

Basic UNIX 4: More on the GUI

- How X works
- Window and desktop managers
- File managers
- Common tasks
- System administration tools

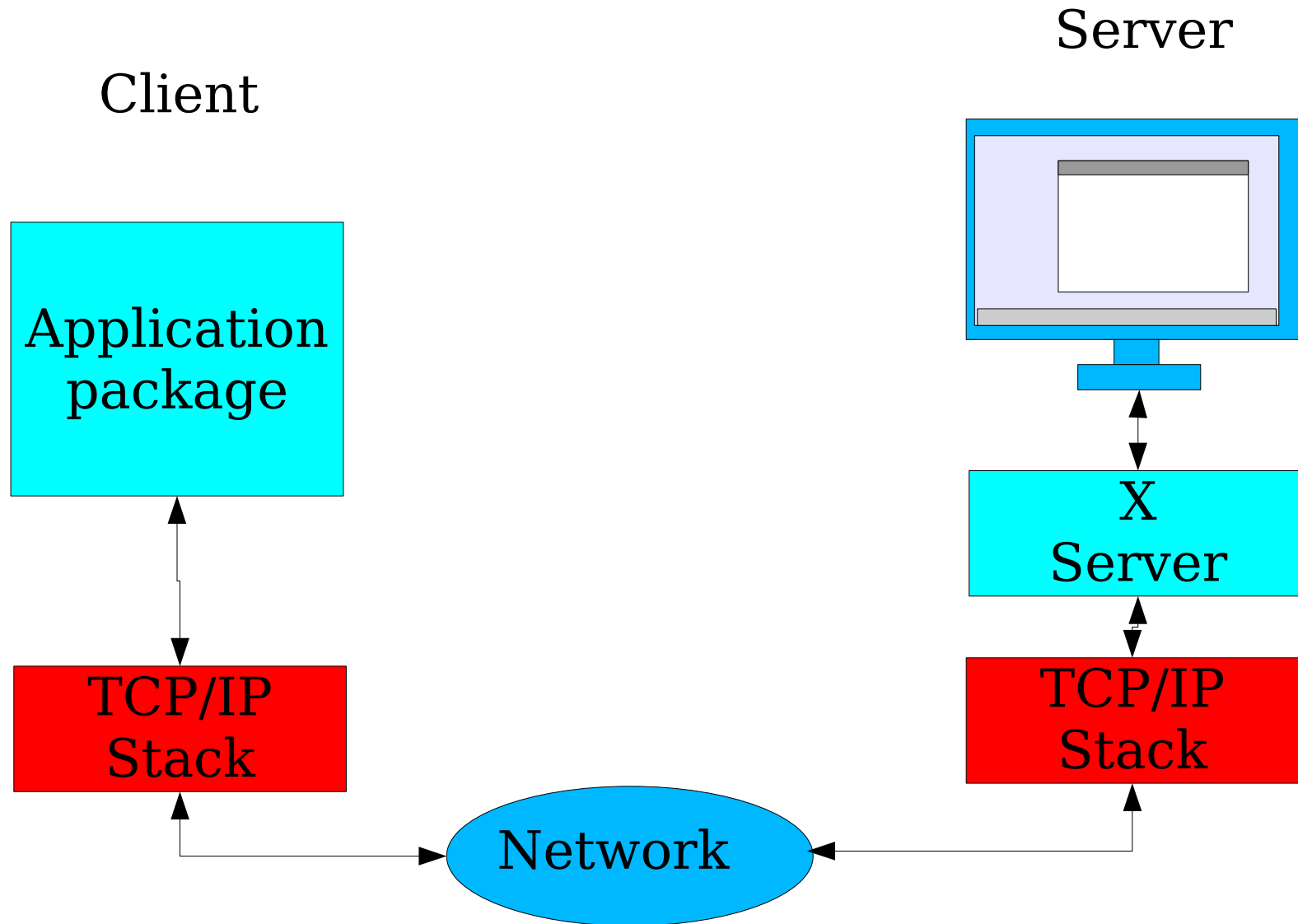


How X works

- X server (X)
 - Provides tools for drawing graphics on a display
 - X applications send commands to the X server via TCP/IP
- X client
 - Machine running the software that wants to draw graphics
 - Usually the machine running the server, but doesn't have to be!



How this looks



Why is this good?

- Applications are independent of graphics hardware, window manager and even hardware platform
- Server and client do not have to be on the same machine; applications can be run remotely
 - Licensing considerations
 - Horsepower restrictions



Running X applications remotely

- Connect to a remote machine using ssh with the -X option (**not** -x)

```
ssh -X netid@sas.iastate.edu
```

