# NEWS–OS Installation Manual
# Release 3.3

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# Contents

# Preface

This manual describes how to install Release 3.3 of the NEWS operating system on a NEWS-series workstation.

In addition to standard full installation instructions, the following topics are covered:

❑ Installing on an extension hard disk drive

❑ Altering partition size

❑ Improvements over NEWS-OS Release 3.2

The NWF–610X Installation Kit includes the following items:

4 Cartridge tapes
3 Floppy disks
This NEWS–OS Installation Manual

**NOTE**

*See Appendix B for a complete listing of the contents of each installation tape.*

Read this manual before performing installation and/or version upgrade.

There are three methods of installation:

- Full Installation
  A new file system is created on your hard disk.

- Version Upgrade
  This is an upgrade from NEWS–OS Release 3.2 to NEWS–OS Release 3.3. It is accomplished by overwriting certain files in your current operating system.

- Additional Installation
  This allows you to install supplemental functions after NEWS–OS Release 3.3 has already been installed or upgraded.

**NOTE**

*Additional installation is not possible under NEWS–OS Release 3.2.*

# Document and Command Conventions

In this manual, command formats use the following symbols:

| | |
|---|---|
| **bold** | Boldface indicates user input from the keyboard. |
| *italics* | Italics indicate variables, command names, and file names. |
| [Ctrl]+A | Press the Control key along with another specified key, in this case A. |
| Courier | is used within the body of the text to show command lines or options that should be typed verbatim on the screen. |
| | is used within examples to show computer-generated output or the contents of files. |

**Courier bold**     is used within examples to show command lines and options that should be typed verbatim on the screen.

# 1

# Preparation for Installation

Before starting the installation you will need to connect the system, format the hard disk, and back up the installation kit tapes.

**NOTE**

*Appendix B contains a full listing of the contents of the installation kit tapes.*

# Connecting the System

Perform the following steps before turning on the NEWS workstation:

1. Connect the NWP–411 keyboard as an input device.

2. Connect the NWP–512D+NWB–512 bitmap display as output devices. Or, connect the NWP–513/NWP–516 (NWB–225A/NWB–251) color bitmap display.

   It is also possible to connect any VT100 compatible terminal to the serial port (CH-0).

   **NOTE**

   *Neither installation nor version upgrade is possible with any other terminals.*

3. Open the front panel and set the dip switches in accordance with the output devices being used. Be sure to set dip switch 5 to OFF in order to run the ROM monitor.

4. For NEWS workstations without a tape drive, connect the NWP–536 tape drive to the SCSI port on the NEWS rear panel (after having attached the SCSI terminator).

   **NOTE**

   *A full installation is not possible unless the tape drive is connected to SCSI channel number 5.*

5. Turn on the tape drive, the monitor, and the NEWS workstation.

Go to Chapter 2 for an initial *Full Installation* of NEWS–OS.

Go to Chapter 3 for a *Version Upgrade* on your current NEWS–OS.

Go to Chapter 4 for *Additional Installation* of new functions on your current NEWS–OS.

## Formatting the Hard Disk

When performing a full installation, the hard disk must be formatted if the workstation has not had a NEWS-OS installed before. The floppy disk used for formatting is compatible with all NEWS–series workstations, and is capable of formatting multiple hard disks (both built-in and expansion drives).

1. Turn on the NEWS network station.

2. After the ROM monitor prompt NEWS> appears on the screen, insert the formatted floppy disk into the drive.

3. Execute the format program as described in the next section.

## The Formatter

To run the format program, enter the following from the ROM monitor:

NEWS> **bo fh**

After the program has been loaded from the floppy disk and the display on the screen cleared, the following message will appear:

```
NEWS HD Formatter Release 5.00
COPYRIGHT (C) 1989 SONY/SMSG, all rights RESERVED
```

You will be asked the SCSI channel number. Enter the number (from 0 to 6) that corresponds to the SCSI channel to which the disk that is being formatted is connected.

For example, when formatting a hard disk (built-in) connected to SCSI channel number 0, enter **0**.

```
Format channels (0-6):   0
```

When formatting hard disks connected to SCSI channels 0 and 1, enter **01**.

```
Format channels (0-6):   01
```

## Beginning Formatting

After you have entered the SCSI channel number, the following display will appear on your screen:

```
NEWS HD Formatter Release 5.10D
CH   Disk   ST B/P B/G 0 10 20 30 40 50 60 70 80 90 100%
 0   hd182
 1   hd286
 2   *
 3   *
 4   *
 5   *
 6   *
```

In this display, CH represents the channel number and DISK represents the disk unit type. In this display hard disks hd182 and hd286 are connected to SCSI channels 0 and 1.

If there are no errors in the initial display, answer **y** to the following message:

```
Are you ready (y/n)?  y
```

If there are any errors, enter **n** to interrupt the program and return to the ROM monitor. Repeat operations from the beginning.

After **y** has been entered, the following message will appear on the screen:

```
FINAL NOTICE: May I start function (y/n)?  y
```

Make a final check here. Examine the display closely for errors; formatting and the read/write test will begin when you enter **y**.

The following display will appear when formatting begins.

```
NEWS HD Formatter Release 5.10D
CH  DISK   ST B/P B/G 0 10 20 30 40 50 60 70 80 90 100%
 0  hd182 FORMAT    . . . . . .
 1  hd286 FORMAT    . . . .
 2  *
 3  *
 4  *
 5  *
 6  *
```

The word FORMAT which appears under the heading indicates that the corresponding disk is being formatted. When formatting is completed the status will change to DONE.

The scale which extends across the right side of the display represents a bar graph approximation of how much of the disk has been formatted.

## The Read/Write Test

A complete read/write test is conducted over all sectors of all disks for each SCSI channel in ascending order by SCSI channel number. Unlike formatting, the test is not conducted in parallel. A display similar to the following will appear, giving a progress status report for each part of the read/write test.

```
NEWS HD Formatter Release 5.10D
CH  DISK   ST    B/P  B/G  BLOCKS    FROM       TO
 0  hd182  OK     ?    ?   304470  304000    304469
 1  hd286  READ  18    ?       ?        0       999
 2  *
 3  *
 4  *
 5  *
 6  *
```

Possible entries under the STATE heading in the progress status report are following:

| STATE | Meaning |
|---|---|
| OK | The test for the corresponding disk completed successfully. |
| WAIT | The test status is waiting. |
| WRITE READ COMPARE | Checks whether read/write can be conducted normally showing the testing status to the channel being tested in the order displayed. Displayable statuses are: |
| | WRITE     Writes the test pattern to that channel every 1000 blocks. |
| | READ     Reads the written test pattern. |
| | COMPARE     Compares the pattern read with the written pattern. |

After all disks and sectors have been tested, the following message will appear:

```
Function completed.
Press any key to return to monitor...
```

At this point, press any key to return control to the ROM monitor. Formatting is now complete.

## Error Messages

When SCSI errors that occur during formatting, or data comparison errors that occur during the read/write test are detected, error messages such as those shown below appear on the line of the corresponding disk.

| Error Message | Meaning |
|---|---|
| DEVICE OFFLINE | No disk is connected to the corresponding channel. (The program does not respond to this selection.) |
| DATA COMPARE ERROR | The data written differs from the data read. This error can occur even if no error was reported during the read/write test (in order of hard disk). |
| OTHER SCSI ERRORS | Any errors concerning SCSI commands, such as FORMAT, READ, etc. are displayed. |

# Backing Up the Installation Kit

Connect a tape drive (if not built in) and prepare a file system with 75Mbytes of space available. Copy the contents of the tapes to the hard disk by following the procedures below. The example given here is a description of how to make a backup copy in the /mnt directory.

