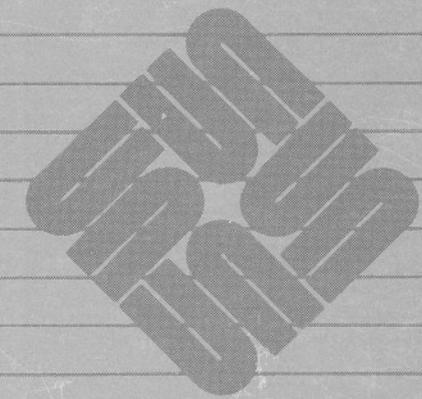




Sun™ Modula-2 Installation Guide



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Sun Modula-2 Installation Guide

This document tells you how to install Modula-2 onto a Sun workstation.

The distribution tape contains:

- The Modula-2 compiler, `m2c`, and linker, `m2l`
- A library of Modula-2 modules
- Some online documentation

The Modula-2 compiler consists of:

- A compiler driver
- A Modula-2 front end
- A Modula-2 code generator

The online documentation consists of:

- The Modula-2 compiler Man Page, in the file `m2c.1`
- The Modula-2 linker Man Page, in the file `m2l.1`

Sun Modula-2 runs on Sun-2 and Sun-3 machines using Release 3.0 of the system software. It occupies about 1.3 Mbytes of disk space. You will need either a 1/4" tape drive, capable of reading tape cartridges, or a 1/2" tape drive, capable of reading 1600-bpi tape.

1.1. Overview of the Installation

Note: With a heterogeneous file server, the `/usr` directory may actually be `/usr.MC68010` or `/usr.MC68020`, as indicated in the next section on the installation procedure.

The components of this software fit in various places in the Sun's file system:

- The compiler driver, `m2c`, and linker, `m2l`, must be installed in the directory `/usr/bin`.
- The library modules must all be installed in the directories `/usr/lib/modula2` and `/usr/lib/modula2_p`, which will be created by the installation process.
- You must install the `m2cfe` compiler front end, and the `f1` code generator in the directory `/usr/lib/modula2`.

Software that has a mandatory installation location automatically installs in that location. Software that has no mandatory location, as well as documentation, initially goes to `/usr/lib/modula2`, and you, the installer, may then move it

to its proper location.

There are three cases within the installation procedure:

- "Normal" configuration, Sun-2 or Sun-3 homogeneous file server
- MC68010 release onto a Sun-3 heterogeneous file server
- MC68020 release onto a Sun-2 heterogeneous file server

Please follow the instructions in the section below appropriate for your case.

Sun distributes 1/4" or 1/2" Modula-2 installation tapes. Choose the device symbol for your tape and tape drive from the table below, and substitute this symbol for the word *tape* in the instructions.

<i>Symbol</i>	<i>Description</i>
ar	Archive 1/4" drive
st	SCSI 1/4" tape drive
mt	1/2" tape drive

Immediately following the device symbol is a digit representing the tape drive unit number, which is 0 for the examples in this guide.

When you are not using a remote tape drive, go on to the section which describes your configuration.

When using a remote tape drive, substitute the following commands for the corresponding `tar` and `mt` commands described in the installation details. In specific, when using a remote tape drive, look for the following command:

```
# mt -f /dev/nrtape0 rew
```

and substitute:

```
# rsh remote_host mt -f /dev/nrtape0 rew
```

Also look for the following command:

```
# mt -f /dev/nrtape0 fsf 1
```

and substitute:

```
# rsh remote_host mt -f /dev/nrtape0 fsf 1
```

1.2. Installation Procedure

Note: A *heterogeneous* file server is a Sun-3 file server that serves at least one Sun-2 (MC68010-based release) client machine, or a Sun-2 file server that serves at least one Sun-3 (MC68020-based release) client machine.

Using a Remote Tape Drive

Note: Remember to replace *tape* with the appropriate device abbreviation for the remote tape you are using. Also, replace *remote_host* with the hostname of the machine that has the tape drive.

