SiliconGraphics
Computer Systems

Video Server Toolkit

Preinstallation and Installation Guide

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Video Server Toolkit
Preinstallation and Installation Guide

Because you must load the Video Server Toolkit (VST) to access online installation information, this guide takes you through preliminary installation procedures:

- How to set up the filesystem on your system so that you can install the Video Server Toolkit (VST)
- How to install the VST images

After completing the procedures in this guide, you can access the *Video Server Toolkit Installation and System Administrator's Guide*, which is included in the product's image, to complete the installation.

The information in this booklet is contained in the first three chapters of the *Video Server Toolkit Installation and System Administrator's Guide*.

Supported Hardware

VST works with the following Silicon Graphics servers and workstation:

- O2 workstation
- Origin200 server with GIGAChannel and DIVO, or with a DVB-ASI or VELA board
- Origin2000 server

Table 1 lists the port configurations for these servers.

Table 1 Port Configurations

Machine	Port Configuration
Origin200 GIGAchannel (single module)	6 PCI slots and 5 XIO slots; one XIO slot can be used for 100-Base-T XIO, which has 6 serial ports.
Origin2000 (one node card; 2 processors)	Either 5 available XIO slots (no PCI slots), or 4 XIO slots with 3 PCI slots.
Origin2000 (two node cards; 4 processors)	Either 11 XIO (no PCI) or 10 XIO with 3 PCI slots.

Downgrading from IRIX 6.5 to IRIX 6.4 and Installing the Miniroot

VST works only with IRIX 6.3 or 6.4. If you are using IRIX 6.5, you must downgrade it to 6.4 using the following instructions, or the instructions included with the IRIX 6.4 CDs.

A miniroot installation is an installation method that relies on services in the system's programmable read-only memory (PROM) to transfer special installation tools from the CD (or distribution directory) to the system disk. It requires that you shut down the system and boot from a CD or distribution directory.

Overview of Repartitioning and Downgrading Procedure

In the following installation, you complete the following steps:

1. Load the miniroot from the IRIX 6.4 patch CD.
2. Make a new filesystem with *mkfs*.
3. Install IRIX 6.4 from the operating system CD.
4. Install IRIX 6.4 applications from the applications CD.
5. Install IRIX 6.4 patches.

6. Restart the system.
7. Install further applications, patches, and non-SGI software from multiuser mode.

For a complete example of a filesystem setup, see Appendix A in the *Video Server Toolkit Installation and Administrator's Guide*.

Pre-VST-Installation Procedure

Use the following procedure to set up your filesystem.

1. If the system is not brand new and you have important data on the disk, perform a full system backup, using the method you normally use for backups.
2. Restart the system using the following command:

   ```
   # init 0
   ```

   The system displays the System Maintenance Menu from the local host.

   ```
   System Maintenance Menu
   1) Start System
   2) Install System Software
   3) Run Diagnostics
   4) Recover System
   5) Enter Command Monitor
   ```

3. Enter **2**, the Install System Software option.

   The system responds:

```
        Installing System Software...

Press <Esc> to return to the menu.

1) Remote Tape  2) Remote Directory  X) Local
CD-ROM  X) Local Tape

Enter 1-4 to select source type, <esc> to quit,
or <enter> to start:
```

4. If you have a local CD-ROM drive, enter **X**. Otherwise, skip to step 5.

   The system responds:

```
Enter 1-4 to select source type, a to select the
source, <esc> to quit,
or <enter> to start:

Insert the installation CD-ROM, then press
<enter>:
```

   Skip to step 6.

5. Alternatively, if you are using a remote CD-ROM drive:

   - On the remote host, edit the */etc/inetd.conf* file to allow the remote system to boot from the CD-ROM directory by appending /CDROM to the configuration line, as shown:

     ```
     tftp    dgram   udp     wait    guest
     /usr/etc/tftpd  tftpd -s /usr/local/boot
     /CDROM
     ```

   - Restart inetd on the remote system:

     `/etc/killall -HUP inetd`

   - Enter **2**, the Remote Directory option.

     The system responds:

     ```
     Enter the name of the remote host:
     ```

   - Enter the name of the remote host (foo in this example).

