

ESV Series Workstations

2.2 Release Notes

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EVANS & SUTHERLAND COMPUTER CORPORATION
Salt Lake City, Utah



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1. Introduction

Overview

This document describes the 2.2 Release of the ESV Workstation software.

- Chapter 1, "Introduction," (this chapter) describes the functionality added in the 2.2 Release.
- Chapter 2, "Known Bugs in the System," describes the system, ES/os, ES/PSX, ES/PEX, X Window System, and OSF/Motif bugs that are known to be in the 2.2 Release.
- Chapter 3, "Bugs Fixed in the Release," describes bugs that have been fixed in the 2.2 Release.
- Chapter 4, "Installation Instructions," describes the installation procedure for the tapes included in the 2.2 Release.
- Appendix A, "1.3 Xdefaults File," contains a listing of the 1.3 Release `/usr/src/samples/Xdefaults` file.
- Appendix B, "Documentation Corrections," describes additions and corrections to the ESV documentation and contains change pages for the ESV documentation.

Additional information will be found in the following document which is distributed with the 2.2 Release:

MIPS Software Binary Release Notes, RISC/os 4.52 Release

On-line release notes for the operating system, compilers, and OSF/Motif are found in the `/usr/pkg/rn` directory.

Added Functionality in the 2.2 Release

xdm

With the 2.2 Release, the X display manager **xdm** no longer starts automatically at system boot. To start **xdm**, log in at the console login prompt as **xdm**. If the system manager has followed the installation instructions, there will be no password required, and **xdm** will start running.

Application Defaults Files

The files in **/usr/lib/X11/app-defaults** define default resource settings for various X clients. In previous releases, the files in this directory were defaults which included color and other features that were supported on the ESV Workstation. Beginning with the 2.2 Release, the X client application defaults files have been restored to the original files which were released by MIT's X Consortium. This was done so the clients would be usable on a monochrome display attached to an ESV Workstation.

However, since these application defaults were designed for a monochrome display, you may want to modify the resource definitions to add color and other features in your **Xdefaults** file, if you have not done so already.

The MIT defaults for the **xterm** client, for example, are geared for monochrome and also do not include the scroll capability. Resource settings not defined in the your **Xdefaults** file are obtained from the file in the **app-defaults** directory, if present there. A sample **Xdefaults** file has been provided in **/usr/src/samples** which sets the X client resources to provide colors and other features on the ESV. You can use this file as a basis for your own **Xdefaults** file if you wish.

For reference purposes, a copy of the 1.3 version of the file **/usr/src/samples/.Xdefaults** is included in Appendix A. Note that comment lines in the 1.3 file began with “#” instead of the currently used “!”.

Linking Libraries

In the 2.2 Release, the X, ES/PEX, and Motif libraries are compiled in both BSD4.3 and System V versions. If your application uses BSD4.3 functionality, use the **-systype bsd43** option when compiling and linking. If your application uses System V functionality, use the **-systype sysv** option when compiling and linking. The System V version of the libraries are located in **/usr/lib**. The BSD4.3 version of the libraries are located in **/bsd43/usr/lib**. The correct libraries are found when the **-systype** option described above is used.

Stereo X Fonts

Three X fonts have been created to use on stereo screens. They are designed to be used where you would like the fonts to be as small as possible to conserve screen space. The new fonts can be accessed through a short alias name or a long ISO format name.

Alias	ISO Format
es5x8	-eands-fixed-medium-r-normal--8-80-75-75-c-50-iso8859-1
es6x9	-eands-fixed-medium-r-normal--9-90-75-75-c-60-iso8859-1
es6x9B	-eands-fixed-bold-r-normal--9-90-75-75-c-60-iso8859-1

Circle and Arc GDPs

Circle and arc **GDPs** have been added in the 2.2 Release. They are documented in the revised chapter “1. ES/PEX” which is found in the changepages at the end of this document.

Name Set Sizes

The name set size is configurable in the 2.2 Release. This feature is documented in the revised chapter “4. Customizing the System” which is found at the end of this document.

Maximum Number of View Tables

The maximum number of view tables has been increased in the 2.2 Release. This feature is documented in the revised chapter “4. Customizing the System” which is found at the end of this document.

Cross Hair Cursor

The cross hair functionality has been added to the E&S Extension. This feature is documented in the change pages to chapter 2, “X Extensions” which is found at the end of this document.

Underlay Planes

Underlay planes have been added to the overlay/underlay functionality in the E&S Extension. This feature is documented in the change pages to chapter 2, “X Extensions” which is found at the end of this document.

AVS Dials

Release 3.0 of AVS incorporates new functionality when using the control dials peripheral device with AVS. For the most part, the dials are treated as described in the *AVS User's Guide* in the “Network Editor” section. However, AVS communicates with the dials peripheral through the X server to provide additional flexibility.

The functions performed by the control dials are dependent upon the current location of the X pointer (also called the mouse cursor). When the pointer is located within the visible boundaries of a geometry viewer window, the functions performed by the control dials are to modify the current object, light, or camera for that geometry viewer window. This applies even if the geometry viewer window is created by a user network using the “render geometry” module with the “display pixmap” module.

When the control dials are performing geometry viewing functions, the LED labels on the control dials cabinet display the function performed by the dials. Seven of the eight dials have specific purposes; the eighth dial is unused. The functions performed by each dial are listed below:

- X ROT** : rotate the object, light, or camera about the *x* axis.
- Y ROT** : rotate the object, light, or camera about the *y* axis.
- Z ROT** : rotate the object, light, or camera about the *z* axis.
- SCALE** : scale the object, light, or camera.
- X TRAN** : translate the object, light, or camera in the *x* direction.
- Y TRAN** : translate the object, light, or camera in the *y* direction.
- Z TRAN** : translate the object, light, or camera in the *z* direction.

When the X pointer is located within the visible boundaries of the Network Editor window (the window in which the modules and the connected network are displayed), the functions performed by the dials reflect the current state of the Dialsbox Manager or Dials Matrix Manager. Only one of these managers can be active at any time.

When the control dials are performing Dialsbox Manager functions, the first eight characters of the module parameter associated with each dial is displayed in the control dials labels. For example, the “clamp” module has two parameters which can be associated with the dials: “clamp_min” and “clamp_max.” If these module parameters are associated with the dials, the corresponding dial labels display “CLAMP_MI” and “CLAMP_MA” when the X pointer is in the Network Window.

When the control dials are performing Dials Matrix Manager functions, the dial labels display the same mnemonics as when they are performing geometry viewing functions.

When the X pointer is in other windows, the control dials have no effect on the AVS application. If the X pointer is in a window for some other application that responds to the control dials, it works as always with no interference from AVS.

Kernel Support for Modem Control

Kernel support for modem control and CTS/RTS has been added in the 2.2 Release. This feature now works as documented.

xtitle Supported

The client **xtitle** is now supported. This client changes the title of an **xterm** window, its icon, or both.

Keyclick

Keyclick is available with the 2.2 Release. Use the following command to enable/disable keyclick:

```
xset c on/off
```

If you are starting your server under **xdm**, you also must increase the keyclick volume by the following command:

```
xset c 100
```

Servers starting under **xdm** have keyclick turned off by default. Servers starting under **startesv** have keyclick turned on by default.



2. Known Bugs in the 2.2 Release

This chapter describes bugs known to be in the 2.2 Release in addition to those documented in the 2.0 Release Notes.

Note: For additional information about operating system and compiler bugs, refer to the *MIPS Release Notes*, which are found on-line in the `/usr/pkg/rn` directory.

Please note the following bug that was reported in the 2.0 Release:

2.15 dump/restore for multiple tapes

- 1) If you use the file system **dump** command to copy your disk files to multiple tapes, and then use the **restore** command to restore them to disk, all of the files may not have been restored properly. In particular, the last file of the first tape and/or the first file of the second and subsequent tapes may be damaged. The following message will be produced when the second or subsequent tape is read:

```
resyncing restore, skipping x records
```

The workaround is to use a block size of 1 when doing the restore as shown below:

```
restore -vrb 1 /your_filesystem_name
```

- 2) If you use the `/bsd43/usr/bin/dd` command to copy files, and use a block size larger than 1024, it causes incorrect data to be copied. The default block size for this command is 512.

System Bugs

1.8 pty feature

The 2.2 Release contains a fix that makes **ptys** understand the **ISTRIP** flag. If you used 8-bit text in **xterms** or for **rlogins**, you may suddenly not see the 8-bit text unless you disable **ISTRIP** using **stty**. You can disable the stripping by using `/bin/stty -istrip` or `/bsd43/bin/stty pass8`.

1.9 bsd43 ctime manual page error

The BSD manual page for **bsd43 ctime** should show that `#include <sys/type.h>` is needed.

1.10 Xterm doesn't recognize the META key

When you try to do **xmodmap** to change the ALT key to be a META key, the **xterm** that you type this into doesn't get the change. In fact, any **xterm** that

has been typed on before the **xmodmap** has been done, will not see the change. Do the **xmodmap** in your **.xinitrc** or **.xsession** file, and you won't have a problem.

1.11 Mapping ALT key to META key

When using **xmodmap** to change the ALT key to be a META key you must do **/bin/stty -lstrip** in the xterm that is going to want META key presses. This is to ensure that all 8 bits of the keycode get to the xterm.

1.12 ES/Dnet can't handle dots (.) in pathnames

When trying to copy a file from the ESV to the VAX using the copy command, if the ESV pathname includes a dot (example: **/tmp/junk.dir/foofile**), ES/Dnet cannot find the file. The dot is treated as if it were a step down in the directory structure (example: **/tmp/junk/dir/foofile**).

1.13 libcurses.a is incorrect for bsd43

There is a problem with **libcurses.a** and **bsd43**. The cursor position is incorrectly reported when using a tab character.

1.14 F77 2.20 internal file READs error

In **F77 2.20** (and prior releases) when using an internal file for **READING** there are values which cause the I/O routines to include the newline character into the string. This causes an error. The workaround is to use an **EQUIVALENCE** statement with the variables, or to use an I/O format which matches the variable in the **READ** statement.

1.15 F77 2.20 doesn't compile with -extend_source

This bug manifests itself whenever you try to declare an array variable, and initialize it in the same statement, and use the **-extend_source** option of the compiler.

1.16 C 2.20 misrepresents conversion of double to unsigned int

When converting a **double** to an **unsigned int**, the leftover bits are assigned 1s instead of 0s.

1.17 F77 2.20 fails to compile a parameter statement

F77 fails to compile a parameter statement which uses a function like **char()**. The compiler issues an error statement which indicates that an illegal initialization has been attempted. The workaround is to not use a parameter statement for this purpose.

1.18 F77 2.20 cannot use integer parameter as length spec for CHARACTER statement

This bug appears whenever a structure is declared in FORTRAN which has a **char** variable whose length specifier is declared in a parameter statement. We have a patch available for customers who have this problem. Call the hotline if you need the patch.

1.19 Compiling with relative paths

A problem occurs when a user is compiling FORTRAN or C code and using more than one **include** file, where both **include** files are defined using relative paths. The problem exists when the first header file is relative to the source code, and the second header is relative to the first **include** file, not the source. The workaround is to have the second relative path be relative to the source code even if the second include file is included in the first **include** file.

1.20 2D array reference C 2.20 compiler bug

A 2D array is passed into a C-language subroutine. The parameter declaration is consistent with the definition of the array (e.g., **float a[4][4]**). The compiler generates wrong code for references to the array elements in the subroutine. Synopsis:

```
float arr[4][4];          /* array definition */
.
.
.
void subr(a)
    float a[4][4];
{
    a[0][0] = 0.0;      /* destroys stack */
}
```

If the parameter to the subroutine is declared as

```
float (*a)[4];
```

the program will run as intended.

As a second workaround, which does not require the source code to be modified, use the **-oldc** switch on the compile command line. We have a patch available. Call the hotline if you need the patch.

1.21 Timing problem with ES/Dnet and NIS

When ES/Dnet starts up, it modifies the effective Ethernet address for the ESV. This modification can cause a failure of the NIS binding on some networks. If your network is unable to resolve the changed address successfully on its own (within a few minutes), you will need to issue the following command on each of the NIS server machines (**root** permission required).

```
arp -d esvname
```

1.22 Error in `cs` manual page

There is an error in the `cs` manual page under the "Files" section. It currently reads:

```
~/.cshrc      Read at beginning of execution by each shell.
/etc/cshrc    Read by login shell, after /cshrc at login.
e&~/.login    Read by login shell, after .cshrc at login.
:
:
:
```

It should read:

```
~/.cshrc      Read at beginning of execution by each shell.
/etc/cshrc    Read by login shell, before ~/.cshrc at login
~/.login      Read by login shell, after ~/.cshrc at login.
```

1.23 Garbled manual page headers

For manual pages that are not pre-formatted, the `/usr/lib/tmac.an.new` macro package generates a header line that many appear garbled if the command name is long. The macro file can be edited to produce a header with only the command name centered on the page. In the head of page macro change the following line from

```
.t1 @\\*(]H@\\*(]D@\\*(]H@
```

to

```
.t1 @@\\*(]H@@
```

1.24 Blank manual pages when using `xman`

The following is a list of ES/os manual pages that have a blank first page. To view these manual pages you must scroll down a page.

- `lastcomm` (BSD)
- `cfe`
- `vi`
- `view`
- `vedit`
- `dup2` (c)
- `len` (f)
- `lrnd` (f)
- `rand` (f)
- `srand` (f)
- `ldfcn`
- `swap` (m)
- `battlestar` (BSD)

1.25 xman scrolling problem

When looking at a manual page that is larger than the **xman** window, if you scroll down the page and stop when the bottom line of the window has text in it, and then scroll back up, the last line keeps the previous text in it.

1.26 stty command does not work on redirect

In the 2.0 release this bug was reported as fixed. It has been fixed for the BSD version but the System V version still does not work.

The **stty** command should be able to redirect requested **tty** settings to a line other than the currently logged in **tty** when used as follows:

```
- /bin/stty [setting] < /dev/tty3  
- /bsd43/bin/stty [setting] > /dev/tty3
```

The above commands should set the requested default(s) for **tty3**. This is important if the **tty** line goes to a “dumb” device that requires certain defaults, like **-lxany**, but is not able to set them interactively.

The **stty** commands do modify the defaults for the specified **tty**, but the original defaults are restored as soon as the **stty** command exits.

1.27 sendmail doesn't handle both NIS and named services

If you use **sendmail** and **NIS**, either domain name services start to work and **NIS** quits, or vice versa.

1.28 Memory leak

Under some conditions the 2.2 Xserver may exhibit a memory leak. This is most noticeable with certain non-default fonts. The workaround is to stop and restart your Xserver. If your machine has this problem, contact customer support on the hotline.

ES/os Bugs

2.16 Unnecessary file checking during bootup

When re-entering multi-user mode after having shut the machine down to single-user, all file systems will be checked whether they are dirty or not. Since shutting down the single user doesn't automatically unmount the file systems, they can't be marked as clean and will be checked when you come back up. To avoid this, either unmount by hand, or shut the machine down to the boot prompt using the **SHUTDOWN** command.

2.17 X server process can monopolize resident memory set

It is possible for the X server to grow in size and monopolize most of the resident set pages in memory. This most often occurs when multiple sets of large

pixmap are displayed. The system may begin to thrash and processing becomes very slow. Workaround by stopping and restarting the server.

A second workaround is to run a program which allocates and references memory to the extent that enough system memory is freed to avoid thrashing. The program would simply exit when it has claimed most of physical memory for itself. The X server needs to run while the memory reclaiming program runs. This is required so the X server can push its physically resident pages to backing store. The following is an example of such a routine:

```
main(argc, argv)
int argc;
char *argv[];
{
    int i, repeat;
    volatile char *a, *reset, b;
    printf("%d\n", strtol(*++argv, 0, 0));
    if ((reset = a = (char *)malloc(strtol(*argv, 0, 0))) == (char *)0) {
        perror("");
        exit();
    }
    for (repeat=0; repeat<5; repeat++) {
        printf("repeat = %d\n", repeat);
        a = reset;
        for (i=0; i<strtol(*argv, 0, 0); i+=4096) {
            b = *a;
            a+=4096;
        }
    }
}
```

ES/PEX Bugs

4.38 Bundle tables have only one predefined entry

ESV documentation for PHIGS and PHIGS PLUS description tables states that the different PHIGS bundle tables have 5 or 6 predefined entries as required for minimum support. There is only one predefined bundle entry for each type of table.

4.39 Can't get DeviceMotion events when PHIGS monitor is running

If you change the parameters to `popen_xphigs` so that it uses the PHIGS monitor and forces client-side CSS, the client may no longer get Device Motion events from the dial box. If the client doesn't use the PHIGS monitor or client-side CSS, it gets Device Motion events with no problems. (Under both cases, the client receives all vanilla X events.)

4.40 Fill Area Set primitives containing zero fill areas hang server

If you send a Fill Area Set primitive which has zero fill areas in the set to the server, the server hangs. It has to be restarted when this happens.

4.41 Errors 205 and 206 not generated

Error 205 on **SET ELEMENT POINTER AT LABEL** and Error 206 on **DELETE ELEMENT BETWEEN LABELS** are not generated. The PEX error 131 (PEXLabelError) is generated instead and the application is aborted.

4.42 HLHSR mode with circle and arc GDPs

Setting the HLHSR mode for multi-pass traversal while using circle or arc **GDPs** causes visual problems in edges and line colors.

4.43 pcomposematrix may cause segmentation fault with System V

The following call causes a segmentation fault:

```
pcomposematrix3(concat2, currmatrix, &error, currmatrix);
```

If the line is replaced as follows, it works. The problem has to do with **currmatrix** being used twice.

```
pcomposematrix3(concat2, currmatrix, &error, temp);
copymatrix(temp, currmatrix);
```

4.44 TRANSFORM POINT 3 breaks under certain conditions

In the PHIGS function **ptran_point3 (TRANSFORM POINT)**, the address of the input point to be transformed should not be the same as the address of the output transformed point. If it is, erroneous data is returned.

4.45 Picking on a stereo image returns the wrong structure ID

Picking on a stereo image returns the wrong structure ID. The structure id returned is a 0.

4.46 PHIGS valuator with dial_box and PET -1 segmentation faults

When using the valuator device and Prompt/EchoType -1, you must set each of the fields in the data record. The label, format, low_label, and high_label should be set to NULL.

X Window System Bugs**5.39 xmag corrupts global screen variable**

The **xmag** client corrupts the global screen variable when the environment variable **DISPLAY** is set to a different display other than the default screen 0.

5.40 **xclock** leaves trails from hand outline

xclock leaves trails of pixels behind the hands as they move around.

5.41 Small dashed zero width arcs can crash the server

If an arc drawn through **XDrawArc(s)** is so small that no points are to be drawn, and the line style is dashed, the X server causes a segmentation fault.

OSF/Motif Bugs

6.33 Setting background pixmaps of scale widgets

When setting the **XmNbackgroundPixmap** resource of a scale widget, the border of the widget gets set with the specified pixmap, but the background (the trough of the scale widget) is not set.

6.34 ESCAPE and RETURN button presses lost

XmNinputCallback for a drawing area does not get called when the ESCAPE key or the RETURN key is pressed.

6.35 XtSetKeyboardFocus and the text widget don't work together

When a text widget and a drawing area are displayed simultaneously, the text widget does not receive keyboard events.

3. Bugs Fixed in the 2.2 Release

This chapter lists bugs reported in previous releases that have been fixed in the 2.2 Release, as well as bugs not previously reported but fixed for this release. If it is a previously reported bug, the original bug number is placed in parentheses next to the title.

System Bugs Fixed

emacs -nw didn't work with xterm, esconsole terminal types

Trying to run **emacs -nw**, the ESV complained that TERM type **xterm** or **esconsole** was not powerful enough to run **emacs**.

man didn't work correctly

sysv man no longer cycles through a manual page more than once.

size_t declared incorrectly

size_t was not declared correctly in **bsd43 include** files.

Security hole

The streams **ioctl** routine allowed a non-privileged user to write from one window into another window's input stream.

vgrind needs to reference troff not itroff

The utility **vgrind** did not run because it references **itroff**. A symbolic link from **/bsd43/bin/troff** to **/bsd43/bin/itroff** has been put in.

The command to execute is **vgrind -t <fname> | lpr -t**

Manual page for generalized_structure_element had errors

The manual page for **generalized_structure_element** had a blank first page. More importantly, the reference to

```
Fillarea Front/Back Face Distinguish
        typedef struct {
                Pint    value;
        } Pgse_front_back_distinguish;
```

was changed to:

```
/* Fillarea front/back z-buffer distinguish GSE structure */
typedef struct {
        Pint    distinguish;
} Pgse_front_back_distinguish;
```

xdm implementation

The **xdm** account did not run the **xdm-restart** command to restart **xdm** after an ALT-F4 at the **xdm** login screen.

xdm log file (2.14)

The X display manager **xdm** created a log file **/usr/tmp/xdm-errors**. This file grew each time you logged in and out of the system via **xdm**. The only way to safely remove this file was to reboot the system. At this time, the old file would be removed and a new one opened. It was recommended that you reboot the system periodically so as to not allow the file to grow too large.

