

**Oracle® Communications
Platform, Release 3.6**

TVOE Disaster Recovery Guide

E93259-01

August 2018

ORACLE®

Oracle Communications Platform TVOE Disaster Recovery Guide, Release 3.6

Copyright © 2016, 2018, Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.



CAUTION: Use only the procedures included in this upgrade kit.

My Oracle Support (<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 <https://www.oracle.com/us/support/contact/index.html>.

See more information on MOS in the Appendix A.

Table of Contents

1. Introduction.....	4
1.1 Purpose and Scope	4
1.2 References	4
1.3 Acronyms and Terminology.....	4
1.4 How to Use this Document.....	4
2. Prerequisites.....	5
2.1 Required Tools for TVOE Disaster Recovery Procedure.....	5
2.2 Network Connections	6
2.3 Assumptions and Restrictions	7
3. TVOE Disaster Recovery Procedure.....	7
3.1 Restore TVOE Configuration from Backup Media	7
3.2 Supporting Procedures.....	13
Appendix A. My Oracle Support (MOS).....	19

List of Tables

Table 1. Acronyms and Terms	4
Table 2. Required Information.....	5

List of Figures

Figure 1. Example of a Procedure Step Used in This Document	5
---	---

List of Procedures

Procedure 1. Restore TVOE Configuration from Backup Media	7
Procedure 2. Standalone TVOE IPM.....	13
Procedure 3. PMAC Aided TVOE IPM	14
Procedure 4. Configure Network	14
Procedure 5. Restore TVOE Backup ISO Using NetBackup	16
Procedure 6. Restore TVOE Backup ISO Using SCP.....	17
Procedure 7. Delete TVOE Host Key from PMAC.....	18
Procedure 8. Determine IPv6 Link Local Address.....	18

1. Introduction

TVOE is a TPD based virtualization host. TVOE allows for virtualization of servers so that multiple applications can reside on one physical machine while still retaining dedicated resources. This means software solutions that include multiple applications and require several physical machines can be installed on very few (possibly one) TVOE hosts.

1.1 Purpose and Scope

In a disaster scenario in which the TVOE host has been lost, the procedures contained herein can be used to recover the TVOE host to its state at the time of the last backup. The disaster recovery requires that a TVOE host backup image has been stored on a customer medium and is available. The scope of this disaster recovery includes only the TVOE host. Guests are NOT restored during this procedure. See the appropriate application disaster recovery information for information concerning restoring guests.

Note: These procedures are intended to be run by Oracle personnel. This document assumes that the user has basic knowledge of the server's hardware, and at least an intermediate skill set with the Linux environment.

1.2 References

[1] PMAC 6.5 Tekelec Platform Configuration Reference Guide

[2] TPD Initial Product Manufacture

1.3 Acronyms and Terminology

This section lists acronyms and terms specific to this document.

Table 1. Acronyms and Terms

Acronym/Term	Meaning
HIDS	Host Intrusion Detection System
IPM	Initial Product Manufacture
Link Local IPv6 Address	An IPv6 address that is assigned automatically to every IPv6 enabled network interface and can only be used within the segment of a local network. This means it is a non-routable address and can only be accessed from machines that are on the same link.
PMAC	Platform Management and Configuration
TPD	Tekelec Platform Distribution
TVOE	Tekelec Virtualization Operating Environment

1.4 How to Use this Document

Although this document is primarily to be used as an initial installation guide, its secondary purpose is as a reference for disaster recovery procedures. When executing this document for either purpose, there are a few points to help ensure the user understands the document's intent. These points are as follows:

- Before beginning a procedure, completely read the instructional text (it displays immediately after the section heading for each procedure) and all associated procedural WARNINGS or NOTES.
- Before execution of a STEP within a procedure, completely read the left and right columns including any STEP specific WARNINGS or NOTES.

If a procedural step fails to execute successfully, stop and contact Oracle's Help Center for assistance before attempting to continue. See Appendix A for information on contacting My Oracle Support (MOS).

Figure 1 shows an example of a procedural step used in this document.

- Any sub-steps within a step are referred to as step X.Y. The example in Figure 1 shows steps 1 through 3, and step 3.1.
- GUI menu items, action links, and buttons to be clicked on are in bold Arial font.
- GUI fields and values to take note of during a step are in bold Arial font.
- Where it is necessary to identify the server explicitly on which a particular step is to be taken, the server name is given in the title box for the step (for example, ServerX in step 2 Figure 1).

Each step has a checkbox the user should check to keep track of the progress of the procedure.		
<div> <div>↓</div> <div>The Title column describes the operations to perform during that step.</div> </div> <div> <div>↓</div> <div>Each command the user enters, and any response output, is formatted in 10-point Courier font.</div> </div> <div> <div>↓</div> </div>		
Title	Directive/Result Step	
1. <input type="checkbox"/>	Change directory	Change to the backout directory. \$ cd /var/TKLC/backout
2. <input type="checkbox"/>	ServerX : Connect to the console of the server	Establish a connection to the server using cu on the terminal server/console. <div>\$ cu -l /dev/ttyS7</div>
3. <input type="checkbox"/>	Verify Network Element data	View the Network Elements configuration data; verify the data; save and print report. Select Configuration > Network Elements to view Network Elements Configuration screen.

