

IBM Virtualization Engine 3954 Model CV6



# IBM Virtualization Engine for Tape TS7500 V3.x Software Installation Instructions

**PN 45E8330 EC M10192C 03Apr2009**

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# Software Installation Instructions

Part Number 45E8330 EC M10192C

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<b>Status:</b>	Field use

**Note:** This Field Feature Bill of Materials must be used on the TS 7530 Server (IBM® 3954 Model CV6) for which it was shipped.

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## 1.0 Purpose and Description

This document describes the procedure for upgrading a TS7520 system running TS7500 V2 R1 or TS7500 V2 R2 software level to the TS7500 V3 software level using the TS7500 V3.x Software Upgrade CD.

**Note:** You cannot load the TS7500 V3 software level on a TS7510 system.

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### 1.1 Who should read this document

This publication is intended for use by customers who are using the TS7500 V3.x Software Upgrade CD to upgrade a TS7520 system running TS7500 V2 R1 or TS7500 V2 R2 software level to the TS7500 V3 software level.

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### 1.2 Installation time

The estimated installation time for this procedure is 1.0 hours.



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## 2.0 Prerequisites

The following prerequisites are to be met prior to performing the upgrade procedure:

- Before starting the software upgrade, please make sure that the virtual vault is empty. If there are tapes inside the virtual vault before software upgrade, please move them to a virtual library before proceeding.
- The necessary software upgrade has been completed:
  - System is at the TS7500 V2 R1 or TS7500 V2 R2 software level (minimum)
  - System has a minimum of 4GB of RAM (FC 3460)
  - System is updated with all released patches. See the following Web site to download the patches:  
[http://www-01.ibm.com/support/search.wss?rs=1174&tc=HW29K&q=ssg1\\*&dc=D420&dtm](http://www-01.ibm.com/support/search.wss?rs=1174&tc=HW29K&q=ssg1*&dc=D420&dtm)

**Attention:** In sections of this documentation, there are occurrences of root passwords that are used to manage and configure the product. Improper use of these commands and passwords poses significant risk to the product and your data. It is imperative that these commands and passwords are used only as documented.

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## 2.1 Verify the system is at the correct software level

To check if the IBM Virtualization Engine™ TS7500 is at the correct level on each server (both the upper and lower server if in an HA environment), perform the following steps:

1. Log into PuTTY by selecting **Start** → **Programs** → **PuTTY** → **PuTTY**.  
For instructions on how to install PuTTY on the VE Console, see *Appendix A. Logging into the server*.
2. Enter the IP address of the server you are connecting to where specified.

**Note:** The IP address should be on the top of the server.

3. Click **Open**.
4. Click **Yes** at the PuTTY Security Alert screen. See Figure 1 on page 6.



Figure 1. PuTTY Security Alert

5. Enter the following user name and password:

User name: **root**

Password: **warning2use**

**Note:** The user name and password are case-sensitive.

**Attention:** Improper use of this password and command poses significant risk to the product and your data. It is imperative that this password and command are used only as documented.

6. At the command prompt, enter the following command:

```
cat /var/log/IBMAplianceType
```

7. The output may look like the following, depending on your configuration:

```
CVT2 HA Lower Server (CVT2.2 HA Lower Server)
x366
```

where the number **2** in **CVT2** gives the software version. In this example, the software level is TS7500 V2 R2 indicated by **CVT2.2**.

The TS7500 should be at the v2.00 software level indicated by **CVT2** above. If the software level is not at the correct level, the system must be brought to the correct software level.

**Note:** If the output reads **CVT3**, then your system is already at the 3.0 software level. Continue to Section 4.0 "Verify that required patches have been installed" to make sure all the available patches have been installed.

You may require the following software CDs if your system is not at the required levels. ISO images for this software are also available from the following Virtualization Engine patch download page:[http://www-01.ibm.com/support/search.wss?rs=1174&tc=HW29K&q=ssg1\\*&dc=D400&dtm](http://www-01.ibm.com/support/search.wss?rs=1174&tc=HW29K&q=ssg1*&dc=D400&dtm)

Click on the link **TS7520 Patch update-ve13821201** and scroll down to find the following CD images:

- TS7520 2.2 Software Upgrade CD (LCD8-0687-01)



- TS7520 CVT Console Installation Disk v2.2.3 (EC L30806 Part number 45E2071)
8. At the command prompt, enter `exit` to exit out of PuTTY.
  9. After you have exited PuTTY, continue to Section 3.0 “Installation of the TS7500 V3.x Software Upgrade CD.”

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## 2.2 Ensure SMcli can resolve hostname

Ensure that the SMcli can resolve your hostname by completing the following procedure:

**Note:** Refer to “2.1 Verify the system is at the correct software level” on page 5 to use PuTTY to log in to your system.

1. At the command prompt enter the following command, where `[hostname]` is the hostname specific to your configuration:

```
nslookup [hostname]
```

The output should resemble the following, depending on your configuration:

```
#nslookup [hostname]
Server: 9.47.64.191
Address: 9.47.64.191 abc102.abc.beaverton.ibm.com
```

```
Name: [hostname]
Address: 10.0.0.1 [hostname].abc.beaverton.ibm.com
```

You need to correct your settings if your output **does not** include the following line (specific to your network environment):

```
Address: 10.0.0.1 [hostname].abc.beaverton.ibm.com
```

You may also need to correct your settings if the command returns error output similar to the following:

```
#nslookup [hostname]
Server: 9.47.64.191
Address: 9.47.64.191 abc102.abc.beaverton.ibm.com
```

```
nslookup: getaddrinfo('hostname') failed: Name or service not known
```

2. Correct your settings by adding the IP address and host name to your `/etc/hosts` file as seen below, where `[hostname]` is the hostname specific to your environment:

```
10.0.0.1 [hostname].abc.beaverton.ibm.com
```

---

## 2.3 Perform configuration backup and diagnostic summary

**Attention:** In the event that the upgrade does not complete successfully, it is a good idea to have a configuration backup and diagnostic summary that can be used for recovery operations. This configuration backup and diagnostic summary should be taken prior to the software upgrade.

**To save a configuration backup, perform the following steps:**

1. Backup the current system configuration.
2. Start the TS7500 Virtualization Engine management console (VE console) workstation by performing one of the following:
  - If there is a desktop shortcut for the **VE for Tape Console** application, double-click it.
  - If there is not a desktop shortcut for the **VE for Tape Console** application, click **Start** → **Programs** → **IBM** → **VE for Tape** → **VE for Tape Console**.

**Note:** This is the default installation location for the **VE for Tape Console** application. The location of the application might differ for you.

3. Double-click **VE for Tape Servers** to expand the server list.

4. Double-click any server icon.
5. In the VE for Tape User Login window, enter the following user name and password:  
User name: **vetapeuser**  
Password: **veuserpassword**

**Note:** The user name and password are case-sensitive.

6. From the menu bar select **Tools** → **Save Configuration**.
7. Select a location to save the file and give it a filename. Click the **Save** button.

