CHAPTER 7

The OpenWindows DeskSet Clients

One advantage of the OPEN LOOK GUI is that it specifies several basic clients such as the File Manager described in Chapter 4, *Using the OPEN LOOK File Manager*. In addition, Sun's OpenWindows provides quite a collection of useful clients above and beyond what the OPEN LOOK specification requires. The name for this collection is "The DeskSet". Table 7-1 lists the DeskSet clients plus some additional clients that are part of OpenWindows even though not in the DeskSet.

Table 7-1. DeskSet and other Sun Clients

Program	Part of?	Function	Described in:
answerbook	unbundled	Hypertext document reader	page 152.
audiotool	DeskSet	Sound play/edit/record	page 152.
binder	DeskSet	Describe file types, icons, etc.	page 155.
calculator	DeskSet	Desk Calculator	page 155.
Catalyst CDware	Catalyst distribution	Lots of demonstration programs, Catalyst catalog, etc.	page 156
clock	DeskSet	Clock accessory	page 157.
cm	DeskSet	Fancy calendar program	page 158.
cmdtool	OpenWindows	Terminal emulator	Chapter 5, *The cmdtool/shelltool Terminal Emulator*
dbxtool	SPARCworks (was DeskSet)	Interface to *dbx*	page 166; also SPARCWorks documentation

Table 7-1. DeskSet and other Sun Clients

Program	Part of?	Function	Described in:
filemgr	DeskSet	File Manager ("dekstop manager").	Chapter 4, *Using the OPEN LOOK File Manager*
helpviewer	DeskSet	Documentation viewer	page 166.
iconedit	DeskSet	Icon editor	Chapter 9, *Graphics Clients*.
mailtool	DeskSet	Multimedia mail system	page 166.
pageview	OpenWindows	PostScript previewer	Chapter 9, *Graphics Clients*.
perfmeter	DeskSet	Performance load monitor	page 175.
printtool	DeskSet	Print system interface	page 177.
searchit	unbundled	Full text searching	
showme	unbundled	Interactive conference	page 180.
snapshot	DeskSet	Screen shot grabber, raster file viewer	Chapter 9, *Graphics Clients*.
tapetool	DeskSet	Interface to *tar*	page 180.
textedit	DeskSet	Text editor	Chapter 5, *The cmdtool/shelltool Terminal Emulator*.

7.1 answerbook

Sun's *Answerbook* is a complete collection of the operating system documentation, plus several books including a few from this series, on a single CD-ROM with searching software. You can locate material by keywords, or by book name. You can set your own "bookmarks" to find material that you have located. And you can print any portion of the documentation on a PostScript printer.

As the *Answerbook* is an unbundled product, we don't provide a full description of it in this book. However, we commend Sun for making the documentation available on CD-ROM, and recommend that at the very least each workgroup acquire a copy of the *Answerbook* corresponding to the version of SunOS that they are using.

7.2 audiotool

The Sun SPARCstation has a microphone connector and an audio-quality loudspeaker. One can infer from this that its designers foresaw the need for multi-media computing in the late 1980's. *audiotool* is a program that lets you record your voice into a sound file, play sound files, and edit sound files. It is used automatically if you try to send or receive a sound file while using *mailtool*, described in Section 7.13, “mailtool – the OpenWindows Mail Interface” on Page 166.

When you first start *audiotool*, you get a window like that in Figure 7-1, and (assuming you have your microphone connected properly as per your model of SPARCstation’s documentation), you are immediately ready to begin recording and playing sounds. Without a microphone, you can of course play existing sound files, but not record new ones.

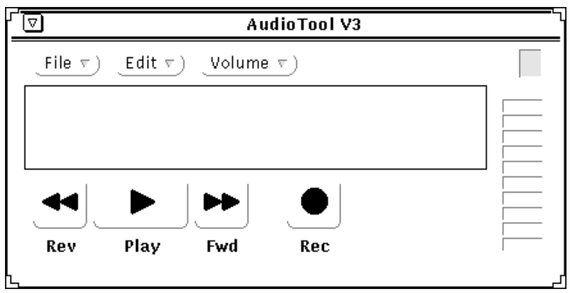

Figure 7-1. AudioTool initial screen

You can load an existing sound file from the `File` menu’s `Load` item. This load item has a directory browser in it. A useful directory is */usr/demo/SOUND/sounds*, if you installed your SunOS with the demonstration files. Just type this directory’s name in the Name field and press RETURN, and you’ll be able to view the directory, as shown in Figure 7-2

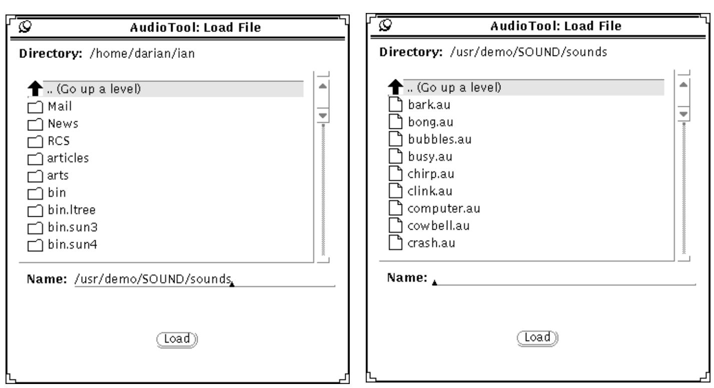

Figure 7-2. AudioTool File Browser: Initial state, and in demo directory

We can’t really describe the sounds here, but they are fun to listen to. When you select a file and click the `Load` button, or just double-click SELECT on a filename, it will be loaded any played.

The drag-and-drop target in the upper right corner allows you to drop in a sound file from the File Manager or any other source; it will be loaded and played.

You can also control playing from the main window shown in Figure 7-1, where the four large glyph buttons (labelled "Rev", "Play", "Fwd" and "Rec") are intended to model the control buttons on a standard audio tape recorder. Clicking SELECT

- on the `Play` button begins playing, and advances the position indicator as it plays. The `Play` button is replaced by a `Stop` button.
- clicking on the Stop button stops playing or recording, and the `Play` button reappears.
- clicking on `Rew` (rewind) takes you to the beginning of the current sound image,
- clicking on `Fwd` (fast forward) moves you to the end.
- clicking `Rec` begins recording, and the `Rec` button becomes a `Stop` button while recording.

While it is playing, the sound level meter at the right side of the window displays the relative sound level, like a "Vu meter" on an audio tape deck. The length of the current sound image is shown in the right footer of the main window, and convenient time markers are shown below the sound graph in the main window. You can also control the output volume and the output destination (internal speaker or the external jack) from the `Volume` menu's popup windows, as shown in Figure 7-3.

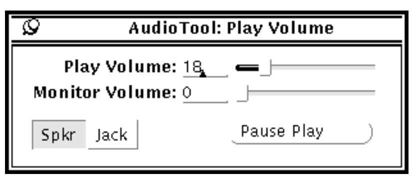

Figure 7-3. AudioTool Volume Pop-up

The `Edit` menu on the main window lets you access, from a menu, such functions as `Cut` and `Paste`, used to rearrange bits and snippets of sound. You can play at this forever if you're not careful! This menu also gets you at the `Properties` sheet, which controls such global functions as whether sounds should be played automatically when loaded, and whether "silence detection" (removal of dead space from sounds) should be performed. You can also change the directory into which temporary files are saved, in case your */tmp* filesystem fills up while you are editing a complicated sound sequence.

If you have sound files in other formats, you may wish to consider the free-software program *sox* a library of files for converting sound files from one format to another. Convert the files to Sun *.au* format, then load them with AudioTool. To send sound files to another user, see *mailtool*, described on page 166.

7.3 binder

The *binder* program is used to control the Classing Engine routines that classify files to decide what icon to display for them, how to print them, and other information. The Classing Engine is used by most of the DeskSet tools, including the OPEN LOOK Window Manager. However its greatest user is the File Manager, so it is documented in Section 4.4.4.1, "Binder: Customizing the File Manager in OpenWindows" on Page 100.

7.4 calctool – the OpenWindows Calculator

Calctool is a scientific calculator. Unlike *xcalc* described in Chapter 8, *calctool* does not emulate a specific brand or model of calculator, but tries to provide the best features of several types in one convenient program. It has fixed, scientific and engineering display modes, basic, financial, and scientific modes of operation, ten register memories, ten user-definable functions, and zillions of other features. Here is a look at its keyboard:

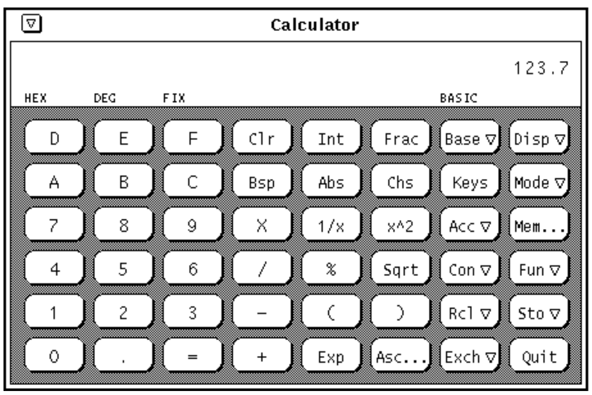

Figure 7-4. Calctool in action.

