Oracle® Communications Tekelec Platform

TVOE 2.0 Disaster Recovery

Release 2.0

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Oracle Communications Tekelec Platform TVOE 2.0 Disaster Recovery, Release 2.0

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Refer to Appendix A: for instructions on accessing this site.

Contact Oracle's Tekelec Customer Care Center and inform them of your upgrade plans prior to beginning this or any upgrade procedure.

Phone: 1-888-FOR-TKLC (1-888-367-8552) or 919-460-2150 (international)

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TABLE OF CONTENTS

INTRODUCTION **5**

1.1 PURPOSE AND SCOPE 5
1.2 REFERENCES 5
1.3 TERMINOLOGY 5

2 PREREQUISITES **6**

2.1 REQUIRED TOOLS FOR TVOE DISASTER RECOVERY PROCEDURE 6
2.1.1 Files *6*
2.1.2 Documents *6*
2.1.3 Information *6*
2.2 NETWORK CONNECTIONS 6
2.3 ASSUMPTION & RESTRICTIONS 6

3 TVOE DISASTER RECOVERY PROCEDURE **7**

3.1 RESTORE TVOE CONFIGURATION FROM BACKUP MEDIA 7
3.2 SUPPORTING PROCEDURES 19

APPENDIX A: ACCESSING ORACLE'S TEKELEC CUSTOMER SUPPORT SITE **27**

LIST OF PROCEDURES

Procedure 1: Restore TVOE configuration from backup media 7
Procedure 2: Standalone TVOE IPM 19
Procedure 3: PM&C Aided TVOE IPM 19
Procedure 4: Configure Network 20
Procedure 5: Restore TVOE backup ISO using Netbackup 22
Procedure 6: Restore TVOE backup ISO using SCP 24
Procedure 7: Delete TVOE host key from PM&C 25
Procedure 8: Determine IPv6 Link Local Address 26

INTRODUCTION

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 WILL NOT be restored during this procedure.

NOTE: These procedures are intended to be run by Tekelec 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] Platform 6.x Configuration Procedure Reference, 909-2209-001, Rev C, Tekelec
[2] Platform 4.x+ Passwords, TR006061, Rev 2.0, Tekelec
[3] TPD Initial Product Manufacture, 909-2130-001, Rev C, Tekelec

Table 1: Acronyms

Acronym	Meaning
iLO	Integrated Lights Out manager
IPM	Initial Product Manufacture
PM&C	Platform Management and Configuration application
TPD	Tekelec Platform Distribution
TVOE	Tekelec Virtual Operating Environment

1.3 Terminology

Table 2: Terminology

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.

2 PREREQUISITES

2.1 Required Tools for TVOE Disaster Recovery procedure

2.1.1 Files

The following files or media are required in order to run a Disaster Recovery procedure on a TVOE host:

- TVOE IPM media
- TVOE Backup ISO image

2.1.2 Documents

The following documents are required in order to run a Disaster Recovery procedure on a TVOE host:

- *909-2209-001 Platform 6.x Configuration Procedure Reference*
- *909-2130-001 TPD Initial Product Manufacture*

2.1.3 Information

The following information is required in order to run a Disaster Recovery procedure for the TVOE host.

Table 3: Required Information

Item	Value
TVOE iLO IP Address	
TVOE iLO username	
TVOE iLO password	
TVOE IP address	
TVOE root password	
TVOE tvoeadmin password	
TVOE tvoexfer password	
TVOE platcfg password	
Customer Server* username	
Customer Server* password	

* The machine used to copy the backup image to the TVOE host.

2.2 Network Connections

The user must have network connectivity to the iLO of the TVOE server as well as network connectivity to a network interface on the TVOE server.

2.3 Assumption & Restrictions

- This is a software disaster recovery for the TVOE host which will 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 will not be 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.