FORTRAN parameter declaration (2.13)

The FORTRAN **PARAMETER** (epsilon = '3cb0000000000000'x) failed. Declaring an epsilon variable using a literal hex value such as **PARAMETER** (epsilon = '3cb0000000000000'x) failed to produce valid results when multiplied by a floating point number. This problem did not occur if the variable assignment was not made as **PARAMETER**.

Pascal compiler initialization crash (2.11)

A Pascal compiler bug caused a crash during initialization due to incorrectly generated code attempting to clear a local variable.

If a local variable was defined which was a record consisting of a 255-byte array and a two-byte integer, the compiler generated incorrect code to clear the array and a bus error occurred.

passwd

When trying to execute the **passwd** command on the **gcpu** side of a Local Server machine, it hung indefinitely if the **/etc** directory was on an imported **nfs**.

/etc/exports file

The **/etc/exports** file contained an incorrect example of how to limit access to file systems by other machines, as follows:

```
# /usr2 mips sprint quacky # export to only these machines
```

You had to edit this file so that it showed a correct example for limiting access to certain machines. The **exports** command with the **-access=** and **-root=** options showed the correct procedure. The **exports** manual page gave correct examples.

Illegal numerics halt 33 MHz CPU

If a program divided by zero or performed any other illegal numeric operation, and was compiled and run on a 33MHz ESV stopped the CPU.

X server (1.3)

If you typed **xlnlt** on a machine where an X server was already running, the initial X server hung. The CTRL-ALT-BREAK key sequence would not kill it.

ES/PEX Bugs Fixed

Multiple DirectColor windows didn't work together

When you had a **DirectColor** X window, then started another application which created a second **DirectColor** colormap and window, the hardware didn't install the colormap properly. When the pointer went back to the first X window, one or more of the colors in the hardware copy of the colormap were corrupted (black turns to red).

XInstallColormap (called by the window manager) didn't seem to work when there was more than one virtual **DirectColor** colormap.

XQueryColor did not return correct color

When you loaded a set of 256 colors with **XStorecolors**, then queried a color value with **XQueryColor**, you got incorrect values for red and green. If you stored a single color using **XStoreColor**, then read with **XQuerycolor**, you got correct values.

Missing some supported characters on dial labels

The PHIGS dial labels only supported characters a-z, 0-9, space, comma, minus, and period. The X input extension version supports many more.

Error reporting degenerate structure paths

The inquire ancestors and descendants routines no longer report paths where the starting structure is the only member of the maximal path.

pslsl set incorrect index

The routine **pslsl** didn't set the correct index. In the previous release, the incorrect value was set for interior style index when using the FORTRAN binding.

pcompose_tran_matrix(3) functions broken

pcompose_tran_matrix and **pcompose_tran_matrix3** generated an incorrect matrix result. These functions pre-multiplied the calculated compound matrix with the provided matrix to produce the resulting matrix.

pinq_elem_type_size/pinq_elem_content crash

If the functions **pinq_elem_type_size** or **pinq_elem_content** were called with a 0 element number, the program crashed.

FORTTRAN - pgdp(3) crashed on an unsupported id

If either **pgdp** or **pgdp3** was called with an unsupported id and a non-packed data record, the function core dumped trying to unpack the data record.

copy all elements from structure killed X server

The command **copy all elements from structure** caused the server to die.

Picking with no structures posted hung server

If you used **XPick** for picking when no structures were posted, the server would hang.

Incorrect pick results

Occasionally a pick report incorrectly gave a pick path length of 0. When an event was processed for either **XPickEventOffset** or **XPickPathEventOffset**, a check was not done to see if a pick actually occurred. The information printed out may not be valid if a pick did not occur.

When pick highlighting was off, picked line disappeared

When **XSetPickHighlightingMode** was set to **pick_highlighting_off**, picking of a line removed the line until the picture was redrawn.

HLHSR modes did not work properly for lines

There was bad end point match on polylines.

Using direct color visuals popen_ws

If a window created on a direct color visual was used in the call to **popen_ws**, the window was changed to use the true color colormap.

Edge pattern affected hollow polygons

There were a number of strange effects related to edge patterns. Edge patterns affected hollow polygons--even if the edges weren't drawn. Also the line pattern affected polygon edges.

1.3 thin layer generated large executables

Using the 1.3 thin layer generated executables in the 2-3 Mbyte range even for very small programs.

1.3 thin layer pinqelemcontent (4.32)

The 1.3 thin layer **pinqelemcontent** routine did not work. It produced a segmentation fault.

INQUIRE HLHSR MODE (4.33)

This inquiry routine incorrectly returned an error, even when no error occurred. If the error indicator was 0, the data is correct. Otherwise, the returned values may have been incorrect.

SET EDGETYPE (4.36)

Setting the edgetype to something other than solid in **SET EDGETYPE** caused unpredictable visual effects.

RETRIEVE STRUCTURES (4.29)

The archive retrieval function **RETRIEVE STRUCTURES** could hang. When the routine was called, and the list of structures to retrieve was not in sequence, the routine may not have returned.

Quad meshes with vertex and facet normals (4.27)

Certain sizes of quad meshes with vertex and facet normals were not displayed correctly. The last row was incorrect. If the facet normals were not set for the mesh, it was displayed correctly.

DeleteStructures failed (4.26)

Under certain conditions a PEX bug using labels and delete structure caused **DeleteStructures** to fail.

INQUIRE PICK DEVICE STATE 3 (4.30)

The value in the `init_pick.depth` field which was returned when **INQUIRE PICK DEVICE STATE 3** was called was not correct. Also, if you were using the 1.3 thin layer, this procedure should not have been used at all, because the buffer size which was returned was incorrect and may have caused unpredictable behavior.

INQUIRE DEFAULT LOCATOR DEVICE DATA 3 (4.31)

INQUIRE DEFAULT LOCATOR DEVICE DATA 3 returned an error. A call to this routine may have generated a bad device error (error 250) even though a valid locator device was given.

Improperly oriented polygons handled incorrectly

Any polygon that is oriented incorrectly in PHIGS (that is, has a clockwise orientation) is getting an incorrect facet normal. This results in incorrect back-face removal and shading. Specifically, the right half of the picture looks fine and the left half has problems.

ddpex (4.10)

Errors returned from **ddpex** were not consistent.

Invalid color type (4.17)

Elements with invalid color types produced errors. The system checked all elements that contained colors for unsupported color types. If an element with an unsupported color type was found, the element was rejected and an error issued. This was different from the proposed PHIGS PLUS standard, which states that the correct action is to build the element, detect the bad color type during traversal, then use the default color.

RGB values (4.18)

RGB values needed to be clamped to reasonable ranges (0.0 to 1.0) when the client program supplied out-of-range data. This was not done, and RGB values outside the range 0.0 to 1.0 had unpredictable results.

Cylinder GDP (4.34)

If a Cylinder **GDP** with indexed colors contained a cylinder list that was too large, the server hung. No cylinder list which used indexed colors could contain more than 33 endpoints.

SET FACE DISTINGUISHING MODE (4.37)

If you set the back face distinguishing mode to **yes** in **SET FACE DISTINGUISHING MODE**, and you shaded a back facing polygon, the polygon appeared black.

X Window System Bugs Fixed

Unable to use System V **termInfo** and **curses** with X libraries

You were unable to use System V **termInfo** and **curses** with X libraries.

xwd hung server on a full screen window dump

If an X window was enlarged to be the full screen and an **xwd** was run on that window, the server hung.

DeviceMotion extension events (5.8)

DeviceMotion extension events for dials did not propagate through the window hierarchy as documented in the *X11 Input Extension Library Specification*. For a finite number of subwindows, you can request the event for each of the windows.

XSsync (5.10)

When the device focus was set to the tablet, calls to **XSsync** may have caused a bus error. When the device focus was set to the dials, calls to **XSsync** may have caused the X Server to crash.

XQueryDeviceState (5.12)

XQueryDeviceState killed the server when you asked for information about the dials.

xman crashed in XCreateWindow (5.36)

xman crashed with the error “cannot do bold and italics” on manual pages that attempt to do bold and italics at the same time. One example of this was the **XCreateWindow** manual page. If you scrolled down through it, **xman** would die at the certain point that it tried to do both bold and italics.

XGrabDeviceButton(5.11)

XGrabDeviceButton returned a **NOMATCH** error (“device does not support input class **BUTTONS**”) when you tried to grab a tablet button.

XAllowEvents (5.16)

XAllowEvents did not allow events to be sent to the client that had grabbed the keyboard or the mouse.

Keyclick didn’t work (5.20)

Turning keyclick on and off through **xset** never produced a key click noise, even though the keyboard supports it.

XI_KEYBOARD (5.26)

XI_KEYBOARD was not declared in **Xi.h** for **XListInputDevices**. Compilation returned the error **XI_KEYBOARD** undefined.

Picking in perspective projection (5.27)

With the projection specified as perspective, a picking program got zeroes for the model coordinates when a primitive was picked. If the projection was changed to parallel, the model coordinates were returned correctly.

This occurred because the perspective matrix was non-invertible, making it impossible to compute a 3D pick point. There is a flag for this condition which can be checked. The typical cause for the perspective matrix to be non-invertible is putting the projection reference point on the front clipping plane. This created a matrix with zeroes in the column. That matrix was non-invertible making it impossible to return a model space pick point.

Turning the bell on/off (5.31)

Using **xset** to turn on/off the bell (**xset b off**, **xset b on**) had no effect; the bell always rang.

Overlay Planes (5.35)

XGetImage and **XPutImage** did not work with overlay planes under all conditions.

C

C

C

4. Installation Instructions

This chapter contains information on ESV Workstation tape drives and provides installation instructions for release tapes. This chapter is organized as follows:

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Caution: You should carefully read the “OS Kernel Information” section before you begin the software installation.

OS Kernel Information

There are four kernels available on the tape. For the 25 MHz CPU there is the “development” and the “non-development” kernels. The same is true for the new 33 MHz CPU. The “non-development” kernel provides smaller resource

allocations and can be used when systems mainly run existing applications. This kernel is installed on the ESV when it is shipped from the factory. For systems in which large application compiles and builds are done, the “development” kernel, which provides larger resource allocations, should be used.

To determine which type of kernel has previously been loaded on the system, you can boot the system and type the following command:

uname -A

This command will print the following system information:

sysname, nodename, release, version, machine, m_type, and base_rel

The m_type will be one of the following:

- m120-1 if the non-development kernel was installed (25 MHz CPU)
- m120-2 if the development kernel was installed (25 MHz CPU)
- m120-3 if the non-development kernel was installed (33 MHz CPU)
- m120-4 if the development kernel was installed (33 MHz CPU)

Note that all releases prior to 2.0 had only the 25 MHz development kernel.

If you need to install a kernel other than the one on the system, you can do so by following the Operating System Update Installation Instructions, but only installing the root and m-120x subpackages.

Configuration Information

The ES/os tape, the ES/PEX Server tape, and the ES/PEX Library tape (Developer’s kit tape) include various optional subpackages. Since each subpackage requires space on an ESV disk, only those which will be used should be installed. The “2.2 Release Subpackage Sizes” section in this chapter provides information about disk space utilization of the various subpackages and options.

There are two basic configurations that are installed at the factory. These are the “non-development” configuration and the “development” configuration. Variations to these configurations are used for the Local Server and the CDRS (Conceptual Design and Rendering System). The following contains recommendations for which subpackages to install if for some reason, you need to reinstall the software at your site:

Non-Development Systems

Non-Development systems include those that have the following options:

- Standard Media Kit (comes on all systems)
- ES/PSX Option (optional)

- ES/Dnet Option (optional)
- LAT Host Services Option (optional)
- ES/Kodak Printer Option (optional)
- Visix Looking Glass Option (optional)

The following subpackages are installed at the factory for each of these tapes:

ES/os Tape (Domestic or Foreign)

root -	installed automatically on scratch install
m120-x -	installed automatically on scratch install
usr -	installed automatically on scratch install
cmplrs -	you must type y when prompted
man -	you must type y when prompted
bsd43 -	you must type y when prompted

ES/PEX Server Tape

executables_s -	you must type y when prompted
library_s -	you must type y when prompted
pexs_man -	you must type y when prompted
fstest -	you must type y when prompted

All Other Options

all subpackages

Development Systems

Development systems could include a mixture of the following options:

- Standard Media Kit (comes on all systems)
- Development Kit (ES/PEX Library Tape, comes on all development systems)
- ES/PSX Option (optional)
- MIPS Pascal RISCompiler Option (optional)
- MIPS FORTRAN RISCompiler Options (optional)
- ES/Dnet Option (optional)
- LAT Host Services Option (optional)

- AVS3 Option (optional)
- ES/Diskless Node Option (Local Server or Diskless Node Systems)
- ES/Kodak Printer Option (optional)
- Visix Looking Glass Option (optional)

The following subpackages are installed at the factory for each of these tapes:

ES/os (Domestic or Foreign)

All Subpackages

ES/PEX Server

All Subpackages

ES/PEX Library Tape

executables_1

library_1

pexl-man

pexl-man-unformat

All other Options

All Subpackages

Local Server Systems

Local Server systems have software installed for each of the CPUs (two available). This software is installed in different locations on the disk (see Local Server installation instructions).

The following subpackages are installed at the factory for each of these tapes:

ES/os (Domestic or Foreign)

You may install either the non-development or development configurations on both the SCPU (server CPU) or the GCPU (graphics CPU).

ES/PEX Server Tape

The SCPU only needs the following subpackages:

executables_s
library_s
pexs-man

The GCPU may have either the non-development or the development configurations installed.

ES/PEX Library Tape

Both the SCPU and GCPU should have at least the following installed:

executables_l
library_l
pexl-man

All other Options

Graphics options (*i.e.*, PSX, AVS, Visix Looking Glass) should be installed on the GCPU (graphics CPU). Other options can go on either CPU depending on disk space available.

CDRS Systems

All CDRS Systems should install the tape subpackages as follows:

ES/os (Domestic or Foreign)

all subpackages

ES/PEX Server Tape

all subpackages

ES/PEX Library Tape

all subpackages

All Other Options

all subpackages

Tape Drive Data Cartridge Information

The Evans & Sutherland ESV Graphics Workstation currently uses the TANDBERG DATA (SIEMENS) 3660 Series Tape Drive. Data cartridges that have proven to work on this drive include the following:

Tape Vendor	Product	Length	Mbyte Capacity	Notes
3M	DC600A	620 ft	120 meg	Used prior to 2.0**
3M	DC615A	150 ft	30 meg	Used prior to 2.0**
BASF	DC600H	620 ft	120 meg	Used prior to 2.0**
3M	DC6037	150 ft	37 meg	Used for Software Distribution
3M	DC6150	600 ft	150 meg	Used for Software Distribution

** We have found that these tapes cause pre-mature head wear and are not recommended on the ESV anymore. They may be used if the new tapes are not available.

2.2 Release Subpackage Sizes

Table 4-1. ES/os Domestic 2.2

Subpackage	Bytes	Kbytes	Meg
root*	9765528	9536	9.31
m120-x*	4598256	4490	4.38
usr*	31493347	30755	30.03
usr_help	640488	625	0.61
usr_dvlp	9820564	9590	9.37
usr_terms	1564937	1528	1.49
cmplrs*	11497115	11227	10.96
cmplrs-bsd43	1676467	1637	1.60
man*	3609515	3524	3.44
man_misc	69600	67	0.07
bsd43*	10260331	10019	9.78
bsd43_troff	83235	81	0.08
bsd43_dvlp	3954837	3862	3.77
reconfig	10722491	10471	10.23
emacs	8695717	8491	8.29
posix	3099224	3026	2.96
uucp	2280577	2227	2.17
sccs	163425	159	0.16
news_readers	729737	712	0.70
games	3301530	3224	3.15
mh	14699326	14354	14.02
<hr/>			
Total non-development	58421248	57052	55.71 (actual)**
Total development	119954400	117142	114.40 (actual)**

* Subpackages installed on a non-development system.

** Actual installed values will be somewhat smaller than the sum of subpackage values. This is due to space used by **pkg** to record hard links which don't show up after an install. These values come from using the bsd43 version of **df** located in **/usr/bsd43/bin**.

Table 4-2. ES/os Foreign 2.2

Subpackage	Bytes	Kbytes	Meg
root*	9765528	9536	9.31
m120-x*	4598256	4490	4.38
usr*	31493347	30755	30.03
usr_help	640488	625	0.61
usr_dvlp	9820564	9590	9.37
usr_terms	1564937	1528	1.49
cmplrs	11497115	11227	10.96
cmplrs-bsd43	1676467	1637	1.60
man	3609515	3524	3.44
man_misc	69600	67	0.07
bsd43	10260331	10019	9.78
bsd43_troff	83235	81	0.08
bsd43_dvlp	3954837	3862	3.77
reconfig	10722491	10471	10.23
emacs	8695717	8491	8.29
posix	3099224	3026	2.96
uucp	2280577	2227	2.17
sccs	163425	159	0.16
news_readers	729737	712	0.70
games	3301530	3224	3.15
mh	14699326	14354	14.02
Total non-develop	58421248	57052	55.71 (actual)**
Total development	119954400	117142	114.40 (actual)**

* Subpackages installed on a non-development system.

** Actual installed values will be somewhat smaller than the sum of subpackage values. This is due to space used by **pkg** to record hard links which don't show up after an install. These values come from using the bsd43 version of **df** located in **/usr/bsd43/bin**.

Table 4-3. ES/PEX Server 2.2

Subpackage	Bytes	Kbytes	Meg
executables_s*	12632281	12336	12.05
library_s*	9247032	9030	8.82
pexs-man*	523478	511	0.50
fstest*	9998535	9764	9.54
xclients	13038002	12732	12.43
pexs-man-unformat	919838	898	0.88
demo_s	5440251	5312	5.19
contrib_s	7986358	7799	7.62
Total default	33463296	32679	31.91 (actual)**
All	61266944	59831	58.43 (actual)**

Table 4-4. ES/PEX Library 2.2

Subpackage	Bytes	Kbytes	Meg
executables_l	82544	80	0.08
library_l	49788350	48621	47.48
cdrs_library_l	48073814	46947	45.85
pexl-man	4961280	4845	4.73
pexl-man-unformat	6538240	6385	6.24
Total non-CDRS	63714304	62221	60.76 (actual)**
CDRS	111788000	109167	106.61 (estimated)

Table 4-5. ES/PSX 2.2

Subpackage	Bytes	Kbytes	Meg
psx	6885376	6724	6.57 (actual)**

Table 4-6. MIPS Pascal 2.20

Subpackage	Bytes	Kbytes	Meg
cmplrs	8586764	8385	8.19
cmplrs-bsd43	1669480	1630	1.59
cmplrs-man	531339	518	0.51
pascal	469945	458	0.45
pascal-bsd43	129909	126	0.12
pascal-man	33308	32	0.03
Total w/o C cmplr	762880	745	0.73 (actual)**
All	11550463	11279	11.01 (estimated)

Table 4-7. MIPS FORTRAN 2.20

Subpackage	Bytes	Kbytes	Meg
cmplrs	8586764	8385	8.19
cmplrs-bsd43	1669480	1630	1.59
cmplrs-man	531339	518	0.51
f77	3854063	3763	3.67
f77-bsd43	3377222	3298	3.22
f77-man	66034	64	0.06
Total w/o C cmplr	7520256	7344	7.17 (actual)**
All	18307839	17878	17.46 (estimated)

Table 4-8. AVS3 2.2

Subpackage	Bytes	Kbytes	Meg
avs	48453632	47318	46.21 (actual)**

Table 4-9. ES/Dnet 2.2

Subpackage	Bytes	Kbytes	Meg
esdnet	9134080	8920	8.71 (actual)**

Table 4-10. LAT Host Services 2.2

Subpackage	Bytes	Kbytes	Meg
eslat	302080	295	0.29 (actual)**

Table 4-11. ES/Diskless Node 2.2

Subpackage	Bytes	Kbytes	Meg
droot	4927018	4811	4.70
dusr	37711	36	0.04
dvar	<u>512</u>	<u>0</u>	<u>0.00</u>
Total	4970088	4847	4.74

Table 4-12. ES/Kodak Printer

Subpackage	Bytes	Kbytes	Meg
kodak	371712	363	0.35 (actual)**

Table 4-13. Visix Looking Glass 2.0

Subpackage	Bytes	Kbytes	Meg
lookglass	4469357	4364	4.26 (estimated)

make.xman.sections Manual Page Setup Script

The following procedure needs to be performed after a scratch or update installation, in order for **xman** to “see” newly installed manual pages.

In the following procedure, system output is shown in typewriter normal font, and user responses are shown in **typewriter bold font**. All user responses should be typed as shown and entered with a carriage return **<CR>**.