Most keys have keyboard equivalents. Let's face it, moving the pointer around to press keys on a window-based calculator may be fun for a minute or two, but just about anybody can type faster than they can point-and-click, particularly for entering numbers. For example, to divide a 95-acre farm among three children, just type

```
95 / 3 <RETURN>
```

with the input focus on *Calctool*, and you will see in the display window that each will inherit 31.67 acres.

When you are typing, you can use normal OPEN LOOK cut and paste operations to put data into the window or copy it out. However, the text field does not show that it has been selected; this is probably a bug that will be fixed by the time you read this. For example, to copy the calculation from the text of the previous paragraph into *calctool*, I just triple-clicked on the "95 / 3" line, hit the COPY key (L6), moved the pointer focus to the Calculator window, and hit PASTE (L8). I then pressed <RETURN> and got the answer. OPEN

LOOK was used to copy the answer back into that paragraph, too: I selected the "31.67" in the *calctool* window by clicking SELECT and dragging the pointer across all four digits (ignoring the fact that text didn't get highlighted as I dragged), hit COPY, moved back into the *cmdtool* window in which we were editing this chapter, and hit PASTE.

In keeping with OPEN LOOK's context-sensitive help facility, each key has a short help menu, as shown in Figure 7-5, that shows the name, keyboard equivalent, and function of the key.

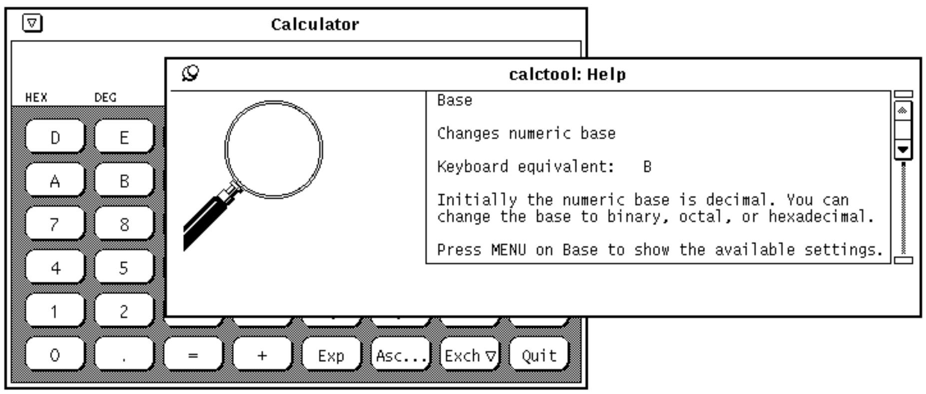

Figure 7-5. Calctool help on "Base".

Each button with a menu mark (such as *Base*, *Acc* and *Con* in Figure 7-4) features a menu. You can pull down the menu by pressing and holding the MENU pointer button, or pop it up by pressing and quickly releasing MENU. Or you can apply the default action from the menu just by clicking SELECT on the menu button. There are literally dozens of functions; too many to detail here. They are all explained in the reference manual page in Section Three, and summarized in the on-line help for each key.

It also has Financial and Scientific modes, and lets you define your own functions.

7.5 Catalyst CDware

One of the best ways to find out about third-party software is to "try before you buy." SunSoft produces a CD-ROM filled with demonstration copies-many of them unlockable-of a large number of commercial software products covering publishing software, database, imaging, games, software development, and many other areas. All products are distributed in a standardized OPEN LOOK browser format as shown in Figure 7-6, which shows a few of the products listed in Volume Four of CDware.

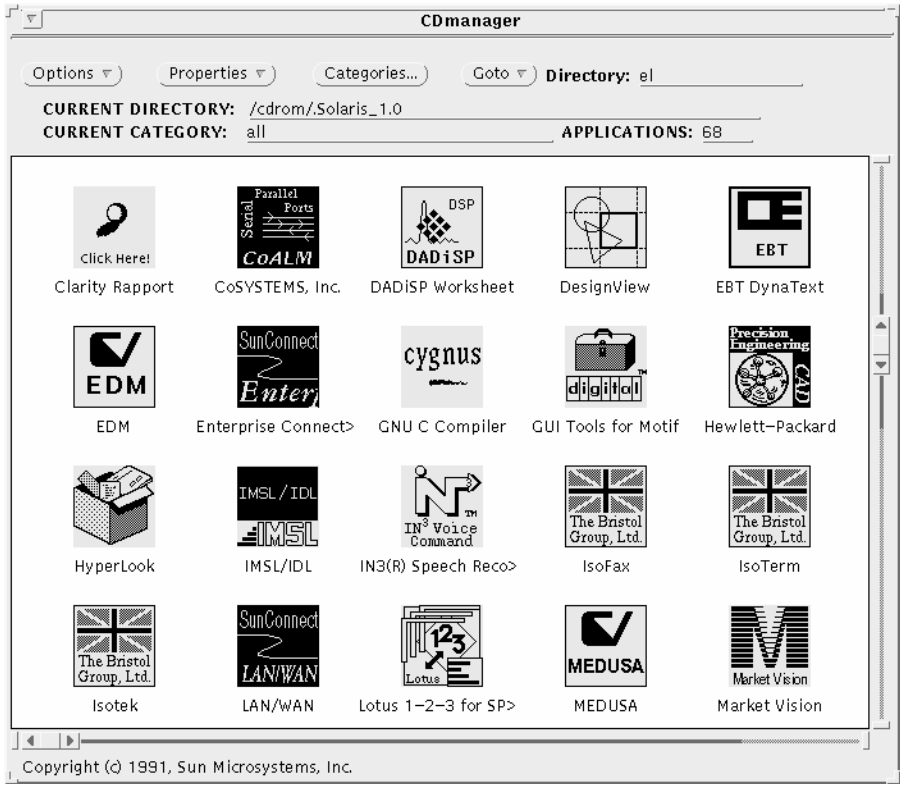

Figure 7-6. Cdware browser and installation program

The CDware CD is issued once or twice a year and is distributed free of charge to Sun owners and users. To get a copy, contact your Sun representative, or SunSoft Inc., Attn: Catalyst CDware, 2550 Garcia Avenue, Mountain View, CA 94043, U.S.A..

7.6 clock

The *clock* program is a simple rectangular clock. It has a Properties dialog that lets you select analog or digital display, analog or roman display in the Icon window, 12 or 24 hour mode, and include the seconds and the date if you wish. The MIT clock programs are described in Section 8.1.1, “Clock Programs: xclock and oclock.” The ultimate discussion of X clocks is the book *X User Tools*, where an entire chapter is given over to the many varieties of clock that you can run under X.

7.7 cm – the OpenWindows Calendar Manager

One of the most common examples of a useful window system program is that of a calendar tool. Most calendar utilities (even the two-decades-old UNIX *calendar* program) let you specify your appointments, and be notified about them in advance. Some of the screen-based ones let you display a week, month, or year, and print calendars in various formats. But most of them ignore the fact that people who work together often need to meet together. Very few such tools let you schedule meetings interactively, by looking at various users' calendar files. Sun's *cm*, or Calendar Manager, is one tool that does so. When initially started, it comes up iconified with the current day and month shown, as in Figure 7-7:

Figure 7-7. Calendar Manager initial icon.

To open the icon, just double click SELECT, or press L7, with the pointer on the icon. It opens up to a large month-at-a-glance format:

Figure 7-8. Calendar Manager main window.

As you can see, this has a menu bar at the top and displays the current month in the main panel. We'll discuss the menus presently, but first let's look at the most common operations.

