

4. SCO UNIXWARE

4.1 SCO UNIXWARE Operating System

This section provides an overview of the SCO UNIXWARE Operating System.

4.1.1 SCO UNIXWARE Overview

- Operating System.
 - SCO UNIXWARE consists of programs that controls the computer, acts as a link between the user and computer, and provides tools to accomplish user tasks. The operating system offers the following advantages:
 - A general purpose system for performing a wide variety of jobs or applications.
 - An interactive environment that allows direct communication with the computer and receive immediate responses to requests and messages.
 - A multi-user environment that allows user to share computer resources with other users without sacrificing productivity.
 - A multi-tasking environment that enables user to execute more than one program, simultaneously.
- Major Components. The four major components are:
 - kernel
 - file system
 - shell
 - SCO UNIXWARE commands
- How the SCO UNIXWARE System Operates.
 - Each circle (Figure 4.1-1) represents one of the main components of the SCO UNIXWARE, namely, the kernel, shell, and user programs or commands. The arrows show how the shell acts as a medium to allow communication with the kernel.

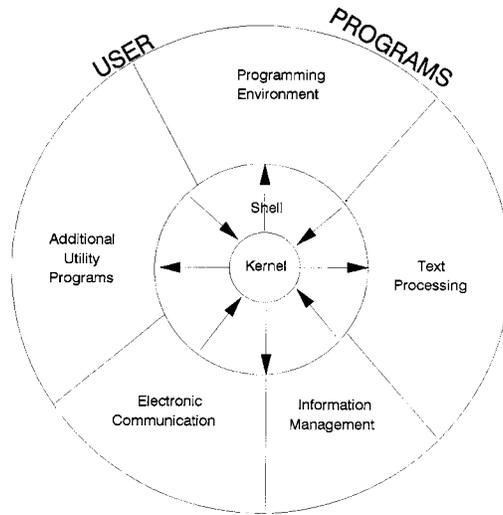


FIGURE 4.1-1 - SCO UNIXWARE System Components

4.1.2 The Kernel

The kernel (Figure 4.1-2) can be referred to as the nucleus of the operating system. The kernel controls access to the computer, schedules processes, allocates memory and disk storage, manages transmission of data between main storage and peripheral devices. The kernel performs three major tasks which are Process Management, Device Management, and File Management.

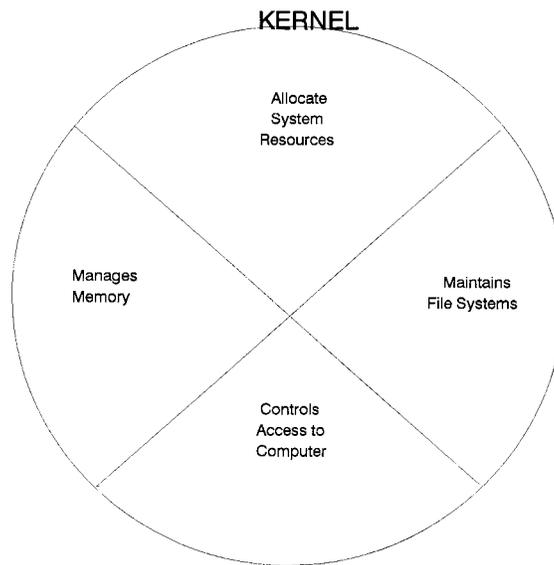


FIGURE 4.1-2 - Kernel

- **Process Management.** Starts processes; schedules processes; swaps processes to disk, allocates resources; such as, memory, and gives services as requested.
- **Device Management.** The most hardware dependent part of the SCO UNIXWARE kernel. It supervises movement of data between main memory and devices. For every piece of Hardware attached to the computer, there are applicable software modules.
- **File Management.** Stores files on disks and supports multiple file system types.

4.1.3 SCO UNIXWARE File Structure

The SCO UNIXWARE file structure is similar to the organizational chart of a large company. This structure provides a logical method of organizing, retrieving, and managing information. The top of the structure is the root and is represented with a / character. The rest of the file system is made up of directories, ordinary files, and special files. The root directory contains a variety of system related directories, e.g., /informix, /usr, /tmp, /etc, and /dev. See Figure 4.1-3 for a view of a typical file system.

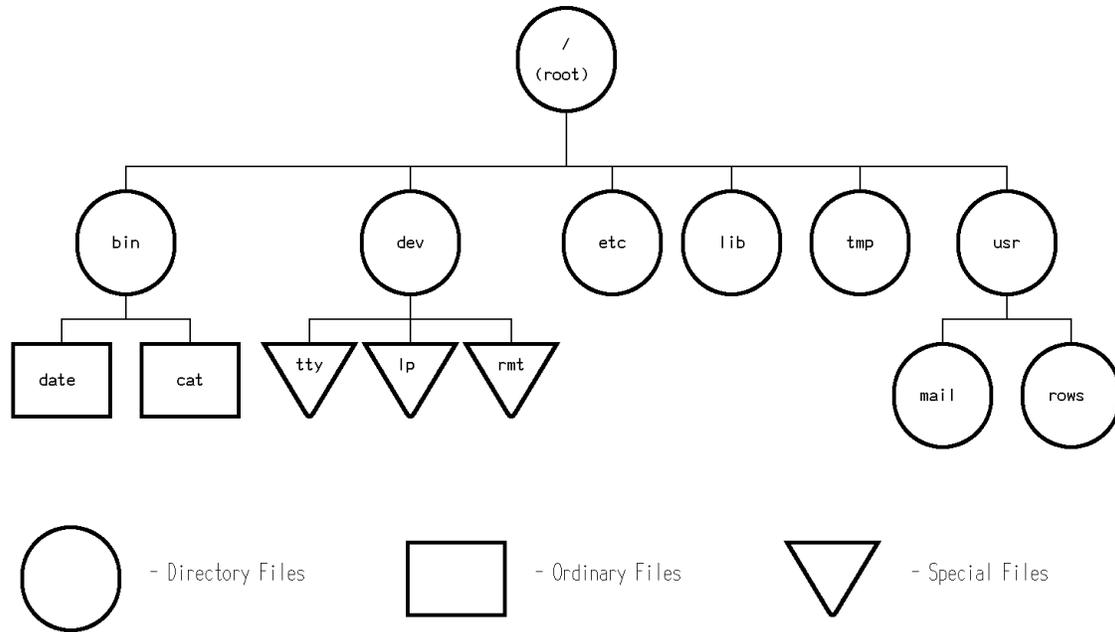


FIGURE 4.1-3 - Typical File System

4.1.4 SCO UNIXWARE File Types

The three types of files used with the operating system are directories, ordinary files, and special files.

- **Ordinary Files.** Ordinary files are a collection of characters treated as a unit by the system. These types of files contain text for letters or reports, code for programs, and commands to run programs. Users can manipulate a file by adding to it or deleting from it.
- **Directories.** Directories are a super file that contain a group of related files. A directory file stores the names of files it contains, plus information used to locate and access the files. Each user has a special directory called the home directory. In the AFMIS system, all user home directories are located in /work/acct/, i. e., /work/acct/ifa1.
- **Special Files.** Special files represent a physical work account device; such as, a terminal, disk drive, magnetic tape drive, or communication link.

The following is a description of the directories of a typical file system using the three file types:

/informix	contains database
/dev	contains special files that represent peripheral devices; such as, the console, line printer, user terminals, and disk drives
/etc	contains programs and data files for system administration
/lib	contains SCO utility programs
/tmp	contains temporary files that can be created by any user
/usr	contains other directories including mail, which contains files for storing newsworthy items

The directories and files created comprise the portion of the file system controlled by user. Other parts of the file system are provided and maintained by the operating system; such as, /bin, /dev, /etc, /lib, /tmp, and /usr, and, basically, have the same structure on all SCO UNIXWARE systems.

4.1.5 Moving Around the System

The directory that you are, presently, in is called the current directory of the working directory. To see the current directory or working directory, type pwd at the prompt. The cd command is used constantly to move around the various directories. For example, cd will take you to the home directory, whereas, cd /usr will take you to the usr directory. You can only move around through the file system in one of two places: current directory or the root directory. Follow these simple rules to move around in system:

- If you are starting with a slash (/), you are starting at the root directory; otherwise, you are starting in the current directory.
- The names used in the path are separated by slashes (/).
- While in /work/acct, the command: `cd afmis` will place user in the directory /work/acct/afmis. To move to a directory in relation to our current directory is called the relational path.
- Ascend the file system hierarchy by specifying in the path name. The examples in Figure 4.1-4 make this clearer.

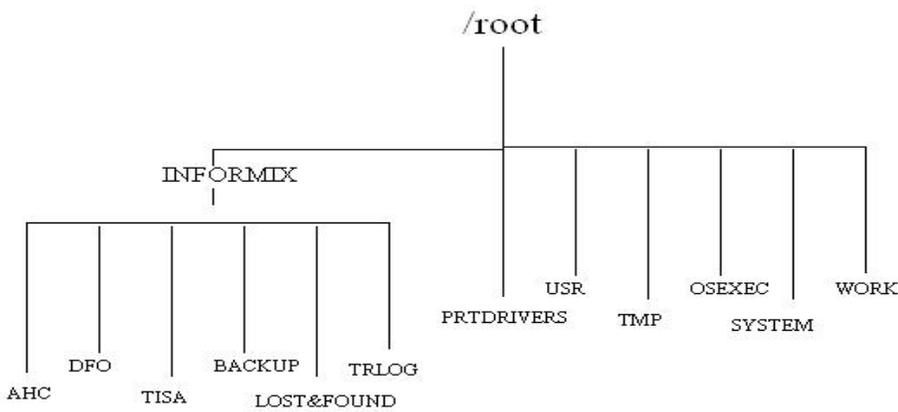


FIGURE 4.1-4 - UNIX File System Structure

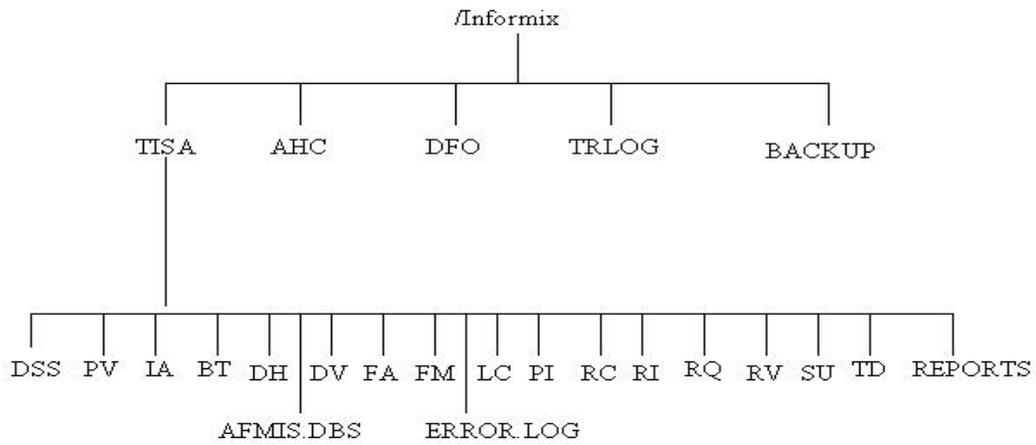


FIGURE 4.1-4a - TISA/IFA Subsystem Structure

- To change directories, the full path can be used. The command `cd /work/acct/dfosa` will move to the specified directory. This is called the full path.

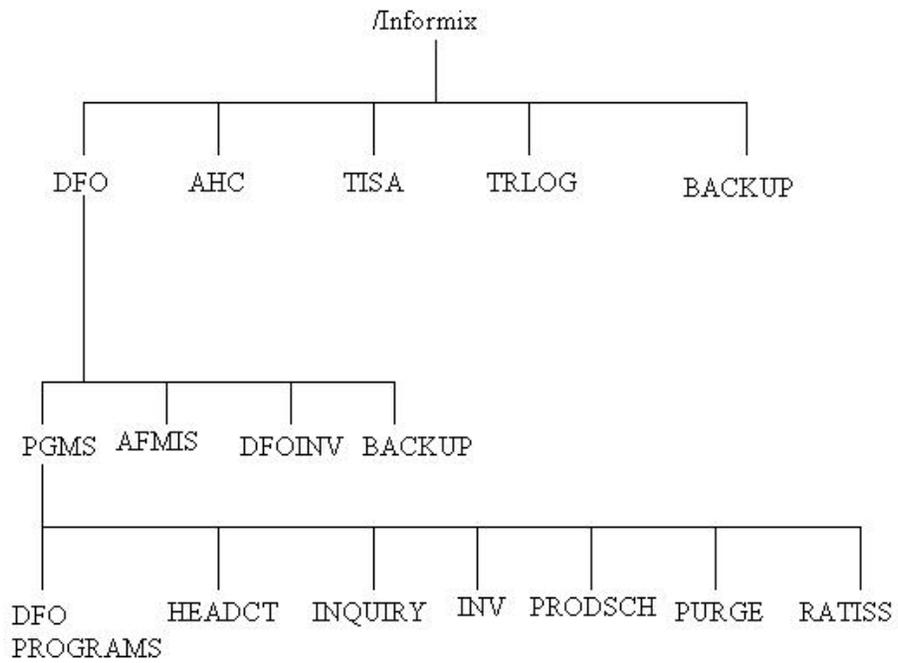


FIGURE 4.1-4b - DFO Subsystem Structure

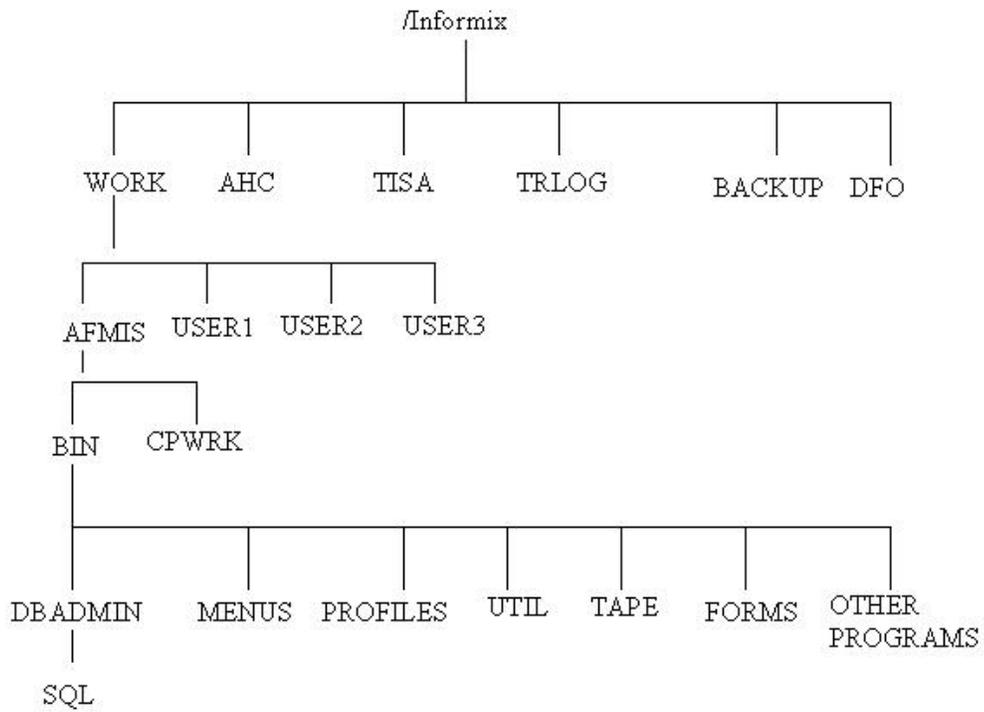


FIGURE 4.1-4c - AFMIS System Structure

- If logged-in as afmis, at the prompt, type pwd, the following is displayed:
/work/acct/afmis.
- Move to /work/acct by typing cd .. (.. represents "back one directory").
- Go to /osexec by typing cd /osexec.
- Use Figures 4.1-4 to move around directories.