- 1) Login as **root**.
- 2) Type **cd /usr/man**
- 3) Type **su bin**
- 4) Type **./make.xman.sections**

The following questions will determine if we need to clean up the links and mandesc file created by a previous invocation of **make.xman.sections**. You may type **q** at any prompt to exit.

Do you just want to clean up the links and mandesc file from a previous invocation of **make.xman.sections** and then exit?

Answer **y, n, q: y** (takes about one minute)

- 5) Type **./make.xman.sections**

The following questions will determine if we need to clean up the links and mandesc file created by a previous invocation of **make.xman.sections**. You may type **q** at any prompt to exit.

Do you just want to clean up the links and mandesc file from a previous invocation of **make.xman.sections** and then exit?

Answer **y, n, q: n**

Are you running this after doing an update install? (**y, n, q**): **n**

(takes about two minutes)

- 6) Type **exit** (to get out of **su**).
- 7) The **xman** client will now see all manual page files installed on your system when invoked.
- 8) You should also update the **manwhatis** database by typing **/usr/lib/manwhatis**

Remove Package/Subpackage Utility

With Release 2.0, a new feature was provided to remove packages or subpackages to free up needed disk space. It is called **rmpkg**. Instructions follow on how to use this tool.

/dev/usr mounted on /mnt/usr

Partition Mags Mounted File System or Partition Usage

0 /dev/dsk/isc0d0s0 23 /dev/root
1 /dev/dsk/isc0d0s1 33 /
6 /dev/dsk/isc0d0s6 564 /dev/usr
7 /dev/dsk/isc0d0s7 14 -**** Available Partition ****-

Disk Device /dev/dsk/isc0d0s2 632 Megabytes Total Size

Do you wish to change swap partition configuration (y n) [n]? <CR>

===== verifying disk space =====

Do you want to check for space (please do so unless you really understand the consequences) (y n) [y]? **y**

----- Note: Takes @30 minutes til next user response -----

The system will now be checked to verify that there is enough disk space with the current configuration to successfully install the package (and any selected optional subpackages). For large packages (especially operating system packages), this can be time consuming...

There is enough space.

===== extracting files from subpackage archives =====

rewinding the tape...

Verifying tape id... ok

Forward spacing the tape...

Loading subpackage: root...

Forward spacing the tape...

Loading subpackage: m120-3...

Forward spacing the tape...

Loading subpackage: usr...

Forward spacing the tape...

Loading subpackage: cmplrs...

Forward spacing the tape...

Loading subpackage: man...

Forward spacing the tape...

Loading subpackage: bsd43...

Forward spacing the tape...

Installation Instructions

rewinding the tape...

===== making device special files =====

Note: You must obtain the appropriate information from your network manager or from your old **local_hostname** file before completing this section.

running MKDEV...
done.

===== running comply =====

running first comply pass...
running second comply pass...

Note: Ignore any comply messages...

===== doing uncompress Thu Aug 30 15:27:31 PDT 1990 =====

uncompress usr/bin/admin.Z
uncompress usr/bin/at.Z

(Uncompresses Occur Here)

uncompress usr/bin/chkey.Z
uncompress usr/new/mh/whatnow.Z
uncompress usr/new/mh/whom.Z

Once again, before you can type 'y' to the next questions, your system administrator must provide you with the following information:

- 1) System hostname.
- 2) Netmask.
- 3) Broadcast address.
- 4) Net address.
- 5) Domain name for your site.

The following entries are given for example ONLY!

Do you wish to configure the network (y n) [n]? y

```

unit 0
Aug 31 07:19:21 tonto unix: installing VME vector: addr 0x8007FFA4 ipl 2,
vec 0xE0
unit 0
Aug 31 07:19:21 tonto unix: Root fstype ffs
Aug 31 07:19:21 tonto unix: Available memory = 29478912
checking for system core dump...
Internet daemons: routed snmpd snmptrapd portmap inetd timed(slave).
Export file systems
NFS daemons: nfsd biod lockd statd.
Aug 31 07:19:32 tonto rpc.statd[139]: enter statd_init
Aug 31 07:19:32 tonto rpc.statd[139]: 1
Aug 31 07:19:32 tonto rpc.statd[139]: local state = 1
Starting lpd
The system is ready.

```

tonto Console login:

WARNING: The System Manager will want to create passwords for the **root**, **fstest**, and **esdemo** accounts using the **passwd** command while logged in as each of these. These accounts provide a security hole until you do so.

Restoring Saved Files from Second Disk

- 1) Login as **root**.
- 2) Type **mkdir /<disk2Name>** (where **disk2Name** is the name of your second disk).
- 3) Type **mount /dev/dsk/isc0d1<sx> /<disk2Name>** (where **sx** is the partition number you used to create the filesystem on the second disk).
- 4) You should compare the files you saved with the newly installed version (using **diff**). If the system portions of the files have changed, you may need to edit your saved files to include the system changes.
- 5) Now copy saved files from where you saved them on **<disk2Name>** to their respective **/etc** locations.
- 6) Type **cd /tmp**
- 7) Type **mount -a** to mount any **nfs** disks specified in **/etc/fstab**.

Restoring Saved Files from Tape

- 1) Login as **root**.
- 2) Type **cd/**
- 3) Insert backup tape into tape drive.

Installation Instructions

- 4) Type `/bin/tar -xv`
- 5) You should compare the files you saved with the newly installed version (using `diff`). If the system portions of the files have changed, you may need to edit your saved files to include the system changes.
- 6) Now copy saved files from `/tmp/etc` to their respective `/etc` locations.

Final Important Note

In order for `xman` to see all manual pages newly installed on the system, you will need to run the `make.xman.sections` script using the instructions found previously in the “`make.xman.sections` Manual Page Setup Script” section of these notes. Perform these instructions after you have installed all software tapes provided.

End of installation

ES/PEX Server Tape 2.2

In the following procedure, system output is shown in typewriter normal font, and user responses are shown in **typewriter bold** font. All user responses should be typed as shown and entered with a carriage return <CR>.

Caution: It is recommended that YOU are the only user logged onto the machine while loading this software.

Installation Procedure Begins Here

- 1) Insert ES/PEX Server 2.2 Tape into the tape drive.
- 2) If you are at the **x**dm login prompt (login box) then enter **ALT F4**.
- 3) Login as **root**.
- 4) Type **ps -e**
Look for the line that contains the process name xdm. If the process exists, using the process ID number located in the first column, type:

```
kill <process id number>
```

- 5) Type **cd /**

- 6) Type **/usr/pkg/bin/inst**

Software Package Installation

Install package relative to where [/]? <CR>

Please mount the (first, if multiple tapes) distribution tape, then press return... <CR>

Rewinding the tape...

Verifying tape id... ok

Extracting packaging information tree... pexs2.2

Installation Information:

Packages will be read in from the local Q24 tape drive.

Machine type: m120-2

Is the information above correct? (y n) [y]? **y**

===== checking subpackages =====

The following subpackages may be installed:

Installation Instructions

executables_s -- PEX 2.2 Executable Release
library_s -- PEX 2.2 Library Release
pexs-man -- PEX 2.2 Man Page Release
fstest -- fstest Release
xclients_s -- PEX 2.2 XClients Release
pexs-man-unformat -- Unformatted Man Page Release
demo_s -- Demo_s Release
contrib_s -- Contrib_s Release

=====
selecting subpackages
=====

You may select all of the above subpackages by answering "y" to the following question. If you answer "n" then you will be asked to select the optional subpackages you would like to have installed.

Install ALL subpackages (y n) [n]? **y**

=====
setting system clock/calendar
=====

The current value of the clock is: Wed Jun 26 14:11:11 PDT 1991
Is the clock correct (y n) [y]? **y**

=====
verifying single-user mode
=====

This system is not presently in a single-user run level. Installation of a package can fail if performed at this run level. We recommend that the system be brought to a single user run level (using "init S") prior to performing the installation.

Are you absolutely sure you wish to continue (y n) [n]? **y**

=====
preserving local files
=====

Running preserve -s for subpackage executables_s... 0 files preserved.
No preserve list or findmods list for library_s- preserve not executed.
No preserve list or findmods list for pexs-man- preserve not executed.
No preserve list or findmods list for fstest- preserve not executed.
No preserve list or findmods list for xclients_s- preserve not executed.
No preserve list or findmods list for pexs-man-unformat- preserve not executed.
No preserve list or findmods list for demo_s- preserve not executed.
No preserve list or findmods list for contrib_s- preserve not executed.

=====
verifying disk space
=====

Do you want to check for space (please do so unless you really understand the consequences) (y n) [y]? **y**

The system will now be checked to verify that there is enough disk space with the current configuration to successfully install the package (and any selected optional subpackages). For large packages (especially operating system packages), this can be time consuming...

There is enough space.

==== stripping old links =====

Stripping links for subpackage executables_s...
Stripping links for subpackage library_s...
Stripping links for subpackage pexs-man...
Stripping links for subpackage fstest...
Stripping links for subpackage xclients_s...
Stripping links for subpackage pexs-man-unformat_s...
Stripping links for subpackage demo_s...
Stripping links for subpackage contrib_s...

==== extracting files from subpackage archives =====

rewinding the tape...
Verifying tape id... ok
Forward spacing the tape...

Loading subpackage: executables_s...
Forward spacing the tape...
Loading subpackage: library_s...
Forward spacing the tape...
Loading subpackage: pexs-man...
Forward spacing the tape...
Loading subpackage: fstest...
Forward spacing the tape...
Loading subpackage: xclients_s...
Forward spacing the tape...
Loading subpackage: pexs-man-unformat_s...
Forward spacing the tape...
Loading subpackage: demo_s...
Forward spacing the tape...
Loading subpackage: contrib_s...
Forward spacing the tape...
rewinding the tape...

Installation Instructions

===== running comply =====

running first comply pass...
running second comply pass...
There were no comply messages from the second pass.

===== doing uncompress Wed Jun 26 14:28:18 PDT 1991 =====

===== cleaning up old versions =====

An attempt will now be made to clean up any files left over from previous versions of the software which has just been installed.

Searching for old versions to remove...

===== restoring preserved user files =====

Running preserve -r for subpackage executables_s...
No preserve list or findmods list for library_s- no files restored.
No preserve list or findmods list for pexs-man- no files restored.
No preserve list or findmods list for fstest- no files restored.
No preserve list or findmods list for xclients_s- no files restored.
No preserve list or findmods list for pexs-man-unformat_s- no files restored.
No preserve list or findmods list for demo_s- no files restored.
No preserve list or findmods list for contrib_s- no files restored.

===== running conversion scripts =====

===== pexs-man.conversion Wed Jun 26 14:28:33 PDT 1991 =====

Manpage Conversion...

Making x_man -> catman/x_man softlink...
Making P_man -> catman/P_man softlink...

Done.

===== cleaning up =====

Remove install tools (y n) [n]? **y**

===== installation complete =====

#

===== selecting subpackages =====

You may select all of the above subpackages by answering "y" to the following question. If you answer "n" then you will be asked to select the optional subpackages you would like to have installed.

Install ALL subpackages (y n) [n]? **n** - See Configuration Information - page 4-2

When asked if you want to install a subpackage, please answer with one of the following:

- y - Yes, you want to install the subpackage
- n - No, you do NOT want to install the subpackage
- l - List the contents of the subpackage and ask me again

Install subpackage executables_1 (l y n) [n]? **y**
Install subpackage library_1 (l y n) [n]? **y**
Install subpackage cdrs_library_1 (l y n) [n]? **n**
Install subpackage pexl-man (l y n) [n]? **y**
Install subpackage pexl-man-unformat (l y n) [n]? **y**

Selected subpackages:
executables_1 library_1 pexl-man pexl-man-unformat
Is this what you want (y n) [y]? **y**

===== setting system clock/calendar =====

The current value of the clock is: Thu Jun 27 13:27:19 MDT 1991
Is the clock correct (y n) [y]? **y**

===== verifying single-user mode =====

This system is not presently in a single-user run level. Installation of a package can fail if performed at this run level. We recommend that the system be brought to a single user run level (using "init S") prior to performing the installation.

Are you absolutely sure you wish to continue (y n) [n]? **y**

===== preserving local files =====

Installation Instructions

No preserve list or findmods list for executables_1- preserve not executed.
No preserve list or findmods list for library_1- preserve not executed.
No preserve list or findmods list for pexl-man- preserve not executed.
No preserve list or findmods list for pexl-man-unformat- preserve not executed.

===== verifying disk space =====

Do you want to check for space (please do so unless you really understand the consequences) (y n) [y]? **y**

The system will now be checked to verify that there is enough disk space with the current configuration to successfully install the package (and any selected optional subpackages). For large packages (especially operating system packages), this can be time consuming...

There is enough space.

===== stripping old links =====

Stripping links for subpackage executables_1...
Stripping links for subpackage library_1...
Stripping links for subpackage pexl-man...
Stripping links for subpackage pexl-man-unformat...

===== extracting files from subpackage archives =====

rewinding the tape...
Verifying tape id... ok
Forward spacing the tape...

Loading subpackage: executables_1...
Forward spacing the tape...
Loading subpackage: library_1...
Forward spacing the tape...
Forward spacing the tape...
Loading subpackage: pexl-man...
Forward spacing the tape...
Loading subpackage: pexl-man-unformat...
Forward spacing the tape...
rewinding the tape...

===== running comply =====

running first comply pass...

running second comply pass...

There were no comply messages from the second pass.

===== doing uncompress Thu Jun 27 14:00:32 MDT 1991 =====

===== cleaning up old versions =====

An attempt will now be made to clean up any files left over from previous versions of the software which has just been installed.

Searching for old versions to remove...

Clean up pexl.library_1 2.0 (y n) [n]? **y**

Clean up pexl.pexl-man 2.0 (y n) [n]? **y**

Clean up pexl.pexl-man-unformat 2.0 (y n) [n]? **y**

===== restoring preserved user files =====

No preserve list or findmods list for executables_1- no files restored.

No preserve list or findmods list for library_1- no files restored.

No preserve list or findmods list for pexl-man- no files restored.

No preserve list or findmods list for pexl-man-unformat- no files restored.

===== running conversion scripts =====

===== pexl-man.conversion Thu Jun 27 14:01:42 MDT 1991 =====

Manpage Conversion...

x_man exists

P_man exists

C_man exists

m_man exists

man3 exists

Done.

===== cleaning up =====

Remove install tools (y n) [n]? **y**

===== installation complete =====

#

ES/PSX Tape 2.2

In the following procedure, system output is shown in typewriter normal font, and user responses are shown in **typewriter bold** font. All user responses should be typed as shown and entered with a carriage return **<CR>**.

Caution: It is recommended that YOU be the only user logged onto the machine while loading this software.

Installation Procedure Begins Here

- 1) Insert ES/PSX Tape into the tape drive.
- 2) If you are at the **x**dm login window box, type **ALT-F4**.
- 3) Login as **root**.
- 4) Type **cd /**
- 5) Type **/usr/pkg/bin/inst**

Software package installation

Install package relative to where [/]? **<CR>**

Please mount the (first, if multiple tapes) distribution tape, then press return... **<CR>**

Rewinding the tape...

Verifying tape id... ok

Extracting packaging information tree... psx2.2

Installation Information:

Packages will be read in from the local Q24 tape drive.

Machine type: m120

Is the information above correct? (y n) [y]? **<CR>**

=====
checking subpackages
=====

The following subpackages may be installed:

psx -- PSX 2.2 Release

=====
selecting subpackages
=====

You may select all of the above subpackages by answering "y" to the following question. If you answer "n" then you will be asked to select the optional subpackages you would like to have installed.

Install ALL subpackages (y n) [n]? **y**

===== setting system clock/calendar =====

The current value of the clock is: Wed Sep 26 09:58:24 PDT 1990

Is the clock correct (y n) [y]? **<CR>**

===== verifying single-user mode =====

This system is not presently in a single-user run level. Installation of a package can fail if performed at this run level. We recommend that the system be brought to a single user run level (using "init S") prior to performing the installation.

Are you absolutely sure you wish to continue (y n) [n]? **y**

===== preserving local files =====

No preserve list or findmods list for psx- preserve not executed.

===== verifying disk space =====

Do you want to check for space (please do so unless you really understand the consequences) (y n) [y]? **<CR>**

The system will now be checked to verify that there is enough disk space with the current configuration to successfully install the package (and any selected optional subpackages). For large packages (especially operating system packages), this can be time consuming...

There is enough space.

If you see this type of error message:

```
space: error: fstabind(): couldn't find device file for dev=0x1439
```

there is a filesystem linked through NFS to another system which must be removed before the installation can be performed.

===== stripping old links =====

Installation Instructions

Stripping links for subpackage psx...

===== extracting files from subpackage archives =====

rewinding the tape...

Verifying tape id... ok

Forward spacing the tape...

Loading subpackage: psx...

Forward spacing the tape...

rewinding the tape...

===== running comply =====

running first comply pass...

running second comply pass...

There were no comply messages from the second pass.

===== doing uncompress Wed Sep 26 10:01:10 PDT 1990 =====

===== cleaning up old versions =====

An attempt will now be made to clean up any files left over from previous versions of the software which has just been installed.

Searching for old versions to remove...

===== restoring preserved user files =====

No preserve list or findmods list for psx- no files restored.

===== cleaning up =====

Remove install tools (y n) [n]? **y**

===== installation complete =====

MIPS-Pascal RISCompiler 2.20

In the following procedure, system output is shown in typewriter normal font, and user responses are shown in **typewriter bold** font. All user responses should be typed as shown and entered with a carriage return **<CR>**.

Installation Procedure Begins Here

Caution: It is recommended that YOU be the only user logged onto the machine while loading this software.

- 1) Insert the MIPS-Pascal RISCompiler 2.20 Tape into the tape drive.
- 2) If you are at the **x**dm login window box, type **ALT-F4**.
- 3) Login as **root**.
- 4) Type **cd /**
- 5) Type **/usr/pkg/bin/inst**

Software package installation

Install package relative to where [/]? **<CR>**

Please mount the (first, if multiple tapes) distribution tape, then press return... **<CR>**

Rewinding the tape...

Verifying tape id... ok

Extracting packaging information tree... pascal2.20

Installation Information:

Packages will be read in from the local Q24 tape drive.

Machine type: ml20-1

Is the information above correct? (y n) [y]? **y**

===== checking subpackages =====

The following subpackages may be installed:

cmplrs	-- MIPS-C
cmplrs-bsd43	-- MIPS-C 4.3 BSD Libraries
cmplrs-man	-- MIPS-C Manual Pages
pascal	-- MIPS-Pascal
pascal-bsd43	-- MIPS-Pascal 4.3 BSD Libraries

Installation Instructions

pascal-man -- MIPS-Pascal Manual Pages

=====
selecting subpackages
=====

You may select all of the above subpackages by answering "y" to the following question. If you answer "n" then you will be asked to select the optional subpackages you would like to have installed.

Install ALL subpackages (y n) [n]? **n**

When asked if you want to install a subpackage, please answer with one of the following:

- y - Yes, you want to install the subpackage
- n - No, you do NOT want to install the subpackage
- l - List the contents of the subpackage and ask me again

Install subpackage cmplrs (l y n) [n]? **n**

Install subpackage cmplrs-bsd43 (l y n) [n]? **n**

Install subpackage cmplrs-man (l y n) [n]? **n**

Install subpackage pascal (l y n) [n]? **y**

Install subpackage pascal-bsd43 (l y n) [n]? **y**

Install subpackage pascal-man (l y n) [n]? **y**

Selected subpackages:

pascal pascal-bsd43 pascal-man

Is this what you want (y n) [y]? **y**

=====
setting system clock/calendar
=====

The current value of the clock is: Mon Jun 3 14:42:49 MDT 1991

Is the clock correct (y n) [y]? **y**

=====
verifying single-user mode
=====

This system is not presently in a single-user run level. Installation of a package can fail if performed at this run level. We recommend that the system be brought to a single user run level (using "init S") prior to performing the installation.

Are you absolutely sure you wish to continue (y n) [n]? **y**

=====
preserving local files
=====

No preserve list or findmods list for pascal- preserve not executed.
No preserve list or findmods list for pascal-bsd43- preserve not executed.
No preserve list or findmods list for pascal-man- preserve not executed.

===== verifying disk space =====

Do you want to check for space (please do so unless you really understand
the consequences) (y n) [y]? **y**

The system will now be checked to verify that there is enough disk space
with the current configuration to successfully install the package (and any
selected optional subpackages). For large packages (especially operating
system packages), this can be time consuming...

There is enough space.

===== stripping old links =====

Stripping links for subpackage pascal...
Stripping links for subpackage pascal-bsd43...
Stripping links for subpackage pascal-man...

===== extracting files from subpackage archives =====

rewinding the tape...
Verifying tape id... ok
Forward spacing the tape...

Forward spacing the tape...
Loading subpackage: pascal...
Forward spacing the tape...
Loading subpackage: pascal-bsd43...
Forward spacing the tape...
Loading subpackage: pascal-man...
Forward spacing the tape...
rewinding the tape...