**Vol.1:**
```
# cd /mnt
# mt -f /dev/nrst00 rew
# mt -f /dev/nrst00 offl
# dd if=/dev/nrst00 bs=128k of=NO-1.1
# dd if=/dev/nrst00 of=NO-1.2
# dd if=/dev/nrst00 of=NO-1.3
# dd if=/dev/nrst00 of=NO-1.4
# dd if=/dev/nrst00 bs=128k of=NO-1.5
             :
             :
             :
# dd if=/dev/nrst00 bs=128k of=NO-1.12
# mt -f /dev/nrst00 rew
# mt -f /dev/nrst00 offl
```

**Vol.2:**
```
# cd /mnt
# mt -f /dev/nrst00 rew
# mt -f /dev/nrst00 offl
# dd if=/dev/nrst00 bs=128k of=NO-2.1
# dd if=/dev/nrst00 bs=128k of=NO-2.2
# dd if=/dev/nrst00 bs=128k of=NO-2.3
             :
             :
             :
# dd if=/dev/nrst00 bs=128k of=NO-2.6
# mt -f /dev/nrst00 rew
# mt -f /dev/nrst00 offl
```

**Vol.3:**
```
# cd /mnt
# mt -f /dev/nrst00 rew
# mt -f /dev/nrst00 offl
# dd if=/dev/nrst00 bs=128k of=NO-3.1
# dd if=/dev/nrst00 bs=128k of=NO-3.2
# dd if=/dev/nrst00 bs=128k of=NO-3.3
             ;
             ;
             ;
# dd if=/dev/nrst00 bs=128k of=NO-3.9
# mt -f /dev/nrst00 rew
# mt -f /dev/nrst00 offl
```

**Vol.4:**
```
# cd /mnt
# mt -f /dev/nrst00 rew
# mt -f /dev/nrst00 offl
# dd if=/dev/nrst00 bs=128k of=NO-4.1
# dd if=/dev/nrst00 bs=128k of=NO-4.2
# dd if=/dev/nrst00 bs=128k of=NO-4.3
   ;
   ;
   ;
# dd if=/dev/nrst00 bs=128k of=NO-4.20
# mt -f /dev/nrst00 rew
# mt -f /dev/nrst00 offl
```

After copying to hard disk is completed, copy the installation kit contents from the hard disk to tape for safekeeping.

**Vol.1:**
```
# cd /mnt
# mt -f /dev/nrst00 rew
# mt -f /dev/nrst00 offl
# dd if=NO-1.1 bs=128k of=/dev/nrst00
# dd if=NO-1.2 of=/dev/nrst00
# dd if=NO-1.3 of=/dev/nrst00
# dd if=NO-1.4 of=/dev/nrst00
# dd if=NO-1.5 bs=128k of=/dev/nrst00
   ;
   ;
   ;
# dd if=NO-1.12 bs=128k of=/dev/nrst00
# mt -f /dev/nrst00 rew
# mt -f /dev/nrst00 offl
```

**Vol.2:**
```
# cd /mnt
# mt -f /dev/nrst00 rew
# mt -f /dev/nrst00 offl
# dd if=NO-2.1 bs=128k of=/dev/nrst00
# dd if=NO-2.2 bs=128k of=/dev/nrst00
# dd if=NO-2.3 bs=128k of=/dev/nrst00
   ;
   ;
   ;
# dd if=NO-2.6 bs=128k of=/dev/nrst00
# mt -f /dev/nrst00 rew
# mt -f /dev/nrst00 offl
```

**Vol.3:**
```
# cd /mnt
# mt -f /dev/nrst00 rew
# mt -f /dev/nrst00 offl
# dd if=NO-3.1 bs=128k of=/dev/nrst00
# dd if=NO-3.2 bs=128k of=/dev/nrst00
# dd if=NO-3.3 bs=128k of=/dev/nrst00
    ;
    ;
    ;
# dd if=NO-3.9 bs=128k of=/dev/nrst00
# mt -f /dev/nrst00 rew
# mt -f /dev/nrst00 offl
```

**Vol.4:**
```
# cd /mnt
# mt -f /dev/nrst00 rew
# mt -f /dev/nrst00 offl
# dd if=NO-4.1 bs=128k of=/dev/nrst00
# dd if=NO-4.2 bs=128k of=/dev/nrst00
# dd if=NO-4.3 bs=128k of=/dev/nrst00
    ;
    ;
    ;
# dd if=NO-4.20 bs=128k of=NO-4.20
# mt -f /dev/nrst00 rew
# mt -f /dev/nrst00 offl
# mt -f /dev/nrst00 rew
# mt -f /dev/nrst00 offl
```

The backup copy is now successfully completed.

**2**

# NEWS–OS Full Installation

Before beginning a *full installation* be sure you have performed the preparation tasks (if needed) described in Chapter 1:

❑  Connecting the system

❑  Formatting the hard disk

❑  Backing up the installation tapes

# Overview

This chapter describes how to perform a full installation of NEWS–OS Release 3.3 on a NEWS workstation using the following basic steps:

1. Copy miniroot
2. Specify the language and keyboard
3. Specify the time zone
4. Enter the date and time
5. Specify installation partition
6. Select installation functions
7. Alter partition size (optional)

To begin installation, insert cartridge tape Vol. 1 into the tape drive. After the NEWS> prompt appears, insert the supplied installation floppy disk into the floppy disk drive.

# Copying Miniroot

At the NEWS> prompt, enter as **bo fh() copy**.

```
NEWS> bo fh()copy
Copy0 2.1 loading fh(0,0,0)copy1_d
Copy1 2.1 copy from tu(5,0,0)
R, W, V:   xxxxx
```

The display above appears on the screen and miniroot copy begins. *xxxxx* indicates the progress of the copying. When the copy is completed, *xxxxx* value will reach 12272.

# Specifying the Language and Keyboard

After the miniroot copy is completed, an auto boot takes place and the following display appears on your screen:

```
@@@@ NEWS-OS 3.3 SELECT INSTALL MENU @@@@

Which language do you use?

        [1].  Japanese
        [2].  European
        [3].  US_English
```

Enter the number corresponding to the language you wish to select.

Japanese

Select this when Japanese NEWS–OS is to be used. This allows display and input of double-width Japanese characters. The time zone is automatically set to Japan.

European

Select this when European languages are to be used. The keyboard will be set so that the ISO 8859-1 character code set can be used.

US_English

Select this when US English NEWS–OS is to be used.

After you have made your selection, a confirmation line will appear below the menu. Enter y to continue; enter n to change your selection.

## When Japanese is Selected

After selecting Japanese as your language (by entering 1), the display below appears on the screen. Indicate whether the Oyayubi Shift Keyboard (NWP–410) is to be used or not by entering y or n.

```
@@@@ NEWS-OS 3.3 SELECT INSTALL MENU @@@@

Which language do you use?  1

        [1].  Japanese
        [2].  European
        [3].  US_English


Do you use "OYAYUBI Shift Keyboard(NWP-410)" (y/n)?  n
OK (y/n)?  y
```

Check your entry and enter y at the confirmation message if your input is correct.

## When European Language is Selected

After selecting European as your language (by entering 2), the display below appears on the screen.

```
@@@@ NEWS-OS 3.3 SELECT INSTALL MENU @@@@

Which language do you use in Europe?

        [0].  Norwegian
        [1].  Danish
        [2].  Swedish
        [3].  Finnish
        [4].  Portuguese
        [5].  Spanish
        [6].  Italian
        [7].  French
        [8].  German
        [9].  UK_English
```

Enter the number of the language to be used. Check your entry and enter y at the confirmation message if your selection is correct. The keyboard will now be set to the proper keymap for that language.