Let's say we want to schedule an appointment for lunch on the 27th of this month. We need only move the pointer into the calendar's box for the 27th, and double-click SELECT, to start up the Appointment Editor window:

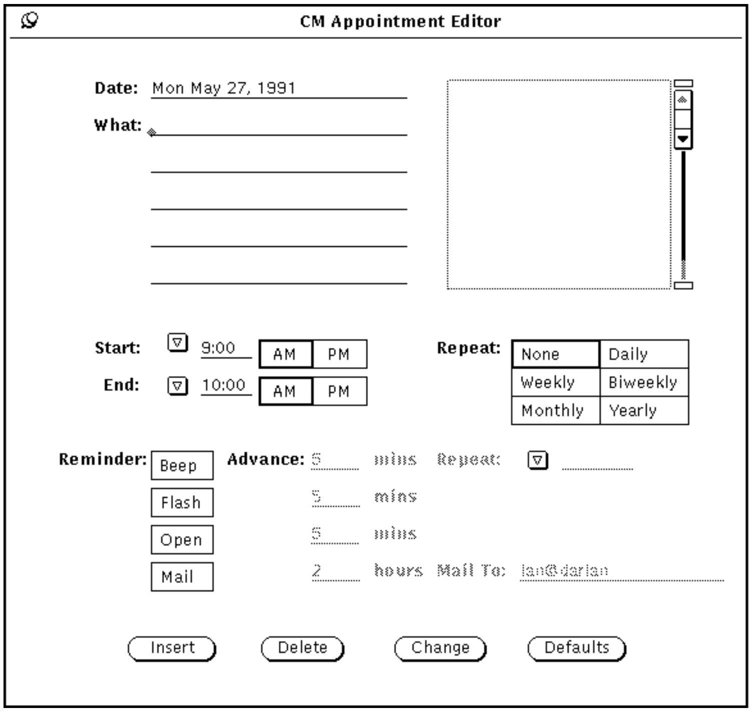

Figure 7-9. Calendar Manager Appointment Editor.

We can type a note about the appointment into the *What* field, and the times in the Start and End fields. As you'd expect from an OPEN LOOK application, there is a context-sensitive Help facility for **all** controls in the window, accessed by pushing the HELP (F1) key. For example, if you need information about the *Start* and *End* time fields, you might press HELP on the Start field, and you will see a display similar to that in Figure 7-10:

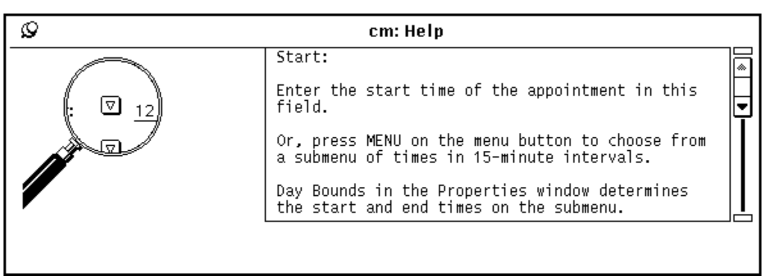

Figure 7-10. Help on the Appointment Editor.

Once you've entered the note about the appointment, the times, you can activate any of the four warning types:

Table 7-2. Reminder Methods for Calendar Manager Appointments

Method	Meaning
Beep	Causes the X display's bell to ring the specified number of minutes in advance of your appointment. Adjust the time to give yourself enough time to get there!
Flash	Causes the *cm* window or icon to start flashing the specified number of minutes before your appointment.
Open	Causes the *cm* icon to open into a window the specified number of minutes in advance.
Mail	Causes *cm* to send electronic mail the given number of hours in advance. You can direct the mail to another user or account if someone else normally manages your time, or if you are using someone else's account.

Once you've set up the appointment the way you want, click SELECT on the *Insert* button. Notice that the appointment now appears both in the scrolling list on the Appointment Editor window *and* in the full-month view:

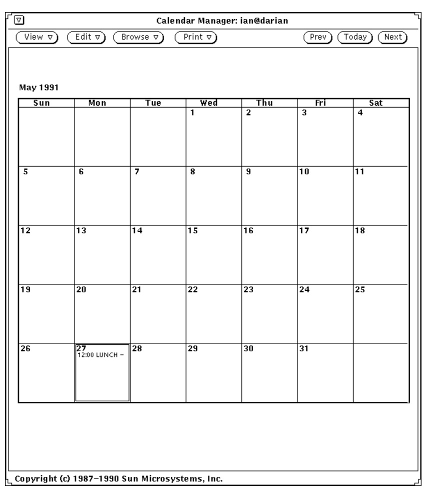

Figure 7-11. Appointment now appears in Month View.

You can also use the scrolling list to select an appointment for alteration or deletion (click SELECT on its entry in the list and then on the *Delete* or *Change* button.). You can recall the default values (usually to start installing a new appointment, since the default *What* item is "nothing") just by clicking on the DEFAULTS button in the editor.

Back on the main window, there are two sets of buttons in the menu bar. The left side has the traditional *View, Edit* and other buttons; the right side has *Prev*, *Today*, and *Next buttons*, The *View* menu lets you control the view in the main panel; you can see just one day, or the week, or a whole month (the default), or even a whole year. *Edit* will by default get you into the Appointments Editor described above; it can also be used to start the Properties sheet that lets you change:.

Table 7-3. Calendar Manager Property Choices

Choice	Meaning
Editor Defaults	Set the defaults for the various Reminder types described above.
Day Boundaries and View	Controls the time that the day starts and ends (adjusted with two OPEN LOOK sliders), and the default view (Year, Month, Week, or Day).
Browser Calendars	Lets you specify a list of other people whose calendars you want to inspect.
Access List and Permissions	Lets you give other people permission to browse, insert, and delete items in your calendar.

Most of these are straightforward. The last, Access List and Permissions, deserves an example. By default, everyone ("the world") can inspect your calendar file:

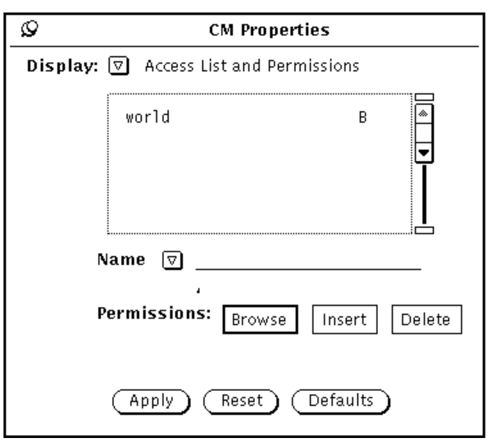

Figure 7-12. Calendar Manager Access Control Screen.

Suppose we want to give user "mary" on machine "gamut" the ability to schedule appointments for us. We add her name (using normal "user@host" notation) and turn on Insert and Delete, then click on the menu mark beside the word *Name* to Add it. This abbreviated menu pulls down to a list of Add, Delete or Change; the default is Add, so you can just click on the menu mark, or hit RETURN after her name, as a keyboard shortcut for Add.

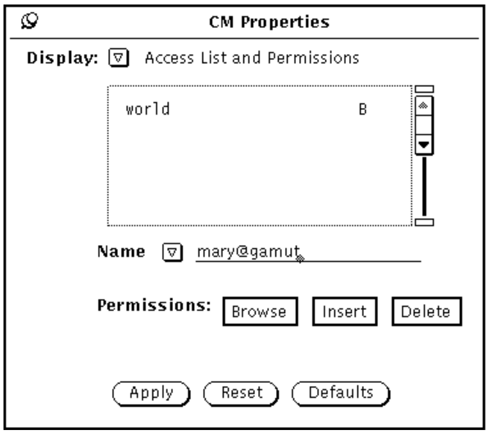

Figure 7-13. Giving Mary Insert and Delete Access.

After adding all the entries we wish to add, we click APPLY to make them permanent.

The *Browse* item lets you browse in others' calendars, assuming they have not turned off the default world Browse permission. It gives you either a scrolling list of people you commonly browse, or lets you select them from the menu. Browsing is similar to working with your own calendar, except that you can see several calendars at once if you invoke the multi-browse feature

The *Print* menu item lets you print any of the standard views (day, week, month, or year), or set the printer properties. For example, Figure 7-14 is a printout of the month of January,

1999. Normally it is printed in landscape mode to fill a full "US Letter" size page; we've rotated and reduced it to fit this book:.

2001

04/03/95 02:50 PM **ian@sqrex**

January

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

February

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

March

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

April

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

May

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

June

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

July

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

August

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

September

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

October

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

November

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

December

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Year view by Calendar Manager

Figure 7-14. Calendar Manager Printout of Month View

7

The *Prev, Today* and *Next* buttons move you forward, backwards, or to today's entry; however, the entry will be displayed in whatever view you have selected. For example, if we have set the View to be Year, and click on Today, we get the current year. If we click on Next enough times, we can get the view shown in Figure 7-15: †