===== running comply =====

running first comply pass...
running second comply pass...
There were no comply messages from the second pass.

===== doing uncompress Mon Jun 3 14:48:30 MDT 1991 =====

Installation Instructions

===== cleaning up old versions =====

An attempt will now be made to clean up any files left over from previous versions of the software which has just been installed.

Searching for old versions to remove...

===== restoring preserved user files =====

No preserve list or findmods list for pascal- no files restored.
No preserve list or findmods list for pascal-bsd43- no files restored.
No preserve list or findmods list for pascal-man- no files restored.

===== cleaning up =====

Remove install tools (y n) [n]? **y**

===== installation complete =====

#

Now run the install script to compile a small Pascal test program.

/usr/lib/cmplrs/pc2.20/checkinstall

Compiling and linking test program

Executing test program...

MIPS-Pascal RISCompiler

The compiler installation completed.

If the script succeeds the installation has completed successfully, otherwise please call Evans & Sutherland for assistance.

MIPS-FORTRAN RISCompiler 2.20

In the following procedure, system output is shown in typewriter normal font, and user responses are shown in **typewriter bold** font. All user responses should be typed as shown and entered with a carriage return **<CR>**.

Caution: It is recommended that YOU be the only user logged onto the machine while loading this software.

- 1) Insert MIPS-FORTRAN RISCompiler 2.20 Tape into the tape drive.
- 2) If you are at the **x**dm login window box, type **ALT-F4**.
- 3) Login as root.
- 4) Type **cd /**
- 5) Type **/usr/pkg/bin/inst**

Software package installation

Install package relative to where [/]? **<CR>**

Please mount the (first, if multiple tapes) distribution tape, then press return... **<CR>**

Rewinding the tape...

Verifying tape id... ok

Extracting packaging information tree... f772.20

Installation Information:

Packages will be read in from the local Q24 tape drive.

Machine type: ml20-1

Is the information above correct? (y n) [y]? **y**

=====
 ===== checking subpackages =====

The following subpackages may be installed:

cmplrs	-- MIPS-C
cmplrs-bsd43	-- MIPS-C 4.3 BSD Libraries
cmplrs-man	-- MIPS-C Manual Pages
f77	-- MIPS-FORTRAN
f77-bsd43	-- MIPS-FORTRAN 4.3 BSD Libraries
f77-man	-- MIPS-FORTRAN Manual Pages

Installation Instructions

===== selecting subpackages =====

You may select all of the above subpackages by answering "y" to the following question. If you answer "n" then you will be asked to select the optional subpackages you would like to have installed.

Install ALL subpackages (y n) [n]? **n**

When asked if you want to install a subpackage, please answer with one of the following:

- y - Yes, you want to install the subpackage
- n - No, you do NOT want to install the subpackage
- l - List the contents of the subpackage and ask me again

Install subpackage cmplrs (l y n) [n]? **n**

Install subpackage cmplrs-bsd43 (l y n) [n]? **n**

Install subpackage cmplrs-man (l y n) [n]? **n**

Install subpackage f77 (l y n) [n]? **y**

Install subpackage f77-bsd43 (l y n) [n]? **y**

Install subpackage f77-man (l y n) [n]? **y**

Selected subpackages:

f77 f77-bsd43 f77-man

Is this what you want (y n) [y]? **y**

===== setting system clock/calendar =====

The current value of the clock is: Mon Jun 3 14:28:09 MDT 1991

Is the clock correct (y n) [y]? **y**

===== verifying single-user mode =====

This system is not presently in a single-user run level. Installation of a package can fail if performed at this run level. We recommend that the system be brought to a single user run level (using "init S") prior to performing the installation.

Are you absolutely sure you wish to continue (y n) [n]? **y**

===== preserving local files =====

No preserve list or findmods list for f77- preserve not executed.

No preserve list or findmods list for f77-bsd43- preserve not executed.

No preserve list or findmods list for f77-man- preserve not executed.

===== verifying disk space =====

Do you want to check for space (please do so unless you really understand the consequences) (y n) [y]? **y**

The system will now be checked to verify that there is enough disk space with the current configuration to successfully install the package (and any selected optional subpackages). For large packages (especially operating system packages), this can be time consuming...

There is enough space.

===== stripping old links =====

Stripping links for subpackage f77...
Stripping links for subpackage f77-bsd43...
Stripping links for subpackage f77-man...

===== extracting files from subpackage archives =====

rewinding the tape...
Verifying tape id... ok
Forward spacing the tape...

Forward spacing the tape...
Loading subpackage: f77...
Forward spacing the tape...
Loading subpackage: f77-bsd43...
Forward spacing the tape...
Loading subpackage: f77-man...
Forward spacing the tape...
rewinding the tape...

===== running comply =====

running first comply pass...
running second comply pass...
There were no comply messages from the second pass.

===== doing uncompress Mon Jun 3 14:35:39 MDT 1991 =====

===== cleaning up old versions =====

Installation Instructions

An attempt will now be made to clean up any files left over from previous versions of the software which has just been installed.

Searching for old versions to remove...

===== restoring preserved user files =====

No preserve list or findmods list for cmplrs- no files restored.
No preserve list or findmods list for cmplrs-bsd43- no files restored.
No preserve list or findmods list for cmplrs-man- no files restored.
No preserve list or findmods list for f77- no files restored.
No preserve list or findmods list for f77-bsd43- no files restored.
No preserve list or findmods list for f77-man- no files restored.

===== cleaning up =====

Remove install tools (y n) [n]? **y**

===== installation complete =====

#

Now run the install script to compile a small FORTRAN test program:

```
# /usr/lib/cmplrs/f772.20/checkinstall
```

```
Compiling and linking test program...
```

```
Executing test program...
```

```
MIPS-FORTRAN RISCompiler
```

```
The compiler installation completed.
```

If the script succeeds the installation has completed successfully, otherwise please call Evans & Sutherland for assistance.

ES/Dnet Tape 2.2

In the following procedure, system output is shown in typewriter normal font, and user responses are shown in **typewriter bold** font. All user responses should be typed as shown and entered with a carriage return **<CR>**.

Caution: It is recommended that YOU be the only user logged onto the machine while loading this software.

- 1) In order for the ES/Dnet installation to work correctly, no ES/Dnet processes should be running on the system. To stop Decnet, type **/etc/init.d/decnet stop**
- 2) Insert ES/Dnet 2.2 Tape into the tape drive.
- 3) If you are at the **x**dm login window box, type ALT-F4.
- 4) Login as **root**.
- 5) Type **cd /**
- 6) Type **/usr/pkg/bin/inst**

Software package installation

Install package relative to where [/]? **<CR>**

Please mount the (first, if multiple tapes) distribution tape, then press return... **<CR>**

Rewinding the tape...

Verifying tape id... ok

Extracting packaging information tree... esdnet2.2

Installation Information:

Packages will be read in from the local Q24 tape drive.

Machine type: ml20

Is the information above correct? (y n) [y]? **<CR>**

=====
 ===== checking subpackages =====

The following subpackages may be installed:

esdnet -- ES/Dnet Release

=====
 ===== selecting subpackages =====

Loading subpackage: esdnet...

Forward spacing the tape...

rewinding the tape...

===== running comply =====

running first comply pass...

running second comply pass...

There were no comply messages from the second pass.

===== doing uncompress Thu Oct 4 09:47:18 MDT 1990 =====

===== cleaning up old versions =====

An attempt will now be made to clean up any files left over from previous versions of the software which has just been installed.

Searching for old versions to remove...

Clean up esdnet.esdnet 2.0 (y n) [n]? **y**

Removing leftover files from esdnet.esdnet 2.0...

There are no longer any boms present for any subpackages from //usr/pkg/lib/esdnet2.0 version 2.0. This probably indicates that no subpackages installed from this package are still present on this system.

Remove the packaging information tree for this package (y n) [y]? **<CR>**

===== restoring preserved user files =====

No preserve list or findmods list for esdnet- no files restored.

===== cleaning up =====

Remove install tools (y n) [n]? **y**

===== installation complete =====

Installing the Software Key

The ES/Dnet license key is normally installed on the system at the factory. If this is a customer installed option and/or the `/etc/ki_pwd` file does not already exist, call the Field Service Hotline at **1-800-582-4375** to obtain the key.

Using any editor, create the file `/etc/ki_pwd`. Enter the *Software Key Number* on one line of the file, with no spaces before, or between, any of the 18 digits.

Installation Instructions

If you have already installed the LAT Host Services software, this file will already exist. In this case, enter the ES/Dnet key before the existing key.

Installing the ES/Dnet Software

Run the installation script located in `/usr/etc/esdnet/dna/bin/install.dna`. The following example shows the installation of the ES/Dnet software. The names and numbers used in the user responses are for example only.

Note: The DECnet name is a maximum of six (6) characters. Therefore, it may be different from your system name.

ES/Dnet Installation procedure

```
ln -s /usr/etc/esdnet/dna /usr/etc/dna
```

```
ln -s /usr/etc/esdnet/dna/bin/uninstall.dna /usr/etc/uninstall.dna
```

```
ln -s /usr/etc/esdnet/dna/bin/install.dna /usr/etc/install.dna
```

```
ln -s /usr/etc/esdnet/dna/bin/config.dna /usr/etc/config.dna
```

To continue, you must know the DECnet node number and name that has been assigned for your host and for a remote node (which has a DECnet database). If you do not know these, press <ENTER> and rerun this installation later by executing `'/usr/etc/install.dna'`

Do you wish to continue? [Y/N]

y

What is your DECnet node name [keyhole]?

keyhol

What is your DECnet area number [1]?

1

What is your DECnet node number?

59

Defining local node 'keyhol' as DECnet address 1.59

What is the remote DECnet node name?

rd780b

What is the remote DECnet area number [1]?

1

What is the remote DECnet node number?

2

Defining remote node 'rd780b' as DECnet address 1.2

Saving configuration commands in `/usr/etc/esdnet/dna/database/ncp.cmd`

Would you like to see the `ncp.cmd` file now? [Y/N]

y

!

! File Generated By ES/Dnet Version 1.4.3

! Generated On Thu Feb 22 18:24:21 1990

!

!

! First we should let DECnet know what our local address is:

```
Define Executor Address 1.59
```

!

! OK, Now for the Executor Characteristics:

```
Set Executor Buffer Size 1461
```

```
Set Hello Timer 15 Seconds
```

```
Set Inactivity Timer 60 Seconds
```

```
Set Incoming Timer 120 Seconds
```

```
Set Outgoing Timer 90 Seconds
```

```
Set Keepalive Timer 300 Seconds
```

!

!Need to know the LAN Device Name

```
Set LAN Device Name la0
```

!

!And now to define all the nodes:

!

```
Set Node 1.2 Name rd780b
```

```
Set Node 1.2 Hardware Address AA-00-04-00-02-04
```

```
Set Node 1.2 Identification rd780b
```

```
Set Node 1.59 Name keyhol
```

```
Set Node 1.59 Hardware Address AA-00-04-00-3B-04
```

```
Set Node 1.59 Identification keyhole
```

!

! And now to define all the objects:

!

```
Set Object d_server Number 17 File /usr/etc/dna/bin/d_server
```

```
Set Object mirror Number 25 File /usr/etc/dna/bin/mirror
```

```
Set Object dnamauld Number 27 File /usr/etc/dna/bin/dnamauld
```

If you want to know about options that can be used when starting ES/Dnet, you can use the "-help" option, i.e.:

```
% deknet -help
```

Would you like to see this help display now? [Y/N]

n

Installation complete

To start ES/Dnet, type the following:

```
/etc/init.d/deknet start
```

Downloading the DECnet Database

To download the DECnet Database, run the following script: `/usr/etc/config.dna`

Installation Instructions

The script will ask for the *username*, *password*, and *node name* of the VAX/VMS machine. The following is a typical example.

```
Enter username for remote node
rbass
```

```
Enter password for remote node
(password will not be echoed)
```

```
Enter remote node name
rd780b
```

The script will now update the DECnet Database without any more input.

Username: **RBASS**

Password:

Welcome to VAX/VMS version V5.2 on node RD780B

Last interactive login on Thursday, 15-FEB-1990 15:48

Last non-interactive login on Wednesday, 14-FEB-1990 19:27

(RD780b) \$

(RD780b) \$

(RD780b) \$

(RD780b) \$

(RD780b) \$ **ncp := \$ncp**

(RD780b) \$ **ncp show known nodes**

Known Node Volatile Summary as of 15-FEB-1990 16:38:35

Executor node = 1.2 (RD780B)

State = on

Identification = DECnet-VAX V5.2, VMS V5.2

Node	State	Active Links	Delay	Circuit	Next Node
1.1 (PARK)	unreachable				
1.3 (TRAIN)	reachable			UNA-0	1.3 (TRAIN)
1.4 (CAD780)	reachable			UNA-0	1.4 (CAD780)
1.306 (SPVAX2)	reachable			UNA-0	1.35 (ESIMSA)
1.309 (CTVS09)	reachable			UNA-0	1.309 (CTVS09)

(RD780b) \$ **logout**

RBASS logged out at 15-FEB-1990 16:38:46.18

SETHOST for ES/Dnet version 1.4.3

Remote Session Terminated. Returning control to local system

Using command file 'test.cmd'

NCP> !

NCP> ! File Generated By CVTNCP on Thu Feb 15 16:41:18 1990

NCP> ! Released with ES/Dnet Version 1.4.3

NCP> !

NCP>

NCP> Set Node 1.2 Name RD780B

NCP> Set Node 1.2 ident DECnet-VAX V5.2, VMS V5.2

Loading subpackage: esdnet...
 Forward spacing the tape...
 rewinding the tape...

=====
 running first comply pass...
 running second comply pass...
 There were no comply messages from the second pass.

=====
 doing uncompress Thu Oct 4 09:47:18 MDT 1990 =====

=====
 cleaning up old versions =====

An attempt will now be made to clean up any files left over from previous versions of the software which has just been installed.

Searching for old versions to remove...
 Clean up esdnet.esdnet 2.0 (y n) [n]? **y**
 Removing leftover files from esdnet.esdnet 2.0...

There are no longer any boms present for any subpackages from //usr/pkg/lib/esdnet2.0 version 2.0. This probably indicates that no subpackages installed from this package are still present on this system.

Remove the packaging information tree for this package (y n) [y]? **<CR>**

=====
 restoring preserved user files =====

No preserve list or findmods list for esdnet- no files restored.

=====
 cleaning up =====

Remove install tools (y n) [n]? **y**

=====
 installation complete =====

Installing the Software Key

The ES/Dnet license key is normally installed on the system at the factory. If this is a customer installed option and/or the `/etc/ki_pwd` file does not already exist, call the Field Service Hotline at **1-800-582-4375** to obtain the key.

Using any editor, create the file `/etc/ki_pwd`. Enter the *Software Key Number* on one line of the file, with no spaces before, or between, any of the 18 digits.

Installation Instructions

If you have already installed the LAT Host Services software, this file will already exist. In this case, enter the ES/Dnet key before the existing key.

Installing the ES/Dnet Software

Run the installation script located in `/usr/etc/esdnet/dna/bin/install.dna`. The following example shows the installation of the ES/Dnet software. The names and numbers used in the user responses are for example only.

Note: The DECnet name is a maximum of six (6) characters. Therefore, it may be different from your system name.

ES/Dnet Installation procedure

```
ln -s /usr/etc/esdnet/dna /usr/etc/dna
```

```
ln -s /usr/etc/esdnet/dna/bin/uninstall.dna /usr/etc/uninstall.dna
```

```
ln -s /usr/etc/esdnet/dna/bin/install.dna /usr/etc/install.dna
```

```
ln -s /usr/etc/esdnet/dna/bin/config.dna /usr/etc/config.dna
```

To continue, you must know the DECnet node number and name that has been assigned for your host and for a remote node (which has a DECnet database). If you do not know these, press <ENTER> and rerun this installation later by executing `'/usr/etc/install.dna'`

Do you wish to continue? [Y/N]

y

What is your DECnet node name [keyhole]?

keyhol

What is your DECnet area number [1]?

1

What is your DECnet node number?

59

Defining local node 'keyhol' as DECnet address 1.59

What is the remote DECnet node name?

rd780b

What is the remote DECnet area number [1]?

1

What is the remote DECnet node number?

2

Defining remote node 'rd780b' as DECnet address 1.2

Saving configuration commands in `/usr/etc/esdnet/dna/database/ncp.cmd`

Would you like to see the `ncp.cmd` file now? [Y/N]

y

!

! File Generated By ES/Dnet Version 1.4.3

! Generated On Thu Feb 22 18:24:21 1990

!

!

! First we should let DECnet know what our local address is:

Define Executor Address 1.59

!

! OK, Now for the Executor Characteristics:

Set Executor Buffer Size 1461

Set Hello Timer 15 Seconds

Set Inactivity Timer 60 Seconds

Set Incoming Timer 120 Seconds

Set Outgoing Timer 90 Seconds

Set Keepalive Timer 300 Seconds

!

!Need to know the LAN Device Name

Set LAN Device Name la0

!

!And now to define all the nodes:

!

Set Node 1.2 Name rd780b

Set Node 1.2 Hardware Address AA-00-04-00-02-04

Set Node 1.2 Identification rd780b

Set Node 1.59 Name keyhol

Set Node 1.59 Hardware Address AA-00-04-00-3B-04

Set Node 1.59 Identification keyhole

!

! And now to define all the objects:

!

Set Object d_server Number 17 File /usr/etc/dna/bin/d_server

Set Object mirror Number 25 File /usr/etc/dna/bin/mirror

Set Object dnamauld Number 27 File /usr/etc/dna/bin/dnamauld

If you want to know about options that can be used when starting ES/Dnet, you can use the "-help" option, i.e.:

```
% deknet -help
```

Would you like to see this help display now? [Y/N]

n

Installation complete

To start ES/Dnet, type the following:

/etc/init.d/deknet start

Downloading the DECnet Database

To download the DECnet Database, run the following script: **/usr/etc/config.dna**

Installation Instructions

The script will ask for the *username*, *password*, and *node name* of the VAX/VMS machine. The following is a typical example.

```
Enter username for remote node
rbass
```

```
Enter password for remote node
(password will not be echoed)
```

```
Enter remote node name
rd780b
```

The script will now update the DECnet Database without any more input.

Username: **RBASS**

Password:

Welcome to VAX/VMS version V5.2 on node RD780B

Last interactive login on Thursday, 15-FEB-1990 15:48

Last non-interactive login on Wednesday, 14-FEB-1990 19:27

(RD780b) \$

(RD780b) \$

(RD780b) \$

(RD780b) \$

(RD780b) \$ **ncp := \$ncp**

(RD780b) \$ **ncp show known nodes**

Known Node Volatile Summary as of 15-FEB-1990 16:38:35

Executor node = 1.2 (RD780B)

State = on

Identification = DECnet-VAX V5.2, VMS V5.2

Node	State	Active Links	Delay	Circuit	Next Node
1.1 (PARK)	unreachable				
1.3 (TRAIN)	reachable			UNA-0	1.3 (TRAIN)
1.4 (CAD780)	reachable			UNA-0	1.4 (CAD780)
1.306 (SPVAX2)	reachable			UNA-0	1.35 (ESIMSA)
1.309 (CTVS09)	reachable			UNA-0	1.309 (CTVS09)

(RD780b) \$ **logout**

RBASS logged out at 15-FEB-1990 16:38:46.18

SETHOST for ES/Dnet version 1.4.3

Remote Session Terminated. Returning control to local system

Using command file 'test.cmd'

NCP> !

NCP> ! File Generated By CVTNCP on Thu Feb 15 16:41:18 1990

NCP> ! Released with ES/Dnet Version 1.4.3

NCP> !

NCP>

NCP> Set Node 1.2 Name RD780B

NCP> Set Node 1.2 ident DECnet-VAX V5.2, VMS V5.2


```
NCP> Set Node 1.1 Name PARK
NCP> Set Node 1.3 Name TRAIN
NCP> Set Node 1.306 Name SPVAX2
NCP> Set Node 1.309 Name CTVS09
NCP> *** EOF ***
Updating database with changes
NCP Execution Complete
```

Update the running database with the following command:

```
/usr/etc/dna/bin/updb
```

Installation Instructions

AVS3 Tape 2.2

In the following procedure, system output is shown in typewriter normal font, and user responses are shown in **typewriter bold** font. All user responses should be typed as shown and entered with a carriage return **<CR>**.

Caution: It is recommended that YOU be the only user logged onto the machine while loading this software.

- 1) Insert AVS3 Tape into the tape drive.
- 2) If you are at the **x**dm login window box, type **ALT-F4**.
- 3) Login as **root**.
- 4) Type **cd /**
- 5) Type **/usr/pkg/bin/inst**

Software package installation

Install package relative to where [/?] **<CR>**

Please mount the (first, if multiple tapes) distribution tape, then press return... **<CR>**

Rewinding the tape...

Verifying tape id... ok

Extracting packaging information tree... avs3.0

Installation Information:

Packages will be read in from the local Q24 tape drive.

