
Convex Cluster Tools for PA-RISC V1.3 Installation Notice



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Overview

1

Convex Cluster Tools for PA-RISC V1.3 provided by Convex CXSOFT for use with the Meta Series HP-UX V10.01 upgrade.

This chapter gives an overview of the Convex Cluster Tools for PA-RISC V1.3 release.

About this package

This section describes the documents and requirements associated with this release. Table 5 lists the titles and part numbers for the software and documentation included with this release.

Table 5 Distribution contents

Title	Part number
<i>Convex Cluster Tools for PA-RISC V1.3 Installation Notice</i>	770-005230-002
Convex Cluster Tools for PA-RISC V1.3	770-002715-002

Documentation

Documentation for Convex Cluster Tools for PA-RISC V1.3 consists of:

- *Convex Cluster Tools for PA-RISC V1.3 Installation Notice*
- Online man pages

Prerequisites

Convex Cluster Tools for PA-RISC runs on the HP 9000/700 Series PA-RISC hardware platform.

Before you can install this package on a PA-RISC computer, your system must already be running HP-UX 10.X.

Corequisites

The following corequisites exist for this product.

- Convex Cluster Tools for PA-RISC is available on DAT or CD-ROM media.
- Installer should be familiar with `/usr/sbin/swinstall`. Refer to Hewlett-Packard's *Managing HP-UX Software with SD* for details.

Installable file sets

This release of Convex Cluster Tools for PA-RISC contains the following file sets:

- TOOLS-BIN
This file set contains the binaries and scripts for Convex Cluster Tools for PA-RISC.
- TOOLS-MAN
This file set contain man pages that are placed in `/usr/cxmaster/hppa/man`. The user should add `/usr/cxsoft/man` to their MANPATH to be able to view the Convex Cluster Tools man pages.

Disk space requirements

Convex Cluster Tools for PA-RISC installation requires the following disk space as shown in Table 6.

Table 6 Disk space requirements

File set	Directory	Space required
TOOLS-BIN	<code>/usr/cxmaster/hppa/{hppa,cxcommon}</code>	2481 Kbytes
	<code>/var</code>	13 Kbytes
TOOLS-MAN	<code>/usr/cxmaster/hppa/man</code>	431 Kbytes
	<code>/var</code>	7 Kbytes
	Total	2932 Kbytes

Notes and cautions

Install the CONVEX Cluster Tools on the server machine only. Refer to Chapter 3, "Configuring the cluster," on page 17 for directions on setting up the remaining hosts in the cluster.

Software installation strategies

This section details the different strategies for installing CXSOFT products on your workstation(s). It should be of interest to people executing software on more than one computer. Read this section to understand the directory structure used by this software installation.

Background

The compute power provided by desktop workstations has increased significantly over the past decade. Additionally, advances in software and network technology have allowed people to "cluster" several workstations together to build powerful computing engines.

Recognizing the system management problems of even a modest number of workstations, CXSOFT provides software installations giving you the greatest flexibility in administering this product, either on a single workstation or in a clustered workstation environment.

CXSOFT software installation supports two different strategies for loading the software:

- **Peer strategy**—All software is specifically installed on each host running the software. This method is traditional in workstation software.
- **Client/server strategy**—Shareable files are loaded on a single host, the "file server." These files are then served to zero or more "clients" using Network File System (NFS). A single file server may have clients of several different architectures.

You must use the client/server strategy when installing Convex Cluster Tools for PA-RISC, since only one file server host must contain the files.

File server directory structure

This and other CXSOFT products install under the `/usr/cxmaster` directory. Additionally the following directory trees are created:

- `/usr/cxmaster/hppa`—This is where architecture-specific files are installed.

- /usr/cxmaster/cxcommon—This is where common configuration files are installed and maintained.

This directory tree is capable of supporting multiple architectures on a single file server as illustrated in Figure 1 .

