Exemplar Software Installation

Order No. DSW-852

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Field Test

This document is approved for use at Field Test sites and for limited customer distribution with program manager approval. The information contained is for verification under actual working conditions.

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Exemplar Software Installation

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Contents

Preface

The *SPP-UX Installation and Upgrade* manual contains procedures for installing and upgrading software products on Convex Exemplar system.

How this book is organized

This manual is divided into the following sections:

- Chapter 1 presents an overview of the various installation procedures described in the manual
- Chapter 2 describes how to install or upgrade software using the Software Distributor (SD) `swinstall` utility; this is the installation procedure you will use to install Convex software on your Exemplar system
- Chapter 3 describes how to install Exemplar software on your test station
- Chapter 4 describes how to install a copy of SPP-UX from scratch, in the event that your working copy of SPP-UX is destroyed
- Chapter 5 describes the Software Distributor commands for maintaining SD-installed software products
- Appendix A describes the contents of the Exemplar software distribution tapes

Notational conventions

This section discusses notational conventions used in this book.

General conventions

In general, the following conventions are used in this guide:

- *Italic*
  - Designates user-supplied variables in a command-line or code example
  - Introduces new and important terms
  - Identifies variables in mathematical equations
  - Indicates document titles
- `Constant-width font` designates input and output, including
  - Command names and options
  - System calls
  - Data structures and types
  - Variables and arrays
  - Function and subroutine names
  - Directives, program statements, display examples, printout examples, and error messages returned
- Horizontal ellipsis (...) shows repetition of the preceding item(s).
- Vertical ellipsis shows that lines of code have been left out of an example.

References to man pages appear in the form mnpgname(1), where "mnpgname" is the name of the man page and is followed by its section number enclosed in parentheses. To view this man page, you would type:

```
man 1 mnpgname
```

Note

A Note highlights important supplemental information.

Caution

A Caution highlights procedures or information necessary to avoid damage to equipment, software, or data.

Command syntax

Consider this example:

```
COMMAND input_file [...] {a | b}
[output_file]
```

1. `COMMAND` must be typed as it appears.
2. *input_file* indicates a file name that must be supplied by the user.
3. The horizontal ellipsis in brackets indicates that additional input file names may be supplied.
4. Either `a` or `b` must be supplied.
5. [*output_file*] indicates an optional file name.

Associated documentation

- For information on Exemplar hardware installation, refer to the *Exemplar Installation Guide* (DHW-501).
- For information on administering SPP-UX, refer to the *SPP-UX System Administration Guide* (DSW-853).

Ordering documents

To order the current edition of this or any other Convex document, send requests to:

Convex Computer Corporation
Customer Service
P.O. Box 833851
Richardson TX 75083-3851 USA

Please include the order number (DSW or DHW number) or the exact title of the document.

Technical assistance

If you have questions that are not answered in this book, contact the Convex Technical Assistance Center (TAC) at the following locations:

- Within the continental U.S., call 1 (800) 952-0379.
- From Canada, call 1 (800) 345-2384.
- All other locations, contact the local Convex office.

You can also use the `contact` utility to report any problems you may have with SPP-UX or its associated documentation. For more information, refer to the contact(1) man page on any Convex computer system.

Introduction 1

This manual describes how to install or upgrade the SPP-UX operating system and its utilities, as well as software products that run under SPP-UX on Exemplar computer systems.

Installing Convex software

There are three separate software installation procedures for Convex software:

SD installation/upgrade

This is the installation procedure you will use under normal circumstances. This procedure installs Convex software products, a new version of SPP-UX and its utilitites, or patches or bugfixes for any software on the system. This procedure uses the Software Distributor (SD) installation utilities. See Chapter 2.

The SD installation procedure is used for all Convex software that runs on Exemplar systems; there are no separate installation procedures for individual products. Any unique aspects of the installation procedure for a particular Convex product are described in the Release Notice for the product.

The SD installation procedure can be used for both local and remote installations. A local installation involves installing software directly from distribution media (normally a DAT cartridge). A remote installation involves installing software that you receive across a network; you may receive software bugfixes or patches from Convex in this manner.

Test station software installation

This procedure installs diagnostic software and other utilities, such as Convex Open Boot software, to the Exemplar test station. This procedure is used to install new diagnostic software, or in the event of a system problem that destroys the working copy of the diagnostic software or the Convex Open Boot software. See Chapter 3.

If your system does not have a test station, skip this procedure.

Scratch OS installation

This procedure installs a working copy of SPP-UX and its utilities. This procedure is used in the event of a disk crash or other problem that destroys the working copy of the operating system.

Installing third-party software

You can install third-party software on your system using one of the following procedures. In addition to third-party software developed for Exemplar systems, you can install any software on your Exemplar system that runs under HP-UX. There are three different installation procedures that are in common use for third-party software; the installation procedure depends on the format of the distribution media for the product:

SD format media

Newer products that run under HP-UX are distributed in SD format. Treat the distribution tape for the product as if it were the SPP-UX distribution tape and follow the procedure described in Chapter 2 for SD installation.

`update` format media

Older products that run under HP-UX are distributed in `update` format. Follow the installation instructions for the product, using the SPP-UX `/etc/update` utility to install the product.

`tar` format media

Some products are distributed in `tar` format. Follow the installation instructions for the product, using the SPP-UX `/bin/tar` utility to install the product.

Verifying your installation kit

Installation kits for Convex Exemplar installations may contain:

- One DAT cartridge containing Exemplar software products
- One or two DAT cartridges containing test station software
- A DAT cartridge containing a bootable copy of SPP-UX

Table 1 SPP-UX installation media

Tape	Type of installation
Exemplar software release tape	SD installation
Exemplar Test Station Diagnostic Software tape	Test station software installation
Exemplar Test Station OS Software tape	Test station software installation
Bootable SPP-UX tape	SPP-UX scratch installation

Read the release notices for the current Convex software release to find out which tapes are included in the release.