4.1.6 File Access Permissions

Each time a file is accessed by a user, the system checks to see if that user has the necessary permissions. Normally, the permissions are set so you can have free access to your files, and very limited or no access to operating system files. In the UNIX file system, these three operations are performed on a file, read, write, and execute. Each file is owned by a particular user and also associated with a particular group. For example, if you type ls -l, user may see the following:

<u>PERMISSIONS</u>	<u>OWNER</u>	<u>GROUP</u>	<u>SIZE</u>	<u>DATE CREATED</u>	<u>FILE NAME</u>
-rw-r--r--	1 U607	Users	5189	Jan 28 2001	sqls
-rw-rw-rw-	1 U607	Users	1813	Jan 19 2001	tape

The permissions on the files are on the left hand side, i. e., -rw-r--r--. The first position on the left is the type of file.

Code	Accessing
-	Ordinary file
d	Directory file
c	Character special file
b	Block special file
l	Symbolic link
p	Fifo (named pipe) file

The next nine positions are divided into groups of three. The first group belongs to the owner, the second to the group, and third to the other (Figure 4.1-5).

-	r w x	r w x	r w x	1	afmis
type of file	owner	group	other		owner ID

FIGURE 4.1-5 - Permissions

The UNIX system uses octal numbers (base 8) to represent the permissions on a file. For example, a single octal digit stores one set of read/write/execute permissions starting from the right. To change the permissions for the owner, group, and other, we need three octal digits. See Figure 4.1-6 for each digit permission.

DIGIT	READ	WRITE	EXECUTE
0	no	no	no
1	no	no	yes
2	no	yes	no
3	no	yes	yes
4	yes	no	no
5	yes	no	yes
6	yes	yes	no
7	yes	yes	yes

FIGURE 4.1-6 - Digit Permissions

file permissions	r w x	r w x	r w x
octal representation	4 2 1	4 2 1	4 2 1
file permission	7	7	7
	r - x	r w - - x	
	4 - 1	42 - - 1	
	5	6	1

4.1.7 Changing File Permissions

The owner of a file can change the permissions by using the chmod (change mode) command. The group can also be changed by chgrp (change group), and the owner can be changed by the chown (change owner) commands, respectively. The super user (root) can change the permissions on any file in the system. The following examples will further explain the use of these commands:

```
afmis> ls -l test
-rw-rw-rw-      1  afmis  users  1269  Jan 24      11:00  test
```

Change permission to make file executable by owner.

```
afmis> chmod 766 test
```

```
afmis> ls -l test
```

```
-rwxrw-rw-      1      afmis  users  1269  Jan 24      11:00  test
```

Make file test inaccessible to members of the group and others.

```
afmis> chmod 600 test
```

```
afmis> ls -l test
```

```
-rw-----      1      afmis  users  1269  Jan 24      11:00  test
```

Make file test readable and writeable to all.

```
afmis> chmod 666 test
```

```
afmis> ls -l test
```

```
-rw-rw-rw-      1      afmis  users  1269  Jan 24      11:00  test
```

To change the group on a file, make sure the group you are changing to is in /etc/group. Change group to informix on file test.

```
afmis> ls -l test
```

```
-rw-rw-rw-      1      afmis  users  1269  Jan 24      11:00  test
```

```
afmis> chgrp informix test
```

```
afmis> ls -l test
```

```
-rw-rw-rw-      1      afmis  informix  1269  Jan 24      11:00  test
```

Change the owner to another login ID on file test.

```
afmis> chown stu1 test
```

```
afmis> ls -l test
```

```
-rw-rw-rw-      1      stu1  informix  1269  Jan 24      11:00  test
```

4.1.8 Creating a File System

After the disk is partitioned or sliced, a file system can be created. To create a file system, use the `mkfs` command with its necessary options or use `sysadm make`. This will cause existing data on that portion of the disk to be cleared. It creates a skeleton directory structure including a special directory called lost and found. When this new file system is finished, it is ready to be mounted. To make this file system:

- login as root
- `mkfs -F s5 /dev/dsk/c?t?d0sa /tisa`

4.1.9 Mounting and Unmounting a File System

A file system is not accessible for use until it is mounted so the kernel is aware of its existence. In order to determine which file systems are mounted, use the `df` (disk file) command with the `-k` option. This listing shows all file systems mounted on the system. To mount or unmount a file system, use the `sysadm` utility.

4.1.10 Monitoring and Checking File Systems

Constant monitoring of the file system reduces the problem of running out of disk space. The following commands help determine if there are disk problems:

- The `du` (disk usage) summarizes disk usage and returns the number of blocks contained in all files and directories.
- The `df` (disk space) command reports the number of free disk blocks.

The SA can use the `dfspace` script located in `/work/acct/afmis/bin` to produce a formatted report (Figure 4.1-7). In order to check and repair the file system, the `fsck` (file system consistency check) should be executed. The `fsck` command should run on unmounted file systems since it goes through several phases of checking (Figure 4.1-7).

```
/          47.35% remaining:  30416 blocks (31145984 bytes)
/proc      0.00% remaining:    0 blocks   (0 bytes)
/dev/fd    0.00% remaining:    0 blocks   (0 bytes)
/usr       54.59% remaining:  294250 blocks (301312000 bytes)
/trlog    93.26% remaining:  185468 blocks (189919232 bytes)
/tisa     28.30% remaining:  141478 blocks (144873472 bytes)
/backup   45.90% remaining:   68846 blocks (70498304 bytes)
/tmp      95.81% remaining:   95810 blocks (98109440 bytes)
/work     81.67% remaining:  347021 blocks (355214422 bytes)
```

FIGURE 4.1-7 - dfspace

4.1.11 The Shell

The UNIX system consists of various programs. The shell is considered to be one of the most important programs. The shell is an interactive program, plus an interpreter for executing commands. The shell is also referred to as the command interpreter. The command interpreter is used to execute commands. For example, if the who command is typed, the shell arranges for that program to be executed by the UNIX system. As a user of the UNIX system, much time will be used entering commands. The shell is very powerful when used for programming scripts (Figure 4.1-8). A special feature of the shell is that it enables a user to run a program/script in unattended mode. This allows a user to do other things on the terminal. The program that runs in attended mode is running in background. The shell is directed to run a program in background by placing an ampersand at the end of the command line. For instance, to run a time-consuming program named, search. Type search at the prompt proceeded by an ampersand (&).

```
afmis> search &
1388
afmis>
```

The number printed, after command is started, is the process ID number of the search process.

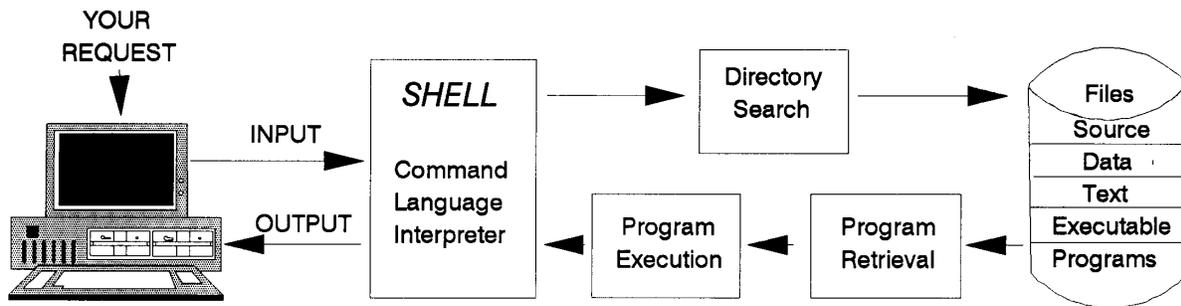


FIGURE 4.1-8 - UNIX Shell

4.1.12 UNIX Shell Commands

A command is one or more words separated by blanks or tabs. The first word of the command is the command name. Subsequent words/letters are the command arguments. The most simple command is a single word. For example, the ls command lists the files of your current directory.

The following pages of UNIX commands are for reference. For further use of these commands, refer to the online manual (man) or the hard copy manuals.

UNIX COMMAND-LINE STRUCTURE

command -options *arguments*

NOTE: Remember to use the man (manual) command to get the various options for commands.

UNIX COMMAND-LINE COMMANDS

banner message	- banners message
cal	- displays calendar
cancel print_id	- cancels print jobs
cat <i>file</i>	- displays contents of <i>file</i>
cd <i>dir</i>	- changes working directory to <i>dir</i>
chgrp <i>group file</i>	- changes <i>group</i> permission of <i>file</i>
chmod <i>mode file</i>	- changes <i>mode</i> permissions of <i>file</i>
chown <i>uid file</i>	- changes <i>file</i> ownership
compress <i>file</i>	- compresses file for space conservation (uncompress to restore file & zcat to display a compressed file)
cp <i>file1 file2</i>	- copy <i>file1</i> to <i>file2</i>
cp <i>file dir</i>	- copy <i>file</i> into <i>dir</i>
cp <i>file</i> \$HOME	- copy <i>file</i> to HOME directory
date	- display date and time
df	- displays number of free disk blocks
du	- displays disk usage in blocks
echo	- echos literal/variable to screen
ed <i>file</i>	- edit <i>file</i> (Use vi instead)
env	- displays environmental variables (some are set in .profile)
exit	- log-off system
file	- lists file types
finger	- gives long listing of users logged on system
ftp <i>host</i>	- file transfer process. Connects to <i>host</i> for file transfer
fuser -k <i>user-id</i>	- kills all processes associated with <i>user-id</i> specified
history	- displays last 20 commands used
init state	- places computer in specified state
kill -9 <i>PID</i>	- kills process ID (PID) stated
lp <i>file</i>	- prints contents of <i>file</i> to default printer (specified in .profile)
lpstat	- lists printer status information
ls <i>dir</i>	- lists files in <i>dir</i> or in current directory if <i>dir</i> is not specified
mail <i>user-id</i>	- used to mail to another user
man <i>command</i> / pg	- gives explanation on use of UNIX <i>command</i>
mkdir <i>dir</i>	- create directory <i>dir</i>
mv <i>file1 file2</i>	- move <i>file1</i> to <i>file2</i> (simply rename it if both reference the same directory)
mv <i>file dir</i>	- move file into directory <i>dir</i>
passwd <i>user-id</i>	- sets new password for user
pg <i>file</i>	- displays contents of <i>file</i> one screen at a time
ps	- process status of user/system
pwd	- displays current working directory path
pr <i>file</i> lp	- inserts page breaks in <i>file</i> and prints it to default printer
rm <i>file</i>	- remove <i>file</i>
rmdir <i>dir</i>	- remove empty directory <i>dir</i>
sort <i>file</i>	- alphabetize <i>file</i>

- su - used to switch user
- telnet *host* - used to connect to *host* system
- tty - displays port id that terminal is connected
- uname - lists specifics of system name
- wc *file* - counts the number of lines, words, and characters in *file*
- who - displays users logged on
- write *user-id* - places user in write session with specified *user*

SPECIAL CHARACTERS

- - (period- termed "dot") current directory
- .. - (parent directory - termed "dot dot", i. e.) one level back
 - cd .. - Will change directories back one directory.
- * - (wild card) - examples are:
 - ls *.4ge - Lists all files with the .4ge extension.
 - rm b* - Removes all files, in current directory, that begin with letter b.
 - rm * - Removes all files in current directory (**Be Careful!**).
 - vi * - Edits all files in current directory (use :n to advance from one file to the next).
- ? - (positional wildcard) - examples are:
 - ls ajk??e - Lists all files that begin with ajk, with any two other characters, and ends with an e.
 - rm c?? - remove all files that begin with c and have two more characters afterwards.
- > - (redirection arrow) Used to direct the output of a UNIX command, i. e.,
 - ls > tempfile - Does the ls command and puts the output in a file named, tempfile.
 - Will overwrite tempfile if it exists! We can now vi.tempfile.
- >> - (append) Similar to the redirection arrow but instead, appends to the file specified rather than overwriting it, i. e.,

ls >> tempfile - Places the output of the ls at the end of whatever exists in tempfile.

| - (pipe) Used to string commands together for a more precise output, i. e.,

```
ps -ef | sort
cat /etc/passwd | pg
```

SOME ADVANCED COMMANDS

cut - Used in conjunction with other commands. Will cut fields and characters from output.

```
-c characters to cut
-f fields to cut (must be used with -d delimiter)
-d delimiter, what character separates fields, i. e., a space, a |, a :, etc.
```

```
who | cut -c1-5 Will cut characters 1 through 5 from the output of the who command.
```

```
who | cut -f1 -d" " - Will cut field 1 from the output of the who command. The -d states that the fields are separated by a space.
```

find - Locates files or directories. If you cannot recall where a file is located, use the find command.

```
cd /
find . -name daily -print
```

This command tells which directories contain the file, daily.

grep - Lists the occurrences of a string within files.

```
grep daily * | pg
```

This command locates the occurrence of the string, daily, in any file in the current dir.

PUTTING COMMANDS TOGETHER

Commands often need to be used with other commands to achieve the desired output. Commands can be "strung" together with the pipe (|) symbol or output can be redirected for future use or modification. The following demonstrates how these can be used:

- ps -ef - command to list all processes executing on system
- ps -ef | pg - command to list all processes executing on system; paged
- ps -ef | sort | pg - all processes sorted and paged
- ps -ef | grep -v root | sort | pg - all processes, except root processes, sorted and paged
- ps -ef | grep -v root | sort > tmpfile- all processes, except root processes, sorted and placed in file
- pr -d *file* | lp -dhsp1 - paginates report (pr) double spaces (-d) file to print (*file*) pipes it (|) to lp (line printer) at destination (-d) printer name (hsp1)(high speed printer)

4.1.13 Partitioning and Formatting a Hard Disk Drive

Before you can write to or read from the hard disk, the disk must be formatted. The super user can use the "fmthard" command from single-user state to physically format a SCSI hard disk.

4.1.13.1 Formatting a Hard Disk

A portion of each hard disk stores information about that particular disk. The volume table of contents (VTOC) resides in that area, and shows how the partitions on the disk are allocated. This process must be run from the SCO ADMIN GUI . Only the AFMIS SA is responsible for this process.

4.1.13.2 Partitioning a Hard Disk Drive

Partitioning is a term used to describe the process of dividing the disk into smaller, more manageable segments. This process must be run from the SCO ADMIN GUI. Only the AFMIS SA is responsible for this process.

4.1.14 Software Installation

After installing the COMPAQ PROLIANT hardware and peripheral devices, it is time to install the software. The following is a step-by-step procedure for loading the SCO UNIXWARE and INFORMIX software. (See Appendix B1)

4.1.15 Logging-in the SCO System

- The logging-in process can be divided into two major areas:
 - Login prompt.
 - User logging-in the system.

4.1.15.1 Login Prompt

The SCO system goes through a number of steps and files before the login prompt is displayed on the terminal. The operating system is loaded into memory. The SCO system is booted by powering-up the computer or pressing the reset switch. These run states are also called run levels. See Figure 4.1-10 for run states and explanation of them. Several other processes are activated at this time. For example, the sac (system access controller) program is started.

