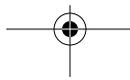
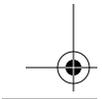
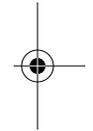




Video Server Toolkit

Preinstallation and Installation Guide





CONTRIBUTORS

Written by George Eckel

Production by Carlos Miqueo

Engineering contributions by Kader Fazlul, Ron Jacoby, Ruben Kleiman, Prince Kohli, Kurt Merriweather, Mike Moskowitz, Hilmi Ortadeveci, Naveen Patil, Jim Preston, Rick Reed, Manuel Ruiz, Aman Singla, Brad Thayer, Parkson Wong, and David R L Worthington.

© 1999, Silicon Graphics, Inc.— All Rights Reserved

The contents of this document may not be copied or duplicated in any form, in whole or in part, without the prior written permission of Silicon Graphics, Inc.

LIMITED AND RESTRICTED RIGHTS LEGEND

Use, duplication, or disclosure by the Government is subject to restrictions as set forth in the Rights in Data clause at FAR 52.227-14 and/or in similar or successor clauses in the FAR, or in the DOD, DOE or NASA FAR Supplements. Unpublished rights reserved under the Copyright Laws of the United States.

Contractor / manufacturer is Silicon Graphics, Inc., 2011 N. Shoreline Blvd., Mountain View, CA 94043-1389.



Silicon Graphics and IRIX are registered trademarks and the Silicon Graphics logo, GIGAchanel, O2, Onyx2, Origin, Origin200, Origin2000, and XFS are trademarks of Silicon Graphics, Inc. Macintosh is a trademark of Apple Computer, Inc.





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
```



4





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





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*



6





- 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/dks0dls0      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:

```
oe.sw.xfs      XFS filesystem  
oe.sw.xfsrt   XFS real-time & guaranteed-rate support  
oe.sw.xlv     XLV volume manager  
oe.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.
nvr~~a~~m netaddr IP_Address nvr~~a~~m 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> 1
```



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, <i>vvtr</i> .
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*.