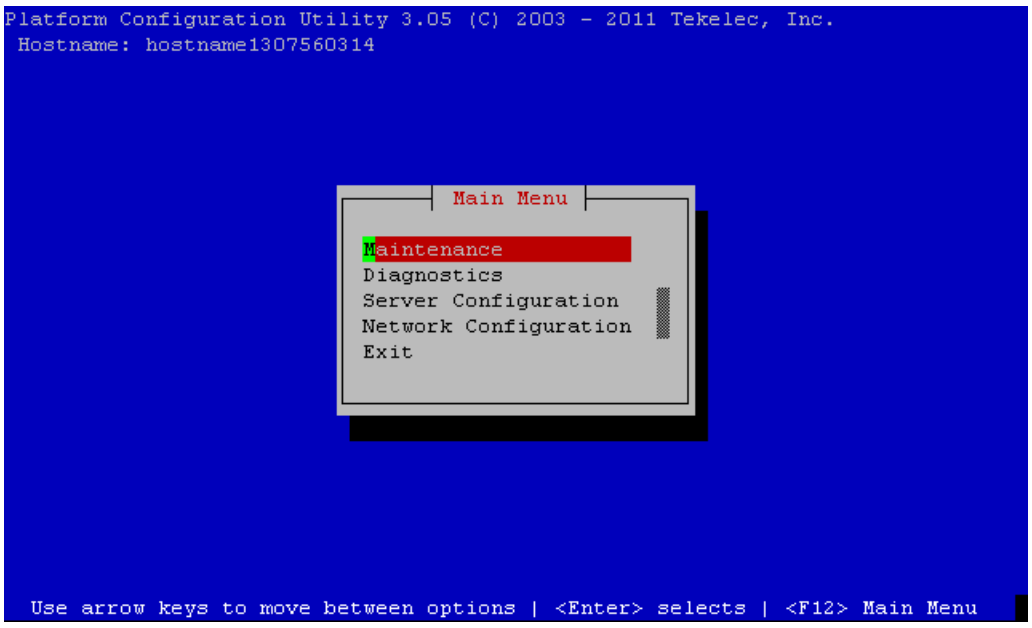
3 TVOE DISASTER RECOVERY PROCEDURE

3.1 Restore TVOE configuration from backup media

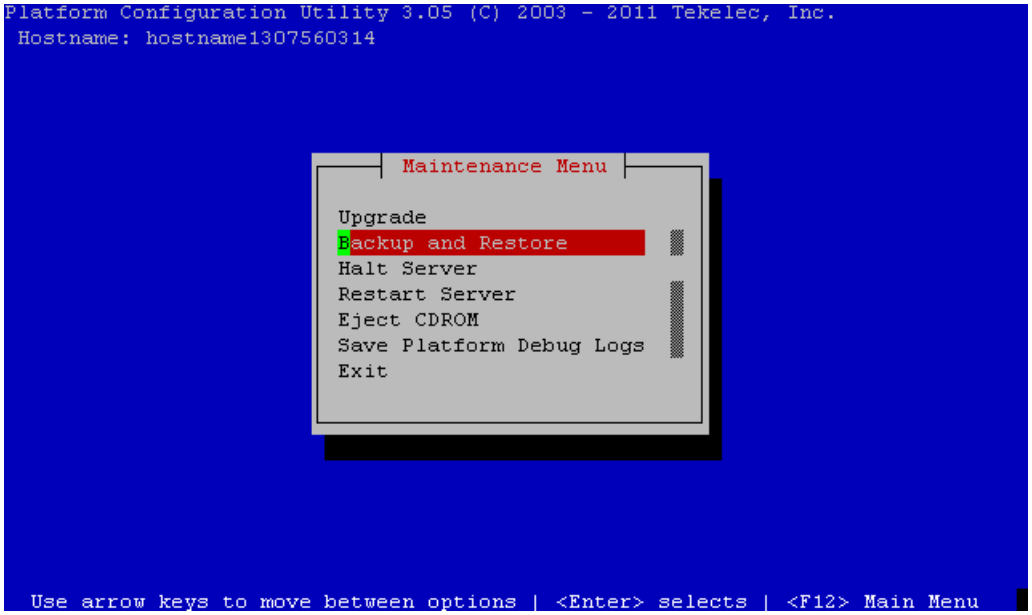
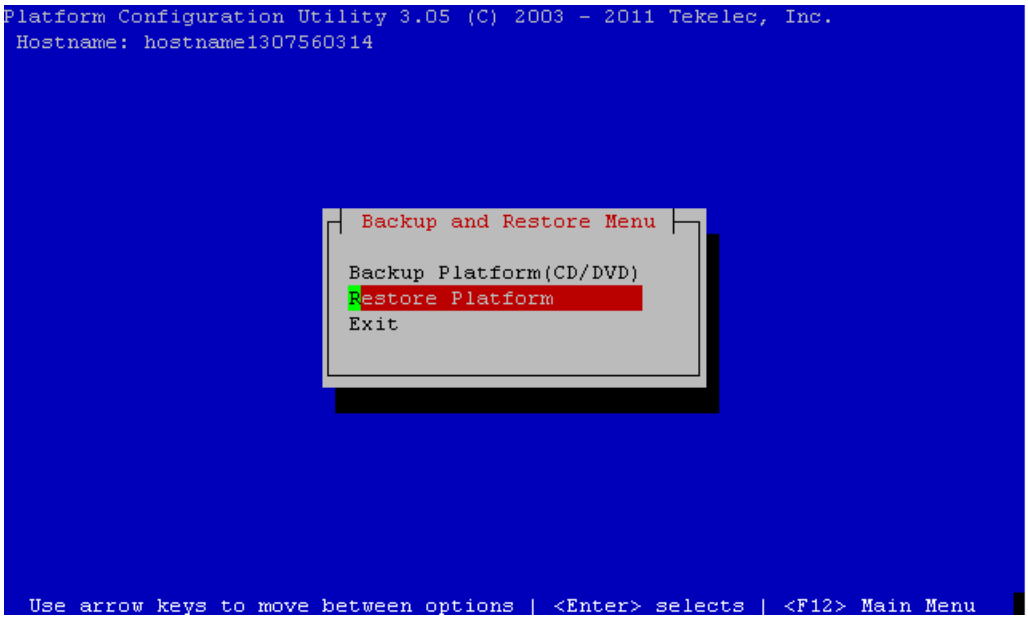
Procedure 1: Restore TVOE configuration from backup media

S T E P #	This procedure provides instructions on how to restore the TVOE application configuration from backup media. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. **IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES** (SEE ***1.4 Customer Care Center*** FROM [1])	
NOTE: You must have a backup ISO image to perform this procedure.		
1. ☐	Install TVOE application. Check each box as each task is completed. Do not check the box if the task is not performed.	If PM&C is available then IPM the TVOE application using the following procedure from this document: ☐ "Procedure 3: PM&C Aided TVOE IPM" If PM&C is not available, IPM the TVOE application using the following procedure from this document: ☐ "Procedure 2: Standalone TVOE IPM"
2. ☐	TVOE Server iLO: Configure network	Execute the following procedure to configure an IP address on the TVOE Server. Note: The IP address that is configured on the TVOE must be one that will be accessible via the network of the machine that currently holds the TVOE Backup ISO image. This could be a Netbackup Master Server, a Customer PC, etc.. ☐ "Procedure 4: Configure Network"

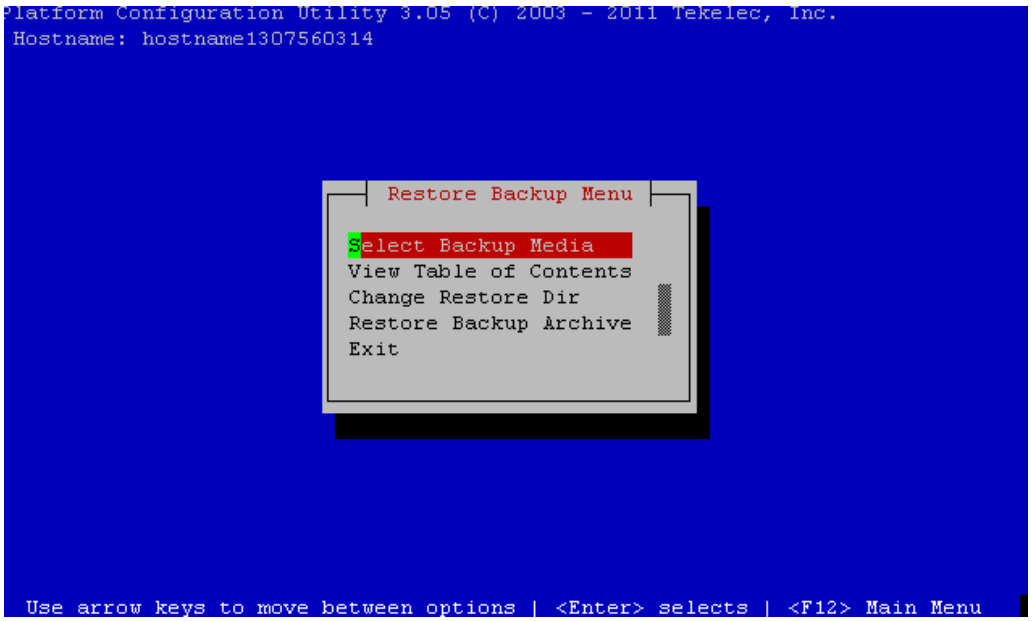
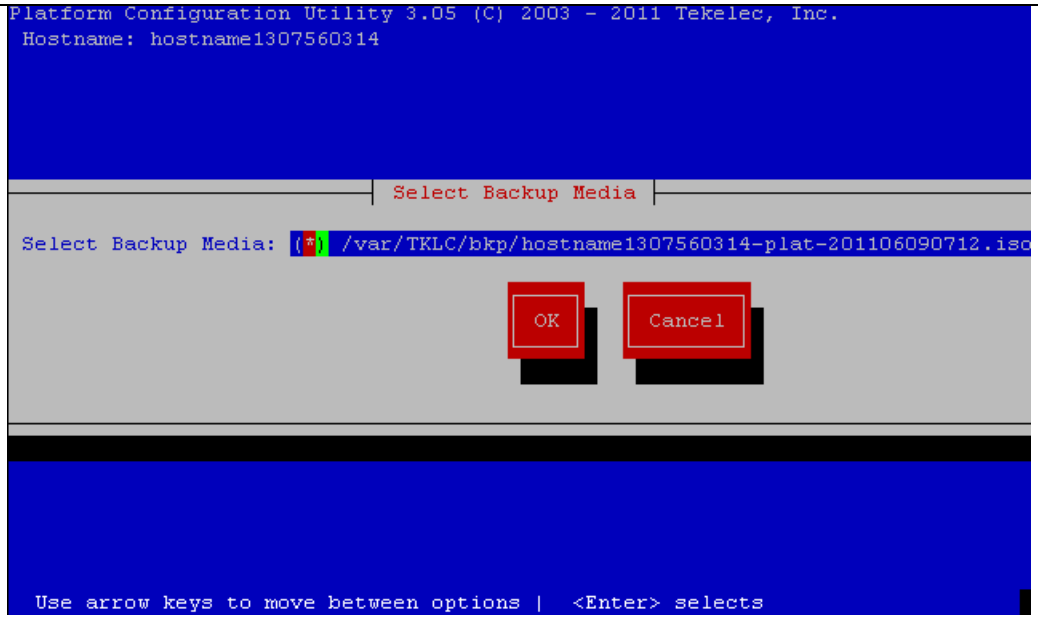
Procedure 1: Restore TVOE configuration from backup media