Machine type: m120-2

Is the information above correct? (y n) [y]? **y**

=====
checking subpackages
=====

The following subpackages may be installed:

avs -- AVS3 Release

=====
selecting subpackages
=====

You may select all of the above subpackages by answering "y" to the following question. If you answer "n" then you will be asked to select the optional subpackages you would like to have installed.

Install ALL subpackages (y n) [n]? **y**

Installation Instructions

running first comply pass...

running second comply pass...

There were no comply messages from the second pass.

===== doing uncompress Tue Jul 23 09:58:24 MDT 1991 =====

===== cleaning up old versions =====

An attempt will now be made to clean up any files left over from previous versions of the software which has just been installed.

Searching for old versions to remove...

===== restoring preserved user files =====

No preserve list or findmods list for avs- no files restored.

===== cleaning up =====

Remove install tools (y n) [n]? **y**

===== installation complete =====

```
NCP> Set Node 1.1 Name PARK
NCP> Set Node 1.3 Name TRAIN
NCP> Set Node 1.306 Name SPVAX2
NCP> Set Node 1.309 Name CTVS09
NCP> *** EOF ***
Updating database with changes
NCP Execution Complete
```

Update the running database with the following command:

```
/usr/etc/dna/bin/updb
```

Installation Instructions

AVS3 Tape 2.2

In the following procedure, system output is shown in typewriter normal font, and user responses are shown in **typewriter bold** font. All user responses should be typed as shown and entered with a carriage return **<CR>**.

Caution: It is recommended that YOU be the only user logged onto the machine while loading this software.

- 1) Insert AVS3 Tape into the tape drive.
- 2) If you are at the **x**dm login window box, type **ALT-F4**.
- 3) Login as **root**.
- 4) Type **cd /**
- 5) Type **/usr/pkg/bin/inst**

Software package installation

Install package relative to where [/?] **<CR>**

Please mount the (first, if multiple tapes) distribution tape, then press return... **<CR>**

Rewinding the tape...

Verifying tape id... ok

Extracting packaging information tree... avs3.0

Installation Information:

Packages will be read in from the local Q24 tape drive.

Machine type: m120-2

Is the information above correct? (y n) [y] **y**

=====
checking subpackages
=====

The following subpackages may be installed:

avs -- AVS3 Release

=====
selecting subpackages
=====

You may select all of the above subpackages by answering "y" to the following question. If you answer "n" then you will be asked to select the optional subpackages you would like to have installed.

Install ALL subpackages (y n) [n] **y**

Installation Instructions

running first comply pass...

running second comply pass...

There were no comply messages from the second pass.

===== doing uncompress Tue Jul 23 09:58:24 MDT 1991 =====

===== cleaning up old versions =====

An attempt will now be made to clean up any files left over from previous versions of the software which has just been installed.

Searching for old versions to remove...

===== restoring preserved user files =====

No preserve list or findmods list for avs- no files restored.

===== cleaning up =====

Remove install tools (y n) [n]? **y**

===== installation complete =====

LAT Host Services Tape 2.2

Before Installation

Before you install LAT Host Services, you must have the following information:

- The *Factory Ethernet Address* of your ESV Workstation. Enter the following command to get this address:

```
/usr/etc/factaddr
```

```
Factory Ethernet Address __ - __ - __ - __ - __ - __
```

The LAT Host Services *Software Key Number* (18 digits). This license key is normally installed on the system at the factory. If the `/etc/ki_pwd` file does not exist, call the Field Service Hotline at **1-800-582-4375** to obtain the key.

- You will be asked for the *System Type* (ESV Workstation) and the *Factory Ethernet Address*.

Software Key Number _____

Loading the LAT Host Services Software

In the following procedure, system output is shown in `typewriter` normal font, and user responses are shown in **typewriter bold** font. All user responses should be typed as shown and entered with a carriage return `<CR>`.

Installation Procedure Begins Here

You must be logged on the system as **root**.

Caution: It is recommended that YOU be the only user logged onto the machine while loading this software.

- 1) Insert LAT Host Services 2.2 Tape into the tape drive.
- 2) If you are at the `xDM` login window box, type **ALT-F4**.
- 3) Login as **root**.
- 4) Type **cd /**
- 5) Type **/usr/pkg/bin/inst**

```
Software package installation
```

```
Install package relative to where [/?] <CR>
```

```
Please mount the (first, if multiple tapes) distribution tape, then press return... <CR>
```

```
Rewinding the tape...
```

```
Verifying tape id... ok
```

```
Extracting packaging information tree... eslat2.2
```

```
Installation Information:
```

```
Packages will be read in from the local Q24 tape drive.
```

Installation Instructions

Machine type: ml20

Is the information above correct? (y n) [y]? <CR>

=====
checking subpackages
=====

The following subpackages may be installed:

eslat -- LAT Host Services 5.5.1 Release

=====
selecting subpackages
=====

You may select all of the above subpackages by answering "y" to the following question. If you answer "n" then you will be asked to select the optional subpackages you would like to have installed.

Install ALL subpackages (y n) [n]? y

=====
setting system clock/calendar
=====

The current value of the clock is: Thu Oct 4 09:59:06 MDT 1990

Is the clock correct (y n) [y]? y

=====
verifying single-user mode
=====

This system is not presently in a single-user run level. Installation of a package can fail if performed at this run level. We recommend that the system be brought to a single user run level (using "init S") prior to performing the installation.

Are you absolutely sure you wish to continue (y n) [n]? y

=====
preserving local files
=====

No preserve list or findmods list for eslat- preserve not executed.

=====
verifying disk space
=====

Do you want to check for space (please do so unless you really understand the consequences) (y n) [y]? y

The system will now be checked to verify that there is enough disk space with the current configuration to successfully install the package (and any selected optional subpackages). For large packages (especially operating system packages), this can be time consuming...

There is enough space.

===== stripping old links =====

Stripping links for subpackage eslat...

===== extracting files from subpackage archives =====

rewinding the tape...

Verifying tape id... ok

Forward spacing the tape...

Loading subpackage: eslat...

Forward spacing the tape...

rewinding the tape...

===== running comply =====

running first comply pass...

running second comply pass...

There were no comply messages from the second pass.

===== doing uncompress Wed Jul 31 5:00:17 MDT 1991 =====

===== cleaning up old versions =====

An attempt will now be made to clean up any files left over from previous versions of the software which has just been installed.

Searching for old versions to remove...

===== restoring preserved user files =====

No preserve list or findmods list for eslat- no files restored.

===== cleaning up =====

Remove install tools (y n) [n]? **y**

===== installation complete =====

To start LAT Host Services, enter the following command:

/etc/init.d/lat start

Installing the Software Key

Using any editor, create the file `/etc/kl_pwd`. Enter the Software Key Number on one line of this file, with no spaces before, or between, any of the 18 digits.

If you have previously installed the ES/Dnet software, this file will already exist. In this case, enter the ES/Dnet key after the existing key.

ES/Diskless Node Tape 2.2

The following instructions should be used for either a Diskless Node installation or a Local Server installation.

Caution: It is recommended that YOU be the only user logged onto the machine while loading this software.

Before this installation is attempted, make sure you have already installed the ES/os 2.2, and ES/PEX Server 2.2 tapes on the Serving machine. (See installation instructions for these particular tapes.

General Notes

Diskless Node and Local Server machines have very similar installation procedures. For the Local Server installation, an SCPU prefix will appear at all user prompts in the instructions that follow.

Diskless Node Notes

The ES/Diskless Node tape should be installed on an ESV that will be the Serving machine for other ESV Diskless Workstations. This Serving machine should already have had the ES/os 2.2 and ES/PEX Server 2.2 tapes and any other software options installed prior to attempting this install.

Local Server Machine Notes

The ES/Diskless Node tape should be installed on the SCPU (which is the "Serving" CPU). This Serving CPU should already have had the ES/os 2.2 and ES/PEX Server 2.2 tapes and any other software options installed prior to attempting this install.

Disk Space Requirements

The files on tapes used require approximately 400 megabytes of disk space. This is due to the fact that the ES/os 2.2 tape and the ES/PEX Server 2.2 tapes are installed again during this procedure (but in a different location on the disk).

Items needed for a Diskless Node/Local Server Installation:

- ES/Diskless Node 2.2 tape
- ES/os 2.2 tape
- ES/PEX Server 2.2 tape

In the following procedure, system output is shown in `typewriter` normal font, and user responses are shown in **typewriter bold** font. All user responses should be typed as shown and entered with a carriage return **<CR>**.

Installation Begins Here

- 1) Login as **root**.

Installation Instructions

2) Insert the ES/Diskless Node distribution tape into the ESV Serving machine or the Local Server machine.

3) Type `cd /`

```
# sync; sync
```

```
# telinit 0
```

```
#
```

```
INIT: New run level: 0
```

```
Miniroot shutdown
```

```
E&S CPU Board MIPS Monitor Version 5.00 MIPS OPT Mon Feb 18 15:00:28 MST 1991
```

```
Copyright 1988, MIPS Computer Systems Inc., All Rights Reserved
```

```
Memory size: 33554432 (0x2000000) bytes
```

```
Icache size: 65536 (0x10000) bytes
```

```
Dcache size: 65536 (0x10000) bytes
```

```
>> boot -f dkis(,,8)sash
```

```
138896+27152+175024 entry: 0xa0480000
```

```
MIPS Standalone shell Version 5.00 MIPS OPT Mon Feb 18 10:49:00 MST 1991
```

```
sash>> boot -f dkis()/unix initarg=s
```

```
869264+103616+894624 entry: 0x80021000
```

```
CPU: MIPS R3000 Processor Chip Revision: 3.0
```

```
FPU: MIPS R3010 VLSI Floating Point Chip Revision: 4.0
```

```
ES/os Release 2.2 ESV Version R_100
```

```
Total real memory = 33554432
```

```
Available memory = 31170560
```

```
abminit: ARS/HIC not present.
```

```
arsinit: ARS/HIC not present.
```

```
installing VME vector: addr 0x8007FB1C ipl 1, vec 0x1 unit 0
```

```
Root fstype ffs
```

```
Available memory = 62386176
```

```
Checking root file system () if necessary.
```

```
INIT: SINGLE USER MODE
```

```
TERM: (esconsole) <CR>
```

```
# fsck.ffs /dev/usr
```

```
** /dev/usr
```

```
** Last Mounted on /usr
```

```
** Phase 1 - Check Blocks and sizes
```

```
** Phase 2 - Check Pathnames
```

```
** Phase 3 - Check Connectivity
```

```
** Phase 4 - Check Reference Counts
** Phase 5 - Check Cyl Group
6201 files, 109993 used, 431042 free (1946 frags, 53637 blocks, 0.4% frag)
```

4) Type the following:

```
# mount -a
# mkdir -p /usr/diskless/dl_root
# /usr/pkg/bin/inst
```

Software package installation

Install package relative to where [/]? **/usr/diskless/dl_root**

Please mount the (first, if multiple tapes) distribution tape, then press return... **<CR>**

Rewinding the tape...

Verifying tape id... ok

Extracting packaging information tree... umips-diskless2.2

Installation Information:

Packages will be read in from the local Q24 tape device.

Machine type: ml20-x

Is the information above correct? (y n) [y]? **y**

=====
 ===== checking subpackages =====

The following subpackages may be installed:

droot -- Diskless root files

dusr -- Diskless usr files

dvar -- Diskless var files

=====
 ===== selecting subpackages =====

You may select all of the above subpackages by answering "y" to the following question. If you answer "n" then you will be asked to select the optional subpackages you would like to have installed.

Install ALL subpackages (y n) [n]? **y**

=====
 ===== setting system clock/calendar =====

Installation Instructions

The current value of the clock is: Tue Jun 25 12:23:32 PDT 1991

Is the clock correct (y n) [y]? **y**

===== verifying single-user mode =====

The system is in a single-user run level.

===== preserving local files =====

No preserve list or findmods list for droot- preserve not executed.

No preserve list or findmods list for dusr- preserve not executed.

No preserve list or findmods list for dvar- preserve not executed.

===== verifying disk space =====

Do you want to check for space (please do so unless you really understand the consequences) (y n) [y]? **y**

The system will now be checked to verify that there is enough disk space with the current configuration to successfully install the package (and any selected optional subpackages). For large packages (especially operating system packages), this can be time consuming...

There is enough space.

===== stripping old links =====

Stripping links for subpackage droot...

Stripping links for subpackage dusr...

Stripping links for subpackage dvar...

===== extracting files from subpackage archives =====

rewinding the tape...

Verifying tape id... ok

Forward spacing the tape...

Loading subpackage: droot...

Forward spacing the tape...

Loading subpackage: dusr...

Forward spacing the tape...

Loading subpackage: dvar...

Forward spacing the tape...

rewinding the tape...

===== running comply =====

running first comply pass...
running second comply pass...
There were no comply messages from the second pass.

===== doing uncompress Tue Jun 25 12:25:31 PDT 1991 =====

===== cleaning up old versions =====

An attempt will now be made to clean up any files left over from previous versions of the software which has just been installed.

Searching for old versions to remove...

===== restoring preserved user files =====

No preserve list or findmods list for droot- no files restored.
No preserve list or findmods list for dusr- no files restored.
No preserve list or findmods list for dvar- no files restored.

===== running conversion scripts =====

===== droot.conversion Tue Jun 25 12:25:41 PDT 1991 =====

Diskless Conversion...

Filesystem	Type	kbytes	use	avail	%use	Mounted on
/dev/usr	ffs	483820	300583	183237	62%	/usr

Kbytes free on the server disk: 183237

WARNING! When asked whether or not you want to perform the space check please answer "yes"

Press [RETURN] to continue: <CR>

You should now install ES/os. Put the ES/os tape 1 in the drive.

Software package installation

Please mount the (first, if multiple tapes) distribution tape, then press return... <CR>

Installation Instructions

Rewinding the tape...
Verifying tape id... ok

Extracting packaging information tree... ESos2.2

=====
checking subpackages
=====

The following subpackages may be installed:

root -- ES/os Standard Root Filesystem
usr -- ES/os Standard /usr Filesystem
usr_help -- ES/os Standard /usr help facilities
usr_dvlp -- ES/os Standard /usr Development files (header files & libraries)
usr_terms -- ES/os Standard /usr Miscellaneous Terminal descriptions
cmplrs -- MIPS-C Compiler
cmplrs-bsd43 -- MIPS-C 4.3 BSD Include Files and Libraries
man -- ES/os Utilities and Administration Manual Pages
man_misc -- ES/os SPP Manual Pages
bsd43 -- ES/os 4.3 BSD Utilities
bsd43_troff -- ES/os 4.3 BSD Troff Utilities and Libraries
bsd43_dvlp -- ES/os 4.3 BSD Include Files and Libraries
reconfig -- Kernel Binary Reconfiguration Components
emacs -- emacs
posix -- ES/os POSIX P1003.1 Include Files, Commands and Libraries
uucp -- UUCP
sccs -- SCCS
news_readers -- News Readers
games -- Games
mh -- mh

=====
selecting subpackages
=====

You may select all of the above subpackages by answering "y" to the following question. If you answer "n" then you will be asked to select the optional subpackages you would like to have installed.

Install ALL subpackages (y n) [n]? n -> See Configuration Information - page 4-2

When asked if you want to install a subpackage, please answer with one of the following:

- y - Yes, you want to install the subpackage
- n - No, you do NOT want to install the subpackage
- l - List the contents of the subpackage and ask me again

Subpackage root will be installed
Subpackage m120-1 will be installed
Subpackage usr will be installed

Install subpackage usr_help (l y n) [n]? **n**
Install subpackage usr_dvlp (l y n) [n]? **n**
Install subpackage usr_terms (l y n) [n]? **n**
Install subpackage cmplrs (l y n) [n]? **y**
Install subpackage cmplrs-bsd43 (l y n) [n]? **n**
Install subpackage man (l y n) [n]? **y**
Install subpackage bsd43 (l y n) [n]? **y**
Install subpackage bsd43_troff (l y n) [n]? **n**
Install subpackage bsd43_dvlp (l y n) [n]? **n**
Install subpackage reconfig (l y n) [n]? **n**
Install subpackage emacs (l y n) [n]? **n**
Install subpackage posix (l y n) [n]? **n**
Install subpackage uucp (l y n) [n]? **n**
Install subpackage sccs (l y n) [n]? **n**
Install subpackage news_readers (l y n) [n]? **n**
Install subpackage games (l y n) [n]? **n**
Install subpackage mh (l y n) [n]? **n**

Selected subpackages:

root m120-1 usr cmplrs man bsd43

Is this what you want (y n) [y]? **y**

===== preserving local files =====

Running preserve -s for subpackage root... 0 files preserved.
No preserve list or findmods list for m120-3- preserve not executed.
Running preserve -s for subpackage usr... 0 files preserved.
No preserve list or findmods list for cmplrs- preserve not executed.
No preserve list or findmods list for man- preserve not executed.
No preserve list or findmods list for bsd43- preserve not executed

===== verifying disk space =====

Do you want to check for space (please do so unless you really understand the consequences) (y n) [y]? **y**

The system will now be checked to verify that there is enough disk space with the current configuration to successfully install the package (and any selected optional subpackages). For large packages (especially operating system packages), this can be time consuming...

Installation Instructions

There is enough space.

===== stripping old links =====

Stripping links for subpackage root...
Stripping links for subpackage usr...
Stripping links for subpackage cmplrs...
Stripping links for subpackage man...
Stripping links for subpackage bsd43...

===== extracting files from subpackage archives =====

rewinding the tape...
Verifying tape id... ok
Forward spacing the tape...

Loading subpackage: root...
Forward spacing the tape...
Forward spacing the tape...
Loading subpackage: usr...
Forward spacing the tape...
Loading subpackage: cmplrs...
Forward spacing the tape...
Loading subpackage: man...
Forward spacing the tape...
Loading subpackage: bsd43...
Forward spacing the tape...
rewinding the tape...

===== running comply =====

running first comply pass...
running second comply pass...

There were no comply messages...

===== doing uncompress Tue Jun 25 13:59:02 PDT 1991 =====

uncompress usr/bin/acctcom.Z
uncompress usr/bin/admin.Z
uncompress usr/bin/at.Z
.
.(Uncompresses Occur Here...)
.
uncompress usr/new/mh/vmh.Z

```
uncompress usr/new/mh/whatnow.Z
uncompress usr/new/mh/whom.Z
```

```
===== cleaning up old versions =====
```

An attempt will now be made to clean up any files left over from previous versions of the software which has just been installed.

Searching for old versions to remove...

Type 'y' to any Clean up prompts.

```
===== restoring preserved user files =====
```

```
Running preserve -r for subpackage root...
Running preserve -r for subpackage usr...
No preserve list or findmods list for cmplrs- no files restored.
No preserve list or findmods list for man- no files restored.
No preserve list or findmods list for bsd43- no files restored.
```

```
===== running conversion scripts =====
```

```
===== root.fstab Tue Jun 25 14:09:56 PDT 1991 =====
```

```
===== cleaning up =====
```

Remove install tools (y n) [n]? **y**

```
===== installation complete =====
```

Are you going to use ES/PEX Server 2.2 on any of the clients? (y n) [y]? **y**

You should now install ES/PEX Server 2.2. Put the ES/PEX Server tape in the drive. **<CR>**

Software package installation

Please mount the (first, if multiple tapes) distribution tape, then press return... **<CR>**

rewinding the tape...

Verifying tape id... ok

Extracting packaging information tree... pexs2.2

Installation Instructions

===== checking subpackages =====

The following subpackages may be installed:

executables_s -- PEX 2.2 Executable Release
library_s -- PEX 2.2 Library Release
pexs-man -- PEX 2.2 Man Page Release
fstest -- fstest Release
xclients_s -- PEX 2.2 XClients Release
pexs-man-unformat -- Unformatted Man Page Release
demo_s -- Demo_s Release
contrib_s -- X Contributed clients

===== selecting subpackages =====

You may select all of the above subpackages by answering "y" to the following question. If you answer "n" then you will be asked to select the optional subpackages you would like to have installed.

Install ALL subpackages (y n) [n]? --> See Configuration Information

===== setting system clock/calendar =====

The current value of the clock is: Fri Mar 22 16:37:04 MST 1991
Is the clock correct (y n) [y]? y

===== verifying single-user mode =====

This system is not presently in a single-user run level. Installation of a package can fail if performed at this run level. We recommend that the system be brought to a single user run level (using "init S") prior to performing the installation.

Are you absolutely sure you wish to continue (y n) [n]? y

===== preserving local files =====

Running preserve -s for subpackage executables_s... 2 files preserved.
No preserve list or findmods list for library_s- preserve not executed.
No preserve list or findmods list for pexs-man- preserve not executed.
No preserve list or findmods list for fstest- preserve not executed.
No preserve list or findmods list for xclients_s- preserve not executed.
No preserve list or findmods list for pexs-man-unformat- preserve not executed.
No preserve list or findmods list for demo_s- preserve not executed.

No preserve list or findmods list for contrib_s- preserve not executed.