Finally, look for this command:

```
# tar xvfp /dev/nrtape0
```

and substitute:

```
# rsh remote_host dd if=/dev/nrtape0 bs=20b | tar xvBF -
```

To avoid permission problems, the hostname of your local machine must be in the remote machine's `/.rhosts` file.

When your system is running the distributed data base services' Yellow Pages, the hostnames of both machines must be in the Yellow Pages' `hosts` file. If either machine is not running the Yellow Pages, make sure an entry for the other machine exists in the `/etc/hosts` file of the non-Yellow-Pages machine.

“Normal” Configuration

- 1) Login to the root account:

```
login: root
Password: (Type password here.)
#
```

- 2) Change your current directory to the root directory (into which the necessary files will be deposited):

```
# cd /
#
```

- 3) Load the Modula-2 distribution tape onto a tape drive.
- 4) Only when using 1/4" tape media (with an Archive 1/4" drive or an SCSI 1/4" drive), retension the tape with the following command (remember to replace *tape* with the appropriate device symbol as explained at the beginning of this installation procedure section — Section 1.2):

```
# mt -f /dev/nrtape0 ret
#
```

- 5) With both types of tape drive, skip the first file on the tape (the copyright mark):

```
# mt -f /dev/nrtape0 fsf 1
#
```

- 6) Use `tar` to extract the object files and documents (see Appendix A for a list of the filenames of these files and documents as they appear in the `tar` listing):

```
# tar xvpf /dev/nrtape0
(... many messages from tar ...)
#
```

- 7) Rewind a 1/4" tape using the command:

```
# mt -f /dev/nrtape0 rew
#
```

Rewind and dismount a 1/2" tape:

```
# mt -f /dev/nrtape0 offl
#
```

- 8) If you wish, you may install the online Modula-2 Man Pages onto *the machine the installed machine uses to access the standard Man Pages*. Log in as `root` on the Man Page source machine and use these commands:

```
# cd /usr/lib/modula2
# mkdir /usr/man/man1
# mv m2c.1 /usr/man/man1
# mv m2l.1 /usr/man/man1
#
```

- 9) If you don't want to install the profiling facility of Modula-2, skip to the next step (number 10).

Profiling a Modula-2 program requires a certain file, part of your 3.0 system software release tape, to be present on your machine. Check that it is present with the command:

```
# ls /usr/lib/libc_p.a
/usr/lib/libc_p.a
#
```

Note: The `/usr/man/man1` directory name indeed ends in the letter 1, not the number one (1). If the `/usr/man/man1` directory already exists when you attempt to create it using `mkdir`, `mkdir` reports a `File exists` warning that you may ignore.

When the file listing appears as above, skip to the next step (number 10). Otherwise, find your system software release tapes. Type the following command and follow the instructions it provides (including mounting the proper system software release tape in your tape drive as prompted by the program):

```
# /usr/etc/extract_release tape tapefull profiled  
...
```

This command installs the necessary Modula-2 profiling support files. Remove the tape from the drive when done.

10) Finally, log out:

```
# ^D (Type CTRL-D or logout to log out.)
```

```
login:
```

This completes the Modula-2 installation for the “normal” configuration.

MC68010 Release onto Sun-3 Heterogeneous Server

- 1) Login to the root account:

```
login: root
Password: (Type password here.)
#
```

- 2) Change your current directory to a temporary directory (into which the necessary files will be deposited):

```
# cd /usr.MC68010/tmp
#
```

- 3) Load the Modula-2 distribution tape onto a tape drive.
- 4) Only when using 1/4" tape media (with an Archive 1/4" drive or an SCSI 1/4" drive), retension the tape with the following command (remember to replace *tape* with the appropriate device symbol as explained at the beginning of this installation procedure section — Section 1.2):

```
# mt -f /dev/nrtape0 ret
#
```

- 5) With both types of tape drive, skip the first file on the tape (the copyright mark):

```
# mt -f /dev/nrtape0 fsf 1
#
```

- 6) Use `tar` to extract the object files and documents (see Appendix A for a list of the filenames of these files and documents as they appear in the `tar` listing):

```
# tar xvpf /dev/nrtape0
(... many messages from tar ...)
#
```

- 7) Rewind a 1/4" tape using the command:

```
# mt -f /dev/nrtape0 rew
#
```

Rewind and dismount a 1/2" tape:

```
# mt -f /dev/nrtape0 offl
#
```

Note: The directory `usr` mentioned in this step is a directory that you have just installed onto your machine under `/usr.MC68010/tmp`.