Figure 1. Example of a Procedure Step Used in This Document

2. Prerequisites

2.1 Required Tools for TVOE Disaster Recovery Procedure

These files or media are required to run a disaster recovery procedure on a TVOE host:

- TVOE IPM Media
- TVOE Backup ISO Image

These documents are required to run a disaster recovery procedure on a TVOE host:

- PMAC 6.5 Tekelec Platform Configuration Reference Guide
- TPD Initial Product Manufacture

This information is required to run a disaster recovery procedure for the TVOE host.

Table 2. Required Information

Item	Value
TVOE Remote Console IP Address	
TVOE Remote Console username	

Item	Value
TVOE Remote Console password	
TVOE IP address*	
TVOE default gateway*	
TVOE netmask*	
TVOE network device name (e.g. eth01)	
TVOE VLAN number (if the network is tagged)	
TVOE storage pools	
TVOE admusr password	
TVOE tvoeadmin password	
TVOE tvoexfer password	
TVOE platcfg password	
Full path to backup ISO on Customer Server**	
Customer Server** IP address	
Customer Server** username	
Customer Server** password	
NetBackup Master Server IP Address***	
PMAC IP****	
PMAC admusr password****	
PMAC GUI password****	

* If a PMAC is available, the TVOE IP address should be the address assigned by the PMAC via the control network. The default gateway and netmask do not have to be gathered if this is the case.

** The machine used to copy the backup image to the TVOE host. If a PMAC is available, this is the PMAC IP, username, password, and path to backup ISO.

*** This is only necessary if NetBackup is being used to restore the system backup ISO.

**** If a PMAC is available.

2.2 Network Connections

The user must have network connectivity to the remote console and a network interface on the TVOE host.

2.3 Assumptions and Restrictions

- This is a software disaster recovery for the TVOE host that does not recover the hardware.
- If there was a hardware failure, then it should be resolved and the system should be in a healthy state before executing this procedure.
- This procedure only recovers the TVOE host. Guests previously installed on the TVOE are not recovered by this procedure.
- TVOE backups must be from the same version of TVOE as the newly installed TVOE.
- TVOE backups can only be used on servers of the same hardware type as the server the backup was created on.
- TVOE backups have been stored somewhere safe by the customer at an earlier point in time and are to be transferred to the TVOE host over the network.

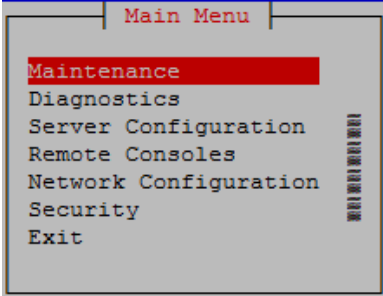
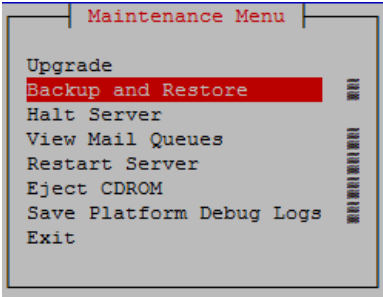
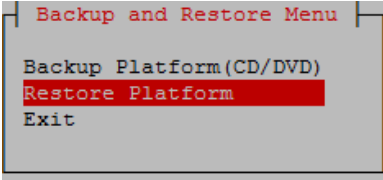
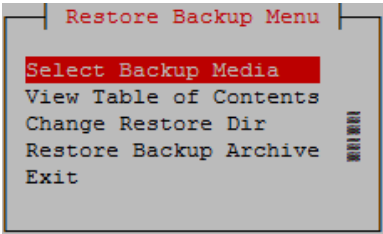
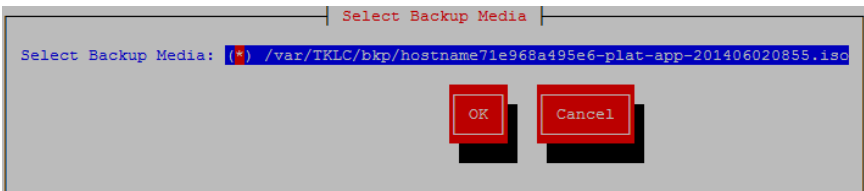
3. TVOE Disaster Recovery Procedure

