

Installation Procedure
CONVEX CXpa V2.0
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Installation Procedure, CONVEX CXpa V2.0

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Installing CONVEX CXpa V2.0

Product Prerequisites

The following products (at the indicated revisions) are required to install and use CXpa V2.0.

- CONVEX FORTRAN V8.0
- CONVEX C V5.0
- ConvexOS V10.0 or greater.

CXpa & CXwindows

While it is preferable that CXwindows be in place for use with CXpa, it is not required. The CXpa installation procedure installs a version of *xterm* on those systems without CXwindows. The *xterm* and the *app-defaults* file for CXpa allow you to run CXpa in X mode on any X server. You need to obtain a version of the XKeysymDB, which is available from most any X server. This file contains the default key bindings used by OSF/Motif and must be available before starting CXpa with the GUI interface.

Structure of this Release

All components of CXpa are installed in a single base directory. By default, the base directory is */usr/lib/cxpa*, but it can be specified at installation time. The CXpa installation is self-contained. This means that the *cxpa* executable is stamped with the directory path in which it was installed. This allows CXpa to locate any associated components, like online help files, regardless of where CXpa has been installed. It also allows for multiple versions of CXpa to be installed on a single system.

Once the product is installed, symbolic links can be made from the standard installation locations, such as */usr/convex/cxpa*, to the corresponding component in the base directory.

Contents of this Release

The base directory consists of the following components:

X11: Contains components related to X. This includes an *app-defaults* file, *Cxpa*, for CXpa. It also includes an *xterm* for installation on systems without CXwindows. This will allow users who have X-window based terminals or workstations to use CXpa's X-window capabilities. Finally bitmaps that are needed for the Graphical User Interface are installed here.

bin: Contains the *cxpa* executable.

lib: Contains the monitor routines *cxpaMonitors_c2.o*, *cxpaMonitors_c2ansi.o*, and *libI77.a*. *libI77.a* is a patch release of the library that will overwrite the *libI77.a* in */usr/lib/palib*.

doc: Contains the online version of the Release Notice.

help: Contains the online help pages.

man: Contains the man page for *cxpa*.

misc: Contains several scripts to aid in the installation of CXpa.

verify: Contains the verify database used to insure correct installation of all installed files.

Linking to Standard Locations

Once CXpa has been loaded from tape, relevant components in CXpa can be optionally linked into the standard locations in */usr*. Additionally, the script *misc/linkfiles* can be used to reinstate all links. The argument to *misc/linkfiles* is the path to the base directory, usually */usr/lib/cxpa*. The links made by the *misc/linkfiles* script are listed below. Relative pathnames are relative to the base directory in which CXpa was installed.

- */usr/convex/cxpa* is linked to *bin/cxpa*.
- */usr/lib/cxpaMonitors_c2.0* is linked to *lib/cxpa.a*.
- */usr/lib/cxpaMonitors_c2ansi.0* is linked to *lib/cxpa.a*.
- */usr/man/man1/cxpa.1* is linked to *man/cxpa.1*.
- */usr/doc/vV2.0cxpa.relnotes* is linked to *doc/cxpa.relnotes*.
- */usr/lib/verify/cxpa_XV2.0* is linked to *verify/cxpa*.
- */usr/X11/lib/app-defaults/Cxpa* is linked to *X11/Cxpa*.
- */usr/X11/include/bitmaps/CxLeftArrow* is linked to *X11/CxLeftArrow*.
- */usr/X11/include/bitmaps/CxRightArrow* is linked to *X11/CxRightArrow*.
- */usr/X11/bin/xterm* is linked to *X11/xterm*, if *xterm* has not already been installed.
- */usr/lib/palib/libI77.a* is linked to *lib/libI77.a*.

Warnings

On some systems, most notably C3800 systems running later versions of ConvexOS 10.1, the last modification times of some of the installed CXpa files are sometimes reset to the date of the install instead of maintaining the modification time of the creation of the file. This does not pose any problems except in the case of the file *lib/libI77.a*. *lib/libI77.a* is a profilable version of the *libI77* archive. If its modification time is reset to the install date, then it will have to be ranlib'ed by a system administrator, so that it won't be out of date.

Installation Procedure

To install CXpa, you will need 9 Mbytes in the base directory. The installation script will check this automatically for you.