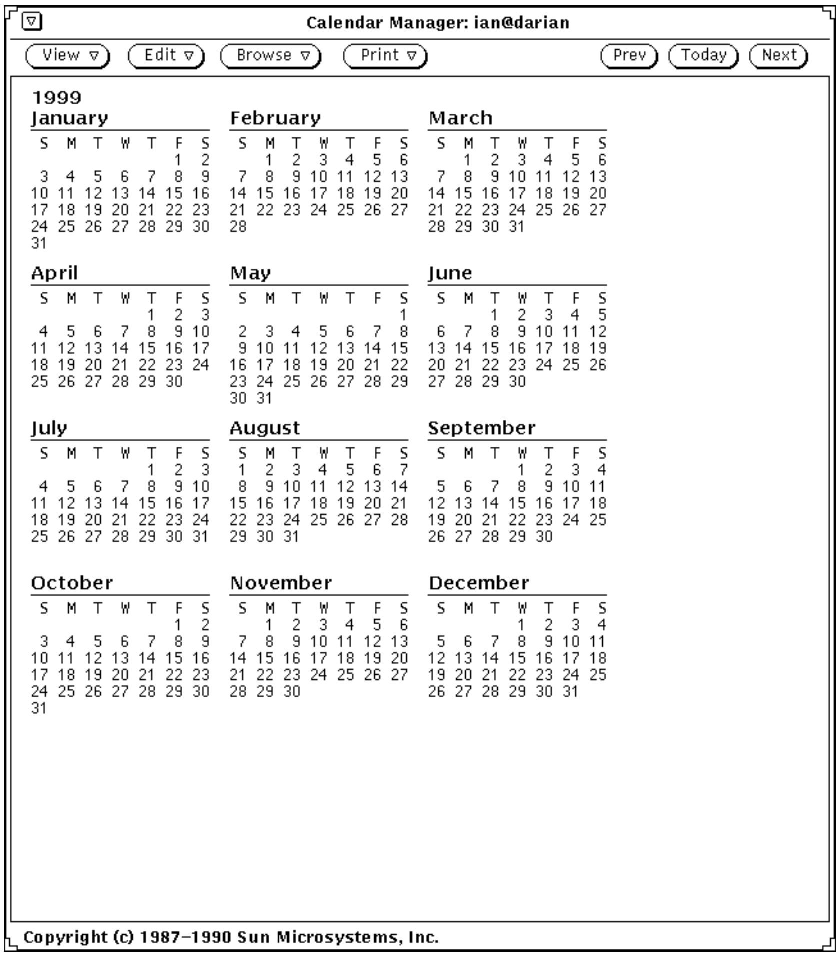

Figure 7-15. Full-Year Calendar.

7.7.1 Related Programs

The contributed software program *xcalentool* provides similar functions, It does not have any capability to inspect other users's calendar files. It does have a simpler file format, and has an "include" file capability so that public lists of holidays or other key dates can be

† The program will stop at 1999; it will not display the last year of this century or any years in the next. Presumably later versions will allow you to plan further into the future.

included without making multiple copies of the dates files. It is not afraid to print year calendars into the twenty-first century. Another contributed program is *xcal*.

7.8 cmdtool

The OpenWindows standard terminal emulator is *cmdtool*, which has been described at length in Chapter 5, *The cmdtool/shelltool Terminal Emulator*.

7.9 dbxtool, debugger

The *dbxtool* debugging interface originated as a SunView program in early releases of SunOS. The first X-based version was included with Release 2 of OpenWindows. With Release 3 it was moved from the DeskSet into the unbundled compilers package known as SparcWorks (ProWorks on the Intel version of Solaris). With Release 2.1 of Solaris, this moving target has been renamed *debugger*. Since it is in any event a tool for programmers, it is not documented in this Guide; consult the appropriate Sun documentation.

7.10 filemgr

The File Manager is a visual interface to your files and programs; this type of program is also called a "desktop manager". We have devoted all of Chapter 4, *Using the OPEN LOOK File Manager*, to this program.

7.11 helpviewer

The *helpviewer* program displays a "help handbook" and allows you to view it, move around, print pages, etc. It is started automatically when a new user starts up OpenWindows the first time (see Figure 2-6 on Page 33), and every time thereafter until the user removes it from their start-up files as described in Section 3.5, "Customizing your Session Start-up" on Page 72.

More detail here.

7.12 iconedit

The *iconedit* program is for creating and modifying the icons that represent files and running programs. It is described in Chapter 9, *Graphics Clients*.

7.13 mailtool – the OpenWindows Mail Interface

Mailtool is an OPEN LOOK replacement for the standard Berkeley *Mail* program. Berkeley *Mail* (known as *mailx* in System V), when started up in mail-reading mode, provides you with a menu of your mail items:

```
Mail version SMI 4.0 Tue Nov 7 10:46:02 PST 1989 Type ? for help.
            "/var/spool/mail/ian": 3 messages 3 new
>N 1 rab@research.att.com Sat May 25 14:20 20/632 S-Plus Review
 N 2 To tim@ora.com Sat May 25 14:23 43/1904 comments on chapters
 N 3 root Sat May 25 14:24 16/458 Output from "at" job
Mail>
```

For each mail message you see its status (N for New), message number, sender's name and date/time, size in lines and characters, and the subject. Single-letter commands (s for save, r for reply, etc.) let you work individual messages in your mailbox.

Mailtool tries to give you all the flexibility of the underlying Berkeley Mail program within the framework of the OPEN LOOK user interface. When started normally, it shows up as one of two icons, depending on whether you have any unread mail or not:

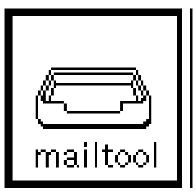

Figure 7-16. Mailtool icon when you have no mail.

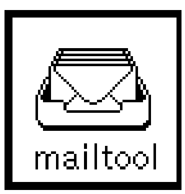

Figure 7-17. Mailtool icon when new mail has arrived

When you open the icon, any mail you do have is displayed in a menu format similar to that shown in Figure 7-18:

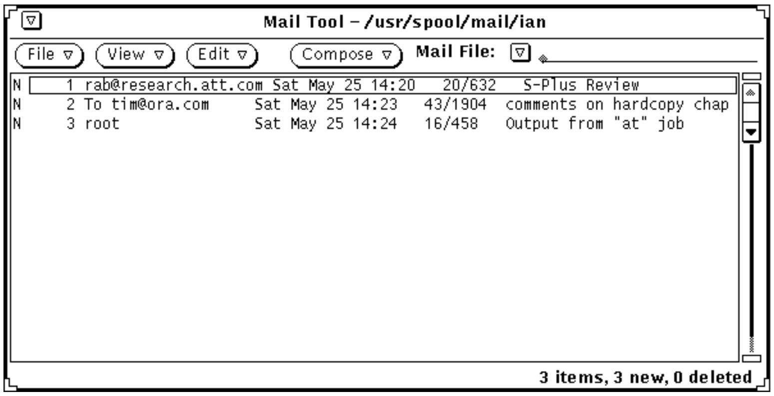

Figure 7-18. Mailtool main window with three messages to be read.

To read a mail message, just click SELECT on it (the "menu" is really an OPEN LOOK Scrolling List). Double-clicking on a message, or clicking once on the message then on the *View* button, causes the message view window to appear, with the selected message in an (editable) text window:

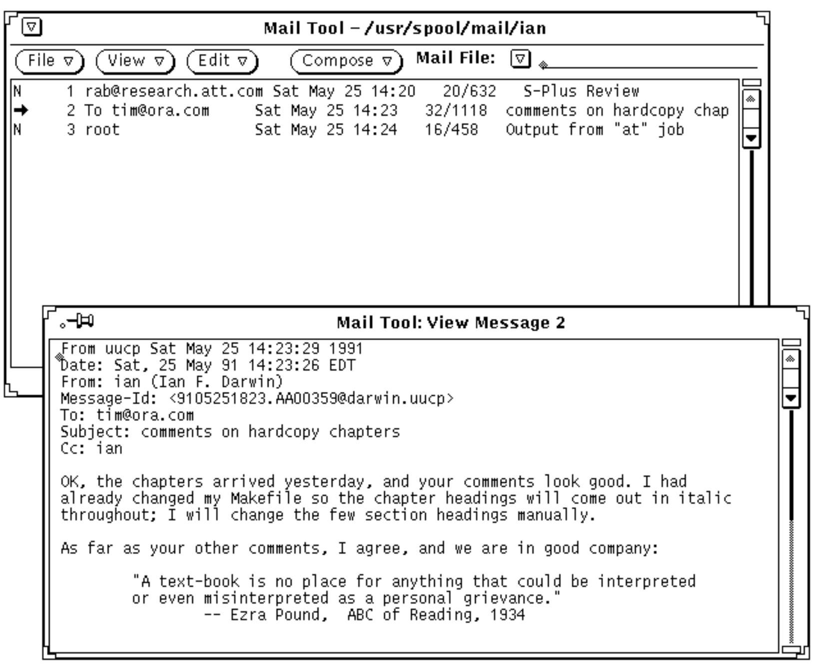

Figure 7-19. View a message.

This window can be scrolled in the usual way, and the text can be edited as described in Chapter 5, *The cmdtool/shelltool Terminal Emulator*.