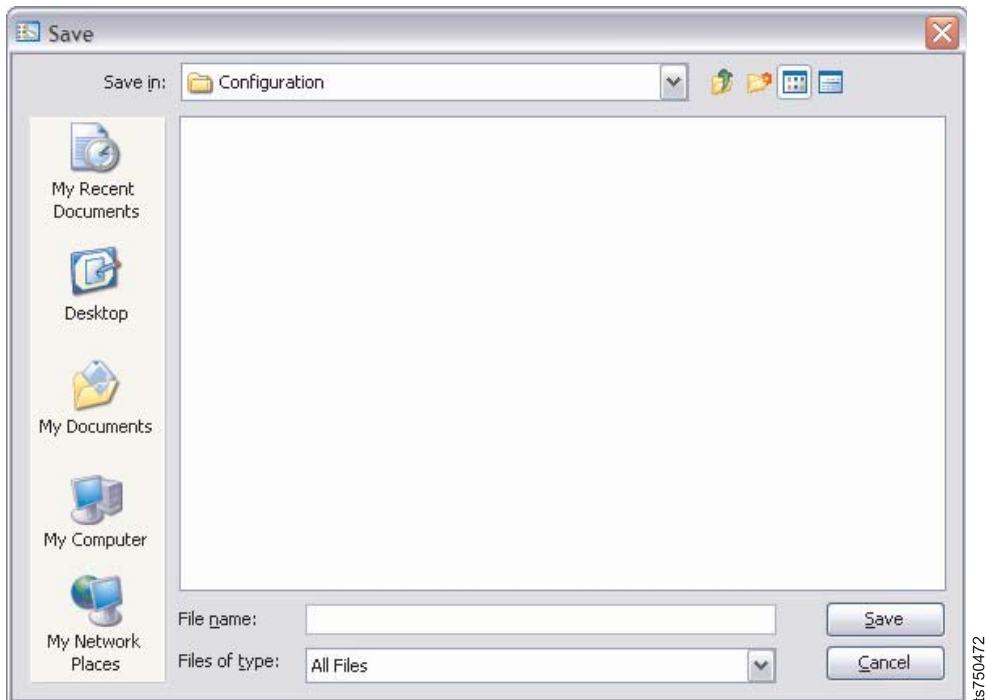


Figure 2. Save configuration

8. Wait for the configuration to save.

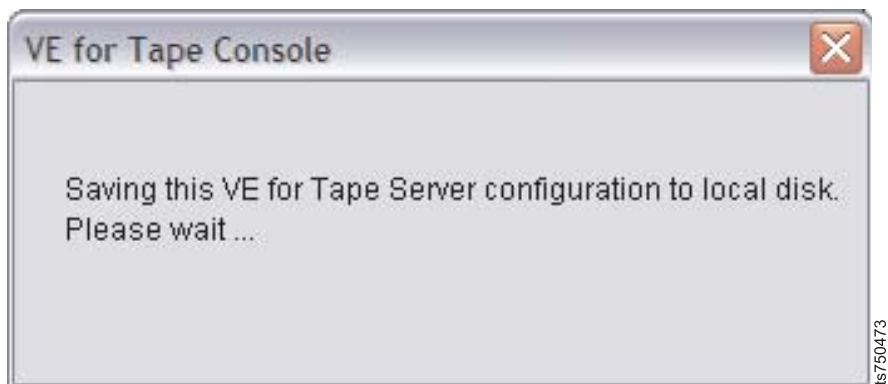


Figure 3. Saving configuration message

9. When the configuration save finishes, click **OK** on the pop-up window.



Figure 4. Configuration saved successfully

10. Do not exit the VE console.

**To save a diagnostic summary, perform the following steps:**

1. In the VE console, right-click the server icon and select **Diagnostic Summary Data**. See Figure 5.

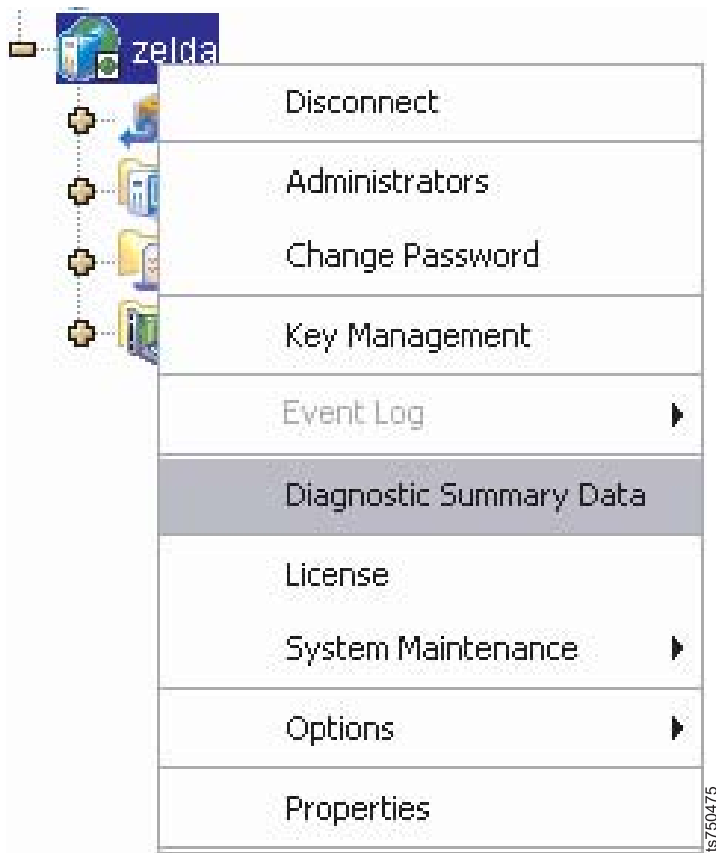


Figure 5. Diagnostic Summary Data selection

2. Click the **Yes** button on the pop-up window.

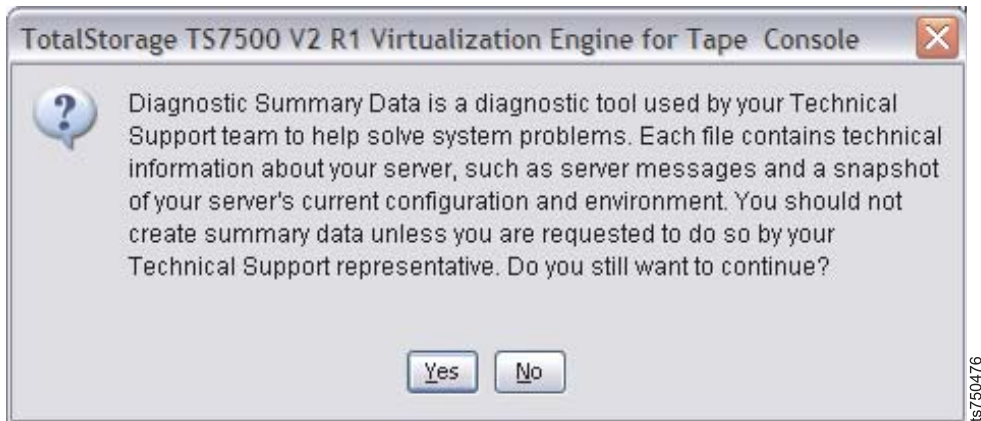


Figure 6. Choosing to create summary data

3. The Diagnostic Summary Data Options window pops up. Click the “...” button to choose a location to save the diagnostic data file.



Figure 7. Diagnostic Summary Data Options window

4. Click the **OK** button when a location is chosen.

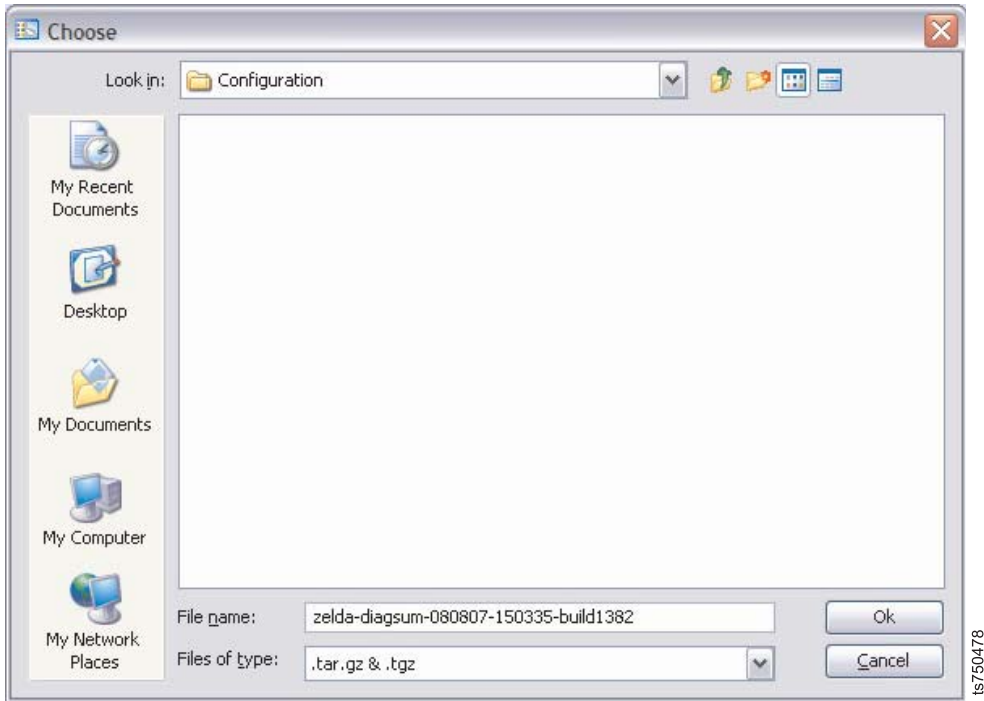


Figure 8. Diagnostic data location

5. Keep the defaults on the Diagnostic Summary Data Options window and click the **Create Diagnostic Summary Data** button.
6. A pop-up window indicates that the diagnostic summary data is being collected. Wait for it to complete, which may take several minutes.