- 8) Perform the following steps to copy the `usr/bin` and `/usr/lib` directories and the files within them to the appropriate locations:

```
# cd usr
# cp -r * /usr.MC68010
# cd ..
# rm -r usr
#
```

Note: Certain of the `/usr.MC68010/man/man1` and `/usr.MC68020/man/man1` directory names indeed end in the letter `l`, not the number one (`1`). If either of these directories already exists when you attempt to create it using `mkdir`, `mkdir` reports a `File exists` warning that you may ignore.

- 9) If you wish, you may install the online Modula-2 Man Pages onto *the machine the installed machine uses to access the standard Man Pages*. You may want to install the online Man Pages in `/usr.MC68010/man/man1` (letter “`l`”), `/usr.MC68020/man/man1` (letter “`l`”), or both. First, log in as `root` on the Man Page source machine.

To determine whether or not to install the online Man Pages in `/usr.MC68010/man/man1` (letter “`l`”), look to see whether the standard online Man Pages are in `/usr.MC68010/man/man1` (that’s a one) with the following command:

```
# ls -d /usr.MC68010/man/man1
/usr.MC68010/man/man1
#
```

When `ls` returns nothing (just the prompt), skip to the next paragraph of instructions. When `ls` returns `/usr.MC68010/man/man1 (one)` as in the listing above, install the Man Pages into `/usr.MC68010/man/man1` (letter “`l`”) with these commands:

```
# cd /usr.MC68010/lib/modula2
# mkdir /usr.MC68010/man/man1
# mv m2c.1 /usr.MC68010/man/man1
# mv m2l.1 /usr.MC68010/man/man1
#
```

To determine whether or not to install the online Man Pages in `/usr.MC68020/man/man1` (letter “`l`”), look to see whether the standard online Man Pages are in `/usr.MC68020/man/man1` (one) with the following command:

```
# ls -d /usr.MC68020/man/man1
/usr.MC68020/man/man1
#
```

When `ls` returns nothing (just the prompt), skip to the next paragraph of instructions. When `ls` returns `/usr.MC68020/man/man1` (one) as in the listing above, install the Man Pages into `/usr.MC68020/man/man1` (letter "l") with these commands:

```
# cd /usr.MC68010/lib/modula2
# mkdir /usr.MC68020/man/man1
# mv m2c.1 /usr.MC68020/man/man1
# mv m2l.1 /usr.MC68020/man/man1
#
```

- 10) If you don't want to install the profiling facility of Modula-2, skip to the next step (number 11).

Profiling a Modula-2 program requires a certain file, part of your system software release tape, to be present on your machine. Check that it is present with the command:

```
# ls /usr/lib/libc_p.a
/usr/lib/libc_p.a
#
```

When the file listing appears as above, skip to the next step (number 11). Otherwise, refer to *Installing UNIX on the Sun Workstation* to install the appropriate profiling library.

- 11) Finally, log out:

```
# ^D (Type CTRL-D or logout to log out.)

login:
```

This completes the Modula-2 installation for the MC68010 release onto a Sun-3 heterogeneous server.