Installation kits for patches or bugfixes may contain some or all of these distribution media.

If you are missing any of these items, contact the Convex Technical Assistance Center (TAC) or a Convex field representative.

SD installation and upgrade

2

This chapter contains instructions you need to perform a normal installation or upgrade of software on your Exemplar system. The procedure uses the Software Distributor (SD) installation utilities to manage the entire installation process.

This chapter describes

- Prerequisites for SD installation
- Installing software with the `swinstall` command
- Installing software with the `swinstall` graphical user interface
- Installing software from various sources
  - Software products distributed on DAT
  - Software products received across a network

Please read this chapter completely before using the SD installation procedure for the first time.

This chapter contains all the essential information you need to perform an SD installation. For information about maintaining SD-installed software, see Chapter 5, "SD software management utilities."

Note

The SD graphical user interface does not work under SPP-UX at this time. You must use the command-line interface to the SD commands. See the SPP-UX Release Notice for specific SD commands to use.

Prerequisites for SD installation

This installation procedure requires that the following conditions be met:

- If you are performing a local installation, your system must have a double-density DAT drive.
- Your system must be running SPP-UX. If it is not, follow the procedure described in Chapter 4 to install a working copy of SPP-UX.
- You must be logged in as root.
- Your system must have a working copy of the `swinstall` installation utility. The `swinstall` file should be in the directory `/usr/sbin`. Add that directory to your $PATH or specify the directory when you invoke the command.
- The `/usr/sbin/swagentd` daemon must be running. If it is not running, start it.
- Your file system must have sufficient space for the products you intend to install. See Appendix A for the file space requirements for Convex products.

  The `swinstall` command checks to see that there is enough space to install all of the products you have selected for installation before attempting to install them, and notifies you if there is insufficient space. If you are upgrading a product, `swinstall` calculates the difference between the files space required for the new version of the product and the file space required for the old version of the product.
- Your Exemplar system must be connected to an active network through `/dev/lan0` or `/dev/fddi0`. The point-to-point connection between the test station and the Exemplar system's DaRT bus does not meet this requirement.
- You must set the system's uname appropriately for the software you are installing. For Convex software, use the SPP-UX uname. For third-party software intended for HP-UX systems, use the HP-UX uname. To set the uname, enter one of the following commands:

```
mpa -uname SPP-UX
```

```
mpa -uname HP-UX
```

Invoke `swinstall` from the same shell in which you executed the `mpa` command.

Using the swinstall installation utility

The SD `swinstall` comand installs or updates software products on your Exemplar system. You can run `swinstall` either from the command line or by using the `swinstall` graphical user interface (GUI).

`swinstall` normally installs software into the root directory of your system. You may specify an alternate root directory for software installation if you wish.

`swinstall` automatically executes any vendor-supplied configuration scripts to modify your system in order to run the software that is installed. For example, a configuration script may modify the /etc/rc file to initialize a daemon needed for a particular software product. If you install software to an alternate root, the configuration is not automatically performed, but it may be performed later using the `swconfig` command.

Installing software using the swinstall command line interface

The command line interface to `swinstall` is useful in the following cases:

- You know the names of all the software products you intend to install and do not want to use the GUI
- You intend to use the GUI but want to specify command line options for the GUI session

The syntax for `swinstall` is:

```
swinstall [-p] [-i] [-v] [-r]
     [-s source] [-x option=value]
     [-f software_file] [-t target_file]
     [-X options_file] [-S session_file]
```

swinstall command options

The `swinstall` command provides the following options:

Option	Description
`-p`	Previews an install task by running it through the analysis phase and then

exiting. This option can be used with any of the other options to explore the impact of a command before the system actually performs it.

`-i` Runs the command in interactive (GUI) mode. Displays the first graphical interface window (Target Host Selection). Used to specify options from the command line for use in the GUI.

`-v` Turns on verbose output to `stdout`. Lets you see the results of the command line activity as it is being performed.

`-r` Indicates that the software is to be installed in an alternate root directory. Specifying this option disables the automatic configuration of the software products that are installed.

`-s` *source* Specifies which software source is to be used for the installation. The default souce type is a directory (usually `/var/spool/sw`), not a tape device.

`-x` *option=value* Overrides the default value for a particular `swinstall` option, including values specified in an alternate options file (`-X` *option_file*).

`-f` *software_file* Reads a list of software selections from a separate file instead of from the command line. Each software selection must be entered on a separate line; lines beginning with # (comment lines) and blank lines are ignored.

`-t` *target_file* Reads a list of target host selections from a separate file instead of from the command line. Each target host must be entered on a separate line; lines beginning with # (comment lines) and blank lines are ignored. A target selection can be a host name or a network address.

`-X` *option_file* Uses the option values in *option_file*. You can change default values for options (as well as default behaviors) for each SD command in the file `/var/adm/sw/defaults`. The

option_file can be used to override the values in the SD defaults file.

`-S` *session_file* Runs the swinstall command using the values saved from a previous installation session.

swinstall command examples

To install software using the `swinstall` GUI from a DATdevice mounted locally at `/dev/rmt/0m`, use the following command:

```
swinstall -i -s /dev/rmt/0m
```

To install only the CXdb product from the DAT device mounted locally at `/dev/rmt/0m`, use the following command:

```
swinstall -s /dev/rmt/0m CXdb
```

Installing software using the swinstall GUI

The `swinstall` graphical user interface (GUI) is the primary interface for the SD software installation process.

There are three phases in the SD GUI installation process.

Selection phase You select the software to install, the source location of the software, and the target host on which to install the software.

Analysis phase SD performs an analysis of the entire installation process before attempting to install the software. You can see the results of the analysis as they occur.

