X-Windows in Unix

Prof. P.C.P. Bhatt

Graphical User Interface

GUI is an artifact that facilitates availing OS facilities with the aid of *widgets.* The widgets basically are windows and icons which provide us with a clue to whatever we may be able to do.

X11 version library package – Unix (as also Linux) provides X-graphics library support to both OS and applications.

X-Window System

X-Windows facilities operation over a set of networked computers by defining a protocol

➢ *X-servers and clients*

- X-server supports bitmapped display and comes up as soon as a user logs onto a machine

- X-client supports communication with keyboard, mouse and provides the basic interface for the user

➢ *Window managers*

- Supports all operations within a window

Some Standard X-Clients

➢ *xclock* : A clock display. Numerical or an analog display for the current time.

➢ *xbiff* : A Berkeley support program that displays mail status with a flag up, to show the arrival of new mail.

➢ *xterm* : a new terminal window. With –c option the window can receive and display console messages.

Hosts

➢ The *X-protocol* requires to maintain a host-table in the */etc/hosts/* file.

➢ Only the machines listed in this table can set up a display on a host.

Example - 1

For instance, my machine

SE-0 has the following host table entries:

Internet host table

#

127.0.0.1 localhost

172.21.36.10 SE-0 loghost

210.163.147.1 a463-2.info.kochi-tech.ac.jp a463-2 canna-server loghost

210.163.147.2 main.info.kochi-tech.ac.jp a464-1 printer-server-host

172.21.36.20 SE-P0

172.21.36.2 SE-1

172.21.36.11 SE-2

.

.

172.21.36.17 SE-10

#

The host-table entries may be modified to add or delete hosts by using the xhost command as shown below. To add an additional host:

xhost +addhostname

To delete an additional host:

xhost -deletehostname

Selecting a Host for Display

The command to open a window on the hostname

xterm   *DISPLAY hostname:0.0*

The command to set the display from a remote computer

setenv *DISPLAY hostname:0.0*

X-Utilities

- ➢ showrbg
- ➢ xcalc
- ➢ xclipboard
- ➢ xclock
- ➢ xhost
- ➢ xload
- ➢ xmag
- ➢ xpr

STARTUP

➤ .Xsessions and .Xdefaults *files* - These files are usually located under X11 directory.
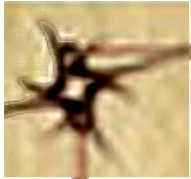
This may be with commands like:

xterm -sb & (For launching a terminal with a scroll bar)

xclock & (For launching a clock)

xterm -iconic (For launching an iconised terminal)

➤ xdm (the display manager) - to launch favorite applications on logging in.

➤ .xinitrc *files*: helpful for xinit in starting the X- server on the host.

Motif and X

➢ *Motif* - most favored X-Windows interface on
   Unix-based systems.

➢ *mwm* - the Motif window manager