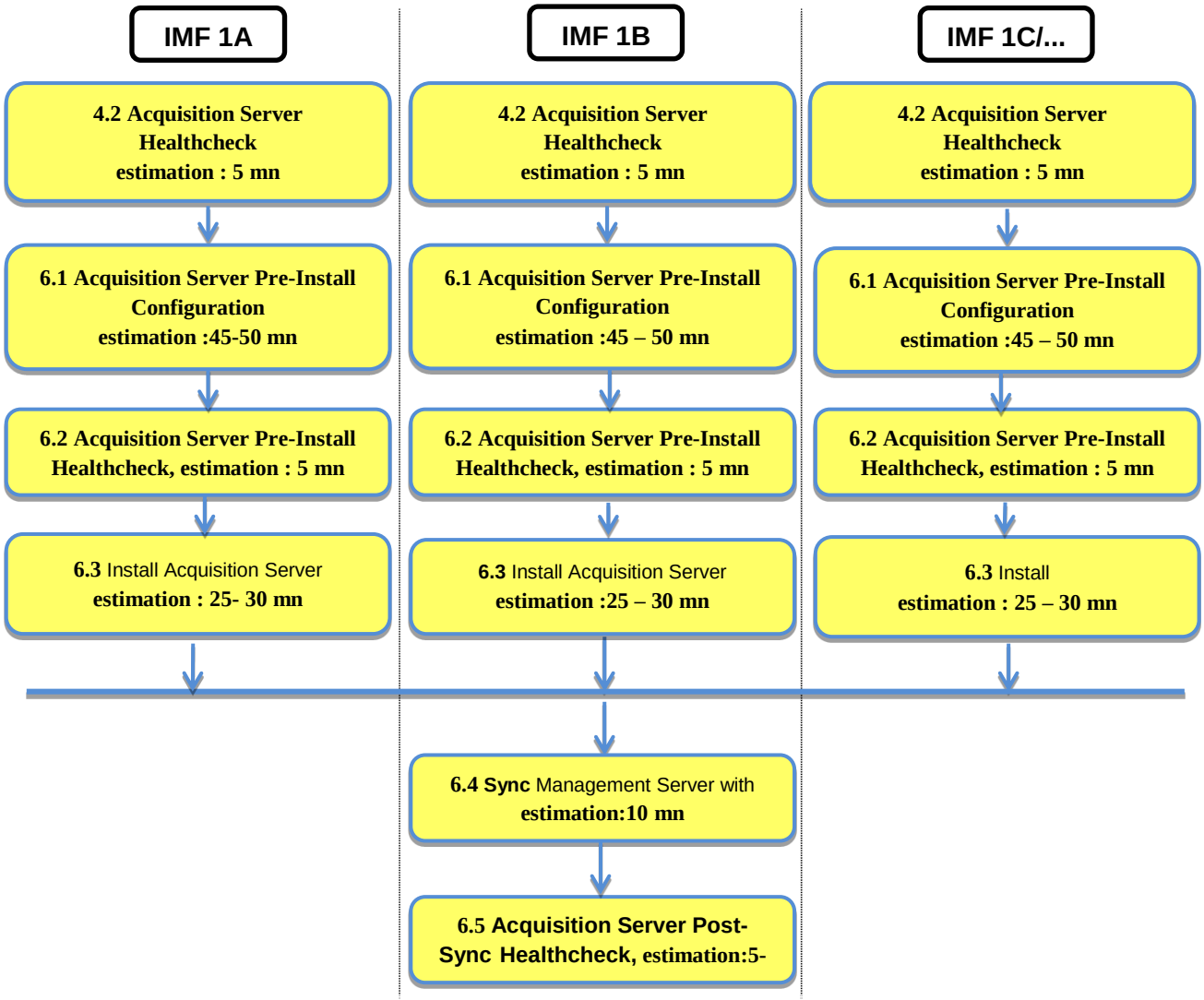


2.6 Integrated Acquisition Major Upgrade

This flowchart depicts the sequence of procedures that must be executed to upgrade Integrated Acquisition subsystem and associated servers.

The procedures depicted in the flowchart pertain to Integrated Acquisition server type. Depending on the number of servers for a particular function, the required procedures depicted in the flowchart will need to be repeated.

As the servers are upgraded in parallel this procedure is introducing some data loss for the customer



2.7 Mediation Server Major Upgrade

This flowchart depicts the sequence of procedures that must be executed to upgrade the Mediation subsystem and associated server functions.

The Mediation subsystem consists of the following types of servers at the beginning of the procedure:

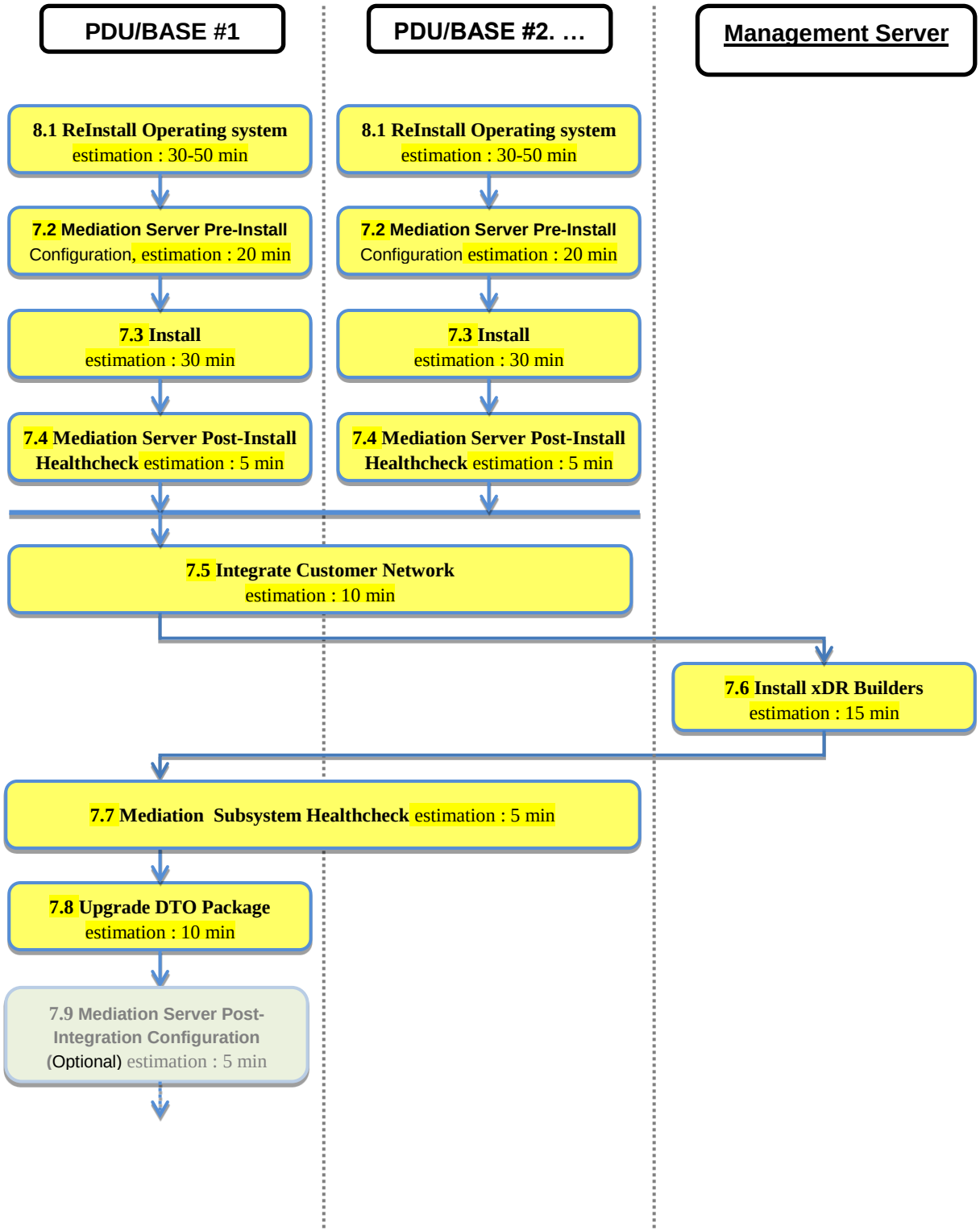
- Mediation PDU storage server
- Mediation Base server

Mediation subsystem major upgrade procedure is triggered from each server in the subsystem manually but runs in parallel on all servers in the subsystem.

Note: Some of the xDR/KPI sessions are stored on different servers in the xDR Storage pool. As Centralized xDR Builder 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 xDR Builder upgrade will fail.

Note: **xDR/DWS** server **must not be upgraded** with the new Mediation software. But it may be DR if the conversion is from 32 bits to 64 bits or any TPD fix should be applied.

Note: Peform the step Appendix 11 Unset Configuration on Management Server (onebox and four box) after the upgrade of the complete PIC system.


PDU/BASE #1
PDU/BASE #2. …
Management Server
8.1 ReInstall Operating system estimation : 30-50 min
8.1 ReInstall Operating system estimation : 30-50 min
7.2 Mediation Server Pre-Install Configuration, estimation : 20 min
7.2 Mediation Server Pre-Install Configuration estimation : 20 min
7.3 Install estimation : 30 min
7.3 Install estimation : 30 min
7.4 Mediation Server Post-Install Healthcheck estimation : 5 min
7.4 Mediation Server Post-Install Healthcheck estimation : 5 min
7.5 Integrate Customer Network estimation : 10 min
7.6 Install xDR Builders estimation : 15 min
7.7 Mediation Subsystem Healthcheck estimation : 5 min
7.8 Upgrade DTO Package estimation : 10 min
7.9 Mediation Server Post-Integration Configuration (Optional) estimation : 5 min

3 Major Backout Overview Flowcharts

The **backout is** design to come back to the previous release. It will be done using the DR procedures of the relase 10.1.0 using PIC 10.1.0 Maintenance Guide, E53511-01

3.1 Management Server Major Backout

NSP application major backout is implemented as a Disaster Recovery procedure. Follow installation document of the source release to find a Disaster Recovery Procedure.
Refer to the Document PIC 10.1.0 Maintenance Guide, E53511-01
.

3.2 Acquisition Server Major Backout

Acquisition application major backout is implemented as a Disaster Recovery procedure. Follow installation document of the source release to find a Disaster Recovery Procedure.
Refer to the Document PIC 10.1.0 Maintenance Guide, E53511-01

3.3 Mediation Server Major Backout

Mediation application major backout is implemented as a Disaster Recovery procedure. Follow installation document of the source release to find a Disaster Recovery Procedure.
Refer to the Document PIC 10.1.0 Maintenance Guide, E53511-01

4 PIC Healthcheck

4.1 Mediation Subsystem Healthcheck

This procedure describes how to run the automatic healthcheck of the Mediation subsystem, including connectity to the DWS

1. Open a terminal window and log in on any Mediation Server in the Mediation subsystem you want to analyze.

2. As `cfguser`, run:

```
$ analyze_subsystem.sh
```

The script gathers the healthcheck 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:

```
[cfguser@ixp2222-1a ~]$ analyze subsystem.sh
------------------------------------------------- ANALYSIS OF SERVER
ixp2222-1a STARTED
-------------------------------------------------
10:16:05: STARTING HEALTHCHECK PROCEDURE - SYSCHECK=0
10:16:05: date: 05-20-11, hostname: ixp2222-1a
10:16:05: TPD VERSION: 4.2.3-70.86.0
10:16:05: IXP VERSION: [7.1.0-54.1.0]
10:16:05: XDR BUILDERS VERSION: [7.1.0-36.1.0]
10:16:05: ------------------------------------------------
10:16:05: Analyzing server record in /etc/hosts
10:16:05:       Server ixp2222-1b properly reflected in /etc/hosts file
10:16:05: Analyzing IDB state
10:16:05:       IDB in START state
...
12:21:48: Analyzing disk usage
...
10:24:09: ENDING HEALTHCHECK PROCEDURE WITH CODE 0
END OF ANALYSIS OF SERVER ixp2222-1b

ixp2222-1a TPD:[ 4.2.3-70.86.0 ] IXP:[ 7.1.0-54.1.0 ] XB:[ 7.1.0-36.1.0 ]  0
test(s) failed
ixp2222-1b TPD:[ 4.2.3-70.86.0 ] IXP:[ 7.1.0-54.1.0 ] XB:[ 7.1.0-36.1.0 ]  0

test(s) failed
```

Example of a successful test:

```
10:24:08: Analyzing DaqServer table in IDB
10:24:08:       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. Open a terminal window and log in as cfguser on any Mediation Server in the Mediation subsystem and use the following command to have the list of the DatawareHouse

```
[cfguser@ixp0101-1a ~]$ Imysql.client
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 16501
Server version: 5.1.66 Source distribution

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> select concat(Login , '/' , Password , '@' , Host , '/' , Instance) from
DatawareHouse;
+-----------------------------------------------------------------+
| concat(Login , '/' , Password , '@' , Host , '/' , Instance) |
+-----------------------------------------------------------------+
| IXP/IXP@10.253.142.203/IXP                                      |
| IXP/IXP@10.253.142.204/IXP                                      |
+-----------------------------------------------------------------+
1 row in set (0.01 sec)

mysql> exit
```

Then, for eah line, make sure that the database is accessible by using the following command:

```
 [cfguser@ixp0101-1a ~]$ sqlplus IXP/IXP@10.253.142.203/IXP

SQL*Plus: Release 11.2.0.2.0 Production on Thu Sep 11 04:57:14 2014

Copyright (c) 1982, 2010, Oracle.  All rights reserved.


Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.3.0 - 64bit Production
With the Partitioning, Automatic Storage Management, OLAP, Data Mining
and Real Application Testing options

SQL> exit
```

4.2 Acquisition Server Healthcheck

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 Integrated Acquisition subsystem or from Probed Acquisition server. The script should be run from only on one server of the Integrated Acquisition subsystem (the 1A server is preferred) or on stand-alone. The output consists of a list of checks and results, and, if applicable, suggested solutions.

1. Run the automatic healthcheck script and verify output
   a) Run analyze_subsystem.sh script as cfguser:
      ```
      $ analyze_subsystem.sh
      ```
   b) 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, contact the Oracle Support 9. Appendix: My Oracle Support (MOS)

      Note: For a standalone, there will be only one server in the output. Example output for a healthy subsystem:
      ```
      ------------------------------------------------------
      ```

```
ANALYSIS OF SERVER IMF0502-1A STARTED
-----------------------------------------------------

11:28:59: STARTING HEALTHCHECK PROCEDURE - SYSCHECK=0
11:28:59: date: 02-07-11, hostname: IMF0502-1A
11:28:59: TPD VERSION: 3.3.8-63.25.0
11:28:59: XMF VERSION: [ 60.6.7-2.1.0 ]
11:28:59: -----------------------------------------------
11:28:59: Checking disk free space
11:28:59:       No disk space issues found
...
11:29:08: Checking whether ssh keys are exchanged among machines in frame -
this can take a while
11:29:08:       3 mates found: yellow-1B yellow-1C yellow-1D
11:29:26:       Connection to all mates without password was successful
11:29:26: Checking A-Node server
11:29:29:       Connection to A-Node 10.240.9.4 was successful
11:29:29:       A-Node version is: 60.6.7-2.1.0
11:29:29: Checking version of the nsp
11:29:32:       Connection to nsp 10.240.9.3 was successful
11:29:32:       nsp version is: 6.6.4-7.1.0
11:29:32:       nsp was installed on: 2011-01-13 05:09:26 (25 days 6 hours
ago)
11:29:32: All tests passed. Good job!
11:29:32: ENDING HEALTHCHECK PROCEDURE WITH CODE 0
END OF ANALYSIS OF SERVER IMF0502-1A

-----------------------------------------------------
ANALYSIS OF SERVER IMF0502-1B STARTED
-----------------------------------------------------
...
...
11:30:04: ENDING HEALTHCHECK PROCEDURE WITH CODE 0
END OF ANALYSIS OF SERVER IMF0502-1B

-----------------------------------------------------
ANALYSIS OF SERVER IMF0502-1C STARTED
-----------------------------------------------------
...
...
11:30:36: ENDING HEALTHCHECK PROCEDURE WITH CODE 0
END OF ANALYSIS OF SERVER IMF0502-1C

IMF0502-1A  TPD: 3.3.8-63.25.0  XMF: 60.6.7-2.1.0   0 test(s) failed
IMF0502-1B  TPD: 3.3.8-63.25.0  XMF: 60.6.7-2.1.0   0 test(s) failed
IMF0502-1C  TPD: 3.3.8-63.25.0  XMF: 60.6.7-2.1.0   0 test(s) failed
```

Example output for a subsystem with errors:

```
...
...
END OF ANALYSIS OF SERVER IMF0502-1D

IMF0502-1A  TPD: 3.3.8-63.25.0  XMF: 60.6.7-2.1.0   1 test(s) failed IMF0502-
1B  TPD: 3.3.8-63.24.0  XMF: 60.6.7-1.0.0   3 test(s) failed server on
interface yellow-1c is not accessible (ping)
IMF0502-1D  TPD: 3.3.8-63.25.0  XMF: 60.6.7-2.1.0   0 test(s) failed
Differences between tpd platform versions found!
Differences between message feeder application versions found!
```

4.3 Management Server Pre-Upgrade Healthcheck and Settings

This procedure describes pre-upgrade sanity test Management Server together with a few configuration settings. The main goal is to have a latest backup using the **PIC 10.1.0 script**. If the latest nightly backup is available then it can be used otherwise the latest backup must be taken as mentioned below.

1. PIC backup

a) Log in as `root` on the Management Server (In case of Onebox configuration) or the Primary box (In case of Fourbox configuration)

b) On One Box server or Primary Box server, go to the path /opt/nsp/scripts/oracle/cmd and run the below script.