3.1 Restore TVOE Configuration from Backup Media

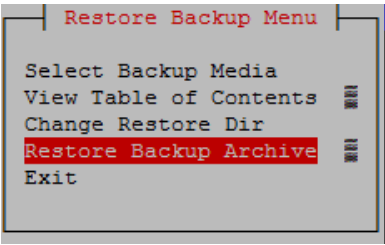
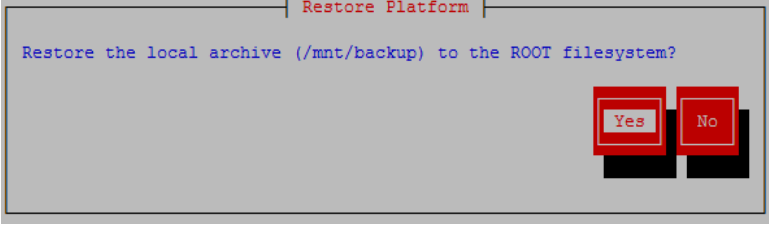
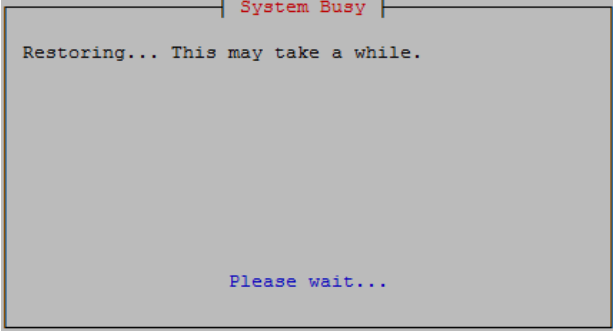
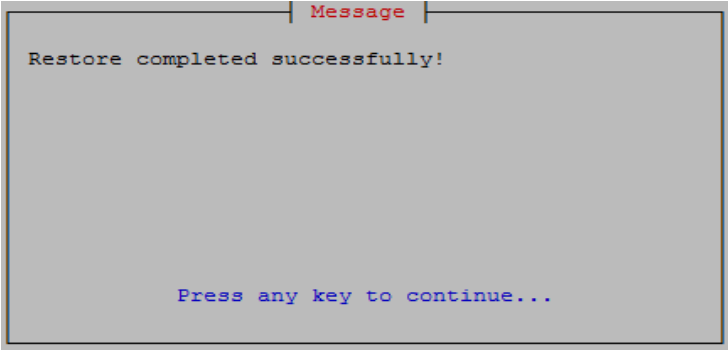
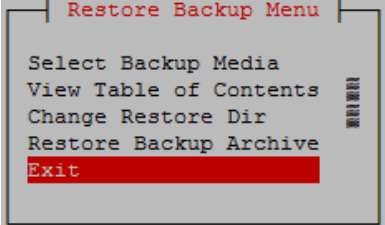
Procedure 1. Restore TVOE Configuration from Backup Media

S T E P #	This procedure restores the TVOE application configuration from backup media. Prerequisites: You must have a backup ISO image to perform this procedure. Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, contact My Oracle Support (MOS) and ask for assistance.	
1. <input type="checkbox"/>	Install TVOE application	If PMAC is available, then IPM the TVOE application following Procedure 3 PMAC Aided TVOE IPM. If PMAC is not available, then IPM the TVOE application following Procedure 2 Standalone TVOE IPM
2. <input type="checkbox"/>	TVOE Host Remote Console: Configure network	If PMAC is available, then skip to the next step; otherwise, follow Procedure 4 Configure Network to configure an IP address on the TVOE host. Note: The IP address configured on the TVOE must be one that is accessible using the network of the machine that currently holds the TVOE backup ISO image. This could be a NetBackup Master Server, a Customer PC, etc.
3. <input type="checkbox"/>	Restore TVOE backup ISO image to the TVOE host	Restore the TVOE Backup ISO image to the TVOE host by executing one of these procedures: <ul style="list-style-type: none"> • If using NetBackup to restore the TVOE Backup ISO image then execute Procedure 5 Restore TVOE Backup ISO Using NetBackup. • If copying the TVOE Backup ISO from a remote location, such as a PMAC or customer PC, then execute Procedure 6 Restore TVOE Backup ISO Using SCP.
4. <input type="checkbox"/>	TVOE Host Remote Console: Connect to the remote console	Follow the How to Access a Server Console Remotely procedure from [1] PMAC 6.5 Tekelec Platform Configuration Reference Guide to log into the remote console using a SSH client to connect to the IP address of the TVOE host remote console.