Load phase SD performs the installation and executes any configuration scripts supplied with the software products.

There are four main windows in the `swinstall` GUI:

- Target Selection Window
- Software Selection Window
- Install Analysis Window
- Install Window

Starting the swinstall GUI

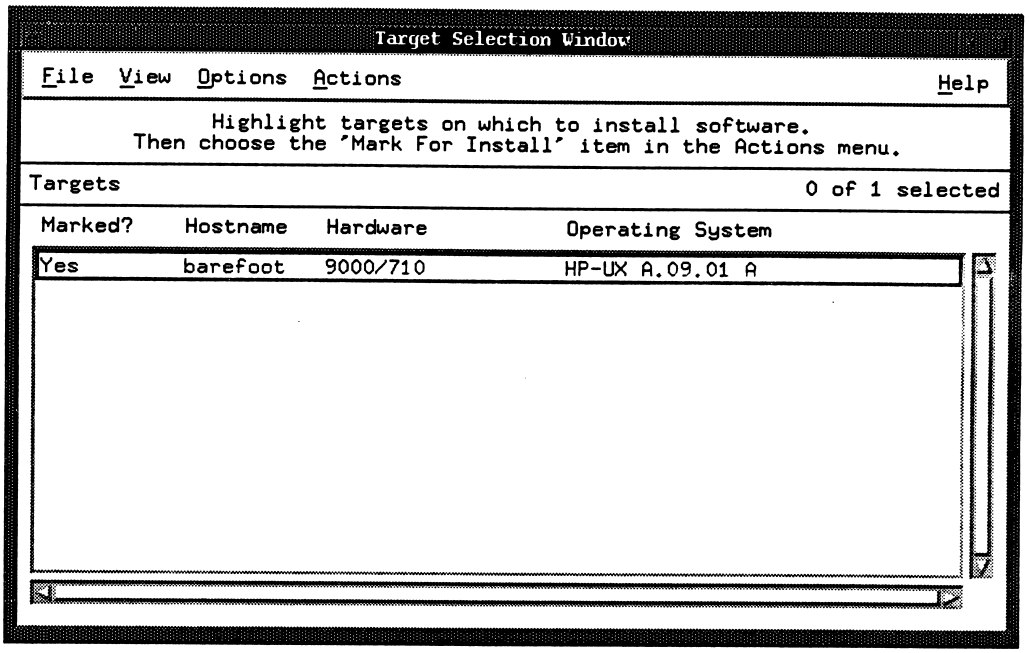
To start the `swinstall` GUI, type one of the following commands:

```
swinstall
swinstall -i (command_line_options)
```

Selecting targets for installation

The Target Selection Window shown in Figure 1 appears when you invoke the `swinstall` GUI. This window allows you to select the target host or hosts for installation.

Figure 1 Target Selection Window



The Target Selection Window displays only the local host at first. For a normal installation procedure, this is the only host you need to specify. If you want to install software to several Exemplar systems in a single session, or if you want to install software to a remote Exemplar system over a network, you can change the target selections. To do this, select the Add Targets option from the Actions menu, enter the name of a host you want to have added to the list of target hosts, press the Add button and then press the OK button.

You must now mark a set of targets for installation. Select each host you want to mark by clicking on its name in the Target Selection Window with your left mouse button, then select Mark for Install from the Actions menu.

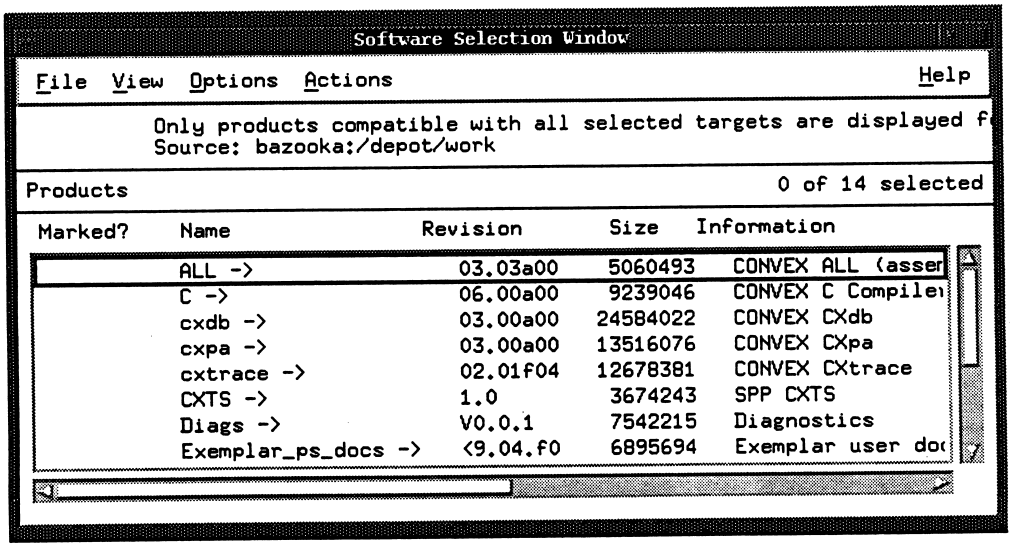
Selecting software to install

When you have finished marking the hosts on which you will install software, select Show Software for Selection from the Actions menu in the Target Selection Window. There are two cascading menu options:

- Select Show Software on Default Source to see the software in the default location; this will be your system's DAT drive if the default has not been changed for your system.
- Select Select a New Source to see the software in a location other than the default; you can enter a directory or a device file name as a new source.

When you have selected a software source, the Sofware Selection Window shown in Figure 2 appears.