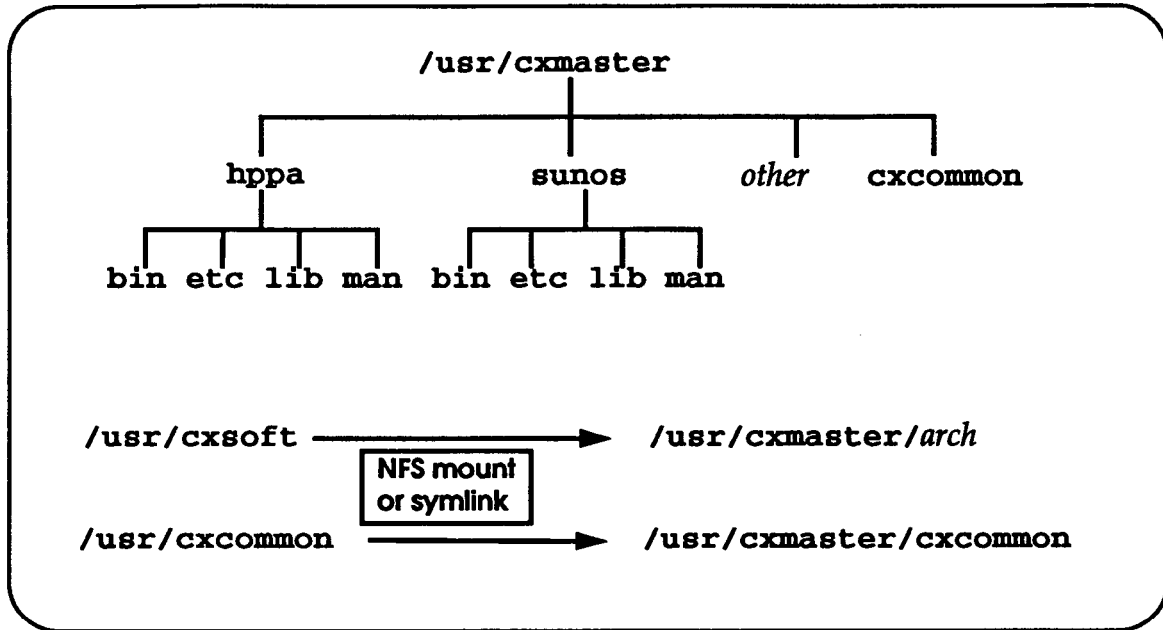


Figure 1 CXSOFT software installation directories

If the software is installed locally, /usr/cxsoft will be a symbolic link to the appropriate /usr/cxmaster/arch directory. Similarly, /usr/cxcommon will be a symbolic link to /usr/cxmaster/cxcommon.

Exporting the file server directories to client hosts

To locate the appropriate product executables on any given host, the following scheme is used by CXSOFT installations.

On the file server host, there are the following symbolic links:

- /usr/cxsoft -> /usr/cxmaster/arch
- /usr/cxcommon -> /usr/cxmaster/cxcommon

On each of the client hosts, there are the following directory mounts:

- server:/usr/cxmaster/arch mounted on client:/usr/cxsoft
- server:/usr/cxmaster/cxcommon mounted on client:/usr/cxcommon

arch is an architecture type. For example, if your client host is an HP workstation, then *arch* would be *hppa*. If your client is a SUN workstation running SunOS, then *arch* would be *sunos*.

In this manner, users need only add the `/usr/cxsoft/bin` directory to their execution path, and they will automatically execute the correct executable programs no matter which host they are logged into. Similarly, they need only add `/usr/cxsoft/man` to their `MANPATH` variable and they will always access the man pages specific to the host they are on.

Refer to your HP system administration documentation for instructions on exporting and mounting directories across hosts.

Selecting a strategy

To help you recognize the strategy that best suits your environment, Table 7 compares peer and client/server strategies with regard to specific system administration issues.

Table 7 Software installation strategy comparison

Issue	Peer strategy	Client/server strategy
Disk space	Each software package is installed on every host on which it executes.	Most software is loaded on the file server with a minimum number of files installed on the client hosts. This conserves disk space on the client hosts.
Fault tolerance	Since all executables are installed on the individual hosts, there is no single point of failure as long as all data is also local.	The file server becomes a single point of failure for the cluster environment. If the file server is also serving data files to the cluster, fault tolerance is irrelevant.
Software installations	All software packages are installed on each host.	All software packages are installed on a file server. Some software packages may also have small "Environment" file sets that must be installed on each client as well.
System administration	Configuration files must be copied to all cooperating hosts.	Configuration files localized on a single file serving host.