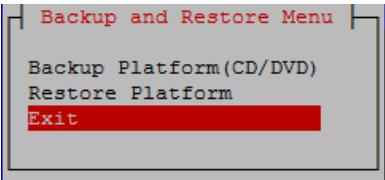
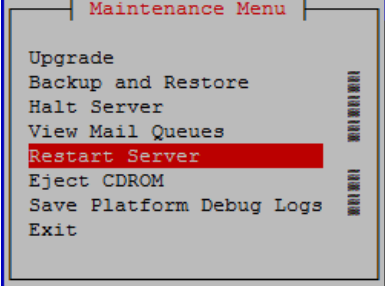
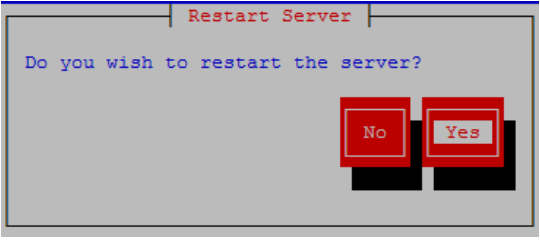
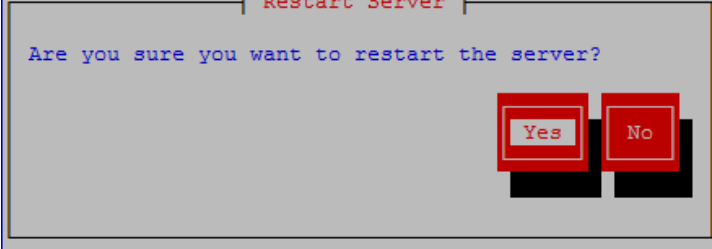
Procedure 1. Restore TVOE Configuration from Backup Media

5. <input type="checkbox"/>	TVOE Host Remote Console: Log into the platcfg menu	Login as the platcfg user.
6. <input type="checkbox"/>	TVOE Host Remote Console: Select Maintenance	 <p>A screenshot of the 'Main Menu' in a terminal window. The menu items are: Maintenance (highlighted in red), Diagnostics, Server Configuration, Remote Consoles, Network Configuration, Security, and Exit.</p>
7. <input type="checkbox"/>	TVOE Host Remote Console: Select Backup and Restore	 <p>A screenshot of the 'Maintenance Menu' in a terminal window. The menu items are: Upgrade, Backup and Restore (highlighted in red), Halt Server, View Mail Queues, Restart Server, Eject CDROM, Save Platform Debug Logs, and Exit.</p>
8. <input type="checkbox"/>	TVOE Host Remote Console: Select Restore Platform	 <p>A screenshot of the 'Backup and Restore Menu' in a terminal window. The menu items are: Backup Platform(CD/DVD), Restore Platform (highlighted in red), and Exit.</p>
9. <input type="checkbox"/>	TVOE Host Remote Console: Select Select Backup Media	 <p>A screenshot of the 'Restore Backup Menu' in a terminal window. The menu items are: Select Backup Media (highlighted in red), View Table of Contents, Change Restore Dir, Restore Backup Archive, and Exit.</p>
10. <input type="checkbox"/>	TVOE Host Remote Console: Select the desired archive	 <p>A screenshot of the 'Select Backup Media' dialog box. It shows a text field with the path <code>/var/TKLC/bkp/hostname71e968a495e6-plat-app-201406020855.isc</code> selected. Below the text field are 'OK' and 'Cancel' buttons.</p>

Procedure 1. Restore TVOE Configuration from Backup Media

11. <input type="checkbox"/>	TVOE Host Remote Console: Select Restore Backup Archive	
12. <input type="checkbox"/>	TVOE Host Remote Console: Confirm restore	
13. <input type="checkbox"/>	TVOE Host Remote Console: Wait for restore to complete. This typically takes less than 5 minutes.	
14. <input type="checkbox"/>	TVOE Host Remote Console: Restore is complete	 <p>Note: If any failures are reported, contact My Oracle Support (MOS) for information on how to proceed.</p>
15. <input type="checkbox"/>	TVOE Host Remote Console: Exit the Restore Backup Menu	

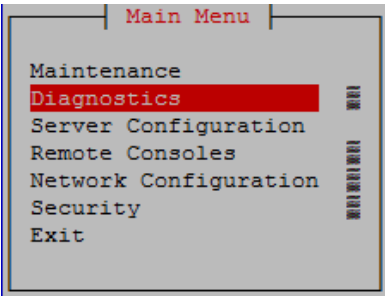
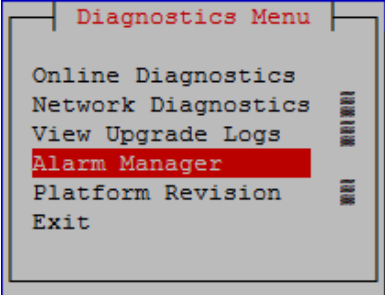
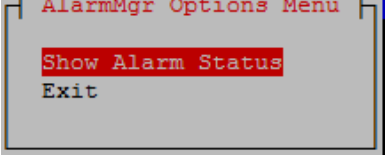

Procedure 1. Restore TVOE Configuration from Backup Media

16. <input type="checkbox"/>	TVOE Host Remote Console: Exit the Backup and Restore Menu	
17. <input type="checkbox"/>	TVOE Host Remote Console: Select Restart Server	
18. <input type="checkbox"/>	TVOE Host Remote Console: Select Yes to restart server	
19. <input type="checkbox"/>	TVOE Host Remote Console: Confirm restart	