===== verifying disk space =====

Do you want to check for space (please do so unless you really understand the consequences) (y n) [y]? **Y**

The system will now be checked to verify that there is enough disk space with the current configuration to successfully install the package (and any selected optional subpackages). For large packages (especially operating system packages), this can be time consuming...

There is enough space.

===== stripping old links =====

Stripping links for subpackage executables_s...
Stripping links for subpackage library_s...
Stripping links for subpackage pexs-man...
Stripping links for subpackage fstest...
Stripping links for subpackage xclients_s...
Stripping links for subpackage pexs-man-unformat...
Stripping links for subpackage demo_s...
Stripping links for subpackage contrib_s...

===== extracting files from subpackage archives =====

rewinding the tape...
Verifying tape id... ok
Forward spacing the tape...

Loading subpackage: executables_s...
Forward spacing the tape...
Loading subpackage: library_s...
Forward spacing the tape...
Loading subpackage: pexs-man...
Forward spacing the tape...
Loading subpackage: fstest...
Forward spacing the tape...
Loading subpackage: xclients_s...
Forward spacing the tape...
Loading subpackage: pexs-man-unformat...
Forward spacing the tape...
Loading subpackage: demo_s...
Forward spacing the tape...

Installation Instructions

Loading subpackage: contrib_s...
Forward spacing the tape...
rewinding the tape...

===== running comply =====

running first comply pass...
running second comply pass...
There were no comply messages from the second pass.

===== cleaning up old versions =====

An attempt will now be made to clean up any files left over from previous versions of the software which has just been installed.

Searching for old versions to remove...

NOTE: These messages appear if you have a previous version of ES/PEX Server installed on your system.

Clean up pexs.executables_s 2.0 (y n) [n]? **y**
Clean up pexs.library_s 2.0 (y n) [n]? **y**
Clean up pexs.pexs-man 2.0 (y n) [n]? **y**
Clean up pexs.fstest 2.0 (y n) [n]? **y**

There are no longer any boms present for any subpackages from //usr/pkg/lib/pexs2.0 version 2.0. This probably indicates that no subpackages installed from this package are still present on the system.

Remove the packaging information tree for this package (y n) [y]? **y**

===== restoring preserved user files =====

Running preserve -r for subpackage executables_s...
No preserve list or findmods list for library_s- no files restored.
No preserve list or findmods list for pexs-man- no files restored.
No preserve list or findmods list for fstest- no files restored.
No preserve list or findmods list for xclients_s- no files restored.
No preserve list or findmods list for pexs-man-unformat- no files restored.
No preserve list or findmods list for demo_s- no files restored.
No preserve list or findmods list for contrib_s- no files restored.

===== running conversion scripts =====

===== pexs-man.conversion Tue Jun 25 15:09:45 PDT 1991 =====

Manpage Conversion...

x_man exists

P_man exists

Done.

===== cleaning up =====

Remove install tools (y n) [n]? y

===== doing uncompress Tue Jun 25 15:09:02 PDT 1991 =====

===== installation complete =====

Fixing up all the directories and links...

mv: posix: No such file or directory

rmdir: usr/new/lib/emacs/lock: Directory does not exist

ln: Symbolic link ../../../../var/lib/emacs/lock to

usr/new/lib/emacs/lock: No such file or directory

Doing comply for ES/os 2.2 files and directories...

Comply Pass 1... done.

Comply Pass 2... done.

Doing comply for ES/PEX 2.2 files and directories...

Comply Pass 1... done.

Comply Pass 2... done.

No comply errors.

Building diskless database directory and files...

Done.

===== cleaning up =====

Remove install tools (y n) [n]? **y**

===== installation complete =====

Installation Instructions

```
# cd /usr/disklessDB
# ./client.setup
```

MIPS diskless client installation

Operation (add clone modify move del) [add]? **add**

Is this client a 25Mhz CPU? (y n) [y]? **n**

New Client Machine Name? []? **toddler** (for example only)

Is this client the gcpu of an LS system (y n) [n]? **y**

Enter toddler's inet address [130.187.100.xx]? **130.187.100.50**

Adding toddler to /etc/hosts.

Mode (master slave client none) [none]? **none**

Note: Your swap space size should be twice the physical memory of the Client.

Swap Space Size [32M]? **32M**

Client Root Directory [/usr/diskless/clients/toddler]? **<CR>**

Client Swap File Directory [/usr/diskless/clients/toddler]? **<CR>**

Client Dump File Directory [/usr/diskless/clients/toddler]? **<CR>**

Read Only usr Directory [/usr/diskless/dl_usr]? **<CR>**

Building environment for toddler.

Copying root directory... done.

Copying var directory... done.

Creating swap file... done.

Building devices... done.

Copying /etc/hosts for toddler

Creating etc/fstab for toddler

Creating etc/local_hostname for toddler

Adding toddler to /etc/bootparams

Adding toddler to /usr/etc/exports

Running /usr/etc/exportfs...

exported /usr/diskless/dl_usr

exported /usr/diskless/clients/toddler

done.

Creating link in /tftpboot for toddler

Starting /etc/rpc.bootparamd... done.

```
# sync; sync  
# telinit 0
```

```
>> auto (follow normal boot procedure at this point)
```

```
Autoboot: waiting to load lcs()tftboot/gcpu (CTRL-C to abort, RETURN to expedite) <CR>
```

For Local Server systems, you will need to boot the second CPU the same as above.

Installation is now complete.

ES/Kodak Printer Tape 2.2

In the following procedure, system output is shown in typewriter normal font, and user responses are shown in **typewriter bold** font. All user responses should be typed as shown and entered with a carriage return **<CR>**.

Installation Procedure Begins Here

Caution: It is recommended that YOU be the only user logged onto the machine while loading this software.

- 1) Insert ES/Kodak Printer Tape 2.2 into the tape drive.
- 2) If you are at the **xdm** login window box, type **ALT-F4**.
- 3) Login as **root**.
- 4) Type **cd /**
- 5) Type **/usr/pkg/bin/inst**

Software package installation

Install package relative to where [/]? **<CR>**

Please mount the (first, if multiple tapes) distribution tape, then press return... **<CR>**

Rewinding the tape...

Verifying tape id... ok

Extracting packaging information tree... kodak2.2

Installation Information:

Packages will be read in from the local Q24 tape drive.

Machine type: m120-1

Is the information above correct? (y n) [y]? **y**

=====
checking subpackages
=====

The following subpackages may be installed:

kodak -- Kodak 2.2 Release

=====
selecting subpackages
=====

You may select all of the above subpackages by answering "y" to the following question. If you answer "n" then you will be asked to select the optional subpackages you would like to have installed.

Install ALL subpackages (y n) [n]? **y**

===== setting system clock/calendar =====

The current value of the clock is: Wed Apr 10 13:25:26 MDT 1991

Is the clock correct (y n) [y]? **y**

===== verifying single-user mode =====

This system is not presently in a single-user run level. Installation of a package can fail if performed at this run level. We recommend that the system be brought to a single user run level (using "init S") prior to performing the installation.

Are you absolutely sure you wish to continue (y n) [n]? **y**

===== preserving local files =====

No preserve list or findmods list for kodak- preserve not executed.

===== verifying disk space =====

Do you want to check for space (please do so unless you really understand the consequences) (y n) [y]? **y**

The system will now be checked to verify that there is enough disk space with the current configuration to successfully install the package (and any selected optional subpackages). For large packages (especially operating system packages), this can be time consuming...

There is enough space.

===== stripping old links =====

Stripping links for subpackage kodak...

===== extracting files from subpackage archives =====

rewinding the tape...

Verifying tape id... ok

Forward spacing the tape...

Loading subpackage: kodak...

Forward spacing the tape...

rewinding the tape...

Installation Instructions

===== running comply =====

running first comply pass...

running second comply pass...

There were no comply messages from the second pass.

===== doing uncompress Wed Apr 10 13:26:20 MDT 1991 =====

===== cleaning up old versions =====

An attempt will now be made to clean up any files left over from previous versions of the software which has just been installed.

Searching for old versions to remove...

===== restoring preserved user files =====

No preserve list or findmods list for kodak- no files restored.

===== cleaning up =====

Remove install tools (y n) [n]? **y**

===== installation complete =====

To configure the SCSI printer device for the Kodak Printer, type the following while logged in as **root**:

```
mknod /dev/scsi/printer c 16 80; chmod 666 /dev/scsi/printer
```

Installation is complete

Visix Looking Glass Option

In the following procedure, system output is shown in typewriter normal font, and user responses are shown in **typewriter bold** font. All user responses should be typed as shown and entered with a carriage return <CR>.

- 1) Insert Visix Looking Glass tape into tape drive.
- 2) Login as **root**.
- 3) Type **/usr/pkg/bin/inst**

Software package installation

Install package relative to where [/]? **<CR>**

Please mount the (first, if multiple tapes) distribution tape, then press return... **<CR>**

Rewinding the tape...

Verifying tape id... ok

Extracting packaging information tree... lookglass2.1

Installation Information:

Packages will be read in from the local Q24 tape drive.
Machine type: m120-2

Is the information above correct? (y n) [y]? **y**

=====
checking subpackages
=====

The following subpackages may be installed:

lookglass -- Visix Looking Glass 2.1

=====
selecting subpackages
=====

You may select all of the above subpackages by answering "y" to the following question. If you answer "n" then you will be asked to select the optional subpackages you would like to have installed.

Install ALL subpackages (y n) [n]? **y**

=====
setting system clock/calendar
=====

The current value of the clock is: Fri Sep 13 11:03:08 MDT 1991

Installation Instructions

Is the clock correct (y n) [y]? **y**

===== verifying single-user mode =====

This system is not presently in a single-user run level. Installation of a package can fail if performed at this run level. We recommend that the system be brought to a single user run level (using "init S") prior to performing the installation.

Are you absolutely sure you wish to continue (y n) [n]? **y**

===== preserving local files =====

No preserve list or findmods list for lookglass- preserve not executed.

===== verifying disk space =====

Do you want to check for space (please do so unless you really understand the consequences) (y n) [y]? **y**

The system will now be checked to verify that there is enough disk space with the current configuration to successfully install the package (and any selected optional subpackages). For large packages (especially operating system packages), this can be time consuming...

There is enough space.

===== stripping old links =====

Stripping links for subpackage lookglass...

===== extracting files from subpackage archives =====

rewinding the tape...

Verifying tape id... ok

Forward spacing the tape...

Loading subpackage: lookglass...

Forward spacing the tape...

rewinding the tape...

===== running comply =====

running first comply pass...

running second comply pass...

There were no comply messages from the second pass.
===== doing uncompress Fri Sep 13 11:06:21 MDT 1991 =====

===== cleaning up old versions =====

An attempt will now be made to clean up any files left over from previous versions of the software which has just been installed.

Searching for old versions to remove...

===== restoring preserved user files =====

No preserve list or findmods list for lookglass- no files restored.

===== cleaning up =====

Remove install tools (y n) [n]? **y**

===== installation complete =====

Run the Installation Shell Script

1) Type **cd /usr/visix/install**

2) Type **./lg_install**

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You can choose the standard installation or the custom installation. The standard installation procedure links the proper Looking Glass file into the standard system directories (/etc and /usr/bin).

The custom installation procedure allows you to specify where files are to be linked, and allows you to handle non-standard systems.

If you are not sure which to do, try the standard installation. If you plan to install Looking Glass on only one machine and have other machines access it over the network, you will probably want to use the custom installation to a unique directory location.

Do you want to perform the standard installation procedure? [y/n/q] **y**

Logging application directories to /etc/visix.apps...

Creating executable shell script files...

lg (shell script)

lg_pause (shell script)

Installation Instructions

lg_convert (shell script)
fss (shell script)
build_db (shell script)
db_build (shell script)
db_remove (shell script)
assigndef (shell script)
ftc (shell script)
vice (shell script)
icon_merge (shell script)
icon_convert (shell script)
vls (shell script)
vls_add (shell script)
vls_del (shell script)
vls_where (shell script)

Linking 'English_United.States_ISO.8859.1' version files...

Assigning access permissions for data files...

lg.hlp
help_images.vr
lg_icons.vr
look.vr
icons.sym
LG_rulebase
exclude.lgdb
Makefile
records.sym
ftdefs.h
records.sym
class.ftc
data.ftc
dev.ftc
gen.ftc
prog.ftc
ftdefs.loc.h
class.loc.ftc
data.loc.ftc
dev.loc.ftc
gen.loc.ftc
prog.loc.ftc
helpwins.vr
colors
system.vr
vuistrs.vr

```
lang_time
lang_specs
vice.vr
vice.hlp
```

Duplicating data files...

Installation complete.

Activate the License Keys

1) At the system prompt, enter:

```
/usr/bin/vls_add
```

```
creating new data file '/usr/visix/vls/default/vls.data'
enter license number to add:<enter 1st number here>
enter license number to add:<enter 2nd number here>
enter license number to add:<CR>
database file '/usr/visix/vls/default/vls.data' updated ...
run 'vls -l' to check validity of license numbers
```

2) Once the program has exited, verify that the keys were entered correctly by entering:

```
vls -l
```

3) Check the list of license keys. Make sure that the anticipated number of users and CPUs are able to run Looking Glass. If the numbers were entered correctly, go to next procedure.

If NOT, you will need to delete the incorrect key(s). Do this by typing the following:

```
vls_del
```

Enter the mis-typed key and press <CR>, then exit the script with another <CR>.

Authorize License Server Host Machines

This step is only necessary if you intend to run Looking Glass and the License Server on different machines.

- 1) Type `cd /usr/visix/vls/default`
- 2) Edit the file `vls.hosts` using a text editor (*i.e.*, `emacs`, `-nw`, or `vi`).
- 3) Add as the first line of the file the hostname of the system which is running the Visix License Server.
- 4) Save the file `vls.hosts` with the above changes.
- 5) Log out of `root`.

Starting Looking Glass for the First Time

- 1) Login to your user account while in the root screen (blue screen).

Installation Instructions

- 2) Add the following lines to your **.Xdefaults** file in your home directory using a text editor of choice (*i.e.*, **emacs**, **-nw**, or **vi**):

----- Under the Mwm defaults -----

```
Mwm*clientAutoPlace: False
```

```
Mwm*positionIsFrame: False
```

- 3) Start the X Server (*i.e.*, **xinit**, **startesvx**, **xdm**)

- 4) Run the following script while in your home directory logged on as you, by typing:

```
/usr/bin/newLGuser.sh <your username>
```

```
==== Installing <your username>
```

```
==== Finished with <your username>
```

This script sets up a default factory environment for Looking Glass to use.

Caution: If your system is running “Yellow Pages,” you will need to copy a file as follows before typing the commands in steps 5 and 6.

a) Type **cd /etc**

b) Type **cp vis.conf.lookglass vis.conf**

Failure to do this will cause Looking Glass to appear to hang when you type **lg &**

- 5) Type **vis**

- 6) Type **lg &**

The software will start with initial preset defaults (*i.e.*, colors, window placement, *etc.*). Any changes you make to these settings during your session will be saved automatically in the **/lg** file in your home directory. Refer to the tutorial for information on changing these defaults.

Automatic Startup of Looking Glass

If you would like Looking Glass to startup at login every time, add the following lines to both your **.xsession** and **.xinitrc** files located in your home directory:*

```
vis
```

```
lg &
```

* If these files don't exist in your home directory, you may copy sample **.xsession** and **.xinitrc** files (as well as others) from the directory **/usr/src/samples**. Type **ls -a** to see these files. These files already have the new Looking Glass commands inserted.

A. 1.3 Xdefaults File

```
##### xterm #####
#
xterm*jumpScroll:           on
xterm*scrollBar:           on
xterm*saveLines:           400
xterm*font:                 6x13
xterm*TitleBar:            on
xterm*DeiconifyWarp:       on
#ifdef COLOR
xterm*Background:          #00294d
xterm*Foreground:          #ffffff
xterm*border:              #ff1493
xterm*cursorColor:         #ffff00
xterm*pointerColor:        #ff0000
#endif
#
##### emacs #####
#
emacs*geometry:             81x35+0+0
emacs.Title:                Emacs
emacs.TitleBar:             on
emacs*Font:                 9x15
emacs*BitMapIcon:           on
#ifdef COLOR
#emacs*Background:         #00294d
#emacs*Foreground:         #ffffff
#emacs*Background:         #102030
#emacs*Foreground:         #ffc080
#emacs*foreground:         #ffffff
#emacs*cursorColor:        #ffff00
#endif
#
##### xlogo #####
#
#ifdef COLOR
xlogo*Background:          #00294d
xlogo*Foreground:          #ffff00
#endif
#
##### xload #####
```

1.3 Xdefaults File

```
#
#ifdef COLOR
xload*highlight:           #ffff00
xload*Background:         #f4a460
xload*Foreground:         #000000
#endif
#
##### oclock #####
#
#ifdef COLOR
Clock*Background:         #f4a460
Clock*BorderColor:        #00294d
Clock*hour:               black
Clock*jewel:              black
Clock*minute:             black
#endif
#
##### xclock #####
#
#ifdef COLOR
xclock*Background:        #000000
xclock*Border:            #ffffff
xclock*Foreground:        #ffff00
xclock*Hands:             #ffffff
#endif
xclock*Mode:              analog
xclock*Update:            1
#
##### xbiff #####
#
xbiff*geometry:           80x80
#ifdef COLOR
xbiff*Border:             #ffffff
xbiff*Update:             1
xbiff*Background:        #b0ffff
xbiff*Foreground:        #902030
#endif
#
##### xclipboard #####
#
#ifdef COLOR
xclipboard*form*quit*Background:  #00294d
xclipboard*form*quit*Foreground:  #ffff00
xclipboard*form*delete*Background: #00294d
```

```

xclipboard*form*delete*Foreground:      #ffff00
xclipboard*form*new*Background:         #00294d
xclipboard*form*new*Foreground:         #ffff00
xclipboard*form*next*Background:       #00294d
xclipboard*form*next*Foreground:       #ffff00
xclipboard*form*prev*Background:       #00294d
xclipboard*form*prev*Foreground:       #ffff00
xclipboard*form*text*Background:       #f4a460
xclipboard*form*text*Foreground:       #000000
#endif
XClipboard.geometry:                    280x250+578+173
#
##### xfontsel #####
#
XFontSel*ShapeStyle:                   Oval
#ifdef COLOR
XFontSel*quitButton*Background:        #00294d
XFontSel*quitButton*Foreground:        #ffff00
XFontSel*ownButton*Background:         #00294d
XFontSel*ownButton*Foreground:         #ffff00
XFontSel*commandBox.Background:        #f4a460
XFontSel*countLabel.Background:        #f4a460
#XFontSel*fieldBox.Background:         #f4a460
XFontSel*fieldBox*Background:          #f4a460
XFontSel*fontName*Background:          #f4a460
XFontSel*sampleText*Background:        #f4a460
#endif
#
##### xeyes #####
#
#ifdef COLOR
XEyes*Foreground:                      #00294d
XEyes*Background:                      #f4a460
xeyes*outline:                          firebrick
xeyes*center:                           grey80
XEyes*BorderColor:                      black
#endif
#
##### xfd #####
#
Xfd*ShapeStyle:                        Oval
#ifdef COLOR
Xfd*Background:                         #f4a460
Xfd*Foreground:                         #000000