Figure 2 Software Selection Window



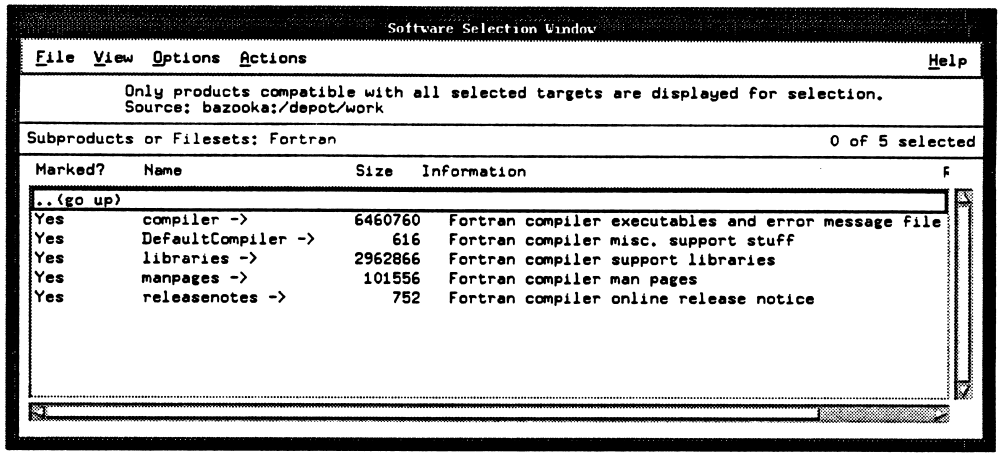
You must mark software for installation in much the same way as you mark target hosts. Select each software package you want to mark by clicking on its name in the Software Selection Window with

your left mouse button, then select Mark for Install from the Actions menu.

Getting more information about a software package

The Software Selection Window object list is a hierarchical list. The top-level object for each software product is shown by default. You can view the components of a software product by double-left-clicking on the product's name, or by selecting the Open Object option from the Actions menu. To close an object and return to the next higher level object, double-left-click on the first object in the list (`..(go up)`) or select the Close Object option from the Actions menu. Figure 3 shows the detail window that appears when you double-click on a software product.

Figure 3 Software Selection detail window

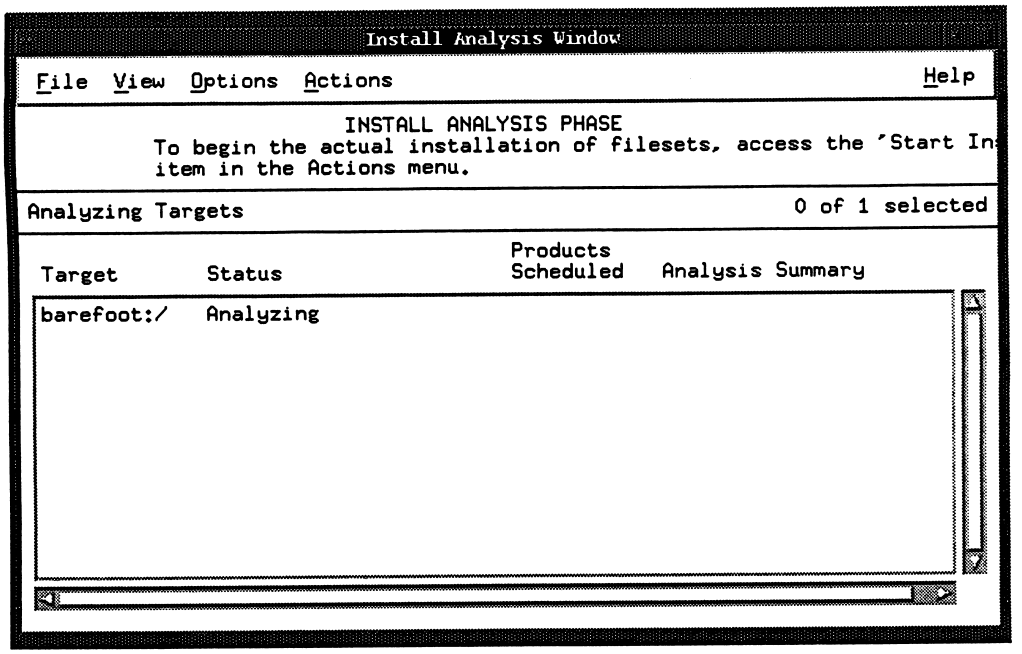


You can view detailed information about a software product by selecting the Show Description of Software option from the Actions menu. This action displays such information as the revision number, product number, category, operating system, and hardware platform.

Analyzing the installation process

When you have finished marking the software products you will install, select Install (analysis) from the Actions menu in the Software Selection Window. the Install Analysis Window shown in Figure 4 appears.