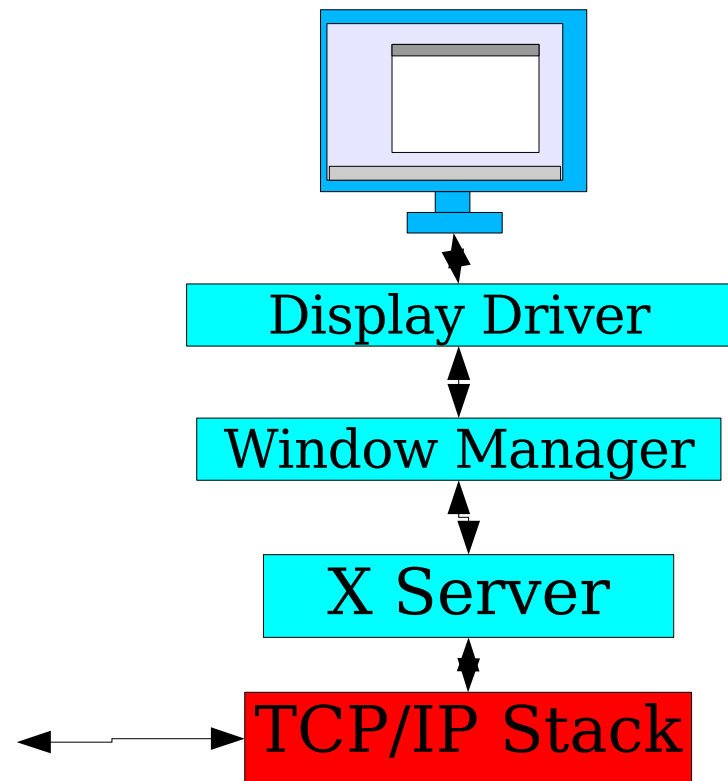
- *Start the application*

```
sas
```



Window managers

- Manages positioning of windows on the screen, virtual desktops, running applications; may include menus
 - AfterStep
 - Blackbox
 - Enlightenment
 - FVWM
 - IceWM
 - WindowMaker
 - etc., etc., etc., etc.




```
belgarath>ls
Mail      cgi-bin    howto      old_html   skel
XBanner   connect.log java        pics        splot
app-defaults csuoq     lib        public_html src
appres    dl         misc       quake      stuff
archive   game_over.au mlvwm      scripts    tmp
bin       gnustep   new_html   sendmail.cf xpm
belgarath>
```

Applications

- Info
- XTerm
- XJed
- Workspaces
- Applications
- Editors
- Miscellaneous
- Utils
- Workspace
- Exit

Workspace

- Background
- Setup Gradients
- Hide Others
- Show All
- Arrange Icons
- Refresh
- Lock
- Save Workspace

rxvt

emacs: *scratch*

Options Buffers Tools

Help

- Cut
- Copy
- Paste
- Undo
- Spell
- Replace
- Mail
- Info
- Compile
- Debug
- News

-----XEmacs: *scratch* (Lisp Interaction Filladapt)-----L1--A11-----

20 37

MON
30
JUN

scratch

ian's Home Page

Desktop Environments

- Window management + system utilities + standard applications + games + menuing system + ?????????
 - GNOME Desktop
 - K Desktop Environment (KDE)
 - Microsoft Windows



What you'll have to get used to...

- Users have a choice of window/desktop manager (even in the stock RedHat install)
- Many desktop managers are themeable, i.e., FVWM may look completely different from FVWM on another machine depending on the choice of theme



Why choice is good...