```
# sh launch_pic_global_backup.sh
```

The above script will take the Management Server backup on one box server or oracle box server along with the Mediation Server/Acquisition Server backup at path /opt/oracle/backup/NSP_BACKUP_XX_XX_XX_XX_XX_XX

Note: Please verify export realm directory inside upgrade_backup (/opt/oracle/backup/upgrade_backup/exportrealm) directory on one box server or primary box server that its content has latest timestamp (approximately the same timestamp when the latest backup folder was created).

Any changes done after the backup will be lost!

4.4 Check Management Server Backup is valid

This procedure describes different steps to be followed for checking the backup of Management Server is valid. It is useful to have this backup in case of restoring the setup need arising from upgrade failure

There must be one directory for the last seven days and it is recommended to copy in a safe place the full content of at least the last of this directory. This must be verified on One Box server or Oracle Box server.

```
# cd /opt/oracle/backup
# ls -lh
drwxrwxrwx 9 root   root          4096 Jun 28 22:01 NSP_BACKUP_06_28_12_22_00_01
drwxrwxrwx 9 root   root          4096 Jun 29 22:01 NSP_BACKUP_06_29_12_22_00_02
drwxrwxrwx 9 root   root          4096 Jun 30 22:01 NSP_BACKUP_06_30_12_22_00_01
drwxrwxrwx 9 root   root          4096 Jul  1 22:01 NSP_BACKUP_07_01_12_22_00_01
drwxrwxrwx 9 root   root          4096 Jul  2 22:01 NSP_BACKUP_07_02_12_22_00_01
drwxrwxrwx 9 root   root          4096 Jul  3 22:01 NSP_BACKUP_07_03_12_22_00_01
drwxrwxrwx 9 root   root          4096 Jul  4 22:01 NSP_BACKUP_07_04_12_22_00_01
```

a) Check whether the Management Server backup is on external drives or not.
   i. Login as root on Management Server one box or oracle box in case of 4 box system and execute below commands.

```
# cd /opt/oracle/backup
# df -h .
Filesystem                  Size  Used Avail Use% Mounted on
/dev/mapper/nsp_backup_vol  138G  2.1G  136G   2% /usr/TKLC/oracle/backup
```

In case of Blade system output will be like as above.

```
# cd /opt/oracle/backup
# df -h .
```

```
Filesystem                  Size  Used Avail Use% Mounted on
/dev/sdd1       275G  1.1G  274G   1% /usr/TKLC/oracle/backup
```

In case of RMS system output will be like as above.

The outputs shown above are examples but they shows that /usr/TKLC/oracle/backup directory is mounted on **/dev/mapper/nsp_backup_vol** partition in case of blade machines or on **/dev/sdd1** partition in case of RMS machines. These partitions are on external storage array. If the output is not similar as shown above then do not proceed further and contact Oracle Support Appendix: My Oracle Support (MOS).

b) Check the content of the last backup directory

For a One Box

```
-rw-r--r--  1 root   root     391K Mar 24 22:01 apache-conf.tgz
-rw-r--r--  1 root   root      169 Mar 24 22:01 backup.log
-rw-r--r--  1 root   root      186 Mar 24 22:00 boot.properties
-rw-r--r--  1 root   root      116 Mar 24 22:01 bulkconfig
drwxr-xr-x 10 root   root     4.0K Mar 24 22:00 config
-rw-r--r--  1 root   root     6.9K Mar 24 22:01 customer icon.jpg
-rw-r--r--  1 oracle oinstall 3.0M Mar 24 22:01 ExpNSP.dmp.gz
-rw-r--r--  1 oracle oinstall  52K Mar 24 22:01 ExpNSP.log
drwxr-xr-x  2 root   root     4.0K Mar 24 22:00 exportrealm
-rw-r--r--  1 root   root     230k Mar 24 22:01 failedconnection.txt
-rw-r--r--  1 root   root     2.5K Mar 24 22:01 global_versions.properties
-rw-r--r--  1 root   root      235 Mar 24 22:01 hosts
-rw-r--r--  1 root   root     1585 Mar 24 22:01 hosts.csv
-rw-r--r--  1 root   root      163 Mar 24 22:01 ifcfg-eth01
-rw-r--r--  1 root   root       23 Mar 24 22:01 ifcfg-eth02
-rw-r--r--  1 root   root      47K Mar 24 22:01 install.log
drwxrwxrwx  2 root   root     4096 Mar 24 22:01 IXP
-rw-r--r--  1 root   root      59M Mar 24 22:01 jmxagentproperties.tgz
drwxr-xr-x  7 root   root     4.0K Mar 24 22:00 ldap
-rw-r--r--  1 root   root       85 Mar 24 22:01 network
-rw-r--r--  1 root   root      600 Mar 24 22:01 nsp setenv.sh
-rw-r--r--  1 root   root     1.6K Mar 24 22:01 ntp.conf
-rw-r--r--  1 root   root      298 Mar 24 22:01 optional modules list
-rw-r--r--  1 root   root      320 Mar 24 22:00 preBackupTests.log
-rw-r--r--  1 root   root      148 Mar 25 05:44 restore 10.248.19.35.log
-rw-r--r--  1 root   root       64 Mar 24 22:00 SerializedSystemIni.dat
-rw-------  1 root   root        0 Mar 24 22:01 snmpd.conf
drwxrwxrwx  2 root   root     4096 Mar 24 22:01 XMF
```

Make sure the file `ExpNSP.dmp.gz` exist and have a size coherent with the amount of data of your customer. Check the content of `ExpNSP.log`

Check the content of **Mediation** backup folder

```
-rw-r--r-- 1 root   root      610 Mar 24 22:01 IXP_ixp1000-1a.tgz
-rw-r--r-- 1 root   root      645 Mar 24 22:01 IXP_ixp1000-1b.tgz
-rw-r--r-- 1 root   root      560 Mar 24 22:01 IXP_ixp1000-1z.tgz
```

Check the content of **Acquisition** backup folder

```
-rw-r--r-- 1 root   root      296 Mar 24 22:01 XMF_xmf-9010.tgz
```

For a Four Box

```
# cd NSP_BACKUP_07_04_12_22_00_01
```

```
# ls -lh
total 60K
drwxr-xr-x  2 root root 4.0K Jun  8 22:01 apache
-rw-r--r--  1 root root 3.0K Jun  8 22:01 backup.log
-rw-r--r--  1 root root  186 Jun  8 22:00 boot.properties
drwxr-xr-x 10 root root 4.0K Jun  8 22:00 config
drwxrwxrwx  2 root root 4.0K Jun  8 22:00 exportrealm
-rw-r--r--  1 root root    0 Jun  8 22:01 failedconnection.txt
-rw-r--r--  1 root root 2.5K Jun  8 22:01 global_versions.properties
-rw-r--r--  1 root root  486 Jun  8 22:01 hosts.csv
drwxrwxrwx  2 root root 4.0K Jun  8 22:01 IXP
drwxr-xr-x  7 root root 4.0K Jun  8 22:00 ldap
drwxrwxrwx  2 root root 4.0K Jun  8 22:01 oracle
-rw-r--r--  1 root root  320 Jun  8 22:00 preBackupTests.log
drwxr-xr-x  2 root root 4.0K Jun  8 22:01 primary
drwxr-xr-x  2 root root 4.0K Jun  8 22:01 secondary
-rw-r--r--  1 root root   64 Jun  8 22:00 SerializedSystemIni.dat
drwxrwxrwx  2 root root 4.0K Jun  8 22:01 XMF
```

Check the content of the oracle directory and make sure the file `ExpNSP.dmp.gz` exist and have a size coherent with the amount of data of your customer. Check the content of `ExpNSP.log`

```
# ls -lh oracle/
total 87M
-rw-r--r-- 1 root   root       448 Jun  8 22:01 bulkconfig
-rw-r--r-- 1 oracle oinstall  37M Jun  8 22:01 ExpNSP.dmp.gz
-rw-r--r-- 1 oracle oinstall  52K Jun  8 22:01 ExpNSP.log
-rw-r--r-- 1 root   root      2.5K Jun  8 22:01 global_versions.properties
-rw-r--r-- 1 root   root       203 Jun  8 22:01 hosts
-rw-r--r-- 1 root   root       152 Jun  8 22:01 ifcfg-bond0.3
-rw-r--r-- 1 root   root        76 Jun  8 22:01 ifcfg-eth02
-rw-r--r-- 1 root   root       47K Jun  8 22:01 install.log
-rw-r--r-- 1 root   root       50M Jun  8 22:01 jmxagentproperties.tgz
-rw-r--r-- 1 root   root        88 Jun  8 22:01 network
-rw-r--r-- 1 root   root        63 Jun  8 22:01 nsp setenv.sh
-rw-r--r-- 1 root   root      1.8K Jun  8 22:01 ntp.conf
-rw------- 1 root   root      2.8K Jun  8 22:01 snmpd.conf
```

c) Verify that bulkconfig file and global_version.properties file must be present in the latest backup directory in case of One Box server. In case of Four Box Configuration, on Oracle Box, verify that bulkconfig file is present inside primary, secondary, apache and oracle folder inside latest backup directory and global_version.properties file inside the latest backup directory.

d) ExpNSP.dmp.gz file should not be empty.

e) In exportrealm directory four files i.e. `DefaultAuthenticator.dat`, `DefaultCredentialMapper.dat`, `XACMLAuthorizer.dat`, `XACMLRoleMapper.dat` should be present

f) On One Box server or Oracle Box server, run healthcheck:

- For the ISO file, run:

```
# sh /mnt/upgrade/health_check/healthcheck_nspbackup.sh
```

Example (one box):

```
[root@nsp9 health check]# sh healthcheck nspbackup.sh
Last NSP backup is /opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01
Verifying expected files in /opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01 directory
/opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/jmxagentproperties.tgz File exists [ OK
].
/opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/bulkconfig File exists [ OK ].
/opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/ExpNSP.dmp.gz File exists [ OK ].
/opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/hosts File exists [ OK ].
/opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/ifcfg-eth0 File does not exists [ NOT OK
].
/opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/ifcfg-eth1 File does not exists [ NOT OK
].
```

```
/opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/ifcfg-eth01 File does not exists [ NOT OK ].
/opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/ifcfg-eth02 File exists [ OK ].
/opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/ifcfg-bond0.3 File exists [ OK ].
/opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/ifcfg-bond0.4 File does not exists [ NOT OK ].
/opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/network File exists [ OK ].
/opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/nsp setenv.sh File exists [ OK ].
/opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/ntp.conf File exists [ OK ].
/opt/oracle/backup/NSP_BACKUP_03_30_14_22_00_01/optional_modules_list File exists [ OK ].
/opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/snmpd.conf File exists [ OK ].
/opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/apache-conf.tgz File exists [ OK ].
/opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/exportrealm/DefaultAuthenticator.dat File exists [ OK ].
/opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/exportrealm/DefaultCredentialMapper.dat File exists [ OK ].
/opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/exportrealm/XACMLAuthorizer.dat File exists [ OK ].
/opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/exportrealm/XACMLRoleMapper.dat File exists [ OK ].
/opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/customer icon.jpg File exists [ OK ].
/opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/global versions.properties File exists [ OK ].
Verifying size of NSP DMP file
 /opt/oracle/backup/NSP BACKUP 03 30 14 22 00 01/ExpNSP.dmp.gz file size is [ OK ]
Health check complete
```

Note: In above example eth01 & eth02 interface will be present in case of RMS and ifcfg-bond0.3 && ifcfg-bond0.4 will be available in case of blade server.

g) Copy backup directory

i. Login as a root user on Management Server (In case of Onebox configuration) or Oracle server (In case of fourbox configuration).

ii. Verify the Management Server backup on which the healthcheck was performed is present and is the latest backup. Execute the below command to find out the latest backup directory:

```
# ls -dtr /opt/oracle/backup/NSP* | tail -1
/opt/oracle/backup/NSP_BACKUP_09_03_14_22_00_01
```

In case of any discrepancy, don't proceed further and contact Oracle Appendix: My Oracle Support (MOS).

iii. Verify the size of Management Server backup & space available on external server to be used for storing backup.

Command to verify the size of the backup:

```
# du -sh /opt/oracle/backup/NSP BACKUP XX XX XX XX XX XX
89M     /opt/oracle/backup/NSP_BACKUP_09_03_14_22_00_01
```

Command to verify the available space on the external server, where the backup is to be copied:

```
# Login to the server as root
# df -kh
Filesystem                          Size  Used Avail Use% Mounted on
/dev/mapper/vgroot-plat root      1008M  333M  625M  35% /
tmpfs                               20G     0   20G   0% /dev/shm
/dev/sda1                          248M   41M  196M  18% /boot
/dev/mapper/vgroot-plat tmp       1008M   43M  915M   5% /tmp
/dev/mapper/vgroot-plat_usr        4.0G  2.6G  1.2G  69% /usr
```

```
/dev/mapper/vgroot-plat var      1008M  184M  774M  20% /var
/dev/mapper/vgroot-plat var tklc  7.9G  6.3G  1.3G  84% /var/TKLC
/dev/mapper/vgroot-plat nsp       237G   20G  205G   9% /usr/TKLC/nsp
/dev/mapper/vgroot-plat_oracle    7.9G  4.4G  3.2G  59% /usr/TKLC/oracle11
```

Select the partition where the sufficient space is available for the backup and use that partition for copying. The above output is just the sample output and it can be different depending on the external server used.

iv. Copy the latest backup folder on the external server at the path identified in the previos step, using below command

```
# scp -r /opt/oracle/backup/NSP BACKUP XX XX XX XX XX XX <Server
IP>/<Directory_Path>
```

4.5 Disable the cron job which takes PIC backup (four box only)

Once the backup and its health check is complete, edit the cronjob by performing the below steps. This will ensure that no intermediate PIC backup is created during Major upgrade cycle.

a) Login as a root user on Management Server Primary server and do the below step:

```
# crontab -e
```

Comment out the launch_pic_global_backup.sh entry by putting a hash(#) at the beginning.
You might use the command crontab –l to display the list of jobs scheduled. Below should be the updated entry.