## Specifying the Time Zone

If you selected Japanese as your language, the time zone has automatically been set to Japan. If you selected European as your language, the following display appears on the screen:

```
@@@@ NEWS-OS 3.3 SELECT INSTALL MENU @@@@

Which timezone do you use?

        [0].  NORWAY
        [1].  DENMARK
        [2].  SWEDEN
        [3].  FINLAND
        [4].  PORTUGAL
        [5].  SPAIN
        [6].  ITALY
        [7].  FRANCE
        [8].  GERMANY
        [9].  ENGLAND
        [a].  Other
```

Specify your time zone by entering the number of your country.  If your country is not in the menu, enter a, Other.

```
@@@@ NEWS-OS 3.3 SELECT INSTALL MENU @@@@

Which timezone do you use?  7

        [0].  NORWAY
        [1].  DENMARK
        [2].  SWEDEN
        [3].  FINLAND
        [4].  PORTUGAL
        [5].  SPAIN
        [6].  ITALY
        [7].  FRANCE
        [8].  GERMANY
        [9].  ENGLAND
        [a].  Other

OK (y/n)?  y
```

Check your entry and enter y at the confirmation message if your selection is correct.

If you entered a, Other, the following display will appear after your confirmation.  This is also the display that appears if you selected US_English as your language.

```
@@@@   NEWS-OS 3.3 SELECT INSTALL MENU   @@@@

Which timezone do you use?

        [a].  GMT        [j].  GMT+9     [s].  GMT-5
        [b].  GMT+1      [k].  GMT+10    [t].  GMT-6
        [c].  GMT+2      [l].  GMT+11    [u].  GMT-7
        [d].  GMT+3      [m].  GMT+12    [v].  GMT-8
        [e].  GMT+4      [n].  GMT+13    [w].  GMT-9
        [f].  GMT+5      [o].  GMT-1     [x].  GMT-10
        [g].  GMT+6      [p].  GMT-2     [y].  GMT-11
        [h].  GMT+7      [q].  GMT-3     [z].  GMT-12
        [i].  GMT+8      [r].  GMT-4
```

Specify your time zone by entering the time difference from  Greenwich Mean Time (GMT) of the place you live.

Check your entry and enter y at the confirmation message appears if your selection is correct.

Language, keyboard, and time zone have now been specified.

# Entering the Date and Time

After the language, keyboard, and time zone have been specified, the following display will appear.

```
@@@@ NEWS-OS 3.3 SELECT INSTALL MENU @@@@
```

```
Please enter Date & Time =
```

Enter the date and time in the format used for the *date* command. For example, if it is 10:30 a.m. on January 22, 1990, enter date and time as shown in the sample display below.

```
@@@@   NEWS-OS 3.3 SELECT INSTALL MENU   @@@@
```

```
Please enter Date & Time =   9001221030
```

```
Mon Jan 22 10:30:00 GMT+4 1990
```

```
OK (y/n) ?
```

After entering the date and time, the information will be displayed for confirmation.

Check the date and time and enter **y** at the confirmation message if your input is correct.

# Specifying Installation Partitions

After specifying the language, keyboard, time zone, date, and time you are ready to specify hard disk partitions.

In NEWS–OS Release 3.3, the file systems /private and /public can be installed separately on a built-in hard disk or an expansion hard disk.

An expanded system comprised of an NWS–1720 (hd182 type hard disk built-in) and an NWP–535 (hd286 type 286 Mbytes hard disk) is used in the example presented here.

```
@@@@ NEWS-OS 3.3 HD PARTITION INFORMATION @@@@

[CH.0] 304470  <a>   <b>   <c>   <d>   <e>   <f>   <g>
               root  swap   -          pri   pub
[CH.1] 586764  <a>   <b>   <c>   <d>   <e>   <f>   <g>   <h>
                -     -

Do you use default Install Partition (y/n)?
```

In the sample display here, the default partitions of the built-in hard disk for the respective file systems are shown. Allocation depends upon the type of hard disk. For the hd182, allocation is as follows:

| | |
|---|---|
| /(root) partition | [a] partition |
| swap area | [b] partition |
| /public partition | [f] partition |
| /private partition | [e] partition |

The components of the sample display are explained below.



At this time, it is possible to change the partitions for the file systems /public and /private separately. See the sections *When Partitions are not Altered* and *When Partitions are Altered* later in this chapter.

## When Partitions Are Not Altered

```
@@@@    NEWS-OS 3.3 HD PARTITION INFORMATION   @@@@

[CH.0] 304470  <a>   <b>   <c>   <d>   <e>   <f>   <g>
               root  swap  -           pri   pub
[CH.1] 586764  <a>   <b>   <c>   <d>   <e>   <f>   <g>   <h>
                -     -


Do you use default Install Partition (y/n) ? y
```

Enter **y** to indicate that you wish to use default partitioning. The respective file systems will be installed as displayed on the screen.

Specification of default partitions is now completed.

## When Partitions Are Altered

```
@@@@    NEWS-OS 3.3 HD PARTITION INFORMATION   @@@@

[CH.0] 304470  <a>   <b>   <c>   <d>   <e>   <f>   <g>
               root  swap  -           pri   pub
[CH.1] 586764  <a>   <b>   <c>   <d>   <e>   <f>   <g>   <h>
                -     -


Do you use default Install Partition (y/n) ? n
```

Enter **n** to indicate that you don't want to use default partitioning. The display shown below will appear.

```
@@@@    NEWS-OS 3.3 HD PARTITION INFORMATION   @@@@

[CH.0] 304470  <a>   <b>   <c>   <d>   <e>   <f>   <g>
               root  swap  -           pri   pub
[CH.1] 586764  <a>   <b>   <c>   <d>   <e>   <f>   <g>   <h>
                -     -


Please select Install Partition.

    (Public)=    -         (Private)=    -
```
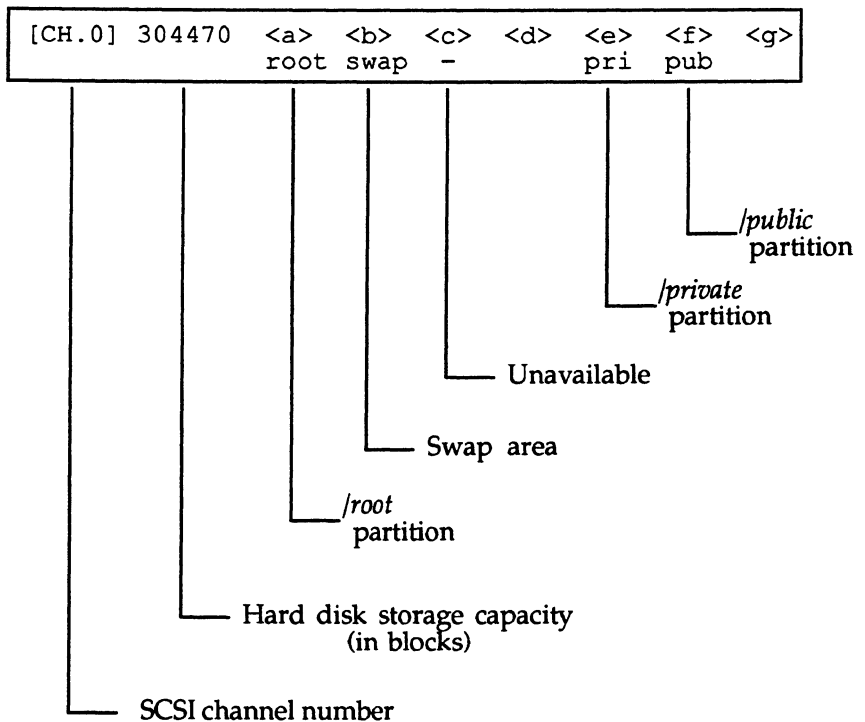
Specify the partitions you wish to install by entering $X1$, $P1$, $X2$ and $P2$ in order.