3. ☐	Restore TVOE Backup ISO image to the TVOE Server.	Restore the TVOE Backup ISO image to the TVOE Server by executing one of the following procedures: 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 Customer PC, then execute: ☐ "Procedure 6: Restore TVOE backup ISO using SCP"
4. ☐	TVOE Server iLO: Log in to iLO	Using the sections listed below from the *Platform 6.x Configuration Procedure Reference* [1], log in to the iLO by using a ssh client to connect to the IP address of the TVOE server iLO. ☐ "3.5.4 Accessing the c-Class iLO Virtual Serial Port" [1]
5. ☐	TVOE Server iLO: Log in to the platcfg menu.	Log in as the platcfg user.
6. ☐	TVOE Server iLO: Select the "Maintenance" option	

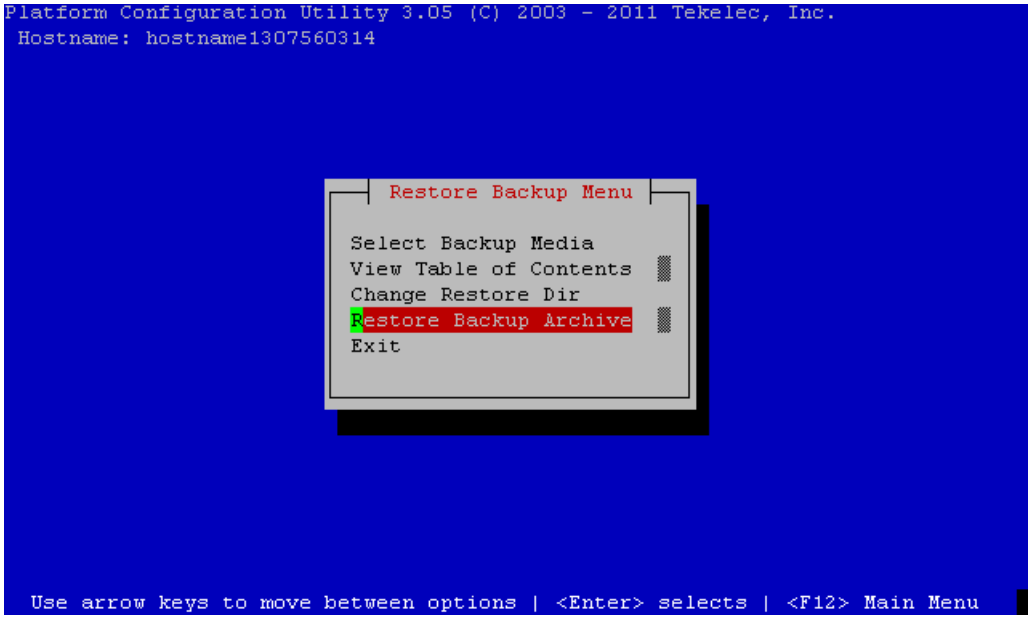
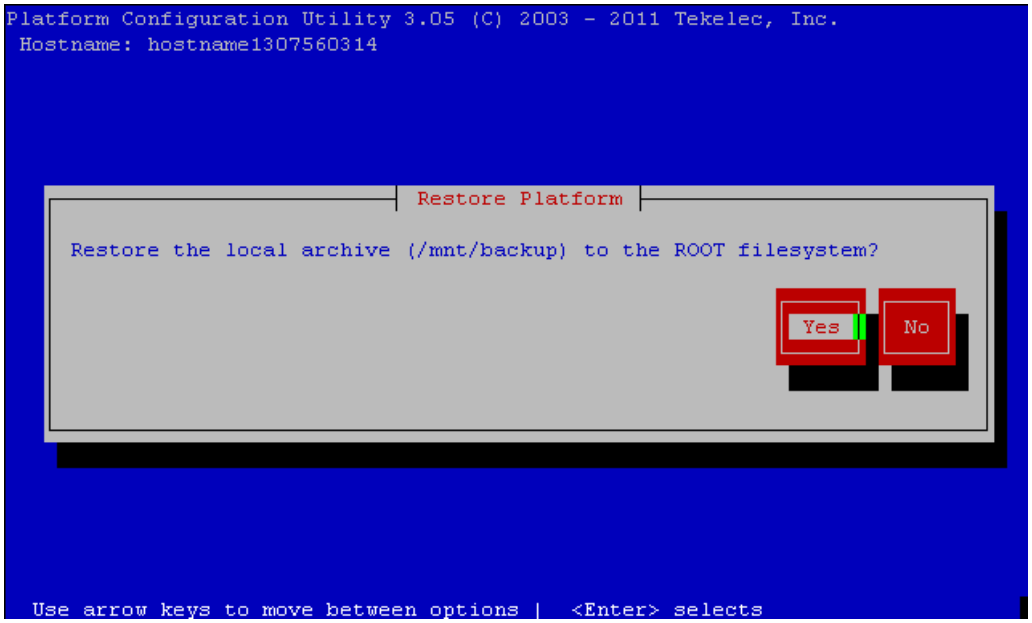
Procedure 1: Restore TVOE configuration from backup media

7. ☐	TVOE Server iLO: Select the “Backup and Restore” option	
8. ☐	TVOE Server iLO: Select the “Restore Platform” option.	