7.13.1 Sending a message

Should you decide that a reply to this message is in order, or if you wish to compose a new message, pull down the *Compose* menu. The main items here are *New*, which starts a new message, and *Reply* which replies to the sender of the message that you are viewing or have selected. If no message is selected, you can only compose a New message. The *Compose* window looks like Figure 7-20:

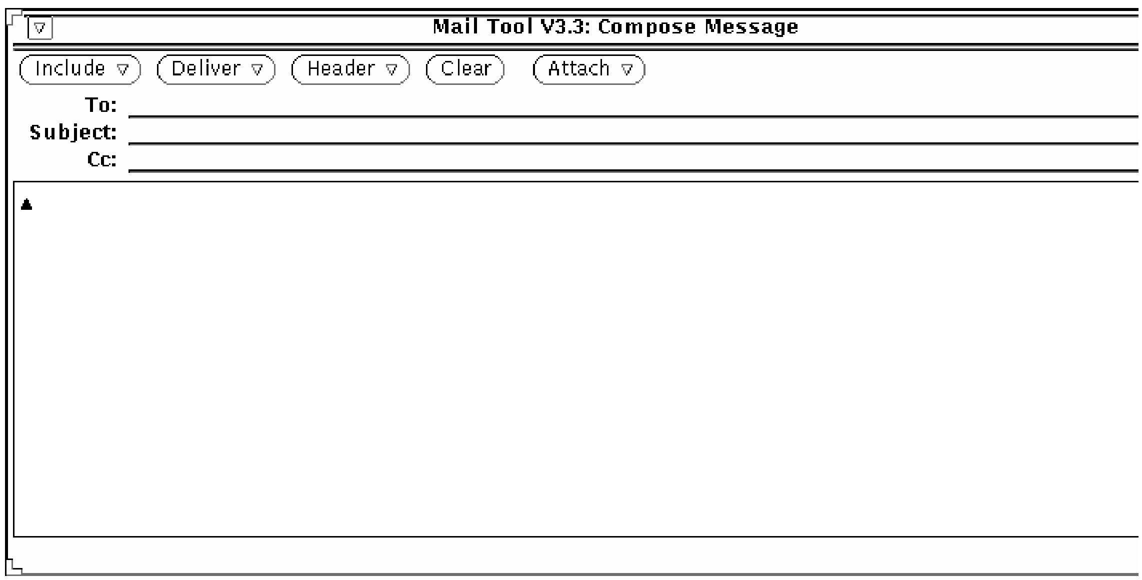

Figure 7-20. Compose Window

There are some controls at the top; for now, just type the name of the recipient into the text field labeled *To:*. The main part of this window is a standard OPEN LOOK text screen, as described in Chapter 5, *The cmdtool/shelltool Terminal Emulator*, into which you can type the body of your message. When you're happy with the message, just click SELECT on the *Deliver* button at the top, and it will be sent.

7.13.2 More Menus

The *File* menu lets you *Open* new mail, *Move* or *Copy* selected messages into a holding file, *Print* the selected message(s), *Save changes* that you've made, and be *Done* with (e.g., iconify) the *Mailtool* program.

The *View -> Messages* menu item lets you see either the full header or an abbreviated header, as controlled by the *Ignore* line in the *.mailrc* file in your home directory. This is useful to suppress the display of uninteresting "message headers" inserted by most mail transport agents such as *sendmail*. For example, if we have the line

7

```
ignore Received Message-ID Status
```

in my *.mailrc* file, then the abbreviated message view (which is the default) might look like this:

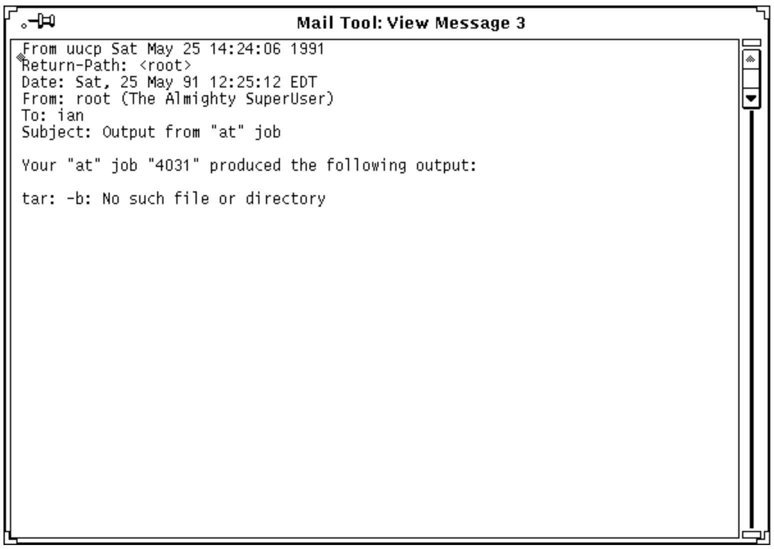

Figure 7-21. Abbreviated Message View.

The Full message display of the same message would look like this:

Figure 7-22. Full Message View.

The *View* menu also lets you select the *Next* or *Previous* message. And it also has a *Sort* item for sorting the messages; this item seems to be permanently disabled in this release.

The *Edit* menu you lets you cut, copy, delete or undelete messages. It also gets you access to *Find*, which tries to locate a person by using Sun's NIS (formerly YP) password service (you can't use this facility if the machine you're running *mailtool* on isn't served by NIS). And it gets you the *mailtool* Property sheet

The *Compose* menu on the main window allows you to create a *New* or *Reply* message. As previously noted, this pops up the *Compose* window, used for entering mail messages. You can also *Forward* a message, which lets you use an existing message as the basis of a new message. And finally, this menu gets you into a mode where you can control the *vacation* mail program. This will send people mail stating that you are on vacation (or whatever message you like) and that you will read your mail when you get back.

7.13.3 Attachments

The *Mailtool* program allows you to include or "attach" files, audio clips, and other items. When you receive a message with attachment(s), you will see them listed in a file-manager-like window at the bottom of the *View Message* window. When composing a message, you can select the menu item *Include->Show Attachments* to create a similar window at the bottom of the *Compose* window. This window has its own *File* menu that lets you Add a file, and an *Edit* menu that lets you rename or remove attachments. But since this is a file-manager type window, you can more easily add objects just by drag-and-drop from any filemanager window. *This is the best way to send a copy of a file to the recipient of your message*

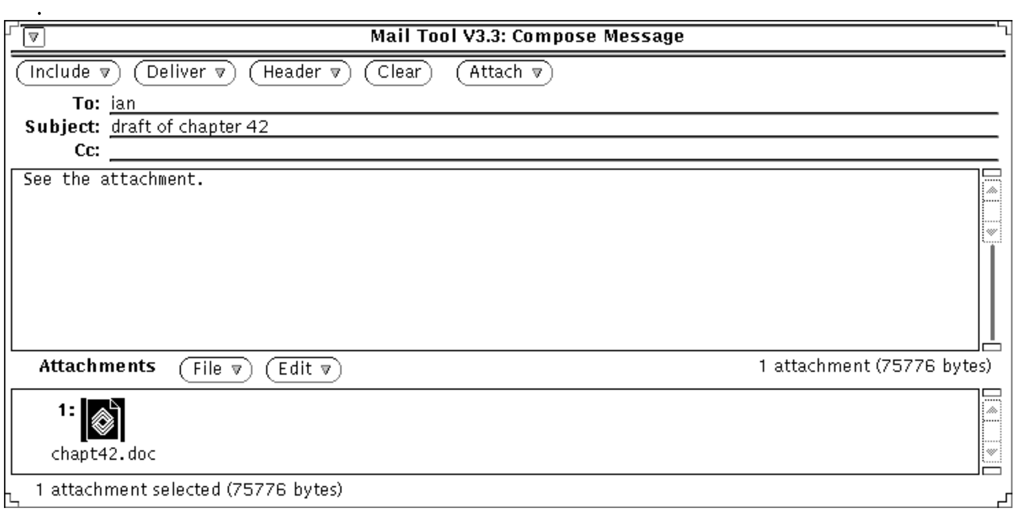

Figure 7-23. Compose Window with one Attachment

The *Compose* window also has an *Attach* menu, which lets you attach a voice message using *AudioTool* or an Appointment from *Calendar Manager*.

7.13.4 Menus in Compose Window

The *Compose* window is used to compose new mail and reply to incoming messages, and has several menus at the top. *Include* lets you include the currently selected message (it does not default to the message you are replying to; you must select a message). By default, this button includes the message *bracketed* by the conventional Internet-style messages:

```
----- Begin Included Message -----
----- End Included Message -----
```

Alternately, you can have the message *Indented* by one tab position.

The next menu button is to *Deliver* the message. This normally terminates the *Compose* window; you can also iconify it, leave it up, or leave it up and clear the message, by choosing options from this menu.

Using the third button, you can add *Header* fields such as CC (carbon copy), BCC (blind carbon copy, i.e., the recipients don't see the BCC recipient's name), and other fields (which you specify usingthe Properties window as described in Section 7.13.6, "Customizing Mailtool" on Page 173).

The next button, *Name Finder*, starts up the same message finder described above under *Edit -> Find*. It relies on NIS to scan your NIS domain's password file looking for a name that matches the name you specified. This feature is not included in later versions of the software.