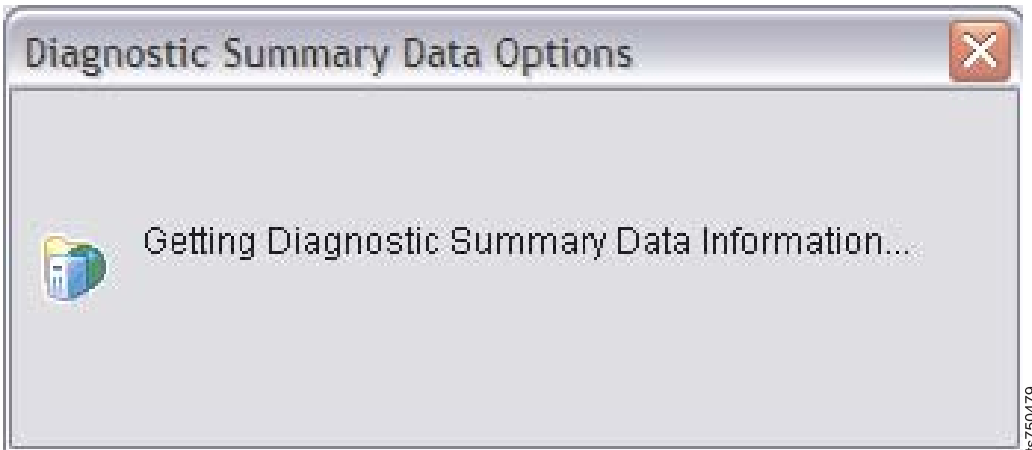


Figure 9. Diagnostic summary data message

7. When the diagnostic summary data collection is complete, you will disconnect from the VE console. Wait a minute or two, then double-click the server icon to log back into the console.
8. Proceed to Section 3.0 "Installation of the TS7500 V3.x Software Upgrade CD" to update the software.

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## 3.0 Installation of the TS7500 V3.x Software Upgrade CD

To install the TS7500 V3.x Software Upgrade CD, perform the following steps:

**Note:** Press **enter** after typing commands at the command prompt.

1. Obtain the TS7500 V3.x Software Upgrade CD with part number: PN 45E6573.
2. Start the TS7500 Virtualization Engine management console (VE console) workstation by performing one of the following:
  - If there is a desktop shortcut for the **VE for Tape Console** application, double-click it.
  - If there is not a desktop shortcut for the **VE for Tape Console** application, click **Start** → **Programs** → **IBM** → **VE for Tape** → **VE for Tape Console**.

**Note:** This is the default installation location for the **VE for Tape Console** application. The location of the application might differ for you.

3. Double-click **VE for Tape Servers** to expand the server list.
4. Double-click any server icon.
5. In the VE for Tape User Login window, enter the following user name and password:

User name: **vetapeuser**

Password: **veuserpassword**

**Note:** The user name and password are case-sensitive.

6. Perform one of the following, depending upon whether one or two servers are installed in the 3954 F05 frame:
  - If **two** servers are installed and failover has been configured, **remove failover on both the lower and the upper servers** and then go to step 7.

**Note:** See *Appendix B. Removing Failover* for procedure to remove failover.

- If **one** server is installed, go to step 7.
7. Place the TS7500 V3.x Software Upgrade CD into the DVD drive of the lower server.
  8. Log into PuTTY by selecting **Start** → **Programs** → **PuTTY** → **PuTTY**.  
For instructions on how to install PuTTY on the VE Console, see *Appendix A. Logging into the server*.
  9. Enter the IP address of the server you are connecting to where specified.

**Note:** The IP address should be on the top of the server.

10. Click **Open**.
11. Click **Yes** at the PuTTY Security Alert screen. See Figure 10 on page 14.



Figure 10. PuTTY Security Alert

12. Enter the following user name and password:

User name: **root**

Password: **warning2use**

**Note:** The user name and password are case-sensitive.

**Attention:** Improper use of this password and command poses significant risk to the product and your data. It is imperative that this password and command are used only as documented.

13. Verify that the VE services are running, by entering the following command at the command line:

```
ve status
```

and press **enter**. All the services should indicate a status of RUNNING.

**Note:** If the VE services are not running, start them by entering the command

```
ve start
```

and repeat step 13. If the command cannot be found, exit out of PuTTY, log back into PuTTY and repeat step 13. If the problem persists, contact your next level of support.

14. Mount the TS7500 V3.x Software Upgrade CD by running the following command at the command prompt:

```
mount /dev/hda /media/cdrom
```

15. Run the Software Upgrade by running the following command at the command prompt:



**Attention:** The system will check for the amount of RAM available (with 4GB being the minimum). If the amount of RAM installed is inadequate, do not continue with installation until the minimum amount of RAM has been installed.

**Note:** You should see the following messages:

```
zelda:~ # /media/cdrom/SW_CVT2_to_CVT3
Total Memory=3630008 Used=%used Free=2683032
```

```
IBM VE for Tape Server v2.00 (Build 1382)
Copyright (c) 2001-2007 FalconStor Software. All Rights Reserved.
```

```
Starting VE for Tape Configuration Module [RUNNING]
Starting VE for Tape Base Module [RUNNING]
Starting VE for Tape HBA Module [RUNNING]
Starting VE for Tape SNMPD Module [RUNNING]
Starting VE for Tape Authentication Module [RUNNING]
Starting VE for Tape Server (Compression) Module [RUNNING]
Starting VE for Tape Server (HW Compression) Module [RUNNING]
Starting VE for Tape Server (Application Upcall) Module [RUNNING]
Starting VE for Tape Server (FSNBase) Module [RUNNING]
Starting VE for Tape Server (Upcall) Module [RUNNING]
Starting VE for Tape Server (Application) Module [RUNNING]
Starting VE for Tape Server (Application IOCTL) Module [RUNNING]
Starting VE for Tape Server (User) [RUNNING]
Starting VE for Tape Target Module [RUNNING]
Loading VE for Tape Resources [SKIPPED]
Starting VE for Tape Communication Module [RUNNING]
Starting VE for Tape Logger Module [RUNNING]
Starting VE for Tape Self Monitor Module [RUNNING]
Verify the Tape in the drive.
WARNING: The CD will format the LUN0 and update OS.
Do you want to continue (yes/no)?
yes
Starting...
SOFTWARE UPGRADE CVT3.0.
/dev/mem: munmap: Invalid argument
Save repository. Please wait...
The Repository saved.
populate_vtapes finished.
*****
* rebooting now with the CD... *
*****
```

16. Type yes to proceed when prompted.

**Note:** During the upgrade process, you will see status messages on the screen displaying the percentage complete of installing various software packages. This is normal.

After the installation is complete and the CD ejects, the system will reboot. You will lose connection to the server as it reboots. Wait approximately 15 minutes before continuing to step 17.

17. Log into PuTTY by selecting **Start** → **Programs** → **PuTTY** → **PuTTY**.

For instructions on how to install PuTTY on the VE Console, see *Appendix A. Logging into the server*.