Figure 4 Install Analysis Window

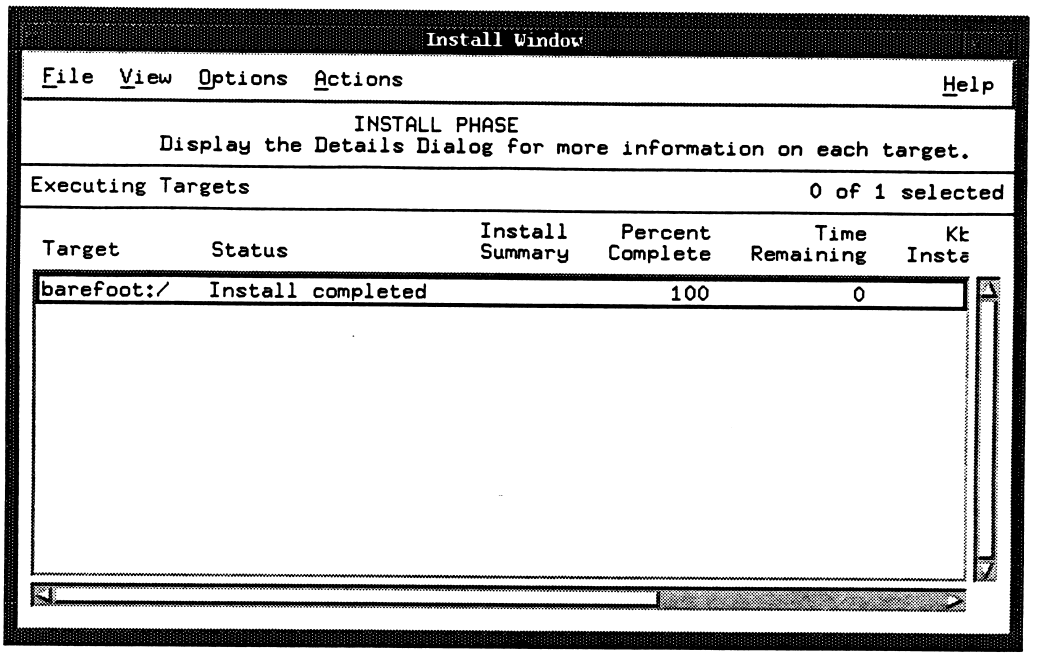


The analysis phase begins automatically when the Target Analysis Window appears. When the analysis is done, the status for each target host will be marked as either "Ready to install" or "Excluded from task." The Analysis Summary field indicates any errors or warnings that were issued during the analysis phase.

Installing the software products

When you have finished marking the software products you will install, select Start Install from the Actions menu in the Install Analysis Window. the Install Window shown in Figure 5 appears.

Figure 5 Install Window



The Install Window shows each target host on which software is being installed. The Status field indicates whether the install process is active, suspended, complete, or has been aborted.The Install Summary field displays the progress and the results of the install phase. Other fields show the percent complete, time remaining, KB installed, total KB to install, and whether software is presently being loaded.

If the install process is suspended (for example, if you need to insert a tape in a multi-tape installation), you will see a message indicating the action you need to perform before the installation can continue. When you have completed the action, resume the install by selecting Resume Install from the Actions menu.

The install process may complete cleanly, or with warnings or errors. At this time, you can perform one of the following actions:

- Review all selection windows
- Display details on any target host
- Save the session before exiting or starting a new session

- Start a new session
- Recall a session
- Exit

Installing software locally

You can install SD-packaged software locally on your system using any I/O device attached to your system.

Releases of Convex Exemplar software are distributed on double-density DAT. Your Exemplar system is shipped with a double-density DAT drive that is capable of reading these tapes. The device file name of the DAT drive is `/dev/rmt/0m` dy default. To install SD-packaged software from your DAT drive, you can invoke `swinstall` with the following command:

```
swinstall -i -s /dev/rmt/0m
```

To install software locally from a different device, specify the device file name of the device in the `-s` parameter of the `swinstall` command.

Installing software remotely

You can install SD-packaged software from any remote source on your Exemplar system. To perform a remote software installation, you must first make the software files available to your SPP-UX file system. You can do this in either of two ways:

- Transmit the software files to the Exemplar system using a file transfer utility such as `ftp`
- Mount the remote file system containing the sofware files on your Exemplar system using a utility such as `nfs`

You may receive Convex software product patches and bugfixes across a network. You can install these software products with the `swinstall` command by specifying the directory containing the software product files in the `-s` parameter. For example, if you receive an SD-format patch to the Convex CXpa product in directory `/tmp/convex/cxpa` on your

Exemplar system, you can install the patch by entering the following command:

```
swinstall -i -s /tmp/convex/cxpa
```

Exemplar test station software installation

3

This chapter contains instructions you need to install or upgrade the Exemplar test station software.

Overview

First read the Test Station Software Release Notice and make sure that you perform all of the specific instructions that apply to the current release of the test station software.

If you are installing your Exemplar test station for the first time, perform all of the instructions provided in this chapter.

If you are installing an upgrade to the test station software, perform all the instructions in this chapter except those in the section *"Preliminary steps for initial test station configuration,"* and the configuration tasks in step 7 of the section *"Installing the test station software."*

Convex ships two separate tapes containing Exemplar test station software. For a particular release, you may receive a Exemplar Test Station Diagnostic Software DAT cartridge, an Exemplar Test Station OS Software DAT cartridge, or both. Some of the instructions iin this chapter apply to only one of these tapes; if you have not received a new version of a particular tape from Convex, skip the steps that apply only to that tape.

Prerequisites for test station software installation

This installation procedure requires that the following conditions be met:

- Your Exemplar system must have a test station consisting of an HP 9000 Model 712 or 715

workstation with a copy of the HP-UX operating system installed.

- The test station must be connected to the Exemplar system's DaRT (diagnostic) bus through the test station's `lan0` Ethernet port.
- The test station must have a DAT drive capable of reading single-density DAT cartridges.

Preliminary steps for initial test station configuration

If your test station has not yet been used at your site, perform the following steps before installing the test station software:

Step 1 Select two host names containing no more than eight characters each for the Exemplar test station. The first name will be the test station's host name on the Ethernet connected to the Exemplar DaRT (diagnostic) bus through the `lan0` Ethernet port; the second name will be the test station's host name on the external Ethernet (`lan1`).

Step 2 Install the test station hardware and HP-UX software. When the HP-UX installation completes, you will be asked if you are ready to link to the network. Answer 'no'. When you are prompted to enter the host name, enter the first host name you selected in Step 1 (the DaRT bus name). Follow the instructions to set the date and time of day, set the root password, and then allow the test station to complete the boot process.

Step 3 If you have an external Ethernet connection on your test station (an Ethernet connection in addition to the point-to-point connection to the Exemplar diagnostic bus), request an Internet address for the test station from the manager of the external Ethernet network at your site. Save this information for the `ts.install` script in Step 7 of the following procedure.

Installing the test station software

Use the following procedure to install the test station software:

Step 1 Log in to the test station in an HPterm or Xterm window as root. Do not use the Exemplar System Console window.

