

Development System Installation

Note: If you plan to install an SCO Maintenance Supplement, consult the release notes for the Maintenance Supplement to see if you are required to complete this section before installing the Maintenance Supplement.

Note: If you like, you may perform the "Program Installation" section while you are installing the Development System.

You will need your "IN" series floppies from the Unix Installation section again. Also, make sure you have your serial number and activation key for the Development System, or you will be wasting your time

```
# custom
```

```
Vinstall
```

```
RETURN (A New Product)
```

```
RETURN (Entire Product)
```

At this point, you will be prompted to insert a series of floppies. Please do so when prompted. (Start with floppy D1.)

Enter serial number: (Carefully type the serial number from the pink Activation Key card. Write this number on the serial number log sheet for this computer as well.)

Enter activation key: (Carefully type the activation key from the pink Activation Key card. Write this number on the serial number log sheet for this computer as well.)

At this point, you may be prompted to insert a series of floppies (from the "IN" series of the Operating System floppies). Please do so when prompted.

```
Q)uit
```

```
Y)es
```

Examination of System Diagnostic and Error Messages:

Errors that appear on the console are stored in the file

```
/usr/adm/messages
```

This seems to also contain the system bootup messages (such as what devices are found) when the system goes directly into *multi*-user mode. These bootup messages also tell how much memory there is, how large the kernel is, how large various kernel parameters are, etc. Note that these answers, if they refer to blocks, are given in 512B blocks, not 1KB blocks; hence if you chose 16000 for the swap space during Unix installation, you will likely see a line containing

```
nswap = 32000.
```

To examine this file, use syntax similar to the following:

```
tail -100 /usr/adm/messages | pg
```

This will display the last 100 lines of the file, piped through the lpg, utility.

SCSI Tape Not Rewinding Properly Before Use:

This problem is addressed in the end of the "****Unix Installation****" section. The 'lrStp' devices need to have a minor number in the range of 0-7 (preferably 4-7), and the 'lnrStp' devices need to have a minor number in the range of 8-15. The best way to address the problem is to make the proper change to /etc/perms/rtsmd, de-install the tape drive(s), and reinstall them in the same order they were installed originally. This will involve relinking the kernel twice, rebooting the system after each relink.

Note: You probably do not need to relink the kernel after de-installing the tape drive(s)--just decline lmkdev tape's offer to relink the kernel until after reinstalling the tape drive(s).

Another method, which does not involve relinking the kernel, involves "rotating" the names of the 'lnrStp' and 'rStp' devices. To do this, follow these general guidelines:

- o Go to the /dev directory (1cd /dev')
- o Write down the current configuration (use 11 -i *rct* *rStp*) in case something goes wrong. Be sure to record the inodes (the numbers in this ist column), and the major and minor numbers (the two numbers separated by), and the device name
- o Rotate the name(s) using 1mv,1 as: mv nrStpO nrStpO.h mv rStpO nrStpO mv nrStpO.h rStpO
- o Re-link the default devices (rctO & nrctO) to the proper devices, as: ln nrStpO nrctO ln rStpO rctO
- o Be sure to perform the patch to /etc/perms/rtsmd as described in the last part of the "****Unix Installation****" section so the configuration will be correct the next time tapes devices are created.

See also "SCSI Tape Ejecting After Each Tape Operation."

SCSI Tape Ejecting After Each Tape Operation:

Note: This section assumes you have already addressed the problem of the SCSI tape not rewinding properly before use (see the section under that name).

This problem tends to happen with DAT tape drives.

This problem is similar to the tape not rewinding properly before each tape operation. The solution to this is to give the "rStp" devices minor numbers in the range of 4-7 rather than their probable 0-3.

Note: It has been attempted to fix the problem by using the minor number offsets of 4 and 8 for StpO and nrStpO, respectively in /etc/perms/rtsmd, rather than 0 and 8, but Unix turns the 4's into O's anyway. Perhaps on a later release SCO will fix that problem.

You may use this procedure, which does not involve relinking the kernel:

```
# cd /dev                (Go to the devices directory)

# 1 -i *rct* *rStp* sort (Sorted long listing of all SCSI tape drives, links to the default devices, and
their inodes)
```

Your output may look something like this:

```
70    crw-rw-rw-    1    root    other    46,    1    Oct    30
15:10 rStpi

163   crw-rw-rw-    3    root    other    46,    0    Oct    28
18:09 rStpO
```

163 18:09	crw-rw-rw- rctO	3	root	other	46,	0	Oct	28
167 15:12	crw-rw-rw- nrStpl	1	root	other	46,	9	May	20
6237 15:12	crw-rw-rw- nrStpO	3	root	other	46,	8	May	20
6237 15:12	crw-rw-rw- nrctO	3	root	other	46,	8	May	20

(inode) (major, minor) (device)

In this case, you can see both by the inode (the number in the first column) and the major and minor numbers (in this case, the 46 is the major number; the number after the comma is the minor number) which devices are identical:

```
rStpO rctO
```

```
nrStpO nrctO
```

The ejection problem is caused by the fact that rStpO & rStpl have minor numbers in the range of 0 to 3 (in this case, 0 & 1, respectively), instead of in the range of 4 to 7. Here's how to change the minor numbers:

First, take note of which devices are linked to each other. We have already noted that rctO & rStpO, and nrctO & nrStpO, are linked. The devices we are concerned about are rStpO & rStpl. Since rStpl has no links, we don't have to worry about that. Just remember that (in this case) rStpO is linked to rctO.

Second, take note of the major number. In this case it is 46. This number is very important--it will be staying the same.

Third, take note of the minor numbers for the rStp* devices (in this case, rStpO's is 0, and rStpl's is 1).

```
# rm rStpO (Remove the 1st SCSI tape device)
```

In the next instruction, use the major number you took note of earlier (in this case, 46); also, add 4 to the current minor number of the device, putting it in the range of 4-7. For example, in our case, with a major number of 46 and a minor number of 0 for rStpO, we would type:

```
# mknod rStpO c 46 4 (Add the 1st SCSI tape device, instructing it to not eject the tape after use)
```

Now we need to reestablish the link that rStpO had with rctO. Here's how:

```
# ln rStpO rctO
```

In the case of a second SCSI tape drive, we will need to redefine its minor number, but probably not link it. In our example it would be:

```
# rm rStpl (Remove the 2nd SCSI tape device)
```

```
# mknod rStpl c 46 5 (Remake the 2nd SCSI tape device, instructing it to not eject the tape after use)
```

In the above instruction, we added 4 to the previous minor number to get 5.

If you ever remove the tape device using `lmddev tape`, you will have to redo this section.

Note: Even though the minor number no longer matches what is in `/etc/perms/rtsmd`, if you should ever remove the tape device using `lmkdev tape`, the device will be removed properly. This is no-doubt contingent upon keeping the same major number. If you mess up and use the wrong major number, remove the offending file!