Run States	Description
0	Power-Down Mode (You may turn off the machine without danger.)
1	Single User Mode
s or S	Single User Mode
2	Multi-User Mode
3	Remote File Sharing Mode (Not Used)
4	User-Defineable System Mode (Not Used)
5	Firmware Mode used for maintenance and diagnostics
6	Shutdown and reboot

FIGURE 4.1-10 - Run States

4.2 Using the SCOADMIN Graphical Interface Unit (GUI) Menus

4.2.1 Account Manager

The SCOadmin (system administration) windows are used for a number of administrative jobs. For example, adding and removing users from the system, adding and removing printers from the system, and a host of other tasks. To invoke these windows, you must be a root user.

After successfully login, the first screen (Figure 4.1-13) will appear.

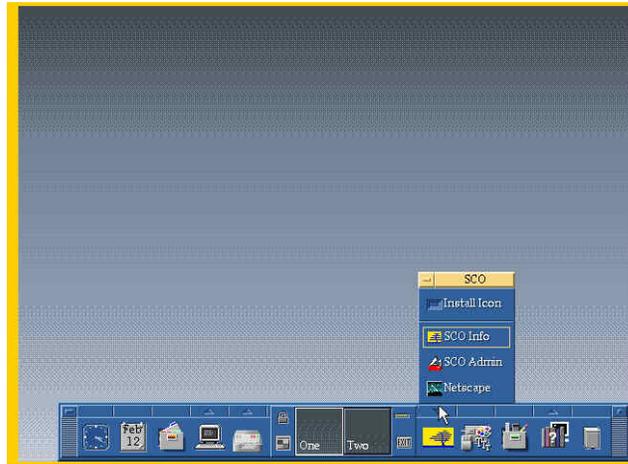


FIGURE 4.1-13 - GUI Main Window

You then click the up arrow above the yellow tree icon. Figure 4.1-14 will appear. You can select various options from this screen.



FIGURE 4.1-14 - SCOadmin GUI Window

4.2.1.1 Adding Users to System

One of the SA duties is to manage and keep track of user accounts in the system. You have the option to add, change, and delete users in the system. You can also change user properties; such as password and security.

Highlight and click the ACCOUNT MANAGER option. The following window will appear:



FIGURE 4.1-15 - Account Manager Window

To ADD a user, click the "Users" option in the toolbar. The following window will appear (Figure 4.1-16)

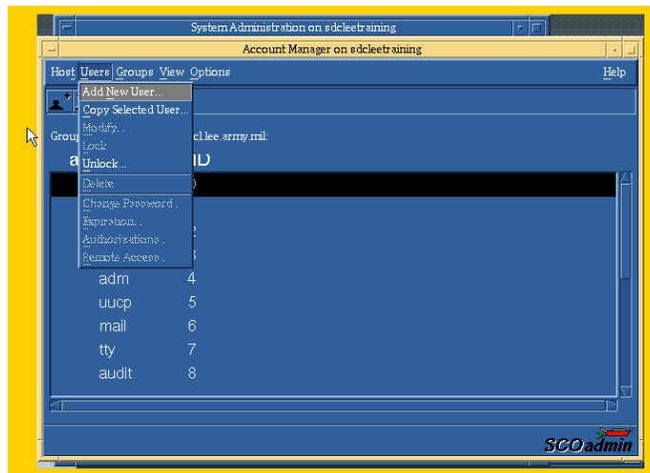


FIGURE 4.1-16 - Account Manager Window

From the dropdown list, double click the "Add New User" option. A new window will appear. See Figure 4.1-17.

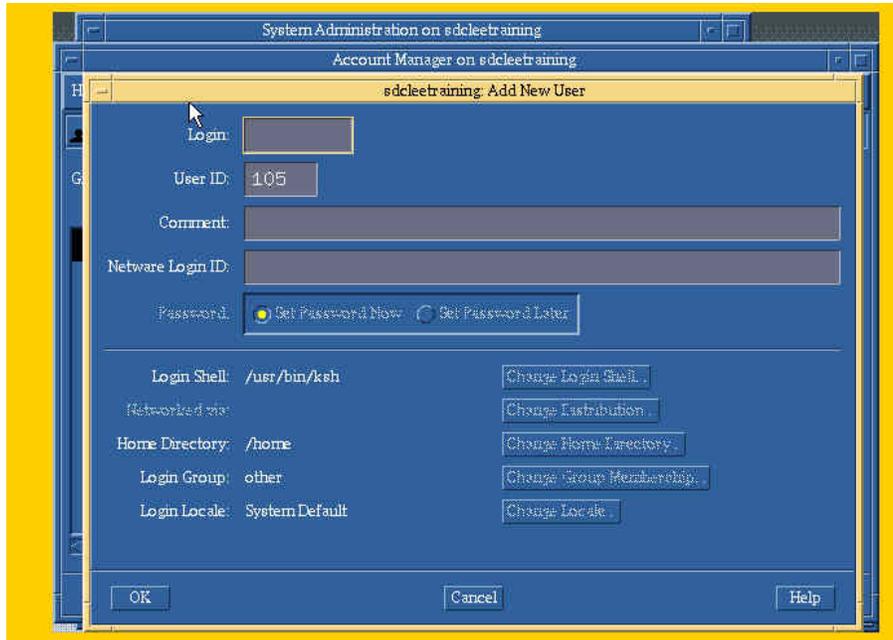


FIGURE 4.1-17 - Add New User Window

- Login :** Choose a name that is not being used. The maximum length is eight characters, i. e., ifa1, last name, bldg#, etc.
- User Id:** If you are using sysadm to add a user, the next available UID will be given by the system.
- Comment:** This field is useful to identify the user by name, e. g., Joe Doe, phone ext. 0898.
- Netware Login Id:** Must be blank.
- Login Shell:** The type of shell the user will use has to be determined. In AFMIS, all users use the home shell, i. e., /bin/sh, except root and AFMIS which use the korn shell, i. e., /usr/bin/ksh.
- Home Directory:** You have to assign a home directory for each user. Normally, the home directory for all users is in one file system. For example, in AFMIS, the home directory is /work/acct/userid.
- Login Group:** If the user belongs to a group, it must be indicated here.
- Login Locale:** Remains as a system default.

After entering all data in the window, click OK and you will be returned to the previous window.

See figure 4.1-18

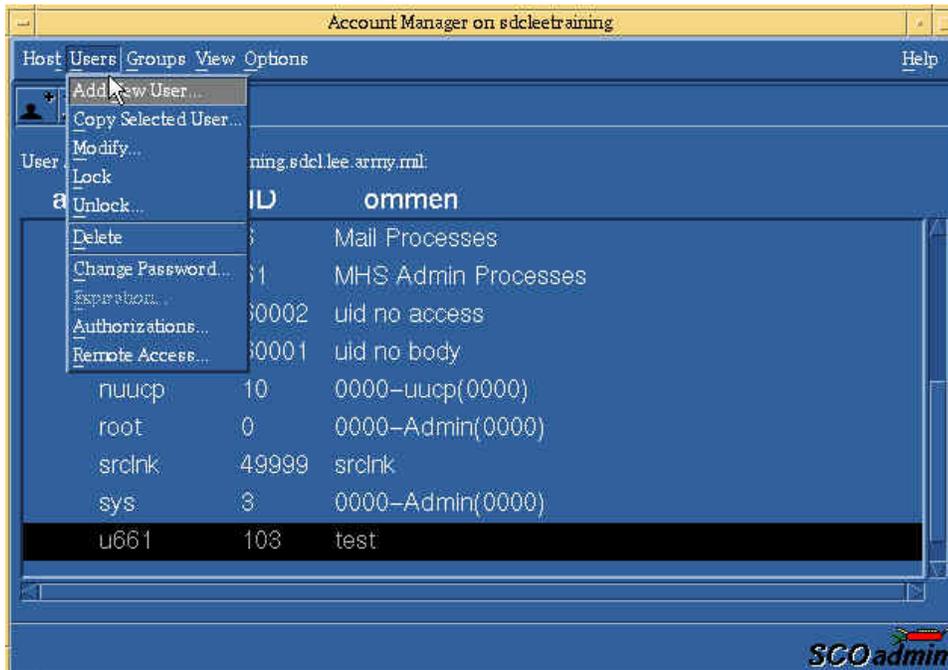


FIGURE 4.1-18 - Account Manager Window

4.2.1.2 Creating a copy of a user

To create a copy of another user, you must double click the "Copy Selected User" option. Figure 4.1-19 will then appear.

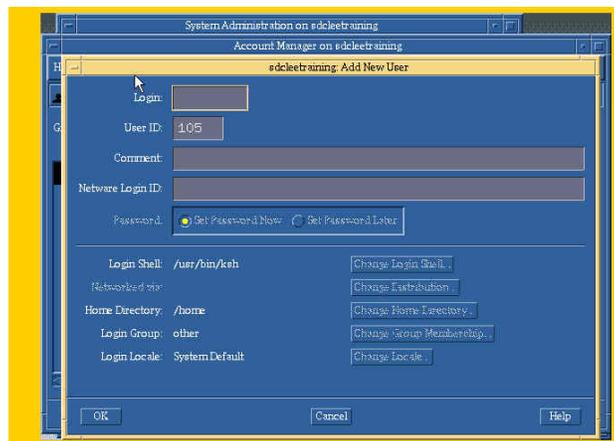


FIGURE 4.1-19 - Add New User Window

You must provide a Login name and the system will automatically assigned a User ID. The rest of the information, ie. Login Shell, Home Directory, etc will be same as the

user you just copied from.

Once you have finished with the window, click the OK button and you will return to the previous window. See Figure 4.1-18.

4.2.1.3 Modify Users In System

To modify the information for auser, you must click the "View" Option from the toolbar. You will then see (Figure 4.1-20 below.)

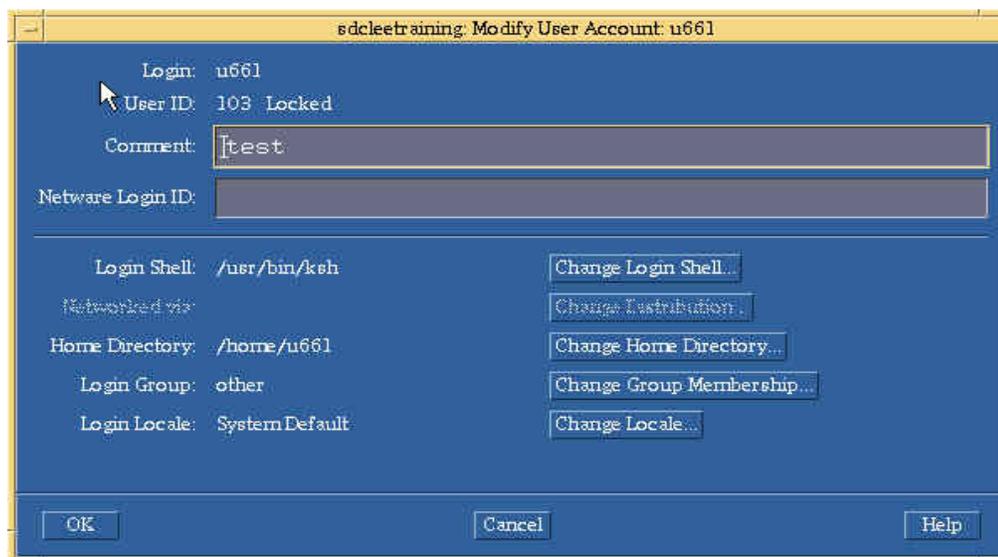


FIGURE 4.1-20 - Modify User Account Window

From this window you will be able to modify the following user properties:

- Comment:
- Netware Login Id: **Must be blank**
- Login Shell:
- Home Directory:
- Login Group:
- Login Locale:

After you have completed making changes to all the different options available, click the "OK" button, and you will be returned to the previous window. See figure 4.1-18.

By clicking the Shell button, figure 4.1-21 will appear. Make entry changes as needed and click the OK button when done.



FIGURE 4.1-21 - Change Login Shell Window

Once you clicked the OK Button, Figure 4.1-20 will then appear.

To make changes to the Home directory, click the Directory button and figure 4.1-22 will appear.

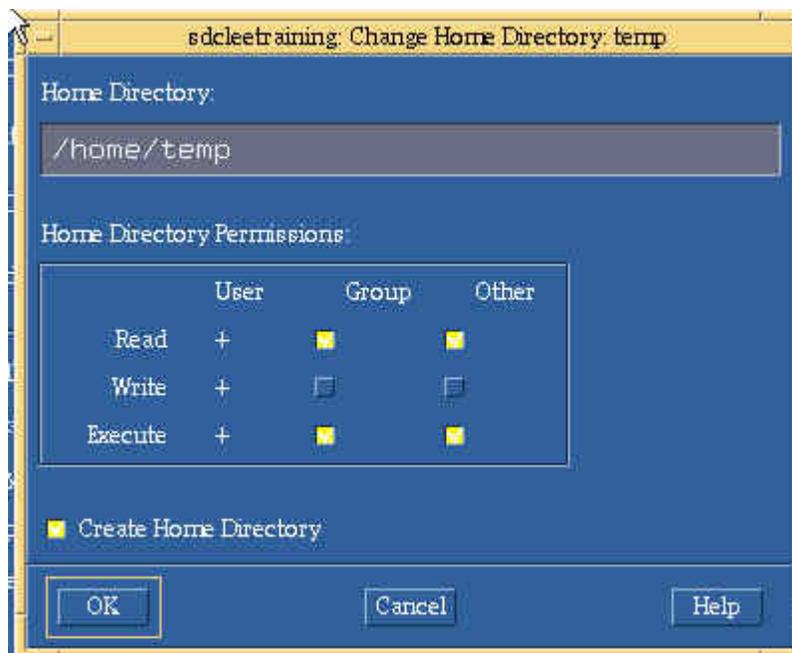


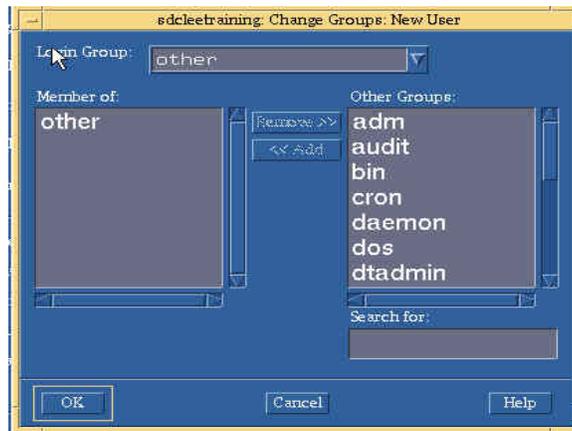
FIGURE 4.1-22 - Change Home directory Window

Make entry changes as needed, again when done, click the OK button and Figure 4.1-20 will appear.

To add and/or remove user from or to another group, click the Change Group Membership button from figure 4.1-20 and figure 4.1-23 below will appear.

FIGURE 4.1-23 - Change Groups Window

To add a user to a group, you must insure you have the proper group selected (to change group,



click the arrow in the Login Group tab, a dropdown list will be available). You then must double click the user from the "Other Groups" window. The user will be moved to the "Member of " group.

To remove a user from a group, you must do the opposite. You then must double click the user from the "Member of " group. The user will be moved back to the "Other Groups" window.

After you have added and removed all users and all necessary changes are done, click the OK button and Figure 4.1-20 will appear. Click again the OK button and you will be back 4.1-18.