Procedure 1. Restore TVOE Configuration from Backup Media

20. <input type="checkbox"/>	TVOE Host Remote Console: Wait for restart to successfully complete. This typically takes less than 20 minutes to complete.	<pre> 1401715649: Upstart Job TKLChpacucli: started ##### 1401715649: Upstart Job alarmMgr: started ##### 1401715649: Upstart Job tpdProvds: started ##### Oracle Linux Server release 6.5 Kernel 2.6.32-431.11.2.el6prere17.0.0.0_86.3.0.x86_64 on an x86_64 1401715649: Upstart Job syscheck: started ##### 1401715650: Upstart Job TKLCsnmp-subagent: started ##### 1401715651: Upstart Job ntdMgr: started ##### Oracle Linux Server release 6.5 Kernel 2.6.32-431.11.2.el6prere17.0.0.0_86.3.0.x86_64 on an x86_64 hostname71e968a495e6 login: █ </pre>
21. <input type="checkbox"/>	TVOE Host Remote Console: Login as tvoadmin user	Log in as the tvoadmin user.
22. <input type="checkbox"/>	TVOE Host Remote Console: Verify storage pools are active	<p>Execute this command and verify all storage pools are listed and are in the active state:</p> <pre>\$ virsh -c "qemu:///system" pool-list</pre> <p>An example of the output is shown below:</p> <pre> Name State Autostart ----- default active yes vgguests active yes </pre> <p>Note: If any storage pools are missing or inactive, contact My Oracle Support (MOS) for information on how to proceed.</p>
23. <input type="checkbox"/>	TVOE Host Remote Console: Log out, then login as plattcfg user	Log out by typing exit at the command prompt and pressing Enter . Log in as the plattcfg user.

Procedure 1. Restore TVOE Configuration from Backup Media

24. <input type="checkbox"/>	TVOE Host Remote Console: Select Diagnostics	 <p>The screenshot shows the 'Main Menu' with the following options: Maintenance, Diagnostics (highlighted in red), Server Configuration, Remote Consoles, Network Configuration, Security, and Exit.</p>
25. <input type="checkbox"/>	TVOE Host Remote Console: Alarm Manager	 <p>The screenshot shows the 'Diagnostics Menu' with the following options: Online Diagnostics, Network Diagnostics, View Upgrade Logs, Alarm Manager (highlighted in red), Platform Revision, and Exit.</p>
26. <input type="checkbox"/>	TVOE Host Remote Console: Select Show Alarm Status	 <p>The screenshot shows the 'AlarmMgr Options Menu' with the following options: Show Alarm Status (highlighted in red) and Exit.</p>
27. <input type="checkbox"/>	TVOE Host Remote Console: Examine the output and determine if any errors or failures were reported	 <p>The screenshot shows the 'Alarms' screen. At the top, it displays 'Copyright (C) 2003, 2014, Oracle and/or its affiliates. All rights reserved.' and 'Hostname: hostname71e968a495e6'. Below this is a large grey area for the alarm details. At the bottom, there are five red buttons: Forward, Backward, Top, Bottom, and Exit. A blue bar at the very bottom contains the text: 'Use arrow keys to move between options <Enter> selects'.</p> <p>Note: If any failures are reported contact My Oracle Support (MOS) for information on how to proceed.</p>

Procedure 1. Restore TVOE Configuration from Backup Media

28. <input type="checkbox"/>	TVOE Host Remote Console: Optionally enable HIDS	<p>Note: Enabling HIDS is optional. This step should be skipped if HIDS is not required to be enabled.</p> <p>Exit platcfg and login as admusr. When enabling HIDS, update the baseline so the restored files are not incorrectly reported as being tampered with. Run these commands run from the TVOE host remote console to initialize, enable HIDS, and update the baseline:</p> <pre>\$ /usr/TKLC/plat/bin/hidsMgr --initialize \$ /usr/TKLC/plat/bin/hidsMgr --enable \$ /usr/TKLC/plat/bin/hidsMgr --update --all</pre> <p>An example of the output is shown below:</p> <pre>\$ /usr/TKLC/plat/bin/hidsMgr --initialize LOG: HIDS monitoring has been Initialized HIDS baseline has been initialized New State: INITIALIZED \$ /usr/TKLC/plat/bin/hidsMgr --enable HIDS monitoring has successfully been enabled New State: ENABLED \$ /usr/TKLC/plat/bin/hidsMgr --update --all HIDS baseline has successfully been updated</pre>
29. <input type="checkbox"/>	TVOE Host Remote Console: Log out	Using the section listed below from the PMAC 6.5 Tekelec Platform Configuration Reference Guide [1], log out of the remote console. “How to Access a Server Console Remotely” [1]
30. <input type="checkbox"/>	Remove TVOE SSH key from PMAC	If this TVOE host will host PMAC, this is completely new hardware, or there is no PMAC in the network, then no work is necessary for this step. Remove the TVOE remote host key from the PMAC in the network by executing this Procedure 7 Delete TVOE Host Key from PMAC.