(Public)= X1 – P1   (Private)= X2 – P2

X1    This is the SCSI channel number [CH.X] to which the hard disk is connected. /public will be installed on this disk.

$(0 <= X1 \backslash <= 6)$

P1    This is the partition in which /public will be installed.

('c' <= P1 <= 'h')

X2    This is the SCSI channel number [CH.X] to which the hard disk is connected. /private will be installed on this disk.

$(0 <= X2 <= 6)$

P2    This is the partition in which /private will be installed.

('c' <= P2 <= 'h')

For example, if /public is to be installed in partition h on SCSI channel 1 (expansion drive), and /private is to be installed in partition f on SCSI channel 0 (built-in drive), this would be specified be entering the following:

**1 h 0 f**

If you make a mistake in your entry, enter **D** to return to the default display.

```
    @@@@   NEWS-OS 3.3 HD PARTITION INFORMATION   @@@@

[CH.0] 304470  <a>   <b>   <c>   <d>   <e>   <f>   <g>
               root  swap   -          pri   pub
[CH.1] 586764  <a>   <b>   <c>   <d>   <e>   <f>   <g>   <h>
                -     -                                  pub

Please select Install Partition.

    (Public)= 1 - h      (Private)= 0 - f

OK(y/n) ?
```

Check your entry and enter **y** at the confirmation message if you, input is correct. If you enter **n**, you will be asked again to specify the partitions to be installed.

**NOTE**

*Be sure your input is correct. Once you have specified the partitions, they cannot be changed.*

Specification of non-default partitions is now completed.

# Selecting Installation Functions

After specifying installation partitions, the following display will appear.

```
@@@@    NEWS-OS 3.3 SELECT INSTALL MENU   @@@@

[0]. X10      (5596k)          [g]. fontxp  (871k)
[1]. X11R2    (14438k)         [h]. 8em     (170k)
[2]. X11-devl (3060k)          [i]. cdff    (2121k)
[3]. X11-appl (17929k)         [j]. ir      (673k)
[4]. X11-font (6067k)          [k]. sj2     (1310k)
[5]. sys      (18604k)         [l]. nroff   (881k)
[6]. cc       (2515k)          [m]. dict    (4127k)
[7]. fortran  (1056k)          [n]. bib     (243k)
[8]. lisp     (8443k)          [o]. cgi     (1326k)
[9]. pascal   (946k)           [p]. plot    (551k)
[a]. man      (5740k)          [q]. rcs     (537k)
[b]. jman     (5435k)          [r]. uucp    (732k)
[c]. doc      (10655k)         [s]. mh      (5186k)
[d]. lbpfil   (239k)           [t]. yp      (634k)
[e]. font533  (3324k)          [u]. games   (2735k)
[f]. fontlbp8 (1920k)          [v]. learn   (964k)

   # Please select number =

   AMOUNT =   0 kbyte [Max 119882 kbyte]
```

**NOTE**

*Refer to Appendix A for a description of each installation function.*

Maximum value [Max 119882 Kbyte] shows the size in Kbytes of the partition allocated to /public (specified in the preceding section). Your function selection may not exceed this range.

You may enter your selections as follows:

%           Selects all functions.

$           Selects default functions.
            (The default functions selected depend upon the type of hard disk being used.)

*           Clears all functions.

[0-9,a-u]   Selects the function corresponding to the alphanumeric entered.
            The first entry selects a function, the second entry cancels the selected function.

Functions selected will be displayed in reverse video, and the total storage capacity necessary to install them will be displayed after *AMOUNT*.

If the value *xxxxx* is less than or equal to Max value, installation will be executed. Otherwise, the *AMOUNT xxxxx* will be displayed in reverse video and the following message will appear.

```
         @@@@    NEWS-OS 3.3 SELECT INSTALL MENU   @@@@

 [0]. X10       (5596k)              [g]. fontxp  (871k)
 [1]. X11R2     (14438k)             [h]. 8em     (170k)
 [2]. X11-devl  (3060k)              [i]. cdff    (2121k)
 [3]. X11-appl  (17929k)             [j]. ir      (673k)
 [4]. X11-font  (6067k)              [k]. sj2     (1310k)
 [5]. sys       (18604k)             [l]. nroff   (881k)
 [6]. cc        (2515k)              [m]. dict    (4127k)
 [7]. fortran   (1056k)              [n]. bib     (243k)
 [8]. lisp      (8443k)              [o]. cgi     (1326k)
 [9]. pascal    (946k)               [p]. plot    (551k)
 [a]. man       (5740k)              [q]. rcs     (537k)
 [b]. jman      (5435k)              [r]. uucp    (732k)
 [c]. doc       (10655k)             [s]. mh      (5186k)
 [d]. lbpfil    (239k)               [t]. yp      (634k)
 [e]. font533   (3324k)              [u]. games   (2735k)
 [f]. fontlbp8  (1920k)              [v]. learn   (964k)

    # Amount is over! Please select delete number =

      AMOUNT = xxxxxx kbyte [Max yyyyyy kbyte]
```

In this case, installation is not possible. You must reduce the number of functions you have selected.

When the amount of your total selections fall within the Max limit, you can continue on to the next display for altering partition size.

When you press [Return], the following message will appear:

```
Select finished. Go to next ? (y/n)  y
```

Press [Return] or enter y.

Selecting installation functions is now completed. After confirmation, the display for altering partition size will appear.

# Notes on Function Selection

Be aware of the following issues when selecting functions.

### On-line Manual

When selecting man and/or jman, note that the printing cannot be output without also selecting *nroff*.

### Include Files and Diskless vmunix

Although the include files and vmunix were not installed without installing **sys** in NEWS–OS Release 3.2, with NEWS–OS Release 3.3, the include files are installed through the selection of "cc" and diskless vmunix is installed as a default.

### sj2 and jman

When a language other than Japanese is selected, neither operation nor display is possible for sj2 and jman, even if they are installed.

### X11

Although the three functions X11-devl, X11-appl and X11-font are available, normal operations are only possible if X11 is selected. Only select X11-devl when using Xlib for the creation of X11 programs.

### Selecting Default Function

Although default function will be selected if you enter $ during function selection, you may find that the storage capacity necessary for default function selection will exceed Max. This is especially likely if you have altered installation partitions or partition size. In this case, select the functions singly and adjust the size.

# When Altering Partition Size Before Function Selection

When you wish to alter partition size before selecting installation functions, enter y or press [Return] until the display for selecting functions appears, without selecting any functions or after selecting some functions falling well within the Max range.

When the display for altering partition size appears, alter partition size by following the instructions given in the *Altering Partition Size* section later in this chapter. It is possible to select functions again after making alterations.

# Altering Partition Size

In NEWS–OS Release 3.3, it is possible to alter partition size.

The hard disk partitions allocated to /public, /private and /(root) in the section *Specifying Installation Partitions* are displayed, beginning with the status of the hard disk partition allocated to /public.