```

1.3 Xdefaults File

```
Xfd*quit.Background:      #00294d
Xfd*quit.Foreground:      #ffff00
Xfd*prev.Background:      #00294d
Xfd*prev.Foreground:      #ffff00
Xfd*next.Background:      #00294d
Xfd*next.Foreground:      #ffff00
Xfd*select*Background:    #f4a460
Xfd*metrics*Background:   #f4a460
Xfd*range*Background:     #f4a460
Xfd*start*Background:     #f4a460
#endif
#
##### xman #####
#
xman*ShapeStyle:          Oval
#ifdef COLOR
xman*manualBrowser*search*manualPage*Background:  #f4a460
xman*manualBrowser*search*manualPage*Foreground:  #000000
xman*manualBrowser*search*apropos*Background:     #f4a460
xman*manualBrowser*search*apropos*Foreground:     #000000
xman*manualBrowser*search*cancel*Background:      #f4a460
xman*manualBrowser*search*cancel*Foreground:      #000000
xman*manualBrowser*search*value*Background:       #f4a460
xman*manualBrowser*search*value*Foreground:       #000000
xman*manualBrowser*likeToSave*yes*Background:     #f4a460
xman*manualBrowser*likeToSave*yes*Foreground:     #000000
xman*manualBrowser*SimpleMenu*Background:         #8b1a1a
xman*manualBrowser*SimpleMenu*Foreground:         #ffff00
xman*topLabel*Background:                          #f4a460
xman*manualBrowser*Background:                     #00294d
xman*manualBrowser*Foreground:                     #ffffff
xman*helpButton*Background:                        #00294d
xman*helpButton*Foreground:                        #ffff00
xman*quitButton*Background:                       #00294d
xman*quitButton*Foreground:                       #ffff00
xman*manpageButton*Background:                    #00294d
xman*manpageButton*Foreground:                    #ffff00
xman*manualPage*Background:                       #00294d
xman*manualPage*Foreground:                       #ffff00
xman*apropos*Background:                          #00294d
xman*apropos*Foreground:                          #ffff00
xman*displayManualPage*Background:                #00294d
xman*displayManualPage*Foreground:                #ffffff
xman*displayDirectory*Background:                #8b1a1a
```

```
xman*displayDirectory*Foreground:          #ffffff
#endif
xman*pagesize:                             520x765+0+0
xman*bothShown:                            true
#
##### xcalc #####
#
xcalc*geometry:                            +885+5
#ifdef COLOR
xcalc*Foreground:                          #000000
xcalc*Background:                          #f4a460
xcalc*bevel.background:                    #00294d
xcalc*screen*background:                   #000000
xcalc*screen*foreground:                   #ffffff
xcalc*screen*DEG*foreground:               #ffff00
xcalc*screen*RAD*foreground:               #ffff00
xcalc*screen*GRAD*foreground:              #ffff00
xcalc*screen*INV*foreground:               #ffff00
xcalc*screen*P*foreground:                 #ffff00
xcalc*ti.button1*background:               #00294d
xcalc*ti.button2*background:               #00294d
xcalc*ti.button3*background:               #00294d
xcalc*ti.button4*background:               #00294d
xcalc*ti.button5*background:               #00294d
xcalc*ti.button6*background:               #00294d
xcalc*ti.button7*background:               #00294d
xcalc*ti.button8*background:               #00294d
xcalc*ti.button9*background:               #00294d
xcalc*ti.button10*background:              #00294d
xcalc*ti.button11*background:              #00294d
xcalc*ti.button12*background:              #00294d
xcalc*ti.button13*background:              #00294d
xcalc*ti.button14*background:              #00294d
xcalc*ti.button15*background:              #00294d
xcalc*ti.button16*background:              #00294d
xcalc*ti.button17*background:              #00294d
xcalc*ti.button18*background:              #00294d
xcalc*ti.button19*background:              #00294d
xcalc*ti.button20*background:              #00294d
xcalc*ti.button21*background:              #00294d
xcalc*ti.button22*background:              #00294d
xcalc*ti.button23*background:              #00294d
xcalc*ti.button24*background:              #00294d
xcalc*ti.button25*background:              #00294d
```

1.3 Xdefaults File

```
xcalc*ti.button26*background: #00294d
xcalc*ti.button27*background: #00294d
xcalc*ti.button28*background: #00294d
xcalc*ti.button29*background: #00294d
xcalc*ti.button30*background: #00294d
xcalc*ti.button31*background: #00294d
xcalc*ti.button32*background: #00294d
xcalc*ti.button33*background: #00294d
xcalc*ti.button34*background: #00294d
xcalc*ti.button35*background: #00294d
xcalc*ti.button36*background: #00294d
xcalc*ti.button37*background: #00294d
xcalc*ti.button38*background: #00294d
xcalc*ti.button39*background: #00294d
xcalc*ti.button40*background: #00294d
xcalc*ti.button1*foreground: #ffff00
xcalc*ti.button2*foreground: #ffff00
xcalc*ti.button3*foreground: #ffff00
xcalc*ti.button4*foreground: #ffff00
xcalc*ti.button5*foreground: #ffff00
xcalc*ti.button6*foreground: #ffff00
xcalc*ti.button7*foreground: #ffff00
xcalc*ti.button8*foreground: #ffff00
xcalc*ti.button9*foreground: #ffff00
xcalc*ti.button10*foreground: #ffff00
xcalc*ti.button11*foreground: #ffff00
xcalc*ti.button12*foreground: #ffff00
xcalc*ti.button13*foreground: #ffff00
xcalc*ti.button14*foreground: #ffff00
xcalc*ti.button15*foreground: #ffff00
xcalc*ti.button16*foreground: #ffff00
xcalc*ti.button17*foreground: #ffff00
xcalc*ti.button18*foreground: #ffff00
xcalc*ti.button19*foreground: #ffff00
xcalc*ti.button20*foreground: #ffff00
xcalc*ti.button21*foreground: #ffff00
xcalc*ti.button22*foreground: #ffffff
xcalc*ti.button23*foreground: #ffffff
xcalc*ti.button24*foreground: #ffffff
xcalc*ti.button25*foreground: #ffff00
xcalc*ti.button26*foreground: #ffff00
xcalc*ti.button27*foreground: #ffffff
xcalc*ti.button28*foreground: #ffffff
xcalc*ti.button29*foreground: #ffffff
```

```
xcalc*ti.button30*foreground: #ffff00
xcalc*ti.button31*foreground: #ffff00
xcalc*ti.button32*foreground: #ffffff
xcalc*ti.button33*foreground: #ffffff
xcalc*ti.button34*foreground: #ffffff
xcalc*ti.button35*foreground: #ffff00
xcalc*ti.button36*foreground: #ffff00
xcalc*ti.button37*foreground: #ffffff
xcalc*ti.button38*foreground: #ffffff
xcalc*ti.button39*foreground: #ffff00
xcalc*ti.button40*foreground: #ffff00
#
# HP button settings
#
xcalc*hp.button1*background: #00294d
xcalc*hp.button2*background: #00294d
xcalc*hp.button3*background: #00294d
xcalc*hp.button4*background: #00294d
xcalc*hp.button5*background: #00294d
xcalc*hp.button6*background: #00294d
xcalc*hp.button7*background: #00294d
xcalc*hp.button8*background: #00294d
xcalc*hp.button9*background: #00294d
xcalc*hp.button10*background: #00294d
xcalc*hp.button11*background: #00294d
xcalc*hp.button12*background: #00294d
xcalc*hp.button13*background: #00294d
xcalc*hp.button14*background: #00294d
xcalc*hp.button15*background: #00294d
xcalc*hp.button16*background: #00294d
xcalc*hp.button17*background: #00294d
xcalc*hp.button18*background: #00294d
xcalc*hp.button19*background: #00294d
xcalc*hp.button20*background: #00294d
xcalc*hp.button21*background: #00294d
xcalc*hp.button22*background: #00294d
xcalc*hp.button23*background: #00294d
xcalc*hp.button24*background: #00294d
xcalc*hp.button25*background: #00294d
xcalc*hp.button26*background: #00294d
xcalc*hp.button27*background: #00294d
xcalc*hp.button28*background: #00294d
xcalc*hp.button29*background: #00294d
xcalc*hp.button30*background: #00294d
```

1.3 Xdefaults File

```
xcalc*hp.button31*background: #00294d
xcalc*hp.button32*background: #00294d
xcalc*hp.button33*background: #00294d
xcalc*hp.button34*background: #00294d
xcalc*hp.button35*background: #00294d
xcalc*hp.button36*background: #00294d
xcalc*hp.button37*background: #00294d
xcalc*hp.button38*background: #00294d
xcalc*hp.button39*background: #00294d
xcalc*hp.button1*foreground: #ffff00
xcalc*hp.button2*foreground: #ffff00
xcalc*hp.button3*foreground: #ffff00
xcalc*hp.button4*foreground: #ffff00
xcalc*hp.button5*foreground: #ffff00
xcalc*hp.button6*foreground: #ffff00
xcalc*hp.button7*foreground: #ffffff
xcalc*hp.button8*foreground: #ffffff
xcalc*hp.button9*foreground: #ffffff
xcalc*hp.button10*foreground: #ffff00
xcalc*hp.button11*foreground: #ffff00
xcalc*hp.button12*foreground: #ffff00
xcalc*hp.button13*foreground: #ffff00
xcalc*hp.button14*foreground: #ffff00
xcalc*hp.button15*foreground: #ffff00
xcalc*hp.button16*foreground: #ffff00
xcalc*hp.button17*foreground: #ffffff
xcalc*hp.button18*foreground: #ffffff
xcalc*hp.button19*foreground: #ffffff
xcalc*hp.button20*foreground: #ffff00
xcalc*hp.button21*foreground: #ffff00
xcalc*hp.button22*foreground: #ffff00
xcalc*hp.button23*foreground: #ffff00
xcalc*hp.button24*foreground: #ffff00
xcalc*hp.button25*foreground: #ffff00
xcalc*hp.button26*foreground: #ffff00
xcalc*hp.button27*foreground: #ffffff
xcalc*hp.button28*foreground: #ffffff
xcalc*hp.button29*foreground: #ffffff
xcalc*hp.button30*foreground: #ffff00
xcalc*hp.button31*foreground: #ffff00
xcalc*hp.button32*foreground: #ffff00
xcalc*hp.button33*foreground: #ffff00
xcalc*hp.button34*foreground: #ffff00
xcalc*hp.button35*foreground: #ffff00
```

```

xcalc*hp.button36*foreground: #ffffff
xcalc*hp.button37*foreground: #ffff00
xcalc*hp.button38*foreground: #ffff00
xcalc*hp.button39*foreground: #ffff00
#endif
#
##### xmh #####
#
xmh*Geometry:                               650x750
xmh*Font:                                     6x13
xmh*InitialIncFile:
xmh*MailWaitingFlag:                         true
xmh*printcommand:                             lpr
xmh*titlebar*reverseVideo:                   on
xmh*titlebar*Font:                           variable
xmh*folderButtons*close*label:               Close
xmh*folderButtons*compose*label:             Compose
xmh*folderButtons*open*label:                Open
xmh*folderButtons*openInNew*label:           Open in New
xmh*folderButtons*create*label:              Create
xmh*folderButtons*delete*label:              Delete
xmh*tocButtons*inc*label:                    Inc
xmh*tocButtons*next*label:                   View Next
xmh*tocButtons*prev*label:                   Prev
xmh*tocButtons*delete*label:                 Delete
xmh*tocButtons*move*label:                   Move
xmh*tocButtons*copy*label:                   Copy
xmh*tocButtons*unmark*label:                 Unmark
xmh*tocButtons*viewNew*label:                View New
xmh*tocButtons*reply*label:                  Reply
xmh*tocButtons*forward*label:                Forward
xmh*tocButtons*useAsComp*label:              Use as Comp
xmh*tocButtons*commit*label:                 Commit
xmh*tocButtons*openSeq*label:                Open Seq
xmh*tocButtons*addToSeq*label:               Add to Seq
xmh*tocButtons*removeFromSeq*label:          Remove from Seq
xmh*tocButtons*pick*label:                   Pick
xmh*tocButtons*deleteSeq*label:              Delete Seq
xmh*tocButtons*print*label:                  Print
xmh*tocButtons*pack*label:                   Pack
xmh*tocButtons*sort*label:                   Sort
xmh*tocButtons*rescan*label:                 Rescan
xmh*viewButtons*close*label:                 Close
xmh*viewButtons*reply*label:                 Reply

```

1.3 Xdefaults File

```
xmh*viewButtons*forward*label:      Forward
xmh*viewButtons*useAsComp*label:     Use as Comp
xmh*viewButtons*edit*label:         Edit
xmh*viewButtons*save*label:         Save
xmh*viewButtons*print*label:        Print
xmh*compButtons*close*label:        Close
xmh*compButtons*reset*label:        Reset
xmh*compButtons*compose*label:      Compose
xmh*compButtons*save*label:         Save
xmh*compButtons*send*label:         Send
xmh*confirm*yes*label:              Yes
xmh*confirm*no*label:              No
xmh*prompt*goAhead*label:           Go Ahead
xmh*prompt*cancel*label:           Cancel
#
##### mwm - Motif Window Manager Defaults #####
#
Mwm*shadowThickness:                6
#
# ----- Class Background -----
# Mwm*background:                    LightGray  #color
#ifdef COLOR
Mwm*background:                     #6e645a
#elseif
# Mwm*background:                    White      #monochrome
# Mwm*topShadowColor:                White
# Mwm*activeBackground:              CadetBlue #color
#ifdef COLOR
Mwm*activeBackground:                #8blala
#elseif
# Mwm*activeBackground:              White      #Monochrome
# Mwm*activeTopShadowColor:          varies
!Mwm*iconImageBackground:           #8blala
# Mwm*iconImageBackground:          icon background
# Mwm*iconImageTopShadowColor:      icon top shadow color
# Mwm*matteBackground:              background
# Mwm*matteTopShadowColor:          top shadow color
#
# ----- Class Foreground -----
# Mwm*foreground:                    varies
#ifdef COLOR
Mwm*foreground:                      #ffffff
#elseif
# Mwm*bottomShadowColor:            Black      #Monochrome
```

```

# Mwm*activebottomShadowColor:  varies
# Mwm*activeForeground:         varies
#ifdef COLOR
Mwm*activeForeground:          #ffff00
#endif
# Mwm*iconImageBottomShadowColor: icon bottom shadow
#ifdef COLOR
Mwm*iconbox*Foreground:        #00294d
#endif
# Mwm*iconImageForeground:      icon foreground
# Mwm*matteBottomShadowColor:   bottom shadow color
# Mwm*matteForeground:          foreground
#ifdef COLOR
Mwm*menu*foreground:           #ffff00
Mwm*menu*background:          #8blala
#endif
#
# ----- Class BackgroundPixmap -----
# Mwm*backgroundPixmap:         NULL          #Color
# Mwm*backgroundPixmap:         75_foreground  #Monochrome
# Mwm*activebackgroundPixmap:   NULL
#
# ----- Class BottomShadowPixmap -----
# Mwm*bottomShadowPixmap:       NULL
# Mwm*activeBottomShadowPixmap: NULL
# Mwm*matteBottomShadowPixmap:  bottom shadow pixmap
#
# Mwm*iconImageBottomShadowPixmap: icon bottom shadow pixmap
# ----- Class TopShadowPixmap -----
# Mwm*topShadowPixmap:          NULL          #color
# Mwm*topShadowPixmap:          50_foreground #Monochrome
# Mwm*activeTopShadowPixmap:    NULL          #color
# Mwm*activeTopShadowPixmap:    50_foreground #Monochrome
# Mwm*iconImageTopShadowPixmap: icon top shadow pixmap
# ----- Class Fontlist -----
# Mwm*fontlist:                 fixed
Mwm*menu*fontList:              variable
Mwm*icon.fontList:              variable
Mwm*fontList:                   -bitstream-charter-bold-r-normal--11-80-100-100-p-69-
                                iso8859-1
# ----- Class SaveUnder -----
# Mwm*saveUnder:                 F
# ----- Class AutoKeyFocus -----
# Mwm*autoKeyFocus:              T

```

1.3 Xdefaults File

```
# ----- Class AutoRaiseDelay -----
# Mwm*autoRaiseDelay:      500          # millisec
# ----- Class BitmapDirectory -----
# Mwm*bitMapDirectory:    /usr/include/X11/bitmaps
# ----- Class ButtonBindings -----
# Mwm*buttonBindings:     NULL
#
Mwm*buttonBindings:      ExplicitButtonBindings
#
# ----- Class CleanText -----
# Mwm*cleanText:          T
# ----- Class ClientAutoPlace -----
# Mwm*clientAutoPlace:    T
# ----- Class ClientDecoration -----
# Mwm*clientDecoration:   all          (all border maximize minimize)
#                          (none resize menu title)
Mwm*xclock*clientDecoration: border resizeh
Mwm*xload*clientDecoration: title menu minimize
Mwm*xbiff*clientDecoration: title menu minimize
Mwm*oclock*clientDecoration: title menu minimize maximize
Mwm*xcalc*clientDecoration: border title menu minimize
Mwm*xeyes*clientDecoration: title menu minimize
#
# ----- Class ClientFunctions -----
# Mwm*clientFunctions:    all          (all none resize move)
#                          (minimize maximize close)
# ----- Class ColormapFocusPolicy -----
# Mwm*colormapFocusPolicy: keyboard
# ----- Class ConfigFile -----
# Mwm*configFile:         .mwmrc
# ----- Class DeiconifyKeyFocus -----
# Mwm*deiconifyKeyFocus:  T
# ----- Class DoubleClickTime -----
# Mwm*doubleClickTime:    500          # millisec
# ----- Class EnforceKeyFocus -----
# Mwm*enforceKeyFocus:    T
# ----- Class FadeNormalIcon -----
# Mwm*fadeNormalIcon:     F
#
Mwm*fadeNormalIcon:      T
#
# ----- Class FocusAutoRaise -----
# Mwm*focusAutoRaise:    T
# ----- Class FrameBorderWidth -----
```

```

# Mwm*frameBorderWidth:      5          # Pixels
# ----- Class IconAutoPlace -----
# Mwm*iconAutoPlace:         T
# ----- Class IconBoxGeometry -----
# Mwm*iconBoxGeometry:       6x1+0-0
#
Mwm*iconBoxGeometry:         3x1+611+5
#
# ----- Class IconBoxName -----
# Mwm*iconBoxName:           iconbox
# ----- Class IconBoxTitle -----
# Mwm*iconBoxTitle:          Icons
Mwm*iconBoxTitle:           Demo Icons
# ----- Class IconClick -----
# Mwm*iconClick:             T
# ----- Class IconDecoration -----
# Mwm*iconDecoration:        varies
# ----- Class IconImage -----
# Mwm*IconImage:             (image)   # pathname
Mwm*xterm*IconImage:         /usr/include/X11/bitmaps/xlogo32
# ----- Class IconImageMaximum -----
# Mwm*iconImageMaximum:     50x50
# ----- Class IconImageMinimum -----
# Mwm*iconImageMinimum:     32x32
# ----- Class IconPlacement -----
# Mwm*iconPlacement:         left bottom (top bottom left right)
# ----- Class IconPlacementMargin -----
# Mwm*iconPlacementMargin:   varies
# ----- Class InteractivePlacement -----
# Mwm*interactivePlacement:  F
# ----- Class KeyBindings -----
# Mwm*keyBindings:           system
# ----- Class KeyboardFocusPolicy -----
# Mwm*keyboardFocusPolicy:   explicit
Mwm*keyboardFocusPolicy:     pointer
# ----- Class LimitResize -----
# Mwm*limitResize:           T
# ----- Class LowerOnIconify -----
# Mwm*lowerOnIconify:        T
# ----- MatteWidth -----
# Mwm*matteWidth:            0          # pixels
# ----- Class MaximumClientSize -----
# Mwm*maximumClientSize:     fill the screen
# ----- Class MaximumMaximumSize -----

```

1.3 Xdefaults File

```
# Mwm*maximumMaximumSize:      2xscreen (w&h)
# ----- Class MoveThreshold -----
# Mwm*moveThreshold:           4          # Pixels
# ----- Class PassButtons -----
# Mwm*passbuttons:             F
# ----- Class PassSelectButton -----
# Mwm*passSelectButton:       T
# ----- Class PositionIsFrame -----
# Mwm*positionIsFrame:        T
# ----- Class PositionOnScreen -----
# Mwm*positionOnScreen:       T
# ----- Class QuitTimeout -----
# Mwm*quitTimeout:            1000       # millisecc
# ----- Class ResizeBorderWidth -----
# Mwm*resizeBorderWidth:      10          # Pixels
# ----- Class ResizeCursors -----
# Mwm*resizeCursors:          T
# ----- Class ShowFeedback -----
# Mwm*ShowFeedback:           all          (all behavior move none)
#                               (placement resize restart)
# ----- Class StartupKeyFocus -----
# Mwm*startupKeyFocus:        T
# ----- Class TransientDecoration -----
# Mwm*transientDecoration:    system title
# ----- Class TransientFunctions -----
# Mwm*transientFunctions:     -minimize-maximize
# ----- Class UseClientIcon -----
# Mwm*useClientIcon:          F
#
# Mwm*defaults*useClientIcon: True
#
# ----- Class UseIconButton -----
# Mwm*useIconButton:          F
Mwm*useIconButton:            True
# ----- Class WindowMenu -----
# Mwm*windowMenu:             varies
# ----- Class WMenuButtonClick -----
# Mwm*wMenuButtonClick:       T
# ----- Class WMenuButtonClick2 -----
# Mwm*wMenuButtonClick2:      T
#-----
```

B. Documentation Corrections

You should note the following corrections to the ESV documentation with the 2.2 Release. Change pages are found after this appendix.

ESV Workstation User's Manual

“4. Customizing the System”

Several new features are documented in this chapter. Replace the existing chapter in your documentation with this new version.

ESV Workstation Reference Manual

“1. ES/PEX”

This chapter has been updated to reflect the 2.2 Release functionality. Replace the existing chapter in your documentation with this new version.

“2. X Extensions”

This chapter has been updated to reflect the 2.2 Release. Replace the existing chapter in your documentation with this new version.

ESV Workstation Applications and Options

“Helpful Hints”

Helpful hints have been added. Add these new pages to your documentation.

“Application Notes”

A Table of Contents has been added. Application note 7 has been revised and application notes 8 and 9 have been added. Add these new pages to your documentation.

“Spaceball User's Manual [2.0]”

On page 1-1, step 2 in the installation procedure should read:

- “2) Plug this end of the cable into the gender changer, and then into an unused port (**tty0** or **tty3**) of the ESV Workstation.