4.2.1.4 Locking and Unlocking Users In System

This option is used by the SA to completely lock and unlock user(s) from accessing the AFMIS Server. To lock a user, you must first highlight a user and from the dropdown list option, click the Lock option. See Figure 4.1-18. You then will see Figure 4.1-24



FIGURE 4.1-24 - Warning Lock Window

Once you click the OK button, you have locked the user. The user will not be able to login to the AFMIS server from any of the workstations or the Server console.

To grant access to the user again, you must highlight the user and from the dropdown list option, click the Unlock option. See Figure 4.1-18. You then will see Figure 4.1-25 below.

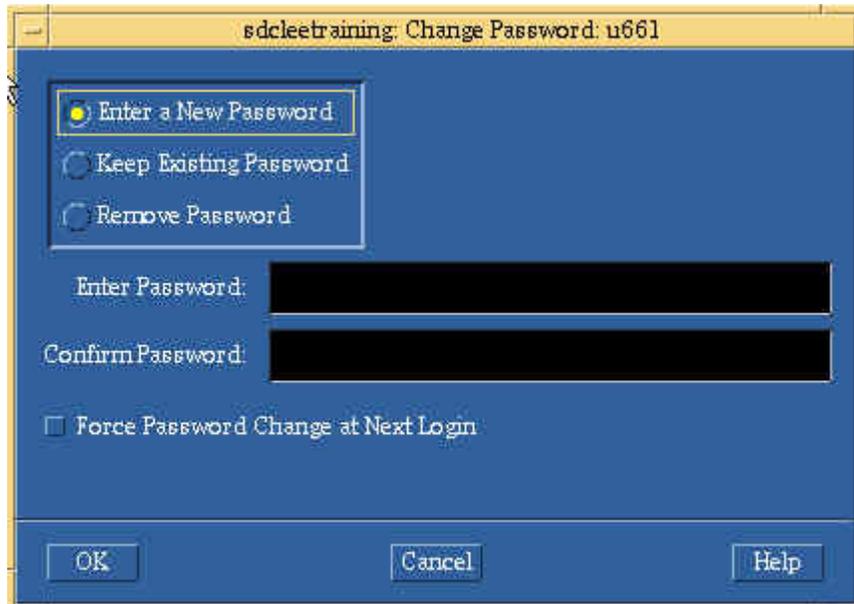


FIGURE 4.1-25 - Unlock User Window

To unlock the user, the AFMIS SA must either enter a new password or re-key the users previous password and click the "OK" button when done. The AFMIS SA also has the option to assign a new password and force them to change the password when the user logs to the system the next time. Once you clicked the "OK" button figure 4.1-18 Account Manager Window will appear.

4.2.1.5 Delete Users In System

To delete a user, you must insure you must first highlight the user as shown on Figure 4.1-18. Once the record is highlighted, click the "Delete" option and Figure 4.1-26 will appear.



FIGURE 4.1-26 - Delete User Window

This option is very important. Once you click the "OK" button the user will be removed permanently. Click again the OK button and you will be back to Figure 4.1-18.

4.2.1.6 Change Password

This option is used by the AFMIS SA to change user(s) password. To change the password, you must first highlight a user and from the dropdown list option, click the "Change Password" option. See Figure 4.1-18. Once you click this option, Figure 4.1-27 will appear.

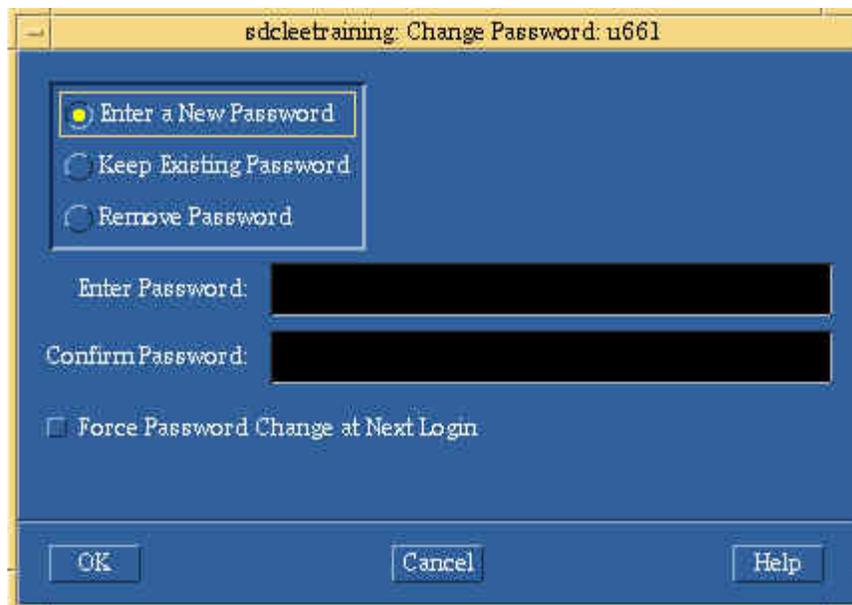


FIGURE 4.1-27 - Change Password Window

To change the user password, the AFMIS SA must either enter a new password or re-key the user previous password and click the "OK" button when done.

The AFMIS SA has also the option to assign a new password and force him to change the password when the user log to the system the next time. Once you clicked the "OK" button, you will see figure 4.1-18 Account Manager Window again.

4.2.2 Filesystem Manager

Use the Filesystem Manager to manage the filesystems on your system. A "filesystem" is a distinct division of the operating system, consisting of files, directories, and the information

needed to locate and access them.

Filesystems can reside on local hard disks, CD-ROMs, and floppy disks. You can also mount remote filesystems on your local system and make local filesystems available for other systems to mount. The system administrator creates the filesystems on the hard disk, then mounts and unmounts - attaches and detaches - the filesystems when needed. Similar to the way you access your floppy drive.

You can start this option by clicking on the "filesystem Manager" option as shown in Figure 4.1-28.

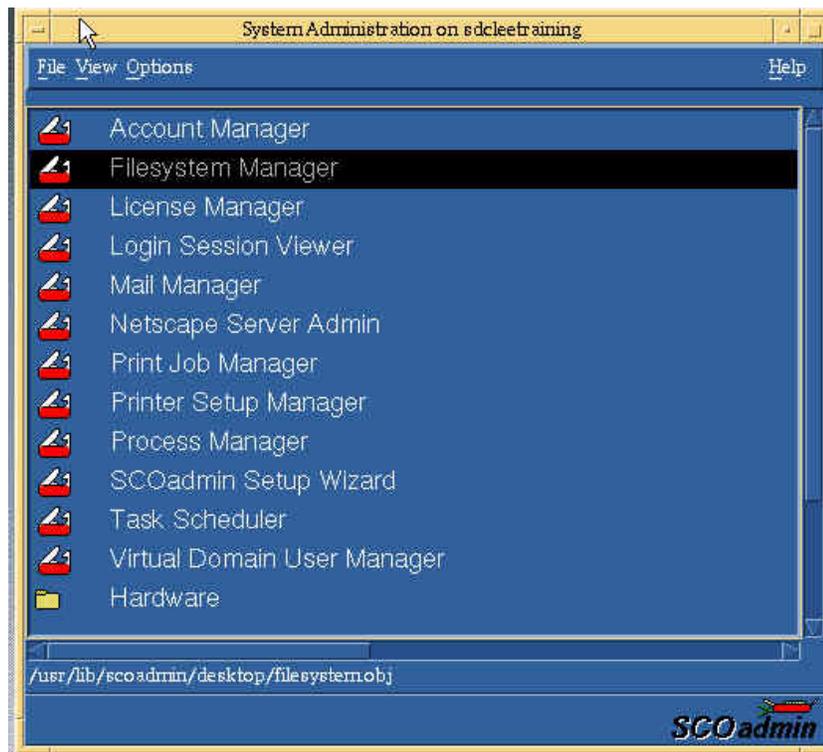


FIGURE 4.1-28 - Sysadm GUI Window

Once you click that option, you then will see the window shown on Figure 4.1-29.

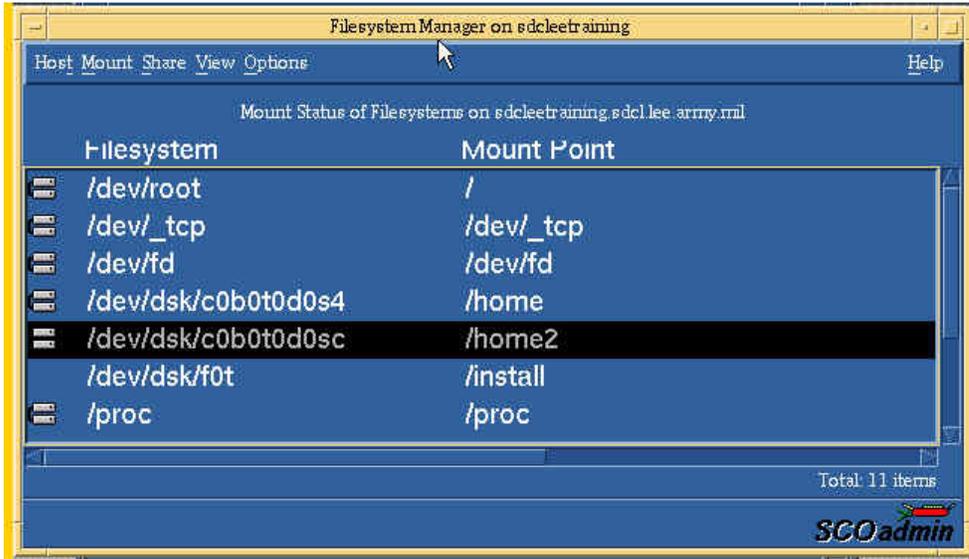


FIGURE 4.1-29 - Filesystem Manager Window

Once a filesystem has been created (on the CD-ROM, Floppy drive, or hard disk) or exported from a remote server, you must add the mount information to the system so that you can mount and use the filesystem.

To add a filesystem, you must click the option "Mount" shown above in figure 4.1-29. Figure 4.1-30 will then appear.

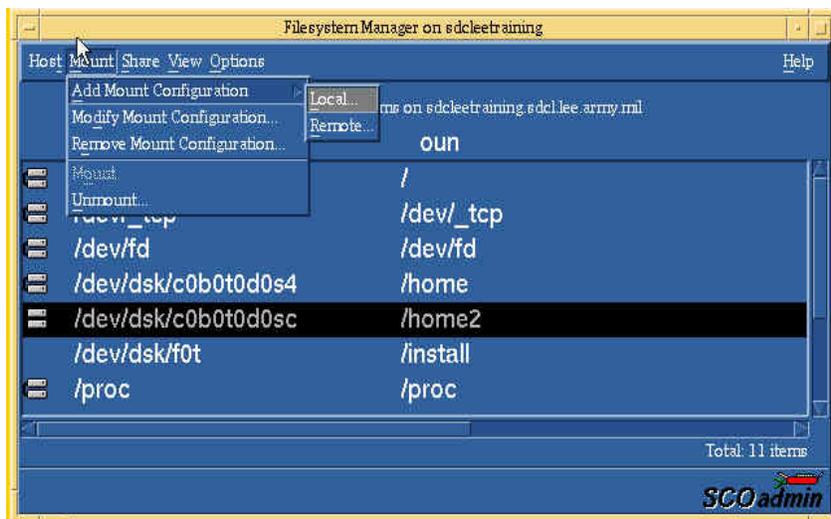


FIGURE 4.1-30 - Mount Window

When you click the option "Add Mount," it allows you to specify if the filesystem is going to be Local or Remote. When selecting the Local option, you will be using devices in your local system and when selecting the "Remote" option, you will select devices from a remote server. See Figure 4.1-30.



FIGURE 4.1-30.1 – Add Local Window

From this screen you can mount devices and provide the properties for each device.

Device File: By scrolling down the bar, you may select the device(s) you may wish to mount in the system.

Mount Point: Specifies the directory where you want to mount the filesystem.

Description: Description of the filesystems

Filesystem Type: Specifies the type of filesystem. Refer to page 166 on SCO Unixware Handbook.

Access Mode: Choose read-only or write-only.

When to mount: It determines when the mount will take place.

Advance Options: Change specific advance option for the filesystem.

Once you complete entering all the information, clicked the OK button. You will see Figure 4.1-29.

The Remote Option, will not be discussed in this handbook. For more information, refer to the SCO System Handbook Release 7.1.

To modify a mount, you must select and highlight a device as shown in figure 4.1-29. Then, from the toolbar, select mount, then Modify, and Figure 4.1-31 as seen below.

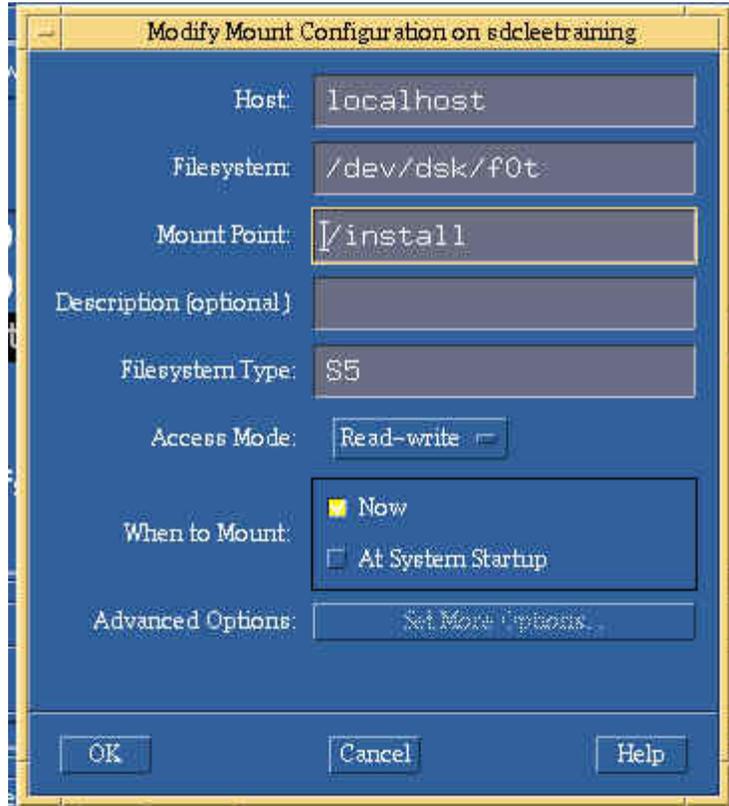


FIGURE 4.1-31 - Modify Mount Window

On this window, you can make all the required changes to the device you have selected. Once you are done with the changes, clicked the OK button and it will take you back to

Figure 4.1-30.

To remove a device, you must select and highlight a device as shown in figure 4.1-29. Then, from the toolbar, select mount, then Remove Mount, and Figure 4.1-32 as seen below.

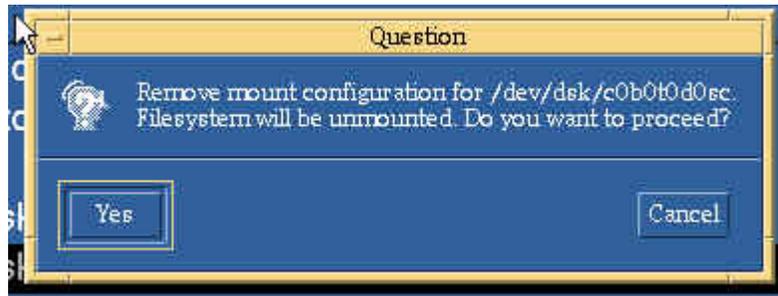


FIGURE 4.1-32 - Remove Question Window

You then are prompted if you are sure you wish to remove the device. If you are not sure clicked the Cancel button and you will return to the previous screen; otherwise click the "Yes" button and the device will be removed. Figure 4.1-29 will appear again.