The installation procedure will *not* save CXpa components from previous installations. If you do not want to overwrite previous components, you should install CXpa in another directory.

Follow these steps to install CXpa:

1. Mount the CXpa *installsw* tape.
2. Log in as root.
3. Make sure you are running under the C shell (csh). Enter *echo \$SHELL* to display your shell.
4. Make sure you have "." in the environment variable PATH. Enter *echo \$PATH* to display your path.
5. Run the */etc/installsw* script as shown in the *Example Installation* section below. *installsw* must be run on a machine with a tape drive, but the actual installation may be on any machine in the same cluster.
6. The installation script will prompt you for:
 - The directory in which to install CXpa. Default is */usr/lib/cxpa*. If necessary, the installation script will make a directory for the last component of the path.
 - Activation keys. CXpa is protected by a serial number and requires an activation key to enable it. If you enter the wrong activation key, you will be queried again during the installation.

- Whether or not you want to instantiate the symbolic links listed in the *Linking to Standard Locations* section above.
- Whether or not you want to delete old components from earlier versions of CXpa.

Note that all prompts which contain an entry in square brackets “[]” provide a default answer of the text within the brackets. Just press RETURN to accept the default response.

7. Unmount the install tape.
8. You are now finished with the installation.

Example Installation

An example installation is listed below. It is only an illustration and may not exactly reflect the output you will see. User input appears in a bold font.

```

> tpmount -a /dev/rmt20                (user input)
Tape device /dev/rmt20 allocated.
> /etc/installsw -i -d /dev/rmt20    (user input)
Tape device is /dev/rmt20

** Installsw Header File From Tape **

Copyright 1993 CONVEX Computer Corp.
All rights are reserved.
CREATED ON Thur Mar 3 11:07:43 CST 1993
710-005715-008 CXpa, release 2.0

Choose the type of installation you want to perform:

LOCAL    --> install on this machine
REMOTE   --> install on a remote machine
ABORT    --> abort installation

Enter your selection now -->          local (user input)

Setting up installation environment. Hang on...
tar: blocksize = 65536 blocking = 64
This tape contains only release 2.0 of CXpa.

Do you wish to install or de-install it?    install (user input)
[Installing CXpa v2.0]
Directory in which to install cxa subdirectory [/usr/lib/cxa]? (user input)

CXpa requires an activation key.
What are your activation keys?    xxxxx-xxxxx-xxxx (user input)

Do you want to make links to components within the cxa directory [y]?  (user input)

Do you want to delete old components of cxa [y]?    (user input)

Unless there are errors, the install will be done in ~5 minutes.

Done processing install tape

Saving existing components, please wait...
Done.
```

CONVEX CXpa V2.0

Removing existing components, please wait...

Deleting: /usr/lib/cxpa/bin

Deleting: /usr/lib/cxpa/lib

Deleting: /usr/lib/cxpa/doc

Deleting: /usr/lib/cxpa/help

Deleting: /usr/lib/cxpa/man

Deleting: /usr/lib/cxpa/misc

Deleting: /usr/lib/cxpa/X11

Deleting: /usr/lib/cxpa/verify

Done.

Reading tape...

Reading logical tape 0: bin...Done.

Reading logical tape 1: lib...Done.

Reading logical tape 2: doc...Done.

Reading logical tape 3: help...Done.

Reading logical tape 4: man...Done.

Reading logical tape 5: misc...Done.

Reading logical tape 6: X11...Done.

Reading logical tape 7: verify...Done.

Done Reading tape

Activating executable /usr/lib/cxpa/bin/cxpa, please wait...Done.

Now testing activation of cxpa, please wait...

Done.

Marking cxpa executable with path of install directory...

Verifying files were installed correctly, please wait...

Done.

Making links to CXpa files in /usr/lib/cxpa.

Making link for: /usr/convex/cxpa

Making link for: /usr/lib/cxpaMonitors_c2.o

Making link for: /usr/lib/cxpaMonitors_c2ansi.o

Making link for: /usr/lib/palib/libI77.a

Making link for: /usr/man/man1/cxpa.1

Making link for: /usr/doc/v2.0cxpa.relnotes

Making link for: /usr/lib/verify/cxpa_X2.0

Making link for: /usr/X11/lib/app-defaults/Cxpa

Making link for: /usr/X11/include/bitmaps/CxLeftArrow

Making link for: /usr/X11/include/bitmaps/CxRightArrow

Done.