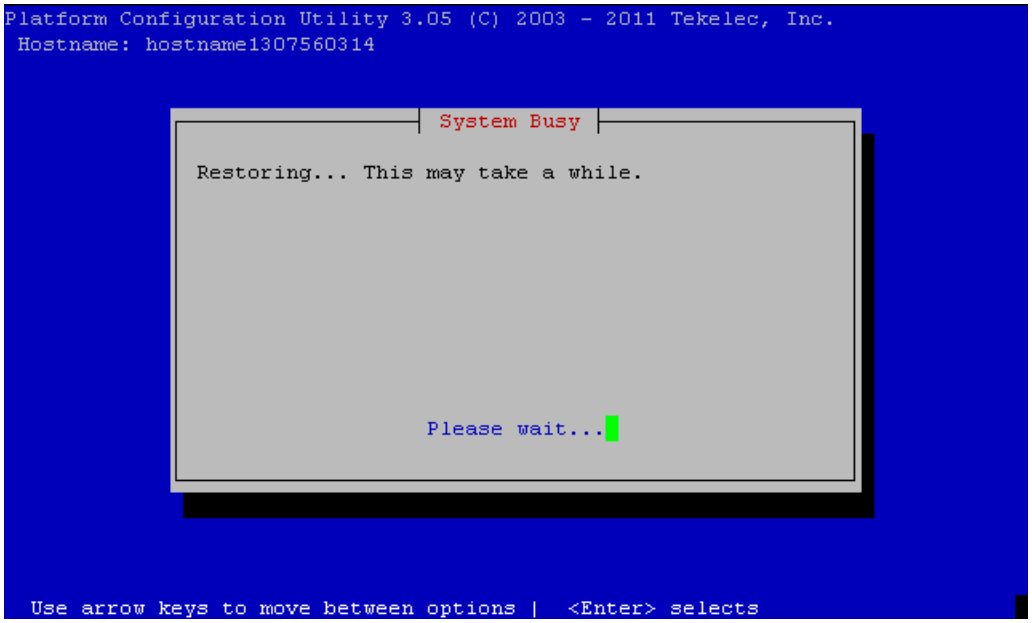
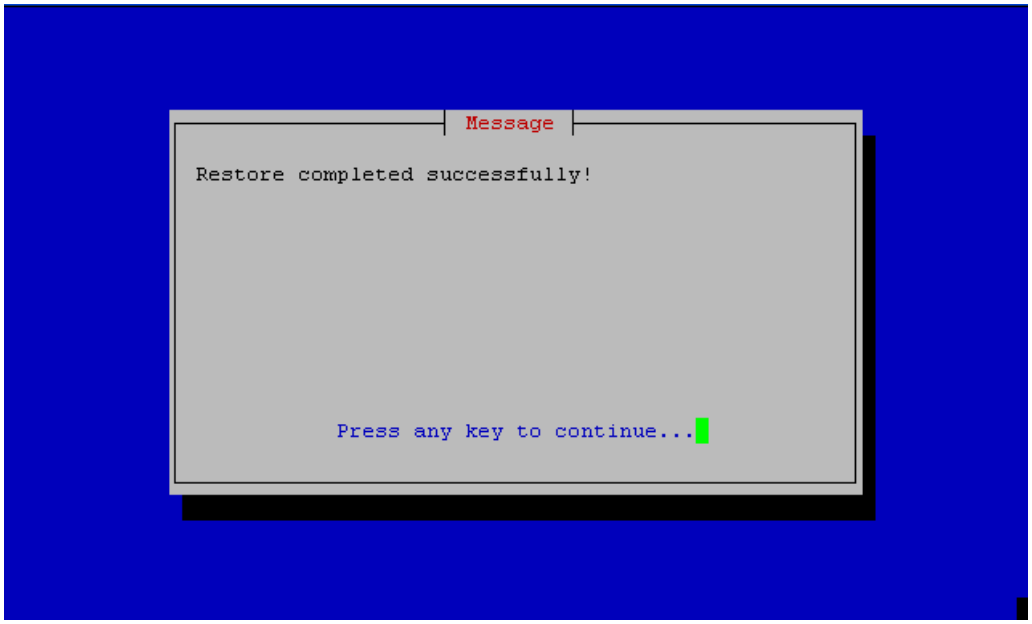
Procedure 1: Restore TVOE configuration from backup media

9. ☐	TVOE Server iLO: Select the "Select Backup Media" option	
10. ☐	TVOE Server iLO: Select the desired archive.	

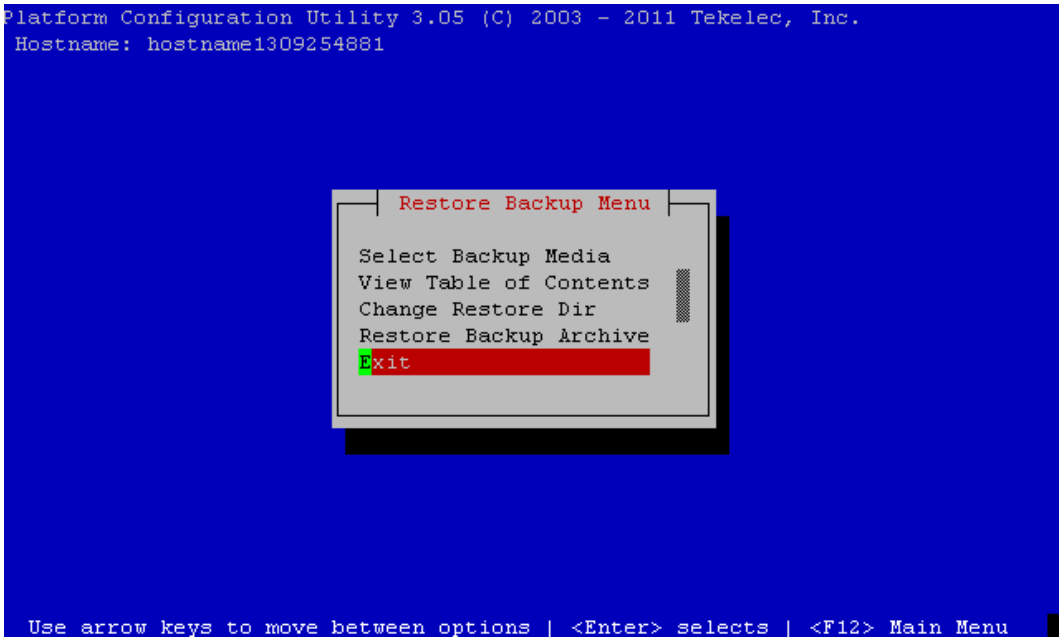
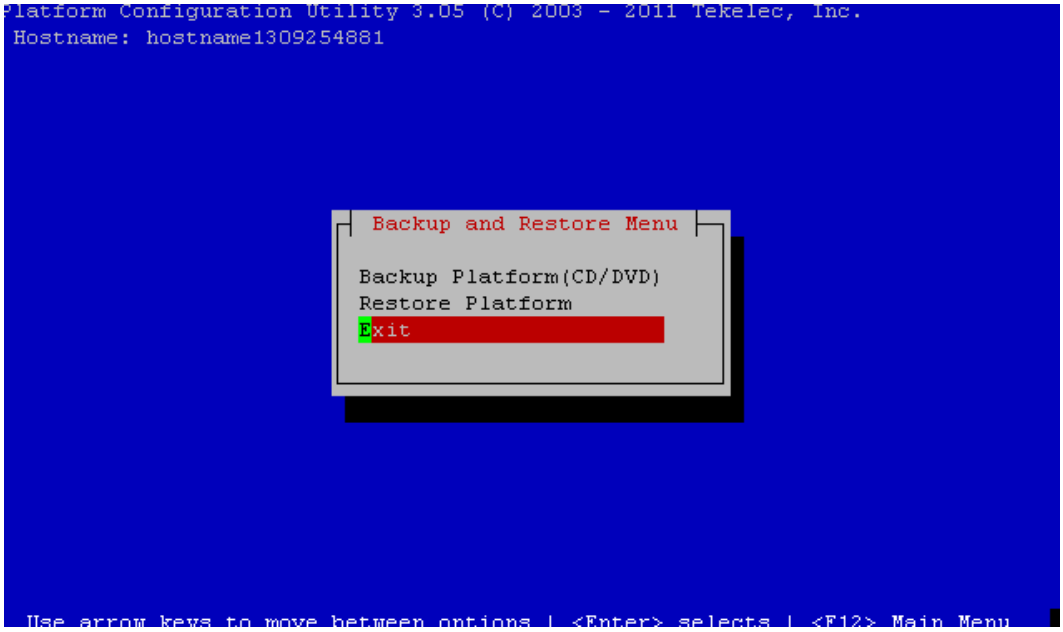
Procedure 1: Restore TVOE configuration from backup media

11. ☐	TVOE Server iLO: Select the "Restore Backup Archive" option.	
12. ☐	TVOE Server iLO: Confirm restore	