To unmount a device, you must select and highlight a device as shown in figure 4.1-29. Then, from the toolbar, click the Mount option, then the Unmount button.

The Share option, will not be discussed on this handbook. For more information, refer to the SCO System Handbook Release 7.1.

The View option gives you the opportunity to only view the different filesystem configuration in the current system. The options you will probably use the most are the Mount option and the Disk Usage option.

When you have selected from Figure 4.1-29 the view tab and mount option, Figure 4.1-32.1 will appear and display the information as shown below.

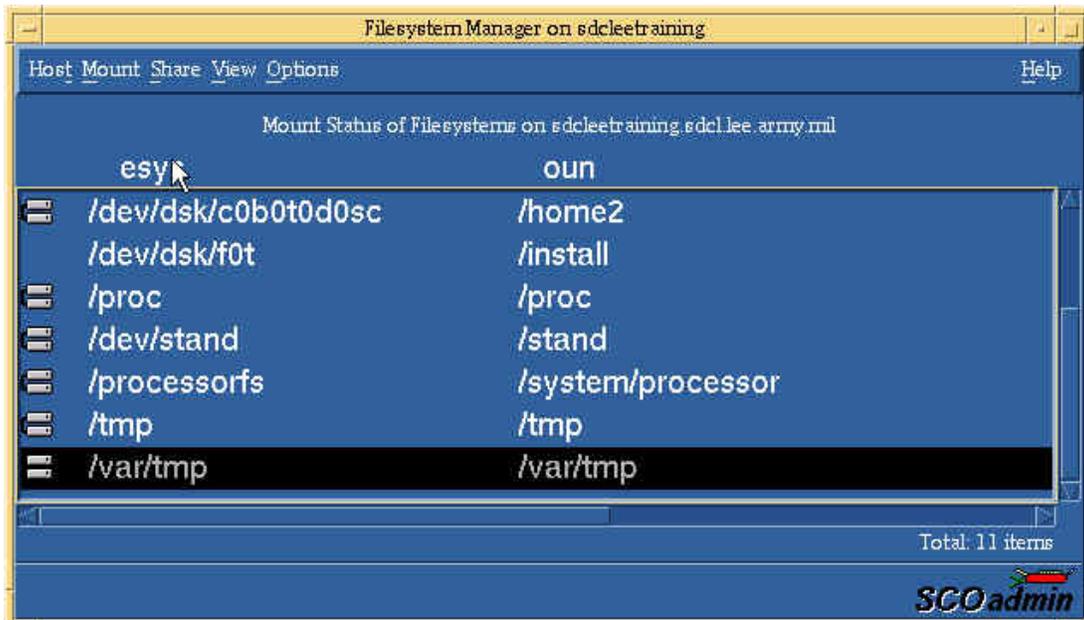


FIGURE 4.1-32.1 Mount Status Window

When you have selected from Figure 4.1-29 the View Tab and Disk Usage option, Figure 4.1-32.2 will appear and display the information as shown below.

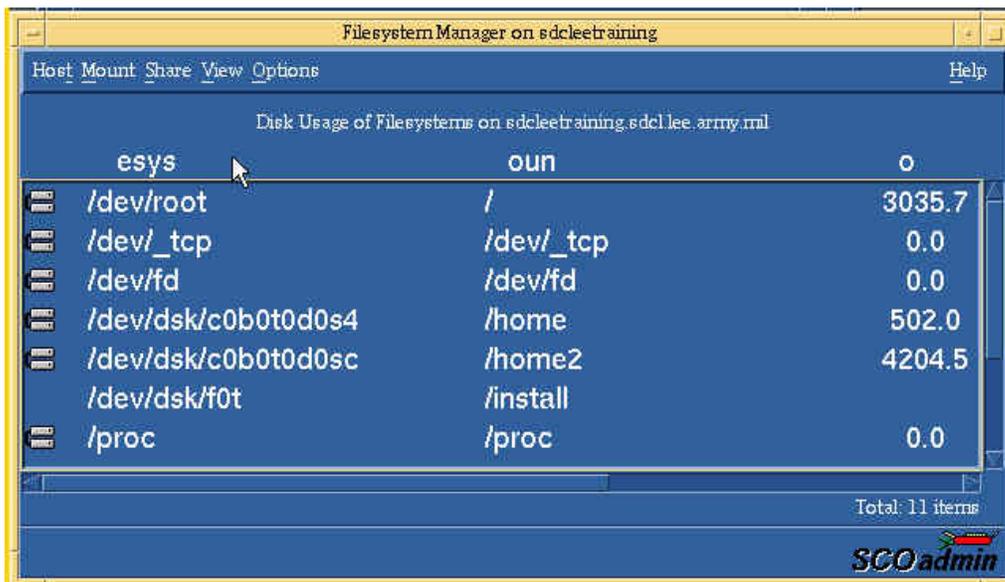


FIGURE 4.1-32.2 Disk Usage Window

The rest of the Tool Bar selections from the Filesystem Manager, will not be discussed in this handbook. For more information, refer to the SCO System Handbook Release 7.1.

4.2.3 License Manager

Once you have installed and licensed your SCO product you must register the product. To register the SCO UNIXWARE operating system is a two step process. First you enter the Licence information, then registration. From the System Administration window, you must click the License Manager button as shown in Figure 4.1-28. Once you clicked the button, Figure 4.1-33 as shown below will appear. The information presented in that window was entered previously when the system was loaded initially.

This window will provide the opportunity to add more licences to the system. To do this you will need the Certificate of License and Authenticity which was provided to the system administrator via mail or handed by the deployment team.

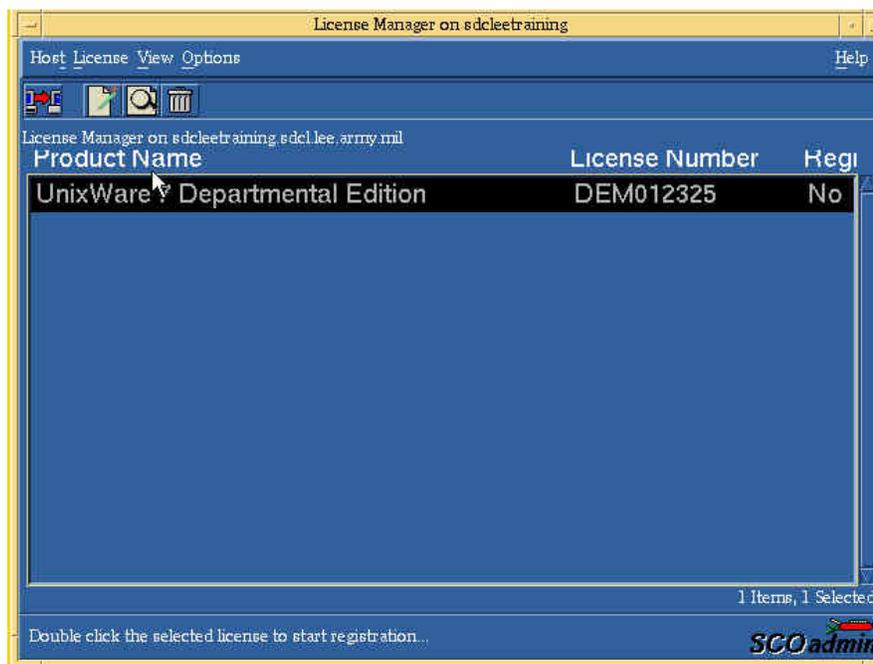


FIGURE 4.1-33 License Manager Window

To add another license, you must click the License button in the toolbar. You will then see Figure 4.1-34 as shown below.

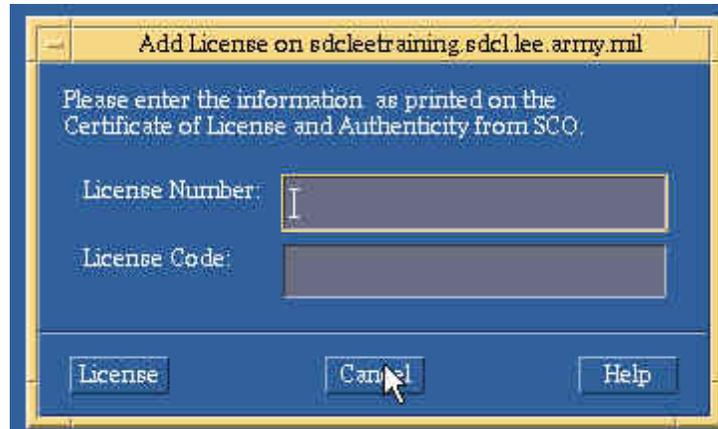


FIGURE 4.1-34 Add License Window

You must enter the License Number and Code. Again, this information is in the Certificate of License and Authenticity which was handed to the system administrator. Depending on the type of license being added, once you click the License button you will see Figure 4.1-33 or Figure 4.1-35.

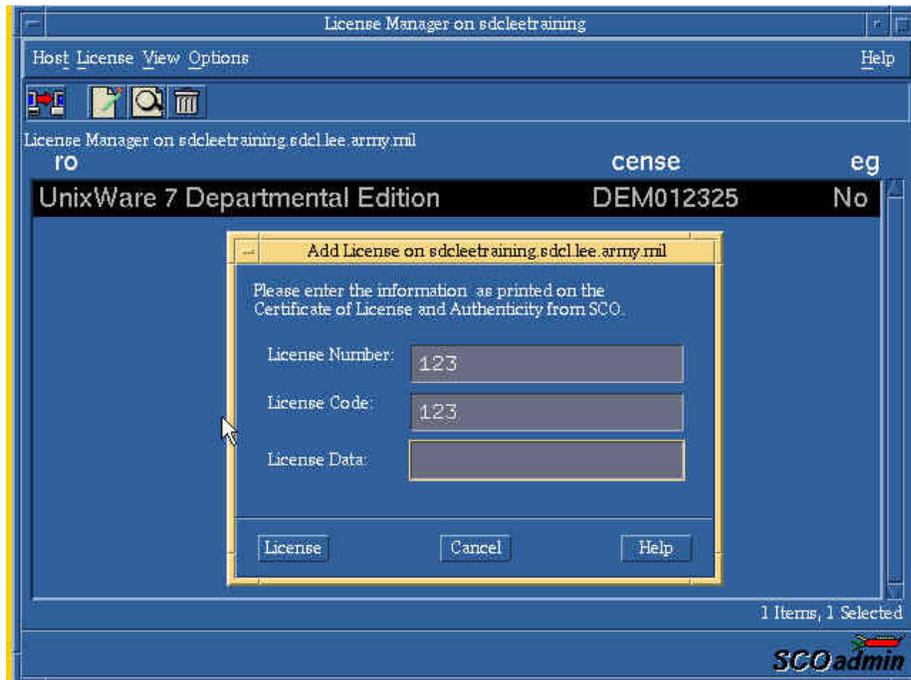


FIGURE 4.1-35 Add License Window

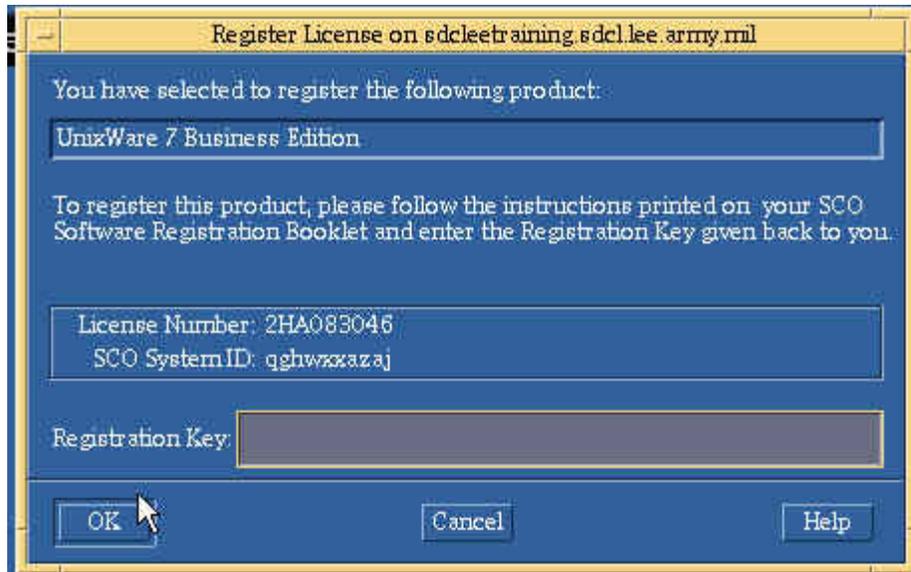


FIGURE 4.1-36 Register License Window

To obtain the Registration Key you must either access the online registration site by pointing your browser to www.sco.com or mail the Registration Card to SCO Registration Center.

Note: Not all SCO products require a registration key. However, it is recommended you still register them to receive updated information about the product.

Once you have completed the entries, click the "OK" button and you will return to Figure 4.1-33. You exit the window by clicking on the Host tab, then click exit to return.

4.2.4 Print Job Manager

Use the Print Job Manager to manage print jobs on all the printers available to the system. All users can delete, hold, and resume their own jobs. As the system administrator, you can also promote jobs to the top of the queue for a particular printer, transfer jobs to another printer and manipulate any of the jobs. To start the Print Job Manager, from the Sysadm GUI Window Figure 4.1-28, you must highlight and click the Print Job Manager option. Figure 4.1-37 will appear.

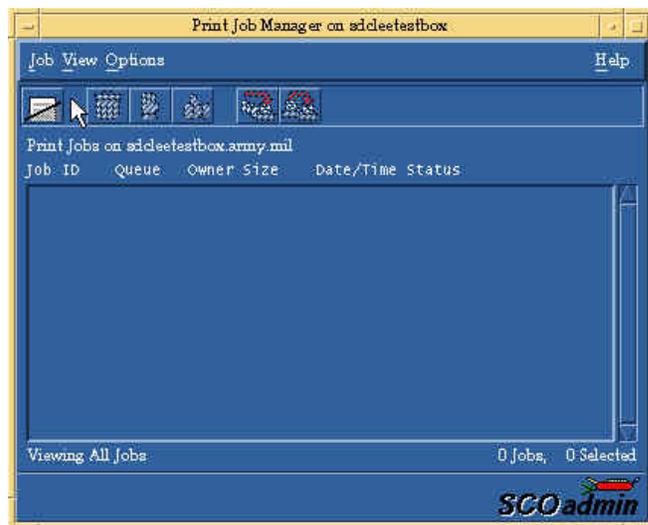


FIGURE 4.1-37 Print Job Manager Window

Use the Print Job Manager to Delete, Hold and Resume, Promote and Transfer print jobs.

To delete a job, refer to Figure 4.1-38.

To hold jobs, refer to Figure 4.1-39.