The final button, *Clear*, is the measure of last despair: it clears the entire compose message window and lets you start all over again. If you have text in the window, of course, you will be prompted if it is alright to discard the text.

The *Compose* window is a baseframe, so you can keep working on it while you've iconified the rest of *Mailtool*.

7.13.5 Saving and Printing Messages

Mailtool provides a facility for saving all your mail messages in a subdirectory. You can specify this in the Mail Filing category of the Properties window (See "Customizing Mailtool" below).

The main menu scrolling list allows you to use the OpenWindows shortcut for CUT, L10, to delete the current message, even while there is a View window active for it. Just move the pointer into the main window and hit the CUT key. The message will be deleted, the next message will be selected, and the new message will appear in the View window if there is one active.

Since the main menu is a scrolling list, you can select any item in it for drag-and-drop operations. Just click SELECT to select the item, release the pointer button, then click SELECT again without moving the pointer, and hold SELECT down while dragging. If you drag the message (an envelope icon follows the pointer) onto a *printtool* icon (described in *Section 7.16, "printtool – the OpenWindows Printer Interface"* later in this chapter), the file will be sent to the printer. (In older versions you then had to select *Edit -> Undelete* to keep the message in your mailbox, since the drag and drop operation removed it from your mailbox). You can also use use *File -> Print* from the main window to print the message that is currently displayed.

As another possibility, you can save the message in a file just by dragging it into a File Manager (see Chapter 4, *Using the OPEN LOOK File Manager*) window and dropping it into a directory. Since mail messages don't have names, the saved message will have a name made up for it by *mailtool*. Depending on what version of the software you have, the saved message will initially have a filename of either *Mail* plus a large pseudorandom number, or of *sun-deskset-message*. You can rename it using the file manager (just click on the name, rather than the icon, type your new name, and press Enter). Another way to copy a message into a file is to use *File -> Edit -> Save New File* in the window menu of the *mailtool* View window.

7.13.6 Customizing Mailtool

There are two main ways of customizing mailtool, the *~/.mailrc* file and the *Edit->Properties* menu item, which pops up a Properties window.. For the most part you should avoid editing your ~/.mailrc file and use the Properties window. The categories of customization are shown in Table 7-4:

Table 7-4. Mailtool Properties Customization

Category	Meanings
Header Window	Message Listing Window: Retrieval frequency, notification, geometry, delivery, custom buttons.
Message Window	Lines to display, print command, hidden fields
Compose Window	When composing text: marker for included text, file to log outgong messages to, defaults, custom fields for *Header* menu
Message Filing	Mail folders to appear in *Load*, *Copy* and *Move* menus
Template	Neat feature - lets you compose or reply with form letters!
Alias	Updates user and group aliases (also used by *)*
Expert	Miscellaneous Options

One customization that can only be performed by editing the *~/.mailrc* file is the display format used in the Header Window. There can be any of a number of *variables* in this file. One variable is *showto*, which controls whether address of the "To" person or recipient will be displayed. Another variable is *header_format*, which specifies the format of the header. This variable is rather like the C language printf format string, in that a percent sign followed by (usually) one character specifies the formatting of one item. The formats which can be used are shown in Table 7-5:

Table 7-5. Mailtool Format Codes

Format Code	Result
%c	number of bytes in the message
%C	number of bytes in the message contents (excluding header)
%f	entire From field
%l	number of lines in the message
%L	number of lines in the message contents
%i	Message-ID field
%m	Message Number
%s	Subject: field of message
%t	To: field (recipient)
%r	Recipient (sender, or to line if you are the sender)
%d	date and time of the message
%n	sender's real name (if any, otherwise same as %r)
%?header?	Contents of *header* field, if present
%%	Print a real % character

For example, the default format is something like

```
header_format="%3m %-18.40f %16.16d %4l/%-5c %-.100s"
```

where a number means the width of a field, a period means "no more than", and a negative sign means to left-justify the field.

7.13.7 Other Mail Programs

The standard MIT X11 client *xbiff* will show you whether you have mail or not, using an icon similar to that an old version of *mailtool*. And the contributed program *faces* will give you a fancier display of incoming mail, showing a pictorial representation of each sender.

The three mail messages shown in the examples above might appear like this with *Faces*:
9z

Figure 7-24. Faces display of incoming mail.

But neither of these has the ability to display your mail; they just tell you that you have mail to read.

The standard MIT X11 client *xmh* provides a sophisticated mail reading interface to the MH mail system; both MH and *xmh* are described in detail in the O'Reilly Nutshell book *MH & xmh: E-mail for Users & Programmers* by Jerry Peek.

7.14 Pageview

The *pageview* PostScript previewer is described in Chapter 9, *Graphics Clients*.

7.15 Perfmeter

The *perfmeter* program is useful for showing the "load average" and other measures of busy-ness on one or several machines. It is simpler to use and more flexible than *xload* (see Chapter 8, *Other Standard Clients*). The *perfmeter* client knows how to reach out across the network to ask another machine for its load average (or any of almost a dozen statistics). Its default is to show the percentage of CPU time that is used, rather than the load average; you can get the load average just by adding `-v load` on the command line. Let us say that you want to watch the load average on both the local machine (call it *kansas)* and a server named *oz*. Assuming that both machines are running the standard RPC daemon *rstatd(8C)*, you need only type this set of commands in a *kansas* xterm:

```
perfmeter -v load & perfmeter -v load oz &
```

The result might look like this:

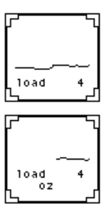

Figure 7-25. OpenWindows Perfmeter running locally and on Oz

As you can see, *perfmeter* has the advantage (over the older *xload* program) that it gives a numerical scale to its graph, rather than the numberless graph that *xload* offers. As well, *perfmeter* lets you select CPU load, disk I/O, paging, ethernet traffic, and many other things to watch just by pressing the *Props* key (L3) or by pulling down a menu in its window. Its *Properties* panel lets you select two or more load factors to monitor, and lets you change several other attributes of its operation. Figure 7-26 shows the Properties window, which you get by selecting Properties from the application menu in the *perfmeter* window.

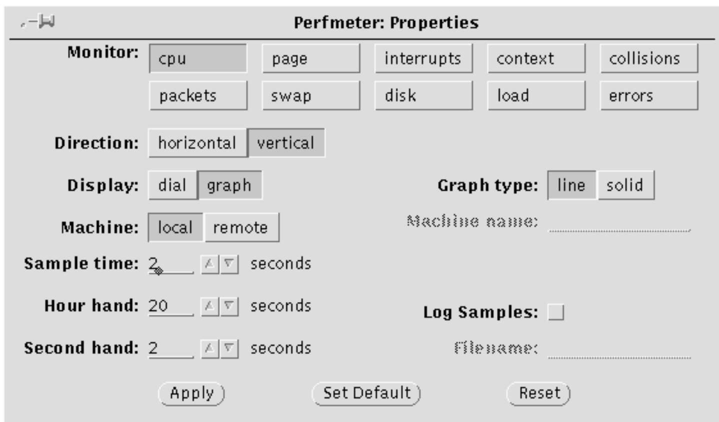

Figure 7-26. Perfmeter Properties Window

You can select any of the load indicators that you want:

See the reference manual page in Section Three of this guide for more information about either *xload* or *perfmeter*.

7.16 printtool – the OpenWindows Printer Interface

Printtool provides a simplified OPEN LOOK-style interface to the line printer system. If you start it, either by typing the command *printtool* or by selecting it from the *Programs* menu, you get a start-up screen similar to this one:

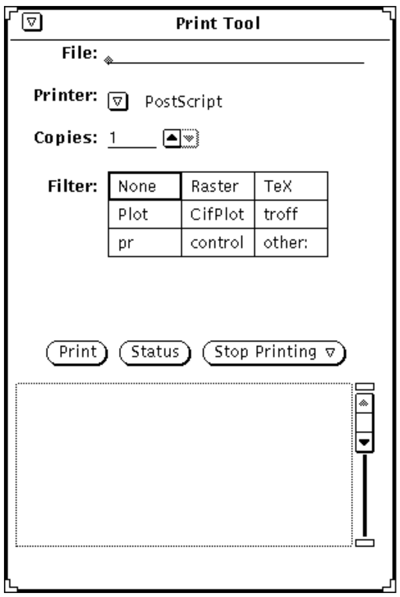

Figure 7-27. Printtool main window.

The main function of this tool is to send files to the printer for you. There are two simple ways to do this. One is to have a copy of printtool sitting iconified, drag a file's image from the *filemgr* program, and drop it onto the icon for *printtool.* The other way is to have a copy of *printtool* open, type the filename in the *File* text field, and click on the *Print* button.