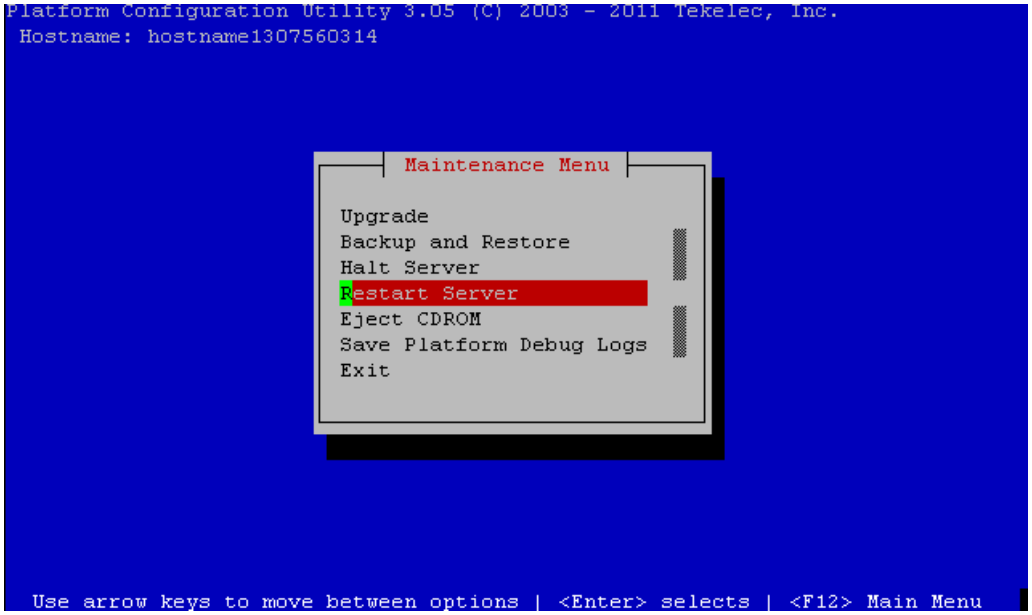
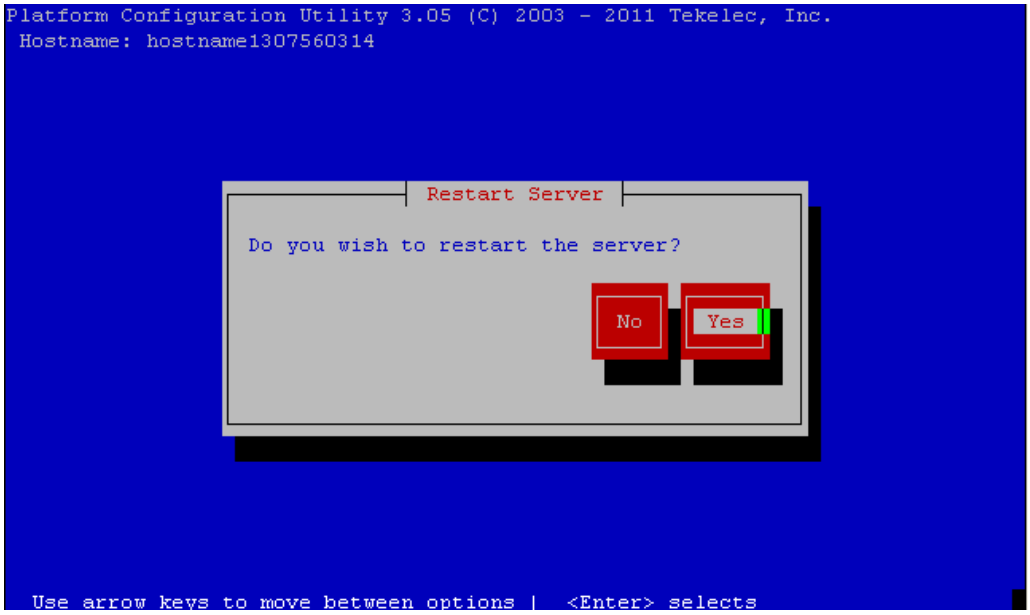
Procedure 1: Restore TVOE configuration from backup media

13. ☐	TVOE Server iLO: Wait for restore to complete. This will typically take less than 5 minutes.	
14. ☐	TVOE Server iLO: Restore is complete	 **Note**: *If any failures are reported contact Tekelec TAC (see **1.4 Customer Care Center** from* [1]*) for information on how to proceed.*

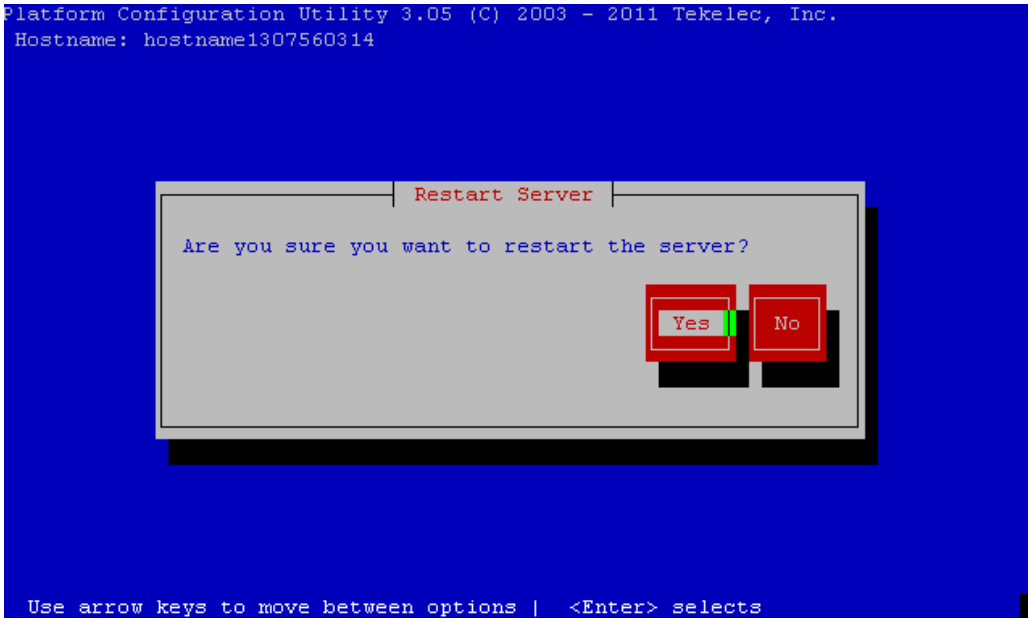
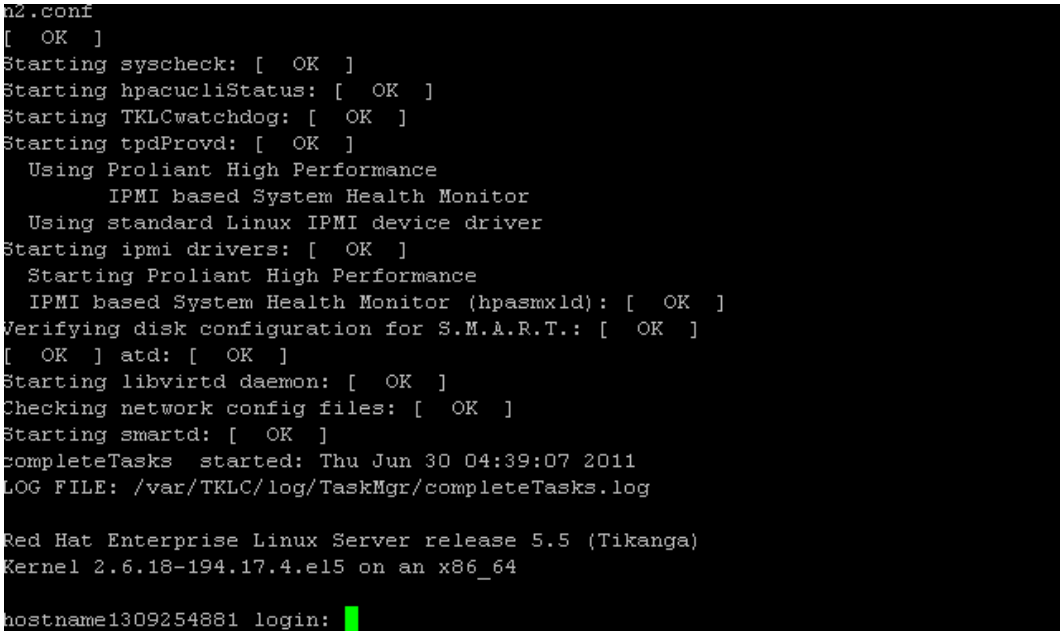
Procedure 1: Restore TVOE configuration from backup media

15. ☐	TVOE Server iLO: Exit out of the Restore Backup Menu.	
16. ☐	TVOE Server iLO: Exit out of the Backup and Restore Menu.	