18. Enter the IP address of the server you are connecting to where specified.

**Note:** The IP address should be on the top of the server.

19. Click **Open**.

20. Click **Yes** at the PuTTY Security Alert screen. See Figure 11 on page 19.



Figure 11. PuTTY Security Alert

21. Enter the following user name and password:

User name: **root**

Password: **warning2use**

**Note:** The user name and password are case-sensitive.

**Attention:** Improper use of this password and command poses significant risk to the product and your data. It is imperative that this password and command are used only as documented.

22. Run the following command at the command prompt:

```
/var/tmp/set_ve_type
```

The server will begin to finish updating itself and will reboot itself once again. You will lose connection to the server as it reboots. Wait approximately 15 minutes before continuing to step 23.

**Note:** You should see the following messages:

```
zelda:/ # /var/tmp/set_ve_type
Software Upgrade CVT2.x to CVT3.0.
Copying, Please wait...
```

```
Shutting down syslog services           done
Starting syslog services                 done
Start installation VE for Tape....
Installing SM packages.
SMagent started.
SMmonitor started.
Starting mcpConfig script.
untarring files from mcpConfig.tgz:
usr/
usr/share/
usr/share/fluxbox/
```

```

usr/share/fluxbox/init
usr/share/fluxbox/keys
usr/share/fluxbox/menu
etc/
etc/X11/
etc/X11/xdm/
etc/X11/xdm/Xsetup
etc/X11/XF86Config.x346
etc/X11/XF86Config.x366
etc/X11/XF86Config.x3755
configuring /etc/X11/XF86Config
Adding SMClient to /usr/share/fluxbox/menu file
Adding SMClient to /etc/X11/twm/system.twmrc file
creating isadmin group
Create ServiceAgent group and user
Creating CVT3.0 userids
Adding root dirs to vetapeservice path setting
Setting default window manager in /etc/X11/xinit/xinitrc
Modifying /etc/sudoers
Creating /var/log/lastlog file
done with mcp configuration
Installing VE Console GUI.
IBM TotalStorage TS7500 V3 R1 Virtualization Engine for Tape Console installation
completed.
Adding VE Console GUI to fluxbox menu.
Verifying archive integrity... All good.
Uncompressing Open iSCSI initiator 2.0-754.....
Stopping iSCSI service...
Uninstalling iscsi-initiator...
Installing open iSCSI initiator 2.0-754...
Adding swap.
mke2fs 1.38 (30-Jun-2005)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
488640 inodes, 976896 blocks
48844 blocks (5.00%) reserved for the super user
First data block=0
30 block groups
32768 blocks per group, 32768 fragments per group
16288 inodes per group
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376, 294912, 819200, 884736

Writing inode tables: done
Creating journal (16384 blocks): done
Writing superblocks and filesystem accounting information: done

This filesystem will be automatically checked every 36 mounts or
180 days, whichever comes first. Use tune2fs -c or -i to override.
mke2fs 1.38 (30-Jun-2005)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
727200 inodes, 1454080 blocks
72704 blocks (5.00%) reserved for the super user
First data block=0
45 block groups
32768 blocks per group, 32768 fragments per group
16160 inodes per group
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376, 294912, 819200, 884736

Writing inode tables: done
Creating journal (32768 blocks): done

```

Writing superblocks and filesystem accounting information: done

This filesystem will be automatically checked every 28 mounts or 180 days, whichever comes first. Use tune2fs -c or -i to override.

Install IBM package for 3494 Library support.

Adding lmcpcd 3494 port to /etc/services file...

Adding lmcpcd entry to /etc/inittab file...

Finish to the installation

Install IBM package for 3494 Library support done.

Found xSeries 366.

Change rotation policy of messages.

Change rotation policy [ OK ]

Shutting down syslog services done

Starting syslog services done

Change rotation policy of messages done.

Starting the DS4100 agent.

Running...

SMagent Started successfully [ OK ]

New storage subsystem was discovered at address 127.0.0.1.

SMcli completed successfully.

Starting SMmonitor.

Cannot start SMmonitor because SMmonitor is already running.

SMcli completed successfully.

Starting the DS4100 agent done.

Running PreferredPath, Please wait...

Setting VE Engine type.

Adding the application LUN.

The number of cylinders for this disk is set to 26108.

There is nothing wrong with that, but this is larger than 1024, and could in certain setups cause problems with:

1) software that runs at boot time (e.g., old versions of LILO)

2) booting and partitioning software from other OSs

(e.g., DOS FDISK, OS/2 FDISK)

mke2fs 1.38 (30-Jun-2005)

100+0 records in

100+0 records out

104857600 bytes (105 MB) copied, 0.480608 seconds, 218 MB/s

Repository sdb.

100+0 records in

100+0 records out

104857600 bytes (105 MB) copied, 0.46492 seconds, 226 MB/s

Mirror of the Repository sdo.

Installing VE RPM package.

Initialize IMA configuration file ..... [ OK ]

Preparing... ##### [100%]

1:ve ##### [100%]

International Business Machines, Inc. TotalStorage TS7500 V3 R1 Virtualization Engine for Tape Server

v3.00 (Build 1465) Setup

Copyright (c) 2001-2008 FalconStor Software. All Rights Reserved.

Supported SCSI device(s) found: 48

TotalStorage TS7500 V3 R1 Virtualization Engine for Tape configuration created.

International Business Machines, Inc. TotalStorage TS7500 V3 R1 Virtualization Engine for Tape

installation completed.

Update VE

Installing VE RPM package done.

Configure the FC drivers.

IBM VE for Tape Server v3.00 (Build 1465)

Copyright (c) 2001-2008 FalconStor Software. All Rights Reserved.

```

Starting VE for Tape SNMPD Module [ OK ]
Starting VE for Tape Authentication Module [ OK ]
Starting VE for Tape Server (Compression) Module [ OK ]
Starting VE for Tape Server (Hifn HW Compression) Module [ OK ]
Starting VE for Tape Server (Application Upcall) Module [ OK ]
Starting VE for Tape Server (FSNBase) Module [ OK ]
Starting VE for Tape Server (Upcall) Module [ OK ]
Starting VE for Tape Server (Application) Module [ OK ]
Starting VE for Tape Server (Application IOCTL) Module [ OK ]
Starting VE for Tape Server (User) [ OK ]
Starting VE for Tape Target Module [ OK ]
Starting VE for Tape Local Client (VBDI) [ OK ]
Loading VE for Tape Resources [ OK ]
Starting VE for Tape Server IMA Daemon [ OK ]
Starting VE for Tape Server RDE Daemon [ OK ]
Starting VE for Tape Communication Module [ OK ]
Starting VE for Tape Logger Module [ OK ]
Starting VE for Tape Self Monitor Module [ OK ]
Please wait...
virtualization of LUN 0.0.0.1 done.
Making new kernel image....
Root device: /dev/sda1 (mounted on / as ext3)
Module list: fsbase fsconf fshba tg3 bonding ()

Kernel image: /boot/vmlinuz-2.6.16.46-229-smp
Initrd image: /boot/initrd-2.6.16.46-229-smp.img
Shared libs: lib64/ld-2.4.so lib64/libacl.so.1.1.0 lib64/libattr.so.1.1.0 lib64/libblkid
.so.1.0 lib64/libc-2.4.so lib64/libcom_err.so.2.1 lib64/libdl-2.4.so lib64/libext2fs.so.
2.4 lib64/libhistory.so.5.1lib64/libncurses.so.5.5 lib64/libpthread-2.4.so lib64/libread
line.so.5.1 lib64/librt-2.4.so lib64/libuuid.so.1.2lib64/libnss_files-2.4.so lib64/libns
s_files.so.2 lib64/libgcc_s.so lib64/libgcc_s.so.1

Driver modules: scsi_mod sd_mod fsbase fsconf fshba tg3 bonding libata pata_serverworks
Filesystem modules:
Including: initramfs fsck.ext3
23938 blocks

You may now have to update your boot loader configuration.
New kernel image made successfully [ OK ]
making a new kernel image done.
Adding VE auto start.
CVT3 SOFTWARE UPGRADE COMPLETED SUCCESSFULLY..
Rebooting...