Step 2 Bring the test station to single-user mode by entering the following command as root:

```
/etc/shutdown
```

Step 3 If you have received a new Exemplar Test Station Diagnostic Software DAT cartridge from Convex, insert that cartridge the into the test station's DAT drive.

Step 4 You will be copying the tar files from the installation tape to the test station's root directory. Enter the following command:

```
cd /
```

Step 5 Copy the tar files on the DAT cartridge to the test station with the following command:

```
tar -xv
```

Step 6 If you have received a new Exemplar Test Station OS Software DAT cartridge from Convex, insert that cartridge the into the test station's DAT drive, then repeat steps 3 through 5.

Step 7 Execute the `ts.install` script by entering the following command:

```
/spp/scripts/inst/ts.install
```

This script copies the test station software files to the appropriate locations and optionally configures your test station.

The `ts.install` script prints the following prompt:

```
Do you wish to set up this
workstation as a Test Station
((y/n[n])?
```

Answer `y` if you are performing an initial configuration; otherwise, answer `n` or press the Return key. If you answer `y`, you will be prompted to enter the two host names you have selected for the test station, the Ethernet address for the test station on the external Ethernet, and the gateway on that subnet to other subnets.

When the `ts.install` script completes, perform the following tasks if you are doing an initial configuration and answered `y` to the above question:

- Make sure that the `/etc/hosts` files on other systems to which the test station is connected via

Ethernet are changed to include the new external host name for the test station.

- If you have an external Ethernet connection on the test station, edit the `/etc/netlinkrc` file and uncomment the lan1 section.
- If you plan to use the named name server, make sure that both host names for the test station are entered in your site's name server.
- Edit the `/etc/netnfsrc` file, and change the second occurrence of the string `NFS_SERVER=1` to `PCNFS_SERVER=0`. This string is just below five lines of comments.

Caution

If you copy an /etc/hosts file from another system to the test station, you must preserve the test station host name entries created by the ts.install script, and the `mu_000`*x* entries, where *x* is any single character. Failure to preserve these entries will make the test station unusable.

Step 8 If you installed a new Exemplar Test Station OS Software tape, enter the following commands:

```
cd /spp/os
chown sppuser *
chgrp sppuser *
chmod 554 sppboot
```

Step 9 With the Exemplar system powered up and connected to the test station, enter the following command on the test station (not in the Exemplar System Console window):

```
/etc/reboot
```

You are now done installing the test station software.

Installing firmware

Perform the following steps to install firmware from the test station to the Exemplar system's MU (utility) board.

Step 1 Log in to the test station with the *sppuser* user ID. Contact the Convex Technical Assistance Center (TAC) if you do not know the default password for *sppuser*.

Step 2 Install the new Open Boot (OBP) firmware by entering the following command:

```
/spp/bin/load_eprom 0 -s
  /spp/firmware/obp
```

Step 3 Install the new primary loader by entering the following command:

```
/spp/bin/load_eprom 0 -p
  /spp/firmware/pl
```

Step 4 Install the new MU firmware by entering the following commands:

```
ccmu pull

/spp/bin/load_eprom 0 -f
  /spp/firmware/mu_firmware

ccmu push

pce_util -p off

do_reset 1
```

You are now done installing the Exemplar firmware.

What to do next

Read the Test Station Software Release Notice and the SPP-UX Release Notice to find out what you should do after installing the current version of the test station software. There are three possibilities:

Booting SPP-UX from disk

To boot SPP-UX from disk, wait until the Exemplar System Console window appears on the test station, and enter the following command at the Open Boot ok prompt:

```
[0:3] ok boot
```

Booting SPP-UX from the test station

To boot SPP-UX from the test station, log in as *sppuser* and enter the following commands:

```
cd /spp/os

sppboot
```

Booting SPP-UX from scratch

To perform a scratch installation of SPP-UX, perform the instructions described in Chapter 4, "SPP-UX scratch installation," on page 25.

SPP-UX scratch installation 4

This chapter contains instructions for performing a scratch installation of SPP-UX in the event that the working copy of your operating system is damaged or destroyed.

Scratch installation prerequisites

This installation procedure requires that the following conditions be met:

- Your Exemplar system must have a double-density DAT drive installed.

  The scratch installation program refers to the DAT drive that you use to perform the scratch installation as the *install device*.

- Your Exemplar system must have at least one properly functioning hard disk drive installed. This hard disk must have a capacity of at least 1.8 GB if it is unlabeled; if the disk is labeled, it must have at least 800 MB of free space. The scratch installation program will provide you with a list of disk drives on your system that meet these requirements.

  The scratch installation program refers to the hard disk on which you install the working copy of SPP-UX as the *root device*.

- The Open Boot firmware installed on your system must be version 1.0 or later.

- You need a copy of the Exemplar Scratch Installation DAT cartridge.

Scratch Installation procedure

Use the following procedure to install a working copy of SPP-UX on your Exemplar system. This procedure installs SPP-UX, a new root file system, and, if the target hard disk is unlabeled, a 1-GB paging space.

Step 1 Insert the Exemplar Scratch Installation DAT cartridge into your Exemplar system's DAT drive.

Step 2 If SPP-UX is still running on the Exemplar system, reboot the system by entering the following command in the Exemplar System Console window on the test station (you must be logged in as the superuser to run this command):

```
/etc/reboot
```

If you can not run SPP-UX commands on the Exemplar system, press the power switch on the root node of the Exemplar system to boot the system.

Step 3 When a new Exemplar System Console window appears on the test station, enter the following command in the console window at the Open Boot ok prompt:

```
[0:3] ok boot rmt0
```

Step 4 The scratch installation program displays some information in the console window, followed by the following menu:

```
Are you ready to begin the installation?
 0. No
 1. Yes
 2. Exit
 Choice (default is 1):
```

Enter 1 at the prompt and press the Return key to continue the installation procedure.