3.2 Supporting Procedures**Procedure 2. Standalone TVOE IPM**

STEP #	Use this procedure to install the TVOE application without a PMAC. Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, contact My Oracle Support (MOS) and ask for assistance.	
1. <input type="checkbox"/>	Install TVOE application	<p>Using the section listed below from the PMAC 6.5 Tekelec Platform Configuration Reference Guide [1], reinstall the TVOE application in accordance with the checklist shown:</p> <p>IPM Management Server [1]</p> <p>The version of TVOE used for this procedure must match the backed up version of TVOE.</p>

Procedure 3. PMAC Aided TVOE IPM

S T E P #	<p>Use this procedure to install the TVOE application using a PMAC.</p> <p>Prerequisites: In addition to the requirements listed in section 2, this procedure also requires:</p> <ul style="list-style-type: none"> • PMAC IP Address • PMAC GUI password <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>If this procedure fails, contact My Oracle Support (MOS) and ask for assistance.</p>
1. <input type="checkbox"/>	<div> <div> Install TVOE application. Check each box as each task is completed. </div> <div> Use the sections listed below from the PMAC 6.5 Tekelec Platform Configuration Reference Guide [1], to reinstall the TVOE application with the aid of PMAC: <ul style="list-style-type: none"> • IPM Servers Using PMAC Application [1] <p>Note: The version of TVOE used for this procedure must match the backed up version of TVOE.</p> </div> </div>

Procedure 4. Configure Network

S T E P #	<p>Use this procedure to configure an IP address and default route on the TVOE host. Once an IP address is configured it can then be used to transfer the TVOE backup ISO image to the TVOE host.</p> <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>If this procedure fails, contact My Oracle Support (MOS) and ask for assistance.</p>
1. <input type="checkbox"/>	<div> <div> TVOE Host Remote Console: Connect to the remote console </div> <div> Follow the How to Access a Server Console Remotely procedure from the [1] PMAC 6.5 Tekelec Platform Configuration Reference Guide to log into the remote console using an SSH client to connect to the IP address of the TVOE host remote console. </div> </div>
2. <input type="checkbox"/>	<div> <div> TVOE Host Remote Console: Log into the server </div> <div> Login as the admusr user. </div> </div>
3. <input type="checkbox"/>	<div> <div> TVOE Host Remote Console: Remove live network configuration </div> <div> Remove any live interface configuration on the TVOE by executing this command: <pre>\$ sudo /sbin/service network stop</pre> An example of the output is shown below: <pre>Shutting down interface control: [OK] Shutting down interface bond0: [OK] Shutting down loopback interface: [OK]</pre> </div> </div>
4. <input type="checkbox"/>	<div> <div> TVOE Host Remote Console: Bring the loopback interface up </div> <div> The loopback interface was also brought down in the previous step. Bring it back up by executing this command: <pre>\$ sudo /sbin/ifup lo</pre> </div> </div>

Procedure 4. Configure Network

5. <input type="checkbox"/>	TVOE Host Remote Console: Set up a vlan device, if needed	<p>If a vlan tagged interface is needed, then create it and bring it up using these two commands.</p> <pre>\$ sudo /sbin/ip link add dev <VLAN_DEVICE> link <DEVICE> type vlan id <VLAN> \$ sudo /sbin/ip link set up <DEVICE></pre> <p><VLAN_DEVICE> is the name of the vlan device being created. <DEVICE> is the name of the physical interface to build the vlan device on top of. <VLAN> is the number of the vlan. <VLAN_DEVICE> is a concatenation of <DEVICE> and <VLAN>, which should both be retrieved from Error! Reference source not found.. There should be no output from the commands. Here is an example:</p> <pre>\$ sudo /sbin/ip link add dev eth01.3 link eth01 type vlan id 3 \$ sudo /sbin/ip link set up eth01</pre> <p><DEVICE> in the following steps would now be "eth01.3"</p>
6. <input type="checkbox"/>	TVOE Host Remote Console: Set up an IP address on the Ethernet device	<p>On the command line, execute this command to add an IP address to the system.</p> <pre>\$ sudo /sbin/ip addr add <IP>/<NETMASK> dev <DEVICE></pre> <p>The <IP> and <NETMASK> need to be on a network that is accessible from the machine currently hosting the TVOE backup ISO image — this could be a NetBackup Master server, a customer system or a PMAC. The device <DEVICE> needs to be physically attached to a network segment that can be reached from the machine hosting the TVOE backup ISO image. There should be no output from the command.</p>
7. <input type="checkbox"/>	TVOE Host Remote Console: Bring up the Ethernet device	<p>On the command line execute this command to bring up the interface <DEVICE>.</p> <pre>\$ sudo /sbin/ip link set up <DEVICE></pre> <p>There should be no output from the command.</p>
8. <input type="checkbox"/>	TVOE Host Remote Console: Add route, if necessary	<p>If a default route needs to be configured (this is the case when the IP and netmask configured in the previous steps are on a different network than the IP and netmask of the server hosting the TVOE backup ISO image), then execute this command.</p> <pre>\$ sudo /sbin/ip route add default via <GATEWAY></pre> <p><GATEWAY> is the IP address of the gateway from Error! Reference source not found.. There should be no output from the command.</p>