```

23. Log into PuTTY by selecting **Start** → **Programs** → **PuTTY** → **PuTTY**

For instructions on how to install PuTTY on the VE Console, see *Appendix A. Logging into the server.*

24. Enter the IP address of the server you are connecting to where specified.

**Note:** The IP address should be on the top of the server.

25. Click **Open**.
26. Click **Yes** at the PuTTY Security Alert screen. See Figure 12 on page 24.



Figure 12. PuTTY Security Alert

27. Enter the following user name and password:

User name: **root**

Password: **warning2use**

**Note:** The user name and password are case-sensitive.

**Attention:** Improper use of this password and command poses significant risk to the product and your data. It is imperative that this password and command are used only as documented.

28. At the command prompt, make sure all services are running by entering the following command:

ve status

**Note:** You should see the following messages:

```

zelda:~ # ve status
IBM VE for Tape Server v3.00 (Build 1465)
Copyright (c) 2001-2008 FalconStor Software. All Rights Reserved.
Status of VE for Tape SNMPD Module [RUNNING]
Status of VE for Tape Configuration Module [RUNNING]
Status of VE for Tape Base Module [RUNNING]
Status of VE for Tape HBA Module [RUNNING]
Status of VE for Tape Authentication Module [RUNNING]
Status of VE for Tape Server (Compression) Module [RUNNING]
Status of VE for Tape Server (Hifn HW Compression) Module [RUNNING]
Status of VE for Tape Server (Application Upcall) Module [RUNNING]
Status of VE for Tape Server (FSNBase) Module [RUNNING]
Status of VE for Tape Server (Upcall) Module [RUNNING]
Status of VE for Tape Server (Application) Module [RUNNING]
Status of VE for Tape Server (Application IOCTL) Module [RUNNING]
Status of VE for Tape Server (User) [RUNNING]
Status of VE for Tape Target Module [RUNNING]
Status of VE for Tape Server IMA Daemon [RUNNING]

```

```
Status of VE for Tape Server RDE Daemon [RUNNING]
Status of VE for Tape Communication Module [RUNNING]
Status of VE for Tape Logger Module [RUNNING]
Status of VE for Tape Local Client (VBDI) [RUNNING]
Status of VE for Tape Self Monitor Module [RUNNING]
zelda:~ #
```

29. Repeat steps 1 through 28 in this section on any other servers present.
30. Using the User's Guide that shipped with the system and the TS7500 Console Installation Disk (P/N LCD8-0688-02), update the VE Console workstation.
31. If failover was removed, failover should be reinstalled on both servers after they have completely finished rebooting by following the steps in *Appendix C. Re-installing Failover*.
32. You are finished with the upgrade of your system.

For optimum performance of your virtualization engine, you **MUST** download the latest software service updates (patches) from the IBM Support Web site.

This should be done after your virtualization engine has been installed and during the life of your virtualization engine. As a general rule, you should periodically visit the IBM Support Web site to see if there are any new updates available for your virtualization engine.





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## 4.0 Verify that required patches have been installed

Use the following procedure to verify that **all** the required patches have been installed on each server (both the upper and lower server if in an HA environment). It is **critical and mandatory** that you install all the latest patches after the software upgrade has been performed and prior to operating the virtualization engine(s).

**Note:** This is a very important step and should not be ignored. All steps should be performed immediately after the software upgrade has been completed.

1. At the VE console workstation, open a Web browser window.
2. In the Web browser address bar, type the following address: `http://www-01.ibm.com/support/search.wss?rs=1310&tc=STST5U&dc=D400&dtm`

**Note:** Patches are not hardware dependent, meaning that the TS7500 you are working on could be using TS7520 hardware but running V3 software.

3. Write down all the patch number(s) present. For example, you would write down: Patch update-ve146501.
4. Start the TS7500 Virtualization Engine management console (VE console) workstation by performing one of the following:
  - If there is a desktop shortcut for the **VE for Tape Console** application, double-click it.
  - If there is not a desktop shortcut for the **VE for Tape Console** application, click **Start** → **Programs** → **IBM** → **VE for Tape** → **VE for Tape Console**.

**Note:** This is the default installation location for the **VE for Tape Console** application. The location of the application might differ for you.

5. Double-click **VE for Tape Servers** to expand the server list.
6. Double-click any server icon.
7. In the VE for Tape User Login window, enter the following user name and password:

User name: **vetapeuser**

Password: **veuserpassword**

**Note:** The user name and password are case-sensitive.

8. Click on the **Version Info** tab, to confirm what patch(es) are installed on the server(s). There should be a Version Info entry stating "update-vexxxxxx," where xxxxxx is the patch number. See Figure 13 on page 24

**Note:** You may have to scroll through the log in order to find these entries depending on the configuration of the TS7500.



Server Version:

IBM VE for Tape Server v3.00 (Build 1465.0.01)

Console Version:

IBM VE for Tape v3.00 (Build 1465)

Patches:

12Sep08\_140946 Install update-ve146501, patch i  
using LTO4 drive, reported density and max block  
12Sep08\_141550 Install update-ve146502, patch i  
jobs, and a function to move a tape from the virtua  
any status

ts750480

Figure 13. Confirming installed patches

9. Verify the patches are present. If the patches are not present, you should install the patches. Refer to the *IBM Virtualization Engine User's Guide* that came with your system for instructions on how to install patches.

**Note:** You should always check the Web site for the latest patches available.

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## Appendix A. Logging into the server

### Primary login method

Open a PuTTY Session by performing the following steps from the PuTTY console:

**Note:** If PuTTY is not installed, refer to Install PuTTY on VE Console below and return here once complete.

1. Click **Start**.
2. Click **Programs**.
3. Click **PuTTY**.
4. Click **PuTTY**.
5. Enter IP Address of the server you are connecting to where specified.
6. Select **Open**.
7. Enter the following userid and password. The userid and password are case-sensitive.
  - Login: **vetapeservice**
  - Password: **service4u**
8. Return to the step that sent you here.

Install PuTTY on the VE Console by performing the following steps:

1. Locate and insert the *IBM Total Storage Virtualization Engine TS7500 Base Firmware Update Disk* into the CD-Rom drive of the workstation.

**Note:** Start Windows® Explorer if it does not automatically start and navigate to **x: Tools**, where **x** is the letter of the CD-ROM drive.

2. Click the **TOOLS** folder.
3. Click the **PuTTY** folder.
4. Click the **INSTALLER** folder.
5. Double-click **PuTTY – 0.58-Installer.exe**.
6. At the PuTTY Wizard, click **Next..**
7. Click **Next**.
8. Click **Next**.
9. Click **Install**.
10. Click **Finish**.
11. Close the Read Me Window.
12. Remove the *IBM Total Storage Virtualization Engine TS7500 Base Firmware Update Disk* from the CD-Rom drive of the workstation and close the drive.



## Appendix B. Removing failover

1. Right-click the failover group name icon and click **Failover** → **Remove**. See Figure 14.

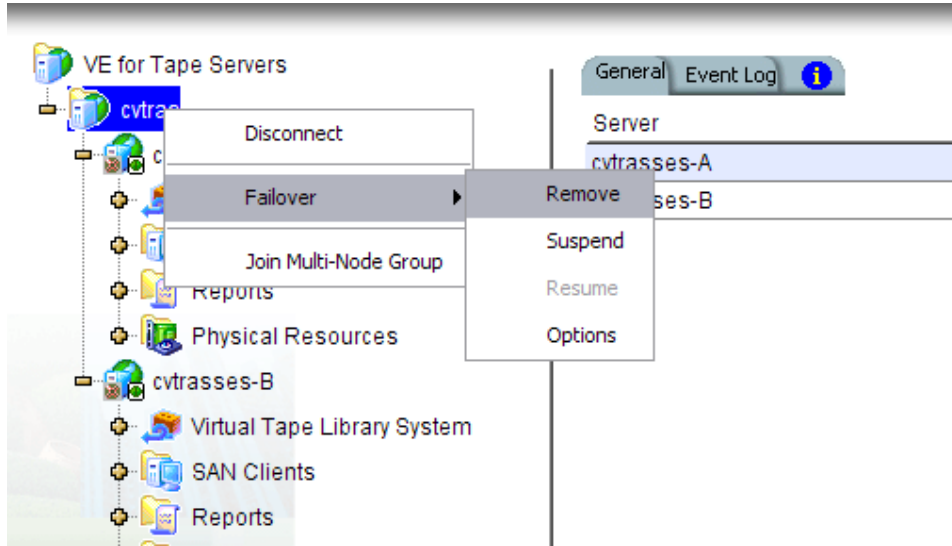


Figure 14. Selecting the failover group to remove failover

**Note:** This procedure assumes that you selected the hostname of the lower server and ran the wizard on the lower server. For the sake of consistency, the example screen captures in this procedure show the wizard running on the lower server.