     The system responds:

     ```
     Enter the remote directory: /CDROM/dist
     ```

- Enter the name of the remote directory (*/CDROM/dist* in this example).

```
1) Remote Tape  2)[Remote Directory]  X) Local
CD-ROM  X) Local Tape

*a) Remote directory /CDROM/dist from server foo.
Enter 1-4 to select source type, a to select
the source, <esc> to quit, or <enter> to
start:
```

6. Make sure the CD is in the CD-ROM drive and press the Enter key to load the miniroot.

   The system responds:

```
Copying installation program to disk.
10% ...... 20% ... 30% .... 40%....... 50%
60% ...... 70% ..... 80% ...... 90% ..... 100%
Copy complete

IRIX Release 6.4 IP27 Version 02121744 System V -
64 Bit
Copyright 1987-1997 Silicon Graphics, Inc.
All Rights Reserved.
```

```
root on
/hw/module/1/slot/MotherBoard/node/xtalk/8/pci/0/s
csi_ctlr/0/target/1/lun/0/disk/partition/1/block ;
boot swap file on /dev/swap swplo 55000

Creating miniroot devices, please wait...

Current system date is Mon Feb 01 11:02:16 PST 1999

Mounting file systems:

   /dev/miniroot            on  /
   /dev/dsk/dks0d1s0        on  /root
Invoking software installation.
```

7. Clean the root filesystem using *mkfs* by entering **13** to access the Administration menu.

   The system displays:

```
Administrative Commands Menu
1. set [preferences]
   List all preferences or set/clear a preference
2. date [args]
   Display or set the system date
3. files [names]
   List files in subsystems
```

4. space
   List disk usage information
5. recalculate
   Recalculate space required for installation
6. sh [cmd]
   Escape to a shell or run a command
7. shroot [cmd]
   Escape to a chrooted shell or run a command
8. relocate [prod [disk]]
   Relocate product to a different disk
9. mount [fsname] [dir]
   Show mounted filesystems or mount new ones
10. umount [fsname]
    Unmount a filesystem
11. mkfs [blockdevice]
    Make a new filesystem
12. sethostname
    Set name of current host, for networking
13. sethostipaddr
    Set host ipaddr - Internet address
14. save filename
    Save selection to file
15. load filename
    Load selection from file
16. rqs
    Perform rqs(1) processing

```
17. config [changed]
    List all or modified config files
18. hardware
    List machine-specific hardware information
19. updatekeepfile
    Add N(ew), unselected subsystems to keepfile
20. return
    Go to the Inst Main Menu

Admin>
```

8. Enter **11** at the Admin prompt.

   The system displays:

```
** Clean Disks Procedure **

If you agree to it, this procedure will clean your
disks, removing all data from the root and (if
present) the user file systems.

Boot device partitions zero (0) and, if present,
six (6) will be erased (using mkfs). This will
destroy all data on them. These partitions will
then be remounted under /root and (if present)
/root/usr.
```

```
If you have data on these file systems you want to
save, answer "no" below, and backup the data
before cleaning your disks.

Any other file systems or logical volumes will be
unmounted and forgotten about until you choose to
reconfigure and remount them.

Are you sure you want to clean your disks ?
{ (y)es, (n)o, (sh)ell, (h)elp }: y

WARNING: There appears to be a valid file system
on /dev/dsk/dks0d1s0 already. Making a new file
system will destroy all existing data on it.

Make new file system on /dev/dsk/dks0d1s0?
{ (y)es, (n)o, (sh)ell, (h)elp }:
```

9. Enter **y**.

   The system displays:

```
Doing: mkfs -b size=4096 /dev/dsk/dks0d1s0
meta-data=/dev/dsk/dks0d1s0 isize=256 agcount=9,
agsize=243268 blks
data = bsize=4096   blocks=2189410, imaxpct=25
log =internal log bsize=4096   blocks=1000
realtime =none extsz=65536  blocks=0, rtextents=0
```

```
Mounting file systems:

    /dev/miniroot            on  /
    /dev/dsk/dks0d1s0        on  /root
Admin>
```

10. Enter **quit**.

    The Inst Main Menu displays

11. Enter **from**.

12. When the Inst prompt appears, eject the recommended patches for IRIX 6.4 CD-ROM, load the IRIX 6.4 for Origin operating system CD-ROM, and enter the following:

    ```
    Inst> from /CDROM/dist
    ```

13. When prompted for another distribution, enter the following:

    ```
    Install software from: [/CDROM/dist] done
    ```

    The system returns an Inst prompt.