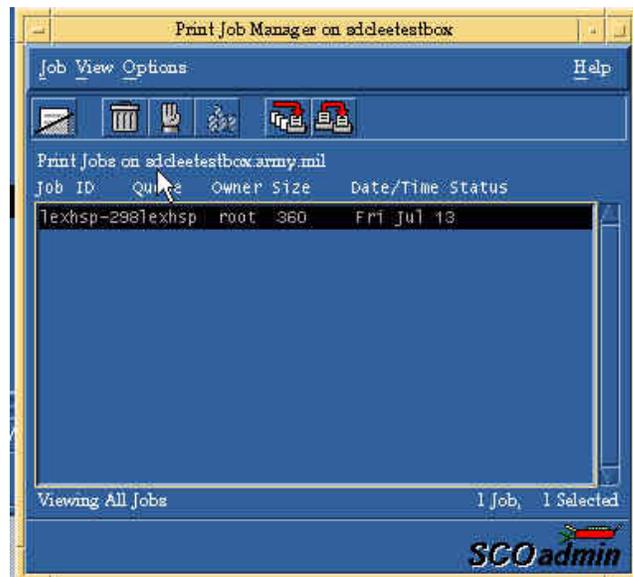
To resume a held print job, refer to Figure 4.1-40

To promote a job, refer to Figure 4.1-41 & Figure 4.1-42

To transfer a job, refer to Figure 4.1-43

To delete a job, highlight (select) the job or jobs to delete, from the "Job" dropdown list and select the "Delete" option (refer to Figure 4.1-38)

FIGURE 4.1-38 Print Job Manager Window



Once you selected the "Delete" option and click the "OK" button to confirm, you then will see Figure 4.1-39

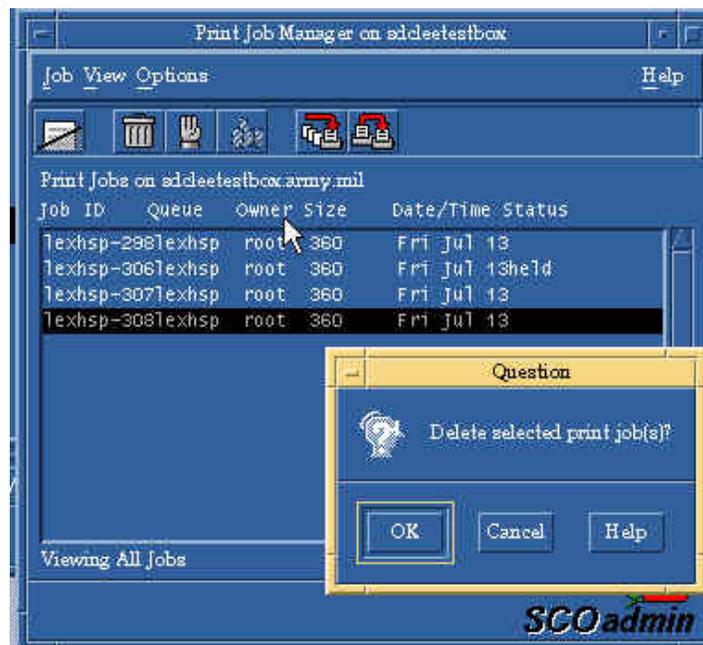


FIGURE 4.1-39 Print Job Manager Window

Once you have clicked the "OK" button you will return to Figure 4.1-37.

To Hold and Resume jobs, highlight (select) the job(s) you wish to put on hold, then from the Job Menu click the Hold option and click the "OK" button. You then will see that the Status column will change to *held* to indicate that the job will not be printed. Refer to Figure 4.1-40.

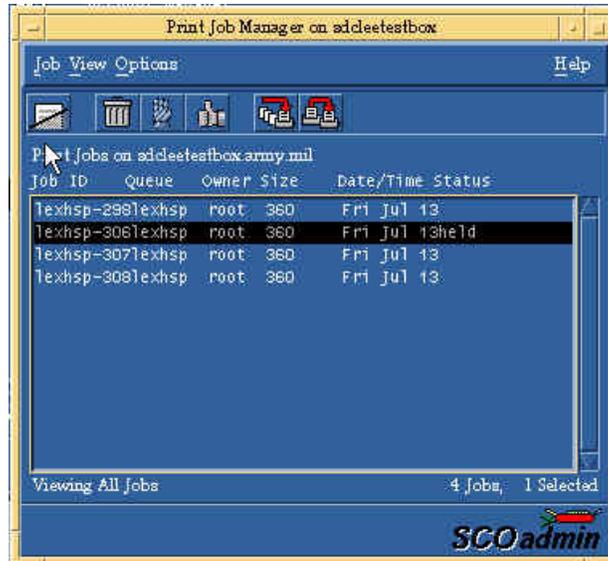


FIGURE 4.1-40 Print Job Manager Window

To Resume a held print job, select the job to resume, then select Resume from the Job Menu. The Status column will change to indicate the job will no longer be held. Job will start printing immediately.

To Promote a job means to change the priority of the printer queue. To do this, you must first be the system owner. You must be logged in as root or have authorization to "administer printer".

To promote a job, highlight (select) the job you wish to promote, then from the Job Menu click the Promote option. See figure 4.1-41.

Promoting a job does not mean the job will print first:

If there is a job currently printing, the job move to the next in line in the queue.

If other jobs have already been moved up, they will print first.

Figure 4.1-41 shows job "lexhsp-355" at the end of the screen. Once you highlight the job and click the promote option, job will move to the top of the queue (see Figure 4.1-42)

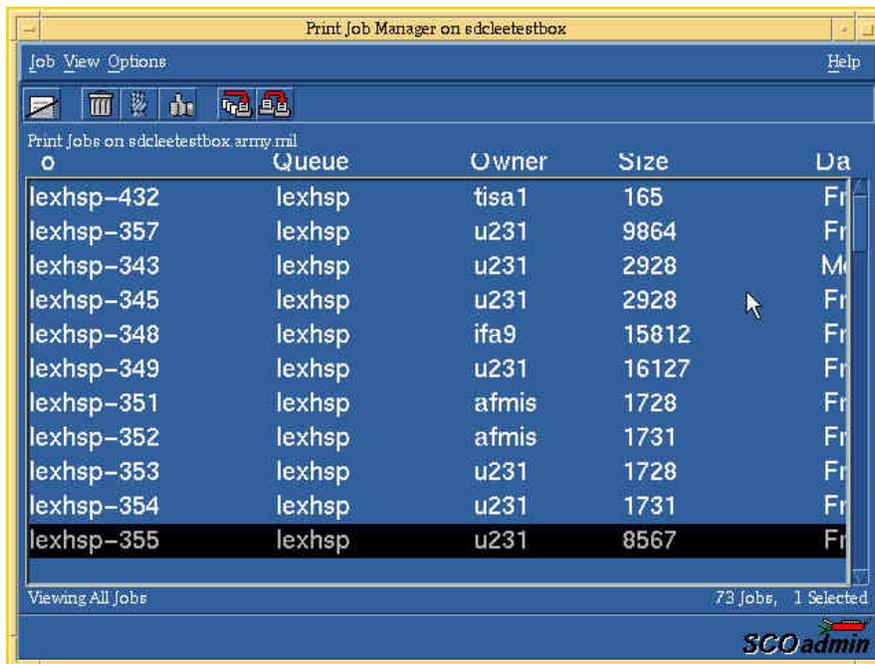


FIGURE 4.1-41 Print Job Manager Window

Review Figure 4.1-42 and notice how job "lexhsp-355" have move to the top of the queue.

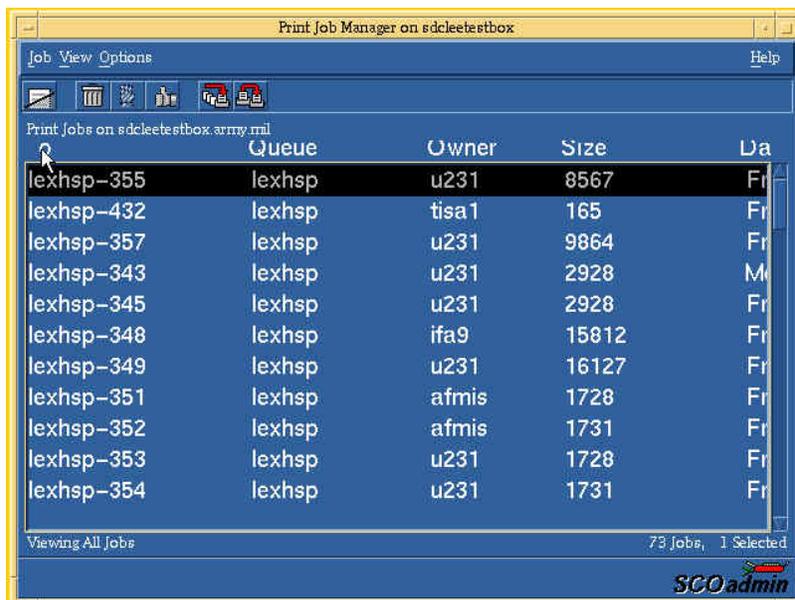


FIGURE 4.1-42 Print Job Manager Window

To transfer a job to another printer, highlight (select) the job(s) you wish to transfer to another printer. Then from the Job Menu click the "Transfer" option and Figure 4.1-43 will appear.

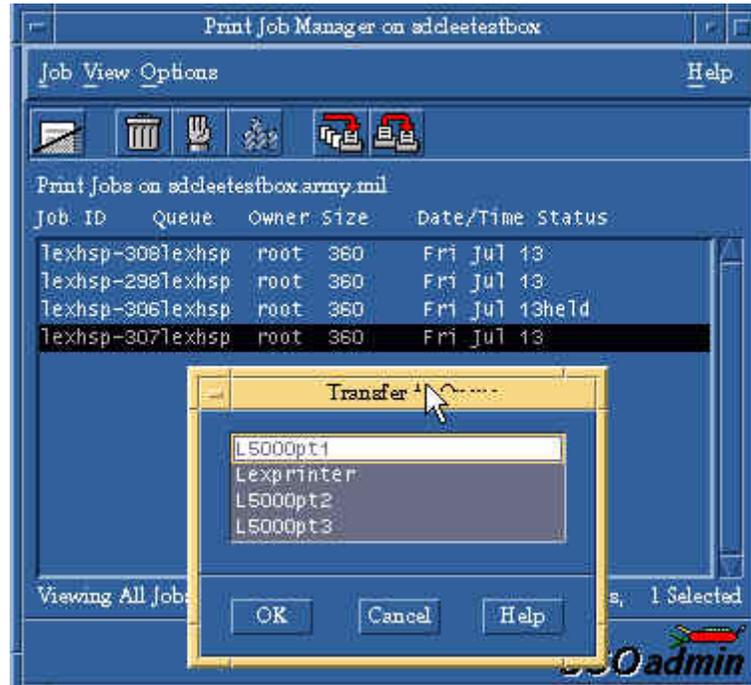


FIGURE 4.1-43 Print Job Manager Window

A window with all the printers available in your will system will be displayed. You must then highlight the printer and click the "OK" button. The job will then be moved to the printer you have selected.

For more information on other options available under the Print Job Manager, you must refer to the SCO UnixWare 7 System Handbook.

4.2.5 Printer Setup Manager

From the SCO Admin window, highlight and click the "Printer Setup Manager".

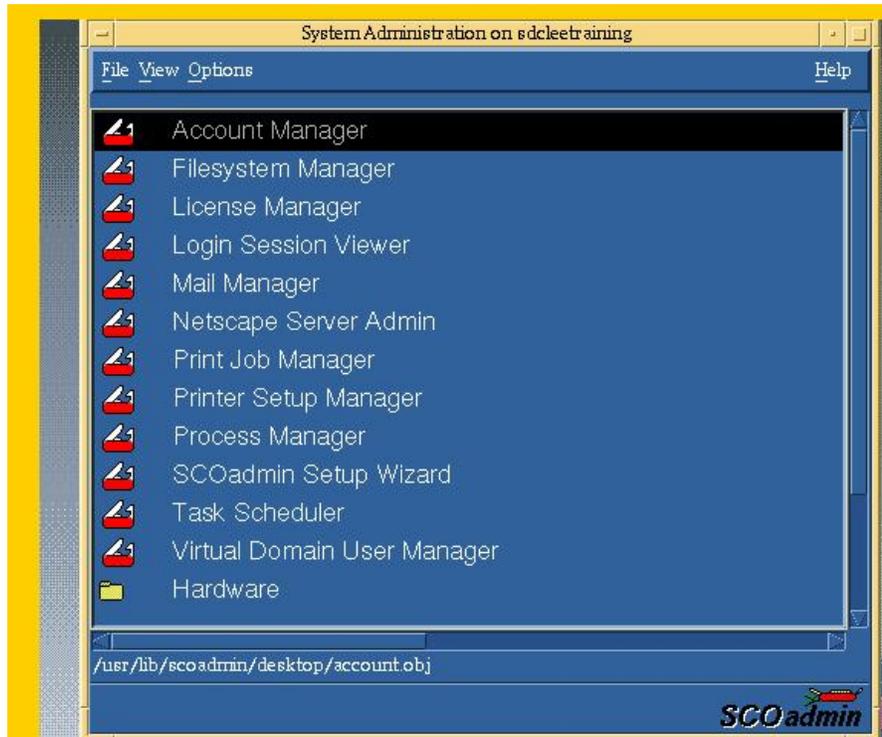


FIGURE 4.1-44 - SCOadmin GUI Window

Figure 4.1-45 will appear. From this screen you have the ability to:

- Add, modify, or copy local printers
- Add, modify, or copy remote printers
- Remove printers
- Enable / Disable printers
- Accept / Reject print requests

Note: Lexmark printers are not managed using this interface. They must be configured using a program called "Lexprt" and must be run from the root prompt.

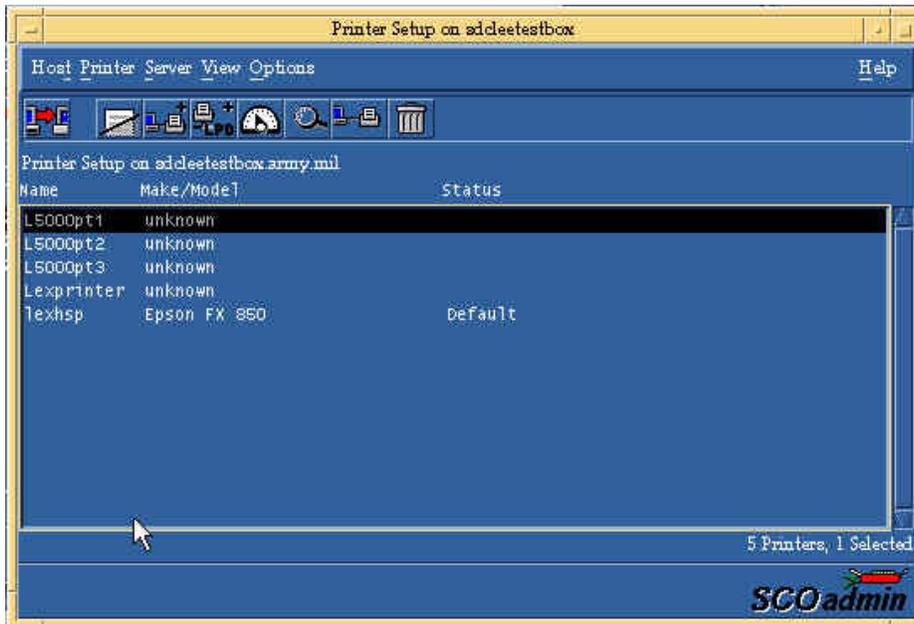


FIGURE 4.1-45 - Printer Setup Window

To Add a printer you must click the Printer option and Figure 4.1-46 will appear. From the window you select any of the available options.