Other options let you choose the printer to use, specify the number of copies, and specify what type of data the file contains. The defaults are: the first printer found in the file */etc/printcap*, one copy, and no special "filtering." As well, push buttons let you *Print* a file (like the *lpr* command), get the *Status* of all jobs (like the *lpq* program), and cancel or *Stop Printing* either one job or all the jobs you have queued (like *lprm*).

To specify an alternate printer, you can use the OPEN LOOK abbreviated menu beside the name of the default printer. Just click MENU on the menu mark beside the word **Printer:**, and you will see a list of the available printers. Select one, and it will become the current printer. The first one in the list is the default, so you can always return to the first one just by clicking SELECT directly on the menu mark.

To change the number of copies, you can either click on the up arrow to add one to the current number, or the down arrow to subtract one from the number. For more drastic changes, say 54 copies, you naturally don't have to click the up-arrow 54 times. The number display is just an OPEN LOOK text field. Move the pointer to the right of the current number, click SELECT, type Control-U to clear the field (or DEL to delete one character), and retype your number.

The Filters listed are normally used only with special types of data files. One exception is *pr*, which paginates your text file before printing it, using the standard UNIX utility of the same name.

The *Print* button causes the named file to be sent to the printer with the currently selected options. The *Status* button causes a listing of the current print jobs to appear in the small scrolling window at the bottom of the page. If you want to delete one or more print jobs, just select them from the scrolling list, and select *selected Print Job* from the *Stop Printing* menu button. You can also cancel all your outstanding print jobs on this printer just by selecting *All Jobs* from the same button.

In short, printtool gives you control over your printers. For more details, consult the reference manual page in Part Three of this guide, as well as the *lpr* manual page in your normal UNIX documentation.

7.17 SearchIt - full text searching

Searchit is an unbundled product from SunSoft that lets you build an index of a collection of files, then rapidly search the index to locate files. We used it in building the OPEN LOOK version of this book. Figure 7-28 is an example of searching for all documents containing the phrase “escape sequence:”

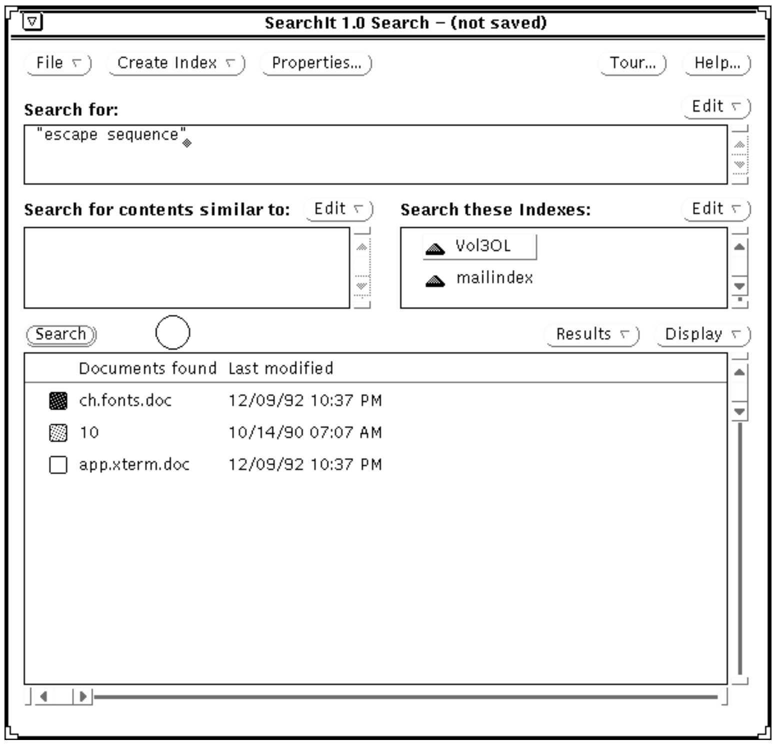

Figure 7-28. Searchit in action

This search found three documents; the first, shown with a black icon, was judged most likely to meet our search criteria, the second, shaded gray, less likely, and the third, shown with a white icon, least likely. Double=clicking on any of the files will bring up a *viewer* window, with command and menu buttons to jump to the next occurrence of a search word, the next document, etc., All in all it’s a good product.

7.18 ShowMe - graphical conferencing

ShowMe is an unbundled converencing tool from SunSoft. It is very easy to use, and will communicate with another or several other copies of itself, one per workstation display. Figure 7-29 is a (hypothetical) example of using *ShowMe*, .

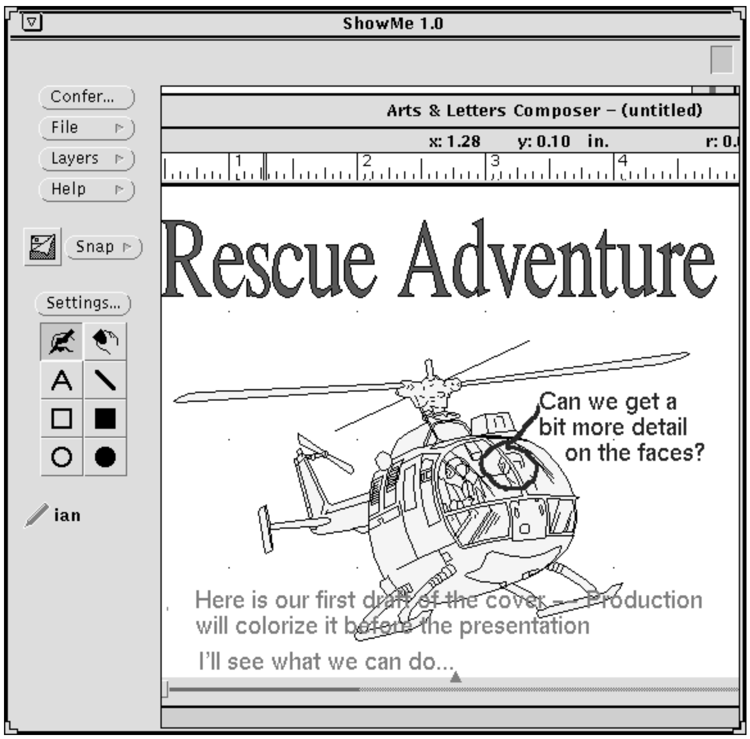

Figure 7-29. Part of a ShowMe conference

The figure definitely looks better in color, so do look at the Color Plates section. Each participant in the conference is given a different color, and anything they add—text, freehand drawing, and outline or filled rectangles or ovals—appears in their color. We like this program, as it is a good example of making computers useful with an intuitive interface.

Figure 7-29 is adapted from our review of this program in the January 1993 issue of *SunExpert* magazine. If you need a "shared whiteboard" facility, we recommend you investigate this program. You can get an evaluation copy without obligation by contacting your Sun representative.

7.19 tapetool – the OpenWindows Tape Interface

Tapetool provides a simplified interface to the standard tape archive utility *tar*.†

.Because *tapetool* is an interface to an existing program, not all the messages are very detailed. Pay close attention to the "footer" section of the main window, and also look in your Console window for messages. For example, trying to write on a tape that is not write-enabled will product the rather uninformative message

```
Write terminated
```

in the window footer; the more detailed messages

```
st0: tape is write protected /bin/tar: can't open /dev/rst8 : Permission
        denied
```

will normally appear in your console window (or in the shell window from which you started *tapetool*). Furthermore, this program will probably never have 100% of the flexibility that the UNIX command line interface to *tar* has. For example, there is no way (except for reverting to a terminal emulator window and issuing an *mt* command) to make *tapetool* read the second or third tar file on a single tape. Nor is there any way to support extra options that local or contributed software versions of *tar* may offer. In fact, you can't use *tapetool* with the Free Software Foundation's contributed version of *tar*; it just doesn't work, due to some incompatibility. However, for simple uses, *tapetool* provides access to the 90% of *tar*'s functionality that is most commonly needed.

When you invoke *tapetool*, you get a simple main window that looks like Figure 7-30:

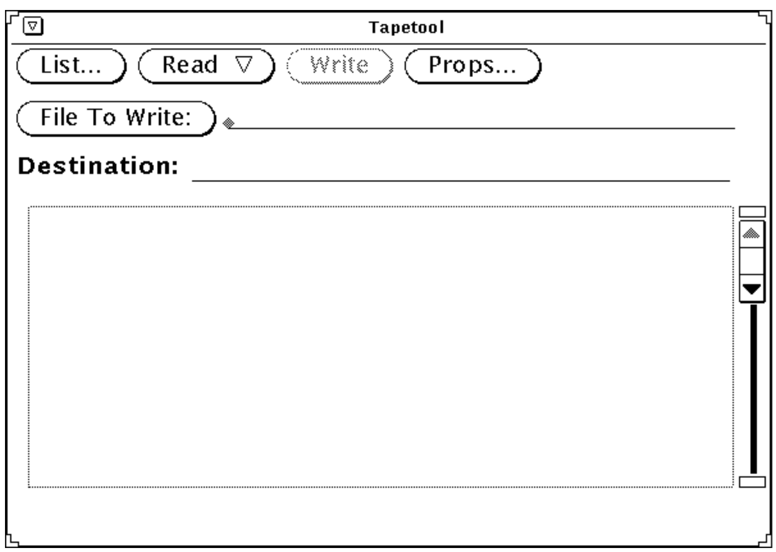

Figure 7-30. Tapetool main window.