In selecting a strategy, you may also determine that a hybrid environment works best. For example, consider an environment where all executable software is loaded on each host running the software (as in the peer strategy). Common configuration files that can be shared among multiple hosts are stored on single file server hosts. Clients then access the configuration files using NFS. Specifically:

- `/usr/cxsoft` is a symbolic link to `/usr/cxmaster/arch`.
- `server:/usr/cxcommon` is mounted on `client:/usr/cxcommon`.

Any given host can be either a client or a file server/peer, but not both, because `/usr/cxsoft` is either a mount point or a symbolic link. If `/usr/cxsoft` is a link, the host is either a file server (in the client/server strategy) or a peer (in the peer strategy). If `/usr/cxsoft` is a mount point, the host is a client. A host should be designated as either a file server or a client, but never both.

Strategy implications

Note

You *must* install Convex Cluster Tools for PA-RISC using the client/server strategy only.

Solving installation problems

If you encounter any problems during the installation and cannot continue, please contact the CXSOFT Technical Assistance Center (TAC) for help. Depending on your location, the TAC may be reached at one of the following telephone numbers:

- In the United States or Canada, call 1 (800) 426-8979.
- Outside the United States or Canada, call 1 (214) 497-4027.

Contents

This section describes the directory contents of Convex Cluster Tools for PA-RISC.

TOOLS-BIN

- In /usr/cxmaster/hppa/bin:

Perl command	RCS command	arc
cladmin	clanysh	clconfigure
clconnect	clcp	clinfo
ckill	clman	clnqs
clps	clsh	cltinit
clupd	cluptime	hpman
install	less	makewhatis
man	patch	rdist
tcsh		

- In /usr/cxmaster/hppa/lib:

less.help perl/

- In /usr/cxmaster/hppa/lib.perl:

cldb.pl Various Perl libraries

In /usr/cxcommon/etc:

cldb/SAMPLE_initial_cluster.def

- In /usr/cxmaster/hppa/template

Location of PA-RISC-specific template files

TOOLS-MAN

In /usr/cxmaster/hppa/man:

Man pages for tools

Installing Cluster Tools for PA-RISC

2

This chapter describes the installation of Cluster Tools for PA-RISC. Cluster Tools for PA-RISC V1.3 has only had installation procedure changes done to make it compatible with HP-UX V10.x. There have been no other changes to this software from V1.2.

The installation of Cluster Tools for PA-RISC uses the Hewlett-Packard Company installation program `/usr/sbin/swinstall`. For more details on using `/usr/sbin/swinstall`, please refer to Hewlett-Packard *Managing HP-UX Software with SD*, published by Hewlett-Packard.

If you have any problems or questions, please contact the CXSOFT Technical Assistance Center (TAC) at 1 (800) 426-8979 inside the United States and Canada, or 1 (214) 497-4027 outside the United States or Canada.

Note

Install the CONVEX Cluster Tools on the server machine only. Refer to Chapter 3, "Configuring the cluster," on page 17 for directions on setting up the remaining hosts in the cluster.

The information on peer strategy is given for reference only.

Before you begin

Before you install this package, you should be familiar with the prerequisites, corequisites, and software installation strategies described in "Overview," on page 5.

Selecting file sets for installations

Regardless of the installation strategy, install the following file sets on the file server:

- TOOLS-BIN (required)
- TOOLS-MAN (optional)

You must use the client/server strategy. Information on peer strategy is provided for general information.

Installing on a file server host

These steps apply to installing Convex Cluster Tools for PA-RISC on a file server (client/server strategy). See "Software installation strategies" section on page 7 for definitions.

Note

Install the CONVEX Cluster Tools on the server machine only. Refer to the Chapter 3, "Configuring the cluster," on page 17 for directions on setting up the remaining hosts in the cluster.

Step 1 Login as root.

Step 2 Mount the installation media.

- For DAT distributions, place the DAT containing Convex Cluster Tools for PA-RISC in the DAT drive.
- For CD-ROM, place the CD-ROM in the drive and mount it:

```
# mount -o ro,suid /dev/dsk/c201d2s0 /cdrom
```

Note

Do not change the default destination.
The tape or CD-ROM device on your system may be different.