CXpa v2.0 installation complete.

Processing of installation media complete.

Trace file may be found in /tmp/install5183script.

> **tpunmount** *(user input)*

NAME

CXpa – CONVEX Performance Analyzer

SYNTAX

cxpa [[-path *dir*]...] [-x *cmdfile*] [-nx] [[-f] *executable*] [-pdf *filename*] [-nw] [-ne] [-ncg] [X Toolkit options]

DESCRIPTION

CXpa is a performance analyzer for C, FORTRAN and Ada that allows you to profile optimized programs compiled with one of the profiling flags (-pa, -par, -pab). CXpa can run under CXwindows or with CRT terminals such as a vt100. Under CXwindows, you can use CXpa's mouse driven interface or you can bring up a command window to enter CXpa commands with the keyboard.

CXpa has an extensive online help system that includes the entire CXpa reference manual. Once in CXpa, press the *Help* menu button in the main window to access the online help system. In CRT mode, use *help* at the command line.

CXpa allows you to profile code at different instrumentation levels. There are four levels of instrumentation: routine, loop, parallel region (often referred to as p-regions), and basic block. You can enable monitor points at any of these levels provided they exist. The monitor points you select will be used by CXpa to gather performance information that is reported using the *analyze* command.

OPTIONS

CXpa accepts all of the standard X Toolkit command line options as well as the options listed below:

- path *dir* Append the directory specified to the end of CXpa's search path. CXpa uses its search path as the list of directories searched when CXpa looks for a source file. Any number of directories can be specified by repeating the -path option several times. The list of directories is initialized to the current working directory and the directory where the executable or PDF is located. The space between the -path option and the directory name is optional.
- x *cmdfile* Execute the profiler commands in the specified file. After CXpa has executed the commands in the file, the profiling session is terminated if the file contains the *quit* command; otherwise the user is prompted for a CXpa command.
- nx Do not execute profiler commands from .cxpait.
- f *executable* Specify fixed scheduling for the program you are profiling to reserve all processors for its use. Fixed scheduling is useful when profiling programs that have sections that execute in parallel. Without fixed scheduling, the number of threads created depends on the system load.
- executable* Specify the name of the executable you wish to profile. The default is *a.out*.
- pdf *filename* Invoke CXpa with the specified performance data file (PDF). CXpa uses the PDF to store profiling information and to generate the analysis reports.
- nw Invoke CXpa in CRT mode. Do not bring up the X window version.
- ne Add the Monitor Points not Executed list to CXpa's analysis reports.
- ncg Do not include the dynamic call graph in CXpa's analysis reports.
- X Toolkit options* Specifies X Toolkit options. For more information about these options, refer to your X Windows documentation.

EXAMPLES

To invoke CXpa in windows mode, simply type the following at the shell prompt.

% cxpa

The above command invokes CXpa with the default executable, *a.out* and default PDF, *cxpa.pdf*, if they exist. If neither exist, CXpa starts, but only allows you to analyze existing PDFs. You can specify a PDF using the *set pdf* command.

% cxpa a.out

The above command invokes CXpa. The file name is treated as an executable file. This begins a profiling session using the specified executable file and the default profile data file (PDF) named *cxpa.pdf*.

% cxpa -pdf my.pdf

The above command invokes CXpa. The *-pdf* option specifies the file name (*my.pdf*) as the performance data file (PDF). CXpa uses the PDF to store the performance information and to generate the analysis reports.

% cxpa -nw a.out

The above command invokes CXpa with the executable *a.out*. Using the *-nw* option causes CXpa to be invoked using the CRT mode.

% cxpa -nx

The above command invokes CXpa but inhibits it from processing any initialization files.

FILES

\$HOME/.cxpainit	per-user initialization file
./cxpainit	per-directory initialization file
/usr/lib/cxpa/help/	online help database
/usr/lib/X11/app-defaults/CXpa	default X key-bindings

BUGS

See the CONVEX CXpa release notes in */usr/doc* for a description of known bugs.

SEE ALSO

fc(1F) (Optional Product), cc (1) (Standard Product), *CONVEX CXpa User's Guide*, *CONVEX CXpa Reference*, *CONVEX CXpa Quick Reference*