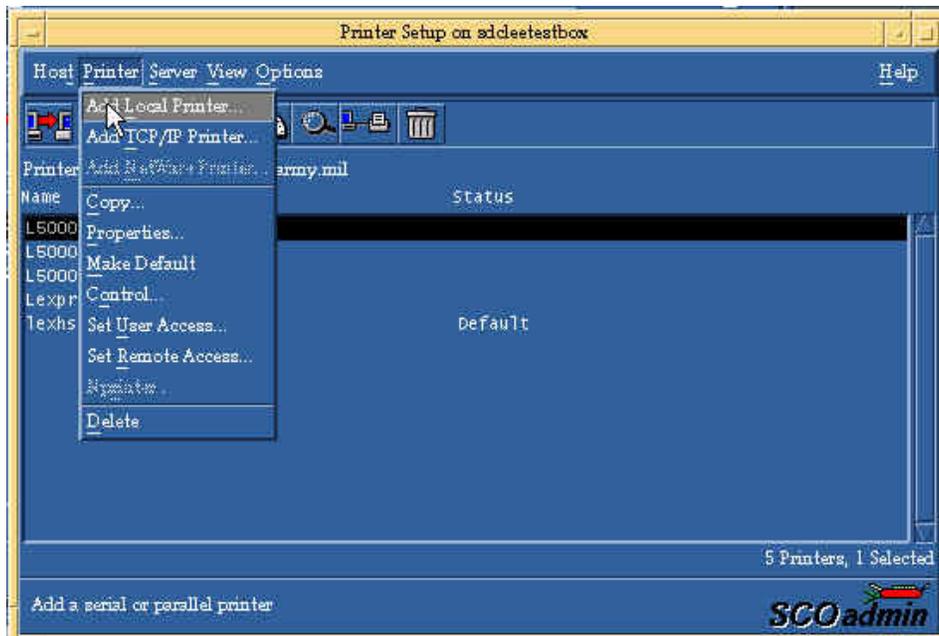


FIGURE 4.1-46 - Printer Setup Window

When you highlight (select) the "Add Local Printer" option Figure 4.1-47 will appear. When you highlight (select) the "Add TCP/IP" option Figure 4.1-48 will appear.

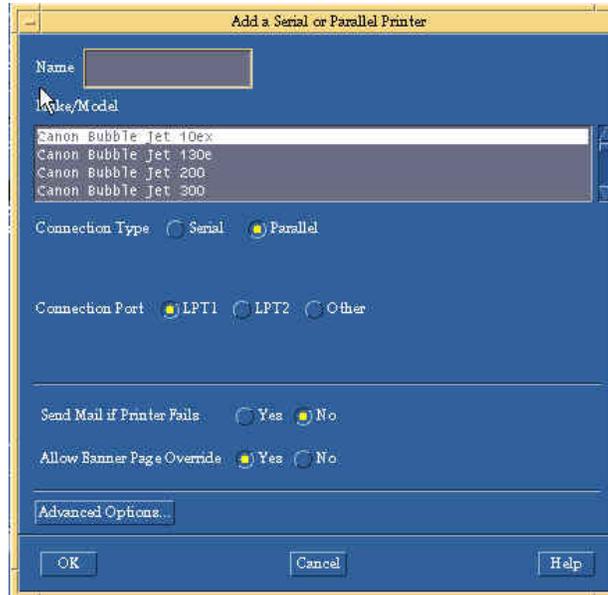


FIGURE 4.1-47 - Printer Setup Window

Adding, modifying, or copying a local printer

Local printers are those connected directly to a host (as opposed to across the network).

The following information must be provided by the AFMIS SA:

Name

Select the name you want to use for the local printer attached to your system. You cannot modify an existing printer name. The SCOadmin Printer Setup Manager does not permit printer names to contain the ``_'' character. To add a printer whose name includes a ``_'', add it from the command-line. Once the printer name is created, the Printer Setup Manager will be able to manage it.

Make/Model

Select the printer model that matches your printer, or a model with which it is compatible.

Connection Type

Choose Serial or Parallel. If you select Serial, click on Serial Settings for additional options described in ``About serial communication settings''.

Connection Port:

For serial printers, COM1 and COM2 ports are displayed that correspond to the first and

second serial ports. For parallel printers, LPT1 and LPT2 are displayed. If you select Other, a Device text box appears. Enter the path of the device that the printer is connected to.

Send Mail if Printer Fails

Select Yes to receive a mail message if the printer fails.

Allow Banner Page Override

Select Yes to allow users to print without a banner page.

Advanced Options

For non-PostScript® printers, you can set the page length, page width, character pitch, and line pitch. Each of these options has a numerical value and a unit value. You can select a unit value in inches, centimeters, or characters. If you do not provide defaults when you configure a printer, the page size and print spacing are taken from the data for your printer type in the terminfo(4) database. For more information on these parameters, see "Setting default printer page size and spacing".

NOTE: The addition of a printer will fail if a nonexistent port is specified as the connection port.

Adding, modifying, or copying a network printer.

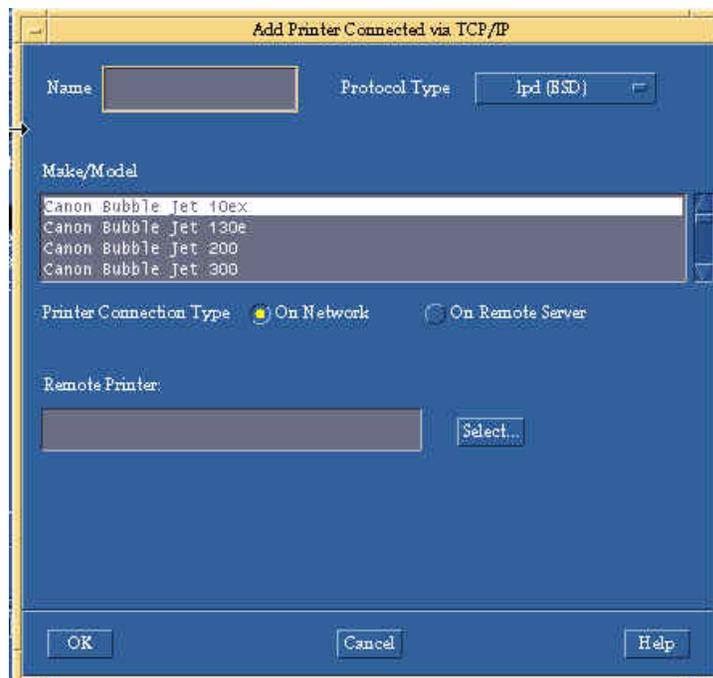


FIGURE 4.1-48 - Printer Setup Window

Network printers are those connected to the installation infrastructure (as opposed to attached directly to the workstation).

The following information must be provided by the AFMIS SA:

Name

The name to call the remote printer on your local system. You cannot change the name of an existing printer.

The SCOadmin Printer Setup Manager does not permit printer names to contain the ``_' character. To add a printer whose name includes a ``_', add it from the command-line. Once the printer name is created, the Printer Setup Manager will be able to manage it.

Make/Model

The printer model (or compatible model) that matches your printer.

Protocol Type

The spooler type on the remote host: lpd(BSD), the default network printing protocol, or System V (legacy), provided for backwards compatibility with older UNIX systems. For HP printers configured On Network, System V is automatically selected.

Printer Connection Type

If the printer is an Ethernet printer (connected to the network itself instead of connected to a computer), select On Network. Otherwise, select On Remote Server.

Remote System

(This field applies only when On Remote Server is selected.) The name of the host that controls the remote printer. Click on Select to choose from a list.

Remote Printer

The IP Address assigned to the printer (preferably) or the printer name of the remote printer. (When On Network is selected, a Select button appears.)

Removing / Deleting a printer.

To Delete a printer, highlight (select) the printer you wish to remove. Then click the "Delete" option and Figure 4.1-49 will appear.

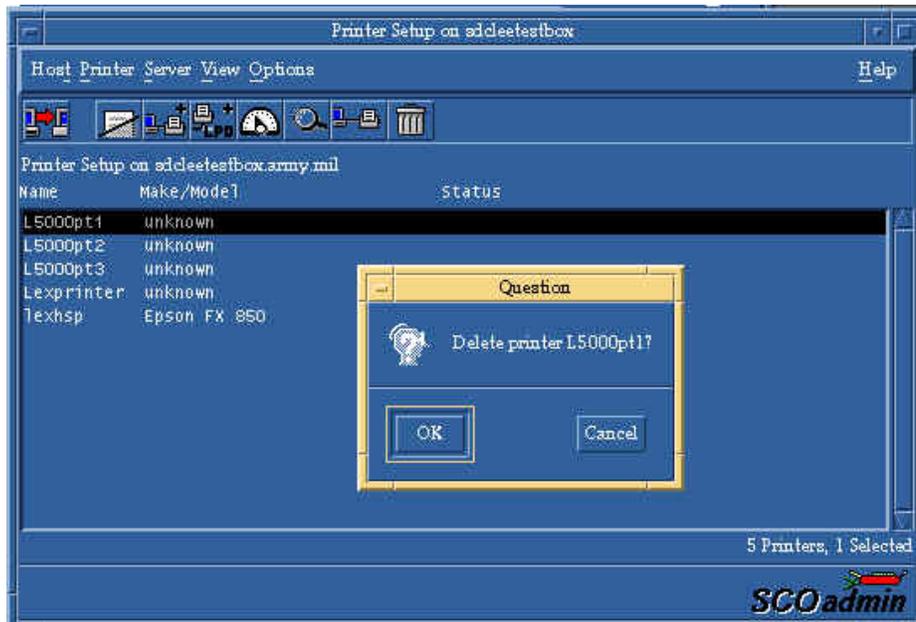


FIGURE 4.1-49 - Printer Setup Window

From this window, just click the "OK" button and the printer is removed and no longer available to be used by anyone.

Starting and stopping the print service

The print service starts automatically each time the system goes into multi-user mode and stops when you bring down the system. Under normal circumstances, you should never have to start or stop the print service manually. (For example, you do not have to stop the print service to change printer configurations or to add forms or filters.)

When you start the print service, the printer configurations, forms, and filters that were in effect when you stopped the print service are restored. It might take a minute or two for these printer configurations to be reestablished before any saved print requests start printing. Any print requests that did not finish printing when the scheduler stopped are printed in their entirety when the print service starts.

However, any time you add a printer, you must stop and start the print service manually without stopping the operating system.

In the Printer Setup Manager, select Server Start or Server Halt (the inappropriate option is unavailable). Refer to figure 4.1-50.

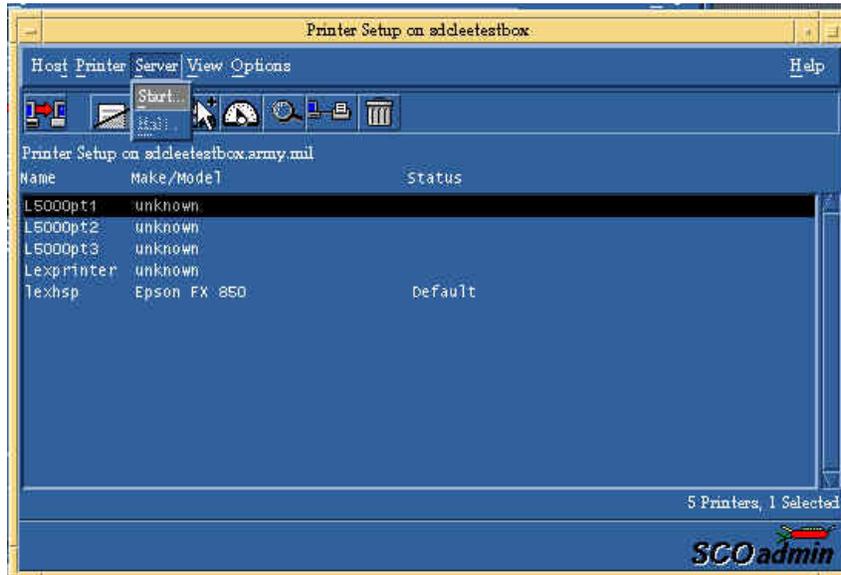


FIGURE 4.1-50 - Printer Setup Window

Click on OK when asked for confirmation. See figure 4.1-51.

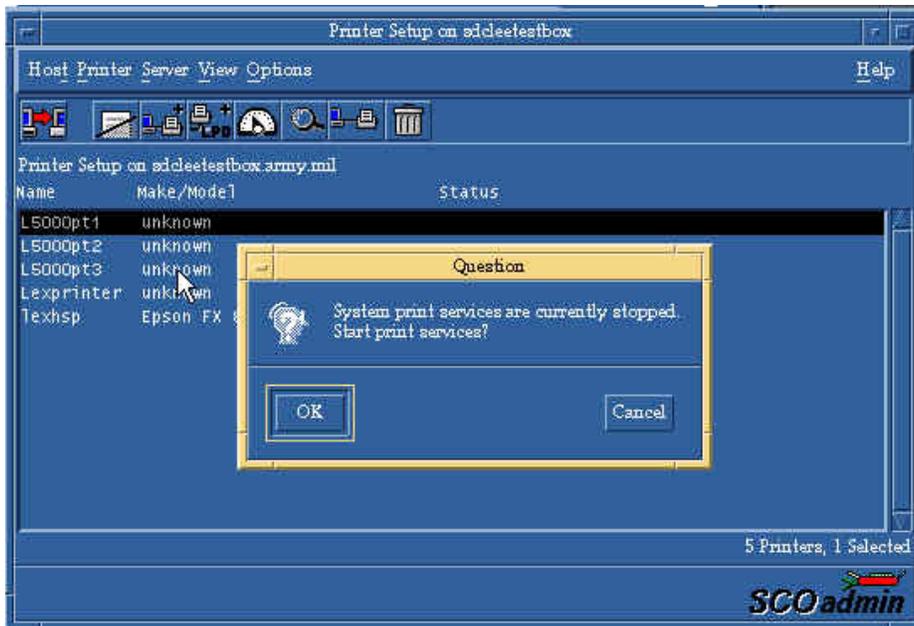


FIGURE 4.1-51 - Printer Setup Window

NOTE: Jobs can appear to pass through a printer that is not online. If a printer is not online or operating properly, you should disable the printer.

4.2.6 Networking

From the SCO Admin window, highlight and click the "Networking" option. See Figure 4.1-52.

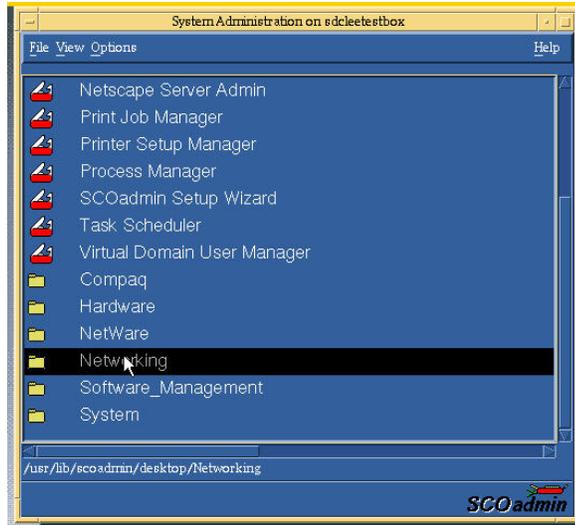


FIGURE 4.1-52 - SCOadmin GUI Window

From this screen, the "Networking" option and Figure 4.1-53 will appear. Several options will be shown. At this time, we will only review the "Network Configuration Manager" option. For information on the other services, you must refer to the SCO Unixware 7.1 System Handbook.