The description here is for an NWP–535 (on SCSI channel 1) connected to an NWS–1720. With this configuration, the display on the screen appears as follows.

```
    @@@@   Variable Partition   (HD = sd01 : HDcap = 586764) @@@@

Do you use the following partition size ? (y/n)
        [(y): Start install, (n): Change partition size]

    [a]= 15884  |+

    [b]= 66880  |++++++

    [c]= 586764 |+++++++++++++++++++++++++++++++++++++++++++++++++++++|~~|++

    [d]= 15884  |+

    [e]= 55936  |+++++

    [f]= 140834 |+++++++++++++

    [g]= 212654 |+++++++++++++++++++++

pub [h]= 291346 |+++++++++++++++++++++++++++++++
                                ^(242268 blk)
```

The display shows that /public has been allocated to partition *h* of the expansion hard disk, and that /private has been allocated to partition *f* of the built-in hard disk.

The first line of the display signifies the following:

HD = sd01      Special file name for the hard disk on SCSI channel 1

HDcap = 586763      Total storage capacity (in blocks) of the hard disk on SCSI channel 1

The lines in the middle of the display (form at xxx [y] = zzzzzz) stand for the following:

xxx :                   The name of the file system allocated to that partition (root, swap, private, or public)

y:                      The hard disk partition

zzzzzz:                 The hard disk partition size (in blocks)

The horizontal bar graph represents their relative sizes.

^(242268 block) on the last line indicates the total storage capacity (in blocks) necessary for the functions selected.

# When Altering Partition Size Is Not Necessary

When altering partition size is not necessary, enter y at the previous display. The following display containing hard disk allocation informations will then appear.

```
@@@@ Variable Partition  (HD=sd00:HDcap = 304470) @@@@

 Do you use the following partition size ? (y/n)
     [(y): Start install, (n): Change partition size]

root [a]=   15884  |+

swap [b]=   33440  |+++

     [c]=  304470  |++++++++++++++++++++++++++++++++++

     [d]=   15884  |+

     [e]=   55936  |+++++

pri  [f]=  183326  |++++++++++++++++++

     [g]=  255146  |+++++++++++++++++++++++++++
```

**NOTE**

*This display does not appear when /public and /private are allocated on the same hard disk.*

At this point, if it is not necessary to alter partition size, enter **y** as in the figure below.

```
@@@@ Variable Partition  (HD=sd00:HDcap=304470) @@@@

 Do you use the following partition size? (y/n) y
    [(y): Start install, (n): Change partition size]

root [a]=   15884 |+

swap [b]=   33440 |+++

     [c]=  304470 |++++++++++++++++++++++++++++++++++

     [d]=   15884 |+

     [e]=   55936 |+++++

pri  [f]=  183326 |+++++++++++++++++

     [g]=  255146 |++++++++++++++++++++++++++
```

Installation will begin by creating the file systems using the disk information displayed.

# When Altering Partition Size Is Necessary

When altering partition size is necessary, enter n on the display at the beginning of the *Altering Partition Size* section. The following display will then appear.

```
@@@@ Variable Partition   (HD = sd01 : HDcap = 586764) @@@@

PARTITION = -> DEFAULT SIZE = standard
PARAMETER =  1000 block [(1)=2,(2)=10,(3)=100,(4)=1000,(5)=10000]
                        Usage [(k)="addition",(j)="subtraction"]
                              [(w)="decide",(r)="return menu"  ]
        [a]=   15884 |+

        [b]=   66880 |++++++

        [c]=  586764 |++++++++++++++++++++++++++++++++++++++++++++++++++|~~|++

        [d]=   15884 |+

        [e]=   55936 |+++++

        [f]=  140834 |+++++++++++++

*       [g]=  212654 |+++++++++++++++++++++

* pub   [h]=  291346 |+++++++++++++++++++++++++++++++
                      ^(242268 blk)
```

The various meanings for specifying partition alternation are explained below.

| | |
|---|---|
| b,c,d,e,f,g,h | Selects the partition name whose size is to be altered (A). |
| b,d,e,f,h | Selects the partition name whose size is to be altered (B). |

<div align="center">

**(A) —> (B)**

</div>

(A) —> increase, (B) —> decrease
(A) —> decrease, (B) —> increase

| | |
|---|---|
| k | Specifies increase in partition size. |
| j | Specifies decrease in partition size. |
| r | Returns to the display for selecting functions. The size specified will be maintained after return. |

| | | |
|---|---|---|
| w | | Installation begins if total function size is within the Max limit. If the size is out of this range, the display for selecting functions will appear. |
| 1-5 | | Parameters for increasing/decreasing partition size (in blocks):<br>1 : 2 blocks<br>2 : 10 blocks<br>3 : 100 blocks<br>4 : 1000 blocks (default)<br>5 : 10000 blocks |
| D | | Returns to default partition size. |
| z | | Sets the specified partition size to 0. |
| T + 1<br>T + 2 | | Sets the partition size to default. (Standard)<br>Sets the partition size to default. (Large public) |
| * | | Returns to the display for selecting functions (initial display). Partition sizes return to their initial values. |

For example, first specify the partitions (A) and (B) whose size is to be altered.

```
@@@@ Variable Partition   (HD = sd01 : HDcap = 586764) @@@@

PARTITION = h -> f     DEFAULT SIZE = standard
PARAMETER =   1000 block [(1)=2,(2)=10,(3)=100,(4)=1000,(5)=10000]
                         Usage [(k)="addition",(j)="subtraction"]
                               [(w)="decide",(r)="return menu"   ]
      [a]=   15884  |+

      [b]=   66880  |++++++

      [c]=  586764  |++++++++++++++++++++++++++++++++++++++++++++++++++|~~|++

      [d]=   15884  |+

      [e]=   55936  |+++++

*     [f]=  140834  |+++++++++++++

*     [g]=  212654  |+++++++++++++++++++++

* pub [h]=  291346  |++++++++++++++++++++++++++++++
                               ^(242268 blk)
```

In this example, h is specified as (A). The cursor moves to the side of the display, showing the size of file system (A). The specification for (B) is f as the default. (A) and (B) appear on the upper left of the display as, *PARTITION* = h —> f. The default hard disk partition for

(B) depends upon the type of hard disk being used.

Use the key $k$ or $j$ to carry out the partition size alteration for $h$. Increases/decreases in file system size are reflected as increases/decreases in the bar graph display.

A partition size displayed in reverse video represents that file system's minimum size. However, if the /public, /private or swap area are not allocated, the size can be set to 0 using $z$.

The minimum sizes for each partition are as follows:

| | |
|---|---|
| /public | 32400 blocks |
| /private | 15884 blocks |
| /(root) | 15884 blocks |
| Other | 1000 blocks \(as a file system)\ |
| | 0 blocks \(no file system created) |

The mark "*" on the left edge of the display indicates the partition presently being accessed. In this example, partition $h$ is affected. There is no affect on any other file system.

Installation is possible only when the value of $h$ is larger than 242268 blocks. It is possible to select more functions by making the value of $h$ larger than the default, and returning to the display for selecting functions using the $r$ key.

If the value of the partition $h$ is less than 242268 blocks, that portion of the display ^(242268 blk) will be displayed in reverse video, indicating that installation is not possible. (Installation is not possible even if you attempt it using $w$.) Either increase the partition size of $h$ beyond 242268 blocks, or return to the display for selecting functions (using the key w or r), and reduce the number of function selections you have made. Altered partition sizes will be implemented at this time.