**Note:** You may need to log in to each failover partner (server) to perform this step.

2. At the remove failover server screen, perform the following substeps (see Figure 15 on page 28):
  - a. \_\_\_ Record the lower server's hostname (**1** in Figure 15 on page 28) in row **1** of Table 1 on page 28.
  - b. \_\_\_ Record the upper server's hostname (**2** in Figure 15 on page 28) in row **1** of Table 1 on page 28.
  - c. \_\_\_ Record the lower server's Adapter 1 (eth0) network interface IP address (**3a** in Figure 15 on page 28) in row **2** of Table 1 on page 28.
  - d. \_\_\_ Record the upper server's Adapter 1 (eth0) network interface IP address (**3b** in Figure 15 on page 28) in row **2** of Table 1 on page 28.
  - e. \_\_\_ Record the lower server's Adapter 2 (eth1) network interface IP address (**4a** in Figure 15 on page 28) in row **3** of Table 1 on page 28.
  - f. \_\_\_ Record the upper server's Adapter 2 (eth1) network interface IP address (**4b** in Figure 15 on page 28) in row **3** of Table 1 on page 28.
  - g. \_\_\_ Record the lower server's Adapter 1 (eth0) service interface IP address (**5a** in Figure 15 on page 28) in row **4** of Table 1 on page 28.
  - h. \_\_\_ Record the upper server's Adapter 1 (eth0) service interface IP address (**5b** in Figure 15 on page 28) in row **4** of Table 1 on page 28.
  - i. \_\_\_ Record the lower server's Adapter 2 (eth1) service interface IP address (**6a** in Figure 15 on page 28) in row **5** of Table 1 on page 28.
  - j. \_\_\_ Record the upper server's Adapter 2 (eth1) service interface IP address (**6b** in Figure 15 on page 28) in row **5** of Table 1 on page 28.

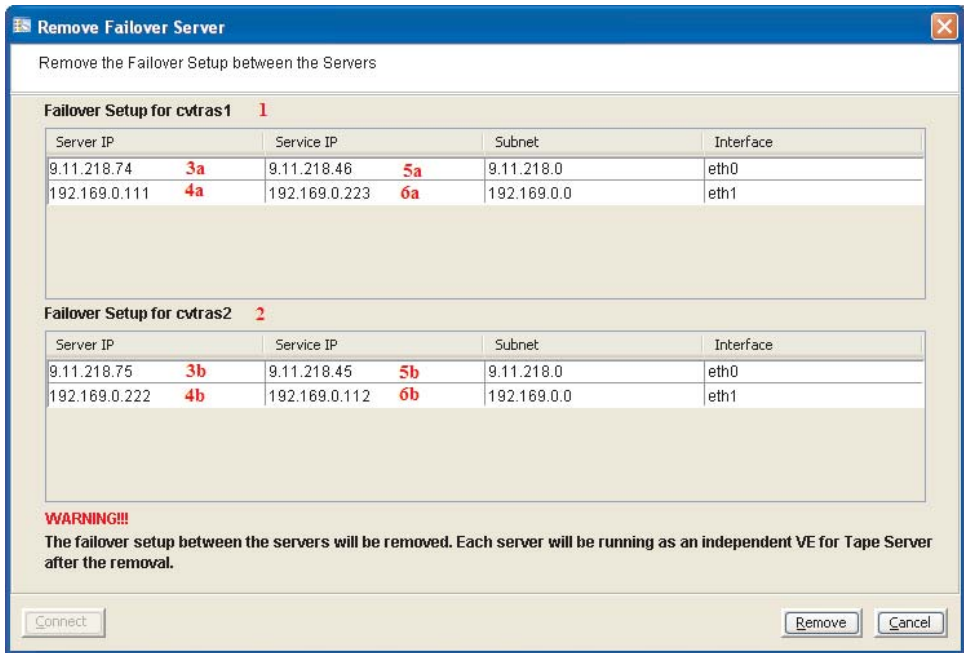


Figure 15. Removing Failover Server

Table 1. Failover setup information

Row	Item	Lower Server	Upper Server
1	Hostname		
2	Adapter 1 (eth0 port) network interface IP address		
3	Adapter 2 (eth1 port) network interface IP address		
4	Adapter 1 (eth0 port) service interface IP address		
5	Adapter 2 (eth0 port) service interface IP address		

- Once Table 1 has been filled out, click **Remove**. Refer to Figure 15.
- Once failover has been removed, click **OK**. Refer to Figure 16



Figure 16. Remove Failover Server confirmation

- If required, click **OK** at the root information window (see Figure 17 on page 29).



Figure 17. Root information window

6. Return to the step following the one that sent you here.





## Appendix C. Re-installing failover

**Attention:** During this procedure, two types of IP address will be assigned to the two Ethernet ports for each server. This procedure assumes that you run the wizard on the lower server. For the sake of consistency, the example screen captures in this procedure show the wizard running on the lower server.

1. \_\_\_ If not already connected, connect to both servers.
2. \_\_\_ Ensure the following services and features are set the same for both servers (for example, if iSCSI is enabled for the lower server, it must also be enabled for the upper server. If Email Notification is disabled for the lower server, it must also be disabled for the upper server):
  - \_\_\_ iSCSI
  - \_\_\_ Email Notification
  - \_\_\_ Hosted Backup
  - \_\_\_ NDMP
3. \_\_\_ Right-click the lower TS7530 Server icon and then click **Failover > Failover Setup Wizard**. Figure 18 shows this step for the lower server. The Failover Setup Wizard starts.

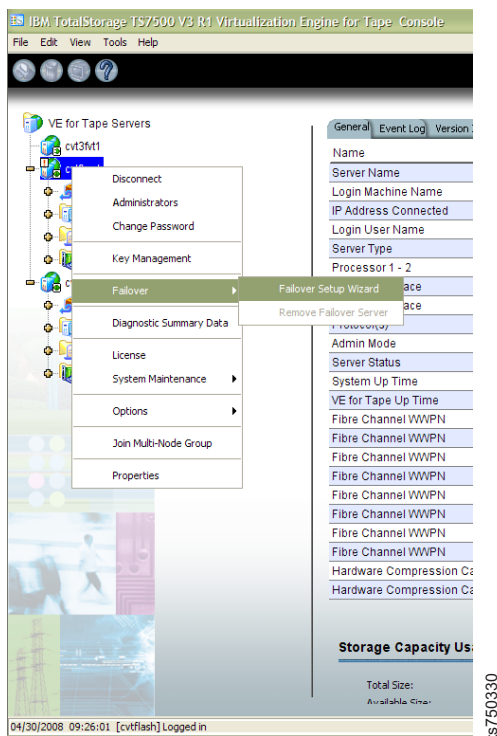


Figure 18. Starting the Failover Setup Wizard

4. \_\_\_ In the Select the Secondary Server window (see Figure 19 on page 32):
  - \_\_\_ From the **VE for Tape Server** list, select the hostname of the secondary server. The secondary server is the other server in the frame. For instance, if you started the Failover Setup Wizard on the lower server in the frame, the secondary server is the upper server. You recorded the hostname for both servers in row 1 of the table when you recorded the server information.



Figure 19. Select the Secondary Server window

- \_\_ Click **Next**.
5. \_\_ Do one of the following:
    - \_\_ If the **Rescanning Physical Devices is required** window (Figure 20 on page 33) opens, proceed to step 6.
    - \_\_ If the **Enter the IP addresses of the Servers (Adapter 1)** window (Figure 24 on page 36) opens, proceed to step 10 on page 35.
  6. \_\_ In the **Rescanning Physical Devices is required** window (Figure 20 on page 33), click **OK**.