14. To create a real-time filesystem, you need the following subsystems:

eoe.sw.xfs	XFS filesystem
eoe.sw.xfsrt	XFS real-time & guaranteed-rate support
eoe.sw.xlv	XLV volume manager
eoe.sw.xlvplex	XLV volume manager plex support

Enter the following commands at the Inst prompts:

```
Inst> install default
Inst> i eoe.sw.xfs eoe.sw.xfsrt eoe.sw.xlv
      eoe.sw.xlvplex
Inst> go
```

15. Load the IRIX 6.4. Applications CD and enter the following commands:

```
Inst> from /CDROM/dist
Inst> install default
Inst> go
```

16. Reload the IRIX 6.4 patches CD and install the patches:

```
Inst> from /CDROM/dist
Inst> install installable
Inst> keep same
Inst> go
```

Caution: You must install the IRIX 6.4 patches during the miniroot installation before restarting the system; not doing so may cause the system to hang during the first IRIX 6.4 boot.

17. When Inst indicates the installation is finished, enter **quit**.

    Postinstallation processes begin. When they are complete you see:

    ```
    Ready to restart the system. Restart?
    ```

    Enter **y** to restart.

18. Restore any user files, modified system files, or other files you need from the backup created in step 1.
19. Install any non-IRIX patches and required software. Make sure you have the IRIX 6.4 versions of the patches or software. You may need to install other patches from the patch CD.

Initial System Administration

Complete the following steps to perform basic administration tasks, such as naming the system and setting up the time zone.

1. Name the system.

   `vi /etc/sys_id`

2. Add the system name and IP address to the hostname-address database.

   `vi /etc/hosts`

3. Set the IP address in nonvolatile RAM; also, set up the system for automatic restart.

   `nvram netaddr` *IP_Address* **`nvram AutoLoad Y`**

4. Set the network address mask, as appropriate for the network.

   `vi /etc/config/ifconfig-1.options`

5. Set the default system time zone.

   `vi /etc/TIMEZONE`

6. Set the password for root, if necessary.

   `passwd`

7. Reboot the system.

   `reboot`

Installing VST

Once your system is properly configured, use the following procedure for installing VST over a network or from a local CD.

1. Become a superuser by entering the following command:

   `% su`

2. For a clean installation, remove any previous versions of *vcp_recorder_eoe*:

   `# versions remove vcp_recorder_eoe`

   This command cleans up all crontab entries.

   If you choose not to remove previous versions, the rotatelog installation exitop adds the rotatelog entry in crontab only if it does not exist already. This choice preserves user modifications.

3. Start the installation program and identify the source of the VST image, as follows:

   # **inst -f** *system_name*:*distribution_directory*

   For example, if you are installing over the network, use a line similar to the following:

   ```
   # inst -f bubka:dist/vcp-recorder/dist
   ```

   Or, if you are installing from a CD, use

   # **inst -f** *cd_host*:**/CDROM/dist**

   Or, if you are installing from a local CD, use

   # **inst -f /CDROM/dist**

4. List the subsystems to install as follows:

   ```
   Inst> l
   ```

This command lists all the subsystems to install; Table 2 describes them.

Table 2 VST Subsystems

Required Subsystems	Description
vcp_recorder_eoe.books.AdminGuide	Installation and Administration Guide
vcp_recorder_eoe.books.DevelGuide	Developers Guide
vcp_recorder_eoe.books.AdminGuideHTML	HTML Installation and Administration Guide
vcp_recorder_eoe.books.DevelGuideHTML	HTML Developers Guide
vcp_recorder_eoe.man	Man pages
vcp_recorder_eoe.man.base	Base man pages
vcp_recorder_eoe.man.tools	Base applications man pages
vcp_recorder_eoe.man.ftpd	Man pages for enhanced FTP daemon
vcp_recorder_eoe.man.relnotes	Release notes

Table 2 (continued) VST Subsystems

Required Subsystems	Description
vcp_recorder_eoe.sw.base	VST Base software.
vcp_recorder_eoe.sw.diaquest	DiaQuest deck-control module
vcp_recorder_eoe.sw.divo	DIVO video module
vcp_recorder_eoe.sw.dvb-asi	Required for ViewGraphics DVB/MPEG mediapump module
vcp_recorder_eoe.sw.fsmon	File System Import Monitor (FSmon)
vcp_recorder_eoe.sw.ftpd	Customized FTP daemon necessary for recording to real-time file systems.
vcp_recorder_eoe.sw.horita	Horita time code input module

Table 2 (continued) VST Subsystems

Required Subsystems	Description
vcp_recorder_eoe.sw.little-red	Miranda Little Red time code input module
vcp_recorder_eoe.sw.louth	Louth VDCP control module
vcp_recorder_eoe.sw.studiocentral	StudioCentral 2.0 archive interface
vcp_recorder_eoe.sw.mpeg	MPEG2 tools
vcp_recorder_eoe.sw.o2video	O2Video module
vcp_recorder_eoe.sw.sony-odetics	Sony/Odetics control module
vcp_recorder_eoe.sw.tools	VST UI applications.
vcp_recorder_eoe.sw.vela	VST Vela SCSI MPEG2-decoder module
vcp_recorder_eoe.sw.vlan	VLAN deck-control interface

The documentation in *vcp_recorder_eoe.books.** is not installed by default.