Step 5 The scratch installation program lists the devices installed on the Exemplar system that can be used to install the Exemplar Scratch Tape:

```
 Searching for install devices .......
 Select an Install Device
 -----------------------
```

```
0. rmt0
1. Other user specified device
2. Help
3. Exit
```

Type the number corresponding to the tape drive containing the Exemplar Scratch Tape and press the Return key. The DAT drive that is shipped with your Exemplar system is normally device `rmt0`.

At this point, the scratch installation program prints a message instructing you to insert the installation media into the installation device you have selected if you have not done so already. Make sure that the Exemplar Scratch Installation DAT cartridge is inserted into the device you have selected, then press the Return key to continue.

Step 6 The scratch installation program displays a list of devices that can be used as a root device for the installation. The list may look like the following:

```
Searching for root devices .......
Select a new Root Device to Install
-----------------------
  0. SCSI Disk, SCSI ID 2 on landmarc unit 0 sbus unit 0
  1. sd1a              1024000K <No Description>
  2. sd1b              1024000K <No Description>
  3. Other user specified device
  4. Help
  5. Exit
```

In the above example, the first device is an unlabeled, unformatted hard disk drive; the second and third devices are labeled (`sd1a` and `sd1b`), formatted disk partitions (these are actually two partitions on a single disk).

Enter the number corresponding to the device on which you wish to install SPP-UX and press the Return key.

Step 7 The scratch installation program displays the install device and the root device you have selected, and prompts you to verify that these are the devices you want to use. If this information is correct, type 1 and press the Return key. If the information is not correct,

enter 0 and press the Return key; if you choose this option, you will be returned to Step 5.

Step 8 The scratch installation program formats the root device, copies SPP-UX to the root device, creates a root file system on the device, and, if the device is unlabeled, creates paging space on the device. The program prints a message each time one MB of disk space has been formatted and written. This operation is finished when the program prints the following message:

```
799 Megabytes read, 799 Megabytes written
```

This step takes approximately 66 minutes.

Step 9 If your root device is unlabeled, the scratch installation program prompts you to enter a logical device name for the device. Enter the device name and press the Return key, or press the Return key to accept the default device name.

Caution

If you select a non-standard device name, the device will not be usable unless you modify /etc/checklist, /dev/rroot, and possibly other system files. Since this is not possible unless you have another working copy of SPP-UX, you are strongly encouraged to use the default device name.

Step 10 Boot the Exemplar system by typing the following sequence of commands in the Exemplar System Console window at the Open Boot ok prompt:

```
[0:3] ok reset   (this takes about 30 seconds)
[0:3] ok boot
```

The Exemplar system is now ready to use. Continue by performing the post-installation tasks desribed in Chapter 2 of the *SPP-UX System Aministration Guide*.

SD software management utilities 5

Overview

This chapter presents a reference to the SD utilities designed for the performance of various software management tasks.

The following utilities are documented:

- `swconfig`
- `swcopy`
- `swlist`
- `swremove`
- `swverify`

Prerequisites

Certain prerequisites must be met in order to use the utilities described in this chapter. Each utility may have specific prerequisites, which will be addressed in the individual sections of this chapter. The prerequisites for all of the utilities are listed below.

- Your system must have a working copy of the SD utilities, which are in the directory `/usr/sbin`. Add that directory to your $PATH or specify the directory when you invoke the command.
- The `/usr/sbin/swagentd` daemon must be running. If it is not running, start it.

Using utilities with the GUI

`swcopy` and `swremove` feature a graphical user interface (GUI). To use `swcopy` of `swremove` with the GUI, simply type the command with no arguments. For example, to start the SD GUI for copying or removing software, type

```
swcopy
```

or

```
swremove
```

and the Target Selection Window will appear (see Figure 1 on page 11).

You may also use `-i` on the command line to specify command options or selections to be used in the GUI.

`swconfig`, `swlist`, and `swverify` have no graphical user interface. For these utilities, all interaction must be done on the command line.

Command reference

Each of the following sections contains a synopsis, command line syntax, and a brief description of an SD software management utility, including examples of usage.

swconfig

The `swconfig` utility configures, unconfigures, and reconfigures software products that are installed on target hosts.

The command-line syntax for `swconfig` is:

```
swconfig [-v] [-u] [-p] [-x option=value]
         [-f software file] [-t target file]
         [-X config file] [-S session file]
         [software selections]
         [@ target selections]
```

swconfig command options

`-v`

Causes verbose logging to `stout`

`-u`

The "undo" option causes `swconfig` to unconfigure the software instead of configuring it.

`-p`

Preview a configuration task by running it through the analysis phase and then exiting.

`-x` *option=value*

Allows setting of an option on the command line

`-f` *file*

Reads the list of software selections from a file

`-t` *target file*

Reads the list of target hosts from a file

`-X` *option file*

Uses the options in the specified options file

`-S` *session file*

Runs `swconfig` based on a previous session

You must specify which software selections to configure (`-f` *file* or *software selections*), and what target hosts are to be operated upon (`-t` *target file* or *target selections*). The `@` sign is an important part of the syntax. Be sure that your shell will allow you to use the @ symbol.

`swconfig` command examples

To unconfigure the software selections in the file `mysoft` that are installed on the target hosts listed in the file `myhosts`, you would type:

```
swconfig -u -f mysoft -t myhosts
```

To unconfigure the software selections listed in `/tmp/install.products` on the hosts listed in `/tmp/install.hosts`, type:

```
swconfig -u -f /tmp/install.products
         -t /tmp/install.hosts
```

---

swcopy

The `swcopy` command copies products from a software source, e.g., a DAT, to a specified directory on the specified host. Software now in the specified directory can then be accessed by the `swinstall` command. `swcopy` does not copy products for use below the root directory. Products are placed into a separate directory, which can then be a source for `swinstall`.