Procedure 4. Configure Network

9. <input type="checkbox"/>	TVOE Host Remote Console: Verify network settings applied successfully	<p>Verify the network settings, by running this command.</p> <pre>\$ /bin/ping -c 4 <REMOTE SYSTEM></pre> <p><REMOTE SYSTEM> is the IP address of either the NetBackup master server or the PMAC from Error! Reference source not found.</p> <p>Below is sample output from the command:</p> <pre>[admusr@localhost ~]# /bin/ping -c 4 192.168.1.1 PING 192.168.1.1 (192.168.1.1) 56(84) bytes of data. 64 bytes from 192.168.1.1: icmp_seq=1 ttl=254 time=0.891 ms 64 bytes from 192.168.1.1: icmp_seq=2 ttl=254 time=0.835 ms 64 bytes from 192.168.1.1: icmp_seq=3 ttl=254 time=0.864 ms 64 bytes from 192.168.1.1: icmp_seq=4 ttl=254 time=0.902 ms --- 192.168.1.1 ping statistics --- 4 packets transmitted, 4 received, 0% packet loss, time 3001ms rtt min/avg/max/mdev = 0.835/0.873/0.902/0.025 ms</pre> <p>If packet loss is higher than 25%, contact Oracle Support.</p>
10. <input type="checkbox"/>	TVOE Host Remote Console: Log out	<p>Follow the How to Access a Server Console Remotely procedure from the [1] PMAC 6.5 Tekelec Platform Configuration Reference Guide to log out of the remote console.</p>

Procedure 5. Restore TVOE Backup ISO Using NetBackup

STEP #	This procedure restores the TVOE backup ISO image to the TVOE host by pushing it using NetBackup.	
	Prerequisites: In addition to the requirements listed in section 2, this procedure also requires: <ul style="list-style-type: none">TVOE has been configured with an IP address in Procedure 4 Configure Network	
	Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.	
	If this procedure fails, contact My Oracle Support (MOS) and ask for assistance.	
1. <input type="checkbox"/>	TVOE Host Remote Console: Connect to the remote console	Follow the How to Access a Server Console Remotely procedure from the [1] PMAC 6.5 Tekelec Platform Configuration Reference Guide to log into the remote console using an SSH client to connect to the IP address of the TVOE host remote console.
2. <input type="checkbox"/>	TVOE Host Remote Console: Install NetBackup Client	Follow the Configure TVOE NetBackup Client procedure from the [1] PMAC 6.5 Tekelec Platform Configuration Reference Guide to install and configure the NetBackup Client on TVOE.
3. <input type="checkbox"/>	NetBackup Server: Restore TVOE backup ISO	Interface with the NetBackup master server and initiate a restore of the TVOE backup ISO image. Note: Once restored, the ISO image is in <code>/var/TKLC/bkp/</code> on the TVOE server.
4. <input type="checkbox"/>	TVOE Host Remote Console: Log out	Follow the How to Access a Server Console Remotely procedure from the [1] PMAC 6.5 Tekelec Platform Configuration Reference Guide to log out of the remote console.

Procedure 6. Restore TVOE Backup ISO Using SCP

S T E P #	<p>Use this procedure to restore the TVOE backup ISO image to the TVOE host by pushing it via SCP from a remote location, such as a Customer PC, where the Backup ISO image is located.</p> <p>Prerequisites: In addition to the requirements listed in section 2, this procedure also requires:</p> <ul style="list-style-type: none"> • TVOE has been configured with an IP address in Procedure 4 Configure Network <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>If this procedure fails, contact My Oracle Support (MOS) and ask for assistance.</p>
1. <input type="checkbox"/>	<p>PMAC or Customer PC: Copy backup ISO image to TVOE</p> <p>Using the IP address on the TVOE host (if a PMAC is unavailable, this was configured in Procedure 4 Configure Network), transfer the backup ISO image to TVOE. The Backup ISO image should be copied into the backup directory within the tvoexfer user's home directory.</p> <p>If you do not have a backup ISO image, then you cannot proceed.</p> <p>Linux</p> <p>From the command line of a Linux machine, use this command to copy the backup ISO image to the TVOE host:</p> <pre># scp <path_to_image> tvoexfer@<TVOE_IP>:backup/</pre> <p>Where <path_to_image> is the path to the backup ISO image on the local system and <TVOE_IP> is the TVOE IP address.</p> <p>If the IP is an IPv4 address, then <TVOE_IP> is a normal dot-decimal notation (for example, 10.240.6.170).</p> <p>If the IP is an IPv6 link local address, then <TVOE_IP> needs to be scoped such as [fe80::21e:bff:fe76:5e1c%control] where control is the name of the interface on the machine initiating the transfer and it must be on the same link as the interface on the TVOE host.</p> <p>IPv4 Example:</p> <pre># scp /path/to/image.iso tvoexfer@10.240.6.170:backup/</pre> <p>IPv6 Example:</p> <pre># scp /path/to/image.iso tvoexfer@[fe80::21e:bff:fe76:5e1c%control]:backup/</pre> <p>Windows</p> <p>Use WinSCP to copy the backup ISO image into the backup directory within the tvoexfer user's home directory. Refer to the Using WinSCP procedure from [1] PMAC 6.5 Tekelec Platform Configuration Reference Guide for help using WinSCP.</p>

