3. SOFTWARE INSTALLATION

This chapter contains the NoteCards Sun Workstation installation instructions to be used by the system administrator.

To install NoteCards on a Sun Workstation, you need the following:

- Release tape
- NoteCards documentation kit for the Sun Workstation

Ensuring Adequate Swap Space

Prior to installing the software, you should ensure that your system has adequate swap space. NoteCards requires 45 megabytes of swap space on top of the normal swap space requirements. Check swap space using the pstat command:

```
prompt%  /etc/pstat -s
37176k used (3176k text), 12920k free, 1344k wasted, 0k missing
max process allocable = 10224k
avail: 5*2048k 1*512k 4*256k 3*128k 6*64k 7*32k 7*16k 40*1k
4800k allocated + 2520k reserved = 7320k used, 64672k available
```

If you need more swap space, consult the *Sun Software Technical Bulletin, March 1988,* pages 335-36, for information on increasing the amount of available swap space.

Once you have checked your swap space, you can do the following:

- Load the contents of the release tape
- Configure NoteCards for your system

Installing Software

The installation procedure shows the steps required, to install the NoteCards software, with examples where appropriate. Only those users who are system administrators and have **root** privileges on the host/server where the software is to reside can use this procedure.

Before starting software installation, remember that:

- The software requires 16 megabytes of disk space
- The entire installation procedure takes about 25 minutes to complete on a standalone system with a ¼-inch tape

1. Log in under your username.

   login *yourname*

   prompt%

2. Check for available space with the `df` (1) command:

   ```
   prompt% df
   Filesystem kbytes used avail capacity  Mounted on
    /dev/xy0a   7437 5470   1223   82%     /
    /dev/xy0h 148455 4900 128709    4%     /usr/misc
   ```

3. Determine if you need to run `su` to make a directory for the distribution. If so, type in **su**:

   ```
   prompt% su
   ```

4. Make a directory for the distribution. If you have enough space on the file system containing `/usr/local`, then create an `lde` directory:

   ```
   prompt# mkdir /usr/local/lde
   ```

   If you don't have enough space on `/usr/local`, go to Step 6.

5. Make yourself the owner of this directory:

   ```
   prompt# /etc/chown yourname /usr/local/lde
   ```

   where *yourname* is your username. Go to Step 7.

6. If you don't have space on the file system which contains `/usr/local`, but do have space somewhere else (for example, on `/usr1`) then make the directory there and link `/usr/local/lde` to it:

   ```
   prompt# mkdir /usr1/lde
   prompt# /etc/chown yourname /usr/usr1/lde
   prompt# ln -s /usr1/lde /usr/local/lde
   ```

7. If you ran **su**, type in exit:

   ```
   prompt# exit
   ```

8. Insert the tape cartridge in the cartridge drive.

9. Change the working directory to `/usr/local/lde`:

   ```
   prompt% cd /usr/local/lde
   ```

10. Load the NoteCards software from tape. Indicate the appropriate device abbreviation for your tape drive by replacing *xx* in the example below with one of the following:
    ar for the Archive drive
    st for a SCSI tape drive
    This example shows the command entry sequence:
    ```
    prompt# tar xvfb /dev/rxx0 126
    ```

As the software is copied from tape (a process that takes a long time), the system prints a series of lines in the following form:

```
x ./install.sunos4.sparc/lde, 270336 bytes, 532 tape blocks
```

The *x* at the beginning of the line indicates that the file is being extracted from the tape. See Appendix E for information on validating the contents of the tape.

Copy Protection

Before starting NoteCards, you must first obtain a host access key from Venue. This key enables the use of NoteCards on one workstation. The software cannot run without the key. You must have one key for each host on which you wish to run. Note that your current host access key *will* work if you move from one version of SunOS to another.

To obtain a key:

1. Get the host ID of the machine on which you intend to run NoteCards by typing on that machine

```
prompt% hostid
310002f6
```

2. Call Venue at 800-228-5325 between 9:00 a.m. and 4:30 p.m. PST. Outside the United States, call your local distributor.
3. Ask for a host access key, giving the Venue representative your host ID. Venue provides you with a host access key, which you need during software configuration, below.

CAUTION

Depending on your license agreement with Venue, your host access key may have an expiration date. After that date, your key is no longer valid.

Configuring the Software

The software comes in two forms:

- An executable binary image for users who have not modified the Sun kernel too extensively
- An object file that can be relinked for your particular system

If you want to use the executable that Venue supplies, skip to the Enabling PUP/XNS Ethernet section in this chapter.

Relinking

If the prelinked software doesn't work, link the object code with the Sun libraries. To do this, you need the `suntool`, `sunwindow`, and `pixrect` libraries, and `make, cc`, etc., available on your search path. To configure the system, connect to the directory **`usr/local/lde/install.sunos`***`x.machinex`* (where *x* is the version of SunOS that you are running, e.g., SunOS 4.0 in the following, and *machinex* is the CPU chip, e.g., sparc in the following), and type make.

```
prompt% cd /usr/local/lde/install.sunos4.sparc
prompt% rm lde ldeether; make
```

This procedure replaces the two executable programs, `lde` and `ldeether`. The program `ldeether` enables access to Xerox network protocols from NoteCards.

Enabling PUP/XNS Ethernet

If you intend to use the PUP or XNS Ethernet directly from NoteCards, you need to change file ownership and permissions of `ldeether`. Note that you do this on the server where `ldeether` is actually residing (root permission must be on the server). Log in to the machine where `ldeether` resides. To find out where `ldeether` resides, type

```
prompt% df filename
```

where *filename* is the pathname of **ldeether**. The system responds with the name of a file system (e.g., `/dev/sd0g`) for a local file, or with a machine name and directory (e.g., `python:/user1`) for an NFS file.

Now you can change the `ldeether` file ownership and permissions.

```
prompt% rlogin server
server% su
server# cd /usr/local/lde/install.sunos4.sparc
server# /etc/chown root ldeether
server# chmod 4755 ldeether
server# exit
```

If you are using the Ethernet, substitute **ldeether** whenever **lde** appears in the instructions below.

Using/Installing the Host Access Key

Enter the host access key on the command line to run NoteCards:

```
prompt% lde sysoutname -k 'host-key'
```

In this example, replace *host-key* with the actual key (still enclosed in single quotes). Replace *sysoutname* with the name of the sysout you want to use.

You can also avoid having to type the host access key each time. One way is to define an alias in the `.cshrc` file.

```
prompt% alias NoteCards "lde sysout-fullpathname -k 'host-key'"
```

Another method is via a shell script.

```
prompt% echo "lde sysout-fullpathname -k 'host-key'" >
                        /usr/local/lde/install.sunos4.sparc/NoteCards
prompt% chmod 755 /usr/local/lde/install.sunos4.sparc/NoteCards
```

Remember to replace *sysout-fullpathname* with the full name of the sysout you want to use. Then, when you wish to run, you can simply type the alias or the script name.

```
prompt% NoteCards
```

Finally, you should arrange for `lde` and `ldeether` to be conveniently located on users' search paths. For example:

```
prompt% ln -s /usr/local/lde/install.sunos4.sparc/lde
                        /usr/bin/lde
prompt% ln -s /usr/local/lde/install.sunos4.sparc/ldeether
                        /usr/bin/ldeether
prompt% rehash
```

Rehash recomputes the internal hash table of the directory contents listed in the path variable to allow for new commands.

For more ideas on how to set up your `.cshrc` and `.login` files, see the Starting NoteCards and Exiting NoteCards and Saving State sections in Chapter 4.

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