Note: If you installed the drivers for hardware, such as a VELA, the subsystem for those pieces of hardware is marked for installation by default.

This listing is for IRIX 6.3. The listing is slightly different for IRIX 6.4. Your operating system is read automatically and the correct subsystems are listed for your system.

5. Mark for installation any optional VST-related software you might need. For example, if you are using VELA, MPEG, Louth, DVB-VG, Sony protocol, or Odetics protocol, install one or more of the following options, as appropriate:

```
Inst> i vcp_recorder_eoe.sw.vela
Inst> i vcp_recorder_eoe.sw.mpeg
Inst> i vcp_recorder_eoe.sw.louth
Inst> i vcp_recorder_eoe.sw.vl
Inst> i vcp_recorder_eoe.sw.sony-odetics
Inst> i vcp_recorder_eoe.sw.ftpd
Inst> i vcp_recorder_eoe.sw.dvb-vg
```

6. Start the installation:

```
Inst> go
```

7. After a successful installation, quit the installation program, as follows:

   ```
   Inst> quit
   ```

8. To run a secondary server that takes over VST operations when the primary server fails, you must repeat the above installation procedure for the secondary server and install IRIS FailSafe, as described in Chapter 6, "Installing IRIS FailSafe," in the *Video Server Toolkit Installation and System Administrator's Guide*.

Confirming the VST Installation

To confirm the successful installation of VST, complete the following steps:

1. Start VST by entering the following command as a superuser:

   ```
   # /usr/vtr/bin/vtrstart
   ```

   If VST starts, on an O2 workstation bitmapped console display only, the VST window is displayed.

2. To see if VST started, run

   ```
   # /usr/vtr/bin/vtrstat
   ```

   If VST is running, the command responds:

   ```
   Video Server Toolkit on hostname is running.
   ```

3. Verify the media ports are supported by running the following command:

   /usr/vtr/bin/vtrstat -ports

   vtrstat lists the supported ports, for example:

```
#  Port    Type    Description
-------------------------------------------------
0  vlan_0  Deck    VLAN Deck Control
1  DIVO_0  Video   SGI XT-DIVO Digital Video Option
2  DIVO_1  Video   SGI XT-DIVO Digital Video Option
3  DIVO_3  Video   SGI XT-DIVO Digital Video Option
4  DIVO_4  Video   SGI XT-DIVO Digital Video Option
5  DIVO_5  Video   SGI XT-DIVO Digital Video Option
6  DIVO_6  Video   SGI XT-DIVO Digital Video Option
7  DIVO_7  Video   SGI XT-DIVO Digital Video Option
```

4. You can also confirm the installation by inspecting the contents of the */usr/vtr, /var/adm/vtr,* and */var/adm/vtr/logs* directories:

```
# cd /usr/vtr
# ls
bin     clips   config   data    images   index
install  lib32    lib
# cd /var/adm/vtr
# ls
crash   logs
```

```
# cd /var/adm/vtr/logs
# ls
vtrlog
```

vtrlog appears only after VTR-Recorder has been started.

The crash directory contains crash files for *vvtr.*

Table 3 describes the */usr/vtr* directories.:

Table 3 /usr/vtr Subdirectories

Subdirectory	Description
bin/*	Commands and VST executable, *vvtr.*
clips/*	Clip cache (can be symlink).
config/*	Configuration files.
data/*	Files under this directory are static data or image files used by various VST components.
images/*	The directory under which still images are created when the MVCP CIMG command is executed.
index/*	Clip indices (MPEG and vframe formats).
install/	Files that are used during the installation.

Table 3 (continued) /usr/vtr Subdirectories

Subdirectory	Description
lib32/*.so	Core and shared libraries.
lib32/modules/*.so	External interface device/control/format modules.
lib/perl	Perl script for cga interaction with vcpmaint.

5. Proceed to the VST configuration chapter, Chapter 4, in the *Video Server Toolkit Installation and System Administrator's Guide*, which is now installed on your system.

Plexing

If you want to plex your system to increase data output, refer to Appendix A in the *Video Server Toolkit Installation and Administrator's Guide*.

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