Procedure 7. Delete TVOE Host Key from PMAC

S T E P #	<p>This procedure deletes the TVOE host SSH from PMAC. This is only needed if PMAC exists in the network at the time TVOE is being recovered and if this is not a new piece of hardware.</p> <p>Prerequisites: In addition to the requirements listed in section 2, this procedure also requires:</p> <ul style="list-style-type: none"> • PMAC IP Address • PMAC admusr password <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>If this procedure fails, contact My Oracle Support (MOS) and ask for assistance.</p>	
1. <input type="checkbox"/>	Determine TVOE ipv6 link local address	Determine the IPv6 link local address of the TVOE host by following Procedure 8 Determine IPv6 Link Local Address.
2. <input type="checkbox"/>	Log into the PMAC CLI	Log into the PMAC using SSH as the admusr user.
3. <input type="checkbox"/>	PMAC CLI: Delete the remote host key	<p>Using the IPv6 address found in step 1. , execute this command to remove the TVOE host's SSH key from the PMAC.</p> <pre>\$ sudo /usr/TKLC/smac/bin/pmacadm removeHostKeys -- ip=<TVOE_IP></pre> <p>An example of the output is shown:</p> <pre>Successful delete of entry for ip (fe80::21e:bff:fe76:5e1c) from PMAC list of known hosts.</pre>

Procedure 8. Determine IPv6 Link Local Address

S T E P #	<p>This procedure finds the IPv6 link local address of the TVOE host.</p> <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>If this procedure fails, contact My Oracle Support (MOS) and ask for assistance.</p>	
1. <input type="checkbox"/>	TVOE Host Remote Console: Connect to the remote console	Follow the How to Access a Server Console Remotely procedure from the [1] PMAC 6.5 Tekelec Platform Configuration Reference Guide to log into the remote console using an SSH client to connect to the IP address of the TVOE host remote console.
2. <input type="checkbox"/>	TVOE Host Remote Console: Log into the server	Login as the admusr user.
3. <input type="checkbox"/>	TVOE Host Remote Console: Detect IPv6 link local address	<p>On the command line, execute this command:</p> <pre>\$ ip -6 addr show dev control</pre> <p>An example of the output of this command is shown:</p> <pre>12: control: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 inet6 fe80::21e:bff:fe76:5e1c/64 scope link valid_lft forever preferred_lft forever</pre> <p>In this case, the link's local address is fe80::21e:bff:fe76:5e1c. Record the link's local address in the output for later use.</p>

Procedure 8. Determine IPv6 Link Local Address

4. <input type="checkbox"/>	TVOE Host Remote Console: Log out	Follow the How to Access a Server Console Remotely procedure from the [1] PMAC 6.5 Tekelec Platform Configuration Reference Guide to log out of the remote console.
--------------------------------	--	---

Appendix A. 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 one of the following options:
 - For technical issues such as creating a new Service Request (SR), select 1.
 - For non-technical issues such as registration or assistance with MOS, select 2.

You are connected to a live agent who can assist you with MOS registration and opening a support ticket. MOS is available 24 hours a day, 7 days a week, 365 days a year.

Emergency Response

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

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

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

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

Locate Product Documentation on the Oracle Help Center

Oracle Communications customer documentation is available on the web at the Oracle Help Center (OHC) 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 <http://www.adobe.com>.

1. Access the **Oracle Help Center** site at <http://docs.oracle.com>.
2. Click Industries.

3. Under the **Oracle Communications** subheading, click the **Oracle Communications documentation** link. The Communications Documentation page appears. Most products covered by these documentation sets display under the headings **Network Session Delivery and Control Infrastructure** or **Platforms**.
4. Click on your Product and then the Release Number. A list of the entire documentation set for the selected product and release displays. To download a file to your location, right-click the PDF link, select Save target as (or similar command based on your browser), and save to a local folder.