As you can see, the main choices are to *List* the tape, *Read* files from it, or *Write* files to tape, and there is also a property sheet. Let's look at each of these operations.

† It does not work with, and in its present form cannot be made to work with, other incompatible tape programs such as *cpio*, *dump*, etc.

7.19.1 Listing and Extracting tape files

Assuming a tape is mounted in your system's default tape drive, just clicking on *List* will generate a list of files on the tape, in a separate window, like so:

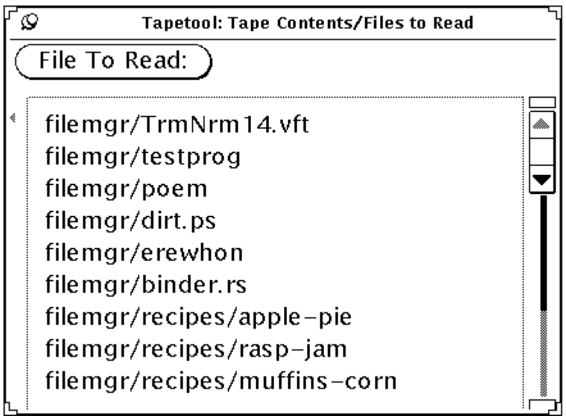

Figure 7-31. Tapetool list of files.

Quite often, obtaining a listing of the files on a tape is a prelude to extracting some or all of them. But given that the list of files is in the computer already, in the "list of files" window, it would be an awful waste of personpower to re-type some of the filenames. And to make maximum use of having the list in the computer, you should be able to specify the files you want in two ways: either by selecting some from the list to be read or extracted, or by selecting some to be excluded (an "all but these files" extraction). *Tapetool* does provide both methods of specifying the files. That display of the list of files is an OPEN LOOK *Scrolling List*, so you can select individual files from it. To extract individual files, just select them — they'll be highlighted by a box around each item — then pull down *Read* from the main window and release or select on *Selected*. In fact, if you have a list displayed, that is the default, so you can just click SELECT on the *Read* menu button. You also have to select a directory *into* which the files are to be extracted, in the *Destination* text field. If you want the files read into the directory in which you started *tapetool*, just type "dot" ('.'), meaning the current directory. Otherwise, type the path to the directory where you want the files places. Then select *Read/ Selected*.

The *Read* item *Entire List* implies that there must be a way to get a partial listing of the tape. Indeed there is. Get a listing of the tape, as above. Select the files that you do **not** want to extract (remember that you can click and hold SELECT and drag it across a scrolling list to quickly select a bunch of files for exclusion), then press the MENU button in the Listing window, and select *Delete Selected* to discard the ones you don't want, leaving those you do. As a shortcut, you can hit the CUT key, L10. Then you can select *Read -> Entire List* and have the program read onto disk just the files you want.

7.19.2 Writing Files with Tapetool

To write a file or directory onto a tape, you must mount the tape with write enabled. For the common QIC cartridge tape drives used on Sun systems, this is accomplished by turning the small plastic arrow in the upper left of the cartridge so that the arrow points to the left, i.e., away from the word "SAFE." For half-inch (reel-to-reel) tapes used on older Sun servers, putting the small plastic write-enable ring, flat side out, into the back of the tape reel enables writing.

Then you have to select the files you want to write. For each file, just type its name in the *Files To Write* textfield, and press RETURN. *Tapetool* will verify that the file is readable and, if so, add it to the scrolling list in the main window. Once you're happy with the list, you can just click SELECT on the *Write* button in the main window. Be *very* careful to watch for error messages. In fact, you should probably make it a habit to always get a listing of a tape (as described above) after writing it, just to be sure that all the files really were written.

7.19.3 Setting Tapetool Properties

The property sheet is used to specify the *device special file* of the tape drive in case the default drive isn't suitable, and to specify some common *tar* options. It lis shown in Figure 7-32:

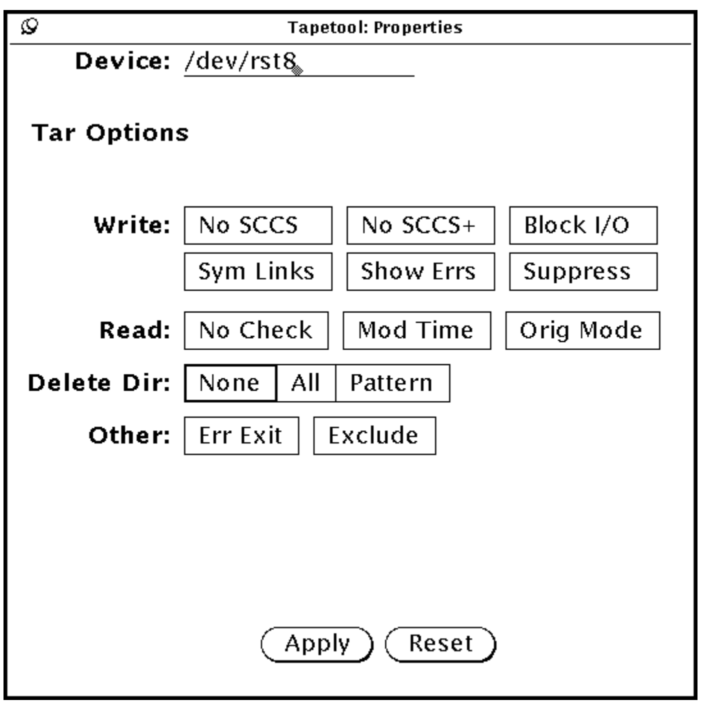

Figure 7-32. Tapetool properties.

If you have more than one tape drive, or use multiple densities, you probably already know the names of the device special files to use. If not, consult your system administrator or Sun's manual pages on the particular tape driver you are using. Note that although some versions of the *tar* program allow you to use a remote tape drive, this option does not seem to be supported at present (maybe in OWN Release 3)?

The other options control specific options of the *tar* program; please refer to the reference manual page for this program in your version of the SunOS reference manual to see exactly what they do. If you are already familiar with *tar* you probably recognize many of these, and if not, you can safely skip them for the time being. There is also a reference page for *tapetool* in Part Three of this guide, which summarizes these options in a briefer format.

7.20 textedit

The *textedit* editor has been described in Chapter 5, *The cmdtool/shelltool Terminal Emulator*.

7.21 Demonstration Programs and Games

Sun has always been an innovative company, and employs a lot of talented people that delight in innovation. The NeWS system, though it has been phased out from current releases of SunOS,, demonstrated conclusively that PostScript is a useful language for interactive display management. Some of these demos and games are in NeWS, and will not work after OpenWindows Version 3.2..

You can access most of these from the *Demos* item on the main workspace menu, assuming you have the full OpenWindows package installed. That menu is shown in Figure 7-33:

Figure 7-33. OpenWindows Demonstration Programs Menu

Table 7-6 is a list of these programs and a few notes on them.

Table 7-6. OpenWindows Demonstration Programs

Name	Function	Notes
Icosahedron	Bouncing geometric shape	From MIT dist'n.
Maze	Generates and solves random mazes	Sun.
Muncher	Geometric progression	From MIT dist'n.
Plaid	Random plaid patterns.	From MIT dist'n.
Puzzle	Solves child's 4x4 puzzle	
Worms	Colorful worms escaping.	
Xsol	Solitaire game.	
Spider	Double-deck Solitaire game	
Jet terminal	Terminal emulator.	See page 135.
Jed	Text editor.	See page 135.

Table 7-6. OpenWindows Demonstration Programs

Name	Function	Notes
NeWS Clock	Another clock.	Sun, NeWS.
FontView	Detailed look at characters in a font.	Sun
Pixelview	PostScript drawing demo	Sun, NeWS
Circles	Circles demo.	
Colors	Choose colors with sliders.	Buggy!
RasterRap	Amazing operations on raster images.	Neat! Try doing this in raw X11...
OLIT Sampler	Sampler of the OPEN LOOK GUI components (controls, etc.)	See "Other Controls" on Page 41
TNT Sampler	As above, but for (obsoleted) TNT toolkit.	NeWS.
Text	Text demonstration	See Section 10.5.3, "The "text" demo program (OpenWindows up to 3.2)" on Page 279.

7.22 Summary

We have now covered the standard DeskSet client programs that are part of Sun's OpenWindows package.We now look at the standard MIT clients that are part of all X11 distributions, in Chapter 8, *Other Standard Clients*.