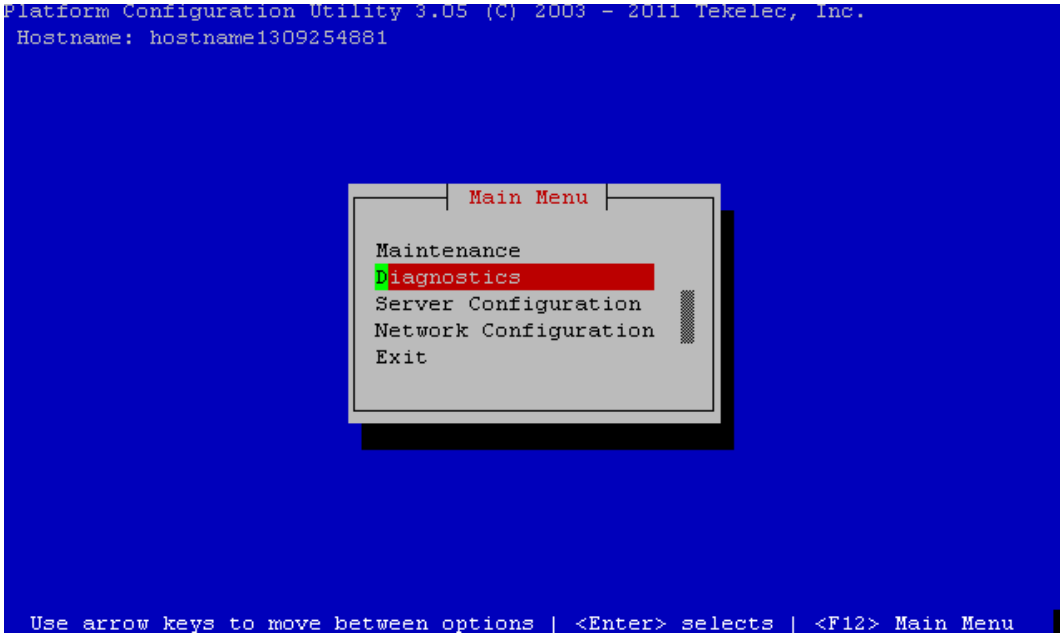
Procedure 1: Restore TVOE configuration from backup media

17. ☐	TVOE Server iLO: Select the “Restart Server” option.	
18. ☐	TVOE Server iLO: Select yes to restart server.	

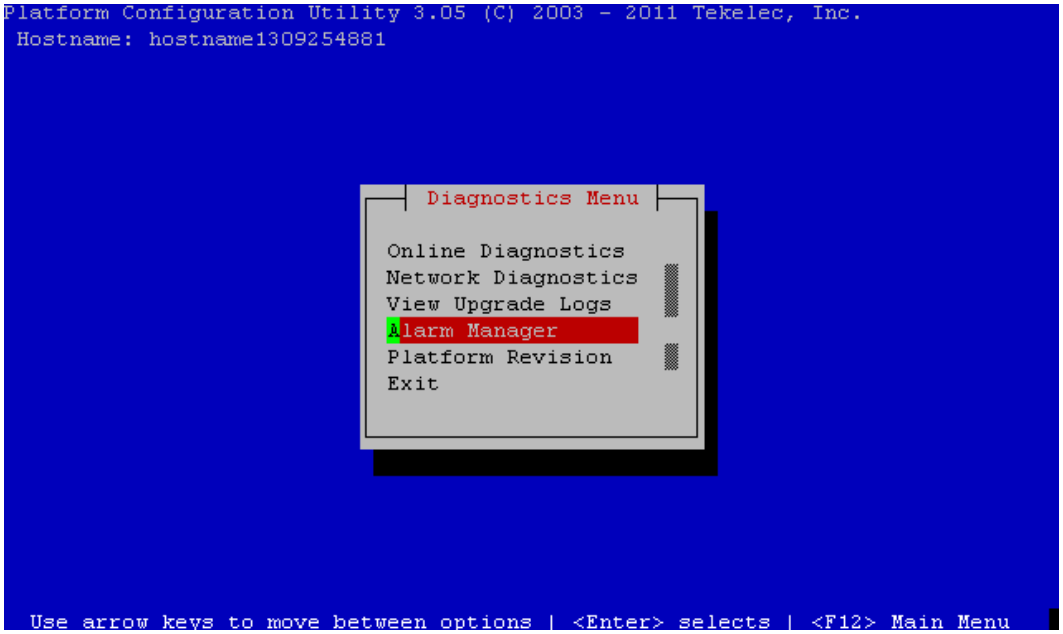
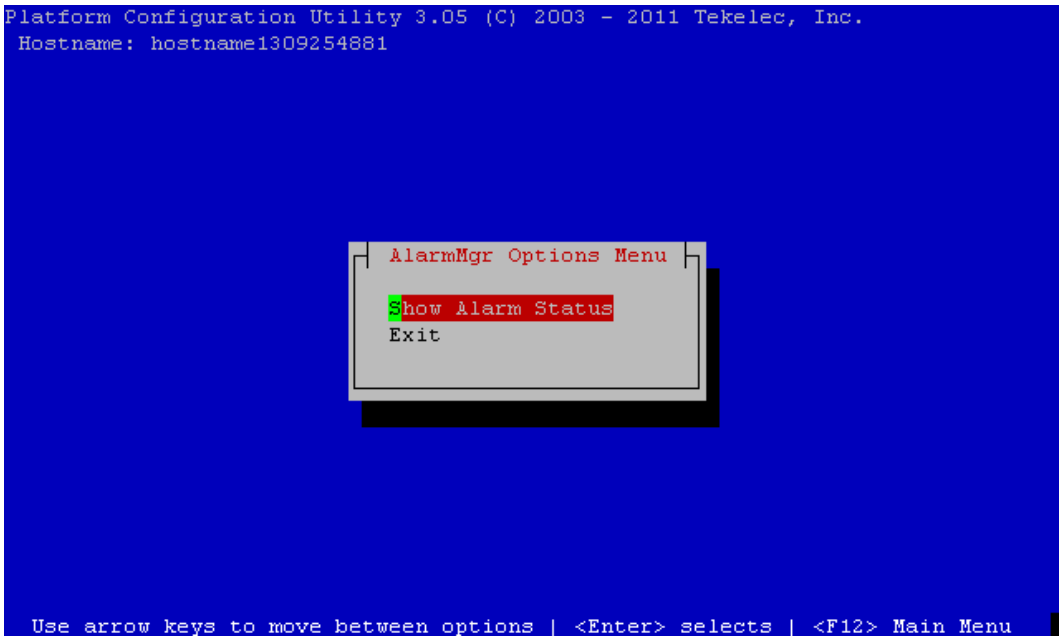
Procedure 1: Restore TVOE configuration from backup media

19. ☐	TVOE Server iLO: Confirm reboot.	
20. ☐	TVOE Server iLO: Wait for reboot to successfully complete. This should typically take less than 20 minutes to complete.	
21. ☐	TVOE Server iLO: Log in as tvoeadmin user.	Log in as the tvoeadmin user.