MC68020 Release onto a Sun-2 Heterogeneous Server

- 1) Login to the root account:

```
login: root
Password: (Type password here.)
#
```

- 2) Change your current directory to a temporary directory (into which the necessary files will be deposited):

```
# cd /usr.MC68020/tmp
#
```

- 3) Load the Modula-2 distribution tape onto a tape drive.
- 4) Only when using 1/4" tape media (with an Archive 1/4" drive or an SCSI 1/4" drive), retension the tape with the following command (remember to replace *tape* with the appropriate device symbol as explained at the beginning of this installation procedure section — Section 1.2):

```
# mt -f /dev/nrtape0 ret
#
```

- 5) With both types of tape drive, skip the first file on the tape (the copyright mark):

```
# mt -f /dev/nrtape0 fsf 1
#
```

- 6) Use `tar` to extract the object files and documents (see Appendix A for a list of the filenames of these files and documents as they appear in the `tar` listing):

```
# tar xvfp /dev/nrtape0
(... many messages from tar ...)
#
```

- 7) Rewind a 1/4" tape using the command:

```
# mt -f /dev/nrtape0 rew
#
```

Rewind and dismount a 1/2" tape:

```
# mt -f /dev/nrtape0 offl
#
```

Note: The directory `usr` mentioned in this step is a directory that you have just installed onto your machine under

`/usr.MC68020/tmp`.

- 8) Perform the following steps to copy the `usr/bin` and `/usr/lib` directories and the files within them to the appropriate locations:

```
# cd usr
# cp -r * /usr.MC68020
# cd ..
# rm -r usr
#
```

- 9) If you wish, you may install the online Modula-2 Man Pages onto *the machine the installed machine uses to access the standard Man Pages*. You may want to install the online Man Pages in `/usr.MC68010/man/man1` (letter '1'), `/usr.MC68020/man/man1` (letter '1'), or both. First, log in as root on the Man Page source machine.

Note: Certain of the

`/usr.MC68010/man/man1` and `/usr.MC68020/man/man1` directory names indeed end in the letter 1, not the number one (1). If either of these directories already exists when you attempt to create it using `mkdir`, `mkdir` reports a `File exists` warning that you may ignore.

To determine whether or not to install the online Man Pages in `/usr.MC68010/man/man1` (letter '1'), look to see whether the standard online Man Pages are in `/usr.MC68010/man/man1` (that's a one) with the following command:

```
# ls -d /usr.MC68010/man/man1
/usr.MC68010/man/man1
#
```

When `ls` returns nothing (just the prompt), skip to the next paragraph of instructions. When `ls` returns `/usr.MC68010/man/man1` (one) as in the listing above, install the Man Pages into `/usr.MC68010/man/man1` (letter '1') with these commands:

```
# cd /usr.MC68020/lib/modula2
# mkdir /usr.MC68010/man/man1
# mv m2c.1 /usr.MC68010/man/man1
# mv m2l.1 /usr.MC68010/man/man1
#
```

To determine whether or not to install the online Man Pages in `/usr.MC68020/man/man1` (letter '1'), look to see whether the standard online Man Pages are in `/usr.MC68020/man/man1` (one) with the following command:

```
# ls -d /usr.MC68020/man/man1
/usr.MC68020/man/man1
#
```

When `ls` returns nothing (just the prompt), skip to the next paragraph of instructions. When `ls` returns `/usr.MC68020/man/man1` (one) as in the listing above, install the Man Pages into `/usr.MC68020/man/man1` (letter "1") with these commands:

```
# cd /usr.MC68020/lib/modula2
# mkdir /usr.MC68020/man/man1
# mv m2c.1 /usr.MC68020/man/man1
# mv m2l.1 /usr.MC68020/man/man1
#
```

- 10) If you don't want to install the profiling facility of Modula-2, skip to the next step (number 11).

Profiling a Modula-2 program requires a certain file, part of your system software release tape, to be present on your machine. Check that it is present with the command:

```
# ls /usr/lib/libc_p.a
/usr/lib/libc_p.a
#
```

When the file listing appears as above, skip to the next step (number 11). Otherwise, refer to *Installing UNIX on the Sun Workstation* to install the appropriate profiling library.

- 11) Finally, log out:

```
# ^D (Type CTRL-D or logout to log out.)

login:
```