```
# crontab -l
#00 22 * * * . $HOME/.bash_profile; cd /opt/nsp/scripts/oracle/cmd; sh
./launch_pic_global_backup.sh >../trc/cronNSP.log 2>&1
01 00 * * *  rm -rf /tekelec/backup`date \+\%u`;/usr/TKLC/TKLCmf/bin/backup config
backup`date \+\%u` > /tekelec/TKLCmf/runtime/run/log/backup`date \+\%u`.log
```

4.6 Global Healthcheck

4.6.1 iLO Access

CAUTION: Make sure you can access the iLO interface of all servers and you can open the remote console for each server. Starting PIC 10.1.5 software **installation through SSH is blocked** and it can be done only on the server console it self or unsing iLO.

4.6.2 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.

4.6.3 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

Note: For blade system make sure all the LUN information are documented and you will not be blocked when you will need to remount the Management Server SAN volumes

4.6.4 ProTrace Session Status

Navigate from the home screen to ProTrace

NOTE: Look for any sessions that are lagging behind the current time.

1. View All records
2. Filter by end date
3. End date must be the correct time
4. 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.

4.6.5 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.

4.6.6 Alarm Forwarding

Connect on Management Server 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.

4.6.7 ProTraq

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

4.6.8 ProPerf

Access to ProPerf configuration and check each dashboard is working fine

4.6.9 DataFeed

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

4.6.10 Scheduler

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

5 Management Server Major Upgrade

This section provides the procedures for upgrading the NSP application. In 10.1.5 A-node is being removed from the management server. The primary server of the acquisition sub-system shall be used to get the realtime counters for ProDiag and SigranProDiag applications. Therefore **once the major upgrade of management server is complete** then an **Apply Change must be made on all acquisition sub-system** to facilitate the removal of A-node information from acquisition sub-system.

5.1 Upgrade Four Box setup

Follow the below mentioned steps to upgrade four box setup:

Warning: This step is applicable to four box configuration only. Skip it for onebox config

5.1.1 Apache Box

If not already done refer *ReInstall Operating system* **to reinstall the machine.**

1) Log in as **root** on the server. As root user run:

a) `# syscheck`

Review the `fail_log` file (`/var/TKLC/log/syscheck/fail_log`) for any errors .

Example ouput for a healthy system:

```
Running modules in class disk...
OK
Running modules in class proc...
OK
Running modules in class system...
OK
Running modules in class hardware...
OK
LOG LOCATION: /var/TKLC/log/syscheck/fail_log
```

Note: Errors of NTP in syscheck can be ignored at this time, as NTP server is not configured

b) **Permit root ssh login**

As `root` run:

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

2) Configure the server hostname

a) As `root`, run:

`#` **su - platcfg**

b) Select **Server Configuration ➢ Hostname** .

c) Click **Edit**.

d) Type the Management Server Apache server hostname and click **OK**.

e) Return to the main **platcfg** menu.

3) Configure SNMP

a) From the main **platcfg** menu, select **Network Configuration➢SNMP Configuration➢NMS Configuration** and select **Edit > Add A New NMS Server**.

b) Type the IP address as **127.0.0.1** and **TEKELEC** as the community string and port number is not optional (port number 162) and then click **OK** and then **EXIT**

c) Click **YES** to restart alarm server and then press any Key to continue.

d) Exit the **platcfg** menu.

4) **Temporary customer IP assignement**

Refer section 6.1.5 Temporary customer IP assignment in PIC 10.1 Installation Guide , E53508-01

5) Copy Management Server ISO

a) Copy Management Server iso to /var/TKLC/upgrade folder.

b) On the c-class blade server download the ISO from the PM&C ISO repository. ISOs are available on the PM&C server under the /var/TKLC/smac/image/repository directory. Store the ISO file to /var/TKLC/upgrade directory. If the ISO is not present in PM&C ISO repository add the ISO file using the procedure Adding ISO Images to the PM&C Image Repository

6) **Mount ISO**

As root, run:

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

where iso_path is the absolute path of the Management Server ISO image, which includes the name of the image (starting with /var/TKLC/upgrade).

7) **Copy bulkconfig**

a) Copy the bulkconfig file from backup directory(from the server on which you have copied during pre health check steps) to /root directory.

8) **Upgrade Apache Box**

a) Login as root user on the Apache Box.

b) As `root`, run:

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

```
# /mnt/upgrade/upgrade_nsp.sh
Where /mnt/upgrade is the mount point where Management Server iso is mounted
```

c) Wait for Management Server installation to get complete. Remove this file to save disk space. As root, run:

```
# rm -f /var/TKLC/upgrade/iso_file
```

where iso_file is the absolute path of the ISO image, which includes the name of the image.

d) After the installation the server will restarts automatically. Log back in and review the Management Server installation log (/var/log/nsp/install/nsp_install.log) and TPD upgrade log (/var/TKLC/log/upgrade/upgrade.log) for errors.

If Management Server did not install successfully, contact the Oracle Appendix: My Oracle Support (MOS)..

Note: When user will login back to machine then a message will appear asking to accept or reject upgrade. Ignore this message for now. It will be automatically accepted when user will execute `post_upgrade_sanity_check.sh script during` *Management Server Post-Upgrade Check (onebox and four box).*

5.1.2 Oracle Box

If not already done refer *ReInstall Operating system* **to reinstall the machine and** *Remount NSP LUN(C-class blades only)* **for blade server only**.

1) Login as root user and run:

a) `# syscheck`

Review the `fail_log` file (`/var/TKLC/log/syscheck/fail_log`) for any errors .

Example ouput for a healthy system:

```
Running modules in class disk...
OK
Running modules in class proc...
OK
Running modules in class system...
OK
Running modules in class hardware...
OK
LOG LOCATION: /var/TKLC/log/syscheck/fail_log
```

Note: Errors of NTP in syscheck can be ignored at this time, as NTP server is not configured

b) **Permit root ssh login**

As `root` run:

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

2) **Configure the server hostname**

a) As `root`, run:

`#` **su - platcfg**

b) Select **Server Configuration ➢ Hostname** .

c) Click **Edit**.

d) Type the Management Server Oracle server hostname and click **OK**.

e) Return to the main **platcfg** menu.

3) **Configure SNMP**

a) From the main **platcfg** menu, select **Network Configuration➢SNMP Configuration➢NMS Configuration** and select **Edit > Add A New NMS Server**.

b) Type the IP address as **127.0.0.1** and **TEKELEC** as the community string and port number is not optional (port number 162) and then click **OK** and than **EXIT**

c) Click **YES** to restart alarm server and then press any Key to continue.

d) Exit the **platcfg** menu.

4) **Temporary customer IP assignement**

Refer section 6.1.5 Temporary customer IP assignment in PIC 10.1 Installation Guide , E53508-01

5) **Copy Management Server ISO**

a) Copy Management Server iso to /var/TKLC/upgrade folder.

b) On the c-class blade server download the ISO from the PM&C ISO repository. ISOs are available on the PM&C server under the /var/TKLC/smac/image/repository directory. Store the ISO
file to /var/TKLC/upgrade directory. If the ISO is not present in PM&C ISO repository add the ISO file using the procedure Adding ISO Images to the PM&C Image Repository

c) Download the following files from Oracle Download center and copy them to /var/TKLC/upgrade folder:

- For Oracle Database 11.2.0.4 product
  - p13390677_112040_Linux-x86-64_1of7.zip
  - p13390677_112040_Linux-x86-64_2of7.zip

6) Mount Management Server ISO

As root, run:

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

where iso_path is the absolute path of the Management Server ISO image, which includes the name of the image (starting with /var/TKLC/upgrade).

7) Copy bulkconfig

a) Login as root user on the Apache Box.
b) Copy the bulkconfig file from Apache box to /root directory.

8) Install Oracle Product

a) Login as root user on the Oracle Box.
b) As `root`, run:

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

```
      # /mnt/upgrade/install_oracle.sh
Note: /mnt/upgrade is the mount point where Management Server ISO is mounted.
```

c) Type `yes`, when prompted.
d) System will reboot after successful installation of oracle
e) Review the installation log (/var/TKLC/log/upgrade/oracle.log) for any errors. Oracle must be installed successfully.

If there are any errors, contact Appendix: My Oracle Support (MOS)Appendix: My Oracle Support (MOS)

9) Check Management Server Backup

a) Login as root user on the Oracle Box.
b) Verify the Management Server backup on which the healthcheck was performed using “section 4.4 Check Management Server Backup is valid “ is present and is the latest backup. Execute the below command to find out the latest backup directory:

```
# ls -dtr /opt/oracle/backup/NSP* | tail -1
/opt/oracle/backup/NSP_BACKUP_09_03_14_22_00_01
```

In case of any discrepancy, don’t proceed with upgrade and contact Oracle Appendix: My Oracle Support (MOS).

10) Upgrade Management Server

a) Log in as root on the server to install the NSP application.
b) For an Management Server ISO file copied in /var/TKLC/upgrade run:

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

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

- On the c-class blade server download the ISO from the PM&C ISO repository. ISOs are available on the PM&C server under the /var/TKLC/smac/image/repository directory. Store the ISO file to /var/TKLC/upgrade directory. If the ISO is not present in PM&C ISO repository.

c) As `root`, run:

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

```
# /mnt/upgrade/upgrade_nsp.sh
Note: /mnt/upgrade is the mount point where Management Server ISO is mounted
```

d) Wait for Management Server installation to get complete. Remove this file to save disk space.

As *root*, run:

```
# rm -f /var/TKLC/upgrade/iso_file
```

where iso_file is the absolute path of the ISO image, which includes the name of the image.

e) After the installation the server will restarts automatically. Log back in and review the Management Server installation log (/var/log/nsp/install/nsp_install.log) and TPD upgrade log (/var/TKLC/log/upgrade/upgrade.log) for errors.

If Management Server did not install successfully, contact the Oracle Appendix: My Oracle Support (MOS).

Note: When user will login back to machine then a message will appear asking to accept or reject upgrade. Ignore this message for now. It will be automatically accepted when user will execute `post_upgrade_sanity_check.sh script during` *Management Server Post-Upgrade Check (onebox and four box)*

5.1.3 Secondary WebLogic Box

If not already done refer *ReInstall Operating system* **to reinstall the machine**

1) **Login as root user and run**:

a) `#` **`syscheck`**

Review the `fail_log` file (`/var/TKLC/log/syscheck/fail_log`) for any errors .

Example ouput for a healthy system:

```
Running modules in class disk...
OK
Running modules in class proc...
OK
Running modules in class system...
OK
Running modules in class hardware...
OK
LOG LOCATION: /var/TKLC/log/syscheck/fail_log
```

Note: Errors of NTP in syscheck can be ignored at this time, as NTP server is not configured

b) **Permit root ssh login**

As `root` run:

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

2) **Configure the server hostname**

a) As `root`, run:

`#` **su - platcfg**

b) Select **Server Configuration ➢ Hostname** .

c) Click **Edit**.

d) Type the Management Server WebLogic Secondary server hostname and click **OK**.

e) Return to the main **platcfg** menu.

3) **Configure SNMP**

a) From the main **platcfg** menu, select **Network Configuration➢SNMP Configuration➢NMS Configuration** and select **Edit > Add A New NMS Server**.

b) Type the IP address as **127.0.0.1** and **TEKELEC** as the community string and port number is not optional (port number 162) and then click **OK** and than **EXIT**

c) Click **YES** to restart alarm server and then press any Key to continue.

d) Exit the **platcfg** menu.

4) **Temporary customer IP assignement**

Refer section 6.1.5 Temporary customer IP assignment in PIC 10.1 Installation Guide , E53508-01

5) **Copy Management Server ISO**

a) Copy Management Server iso to /var/TKLC/upgrade folder.

b) On the c-class blade server download the ISO from the PM&C ISO repository. ISOs are available on the PM&C server under the /var/TKLC/smac/image/repository directory. Store the ISO
file to /var/TKLC/upgrade directory. If the ISO is not present in PM&C ISO repository add the ISO file using the procedure Adding ISO Images to the PM&C Image Repository

c) Download the following files from Oracle Download center and copy them to /var/TKLC/upgrade folder:

- For WebLogic 10.3.6.0 product
  - wls1036_generic.jar
  - Latest JDK 7 tar file

6) **Mount ISO**

As root, run:

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

where iso_path is the absolute path of the Management Server ISO image, which includes the name of the image (starting with /var/TKLC/upgrade).

7) **Copy bulkconfig**

a) Login as root user on the Apache Box.
b) Copy the bulkconfig file from Apache box to /root directory.

8) **Upgrade Weblogic Product**

a) Login as root user , For an ISO file, run:

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

```
# /mnt/upgrade/upgrade_weblogic.sh
Note: /mnt/upgrade is the mount point where Management Server ISO is mounted
```

b) Wait until the installation process is complete.
c) Analyze the installation log(/var/TKLC/log/upgrade/weblogic.log), the weblogic product is installed successfully message appears at the end of the log file.
If this message does not appear in the log file, contact Oracle Appendix: My Oracle Support (MOS).

9) **Upgrade Management Server**

a) Log in as root on the server to install the NSP application.

b) As `root`, run:

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

```
# /mnt/upgrade/upgrade_nsp.sh
Note: /mnt/upgrade is the mount point where Management Server ISO is mounted
```

c) Wait for Management Server installation to get complete. Remove this file to save disk space.
As *root*, run:

```
# rm -f /var/TKLC/upgrade/iso_file
```

where iso_file is the absolute path of the ISO image, which includes the name of the image.

d) After the installation the server will restarts automatically. Log back in and review the management server installation log (/var/log/nsp/install/nsp_install.log) and TPD upgrade log (/var/TKLC/log/upgrade/upgrade.log) for errors.

If Management Server did not install successfully, contact the Oracle Appendix: My Oracle Support (MOS).

Note: When user will login back to machine then a message will appear asking to accept or reject upgrade. Ignore this message for now. It will be automatically accepted when user will execute `post_upgrade_sanity_check.sh script during` *Management Server Post-Upgrade Check (onebox and four box)*

5.1.4 Primary WebLogic Box

If not already done refer *ReInstall Operating system* **to reinstall the machine**

1) Login as root user and run:

a) `# syscheck`

Review the `fail_log` file (`/var/TKLC/log/syscheck/fail_log`) for any errors .

Example ouput for a healthy system:

```
Running modules in class disk...
OK
Running modules in class proc...
OK
Running modules in class system...
OK
Running modules in class hardware...
OK
LOG LOCATION: /var/TKLC/log/syscheck/fail_log
```

Note: Errors of NTP in syscheck can be ignored at this time, as NTP server is not configured

b) **Permit root ssh login**

As `root` run:

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

2) Configure the server hostname

a) As `root`, run:

`#` **su - platcfg**

b) Select **Server Configuration ➢ Hostname** .

c) Click **Edit**.

d) Type the Management Server WebLogic Primary server hostname and click **OK**.

e) Return to the main **platcfg** menu.

3) Configure SNMP

a) From the main **platcfg** menu, select **Network Configuration➢SNMP Configuration➢NMS Configuration** and select **Edit > Add A New NMS Server**.

b) Type the IP address as **127.0.0.1** and **TEKELEC** as the community string and port number is not optional (port number 162) and then click **OK** and then **EXIT**

c) Click **YES** to restart alarm server and then press any Key to continue.

d) Exit the **platcfg** menu.

4) Temporary customer IP assignement

Refer section 6.1.5 Temporary customer IP assignment in PIC 10.1 Installation Guide , E53508-01

5) Copy Management Server ISO

a) Copy Management Server iso to /var/TKLC/upgrade folder.

b) On the c-class blade server download the ISO from the PM&C ISO repository. ISOs are available on the PM&C server under the /var/TKLC/smac/image/repository directory. Store the ISO
file to /var/TKLC/upgrade directory. If the ISO is not present in PM&C ISO repository add the ISO file using the procedure How To Mount the ISO file from PM&C ISO Repository

c) Download the following files from Oracle Download center and copy them to /var/TKLC/upgrade folder:

- For WebLogic 10.3.6.0 product
  - wls1036_generic.jar
  - Latest JDK 7 tar file

6) Mount ISO

a) Management Server ISO must be mounted on Management Server. *Refer How To Mount the ISO file from PM&C ISO Repository*. to mount the ISO on blade server.

b) To mount Management Server ISO on RMS via ILO please refer Chapter **12.1** in [7]

7) Copy bulkconfig

a) Login as root user on the Apache Box.
b) Copy the bulkconfig file from Apache box to /root directory.

8) Upgrade Weblogic Product

a) Login as root user , For an ISO file, run:

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

```
# /mnt/upgrade/upgrade_weblogic.sh
Note: /mnt/upgrade is the mount point where Management Server ISO is mounted
```

b) Wait until the installation process is complete.
c) Analyze the installation log(/var/TKLC/log/upgrade/weblogic.log), the weblogic product is installed successfully message appears at the end of the log file.
If this message does not appear in the log file, contact Oracle Appendix: My Oracle Support (MOS).

9) Upgrade Management Server

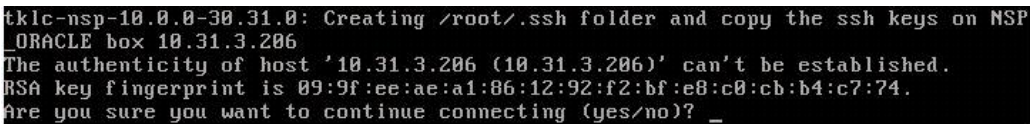
a) Log in as root on the server to install the NSP application.

b) As `root`, run:

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

```
# /mnt/upgrade/upgrade_nsp.sh
Note: /mnt/upgrade is the mount point where Management Server ISO is mounted
```

Note: During Primary box upgrade user will get a prompt asking for input as shown in below screen shot. User needs to enter yes in order to continue. After that a prompt will appear asking for password, user then needs to enter password for root user in order to continue.



c) Wait for Management Server installation to get complete. Remove this file to save disk space.
As *root*, run:

```
# rm -f /var/TKLC/upgrade/iso_file
```

where iso_file is the absolute path of the ISO image, which includes the name of the image.

d) After the installation the server will restarts automatically. Log back in and review the Management Server installation log (/var/log/nsp/install/nsp_install.log) and TPD upgrade log (/var/TKLC/log/upgrade/upgrade.log) for errors.

If Management Server did not install successfully, contact the Oracle Appendix: My Oracle Support (MOS).

Note: When user will login back to machine then a message will appear asking to accept or reject upgrade. Ignore this message for now. It will be automatically accepted when user will execute `post_upgrade_sanity_check.sh script during` *Management Server Post-Upgrade Check (onebox and four box)*

5.2 Upgrade One-Box setup

Warning: If not already done refer *ReInstall Operating system* **to reinstall the machine and** *Remount NSP LUN(C-class blades only)* **for blade server only**.

1) Login as root user and run:

a) `# syscheck`

Review the `fail_log` file (`/var/TKLC/log/syscheck/fail_log`) for any errors .

Example ouput for a healthy system:

```
Running modules in class disk...
OK
Running modules in class proc...
OK
Running modules in class system...
OK
Running modules in class hardware...
OK
LOG LOCATION: /var/TKLC/log/syscheck/fail_log
```

Note: Errors of NTP in syscheck can be ignored at this time, as NTP server is not configured

b) **Permit root ssh login**

As `root` run:

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

2) **Configure the server hostname**

a) As `root`, run:

`#` **su - platcfg**

b) Select **Server Configuration ➢ Hostname** .

c) Click **Edit**.

d) Type the Management Server hostname and click **OK**.

e) Return to the main **platcfg** menu.

3) **Configure SNMP**

a) From the main **platcfg** menu, select **Network Configuration➢SNMP Configuration➢NMS Configuration** and select **Edit > Add A New NMS Server**.

b) Type the IP address as **127.0.0.1** and **TEKELEC** as the community string and port number is not optional (port number 162) and then click **OK** and than **EXIT**

c) Click **YES** to restart alarm server and then press any Key to continue.

d) Exit the **platcfg** menu.

4) **Temporary customer IP assignement**

Refer section 6.1.5 Temporary customer IP assignment in PIC 10.1 Installation Guide , E53508-01

5) **Copy Management Server ISO**

a) Copy Management Server iso to /var/TKLC/upgrade folder.

b) On the c-class blade server download the ISO from the PM&C ISO repository. ISOs are available on the PM&C server under the /var/TKLC/smac/image/repository directory. Store the ISO file to /var/TKLC/upgrade directory. If the ISO is not present in PM&C ISO repository add the ISO file using the procedure *8.4 Adding ISO Images to the PM&C Image Repository*.

c) Download the following files from Oracle Download center and copy them to /var/TKLC/upgrade folder:

- For Oracle Database 11.2.0.4 product
  - p13390677_112040_Linux-x86-64_1of7.zip
  - p13390677_112040_Linux-x86-64_2of7.zip
- For WebLogic 10.3.6.0 product
  - wls1036_generic.jar
  - Latest JDK 7 tar file

6) **Mount Management Server media**

As root, run:

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

where iso_path is the absolute path of the Management Server ISO image, which includes the name of the image (starting with /var/TKLC/upgrade).

7) **Copy bulkconfig**

a) Login as root user on the Management Server one Box.

b) Copy the bulkconfig file from backup directory(from the server on which you have copied during pre health check steps) to /root directory.

8) **Upgrade Weblogic Product**

a) Login as root user, For an ISO file, run:

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

```
# /mnt/upgrade/upgrade_weblogic.sh
Note: /mnt/upgrade is the mount point where Management Server ISO is mounted
```

b) Wait until the installation process is complete.

c) Analyze the installation log(/var/TKLC/log/upgrade/weblogic.log), the weblogic product is installed successfully message appears at the end of the log file.
If this message does not appear in the log file, contact Oracle Appendix: My Oracle Support (MOS).

d) Verify that /opt/oracle/backup directory and backup file in that directory exist.
Note: If backup folder or backup file is not available then do not proceed with upgrade and contact Oracle Appendix: My Oracle Support (MOS).

9) **Install Oracle Product**

a) As `root`, run:

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

```
       # /mnt/upgrade/install_oracle.sh
Note: /mnt/upgrade is the mount point where Management Server ISO is mounted.
```

b) System will reboot after successful installation of oracle

c) Review the installation log (/var/TKLC/log/upgrade/oracle.log) for any errors. Oracle

must be installed successfully.

If there are any errors, contact the Oracle PIC Design Support Team

10) **Check Management Server Backup**

a) Login as root user on the Oracle Box.

b) Verify the Management Server backup on which the healthcheck was performed using "section 4.4 Check Management Server Backup is valid " is present and is the latest backup. Execute the below command to find out the latest backup directory:

```
# ls -dtr /opt/oracle/backup/NSP* | tail -1
/opt/oracle/backup/NSP_BACKUP_09_03_14_22_00_01
```

In case of any discrepancy, don't proceed with upgrade and contact Oracle Appendix: My Oracle Support (MOS).

11) **Upgrade Management Server**

a) Log in as root on the server to install the NSP application.

b) For an Management Server ISO file copied in /var/TKLC/upgrade run:

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

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

• On the c-class blade server download the ISO from the PM&C ISO repository. ISOs are available on the PM&C server under the /var/TKLC/smac/image/repository directory. Store the ISO file to /var/TKLC/upgrade directory. If the ISO is not present in PM&C ISO repository.

b) As `root`, run:

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

```
# /mnt/upgrade/upgrade_nsp.sh
Note: /mnt/upgrade is the mount point where Management Server ISO is mounted
```

d) Wait for Management Server installation to get complete. Remove this file to save disk space.

As *root*, run:

```
# rm -f /var/TKLC/upgrade/iso_file
```

where iso_file is the absolute path of the ISO image, which includes the name of the image.

e) After the installation the server will restarts automatically. Log back in and review the Management Server

installation log (/var/log/nsp/install/nsp_install.log) and TPD upgrade log (/var/TKLC/log/upgrade/upgrade.log) for errors.

If Management Server did not install successfully, contact the Oracle Appendix: My Oracle Support (MOS).

Note: When user will login back to machine then a message will appear asking to accept or reject upgrade. Ignore this message for now. It will be automatically accepted when user will execute post_upgrade_sanity_check.sh script during *5.4 Management Server Post-Upgrade Check (onebox and four box)*

5.3 Post-Upgrade Settings (onebox and four box)

Warning: This step is applicable to onebox and four box configurations.

Box: Onebox or Primary WebLogic boxes

1. **Configure Apache HTTPS Certificate (Optional)**

a) Copy the files `server.crt` and `server.key` that are provided by the customer to `/root`

b) From platcfg root menu navigate to **NSPConfiguration ⦿ Configure Apache HTTPS Certificate**

This would install certificate provided by customer

2. Restrict access of NSP frontend to HTTPS (Optional)

Disable access to HTTP

a) Open a terminal console and Login as a root user on Management Server One-Box server or Management Server Primary
WebLogic server (Four-Box)

b) Enter the plactf menu

```
# su – platcfg
```

c) Navigate to **NSP Configuration ⦿ Enable HTTP Port ⦿ Edit**

d) Select **NO** and press **Ok** to enable access again to HTTP

e) Open a terminal console and Login as a root user on Management Server One-Box server or Management Server Primary WebLogic server (Four-Box)

f) Enter the platcfg menu. As `root` run:

```
# su – platcfg
```

g) Navigate to **NSPConfiguration ⦿ Enable HTTP Port ⦿ Edit**

h) Select **YES**YES and press **Ok**

3. NSP Applications Documentation

Note: Document for application is automatically installed along with NSP application installation

To verify document installation login into NSP application interface and navigate to **Help ⦿ User Manual** Index page for that application opens. (Each application should be tested and also the link to the PDF should be tested to see if the printable PDF file opens.)

In case you have problems to access some appliactions such ProTrace, ProTraq or CCM try to empty you browser cache.

4. Configure Mail Server (Optional)

This procedure describes how to configure the SMTP mail server.

This procedure is optional; however, this option is required for Security (password initialization set to AUTOMATIC) and Forwarding (forwarding by mail filter defined) and is available only on the

Management Server (One-box) or Management Server Primary & Secondary box in case of Management Server 4 box.

a) Open a terminal window and log in as root

b) Enter the **platcfg** menu. As root, run: # su - platcfg

c) Select **NSP Configuration ► SMTP Configuration.**

d) Select **Edit.**

e) Type the IP address of the SMTP server and click **OK.**

f) The host file for the alias used in the WebLogic Mail service is updated.

g) Exit the platcfg menu

5. Transfer Ownership of TklcSrv object

Note: Follow the steps only if some object bellowing to TklSrv were created in previous version

a) Open a web browser and log in to the NSP 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)

6. Change Customer Icon (Optional)

This procedure describes how to change the customer icon (for example, replace the standard Tekelec logo with a customer logo). This procedure is optional.

a) Open a terminal window and log in as root on One box server or Apache server in case of 4 box.

b) Copy the customer icon file (customer_icon.jpg) to the /opt/www/nsp/resources directory of respectiver servers.

c) Verify the customer icon properties:

- The file name must be customer_icon.jpg.
- The file must belong to user tekelec in group tekelec.
- The compression format must be Jpeg.
- Optimum width/height ratio is 1.25.
- Any image can be used; the suggested minimum width/height is 150 pixels.

7. To enable or disable the legacy feeds refer PIC 10.1.0 Maintenance Guide, E53511-01 **the when needed. (Optional)**

Note: Refer also to the maintenance guide to convert the feeds in backaward compatible mode.

8. To enhance alarm description and classification. (Optional)

Note: By default Management Server keep existing alarm classification .

a) Open a terminal window and log in as `root` user on Management Server(one box) or Oracle box (4box) .

b) Change user to Oracle and execute given command with Management Server database sql user and password.

```
# su - oracle
# sqlplus user/password @/usr/TKLC/nsp/nsp-package/framework/core/dist/coreDB/sql/CORdb_AlarmEnhancement_data.sql
```

5.4 Management Server Post-Upgrade Check (onebox and four box)

Box: Onebox /Four Box

1. Open a terminal window and log in as root on the Management Server One-box or the Primary server (Four-box).

2. As root, run:

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

Note: When user will execute this script it will automatically accept the upgrade. However during this step the server will be rebooted by the platform. The logs can be verified after server has come up from reboot.

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

Verify the following:

• Port 80 connectivity is OK

• Oracle server health is OK

• WebLogic health for ports 5556, 7001, 8001 is OK

• Oracle em console connectivity is OK

• The disk partition includes the following lines, depending on whether rackmount or blades setup:

• If rackmount, the output contains the following lines:

```
/dev/sdc1                             275G  4.2G  271G   2% /usr/TKLC/oracle/ctrl1

/dev/sdb1                             825G  8.6G  817G   2% /usr/TKLC/oracle/oradata

/dev/sdd1                             275G  192M  275G   1% /usr/TKLC/oracle/backup
```

Note: The lines must begin with the /dev/cciss/c1d*p1 designations; the remaining portion of the lines may differ.

• If blades, output contains following lines:

```
/dev/mapper/nsp_redo_vol 69G 4.2G 61G 7% /usr/TKLC/oracle/ctrl1
/dev/mapper/nsp_data_vol 413G 76G 316G 20% /usr/TKLC/oracle/oradata
/dev/mapper/nsp_backup_vol 138G 9.2G 121G 8% /usr/TKLC/oracle/backup
```

• If extended dictionaries exists, log shall include processing results to attach extended dictionary to a base protocol dictionary (for further protocol upgrade and ProTrace EPI) and calculation of a partial dictionary defining specific part. If extended dictionary is not used in any dataflow processing or does not contains all attributes of base dictionary, nothing is done.

5.5 Management Server Backup (onebox and four box)

Warning: This step is applicable to onebox and four box configurations.
Box: Onebox or Primary WebLogic box

This procedure describes how to perform a backup from a Management Server successfully upgraded in order to avoid restore the backup from previous release in case you would face in issue while the Acquisition Server and Mediation Server upgrade.

```
# ll /opt/oracle/backup/
Output should be:
drwxrwxrwx 3 oracle oinstall     4096 Apr  8 14:38 upgrade_backup
```

If the permission of /opt/oracle/backup/upgrade_backup is not set as per above snapshot, perform the below step

```
#chmod 777 /opt/oracle/backup/upgrade_backup
```

As `root` run on Weblogic Primary server or one BOX server:

```
# . $HOME/.bash_profile; cd /opt/nsp/scripts/oracle/cmd; sh
./launch_pic_global_backup.sh >../trc/cronNSP.log 2>&1
```

This command might take a long time depending on the size of the backup. Refer to the section 4.4 Check Management Server backup is Valid in order to make sure everything went fine.

Once the backup is complete, move this backup to some other server. In case of Four Box configuration, the user will be required to login to Oracle Box and move this backup to some other server. Also make sure the latest backup is the one with which the Major Upgrade was performed. Path from where backup has to be moved:

```
# /opt/oracle/backup/
```

Note:Edit the cronjob by performing the below steps:

```
#crontab -e
```

Comment out the `launch_pic_global_backup.sh` entry by putting a hash(#) at the beginning. You might use the command crontab –l to display the list of jobs scheduled. Below should be the updated entry.

```
# crontab -l
#00 22 * * * . $HOME/.bash_profile; cd /opt/nsp/scripts/oracle/cmd; sh
./launch_pic_global_backup.sh >../trc/cronNSP.log 2>&1

01 00 * * *  rm -rf /tekelec/backup`date
\+\%u`;/usr/TKLC/TKLCmf/bin/backup_config backup`date \+\%u` >
/tekelec/TKLCmf/runtime/run/log/backup`date \+\%u`.log
```

5.6 Upload xDR Builder ISO to Management Server (onebox and four box)

Warning: This step is applicable to onebox and four box configurations.
Box: Onebox or Primary WebLogic box + workstation browser

This procedure describes how to trigger the xDR builder installation on the Mediation subsystem from the CCM.
Note 1: In case of failure in this step this is not blocking for the Acquisition Server upgrade but only for the Mediation Server. This will give some time to Design Support to investigate the reason of this over the day.

1. **Install Builder ISO on Management Server**

   a) Copy the xDR builder ISO to the Management Server primary Weblogic server or insert xDR Builder CD-ROM. b) Login to the Management Server primary Weblogic server or Management Server One-box server.

   As `root` run:

   ```
   # cd /opt/nsp/scripts/oracle/cmd
   # ./install_builder.sh
   ```

   c) You will be prompted:

   ```
   Please enter path to Builder CDROM or ISO [/media/cdrom]
   ```

   d) Choose one of the following:

   - If you have used ISO file enter the exact path including the ISO name
   - If you have used CDROM press `<ENTER>`

   e) Wait until installation finishes.

2. **Verification of ISO installation on Management Server.**

   a) Login to the NSP application interface as `TklcSrv` user.
   b) Click **Upgrade Utility**
   c) Click on **Manage Builder Rpm** on the left tree.

   It will display the list of the xDR builder rpm. One of them is the one that belongs to the ISO file installed in the previous step. The state will be **Not Uploaded**.
   The list will also display the supported platform of the builder ISO file. The supported platform can be “32 bit”, “64 bit” or “32,64 bit”. The supported platform “32,64 bit” means that same version of builder ISO has been installed twice, one that supports 32 bit and the other that supports 64bit.

3. **Dry run**

a) Login to the NSP GUI as TklcSrv user.

b) Launch **Upgrade Utility**

c) Click on **Manage Builder Rpm** on the left tree.

It will display the list of the xDR builder rpm. Select the RPM which you want to upgrade and choose **Dry Run** option from the tool bar.

d) Dry Report will be generated for each dictionary indicating changes done on the new dictionaries (Added/Removed/Deprecated field(s)) and you will have to take in account at the end of upgrade (after section 7.3 Centralized xDR Builder upgrade is completed)

.

This report is just an information at this time but will be very useful to finalize the upgrade and to prepare in advance what would be required to be done. It will also display the name of the configuration which are using deprecated field and configurations which will become incompatible after removal of field.
If there are configurations (Query/Protraq/xDR filter) on the removed field, then modify those configurations to remove the use of removed field. Otherwise those configurations will be removed from the NSP when you upload the builder RPM.
The dry run can't anymore be executed once the new package would be installed on the Mediation subsystem but you would have access to similar information on the deprecated fields menu you can access from the utility home page.

4. Upload Builder RPM

a) Mark the requested builder RPM with the **Not Uploaded** state and press **Upload** in the toolbar.

b) A dialog box will appear. Click on Continue to continue the RPM upload.

c) After the successful upload the RPM state will change to **Uploaded**

d) In case the RPM upload fails, then the state of will change back to "Not Uploaded" or "Query/Filter Upgrade Failed".

- If the builder RPM upload fails in creating new builder and dictionaries then the state is "Not Uploaded", after failure. At this state, this step can be repeated once the failure issues are resolved.
- If the builder RPM upload fails in upgrading the configurations (Query/xDR filter) then the state is "Query/Filter Upgrade Failed" after failure.

5. Upgrade Queries and Filters

In case the state of the RPM is "Query/Filter Upgrade Failed", then only configurations (Query/xDR filter) are required to be upgraded. Below are steps for the same

a) Mark the requested builder RPM with the "Query/Filter Upgrade Failed" state and press "Upgrade Queries and Filters" button in the toolbar.

b) A dialog box will appear. Click on Continue to continue the upgrade.

c) After the successful upload the RPM state will change to **Uploaded**

6. View Dictionary Upgrade Status

In case the state of the RPM is "Query/Filter Upgrade Failed", then the status of upgrade of queries and filters for the dictionaries can be viewed. Below are the steps for the same

a) Mark the requested builder RPM with the "Query/Filter Upgrade Failed" state and press "Display Dictionary Upgrade Status" button in the toolbar.

b) Dictionary Upgrade Status will be generated for each upgraded/new dictionary indicating whether the Queries and filters have been upgraded or not for this dictionary.

6 Acquisition Server Major Upgrade

The steps mentioned in this chapter must be executed from iLO or similar non disconnectable media.

6.1 Acquisition Server Pre-Install Configuration

This section provides procedures to configure the Acquisition servers that must be performed before installing the Acquisition application.

6.1.1 ReInstall Operating system on Acquisition Server

If the PMF is used with a Falco Backup the file `/opt/TKLCmf/prod/falco.conf`

Refer *ReInstall Operating system* **to reinstall the machine**

Note: For E5-APPB servers use command “TPDlvm scrub” during the major upgrade for OS Re-installation.

6.1.2 Acquisition Server Pre-Install Configuration

This section provides procedures to configure the Acquisition servers that must be performed before upgrading the Acquisition application

6.1.2.1 Temporary Acquisition Server customer IP assignment

Refer 7.1.1 in PIC 10.1.5 Installation Guide , E56065

Note: This procedure is only to be used to transfer the Application ISO during installation.

6.1.2.2 Copy ISO

a) Transfer Application ISO on the server to /var/TKLC/upgrade directory

6.1.3 Configure Acquisition Server

This procedure describes how to configure the Acquisition servers prior to installing the Acquisition application.

Note: This procedure must be executed on all of the Integrated Acquisition and Probed Acquisition servers.

1. **Change the current designation and function & hostname**

Note: The designation and function are case sensitive and must be capitalized; otherwise, the software functionality will not work properly and will result in the need to reinstall the application.

a) Open platcfg menu using su - platcfg
b) Select Server Configuration->Hostname
c) Select Edit
d) Set the hostname
e) Select Server Configuration -> Designation/Function.
f) Select Edit.

g) Change the designation and function.

- For a Integrated Acquisition subsystem:
  In the Designation field, enter the designation in the following format: 1A for the first server, 1B for the second, and so on. In the Function field, enter IMF.
- For a standalone Probed Acquisition:
  In the Designation field, enter the 0A for the server. In the Function field, enter PMF.

h) Select Exit.

6.2 Acquisition Server Pre-Install Healthcheck

This procedure describes how to run the syscheck and analyze the output to determine the state of the Acquisition Server before installing the Acquisition application.

1. Log in as root on the Acquisition server that you want to install the Acquisition application.
2. Run:

```
# syscheck
```

3. Review the fail_log file (/var/TKLC/log/syscheck/fail_log) for any errors.

Example ouput for a healthy system:

```
Running modules in class disk... OK
Running modules in class proc... OK
Running modules in class system... OK
Running modules in class hardware... OK

LOG LOCATION: /var/TKLC/log/syscheck/fail_log
```

6.3 Install Acquisition Server

This procedure describes how to install the Acquisition application on a server that has the operating system installed.

Before you perform this procedure, make sure that you have ISO file available.

1. **Log in and copy the ISO file to the server**
   a) Open a terminal window and log in as root on the server that you want to install the Acquisition application.
2. **Restore Acquisition Server configuration**
   a. Log in to the Management Server oracle server as a root user and execute the script as mentioned below

   ```
   # /opt/nsp/scripts/oracle/cmd/restore_ixp_xmf.sh <ip_addr>
   ```

   where ip_addr is the ip address of the Acquisition Server on which the restore is to be done.
   Note: This script will ask user to provide password for *admusr and root.*
   b. Once the script is executed successfully the archieve file will be restored at /var/TKLC/backup/ directory on Acquisition Server.

Note: The installation procedure then take care of restoring the bulkconfig at /root directory automatically from the archieve file.

3**. Install the application**

a) Enter the platcfg menu. As root, run:

```
# su - platcfg
```

b) Select Maintenance ➤ Upgrade ➤ Initiate Upgrade.

c) Select the desired upgrade media and press Enter.

Informational messages appear on the terminal screen as the upgrade proceeds. When the installation is complete, the server reboots and displays the login prompt.

You can check the TPD upgrade log file (/var/TKLC/log/upgrade/upgrade.log) for any error; but the status of the server will be checked when you run the healthcheck script after the post-sync healthcheck.

Note: In case of TPD 5.5, the early checks may fail if the upgrade is not attempted from the non disconnectable media, so before attempting the next upgrade remove the “UNKNOWN” entry from “/usr/TKLC/plat/etc/platform_revision” file.

6.4 Sync Management Server with Acquisition Server

1. **Set VIP**

The below step should only be executed for the 1A server of the Integrated Acquisition sub-system.

On Probed Acquisition standalone server the VIP is same as the IP address of the server hence no need to set the VIP.

As cfguser run:

```
#  setSSVIP <vip IP address>
```

2. **Discover Acquisition Application on Management Server**

Execute the steps given below when all the servers of the sub-system are installed or if it is a standalone server

a) From supported browser login to the NSP Application GUI as privileged user

b) Go to the Centralized Configuration

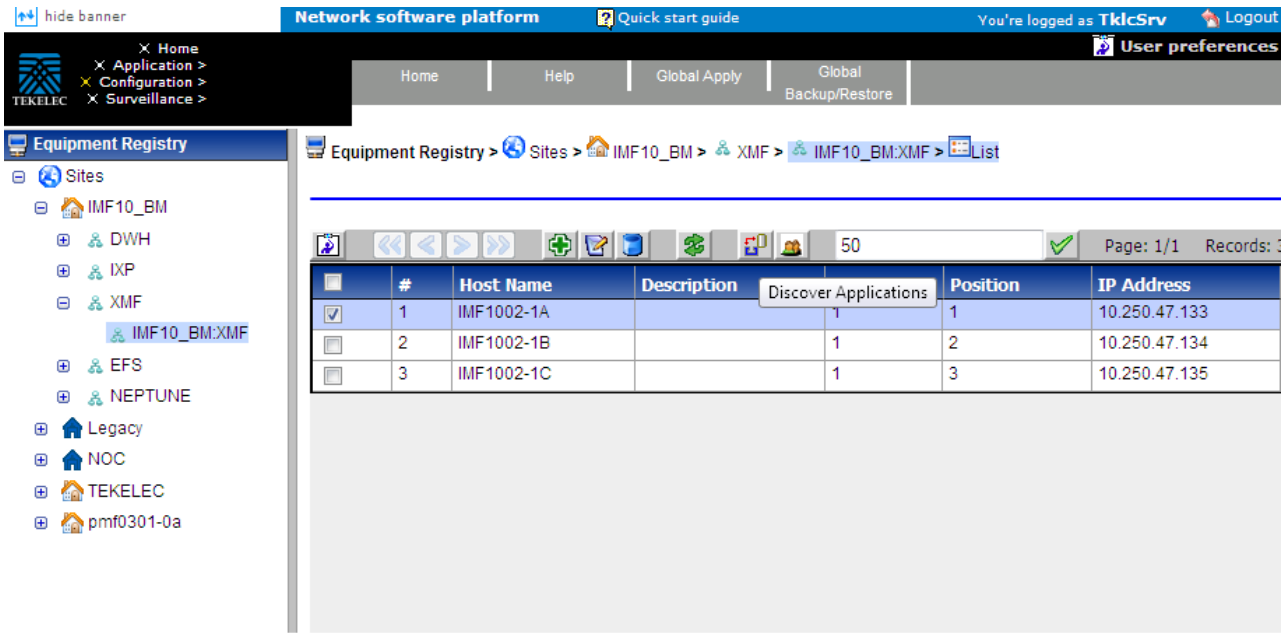
c) Navigate to Equipment Registry Perspective in left tree panel.

d) Navigate to the subsystem.

e) Select the Acquisition subsystem to synchronize by clicking on XMF under the correct Site name.

f) This will list the subsystem in the table

g) Select the Acquisition server and click on Discover Applications. The discover applications action should be done for each Acquisition server in the sub-system.



3**. Apply Change**

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.

Note: If apply changes fails, then verify the accessibility of the VIP from the Management Server. If VIP address is accessible from Integrated Acquisition servers but is not accessible from Management Server, then it may be due to Cisco switch ARP table, refer to procedure **Flush ARP table** in reference [10] PIC Hardware installation Guidelines.

6.5 Acquisition Server Post-Sync Healthcheck

This procedure describes how to run the healthcheck script on Acquisition servers.

The script gathers the healthcheck information from each server in the Acquisition subsystem or from standalone server. The script should be run from only on one server of the Acquisition subsystem (the 1A server is preferred) or on stand-alone. The output consists of a list of checks and results, and, if applicable, suggested solutions

1. Open a terminal window and log in as cfguser on any server in the Acquisition subsystem or standalone server.
2. Run the automatic healthcheck script.

```
$ analyze_subsystem.sh
```

3. 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, contact the Oracle Support, 9 Appendix: My Oracle Support (MOS)

   Note: For a standalone, there will be only one server in the output.

   Example output for a healthy subsystem:

```
------------------------------------------------------
```

```
ANALYSIS OF SERVER IMF0907-1A STARTED
-----------------------------------------------------

FIPS integrity verification test failed.
08:24:59: STARTING HEALTHCHECK PROCEDURE - SYSCHECK=0
08:24:59: date: 05-17-15, hostname: IMF0907-1A
08:25:00: TPD VERSION: 7.0.1.0.0-86.20.0
FIPS integrity verification test failed.
08:25:00: XMF VERSION: [ 10.1.5.0.0-3.3.0 ]
FIPS integrity verification test failed.
08:25:00: ------------------------------------------------
08:25:01: Checking disk free space
08:25:01:       No disk space issues found
08:25:01: Checking syscheck - this can take a while
08:25:18:       No errors in syscheck modules
08:25:18: Checking statefiles
08:25:19:       Statefiles do not exist
08:25:19: Checking runlevel
08:25:19:       Runlevel is OK (4)
08:25:20: Checking upgrade log
08:25:20:       Install logs are free of errors
08:25:21: Analyzing date
08:25:21:       NTP deamon is running
08:25:21:       IP of NTP server is set
08:25:22:       Server is synchronized with ntp server
08:25:22: Analyzing IDB state
08:25:23:       IDB in START state
08:25:23: Checking IDB database
08:25:24:       iaudit has not found any errors
08:25:24: Analyzing processes
08:25:25:       Processes analysis done
08:25:26: Analysing database synchronization
08:25:26:       Either Database synchronization in healthy state or errors found are non-blocking
08:25:27: Checking weblogic server entry
08:25:27:       Appserver is present
08:25:27: Checking whether ssh dsa key was generated
08:25:28:       dsa key is generated
08:25:28: Checking whether ssh keys are exchanged among machines in frame - this can take a while
08:25:29:       1 mates found: yellow-1B
08:25:35:       Connection to all mates without password was successful
08:25:35: All tests passed. Good job!
08:25:36: ENDING HEALTHCHECK PROCEDURE WITH CODE 0
END OF ANALYSIS OF SERVER IMF0907-1A

-----------------------------------------------------
ANALYSIS OF SERVER IMF0907-1B STARTED
-----------------------------------------------------

VPATH=/tekelec/TKLCmf/runtime:/opt/TKLCmf
PRODPATH=/opt/TKLCcomcol/cm6.4
RUNID=00
PRODID=
08:25:01: STARTING HEALTHCHECK PROCEDURE - SYSCHECK=0
08:25:02: date: 05-17-15, hostname: IMF0907-1B
```

```
08:25:02: TPD VERSION: 7.0.1.0.0-86.20.0
08:25:02: XMF VERSION: [ 10.1.5.0.0-3.3.0 ]
08:25:03: ------------------------------------------------
08:25:03: Checking disk free space
08:25:03:       No disk space issues found
08:25:04: Checking syscheck - this can take a while
08:25:13:       No errors in syscheck modules
08:25:14: Checking statefiles
08:25:14:       Statefiles do not exist
08:25:14: Checking runlevel
08:25:15:       Runlevel is OK (4)
08:25:15: Checking upgrade log
08:25:16:       Install logs are free of errors
08:25:16: Analyzing date
08:25:16:       NTP deamon is running
08:25:17:       IP of NTP server is set
08:25:17:       Server is synchronized with ntp server
08:25:17: Analyzing IDB state
08:25:18:       IDB in START state
08:25:18: Checking IDB database
08:25:19:       iaudit has not found any errors
08:25:19: Analyzing processes
08:25:20:       Processes analysis done
08:25:20: Analysing database synchronization
08:25:21:       Either Database synchronization in healthy state or errors found are non-blocking
08:25:21: Checking weblogic server entry
08:25:22:       Appserver is present
08:25:22: Checking whether ssh dsa key was generated
08:25:22:       dsa key is generated
08:25:23: Checking whether ssh keys are exchanged among machines in frame - this can take a while
08:25:23:       1 mates found: yellow-1A
08:25:30:       Connection to all mates without password was successful
08:25:30: All tests passed. Good job!
08:25:30: ENDING HEALTHCHECK PROCEDURE WITH CODE 0
END OF ANALYSIS OF SERVER IMF0907-1B

IMF0907-1A      TPD: 7.0.1.0.0-86.20.0  XMF: 10.1.5.0.0-3.3.0   0 test(s) failed
IMF0907-1B      TPD: 7.0.1.0.0-86.20.0  XMF: 10.1.5.0.0-3.3.0   0 test(s) failed
```

Example output for a subsystem with errors:

```
END OF ANALYSIS OF SERVER IMF0502-1D
IMF0502-1A TPD: 7.0.1.0.0-86.20.0 XMF: 10.1.5.0.0-3.3.0   1 test(s) failed
IMF0502-1B TPD: 7.0.1.0.0-86.20.0 XMF: 10.1.5.0.0-3.3.0 3 test(s) failed
server on interface yellow-1c is not accessible (ping)
IMF0502-1D TPD: 7.0.1.0.0-86.20.0 XMF: 10.1.5.0.0-3.3.0 0 test(s) failed
Differences between tpd platform versions found!
Differences between message feeder application versions found!
```

7 Mediation Server Major Upgrade

This section provides the procedures for installing the Integrated xDR Platform (Mediation) application.

7.1 Install Operating system

Refer *ReInstall Operating system* to reinstall the machine

7.2 Mediation Server Pre-Install Configuration

This procedure describes how to configure Mediation Server prior to installing the application.

Note: manufacturing must contact Project Manager or Professional Engineer in charge of the project in order to define the server hostnames in case of an extension project as this can't be changed without a complete re-installation of the software.

1) Verify each server healthcheck.

a) Run syscheck. Log in as root on the server that you want to install the application. As root run:

```
# syscheck
```

Review the /var/TKLC/log/syscheck/fail_log file for any errors. Example output of healthy server:

```
Running modules in class disk...
OK
Running modules in class proc...
OK
Running modules in class system...
OK
Running modules in class hardware...
OK
LOG LOCATION: /var/TKLC/log/syscheck/fail_log
```

Resolve each error before you continue with the procedure.

Note: Errors of NTP in syscheck can be ignored at this time, as NTP server is not configured
Note: Step b and c has to be executed if error occur in this step.

b) If the server has an external disk storage attached verify the disks state.

Check to which slot an external storage is connected. As root run:

```
# hpssacli ctrl all show
```

Example output:

```
# hpssacli ctrl all show
Smart Array P410i in Slot 0 (Embedded) (sn: **************)
Smart Array P411 in Slot 1             (sn: ************  )
```

Now show a detailed report for each disk. As root run:

```
# hpssacli ctrl slot=slot_number pd all show
```

where slot_number is the number of the slot received in previous step. All disks must be in OK state. Example output:

```
# hpssacli ctrl slot=2 pd all show
Smart Array P411 in Slot 1
array A
physicaldrive 1:0 (port 1:id 0 , Parallel SCSI, 300 GB, OK)
physicaldrive 1:1 (port 1:id 1 , Parallel SCSI, 300 GB, OK)
physicaldrive 1:2 (port 1:id 2 , Parallel SCSI, 300 GB, OK)
physicaldrive 1:3 (port 1:id 3 , Parallel SCSI, 300 GB, OK)
```

```
physicaldrive 1:4 (port 1:id 4 , Parallel SCSI, 300 GB, OK)
physicaldrive 1:5 (port 1:id 5 , Parallel SCSI, 300 GB, OK)
physicaldrive 1:8 (port 1:id 8 , Parallel SCSI, 300 GB, OK)
array B
physicaldrive 2:0 (port 2:id 0 , Parallel SCSI, 300 GB, OK)
physicaldrive 2:1 (port 2:id 1 , Parallel SCSI, 300 GB, OK)
physicaldrive 2:2 (port 2:id 2 , Parallel SCSI, 300 GB, OK)
physicaldrive 2:3 (port 2:id 3 , Parallel SCSI, 300 GB, OK)
physicaldrive 2:4 (port 2:id 4 , Parallel SCSI, 300 GB, OK)
physicaldrive 2:5 (port 2:id 5 , Parallel SCSI, 300 GB, OK)
physicaldrive 2:8 (port 2:id 8 , Parallel SCSI, 300 GB, OK)
```

c) If the server has a SAN disk storage verify the vdisks are attached to the server.
Check to which vdisk are connected. As root run:

```
# multipath -ll
```

Example of output:

```
mpathc (3600c0ff000daf12a289f0b5501000000) dm-2 HP,P2000 G3 FC
size=3.0T features='1 queue_if_no_path' hwhandler='0' wp=rw
|-+- policy='round-robin 0' prio=130 status=active
| |- 1:0:1:22 sde 8:64  active ready running
| `- 2:0:2:22 sdi 8:128 active ready running
`-+- policy='round-robin 0' prio=10 status=enabled
  |- 1:0:0:22 sdc 8:32  active ready running
  `- 2:0:1:22 sdg 8:96  active ready running
mpathb (3600c0ff000daf029689c0b5501000000) dm-1 HP,P2000 G3 FC
size=3.0T features='1 queue_if_no_path' hwhandler='0' wp=rw
|-+- policy='round-robin 0' prio=130 status=active
| |- 1:0:0:21 sdb 8:16  active ready running
| `- 2:0:1:21 sdf 8:80  active ready running
`-+- policy='round-robin 0' prio=10 status=enabled
  |- 1:0:1:21 sdd 8:48  active ready running
  `- 2:0:2:21 sdh 8:112 active ready running
```

2) Configure the server hostname.

a) Enter the **platcfg menu**.
As root, run:

```
# su - platcfg
```

b) Select **Server Configuration -> Hostname**.

c) Click **Edit**.

d) Enter the server hostname in the standard format: ixpNNNN-MA where:

- N is numeric 0-9
- M is numeric 1-9
- A is alphabetical a-z

Note: be sure to reuse the same hostname as before upgrade.

Note: All the servers in an Mediation subsystem must have the same NNNN designation, and each server, in a subsystem, is identified by its MA designation. Always start host naming within a subsystem with “1a” as MA designation, continue with “1b”, and so on.

e) **Exit** the platcfg menu.

3) Configure the server IP.

a) Enter the **platcfg menu**.
As root, run:

```
# su - platcfg
```

b) Select **Network Configuration -> Network Interfaces**.

c) Depending on the H/W, edit an existing interface or create a new one:

- On RackMount server, select **Edit an Interface**:
  (i) Select **eth01**
  (ii) Press **Edit**
  (iii) Don’t fill **MTU**; don’t change **GRO** option; select **none** for **BootProto** and press **OK**

(iv) Select **No** for the **ethtool** option.
(v) Press **Yes** to configure the IP address
(vi) Select **IPv4**
(vii) Select **Add Address** and press **OK**
(viii) Continue with next step

- On C-Class Blade server, click **Add an Interface**:
  (i) Select **Vlan** and press **OK**
  (ii) Set **3** as **VLAN ID**; select interface **bond0**; press **OK**
  (iii) Don't fill **MTU**; select **none** for **BootProto** and press **OK**
  (iv) Press **Yes** to configure the IP address
  (v) Continue with next step

d) Enter the host's IP address:
- Fill in **IP Address**
- Fill in **Netmask**
- Select **yes** for **Start on Boot**
- Press **OK**

e) Configure the route (gateway)

- On RackMount server:
  Network Configuration->Routing->IPV4->Edit, add route->Default->eth01 and then provide the gateway IP
- On C-Class Blade server:
  Network Configuration->Routing->IPV4->Edit, add route->Default->bond0.3 and then provide the gateway IP

f) **Exit** the platcfg menu.

7.3 Install Mediation Server

This procedure describes how to install the Mediation application on the TPD platform.

Before you perform this procedure, make sure that you have the appropriate Mediation Server ISO file available.

Note: Run this procedure via iLO.

1) **Restoring Mediation Server**
   a) Log in to the Management Server Oracle machine as a root user and execute the script as below
   ```
   # /opt/nsp/scripts/oracle/cmd/restore_ixp_xmf.sh <ip_addr>
   ```
   where ip_addr is the ip address of the Mediation Server on which the restore is to be done.
   Note: This script will ask user to provide password for *admusr* and for *root.*

   b) Once the script is successfully executed, the archive file will be restored in /var/TKLC/backup/ directory.
   Note: The installation procedure takes care of automatically restoring the bulkconfig in /root directory, from the archive file.

2) **Log in and distribute the ISO file**
   a) Open a terminal window and log in as root on the server you that you want to install the Mediation application.
   b) Distribute the media:

- On the c-class blade server download the ISO from the PM&C ISO repository. ISOs are available on the PM&C server under the /var/TKLC/smac/image directory. Store the ISO file to /var/TKLC/upgrade directory.

3) **Validate the installation media**
   a) Enter the **platcfg menu**.
      As root, run:
      ```
      # su - platcfg
      ```
   b) Select **Maintenance -> Upgrade -> Validate Media**.
   c) Select the desired upgrade media and press Enter.
      The validation process must complete without errors. You should receive the following message:
      ```
      CDROM is Valid
      ```
      If any errors are reported during this validation process, then **DO NOT USE** this media to install the application.

4) **Install the application**
   a) From platcfg menu select **Maintenance -> Upgrade -> Initiate Upgrade**.
      When the installation process is complete, the server restarts automatically.
   b) If the ISO file was copied to the server, then remove this file to save disk space.
      As root, run:
      ```
      # rm -f /var/TKLC/upgrade/iso_file
      ```
      where iso_file is the absolute path of the ISO image, which includes the name of the image.

      Information note: At this step, for BL460 G6 servers, the default gateway is not set, thus, remote access is only possible though the iLO (the gateway will be set during Customer integration).

5) **Analyze the installation log**
   Review the installation log (/var/TKLC/log/upgrade/upgrade.log) for any errors.
   If there are any errors, contact the Oracle PIC Design Support Team

6) **Set VIP**
   As cfguser, run on 1A server only:
   ```
   #    setSSVIP <vip IP address>
   ```

7.4 Mediation Server Post-Install Healthcheck

This procedure describes how to run the server health check after the application has been installed on the server.

1) Log in on the server that you want to analyze.
2) As cfguser, run:
   ```
   $ analyze_server.sh -p
   ```

   The script gathers the health check information from the server. 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_server.sh
12:40:30: STARTING HEALTHCHECK PROCEDURE - SYSCHECK=0
12:40:30: date: 08-22-11, hostname: ixp8888-1a
12:40:30: TPD VERSION: 4.2.4-70.90.0
12:40:30: IXP VERSION: [ 10.0.0-64.2.0 ]
12:40:30: XDR BUILDERS VERSION: [ 10.0.0-37.1.0 ]
12:40:30: ------------------------------------------------
12:40:31: Analyzing server record in /etc/hosts
12:40:31: Server ixp8888-1a properly reflected in /etc/hosts file
12:40:31: Analyzing IDB state
12:40:31: IDB in START state
12:40:31: Analyzing shared memory settings
12:40:31: Shared memory set properly
.....
12:43:02: All tests passed!
12:43:02: ENDING HEALTHCHECK PROCEDURE WITH CODE 2
```

Example of a successful test:

```
12:40:31: Analyzing server record in /etc/hosts
12:40:31: Server ixp8888-1a properly reflected in /etc/hosts file
```

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
```

Note: if the following error shows up during server analysis, it can be simply ignored, as the alarm will be cleared after Integrate Customer Network step (see below) will have been executed.

```
12:21:48: >>> Error: Alarm raised for tpdServerUpgradePendingAccept...
12:21:48: >>> Suggestion: Check /var/TKLC/log/syscheck/fail_log...
```

In any other cases, after attempting the suggested resolution, if the test fails again, then contact Oracle Appendix: My Oracle Support (MOS).

7.5 Integrate Customer Network

This procedure describes how to integrate the Mediation subsystem post-manufacturing customer network.
This procedure uses the /root/bulkconfig file as an input for the customer network integration. The bulkconfig file should already be available from the restored backup.
This procedure is run from the iLO.

1) Update the bulkconfig file (if IP addresses need to changed)

a) Log in on the iLO of any Mediation Server in the Mediation subsystem that you want to reconfigure.
b) Update the /root/bulkconfig file with the customer IP addresses and timezone.

2) Run the customer network integration

a) Run the Mediation subsystem customer network integration script. As root, run:

```
# bc_customer_integration.sh
```

b) Confirm this operation.
Enter yes.
A prompt for the root password appears.

c) Provide the root password.
The servers reboot.

3) Run the post-integration settings

Note: The Mediation Server has new IP address. The previous addresses are no longer accessible.

a) Run post-integration settings. As root, run:

```
# bc_customer_integration.sh --post
```

Note: The key exchange operation is part of this script.
A prompt for the root and cfguser passwords appears.

b) Provide the appropriate passwords.

c) When the script is complete, check the terminal output for any errors. If the error occurs, contact the Oracle Support, 9 Appendix: My Oracle Support (MOS)

Note: at this step, the remote directories (used by CSV streaming feeds, for example) locally mounted before the upgrade, are automatically remounted. But, and because this is not a standard configuration, any directory (outside of PDU directories) shared by an upgraded server, is not shared again (refer to CSV streaming feeds).

4) Discover the Mediation Servers and apply configuration

a) Open a web browser and log in on the NSP application interface.
b) Open the Centralized Configuration application.
c) Navigate to Equipment Registry.
d) Open Sites and open the site; then open IXP.
e) Select the subsystem; select the first server and click Discover Applications in the toolbar.
f) Proceed as well for each server of the subsystem.
g) Navigate to Mediation.
h) Open Sites and open the site; then, open IXP.
i) Right-click the subsystem and select Apply changes...
j) Click Next and Next.
k) Click Apply Changes and confirm.
l) When change is complete, verify there is no error on the result page.

7.6 Install xDR Builders

This procedure describes how to trigger the xDR Builders installation on the Mediation subsystem from the CCM.

1) Associate the xDR Builders RPM with the Mediation subsystem

m) Open a web browser and log in as TklcSrv on the NSP application interface.
n) Open the Upgrade Utility.
o) Click View Builder RPM Status in the left tree. A list of the Mediation subsystems appears.
p) Select one or more Mediation subsystems and click Associate RPM Package. A list of Builder RPMs that are uploaded in NSP appears.
q) Select the appropriate xDR Builder RPM and click Associate.
If the association is successful, then the list of the subsystems is updated. The RPM Name column contains the new RPM package name and Association Status is marked as OK. If the association fails contact the Oracle Support, 9 Appendix: My Oracle Support (MOS)

2) Apply the configuration to the Mediation subsystem

a) Logout from TklcSrv and login with any other user with sufficient privilege for Centralized Configuration application.
b) Open the Centralized Configuration application.
c) Navigate to Mediation.
d) Open Sites and open the site; then, open IXP.
e) Right-click the subsystem and select Apply changes...
f) Click Next.
g) Click Apply Changes (***WARNING***: ***Not as TklcSrv user***).
h) When change is complete, verify there are no errors on the result page.

3) Install the xDR Builders RPM on Mediation Server

a) Return to the main page of the NSP application interface.
b) Open the Upgrade Utility.
c) Click View Builder RPM Status in the left tree.
The available Mediation subsystem with their respective RPM Associate Status and Install Status appears.
d) Before initiating the builder installation, make sure the Builder RPM that you want to install on the Mediation subsystem is associated with the Mediation subsystem as indicated by RPM Name **column** and Association Status marked as OK. Also, Install Status should contain either - or No Started.
e) Select one or more Mediation subsystems and click Install RPM Package. If the installation is successful, the Install status changes to OK. If the installation fails contact the Oracle Appendix: My Oracle Support (MOS).

4) Sessions upgrade

a) Click **Upgrade Session** link on left tree, this display all the sessions to be upgraded due to upgrade of associated dictionary.
b) Select one or more session(s) (use ctrl key for selecting multiple sessions) with **Session Upgrade Status** as either **Need Upgrade** or **Error** and choose Upgrade icon from tool bar.
You may use available quick filter options on this list page to filter out sessions which you want to upgrade in one go.
Caution: Do not choose more than 5 sessions to be upgraded in one go.
Once upgrade is initiated for a session, its **Upgrade Status** will become **Upgrade Initiated**.
c) Once session is upgraded its **Upgrade Status** will become **Upgraded Successfully**.

5) Re-Sync the ProTraq Configurations

a) Open a web browser and log in to the NSP application interface tekelec user.

b) Navigate to ProTraq Application.

c) Re-Sync all ProTraq Configurations by selecting each configuration and click “Synchronize and Activate Configuration” from the Configurations List Toolbar.

7.7 Mediation Subsystem Healthcheck

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

1) Open a terminal window and log in on any Mediation Server in the Mediation subsystem you want to analyze.
2) As **cfguser**, run:
```
$ analyze_subsystem.sh
```
The script gathers the healthcheck 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 ixp0907-1a STARTED
--------------------------------------------------

09:39:25: STARTING HEALTHCHECK PROCEDURE - SYSCHECK=0
09:39:25: date: 05-17-15, hostname: ixp0907-1a
09:39:25: TPD VERSION: 7.0.1.0.0-86.20.0
09:39:26: IXP VERSION: [ 10.1.5.0.0-3.2.0 ]
09:39:26: XDR BUILDERS VERSION: package TKLCxdrbuilders is not installed
09:39:27: ------------------------------------------------
09:39:27: Analyzing server record in /etc/hosts
09:39:28:       Server ixp0907-1a properly reflected in /etc/hosts file
09:39:28: Analyzing IDB state
09:39:29:       IDB in START state
09:39:29: Analyzing shared memory settings
09:39:30:       Shared memory set properly
09:39:30: Analyzing IXP Licence
09:39:31:       Ixp Licence Valid
09:39:31: Analyzing mount permissions
09:39:32:       Writing enabled for pdu_1
09:39:32:       Writing enabled for pdu_2
09:39:33:       All mount permissions set properly
09:39:33: Analyzing date
09:39:33:       NTP deamon is running
09:39:34:       IP of NTP server is set
09:39:34: Checking CPU usage
09:39:34:       CPU usage check done
09:39:35: Running iaudit
09:39:36:       iaudit did not find any errors
09:39:37: Analyzing synchronization of server
09:39:38:       Role of server is StbMaster
09:39:38:       ActMaster server - ixp0907-1b
09:39:39:       StbMaster server - ixp0907-1a
09:39:40:       Server synchronizating properly
09:39:40: Analyzing NSP servers settings
09:39:41:       nsp_primary reflected in /etc/hosts
09:39:41:       Ping to nsp_primary OK
09:39:42:       nsp_secondary reflected in /etc/hosts
09:39:42:       Ping to nsp_secondary OK
09:39:42:       nsp_oracle reflected in /etc/hosts
09:39:43:       Ping to nsp_oracle OK
09:39:43:       Oracle on nsp_oracle accessible
09:39:44: Analyzing disk usage
09:39:44:       Space not exceeded
09:39:45: Analyzing JMX agent properties
09:39:45:       Instance ID of JMX agent OK
09:39:47:       IxpMbean [ application type IXP+2 ] located
09:39:47: Checking syscheck - this can take a while
09:39:49:       No active alarms
09:39:50: Checking services
09:39:50:       NFS service is running
09:39:51:       Portmap service is running
09:39:51: Analyzing ssh keys
09:39:51:       Ping to ixp0907-1a OK
09:39:52:       Ping to ixp0907-1b OK
09:39:52:       Ping to ixp0907-1c OK
09:39:52:       Ping to ixp0907-1d OK
09:39:53:       All keys for cfguser accounts exchanged
09:39:53: Analyzing DaqServer table in IDB
09:39:54:       Server ixp0907-1a reflected in DaqServer table
```

```
09:39:55:       Server ixp0907-1b reflected in DaqServer table
09:39:55:       Server ixp0907-1c reflected in DaqServer table
09:39:56:       Server ixp0907-1d reflected in DaqServer table
09:39:58:       VIP is set in DaqSubSystem table
09:39:59:       VIP is set in HaVipDef table
09:39:59:       Ping to 10.250.70.115 OK
09:40:00:       VIP is accessible
09:40:00: Analyzing processes
09:40:29: >>> Error: There are too many Dataflow processings (18). Should be 10 at most
09:40:29: >>> Suggestion: Dataflows should be redistributed to other servers
09:40:30:       Processes analysis done
09:40:30: Analyzing Data Feed status
09:40:31:       Data Feed analysis OK
09:40:31:       pdu_1 found in /etc/exports
09:40:32:       pdu_2 found in /etc/exports
09:40:32: Analyzing bulkconfig content
09:40:33:       BulkConfig content is consistent
09:40:33: All tests passed!
09:40:33: ENDING HEALTHCHECK PROCEDURE WITH CODE 0
END OF ANALYSIS OF SERVER ixp0907-1a

--------------------------------------------------
ANALYSIS OF SERVER ixp0907-1b STARTED
--------------------------------------------------

09:40:38: STARTING HEALTHCHECK PROCEDURE - SYSCHECK=0
09:40:39: date: 05-17-15, hostname: ixp0907-1b
09:40:39: TPD VERSION: 7.0.1.0.0-86.20.0
09:40:39: IXP VERSION: [ 10.1.5.0.0-3.2.0 ]
09:40:40: XDR BUILDERS VERSION: [ 10.1.5.0.0-3.2.0 ]
09:40:40: ------------------------------------------------
09:40:41: Analyzing server record in /etc/hosts
09:40:41:       Server ixp0907-1b properly reflected in /etc/hosts file
09:40:41: Analyzing IDB state
09:40:42:       IDB in START state
09:40:43: Analyzing shared memory settings
09:40:43:       Shared memory set properly
09:40:44: Analyzing IXP Licence
09:40:44:       Ixp Licence Valid
09:40:45: Analyzing mount permissions
09:40:45:       Writing enabled for pdu_1
09:40:45:       Writing enabled for pdu_2
09:40:46:       All mount permissions set properly
09:40:46: Analyzing date
09:40:47:       NTP deamon is running
09:40:47:       IP of NTP server is set
09:40:47: Checking CPU usage
09:40:48: >>> Warning: Process IxpBuild -id 43347 [ pid: 6637 ] is taking 96.3% of CPU
09:40:48:       CPU usage check done
09:40:49: Running iaudit
09:40:50:       iaudit did not find any errors
09:40:51: Analyzing synchronization of server
09:40:52:       Role of server is ActMaster
09:40:52:       ActMaster server - ixp0907-1b
09:40:53:       StbMaster server - ixp0907-1a
09:40:55:       Server synchronizating properly
09:40:56: Analyzing NSP servers settings
09:40:56:       nsp_primary reflected in /etc/hosts
09:40:56:       Ping to nsp_primary OK
09:40:57:       nsp_secondary reflected in /etc/hosts
09:40:57:       Ping to nsp_secondary OK
09:40:57:       nsp_oracle reflected in /etc/hosts
09:40:58:       Ping to nsp_oracle OK
09:40:58:       Oracle on nsp_oracle accessible
09:40:59: Analyzing disk usage
09:40:59:       Space not exceeded
```

```
09:41:00: Analyzing JMX agent properties
09:41:00:       Instance ID of JMX agent OK
09:41:01:       IxpMbean [ application type IXP+2 ] located
09:41:02: Checking syscheck - this can take a while
09:41:04:       No active alarms
09:41:05: Checking services
09:41:05:       NFS service is running
09:41:05:       Portmap service is running
09:41:06: Analyzing ssh keys
09:41:06:       Ping to ixp0907-1a OK
09:41:07:       Ping to ixp0907-1b OK
09:41:07:       Ping to ixp0907-1d OK
09:41:07:       Ping to ixp0907-1c OK
09:41:08:       All keys for cfguser accounts exchanged
09:41:08: Analyzing DaqServer table in IDB
09:41:09:       Server ixp0907-1a reflected in DaqServer table
09:41:09:       Server ixp0907-1b reflected in DaqServer table
09:41:10:       Server ixp0907-1d reflected in DaqServer table
09:41:11:       Server ixp0907-1c reflected in DaqServer table
09:41:13:       VIP is set in DaqSubSystem table
09:41:14:       VIP is set in HaVipDef table
09:41:14:       Ping to 10.250.70.115 OK
09:41:14:       VIP is accessible
09:41:15: Analyzing processes
09:41:28: >>> Warning: Process IxpOperate55919 restarted more then 5 times (29)
09:41:35: >>> Error: There are too many Dataflow processings (13). Should be 10 at most
09:41:35: >>> Suggestion: Dataflows should be redistributed to other servers
09:41:35:       Processes analysis done
09:41:36: Analyzing Data Feed status
09:41:37:       Data Feed analysis OK
09:41:37:       pdu_1 found in /etc/exports
09:41:38:       pdu_2 found in /etc/exports
09:41:38: Analyzing bulkconfig content
09:41:38:       BulkConfig content is consistent
09:41:39: All tests passed!
09:41:39: ENDING HEALTHCHECK PROCEDURE WITH CODE 0
END OF ANALYSIS OF SERVER ixp0907-1b

-------------------------------------------------
ANALYSIS OF SERVER ixp0907-1c STARTED
-------------------------------------------------

09:41:44: STARTING HEALTHCHECK PROCEDURE - SYSCHECK=0
09:41:44: date: 05-17-15, hostname: ixp0907-1c
09:41:45: TPD VERSION: 7.0.1.0.0-86.20.0
09:41:45: IXP VERSION: [ 10.1.5.0.0-3.2.0 ]
09:41:46: XDR BUILDERS VERSION: [ 10.1.5.0.0-3.2.0 ]
09:41:46: ------------------------------------------------
09:41:47: Analyzing server record in /etc/hosts
09:41:47:       Server ixp0907-1c properly reflected in /etc/hosts file
09:41:47: Analyzing IDB state
09:41:48:       IDB in START state
09:41:49: Analyzing shared memory settings
09:41:49:       Shared memory set properly
09:41:50: Analyzing IXP Licence
09:41:50:       Ixp Licence Valid
09:41:51: Analyzing date
09:41:51:       NTP deamon is running
09:41:52:       IP of NTP server is set
09:41:52: Checking CPU usage
09:41:52:       CPU usage check done
09:41:53: Running iaudit
09:41:54:       iaudit did not find any errors
09:41:55: Analyzing synchronization of server
09:41:56:       Role of server is Slave
09:41:57:       ActMaster server - ixp0907-1b
```

```
09:41:58:       StbMaster server - ixp0907-1a
09:41:59:       Server synchronizating properly
09:41:59: Analyzing NSP servers settings
09:41:59:       nsp_primary reflected in /etc/hosts
09:42:00:       Ping to nsp_primary OK
09:42:00:       nsp_secondary reflected in /etc/hosts
09:42:01:       Ping to nsp_secondary OK
09:42:01:       nsp_oracle reflected in /etc/hosts
09:42:01:       Ping to nsp_oracle OK
09:42:02:       Oracle on nsp_oracle accessible
09:42:02: Analyzing disk usage
09:42:03:       Space not exceeded
09:42:03: Analyzing JMX agent properties
09:42:03:       Instance ID of JMX agent OK
09:42:05:       IxpMbean [ application type IXP+2 ] located
09:42:05: Checking syscheck - this can take a while
09:42:08:       No active alarms
09:42:08: Analyzing ssh keys
09:42:09:       Ping to ixp0907-1a OK
09:42:09:       Ping to ixp0907-1b OK
09:42:09:       Ping to ixp0907-1c OK
09:42:10:       Ping to ixp0907-1d OK
09:42:10:       All keys for cfguser accounts exchanged
09:42:11: Analyzing DaqServer table in IDB
09:42:11:       Server ixp0907-1a reflected in DaqServer table
09:42:12:       Server ixp0907-1b reflected in DaqServer table
09:42:13:       Server ixp0907-1c reflected in DaqServer table
09:42:14:       Server ixp0907-1d reflected in DaqServer table
09:42:16:       VIP is set in DaqSubSystem table
09:42:16:       VIP is set in HaVipDef table
09:42:17:       Ping to 10.250.70.115 OK
09:42:17:       VIP is accessible
09:42:17: Analyzing processes
09:42:36: >>> Error: There are too many Dataflow processings (13). Should be 10 at most
09:42:37: >>> Suggestion: Dataflows should be redistributed to other servers
09:42:37:       Processes analysis done
09:42:37: Analyzing Data Feed status
09:42:39:       Data Feed analysis OK
09:42:39: Analyzing bulkconfig content
09:42:39:       BulkConfig content is consistent
09:42:40: All tests passed!
09:42:40: ENDING HEALTHCHECK PROCEDURE WITH CODE 0
END OF ANALYSIS OF SERVER ixp0907-1c

-----------------------------------------------------
ANALYSIS OF SERVER ixp0907-1d STARTED
-----------------------------------------------------

09:42:44: STARTING HEALTHCHECK PROCEDURE - SYSCHECK=0
09:42:45: date: 05-17-15, hostname: ixp0907-1d
09:42:45: TPD VERSION: 7.0.1.0.0-86.20.0
09:42:46: IXP VERSION: [ 10.1.5.0.0-3.2.0 ]
09:42:46: XDR BUILDERS VERSION: [ 10.1.5.0.0-3.2.0 ]
09:42:47: -----------------------------------------------
09:42:47: Analyzing server record in /etc/hosts
09:42:47:       Server ixp0907-1d properly reflected in /etc/hosts file
09:42:48: Analyzing IDB state
09:42:48:       IDB in START state
09:42:49: Analyzing shared memory settings
09:42:49:       Shared memory set properly
09:42:50: Analyzing IXP Licence
09:42:50:       Ixp Licence Valid
09:42:51: Analyzing date
09:42:51:       NTP deamon is running
09:42:52:       IP of NTP server is set
09:42:52: Checking CPU usage
```

```
09:42:52:       CPU usage check done
09:42:53: Running iaudit
09:42:54:       iaudit did not find any errors
09:42:55: Analyzing synchronization of server
09:42:56:       Role of server is Slave
09:42:56:       ActMaster server - ixp0907-1b
09:42:57:       StbMaster server - ixp0907-1a
09:42:58:       Server synchronizating properly
09:42:59: Analyzing NSP servers settings
09:42:59:       nsp_primary reflected in /etc/hosts
09:42:59:       Ping to nsp_primary OK
09:43:00:       nsp_secondary reflected in /etc/hosts
09:43:00:       Ping to nsp_secondary OK
09:43:00:       nsp_oracle reflected in /etc/hosts
09:43:01:       Ping to nsp_oracle OK
09:43:01:       Oracle on nsp_oracle accessible
09:43:02: Analyzing disk usage
09:43:02:       Space not exceeded
09:43:02: Analyzing JMX agent properties
09:43:03:       Instance ID of JMX agent OK
09:43:04:       IxpMbean [ application type IXP+2 ] located
09:43:05: Checking syscheck - this can take a while
09:43:07:       No active alarms
09:43:07: Analyzing ssh keys
09:43:08:       Ping to ixp0907-1a OK
09:43:08:       Ping to ixp0907-1b OK
09:43:08:       Ping to ixp0907-1d OK
09:43:09:       Ping to ixp0907-1c OK
09:43:09:       All keys for cfguser accounts exchanged
09:43:09: Analyzing DaqServer table in IDB
09:43:10:       Server ixp0907-1a reflected in DaqServer table
09:43:11:       Server ixp0907-1b reflected in DaqServer table
09:43:12:       Server ixp0907-1d reflected in DaqServer table
09:43:12:       Server ixp0907-1c reflected in DaqServer table
09:43:15:       VIP is set in DaqSubSystem table
09:43:15:       VIP is set in HaVipDef table
09:43:15:       Ping to 10.250.70.115 OK
09:43:16:       VIP is accessible
09:43:16: Analyzing processes
09:43:21:       Processes analysis done
09:43:22: Analyzing Data Feed status
09:43:23:       Data Feed analysis OK
09:43:23: Analyzing bulkconfig content
09:43:24:       BulkConfig content is consistent
09:43:24: All tests passed!
09:43:25: ENDING HEALTHCHECK PROCEDURE WITH CODE 0
END OF ANALYSIS OF SERVER ixp0907-1d

ixp0907-1a      TPD: [ 7.0.1.0.0-86.20.0 ]      IXP: [ 10.1.5.0.0-3.2.0 ]        XB: None
0 test(s) failed
ixp0907-1b      TPD: [ 7.0.1.0.0-86.20.0 ]      IXP: [ 10.1.5.0.0-3.2.0 ]        XB: [
10.1.5.0.0-3.2.0 ]       0 test(s) failed
ixp0907-1c      TPD: [ 7.0.1.0.0-86.20.0 ]      IXP: [ 10.1.5.0.0-3.2.0 ]        XB: [
10.1.5.0.0-3.2.0 ]       0 test(s) failed
ixp0907-1d      TPD: [ 7.0.1.0.0-86.20.0 ]      IXP: [ 10.1.5.0.0-3.2.0 ]        XB: [
10.1.5.0.0-3.2.0 ]       0 test(s) failed
```

Example of a successful test:

```
10:24:08: Analyzing DaqServer table in IDB
10:24:08:  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
```

7.8 Upgrade DTO Package

Whenever you will install or upgrade Mediation Server to a new version you need to keep DataWarehouse compatible. You need to upgrade the DTO package there. DataWarehouse is being used as an external xDR Storage.
The DataWarehouse is expected to have installed Oracle database and database instance with created login, password, data table space with name DATA_CDR and index table space with name DATA_IND. Such server must be already installed with DTO schema and package.
Such DataWarehouse need to be already added to NSP Centralized Configuration and configured.
This procedure describes how to upgrade DTO package on the DataWarehouse. This procedure doesn't describe how to install the DataWarehouse.

Note: If the customer refuses to provide you the SYS user password, you can provide him the files CreateDTOPkgS.sql and CreateDTOPkgB.sql to the customer DBA in order for him to proceed with the upgrade himself.

1) Check DTO package version

Note: Check the previous DTO package version that is installed on the DataWarehouse.

a) Open a terminal window and log in to ActMaster server of the Mediation subsystem from which this DataWarehouse server is reachable.
As **cfguser** run:

```
$ iqt -L DatawareHouse
```

Note down Login, Password, Host IP address and Instance name of the DataWarehouse.

b) Connect to the DataWarehouse.
As **cfguser** run:

```
$ sqlplus user/password@ip_address/instance
```

Where *user*, *password*, *ip_address* and *instance* are the values received in previous step.

c) Check the DTO package version:

```
SQL> select pkg_dto.getversion from dual;
```

If the DTO package upgrade is needed continue with the next step. Quit the SQL console.

```
SQL> quit
```

2) Upgrade DTO package

a) As **cfguser** from any server of the Mediation subsystem run:

```
$ cd_oracle_utils
$ UpgradeDTOPkg.sh DWH_connection SYS_connection DWH_user
```

where:

- *DWH_connection* is the Oracle DWH connection string (*user*/*password*@*ip_address*/*instance*)
- *SYS_connection* is the Oracle SYS connection string (SYS/*SYS_password*@*ip_address*/*instance*)
  Note: refer to TR006061 for the default value for the SYS password.
- *DWH_user* is the DWH user name (optional, default value: 'IXP')

Take care the user and password are case sensitive

3) Verify DTO package upgrade

Note: Check External DataWarehouse if the DTO package has been successfully upgraded.

a) Connect to the DataWarehouse.
As **cfguser** run:

```
$ sqlplus user/password@ip_address/instance
```

Where *user*, *password*, *ip_address* and *instance* are the values received in the first step.

b) Check the DTO package version :

```
SQL> select pkg_dto.getversion from dual;
```

Check if version of DTO package increased after upgrade. Quit the SQL console.

```
SQL> quit
```

7.9 Mediation Server Post-Integration Configuration (Optional)

This section contains various optional post-integration configuration procedures.

7.9.1 CSV streaming feeds and DataBroker

This procedure describes how to integrate a DataBroker server into an Mediation subsystem. Data Broker streaming feeds write files on customer servers providing NFS shared directories.
That same procedure is to be followed to integrate a CSV server into an Mediation subsystem; such a server is used by the CSV streaming feed feature to store CSV files on a server that is not part of an Mediation subsystem.
Note: For the CSV streaming feed feature, instead of using a dedicated server provided by the customer, it is possible to use a PDU server which is part of the current Mediation subsystem or which is part of another Mediation subsystem (as long as all the servers are in the same LAN).
Note: The following procedures describe how to setup shared directories using the NFS v3 protocol; it may be possible to use NFS v4, but the commands to execute are not described here (you should refer to linux and NFS documentation to learn how to use NFS v4 protocol).

1) Configure the shared directory on the sharing server
   a) Select an existing directory or already mounted local file system in which the exported files will be stored.
      Note: Be sure the shared directory has read/write/execute access rights for Mediation's `cfguser` user. If the user `cfguser` also exists on the sharing server, with the same UID as on the Mediation servers, create the shared directory as `cfguser` (or mount the local file system in a directory owned by `cfguser`); in any other case, set RWX access rights on the shared directory for everybody.
   b) Update the exports file. As root, execute:
      If the server uses a versioning system like rcstool, first check out the file:

```
# rcstool co /etc/exports
```

      Edit /etc/exports and add this line (<*path_to_share*> is the directory or path to file system to share, <*ip_ixp_export*> is the IP address of an Mediation Server); add as many lines as Mediation Servers that will remotely access this shared directory
      <*path_to_share*> <*ip ixp export*>(rw,sync,anonuid=-1)
      If needed, check in the file:

```
# rcstool ci /etc/exports
```

   c) Restart the NFS services. As root execute:

```
# chkconfig --levels 345 nfs on
# service rpcbind restart
# service nfs restart
```

2) Mount the shared directory on Mediation Server side
   Note: These steps are to be executed on each Mediation Server that will remotely access the shared directory of the sharing server.
   a) Create the mount point. As root, execute:

```
# mkdir /var/TKLC/ixp/StoreExport
```

```
# chown cfguser:cfg /var/TKLC/ixp/StoreExport
```

b) Update the fstab file. As root, execute:

```
# rcstool co /etc/fstab
```

Edit /etc/fstab and add this line (<*ip_server_nfs*> is the IP address of the sharing server):
<ip server nfs>:<*path_to_share*> /var/TKLC/ixp/StoreExport nfs rw,rsize=32768,wsize=32768,soft 0 0

```
# rcstool ci /etc/fstab
# mount --all
```

c) Restart the NFS services. As root execute:

```
# chkconfig --levels 345 nfs on
# service rpcbind restart
# service nfs restart
```

Note: The firewall must be disabled on the shared CSV server. If the CSV server is maintained by Oracle(Tekelec) then following steps must be performed to disable the firewall as root user

a) chkconfig --levels 345 iptables off
b) service iptables stop

If the CSV server is not maintained by Oracle then firewall must be disabled or configured to allow the nfs connections.

7.9.2 Delivery Network Failure and Recovery (DataBroker)

This application shall be available 24 hours a day, seven days per week, except for minimal downtime due to planned production maintenance.

Note: Even if this procedure is applicable to all the Mediation servers, it is not recommended to apply it for other purposes than DataBroker streaming feed, for which only it has been tested.