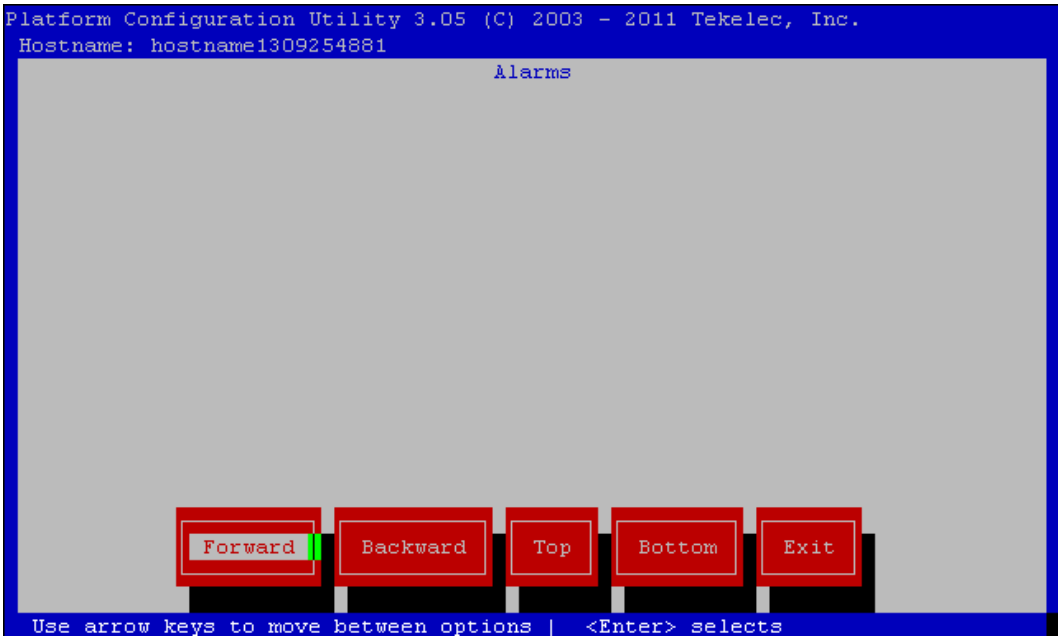
Procedure 1: Restore TVOE configuration from backup media

22. ☐	TVOE Server iLO: Verify storage pools are active.	Execute the following command and verify all storage pools are listed and are in the active state: **% virsh -c "qemu:///system" pool-list**
23. ☐	TVOE Server iLO: Log in as platcfg user.	Log out by typing **exit** at the command prompt and pressing **Enter**. Log in as the platcfg user.
24. ☐	TVOE Server iLO: Select the "Diagnostics" option.	

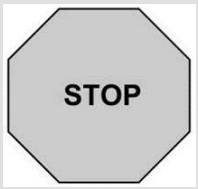
Procedure 1: Restore TVOE configuration from backup media

25. ☐	TVOE Server iLO: Select the “Alarm Manager” option.	
26. ☐	TVOE Server iLO: Select the “Show Alarm Status” option.	

Procedure 1: Restore TVOE configuration from backup media

27. ☐	TVOE Server iLO: Examine the output and determine if any errors or failures were reported.	 **Note**: *If any failures are reported contact Tekelec TAC (see **1.4 Customer Care Center** from* [1]*) for information on how to proceed.*
28. ☐	TVOE Server iLO: Log out of TVOE iLO.	Using the sections listed below from the *Platform 6.x Configuration Procedure Reference* [1], log out of the iLO. ☐ "`3.5.4 Accessing the c-Class iLO Virtual Serial Port`" [1]
29. ☐	Remove TVOE SSH key from PM&C.	If this TVOE Server will host PM&C or there is no PM&C in the network then no work is necessary for this step. Remove the TVOE remote host key from the PM&C in the network by executing the following procedure from this document: ☐ "`Procedure 7: Delete TVOE host key from PM&C` "

Procedure 1: Restore TVOE configuration from backup media



The Restore of TVOE has been completed and guests may now be installed.
No other procedures in this document should be executed.

3.2 Supporting Procedures

Procedure 2: Standalone TVOE IPM

S T E P #	This procedure provides instructions on how to install the TVOE application without a PM&C. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. **IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES** (SEE ***1.4 Customer Care Center*** FROM [1])	
1. ☐	Install TVOE application. Check each box as each task is completed.	Using the sections listed below from the *Platform 6.x Configuration Procedure Reference* [1], reinstall the TVOE application in accordance with the checklist shown: ☐ "3.7.1 IPM DL360 or DL380 Server"[1] **NOTE**: The version of TVOE used for this procedure should match the backed up version of TVOE.

Procedure 3: PM&C Aided TVOE IPM

S T E P #	This procedure provides instructions on how to install the TVOE application using a PM&C. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. **IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES** (SEE ***1.4 Customer Care Center*** FROM [1])

NOTE: ***In addition to the requirements listed in Section 2, this procedure also requires the following:***

- PM&C IP Address
- PM&C Application Password

Procedure 3: PM&C Aided TVOE IPM

1. ☐	Install TVOE application. Check each box as each task is completed.	Use the sections listed below from the *Platform 6.x Configuration Procedure Reference* [1], to reinstall the TVOE application with the aid of PM&C: ☐ "3.8.10 IPM Servers Using PM&C Application" [1] **NOTE**: The version of TVOE used for this procedure should match the backed up version of TVOE.

Procedure 4: Configure Network

S T E P #	This procedure provides instructions on how to configure an IP address and default route on the TVOE Server. Once an IP address is configured it can then be used to transfer the TVOE backup ISO image to the TVOE Server. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. **IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES** (SEE ***1.4 Customer Care Center*** FROM [1])	
1. ☐	TVOE Server iLO: Log in to iLO	Using the sections listed below from the *Platform 6.x Configuration Procedure Reference* [1], log in to the iLO by using a ssh client to connect to the IP address of the TVOE server iLO. ☐ "3.5.4 Accessing the c-Class iLO Virtual Serial Port" [1]
2. ☐	TVOE Server iLO: Remove live network configuration.	Remove any live interface configuration on the TVOE by executing the following command: **# service network stop** An example of the output is shown below: **# service network stop** **Shutting down interface control: [OK]** **Shutting down interface bond0: [OK]** **Shutting down loopback interface: [OK]**
3. ☐	TVOE Server iLO: Bring the loopback interface up.	The loopback interface was also brought down in the previous step. Bring it back up by executing the following command: **# ifup lo**

Procedure 4: Configure Network

4. ☐	TVOE Server iLO: Set up a vlan device if needed.	If a vlan tagged interface is needed then create it and bring it up using the following two commands. <**DEVICE**> is the name of the vlan device that is being created, <**PHYSDEV**> is the name of the physical interface to build the vlan device on top of, and <**VLAN**> is the number of the vlan. **# ip link add dev <DEVICE> link <PHYSDEV> type vlan id <VLAN>** **# ip link set up <PHYSDEV>** There should be no output from the commands. An example is shown below: **# ip link add dev eth01.3 link eth01 type vlan id 3** **# ip link set up eth01** **NOTE: <DEV>** in the following steps would now be "**eth01.3**"
5. ☐	TVOE Server iLO: Set up IP address on ethernet device.	On the command line execute the following command to add an IP address to the system. The **<IP>** and **<NETMASK>** will 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 PM&C. The device **<DEV>** will need to be physically attached to a network segment that can be reached from the machine hosting the TVOE backup ISO image. **# ip addr add <IP>/<NETMASK> dev <DEV>** There should be no output from the command. An example is shown below: **# ip addr add 10.25.6.170/255.255.255.0 dev eth01**
6. ☐	TVOE Server iLO: Bring up the ethernet device.	On the command line execute the following command to bring up the interface **<DEV>.** **# ip link set up <DEV>** There should be no output from the command. An example is shown below: **# ip link set up eth01**
7. ☐	TVOE Server iLO: Add route if necessary.	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 the following command. **<GATEWAY>** is the IP address of the gateway. **# ip route add default via <GATEWAY>** There should be no output from the command. An example is shown below: **# ip route add default via 10.25.6.1**