Figure 20. Rescanning Physical Devices is required window

7. \_\_\_ In the **Virtual Device or Service Enabled Device...** window (Figure 21), click **OK**.

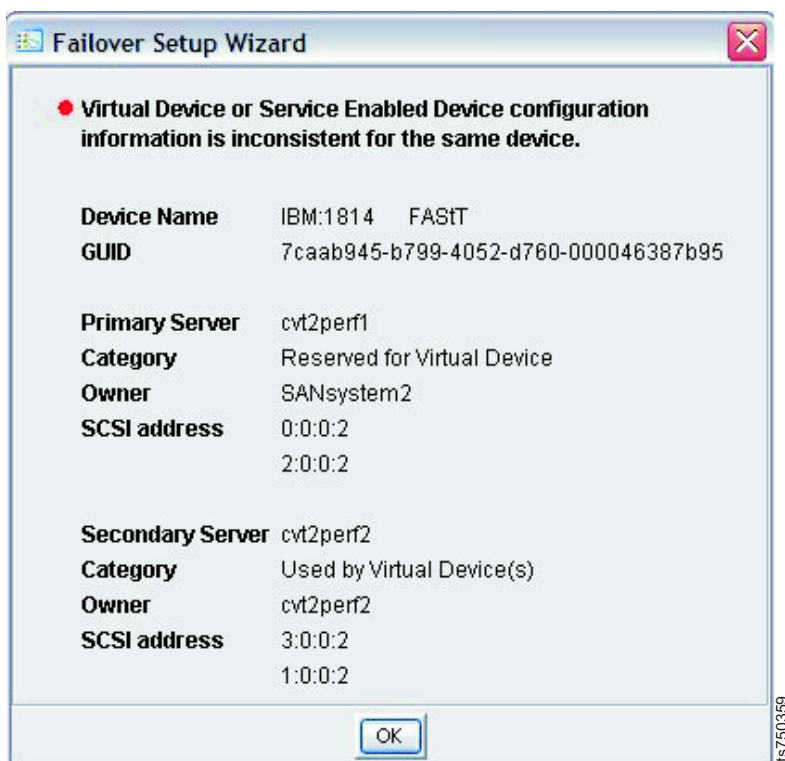


Figure 21. Summary of inconsistent device information

8. \_\_\_ In the VE console (Figure 22):
  - \_\_\_ Expand the icon for the lower server.
  - \_\_\_ Right-click **Physical Devices** and then click **Rescan**.

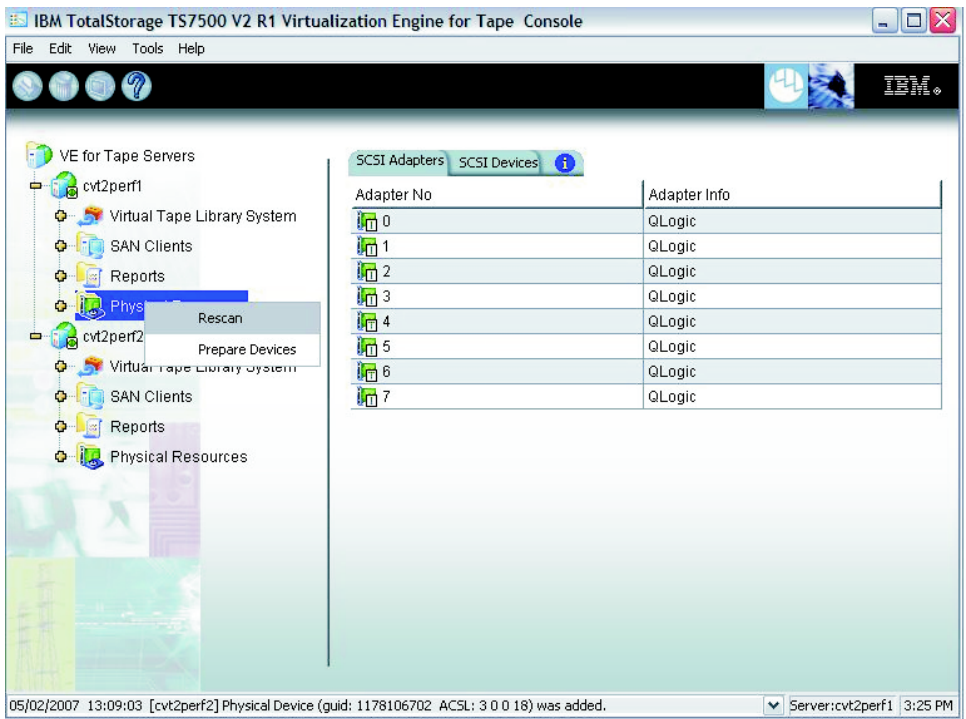


Figure 22. Rescanning physical devices

- \_\_\_ In the **Specify Adapter, SCSI ID and LUN ranges to scan** window (Figure 23 on page 35):
  - a. \_\_\_ Click **Scan Existing Devices**.
  - b. \_\_\_ Click **OK**.

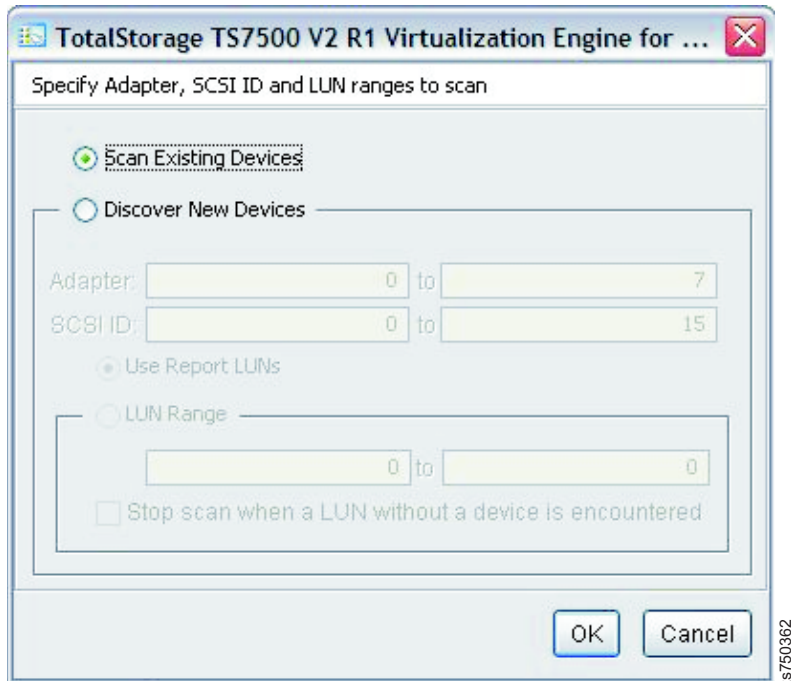


Figure 23. Scan existing devices

9. \_\_ Return to the Failover Setup Wizard.

**Warning:** If the **Rescanning Physical Devices is required** window (Figure 22 on page 34) reopens, do not rescan. You **must** wait at least 10 minutes before rescanning again. If after rescanning a second time, the **Rescanning Physical Devices is required** window reopens, contact your next level of support.

10. \_\_ In the Enter the IP addresses of the Servers (Adapter 1) window (Figure 24 on page 36):
  - \_\_ In the IP address fields, confirm that the wizard retrieved and filled in the network interface IP addresses for adapter 1 (eth0) for the servers. You recorded the hostname for both servers in row 2 of the table when you recorded the server information. If the wizard did not automatically fill in these values, enter them into the IP address fields of the Failover Setup Wizard screen.



Figure 24. Entering or confirming network interface IP addresses for adapter 1

- \_\_ Click **Next**.
11. \_\_ In the Enter Service IP addresses for the Servers (Adapter 1) window (Figure 25):
- \_\_ In the IP address fields, type the service IP addresses for adapter 1 (eth0) for the lower and upper servers. You recorded the hostname for both servers in row 4 of the table when you recorded the server information.