Other partition sizes can be altered in the same manner. Enter **w** after completing any size alterations. The following display will appear.

```
@@@@ Variable Partition   (HD = sd01 : HDcap = 586764) @@@@

The following HD configuration OK ? (y/n)


     [a]=    15884  |+

     [b]=    66880  |++++++

     [c]=   586764  |+++++++++++++++++++++++++++++++++++++++++++++++++|~~|++

     [d]=    15884  |+

     [e]=    55936  |+++++

     [f]=   140834  |+++++++++++++

     [g]=   212654  |++++++++++++++++++++

pub  [h]=   291346  |+++++++++++++++++++++++++++++
                                 ^(242268 blk)
```

Enter **y** after confirming the contents of the display. After this, the status of the hard disk to which */private* is allocated will be displayed. Make size specifications in the same manner here.

```
@@@ Variable Partition   (HD=sd00:HDcap=304470) @@@

Do you use the following partition size ? (y/n)
   [(y): Start install, (n): Change partition size]


root [a]=    15884  |+

swap [b]=    33440  |+++

     [c]=   304470  |+++++++++++++++++++++++++++++++++

     [d]=    15884  |+

     [e]=    55936  |+++++

pri  [f]=   183326  |+++++++++++++++++

     [g]=   255146  |++++++++++++++++++++++++
```

If the partitions for /public, /private and /(root) are all allocated on different disks, the next display to appear will show the status of the hard disk to which /(root) is allocated.

**NOTE**

*This display does not appear if /public and /private are allocated on the same disk.*

Installation will begin after the partition specifications for all hard disks have been completed.

# Installation Processing

After you have completed the basic steps listed at the start of Chapter 2, installation begins. The following is displayed, showing the current status of the installation.

```
Install xxxx   ... end

Install yyyy   ... end

    .


    .


Install zzzz
```

This message appears after each tape cartridge has been processed:

```
Please Change Media Vol.N and Enter "next":
```

Change to the next tape cartridge and enter the following:

**next** [Return]

Your entry will not be accepted if you make a typographical error or if you insert the wrong tape.

Finally, after all four tapes have been processed, this message will appear showing that installation has completed successfully.

```
Install Complete
```

When the NEWS> prompt appears, your system is ready to use. Enter **bo** to boot your workstation.

```
NEWS> bo
```

Please refer to the *NEWS–OS 3.3 User's Guide* for instructions on operating your system.

# Files Created During a Full Installation

During a full installation the following files are created (or their contents are added):

| | |
|---|---|
| */etc/fstab* | *fstab* is created automatically with the partitions specified in the section *Specifying Installation Specifications*. Partitions other than */(root)*, */public*, and */private* are mounted to the directory shown below. |

/mnt0*xy*
*x*   SCSI channel number of the hard disk
*y*   Partition

| | |
|---|---|
| */etc/disktab* | File system entries for the hard disk(s) installed are added to the end of */etc/disktab*. Entry names are as follows: |

hdsd*zy_zzz*
*x*     SCSI channel number of the hard disk
y       Partition
zzz     Disk storage capacity (in Mbytes) at format time

| | |
|---|---|
| */etc/envtab* | Ddefault values of SYS_CODE, SYS_LANGUAGE and TZ are defined. |
| */etc/install_log* | Lists the installed functions. |
| */etc/ttys* | Specifies the current terminal type. |
| */etc/X0.screens* | File necessary for running X11. |

Among these files, information concerning */etc/fstab*, */etc/disktab* and */etc/install_log* is specified at installation time. Since they are necessary for re-installation, you should make backup copies of them.

# Notes on Full Installation

Be aware of the following items when making a full installation.

## File System Creation

*newfs* is executed across all partitions of a hard disk allocated to be installed the */root, /private,* or */public* by the alteration of installation partitions. Be aware that all information on the disk is destroyed at this time.

## Installing from a Terminal Connected to the Serial Port

The */etc/X0.screens* file will not be created even if X11 is installed at function selection. Therefore, it is necessary to create the file independently later in order to use X11 with the bitmap.

## Enlarging the Swap Area

Although the swap area can be enlarged when altering partition size, it is recommended that you enlarge the swap area only when selecting X11. The X server in NEWS–OS Release 3.3 requires a fairly large allocation of memory (at least 2Mbytes), and for this reason applications that could be run on X11 for NEWS–OS Release 3.2 with no problems may result in memory shortages under NEWS–OS Release 3.3. There are also cases where it is possible to run the X11 applications, but printing becomes impossible.

Although there should be no problems of this kind with a 32-Mbyte swap area, it is recommended that you enlarge the swap area if it is only 16Mbytes. For example,

33440(16MB) —> 49324 (24MB)
33440(16MB) —> 66880 (32MB)

# 3

# NEWS–OS Version Upgrade

This chapter explains how to perform a *version upgrade* your system using NEWS–OS Release 3.3.

The Version Upgrade Kit is designed so that the upgrade process will have little impact on the current environment.

**NOTE**

*It is wise to make a current backup of your system whenever you are going to overwrite any files.*

# Version Upgrade Notes

Be sure to read this section before beginning a version upgrade

## OS Version Required

Version upgrade can only be performed on NEWS–OS Release 3.2.

## Differences from a Full Installation

Although the abilities to specify installation partitions and to alter partition size have been added as features of the NEWS–OS Release 3.3 full installation, these features are not available when making a version upgrade.

## Work Area Required

Work area for a version upgrade must be at least 580 Kbytes in the root file system.

## Files that Will Not Be Affected

The following files will not be overwritten during version upgrade:

/etc/devtab
/etc/dumpdates
/etc/ethers
/etc/ethertab
/etc/exports
/etc/ftpusers
/etc/group
/etc/hosts
/etc/hosts.equiv
/etc/motd
/etc/networks
/etc/passwd
/etc/rdtab
/etc/remote
/etc/syslog.c
/etc/utmp
/private/usr/adm/daily
/private/usr/adm/monthly
/private/usr/adm/weekly
/private/usr/hosts/MAKEHO
/private/usr/lib/aliases
/private/usr/lib/aliases.dir
/private/usr/lib/aliases.pag
/private/usr/lib/crontab
/private/usr/lib/sendmail.cf
/private/usr/lib/sendmail.fc
/private/usr/lib/sendmail.st

All object files that were installed under NEWS–OS Release 3.2 will be deleted.

Files other than NEWS–OS files will not be deleted.

# Overview

This section describes how to perform an upgrade from version 3.2 to version 3.3. Before starting the upgrade, refer to Chapter 1 to be sure your system is connected, your hard disk is formatted, and your tape drive is connected.

You will perform the following steps:

1. Copy the version upgrade tool.
2. Specify type of terminal.
3. Specify language, keyboard, and time zone.
4. Specify type of hard disk.
5. Wait for version 3.2 file deletion.
6. Select installation functions.

## Copying the Version Upgrade Tool

Bring the system up in single-user mode by entering **bo/2**. The following display will appear on your screen.

```
NEWS> bo/2
loading hd(0,0,0)boot
Boot
iop: hd(0,0,0)iopboot
xxxxx+xxxx+xxxxx start 0x1000
cpu: hd(0,0,0)vmunix
xxxxxx+xxxxx+xxxxxx start 0xxxxx
SONY NET WORK STATION, Model NWS-xxx, Machine ID #xxxxx
4.3 BSD #0: Fri Apr 21 12:19:36 JST 1989
    root@\xxxx\fP:/src/sys/NEWS\xxx\fP
NEWS-OS Release 3.2 Copyright (c) 1988,1989 by Sony Corporation
real mem  = \xxxxxxx\fP
SYSPTIZE limits number of buffers to \xxx\fP
avail mem = \xxxxxxx\fP
using xxx buffers containing \xxxxxx\fP bytes of memory
Enable Internal Inst. Cache
```

```
Floating-Point Coprocessor is MC68881
Initializing SCSI.......... done
hc0 at iop addr 7fe050 intr 0
hd0 at hc0 slave 0
hd0: hd182
fc0 at iop addr 7fe130 intr 7
fd0 at fc0 slave 0
fd1 at fc0 slave 1
en0 at iop addr 7fe250 intr 16
en0: hardware address xx:xx:xx:xx:xx:xx
kb0 at iop addr 7fe4d0 intr 36
ms0 at iop addr 7fe550 intr 40
fb0 at iop addr 7fe5d0 intr 44
fb0: NWB-512
mfb0 at iop addr 7fe5d0 intr 44
mfb0: NWB-12
rs0 at iop addr 7fe650 intr 48
lp0 at iop addr 7fed50 intr 104
echo 'erase ^?, kill ^U, intr ^C'
#
```

When the # prompt appears, insert the NEWS–OS Release 3.3 cartridge Vol. 1 into the drive, and enter the following commands to read in the files necessary for version upgrade.

```
# cd /tmp
# mt-f /dev/rtu04 rew
# mt-f /dev/rtu04 fsf 1
# tar xpf /dev/rtu04
```

Specify the tape drive name as "non-rewinding," according to the SCSI channel connected.