ES/PHIGS Reference Manual [2.0]

SET DEPTH CUE REPRESENTATION

The description for **SET DEPTH CUE REPRESENTATION** is incorrect. The description contradicts itself by first saying: "Refplanes and scaling entries of 0 are back reference plane and corresponding scaling factors" and then saying: "The first number in scaling specifies the portion of the primitive colour that is combined with the depth cue colour at, or in front of, the front reference plane."

The first statement is true, the second is false.

SET ERROR HANDLER

The **SET ERROR HANDLER** routine is incorrectly called **SET ERROR HANDLING**.

Missing Functions

The manual pages (both printed and on-line) are missing for the functions **INQUIRE LIST OF AVAILABLE GENERALIZED STRUCTURE ELEMENTS** and **SET BACK REFLECTANCE EQUATION**.

INQUIRE LIST OF AVAILABLE GENERALIZED STRUCTURE ELEMENTS is similar in function to **INQUIRE LIST OF AVAILABLE GENERALIZED DRAWING PRIMITIVES**. The list of parameters for the two routines is the same and can be found on the **INQUIRE LIST OF AVAILABLE GENERALIZED DRAWING PRIMITIVES** manual page.

SET BACK REFLECTANCE EQUATION is similar in function to **SET REFLECTANCE EQUATION**. The list of parameters for the two routines is the same and can be found on the **SET REFLECTANCE EQUATION** manual page.

Helpful Hints

System

Script Programming

Make sure you never have `if (. . .)` in your script. Always have a space after each “if,” as in `if ($?TERM == 1)`.

Password Protection for Single User Boot

Turning on password protection for the single user boot requires a change to **init** and **su**.

With the modified executables, if the file `/etc/single.passreq` exists then you must type in the root password before being allowed into single user mode. Therefore the only way to fix a corrupted **passwd** file when this mode is enabled is to boot the miniroot and mount the root filesystem to do repairs.

xtitle

The client **xtitle** has been added in the 2.2 Release. This utility can change the title of an **xterm** window, its icon, or both. The new string may be any valid string of characters. Special characters `*`, `?`, `/`, `[`, `]` must be escaped. If the string contains blanks, the entire expression must be placed in quotes (“”).

ES/PEX

Specular and Light Concentration

The ESV Workstation uses the specular concentration surface property and spot light concentration values differently from many other graphics devices. Other devices use these values as exponents in the lighting equation, raising a value to a power. As a result, large values (60 or more) are needed to create a tight highlight. The ESV Workstation treats these values like the other coefficients in the surface property. A value of 0 gives highlights with minimum concentration, and a value of 1 gives maximum concentration. A useful equation to convert values from another system to the value used by ESV Workstation is: **ESV concentration = log(concentration) + log(256)**.

xdm

If **xdm** error logging is activated and **xdm** runs for a long period of time, the disk space may fill up and the server crash. The **rgb.dat** file can be corrupted by such a crash. To prevent this, the **xdmerror** log file in the 2.2 Release has been set to the default value **/dev/null**.

If you want the errors to go to a **log** file, you have to log in as **root** and edit the **/usr/lib/X11/xdm** file by changing the line

```
DisplayManager.errorLogFile: /dev/null
```

to

```
DisplayManager.errorLogFile: /usr/tmp/xdm-errors
```

Multiscreen Selection Information

The default **.mwmrc** file which is supplied with the ESV system in **/usr/lib/X11/system.mwmrc** allows screen selection to be done using one of the mouse keys.

A possible alternative is to use keyboard keys to select screens. The following could be added to your local **.mwmrc** file to accomplish this. Note that this was written for six screens but could be modified according to the number of screens the X server is started with.

```
# .mwmrc -- mwm configuration file
#
# key binding descriptions
#
Keys DefaultKeyBindings
{
Ctrl Shift<Key>F1 root|icon|window !"screen 0"
Ctrl Shift<Key>F2 root|icon|window !"screen 1"
Ctrl Shift<Key>F3 root|icon|window !"screen 2"
Ctrl Shift<Key>F4 root|icon|window !"screen 3"
Ctrl Shift<Key>F5 root|icon|window !"screen 4"
Ctrl Shift<Key>F6 root|icon|window !"screen 5"
}
```

Polyline Set Slowdown

The DSPs need large polylines (about 15-30 coordinates minimum per polyline) in order to work efficiently and reach the maximum line drawing performance.

Using PPERSPECTIVE with GDP Spheres Stops HLHSR

If you use **PPERSPECTIVE** with **GDP** spheres, the hidden surface removal is effectively turned off even though **HLHSR ID** and mode are set.

List of Application Notes

AN1. Exabyte

AN2. Trackball

AN3. Serial-to-Parallel Converter

AN4. Video Extension Cables

AN5. Distribution Amplifiers

AN6. CIPHER Tape Drive

AN7. External SCSI Cables and Terminators

AN8. Peripheral Expansion Enclosures – Tabletop

AN9. Peripheral Device Configuration



AN7. External SCSI Cables and Terminators

Overview

This application note describes the available external SCSI cables and terminators and the pertinent SCSI operating parameters.

SCSI devices use two types of connectors:

- 50-pin, “alternative-2,” or “Alt2”
(also called the “Amp Champ” or the “Centronics” type)
- 50-pin, D

Each external SCSI device requires an external SCSI cable which must be purchased separately. The specific cable needed will depend on the device being purchased, the device(s) already present on the external SCSI bus, and future plans for adding additional devices. The last device on the external SCSI bus will require a terminator which must also be purchased separately.

Operating Parameters

A total of seven SCSI devices can be connected to the SCSI bus, in addition to the CPU. For example, four devices can be connected via external cables if the ESV has one tape drive and two disk drives installed inside the cabinet.

There is an input and output connector provided on each external SCSI device. The input connector accommodates the cable from the host or previous device. The output connector is provided to allow for daisy chain configurations to the next device or the placement of a SCSI bus terminator. A terminator must be attached to the last device in the daisy chain.

The total length of the external cable(s) cannot exceed 11 feet. This limitation includes SCSI cables that are often found inside external SCSI equipment such as disk-drive enclosures. Failure to properly install a terminator, the presence of more than one external terminator or the use of cable exceeding 11 feet may cause a system crash.

Cables

It is recommended that only the following cables be used with SCSI devices in order to avoid impedance discontinuity and EMI problems. There are five cables each of which are available in 2, 4, and 6 feet lengths:

Cable Number and Description	P/N (2 ft)	P/N (4 ft)	P/N (6 ft)
(1) male, 50-pin, Alt2 / male, 50-pin, D	423203-002	423203-004	423203-006
(2) male, 50-pin, Alt2 / male, 50-pin, Alt2	401013-002	401013-004	401013-006
(3) male, 50-pin, D / male, 50-pin, D	401010-002	401010-004	401010-006
(4) male, 50-pin, Alt2 / female, 50-pin, D	401012-002	401012-004	401012-006
(5) male, 50-pin, D / female, 50-pin, D	401011-002	401011-004	401011-006

In most cases cable 1 will be the correct cable to purchase for use with the first SCSI device to be connected to the ESV. Cable 2 will usually be the correct cable to purchase when subsequent external SCSI devices are added to the system. The type of cable actually required can be determined by reading the appropriate application note for a particular SCSI device. Cable 1 will typically be used in the 6 foot length and cable 2 will generally be used in the 2 foot length. However, any combination of cable lengths can be used as long as the total does not exceed 11 feet.

Cables 3, 4, and 5 are used with the DS2000 Data Shuttle or other devices that have unusual connectors. Cable 3 can be used to connect the ESV to the DS2000 Data Shuttle. Cable 4 can be used to daisy chain devices with a Alt2 connector to the DS2000 Data Shuttle. Cable 5 can be used to daisy chain DS2000 Data Shuttles to each other.

Terminators

Terminator	Part Number	Notes
male, 50-pin, Alt2	401258-050	most external SCSI devices use this terminator
male, 50-pin, D	401272-050	used on the ESV, it must be attached to the I/O panel if no external SCSI devices are present
female, 50-pin, D	401294-050	used with the DS2000 Data Shuttle

AN8. Peripheral Expansion Enclosures – Tabletop

Functional Characteristics

These enclosures allow 5-1/4 inch disk drives to be connected to the external SCSI bus.

Product Details

Three enclosures are available to meet the needs of users wanting to add one, two or three external 5 1/4-inch disk drives:

P/N	Max # Drives	WxLxH (in)	P/N (6 ft)
405213-001	1	9.25 X 13.10 X 5.22	12 lbs
405213-002	2	14.00 X 16.50 X 5.22	18 lbs
405213-003	3	12.63 X 18.12 X 8.25	30 lbs

Maximum power requirements are approximately 0.75 A @ 120 VAC per disk drive. AC input voltage (auto ranging) is 90-260 VAC. AC input frequency is 47 to 63 Hz. Two Centronics-type (alternate 2) connectors are provided on each enclosure to facilitate connection to the external SCSI bus. These enclosures are suitable for tabletop placement.

Supplemental Information

An external SCSI cable must be purchased separately. To connect one of these enclosures directly to an ESV use part number 423203-XXX (where XXX indicates cable-length options). To daisychain an enclosure to another external SCSI device with a Centronics-type connector use part number 401013-XXX. These enclosures use approximately one foot of SCSI cable (inside the enclosure) for each disk drive. Therefore, the maximum external SCSI cable length should be reduced by an appropriate amount. If a terminator is required use part number 401258-050. (Remember that only one terminator is required on the external SCSI bus.) See Application Note 7 for additional instructions on selecting a cable or a terminator.



AN9. Peripheral Device Configuration

Overview

This note describes the various peripherals that are supported on the ESV Workstation and how they can be configured into the system. The first part of this note describes how to set up the device files to match the particular system configuration, and the second part gives a more detailed description of each device and any setup that may be necessary for its proper operation.

The devices currently supported are listed below.

- Optical mouse
- CDRS dial box with labels
- Keyboard
- Wacom tablets
- SummaGraphics tablets
- Button box
- Spaceball

All these devices can be configured to work through the CPU's I/O port or the RDC. Exactly where the system expects the device to be is part of the configuration information in the device file.

UNIX Device Files

Device files are the special files (*/dev/mouse*, */dev/tty0*, *etc.*) that enable UNIX to "talk" to devices. These are not normal text files. To create them you have to use the UNIX **mknod** program.

For example, if you log in as **root** and type the following:

```
mknod /dev/mouse c 90 17
```

you create the special device file called **/dev/mouse** and assign it the major number 90 and minor number 17. The major number tells UNIX which device driver to use. The minor number is then passed as a parameter to the specified device driver.

The driver uses this information to setup the device and allow you to use it. The following are the devices and their major numbers. A particular device always uses the same major number, but may use different minor numbers for different configurations.

90	Optical mouse (1200 Baud)
86	Optical mouse (9600 Baud)
87	Keytronic 101 keyboard
88	Wacom tablet (15 inch x 15 inch)
91	Wacom tablet (18 inch x 25 inch)
98	Wacom tablet (6 inch x 9 inch)
85	SummaGraphics tablet (6 inch x 9 inch)
93	SummaGraphics tablet (12 inch x 12 inch)
89	CDRS dial box with labels
83	Honeywell button box
97	Spacial Systems Spaceball

Keep in mind that each tablet is a different device to the device driver. If you have a Wacom 15 inch x 15 inch tablet you need to use major number 88. Another size or kind of tablet, however, has to use a different major number.

The minor number has a special meaning to the driver. The minor number allows you to specify the RDC port and/or CPU port at which the device is located. (For more information on the RDC, see chapter 2, "Product Overview" in the *ESV Workstation User's Manual*.) In fact you could have two dial boxes, one called `/dev/dials` and the other called `/dev/dials2` plugged into the system at the same time. As long as the minor numbers specify different ports, they can both be used. The keyboard is the only exception to this. Only one keyboard is allowed. It is allowed only on port 2 of the CPU or port A of the RDC (but not both).

The minor number is an 8 bit integer that can have a value from 0 to 255. The driver splits these 8 bits into two parts to determine the port information. The four least significant bits (bits 0-3) are used to identify the RDC port that the device can be plugged into. The four most significant bits (bits 4-6) identify the CPU port that can be used.

RDC ports 0-5 correspond to the labels A through F (with A reserved for keyboard only). An RDC port value of 15 instructs the device driver not to look on the RDC at all for the device.

The CPU I/O ports are tricky because some have more than one function. They are described in table AN9-1 below. Refer to figure AN9-1 at the end of this note for the location of each port on the I/O panel and figure AN9-2 for

the location of the ports on the RDC. A CPU port value of 7 instructs the device driver not to look on the CPU for the device.

Table AN9-1. CPU I/O port functions

Port	Purpose
Port 0	This is a general purpose port. It has both RS232 and 6 pin DIN connector. Only one of these connectors can be in use at a time. It also has modem control lines hooked up.
Port 1	This is the Mouse/RDC/Debug port. If there is no RDC on the system, then the mouse goes here. If there is an RDC, this is the port that the drivers use to talk to the RDC. Also the boot PROM uses this port for the debug terminal if it is enabled.
Port 2	This is the keyboard port. If there is no RDC on the system, the keyboard is expected to be here.
Port 3	This is a general purpose port like port 0 including the modem control lines.

When a device is opened the minor number is given to the driver's open routine. The driver then interprets this number according to the above description. If a valid RDC port is given, the driver checks to see if there is an RDC attached. If there is an RDC, the driver sets up the connection to the device through the RDC. If there is no RDC or the RDC port isn't valid and the CPU port is a valid port, then the driver attaches to the device which is connected to the valid CPU I/O panel port.

For example, a device file with a minor number of 15 indicates that the device can only be on CPU port 0 and it doesn't matter whether or not an RDC is installed. Similarly, a minor number of 116 ($7*16 + 4$ or hex 74) indicates that the device can only be on port 4 (RDC port E). If there is no RDC installed, the driver will refuse to open the device.

When there is a choice of where the device might go, the driver tries first to find the RDC. If the RDC is not connected or not turned on, it is unable to respond and the driver connects to the I/O panel port. The RDC is only polled the first time a driver with a choice is opened. If there is no RDC detected, then it never tries the RDC again. It requires a system reset to be able to attach or disconnect an RDC and have the system recognize it. If the RDC is unintentionally left off when booting the system, this should be detected when the PROM fails to find the keyboard (assuming it is hooked up to the RDC). The boot process will not continue until things are right.

The default configuration of the mouse is a good example of a device which may be connected to either of two I/O ports. The mouse device file is set up by doing **mknod /dev/mouse c 90 17**. This tells the driver that device **/dev/mouse** uses device 90 with minor number 17. The 17 indicates that the mouse could be on port 1 of the CPU or port 1 (RDC port B) of the RDC.

Unfortunately many of the devices give no indication that they are actually attached except by sending data. So, once the driver decides where the device is (using the minor number), it just assumes that the device is actually there. If the device is not there or if a different device is there, then the driver may generate incorrect events or none at all. The keyboard, however, can be probed so the keyboard driver knows if the keyboard is actually attached to the port or not.

The following is a list of the standard device files and their configurations. The minor numbers can be modified to fit specific situations. The information is specified in exactly the form the **mknod** program expects.

- /dev/mouse c 90 17** Optical mouse. Port 1 of the CPU, port B of the RDC (*i.e.*, 1*16+1 or hex 11).
- /dev/kbd c 87 32** Keytronic 101 keyboard. Port 2 of the CPU, port A of the RDC (*i.e.*, 2*16+0 or hex 20).
- /dev/tablet c 88 50** Wacom 15 x 15 inch tablet. Port 3 of the CPU, port C of the RDC (*i.e.*, 3*16+2 or hex 32).
- /dev/dials c 89 3** CDRS dial box. Port 0 of the CPU, port D of the RDC (*i.e.*, 0*16+3 or hex 03).

The following list is for the extra device files. These files must be hand configured because they may interfere with the standard devices. With an RDC it is possible to attach a total of eight devices (six on the RDC and two more on the CPU I/O panel). However, because of the variability of system configuration, it is necessary to set things up by hand.

- /dev/buttonbox c 83 4** Honeywell button box. Port 0 of the CPU, port E of the RDC (*i.e.*, 0*16+4 or hex 04).
- /dev/spaceball c 97 5** Spacial Systems spaceball. Port 0 of the CPU, port F of the RDC (*i.e.*, 0*16+5 or hex 05).

Optical Mouse

The mouse has nothing to configure. The only option is a cable to allow it to plug into the RDC.

Keyboard

The keyboard is AT compatible. The default jumper setting from the factory is usually correct. If there is a problem, the dip switches are accessed by removing a small panel on the bottom of the keyboard. All four dip switches should be set in the off position.

Two versions of this keyboard are supported, a North American version and a German version. Both use the same device major number (87). There is no way for the CPU to tell which type of keyboard is connected so it is necessary to set the PROM environment variable *kbd* to either 0 (North American) or 1 (German).

The German keyboard does not give access to all keys at the same time. Since everything must fit into the 128 character ASCII chart, the German keyboard has two modes, a data processing mode and text processing mode. In text processing mode all the special German characters are displayed although they generate the same ASCII codes as other characters. In data processing mode, however, the normal ASCII symbols are displayed. To switch between modes press the ALTGR key and the SYSREQ keys simultaneously.

Tablets

All Wacom tablets are set at the factory for 9600 baud, 8 bits, 2 stop bits, and no parity.

All SummaGraphics tablets are set at the factory for 9600 baud, 8 bits, 2 stop bits, and odd parity.

Control Dials

The control dial box is configured at the factory to be 2400 baud, 8 bits, 2 stop bits, and no parity.

Function Buttons

The button box is configured at the factory to run at 9600 baud. No changes should need to be made. Currently the button box can only be plugged into an RDC. This is because the button box takes power from the connector and the CPU I/O panel does not provide that power.

Spaceball

Spaceball is set at the factory to run at 9600 baud. Spaceball has an external power supply that attaches to the cable on the spaceball. Spaceball can be plugged into either the CPU I/O panel or the RDC. For the I/O panel you need an RS232 male to male straight through cable. For the RDC you need an RS232 male to 6-pin DIN (male) converter cable.

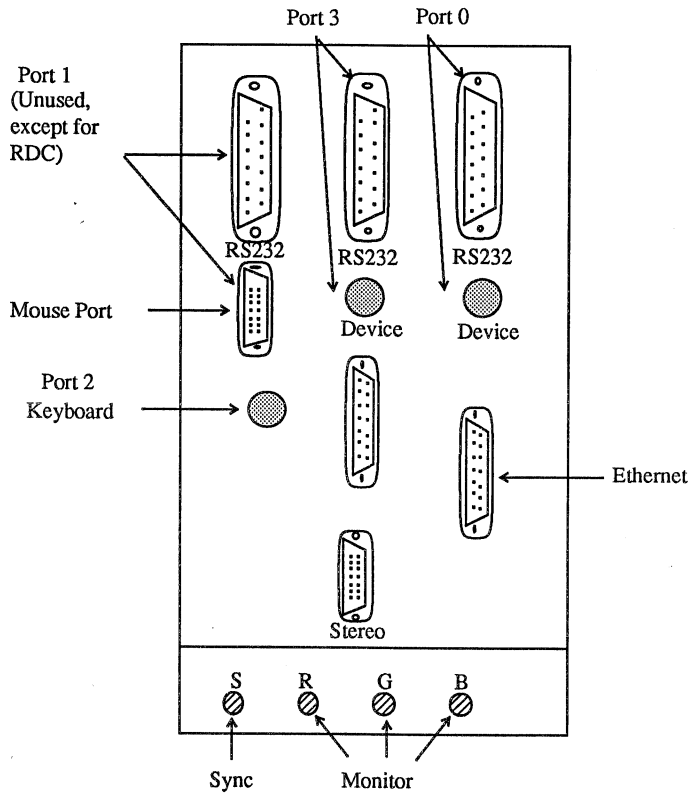


Figure AN9-1. CPU I/O panel

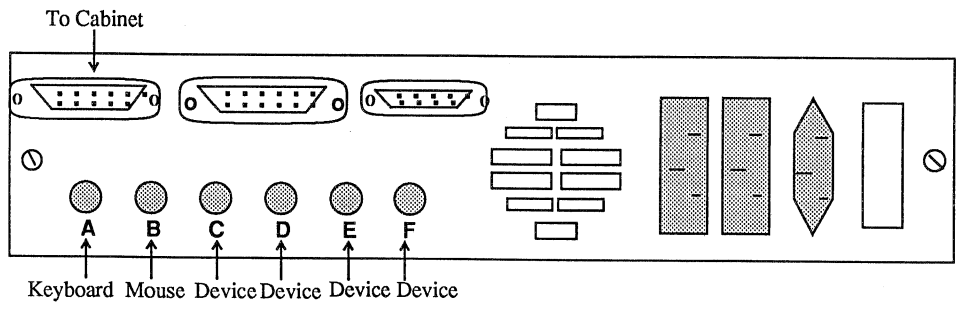


Figure AN9-2. RDC port configuration