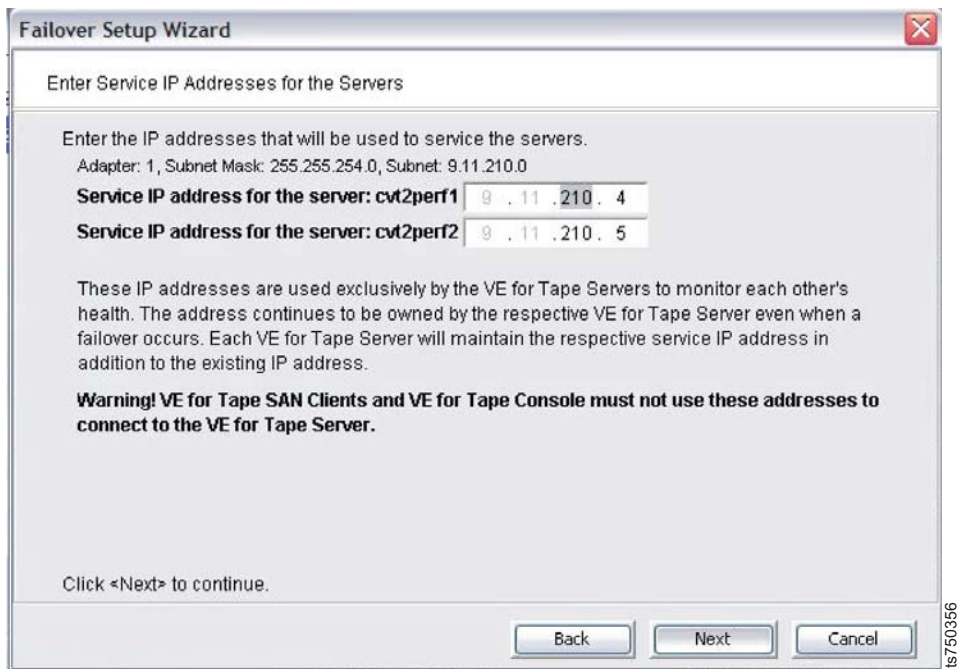


Figure 25. Entering or confirming service IP addresses for adapter 1

- \_\_ Click **Next**.

12. \_\_\_ In the Enter the IP addresses of the Servers (Adapter 2) window (Figure 26):
  - \_\_\_ In the IP address fields, confirm that the wizard retrieved and filled in the network interface IP addresses for adapter 2 (eth1) for the lower and upper servers. You recorded the hostname for both servers in row 3 of the table when you recorded the server information. If the wizard did not automatically fill in these values, type them in the IP address fields.



Figure 26. Entering or confirming network interface IP addresses for adapter 2

- \_\_\_ Click **Next**.
13. \_\_\_ In the Enter Service IP addresses for the Servers (Adapter 2) window (Figure 27 on page 38):
    - \_\_\_ In the IP address fields, type the service IP addresses for adapter 2 (eth1) for the lower and upper servers. You recorded the hostname for both servers in row 5 of the table when you recorded the server information.

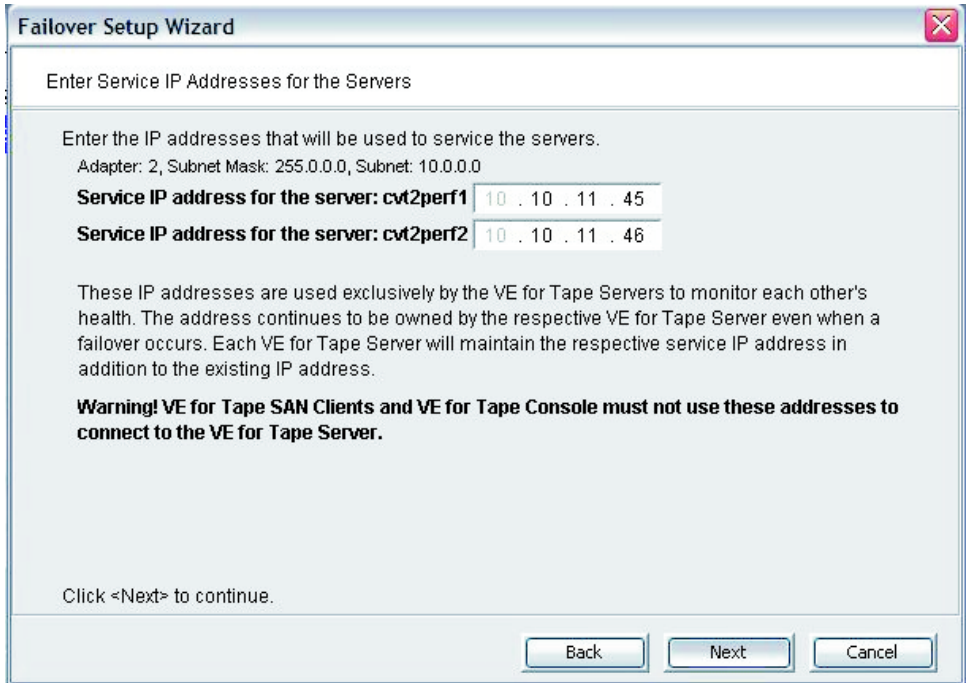


Figure 27. Entering or confirming service IP addresses for adapter 2

- \_\_ Click **Next**.
14. \_\_ In the Confirm the Failover Configuration window (Figure 28), verify that the entered information is correct and click **Finish**.

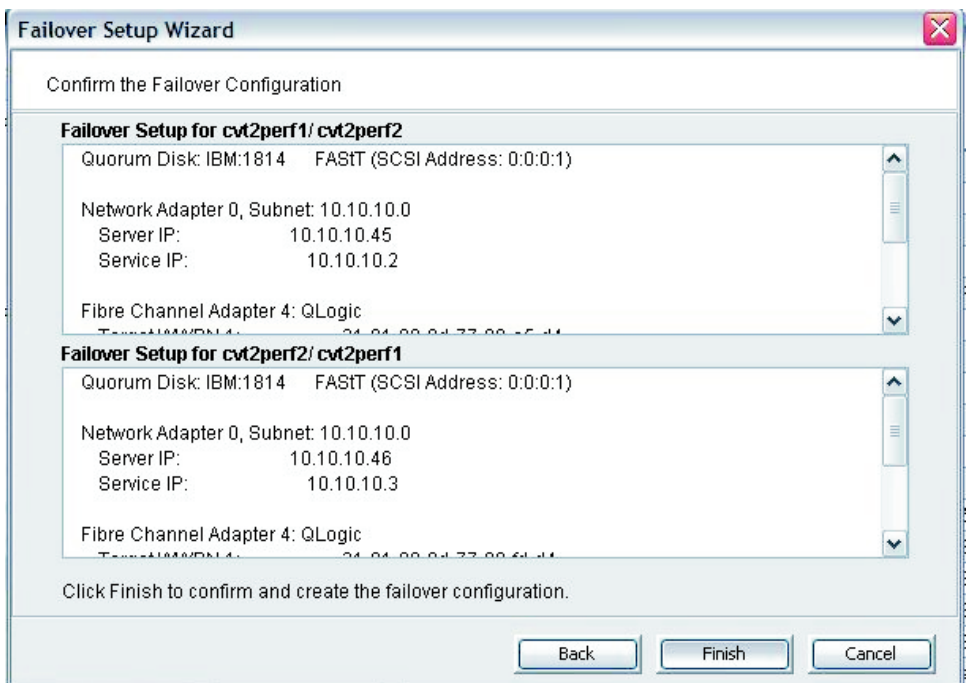


Figure 28. Confirm the Failover Configuration window

15. \_\_ In the Successful Configuration Notification window, click **OK**.
16. \_\_ Verify successful configuration by performing the following substeps:



- \_\_\_ In the VE console, click a server icon.
- \_\_\_ Click the **General** tab.
- \_\_\_ Verify that the server status is **Online**.
- \_\_\_ Click the **Failover Information** tab.
- \_\_\_ Verify that the Failover State is **Normal**.
- \_\_\_ Verify that the Failover Removed value is **No**.
- \_\_\_ Repeat the substeps above for the other server.