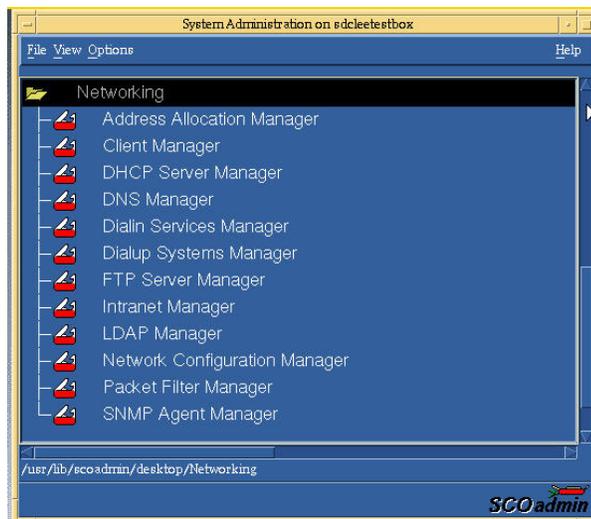


FIGURE 4.1-53 - SCOadmin GUI Window

From this screen, click the “Networking Configuration Manager” option and Figure 4.1-54 will appear.

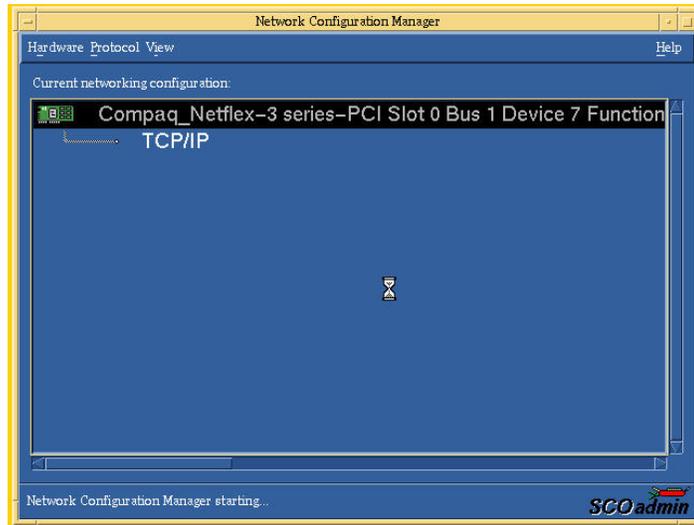


FIGURE 4.1-54 – Network Configuragion Manager Window

From this window, you hightlight “TCP/IP/” option and Figure 4.1.55 will appear.

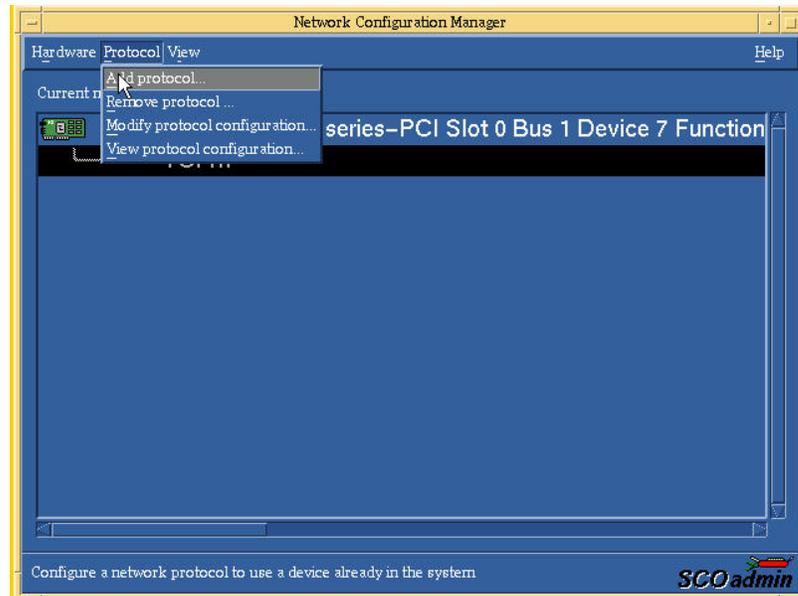


FIGURE 4.1-55 – Network Configuragion Manager Window

From this window, the AFMIS SA should only be concerned with the “Modify protocol configuration” and “View protocol configuration” options only.

If you select the “Modify” option, the window below (Figure 4.1.56) will allow you to make a change(s) to the network configuration in your SCO server. When finished, click the “OK” button, close all windows and return to the main screen.

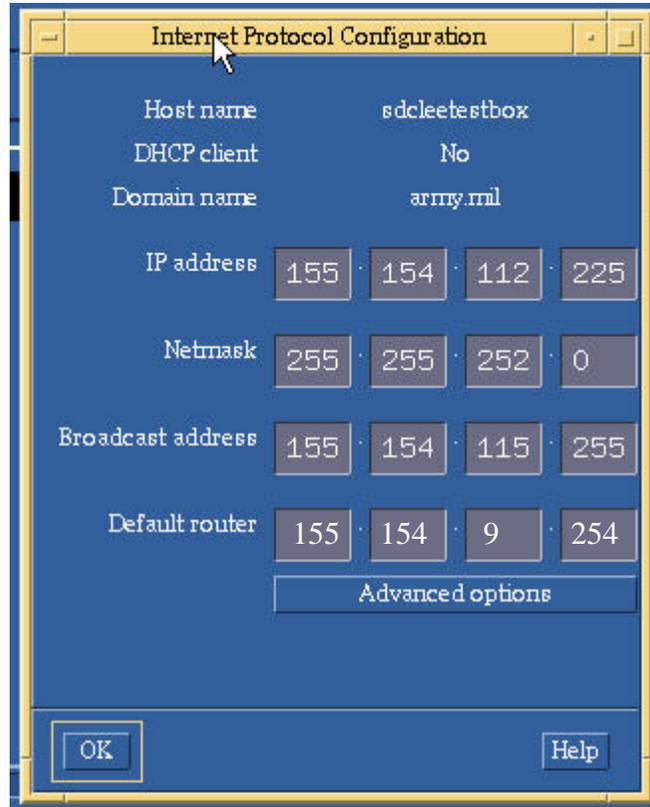


Figure 4.1-56 Internet Protocol Configuration Window

The information in this window is provided by the Directorate of Installation Management (DOIM). The information should not be modified by the AFMIS SA unless directed by the DOIM. **All fields must be filled.**

If you select the “View” option, the window above (Figure 4.1.56) will appear and allow you to view the Internet Protocol Configuration only.

When encountering connectivity problems, this is one area the AFMIS SA should review and insure all values are there and correct.

4.2.7 System

To change the the system clock, you must double click the “System Time Manager” option. See figure 4.1-57.

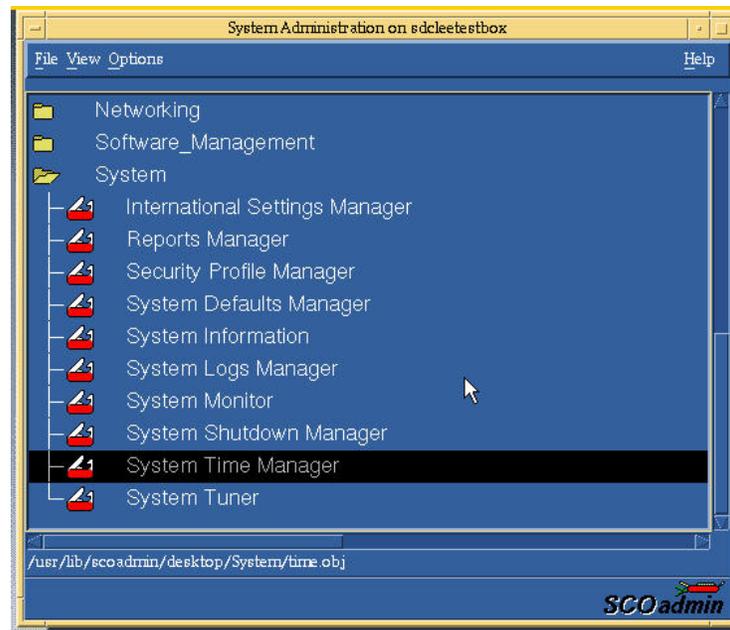


Figure 4.1-57 System Administrator Window

Once you have clicked the System Time Manager, Figure 4.1-58 will appear.

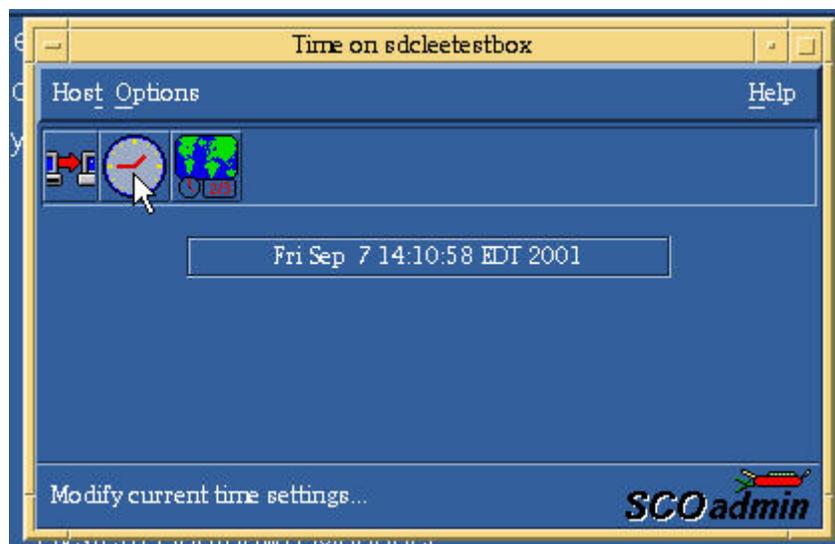


Figure 4.1-58 System Time Window

To set the time, enter the number manually or use the up and down buttons in the graphical version to set the time and date entries. Hours are expressed in 24-hour format. See

Figure 4.1-59. Once completed, close all windows until you return to the main window.

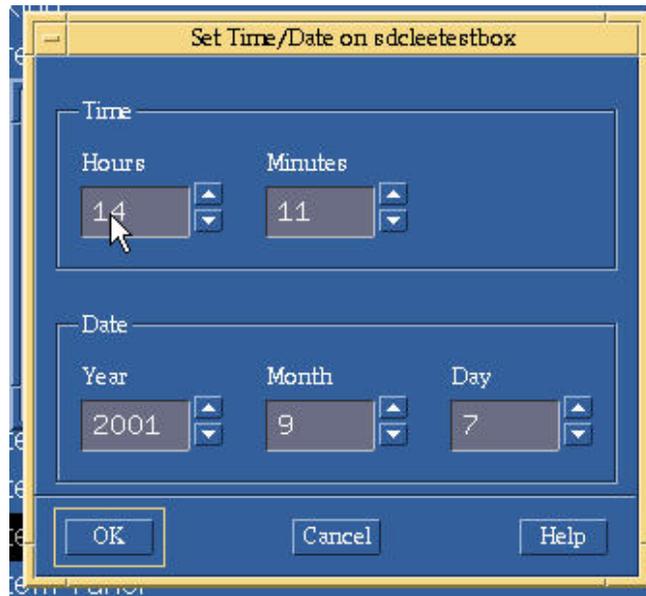


Figure 4.1-59 Time

Date Window

4.2.8 SystemTuner

Figure 4.1-60. The System Tuner is the preferred method for changing system tunable parameters. Because UNIX systems are multi-user and multitasking systems, users and processes may at times find themselves competing for the limited resources available on your system. To insure that no user or process can consume too many of the system's resources, resources are allocated and limited by tunable parameters.

System tuning can be of great value in improving system performance. However, because improperly set parameters can make your system unusable, only experienced system administrators with guidance from CAO, SEC LEE should attempt to change tunable parameters.

NOTE:

For further information on tunable parameters, see "Tunable parameters" in the documentation.

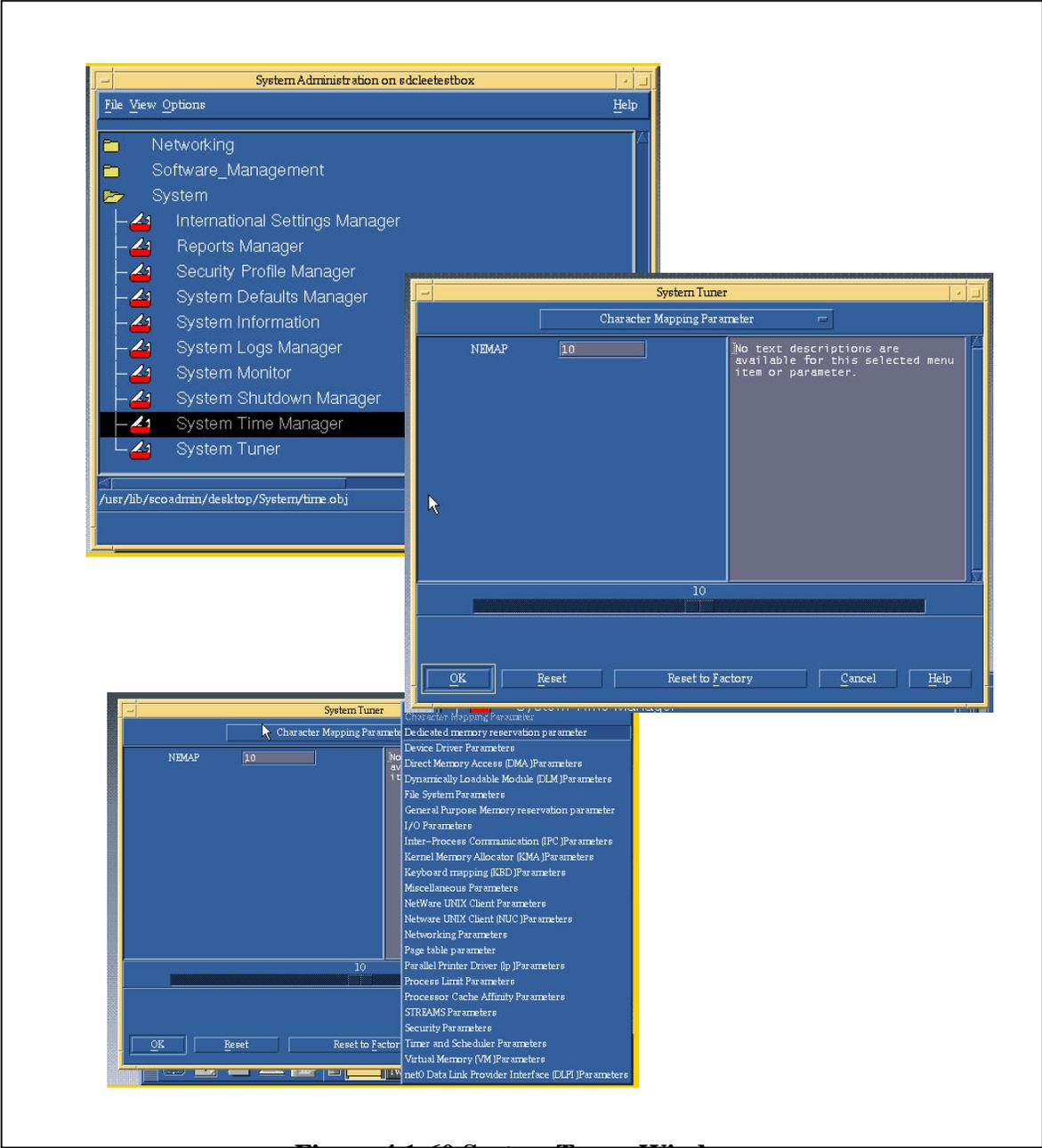


Figure 4.1-60 System Tuner Windows