The *load* file will be read from the tape.

Begin version upgrade operations by entering the following command, where *n* stands for the SCSI channel number (5 – 7) to which the tape drive is connected:

```
# load n
```

## Specifying the Terminal Type

The version upgrade program automatically identifies the terminal that is connected; the following display appears if there is an error.

```
#####  -----  terminal type  -----  #####'

            [1] NWB-512
            [2] NWB-514
            [3] POP-MONO
            [4] POP-COLOR
            [5] NWB-225
            [6] NWB-251
            [7] NWP-511
            [8] vt100
            [9] dumb

Enter terminal type No.
```

**NOTE**

*If this display does not appear, your terminal type has automatically been specified. Continue on to the next operation.*

Enter the number that corresponds to the terminal that is connected.

```
Enter terminal type No.1
terminal type = term ok? [y/n]
```

Check your entry and enter **y** at the confirmation message if your selection is correct. Otherwise, enter **n** and correct the specification.

## Specifying Language, Keyboard, and Time Zone

Refer to the sections in Chapter 2 on specifying language, keyboard, and time zone. The processes are identical for both full installation and version upgrade.

## Specifying the Hard Disk Type

The version upgrade program automatically identifies the built-in hard disk; the following display appears if there is an error.

```
@@@@  NEWS-OS 3.3 SELECT VERSION UP MENU  @@@@

        [0] hd41              (41Mbyte)
        [1] hd101             (101Mbyte)
        [2] hd101_hh          (101Mbyte)
        [3] hd170_hh          (170Mbyte)
        [4] hd182             (182Mbyte)
        [5] hd286             (286Mbyte)
        [6] xt_8760s          (620Mbyte)
        [7] dk515             (640Mbyte)

# Please select number =
```

**NOTE**

*If this display does not appear, your hard disk type has been automatically specified. Continue on to the next operation.*

Enter the number that corresponds to the built-in hard disk type.

```
# Please select number = 4

Sure ? (y/n)
```

Check your entry and enter y at the confirmation message if your selection is correct. Otherwise, enter n and correct the specification.

## File Deletion

At this point, deletion of files installed under NEWS–OS Release 3.2 will begin. The following display will appear on your screen until deletion is completed.

```
#####  Remove object of NEWS-OS Release 3.2  #####

.  .  .  .  .  .  .  .  .
```

During deletion operations, marks of '.' will increase.

## Selecting Installation Functions

After file deletion is completed, refer to the *Selecting Installation Functions* section in Chapter 2 for instruction on how to select functions.

### Exceptions

The processes are identical for both full installation and version upgrade, with the following exceptions:

1.  Available Storage Capacity

    The AMOUNT [ Max XXXXXX kbyte ] displayed on the screen represents (in Kbytes) the available space after the deletion of NEWS–OS Release 3.2 files. The available space is assigned to /public; the value will depend on how /public is to be used. Installable file capacity drops if many non-NEWS–OS files are present.

2.  Key

    Although key allocation is the same as for full installation, the following key is added:

    @   Functions selected under NEWS–OS Release 3.2
        (files listed in /etc/install_log)

In addition, when the $ key (for selecting defaults) is pressed, a full installation is assumed. Depending upon the available space in /public, it may not be possible to install all functions and you will receive an error message. If this happens, decrease the number of functions selected.

# Installation Processing

Since processing procedures are identical for both full installation and version upgrade, refer to Chapter 2. When all operations are completed, the following message will appear and the program will halt.

```
Install Complete
```

When the NEWS> prompt appears, your system is ready to use.

.

# 4

# NEWS-OS Additional Installation

Beginning with NEWS-OS Release 3.3, *additional installation* commands are supported. Through the use of these commands, files that were not originally installed during a full installation can be added later.

# Copying Additional Installation Files

Follow the instructions below for copying additional installation files onto your system.

1.  Insert the NEWS–OS Release 3.3 cartridge tape Vol.1 into the tape drive.

2.  Enter the following commands:

```
#  cd /
#  mt -f /dev/nrst00 rew
#  mt -f /dev/nrst00 fsf 3
#  tar xpvf /dev/nrst00
#  mt -f /dev/nrst00 rew
#  mt -f /dev/nrst00 offl
```

3.  After copying is completed, confirm that the files listed below are installed.

    */usr/sony/etc/Addition*
    */usr/sony/etc/slink*
    */usr/sony/lib/Addition.1*
    */usr/sony/lib/Addition.2*

# Executing Additional Installation

The actual operations for conducting additional installation are described below.

1.  Connect the system.
    Refer to the *Connecting the System* section in Chapter 1 to connect all equipment. The tape drive may be connected to any of the SCSI channels 5 – 7.

2.  Power up the system.
    Turn on the tape drive, the monitor, and the NEWS workstation.

    When the NEWS> prompt appears, enter the command below to bring the workstation up in single-user mode:

    NEWS> **bo/2**

3.  Run the additional install program.
    When the # prompt appears (in single-user mode), enter the command below:

    ```
    # umount -a
    # mount -a
    # /usr/sony/etc/Addition
    ```

4.  Identify the tape drive.
    When the following message appears, enter the tape drive name:

    ```
    Tape device name [st00] : st00
    ```

    If you press [Return], the default device (st00 in this example) will be assumed.

5.  Select additional installation functions.
    The following menu for selecting additional installation functions will appear.

    ```
    @@@@  NEWS-OS 3.3 ADDITIONAL INSTALL MENU  @@@@

     [0]. X10      (5596k)      *[g]. fontxp  (871k)
    *[1]. X11R2    (14438k)      [h]. 8em     (170k)
    *[2]. X11-devl(3060k)        [i]. cdff    (2121k)
    *[3]. X11-appl(17929k)      *[j]. ir      (673k)
    *[4]. X11-font(6067k)       *[k]. sj2     (1310k)
    *[5]. sys      (18604k)     *[l]. nroff   (881k)
    *[6]. cc       (2515k)      *[m]. dict    (4127k)
     [7]. fortran  (1056k)      *[n]. bib     (243k)
     [8]. lisp     (8443k)      *[o]. cgi     (1326k)
     [9]. pascal   (946k)        [p]. plot    (551k)
    *[a]. man      (5740k)      *[q]. rcs     (537k)
    *[b]. jman     (5435k)      *[r]. uucp    (732k)
    *[c]. doc      (10655k)     *[s]. mh      (5186k)
    *[d]. lbpfil   (239k)       *[t]. yp      (634k)
    *[e]. font533  (3324k)       [u]. games   (2735k)
     [f]. fontlbp8(1920k)        [v]. learn   (964k)

          # Please select number =

          AMOUNT = 0 kbyte [ Max  103200 kbyte ]
    ```

    This is the same menu as the full installation menu, with the following exceptions:

    *   The AMOUNT displayed on the last line [ Max XXXXX kbyte ] refers to the available storage capacity of the /public directory to be installed. The default directory to be installed is /(root).