Configure IDB to extend 24 hours of xDRs can be kept in the DTS buffers. As cfguser on Mediation Server primary , run:

```
# IxpExtendDataBroker24hrs.sh
```

Result with 3 Mediation servers:

```
Testing host is primary ..................
Host is primary
Testing user is cfguser ..................
User is cfguser
Update DtsBlockPart - KeepTime to 24 hours from ixp7601-1b    === changed 1 records ===
Update DtsBlockPart - KeepTime to 24 hours from ixp7601-1c    === changed 1 records ===
Update DtsBlockPart - KeepTime to 24 hours from ixp7601-1a    === changed 1 records ===
```

8 Appendix : Knowledge Base Procedures

8.1 ReInstall Operating system

Estimation: 30 mins (In case of blade server)
50 mins (in case of rackmount server)

Refer section **3.1 Operating System Installtion** from PIC 10.1.5 Installation Guide , E56065

Resize /var/TKLC partition

Note: Resize of /var/TKLC partition should be done only when required specially in case of management server where the size of ISOs is large.

Once the OS is install type the df -kh command to check the space in /var/TKLC partition.
Example:

```
[root@hostname1357185304]# df -kh
```

```
Filesystem            Size  Used Avail Use% Mounted on
/dev/mapper/vgroot-plat_root
                      992M  595M  347M  64% /
/dev/mapper/vgroot-plat_tmp
                      992M   34M  908M   4% /tmp
/dev/mapper/vgroot-plat_var
                      992M  845M   97M  90% /var
/dev/mapper/vgroot-plat_var_tklc
                      3.9G  442M  3.3G  12% /var/TKLC
/dev/mapper/vgroot-plat_usr
                      3.9G  2.1G  1.7G  55% /usr
```

If space is less than 7.9 G then in order to resize /var/TKLC partition you need to be perform below mentioned steps on all servers IPM (blade and RMS) before installing applications/thirdparty product :

- init 2
- umount /dev/mapper/vgroot-plat_var_tklc
- lvextend -L +4G /dev/mapper/vgroot-plat_var_tklc
- e2fsck -f /dev/mapper/vgroot-plat_var_tklc
- resize2fs -p /dev/mapper/vgroot-plat_var_tklc

reboot

8.2 Remount NSP LUN(C-class blades only)

This procedure describes different steps to follow to remount the logical volumes from MSA2012fc to Management Server of one box server or Oracle server

Prerequisite:

The Management Server one box server/ Oracle server configuration must be IPM, with network and other system parameters set, the same way as for a fresh install.

Password of platcfg user must be already known.

1. **Login**
   a) Login as **root** user on the Management Server for onebox/ Oracle server.

2. **Retrieve LUN numbers of logical volumes**
   a) As root run:

```
# multipath -ll
```

The result will display 2 blocks of lines starting with “mapth0” and “mapth1”

Example:

```
mpath0 (3600c0ff000d5809fb180cc4901000000) dm-6 HP,MSA2012fc
[size=70G][features=0][hwhandler=0]
\_ round-robin 0 [prio=1][active]
\_ 0:0:0:37 sdc 8:32  [active][ready]
\_ round-robin 0 [prio=1][enabled]
\_ 1:0:0:37 sdd 8:48  [active][ready]
mpath1 (3600c0ff000d579384780cc4901000000) dm-5 HP,MSA2012fc
[size=419G][features=0][hwhandler=0]
```

```
\_ round-robin 0 [prio=1][active]
\_ 0:0:1:36 sda 8:0   [active][ready]
\_ round-robin 0 [prio=1][enabled]
\_ 1:0:1:36 sdb 8:16  [active][ready]
mpath2 (3600c0ff000d579384780cc4901000000) dm-5 HP,MSA2012fc
[size=139G][features=0][hwhandler=0]
\_ round-robin 0 [prio=1][active]
\_ 0:0:1:35 sde 8:64   [active][ready]
\_ round-robin 0 [prio=1][enabled]
\_ 1:0:1:35 sdf 8:80  [active][ready]
```

b) The lun# is the 4th number in the 4th and 6th line of each block, here in the example **37** for mpath0, **36** for mpath1 and **35** for mpath2

Lun# for REDO is the one in the block containing **[size=70G]** (37 in example)

Lun# for DATA is the one in the block containing **[size=419G]**(36 in example)

Lun# for BACKUP is the one in the block containing **[size=139G]**(35 in example)

3. Recreate mapping to SAN REDO volume

a) Execute the following command, replacing lun# (37 in example), by the one retrieved for REDO. As root run:

```
root# tpdProvd --client --subsystem=TPD::SOAP::Storage
addVolumeInfo lun 37 name nsp_redo_vol mount
/opt/oracle/ctrl1
```

b) When prompted for Login on Remote with the user platcfg, enter password for platcfg user . Refer to Teklec Default Passwords ,TR006061 to get the default value.

c) After completion, the output must show:

```
<result>
1
</result>
```

4. Recreate mapping to SAN DATA volume

a) Execute the following command, replacing lun# (36 in example), by the one retrieved for DATA. As root run:

```
# tpdProvd --client --subsystem=TPD::SOAP::Storage
addVolumeInfo lun

36 name nsp_data_vol mount /opt/oracle/oradata
```

b) When prompted for **Login on Remote** with the user `platcfg`, enter password for platcfg

user from the Teklec Default Passwords ,TR006061.

c) After completion, the output must show:

```
<result>

1

</result>
```

5 Recreate mapping to SAN BACKUP volume

a) Execute the following command, replacing lun# (35 in example), by the one retrieved for DATA. As root run:

```
# tpdProvd --client --subsystem=TPD::SOAP::Storage
addVolumeInfo lun

35 name nsp_backup_vol mount /opt/oracle/backup
```

b) when prompted for **Login on Remote** with the user `platcfg`, enter password for platcfg user from the Teklec Default Passwords ,TR006061

c) After completion, the output must show:

```
<result>

1

</result>
```

6. Check the volume names

a) As root run:

```
root# multipath -ll
```

b) It will display 3 blocks of lines starting with **mapth0**, **mapth1** and **mpath2**
Example:

```
nsp_redo_vol (3600c0ff000d5809fb180cc4901000000) dm-6 HP,MSA2012fc

[size=70G][features=0][hwhandler=0]

\_ round-robin 0 [prio=1][active]

\_ 0:0:0:37 sdc 8:32  [active][ready]

\_ round-robin 0 [prio=1][enabled]

\_ 1:0:0:37 sdd 8:48  [active][ready]

nsp_data_vol (3600c0ff000d579384780cc4901000000) dm-5 HP,MSA2012fc

[size=419G][features=0][hwhandler=0]

\_ round-robin 0 [prio=1][active]

\_ 0:0:1:36 sda 8:0   [active][ready]

\_ round-robin 0 [prio=1][enabled]

\_ 1:0:1:36 sdb 8:16  [active][ready]

nsp_backup_vol (3600c0ff000d579384780cc4901000000) dm-5 HP,MSA2012fc

[size=139G][features=0][hwhandler=0]
```

```
\_ round-robin 0 [prio=1][active]

\_ 0:0:1:35 sde 8:64   [active][ready]

\_ round-robin 0 [prio=1][enabled]

\_ 1:0:1:35 sdf 8:80   [active][ready]
```

c) It should no longer show **mapth0**, **mpath1** and **mpath2**

7. **Check the file system**

a) As root run:

```
# fsck /dev/mapper/nsp_redo_vol
# fsck /dev/mapper/nsp_data_vol
# fsck /dev/mapper/nsp_backup_vol
```

8. **Mount the volumes**

a) As root run:

```
# mount -a
```

9. **Verify the volumes**

a) Actual values may change from example below:

df –h

```
Filesystem           Size  Used Avail Use% Mounted on
/dev/mapper/vgroot-plat_root
                     496M  123M  349M  26% /
/dev/cciss/c0d0p1    122M  9.9M  106M   9% /boot

none                 4.0G     0  4.0G   0% /dev/shm
/dev/mapper/vgroot-plat_tmp
                    1008M   47M  910M   5% /tmp
/dev/mapper/vgroot-plat_usr
                     4.0G  1.1G  2.7G  30% /usr
/dev/mapper/vgroot-plat_var
                     496M   40M  431M   9% /var
/dev/mapper/vgroot-plat_var_tklc
                     4.0G   68M  3.7G   2% /var/TKLC
/dev/mapper/nsp_redo_vol
                    69G  4.2G   61G   7% /usr/TKLC/oracle/ctrl1
/dev/mapper/nsp_data_vol
                   413G  3.2G  389G   1% /usr/TKLC/oracle/oradata
/dev/mapper/nsp_backup_vol
                   138G  207M  130G   1% /usr/TKLC/oracle/backup
```

8.3 How To Mount the ISO file from PM&C ISO Repository

This procedure describes different steps to follow to mount ISO's in PM&C repository from a blade server.

1. **Add ISO in PM&C repository**
   a) Distribute the media:
      - For physical media insert the application CD/DVD into drive of PM&C server
      - For the ISO file check that iso is present under `/var/TKLC/smac/image/isoimages/home/smacftpusr/` directory. If no copy the ISO.

2. **Add iso into PM&C repository**
   a) On the PM&C gui navigate to **Main Menu ⦿ Software ⦿ Software Configuration ⦿ ManageSoftware Images**
   b) On the next screen choose image, put description and press Add New Image.
   c) Wait till the adding of image is completed.

3. **Record the path of the ISO**
   a) On the command line of the Management Server running PM&C, run the exportfs command to list the paths of the exported ISOs.
   ```
   # exportfs
   ```
   b) In the sample output below, there are 5 ISOs exported, the PM&C application, TPD, NSP package, Oracle and WebLogic You will need record the path of the ISO that you want to mount on a blade, as this path will be required in the mount command.
   ```
   # exportfs
   /usr/TKLC/smac/html/TPD/PMAC--2.2.0_22.4.0--872-1818-01     169.254.102.0/24
   usr/TKLC/smac/html/TPD/TPD--3.2.0_62.12.0—TPD               169.254.102.0/24
   /usr/TKLC/smac/html/TPD/NSP--7.0.0-3.5.0--872-2128-101      169.254.102.0/24
   /usr/TKLC/smac/html/TPD/Oracle--10.2.0.3-8--872-2115-01     169.254.102.0/24
   /usr/TKLC/smac/html/TPD/Weblogic--10.3-1.2.0--872-2114-101  169.254.102.0/24
   ```

4. **Login to blade server**
   a) Login as `root` user on the blade server where you want to mount the ISO

5. **Start portmap service**
   a) As `root` run:
   ```
   # service portmap start
   ```

6. **Start nfslock service**
   a) As `root` run:
   ```
   # service nfslock start
   ```

7. **Create ISO mount point**
   a) As `root` run:
   ```
   # mkdir /mnt/local_mount_point
   ```
   where *local_mount_point* is the ISO mount point on the local blade server. Example:
   ```
   # mkdir /mnt/oracle_iso
   ```

8. **Mount ISO**
   a) As `root` run:
   ```
   # mount  management_server_ip:export_path   local_mount_point
   ```

where *management_server_ip* is the control network IP address of the PM&C server, *export_path*is the export path you received in step 3 and *local_mount_point* is the mount point you have created in step 7. Example:

```
# mount 169.254.102.4:/usr/TKLC/smac/html/TPD/oracle_10_1_0_2 /mnt/oracle_iso
```

8.4 Adding ISO Images to the PM&C Image Repository

Refer to 7.0 Platform Configuration Procedures

8.5 How to connect a server console using iL0 ssh connection

Open a ssh connection using the server iLO IP address and login with the iLO user and password

```
login as: root
root@10.31.5.100's password:
User:root logged-in to ILOUSE921N4VQ.tekelec.com(10.31.5.100)
iLO 2 Advanced 2.05 at 13:38:05 Dec 16 2010
Server Name: hostname1368545964
Server Power: On

</>hpiLO->
```

Than use the vsp command to access the server console and login with the OS user and password

```
</>hpiLO-> vsp

Starting virtual serial port.
Press 'ESC (' to return to the CLI Session.

</>hpiLO-> Virtual Serial Port active: IO=0x03F8 INT=4

CentOS release 6.3 (Final)
Kernel 2.6.32-279.5.2.el6prerel6.0.1_80.32.0.x86_64 on an x86_64

hostname1368545964 login:
CentOS release 6.3 (Final)
Kernel 2.6.32-279.5.2.el6prerel6.0.1_80.32.0.x86_64 on an x86_64

hostname1368545964 login:
CentOS release 6.3 (Final)
Kernel 2.6.32-279.5.2.el6prerel6.0.1 80.32.0.x86 64 on an x86 64

hostname1368545964 login: root
Password:
```

8.6 PM&C 5.x to 7.0 upgrade

Follow document PM&C 6.0 Incremental Upgrade E54387-02, Nov 2014

8.7 Update the switch configurations

CAUTION: If you are working remotely you may lose the connection on the system

For **all the switches** configure the SSH access as explained in Appendix 12 “Switch Configurations” in PIC 10.1.5 Installation Guide , E56065

For **each CISCO 3020** switch.

A. Configure the switch in order to add the commands from the step d
   a. As there is no log file for the following steps it is recommended to enable the log feature from your terminal in case something would not work as expected and assistance is required.
   b. Open a telnet session on the switch and then move from the user mode to privilege mode and then to config mode

```
Switch# enable
```

Note : for the default switch passwords refer to TR006061 (password dragon)

   c. Check the current configuration in order to see if it needs to be updated.

```
Switch# show running-config
```

   d. If some of the commands are missing go to the configuration mode and then paste the commands

```
Switch# configure terminal
link state track 1
!
interface Port-channel1
 description ISL_between_4948_and_3020
 link state group 1 upstream
 !
interface range GigabitEthernet0/1-16
 description bay.ethx
 link state group 1 downstream
 !
interface GigabitEthernet0/17-20
 description ISL_between_4948_and_3020
 channel-group 1 mode active
```

   e. Check the configuration is modified as expected

```
Switch# show running-config
```

   f. If the configuration is fine then you can save it in the flash in order to have it automatically reloaded if the switch reboot

```
Switch# copy running-config startup-config
```

   g. If there is an issue in your config you can can reboot the switch without saving and then restart the config from the step a

```
Switch# reload
```

9 Appendix: 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.

10 Management Server Backup (onebox and four box)

Warning: This step is applicable to onebox and four box configurations.
Box: Onebox or Primary WebLogic box

This procedure describes how to perform a backup from a Management Server successfully upgraded in order to avoid restore the backup from previous release in case you would face in issue while the Acquisition Server and Mediation Server upgrade.

```
# ll /opt/oracle/backup/
Output should be:
drwxrwxrwx 3 oracle oinstall     4096 Apr  8 14:38 upgrade_backup
```

If the permission of /opt/oracle/backup/upgrade_backup is not set as per above snapshot, perform the below step

```
#chmod 777 /opt/oracle/backup/upgrade_backup
```

Before proceeding with the Management Server backup, move back the backup which was copied to some other server as per steps mentioned in section 5.5. In case of Four box configuration, move this backup to Oracle box. Below is the location where backup is to be moved in case of One Box or Four Box (Oracle Box)

```
# /opt/oracle/backup
```

As `root` run on Weblogic Primary server or one BOX server:

```
# . $HOME/.bash_profile; cd /opt/nsp/scripts/oracle/cmd; sh
./launch_pic_global_backup.sh >../trc/cronNSP.log 2>&1
```

This command might take a long time depending on the size of the backup. Refer to the section 4.4 Check Management Server backup is Valid in order to make sure everything went fine.

Note:Edit the cron job by performing the below steps.

```
#crontab -e
```

Uncomment out the `launch_pic_global_backup.sh` entry by removing the hash(#) at the start.You might use the command crontab –l to display the list of jobs scheduled. Below should be the updated entry.

```
# crontab -l
00 22 * * * . $HOME/.bash_profile; cd /opt/nsp/scripts/oracle/cmd; sh
./launch_pic_global_backup.sh >../trc/cronNSP.log 2>&1

01 00 * * *  rm -rf /tekelec/backup`date
\+\%u`;/usr/TKLC/TKLCmf/bin/backup_config backup`date \+\%u` >
/tekelec/TKLCmf/runtime/run/log/backup`date \+\%u`.log
```

11 Unset Configuration on Management Server (onebox and four box)

Unset configuration application access restriction automatically set during Management Server upgrade by performing the below steps.

Note: Configuration application are automatically restricted to TklcSrv and tekelec user during Management Server upgrade. After required reconfiguration, Management Server shall return to normal.

a) Open a web browser and log in to the NSP application interface as TklcSrv user.

b) Navigate to security application ⦿ Filter access

c) Select None for Restricted configuration setting.

d) Apply modification.

12 Appendix: 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. Under Industries, click the link for Oracle Communications documentation. The Oracle Communications Documentation window opens with Tekelec shown near the top.

2. Click Oracle Communications Documentation for Tekelec Products.

3. Navigate to your Product and then the Release Number, and click the View link (the Download link will retrieve the entire documentation set).

4. To download a file to your location, right-click the PDF link and select Save Target As.