Procedure 4: Configure Network

8. ☐	TVOE Server iLO: Log out of TVOE iLO.	Using the sections listed below from the *Platform 6.x Configuration Procedure Reference* [1], log out of the iLO. ☐ "3.5.4 Accessing the c-Class iLO Virtual Serial Port" [1]

Procedure 5: Restore TVOE backup ISO using Netbackup

S T E P #	This procedure will restore the TVOE Backup ISO image to the TVOE host by pushing it via Netbackup. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. **IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES** (SEE ***1.4 Customer Care Center*** FROM [1])	
NOTE: ***In addition to the requirements listed in Section 2, this procedure also requires the following:*** • TVOE has been configured with an IP address in ***Procedure 4: Configure Network***		
1. ☐	TVOE Server iLO: Log in to iLO	Using the sections listed below from the *Platform 6.x Configuration Procedure Reference* [1], log in to the iLO by using a ssh client to connect to the IP address of the TVOE server iLO. ☐ "3.5.4 Accessing the c-Class iLO Virtual Serial Port" [1]
2. ☐	TVOE Server iLO: Install Netbackup Client.	Using the sections listed below from the *Platform 6.x Configuration Procedure Reference* [1], install and configure the Netbackup Client on TVOE. ☐ "3.12.2 TVOE Netbackup Client Configuration" [1]
3. ☐	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 will be in /var/TKLC/bkp/ on the TVOE Server.

Procedure 5: Restore TVOE backup ISO using Netbackup

4. ☐	TVOE Server iLO: Log out of TVOE iLO.	Using the sections listed below from the *Platform 6.x Configuration Procedure Reference* [1], log out of the iLO. ☐ "3.5.4 Accessing the c-Class iLO Virtual Serial Port" [1]

Procedure 6: Restore TVOE backup ISO using SCP

S T E P #	This procedure will 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. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. **IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES** (SEE ***1.4 Customer Care Center*** FROM [1])	
NOTE: ***In addition to the requirements listed in Section 2, this procedure also requires the following:*** • TVOE has been configured with an IP address in ***Procedure 4: Configure Network***		
1. ☐	Customer PC: Copy Backup ISO image to TVOE	Using the IP address configured on the TVOE Server (this was done 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. *****NOTE: If you do not have a backup ISO image then you cannot proceed.***** — **Linux** • From the command line of a Linux machine please use the following command to copy the Backup ISO image to the TVOE host: **`# scp <path_to_image> tvoexfer@<TVOE_IP>:backup/`** Where **`<path_to_image>`** is the path to the Backup ISO image local to the Customer PC and **`<TVOE_IP>`** is the TVOE IP address. If the IP is an is an IPv4 address then **`<TVOE_IP>`** will be a normal dot-decimal notation (e.g. "**`10.240.6.170`**"). If the IP is an IPv6 link local address then **`<TVOE_IP>`** will be need to be scoped such as "**`[fe80::21e:bff:fe76:5e1c%control]`**" where **`control`** is the name of the interface on the machine that is initiating the transfer and it must be on the same link as the interface on the TVOE host. IPv4 Example: **`# scp /path/to/image.iso tvoexfer@10.240.6.170:backup/`** IPv6 Example: **`# scp /path/to/image.iso tvoexfer@[fe80::21e:bff:fe76:5e1c%control]:backup/`** — **Windows** • Please use WinSCP to copy the Backup ISO image into the backup directory within the tvoexfer user's home directory. Refer to "`Appendix A: Using WinSCP`" from *Platform 6.x Configuration Procedure Reference* [1] for help using WinSCP.

Procedure 7: Delete TVOE host key from PM&C

S T E P #		
	This procedure provides instructions on how to delete the TVOE host SSH key from PM&C. This is only needed if PM&C exists in the network at the time TVOE is being recovered. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. **IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES** (SEE ***1.4 Customer Care Center*** FROM [1])	
NOTE: ***In addition to the requirements listed in Section 2, this procedure also requires the following:*** • PM&C IP Address • PM&C root password		
1. ☐	Determine TVOE ipv6 link local address.	Determine the IPv6 link local address of the TVOE host by executing the following procedure from this document: ☐ "`Procedure 8: Determine IPv6 Link Local Address`"
2. ☐	Log in to the PM&C CLI.	Log in to the PM&C via SSH as the root user.
3. ☐	PM&C CLI: Delete the remote host key.	Using the IPv6 address found in Step 1, execute the following command to remove the TVOE host's SSH key from the PM&C. **`# pmacadm removeHostKeys --ip=<TVOE_IP>`** An example of this is shown below: **`# pmacadm removeHostKeys --ip=fe80::21e:bff:fe76:5e1c`** **`Successful delete of entry for ip (fe80::21e:bff:fe76:5e1c) from PM&C list of known hosts.`**

Procedure 8: Determine IPv6 Link Local Address

S T E P #	This procedure provides instructions on how to find the IPv6 link local address of the TVOE server. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. **IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES** (SEE ***1.4 Customer Care Center*** FROM [1])	
1. ☐	TVOE Server iLO: Log in to iLO	Using the sections listed below from the *Platform 6.x Configuration Procedure Reference* [1], log in to the iLO by using a ssh client to connect to the IP address of the TVOE server iLO. ☐ "3.5.4 Accessing the c-Class iLO Virtual Serial Port" [1]
2. ☐	TVOE Server iLO: Detect IPv6 link local address.	On the command line execute the following command: **# ip -6 addr show dev control** An example of the output of this command is shown below: **# ip -6 addr show dev control** **12: control: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500** **inet6 fe80::21e:bff:fe76:5e1c/64 scope link** **valid_lft forever preferred_lft forever** In this case the link local address is **fe80::21e:bff:fe76:5e1c.** Record the link local address in the output for later use.
3. ☐	TVOE Server iLO: Log out of TVOE iLO.	Using the sections listed below from the *Platform 6.x Configuration Procedure Reference* [1], log out of the iLO. ☐ "3.5.4 Accessing the c-Class iLO Virtual Serial Port" [1]

Appendix A: Accessing Oracle's Tekelec Customer Support Site

Access to the Oracle's Tekelec Customer Support site is restricted to current Tekelec customers. This section describes how to log into Oracle's Tekelec Customer Support site and how to locate upgrade procedures. Viewing these files requires Adobe Acrobat Reader.

1. Go to Oracle's Tekelec Customer Support login page at https://support.tekelec.com/index.asp
2. Enter your assigned username and chosen password and click **Login.**

   Or, if you do not have access to the Customer Support site, click **Need an Account?**
   Follow instructions on the screen.

   Note: After 20 minutes of inactivity, you will be logged off, and you must repeat this step to regain access.

3. After successful login, select a product from the Product Support drop-down menu.
4. Select a release number from the Product Support Release drop-down menu.
5. Locate the Upgrade Procedures section.
6. To open the procedure in the same window, click the procedure name. To open the procedure in a new window, right-click the procedure name and select **Open in New Window**.
7. To download the procedure, right-click the procedure name and select **Save Target As**.