- The symbols preceding the function options in the menu have the following meanings:

    "*"     Functions already installed

    "−"     Functions too large to install

- The following keys do not have the same meaning as in full installation:

    " "     Displays the list for selecting directories to be installed (6).

    "%"     Selects all functions not headed by a "−".

    "$"     Selects default functions (Not headed by a "*" or a "−".)

6. Confirm your selections.
   When you press [Return] on the original menu for selecting installation functions, the message below will appear. If your selections are correct, enter **y** or press [Return] to begin installation.

   ```
   May I start install ? (y/n) y
   ```

   Press any other key to return to the original menu.

7. Verify your confirmation.
   The following message will ask you to verify that you wish to begin additional installation.

   ```
   Sure ? (y/n) y
   ```

   Enter **y** or press [Return] to confirm. Press any other key to return to the original menu

8. Mount the installation tape as directed by the message on the screen, then enter **next** and press [Return].

   ```
   Please Set Media Vol.2 and Enter "next" : next
   ```

   The following message will be displayed during installation.

   ```
   .... Rewinding Tape

   Install X10       to     /mnt    ... end
   Install X11-devl to     /mnt    ... end
   Install X11-appl to     /mnt    ... end
   Install X11-font to     /mnt    ... end

   .... Rewinding Tape
   ```

9.  Repeat step 9 as directed (this depends on the functions selected).
    Additional installation is complete when the following message
    appears:

    ```
    Install Complete
    ```

# Creating Symbolic Links

At this point the newly installed files are not in the locations they usu-
ally should be, and cannot be accessed with normal paths (unless in-
stalled in "/"). For this reason it is necessary to either create symbolic
links to them, or to move them.

Although creating symbolic links is fairly easy, be sure to use the com-
mand carefully; it is not flexible.

## Command-Generated

To execute the command for creating symbolic links, enter the following:

```
# /usr/sony/etc/slink function path
```

Specify a keyword to correspond to the function. Specify the *path* of
the function for which the symbolic link is being created.

## User-Generated

Information about what kind of files are included in each function is not
included in this manual. In order to create symbolic links, the user must
refer to the actual files installed, or the shell script commands for cre-
ating symbolic links.

# Notes on Additional Installation

Since many of the procedures necessary for additional installation are the same as those for full installation, please read Chapter 1 before beginning.

## Limitations on Installable Directories

Among the directories listed in /etc/fstab as able to mount file systems, only directories not in /public along the relative path can be selected from directories being used to mount other file systems. Therefore, the procedure for executing additional installation on a new expansion hard disk is as follows:

1. Format hard disk
2. Execute all partitions to newfs
3. Alter /etc/fstab
4. Execute additional installation

## Symbolic Links

Be aware that additional installation may fail when there is a symbolic link between a file system to be installed (A) and another file system (B), if there is not enough available space in file system B.

## Duplicate Installation

When installing a function which has already been installed (at the same location), there are cases in which you will receive a message saying that there is not enough space available, even when there is enough storage capacity on the disk. If this happens, the files to be overwritten must be deleted in advance.

**NOTE**

*Be sure you have made a recent backup copy of any file(s) that are to be overwritten.*

# Appendix A

## Installation Functions at a Glance

This appendix lists installation function, their size (in Kbytes), and a brief description of each.

| Function | Size (KB) | Description |
|---|---|---|
| X10 | (5596) | X Window Version 10 |
| X11R2 | (14438) | X Window Version 11 Rel. 2 |
| X11-devl | (3060) | X Window Version 11 Rel. 3 library and header file |
| X11-appl | (17929) | X Window Version 11 Rel. 3 server, client and fonts |
| X11-font | (6067) | X Window Version 11 Rel. 3 fonts |
| sys | (18604) | Object files necessary for kernel reconfiguration |
| cc | (2515) | C compiler and header files |
| fortran | (1056) | Fortran compiler |
| lisp | (8443) | Franz lisp interpreter |
| pascal | (946) | Pascal compiler |
| man | (5740) | On-line Manual (English) |
| jman | (5435) | On-line Manual (Japanese) |
| doc | (10655) | On-line documents |
| lbpfil | (239) | lbp output filter |
| font533 | (3324) | NWP–533/537 fonts |
| fontlbp8 | (1920) | -8 fonts |
| fontxp | (871) | xprev fonts |
| 8em | (170) | -8 terminal emulator filter |
| cdff | (2121) | CDFF filter, library, etc. |
| ir | (673) | image reader command |
| sj2 | (1310) | sj2 and sjx |
| nroff | (881) | text formatting command |
| dict | (4127) | dictionary and related commands |
| bib | (243) | commands related to bibliography database |
| cgi | (1326) | CGI library |
| plot | (551) | graphic library |
| rcs | (537) | revision control system command |
| uucp | (732) | UUCP commands and library |
| mh | (5186) | message handler |
| yp | (634) | yellow page network service |
| games | (2735) | games (/usr/games) |
| learn | (964) | computer-supported educational programs |

# Appendix B

# Tape Contents of the Installation Kit

## Vol.1

| Number | Contents | Format |
|--------|----------|--------|
| 1 | install tool-1 | — |
| 2 | install tool-2 | — |
| 3 | install tool-3 | — |
| 4 | install tool-4 | — |
| 5 | Basic file | tar,compress |
| 6 | Basic file 2 | tar,compress |
| 7 | NWS–18xx/19xx vmunix,rtx | tar,compress |
| 8 | NWS–17xx vmunix | tar,compress |
| 9 | NWS–16xx vmunix | tar,compress |
| 10 | NWS–15xx vmunix | tar,compress |
| 11 | NWS–14xx vmunix | tar,compress |
| 12 | NWS–8xx/9xx vmunix, iopboot | tar,compress |

## Vol.2

| Number | Contents | Format |
|--------|----------|--------|
| 1 | install data | --- |
| 2 | X10 | tar,compress |
| 3 | X11R2 | tar,compress |
| 4 | X11-devl | tar,compress |
| 5 | X11-appl | tar,compress |
| 6 | X11-font | tar,compress |

## Vol.3

| Number | Contents | Format |
|--------|----------|--------|
| 1 | instal data | --- |
| 2 | sys | tar,compress |
| 3 | cc | tar,compress |
| 4 | f77 | tar,compress |
| 5 | lisp | tar,compress |
| 6 | pascal | tar,compress |
| 7 | man | tar,compress |
| 8 | jman | ar,compress |
| 9 | doc | tar,compress |

## Vol.4

| Number | Contents | Format |
|--------|----------|--------|
| 1 | instal data | — |
| 2 | lbpfil | tar,compress |
| 3 | font533 | tar,compress |
| 4 | fontlbp8 | tar,compress |
| 5 | fontxp | tar,compress |
| 6 | 8em | tar,compress |
| 7 | cdff | tar,compress |
| 8 | ir | tar,compress |
| 9 | sj2 | tar,compress |
| 10 | nroff | tar,compress |
| 11 | dict | tar,compress |
| 12 | bib | tar,compress |
| 13 | cgi | tar,compress |
| 14 | plot | tar,compress |
| 15 | rcs | tar,compress |
| 16 | uucp | tar,compress |
| 17 | mh | tar,compress |
| 18 | yp | tar,compress |
| 19 | games | tar,compress |
| 20 | learn | tar,compress |