The command-line syntax for `swcopy` is:

```
swcopy [-i] [-p] [-v] [-s source]
       [-x option=value] [-f software file]
       [-t target file] [-X option file]
       [-S session file] [software selections]
       [@ target selections]
```

`swcopy` command options

`-i`

Runs the command in interactive (Graphical User Interface) mode. Used to "pre-specify" targets, software selections, etc. for use in the GUI.

`-p`

Previews a copy operation by running a session through the analysis phase.

`-v`

Turns on verbose output to `stdout`

`-s` *source*

Specifies which software source is to be used for the copy

`-x` *option=value*

Sets an option on the command line to override the default value or a value in an alternate options file

`-f` *software file*

Reads a list of software selections from a separate file instead of from the command line

`-t` *target file*

Reads a list of target host selections from a separate file instead of from the command line

`-X` *option file*

Uses the options in a specified options file

`-S` *session file*

Runs the command based on values saved from a previous session

`swcopy` command examples

To copy all products from the DAT at `/dev/rmt/product` to the directory `/mydir` on the local host:

```
swcopy -s /dev/rmt/product /mydir
```

To copy the CONVEX ALL and CONVEX PVM products on the software server *sw_server* to the directory `/mydir` on a remote host:

```
swcopy -s sw_server all pvm @ hostA:/mydir
```

swlist

The `swlist` utility configures, unconfigures, and reconfigures software products that are installed on target hosts.

The command-line syntax for `swlist` is:

```
swlist  [-d] [-r] [-l level designation]
        [-v] [-x option=value]
        [-s source] [-f software file]
        [-t target file] [-X option file]
        [-a attribute] [software selections]
        [@ target selections]
```

swlist command options

`-d`

List products available on an alternate directory rather than software installed on a target.

`-r`

List products on an alternate root instead of `/`.

`-l` *level designation*

List all software objects down to the specified "level designation." Level designations are the literals: `depot`, `product`, `subproduct`, `fileset` or `file`. You may use only one level designation per command. Do not use software names, subproduct names, etc. to specify levels.

The syntax is to choose a level as a starting point and list items only down to that level:

Table 2 The -l options

Option	Action
`swlist -l product`	shows only products
`swlist -l subproduct`	shows products and subproducts
`swlist -l fileset`	shows products, subproducts, and filesets
`swlist -l file`	shows products, subproducts, filesets, and files

`-v`

List all the attributes for the level given, one per line. These descriptive, state or relational attributes are displayed for each software selection (product, subproduct, fileset) or alternate directory given.

If the `-v` option (verbose) is used in front of the `-l` option (that is, `-vl` *level designator*), all the class attributes for each of the levels implied in the `-l` *level designation* specification are given. This lets you see all the attributes that are available for each software level.

`-a` *attribute*

Each listing level has its own set of attributes or information items. These attributes include such things as revision numbers, descriptions, vendor information, size in Kbytes, and many others.

You may specify only one attriburte per `-a` option. However, the *tag* attribute is always included by default, so specifying `-a` *revision* lists all product names AND their revision numbers.

An attribute containing a large amount of information (for example, a README) is physically stored as a separate file and is desplayed by itself if `-a README` is requested.

`swlist` command examples

To produce a simple list of all the products (by name) installed on your local host, simply type:

```
swlist -l product
```

and a listing like this would follow:

```
ALL
MLIB
PVM
CXdb
CXpa
CXtrace
.
.
.
```

`swremove`

The `swremove` utility configures, unconfigures, and reconfigures software products that are installed on target hosts.

The command-line syntax for `swlist` is:

```
swremove [-p] [-d|-r] [-i] [-v]
         [-x option=value]
         [-f software file] [-t target file]
         [-X option file] [-S session file]
         [software selections]
         [@ target selections]
```

`swremove` command options

`-p`

Previews the remove operation by without actually removing anything.

`-d`

Operate on an alternate directory rather than installed software.

`-r` *alternate root*

Specifies an alternate root directory.

`-i`

Runs the command in interactive (Graphical User Interface) mode. Used to "pre-specify" targets, software selections, etc. for use in the GUI.

`-v`

Turns on verbose output.

`-x` *option=value*

Allows setting of an option on the command line

`-f` *software file*

Reads a list of software selections from a separate file

`-t` *target file*

Reads a list of target host selections from a separate file

`-X` *option file*

Uses the options in a specified options file

`-S` *session file*

Runs `swremove` based on a previous session

`swremove` command examples

To remove a software selection called *mysoft* from the directory `/mydir` on the host *myhost*, type:

```
swremove mysoft @ myhost:/mydir
```

swverify

The `swverify` utility configures, unconfigures, and reconfigures software products that are installed on target hosts.

The command-line syntax for `swverify` is:

```
swverify [-d|-r] [-v] [-x option=value]
         [-f software file] [-t target file]
         [-X config file] [-S session file]
         [software selections]
         [@ target selections]
```

swverify command options

`-d`

Operate on an alternate directory rather than installed software.

`-r` *alternate root*

Specifies an alternate root directory. Verify scripts are not run.

`-v`

Turns on verbose output to `stdout`.

`-x` *option=value*

Allows setting of an option on the command line

`-f` *software file*

Reads a list of software selections from a separate file instead of from the command line

`-t` *target file*

Reads a list of target host selections from a separate file instead of from the command line

`-X` *option file*

Uses the options in a specified options file

`-S` *session file*

Runs the command based on values saved from a previous session

`swverify` command examples

To verify the CONVEX ALL and CONVEX PVM products installed on the local host, type:

```
swverify all pvm
```

To verify the CONVEX ALL and CONVEX PVM products installed at three remote hosts, type:

```
swverify all pvm @ hostA hostB hostC
```

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