Step 3 Check to make sure that you have the required amount of disk space as specified in "Disk space requirements" section on page 6, by entering:

```
# /usr/bin/bdf
```

Step 4 Execute the command:

```
# /usr/sbin/swinstall -i -s /dev/rmt/0mn
```

- Use the the correct device for your system in place of /dev/rmt/0mn.
- For DAT—/dev/rmt/0mn
- For CD-ROM—/cdrom/HPPA/CTOOL1_3.SD

Note

The DAT and CD-ROM device names are examples and may be different on your system.

Step 5 Click on the "OK" button.

Step 6 A "Note" screen saying that software view is set to show bundles might appear. Click on the "OK" button.

Step 7 The Software Selection Window will show Cluster Tools on the Products screen. Click on the Cluster Tools line to highlight the selection. Then select "Mark for Install" from the "Action" pull down menu. A "Yes" will appear under the "Marked" column.

- Step 8** From the "Action" pull down menu select "Install (analysis)". The "Install Analysis" Window will appear, click on "OK" button when ready to proceed.
- Step 9** The "Confirmation" Window will appear. Read the message and click on "OK" when ready. The installation will proceed. You can click on "Logfile" to watch the progress of the installation. Click on the "OK" button when you are done viewing the logfile.
- Step 10** A "Note" window will appear telling you the installation has completed. Click on the "OK" button. Click on "Done" in the "Install Window". And exit swinstall by clicking on "Exit" under the "File" pull down menu.
- Convex Cluster Tools for PA-RISC V1.3 client loads with no further action required. Check /var/adm/sw/swinstall.log for any error messages. See "Precluster configuration" section on page 17 for details on configuring Convex Cluster Tools.
- Step 11** Continue by reading "Configuring the cluster" section on page 17.

Configuring the cluster

3

This chapter describes how to perform initial configuration of the cluster.

Precluster configuration

You must perform the following tasks before cluster configuration can begin:

- Connect the cluster console port to the terminal server, or ensure you have access to the console on the HP workstation.
- Configure the IP addresses in the terminal server, if a terminal server is being used.
- Install HP 10.X on the machines, if it is not already installed.
- Set up the following files:
 - /etc/hosts
 - /etc/hosts.equiv
 - /.rhosts

Note

All hosts in a cluster must have root equivalency with each other.

- Install the CONVEX Cluster Tools for PA-RISC on the server for the cluster.

Cluster configuration

The initial setup of a cluster is simplified by the use of the `clconfigure` command. This command is interactive and will prompt the user for the required information.

You are prompted for information as follows:

- Step 1** You are prompted for the host names of the node in the cluster. Enter the host names, separating them by a space.
- Step 2** After validating each host name, you are prompted for the following information for each host:
- **Port**—The name or IP address of the port in the terminal server that connects to the console for this host. Press **RETURN** if the console is not connected to the terminal server.
 - **Network type**—The type of network this node is on. This is used to make a **PHYSICAL** cluster of all nodes on the same network.
Sample network types are *enet* and *fddi*.
 - **Aliases**—Alternate aliases for this host.
- Step 3** You will then be shown the information you have entered. You are allowed to cancel or continue at this point.
- Step 4** For each host in the cluster you are asked how the cluster software will be accessed. There are three possible answers:
- **hostname**—The host will NFS mount the cluster binaries from the specified host.
 - **netdist**—The binaries will be installed on the host. For this to work the Cluster Tools must have been “*updisted*” to the `/netdist` directory on the local machine.
 - **RETURN**—Pressing **RETURN** causes the host to NFS mount the cluster binaries from the local machine. This is the recommended configuration.
- Step 5** You are given the option of updating the hosts or canceling the operation.
- After updating the hosts in the cluster you should not execute `clconfigure` again. This utility is intended to be used for initial cluster setup only.
- Step 6** Reboot the master server to start all appropriate daemons.
- Step 7** Reboot the slave nodes to start all appropriate daemons.

This appendix contains a list of the man pages provided with Convex Cluster Tools for PA-RISC V1.3. These are available online using the `man(1)` utility.

- `cladmin(8)`
- `clanysh(1)`
- `clconfigure(8)`
- `clconnect(8)`
- `clcp(1)`
- `cldb(5)`
- `clinfo(1)`
- `clkill(1)`
- `clman(1)`
- `clnqs(1)`
- `clsh(1)`
- `cltsinit(8)`
- `clupd(8)`
- `cluptime(1)`
- `cluster(7)`