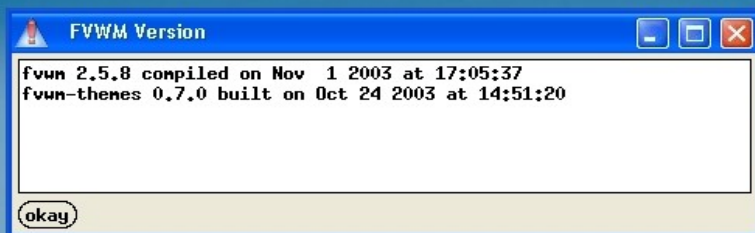
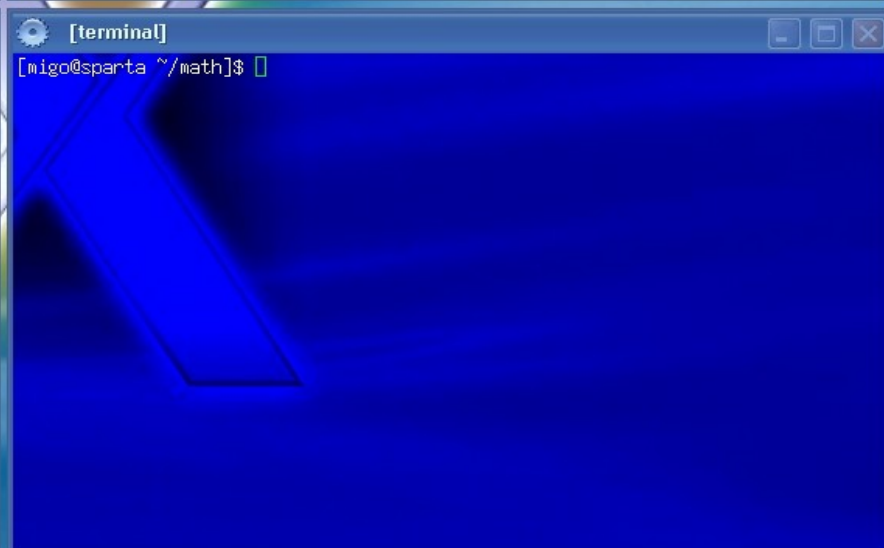
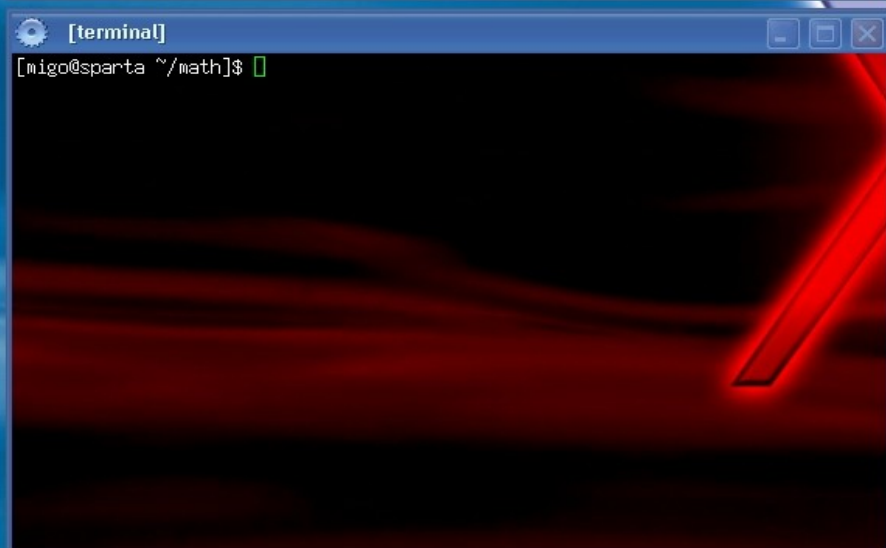
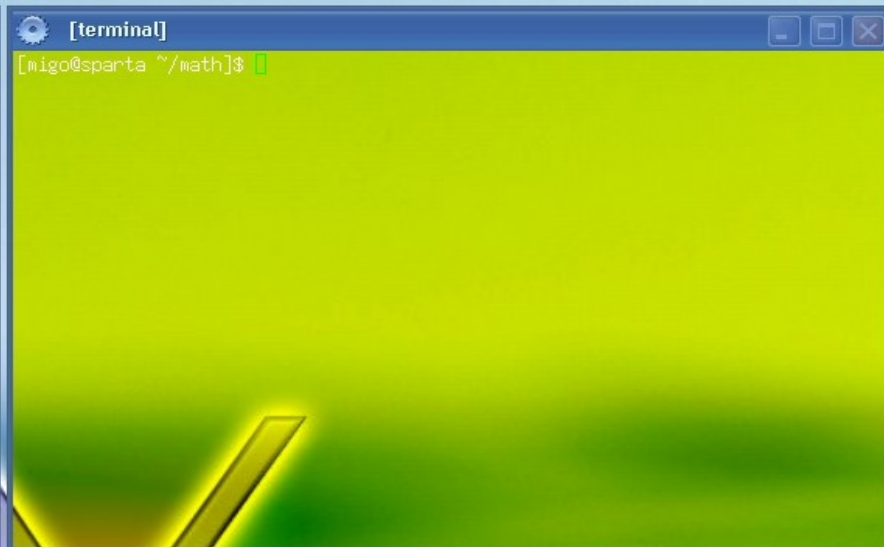
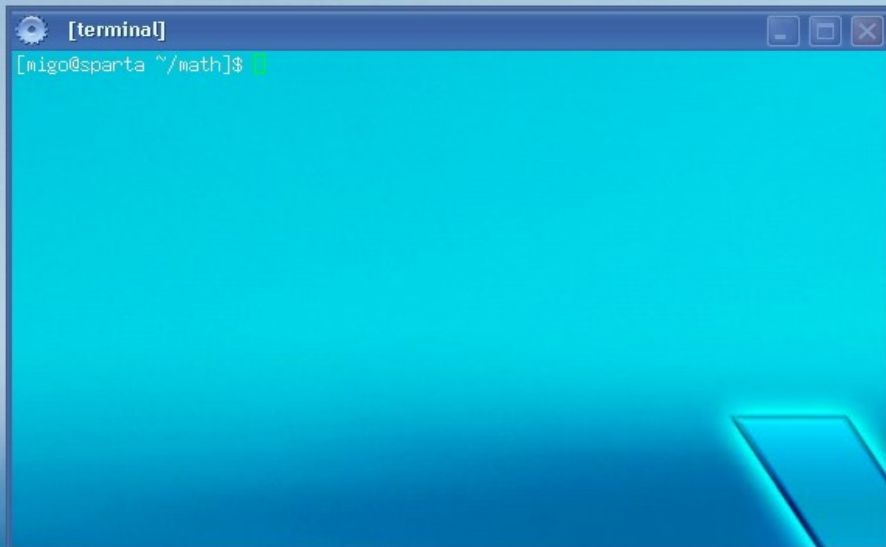
- The window manager can be selected based on the horsepower of the machine
 - Gnome, KDE run well on big, modern hardware
 - Blackbox, FVWM, IceWM, SWM, etc. run better on older machines

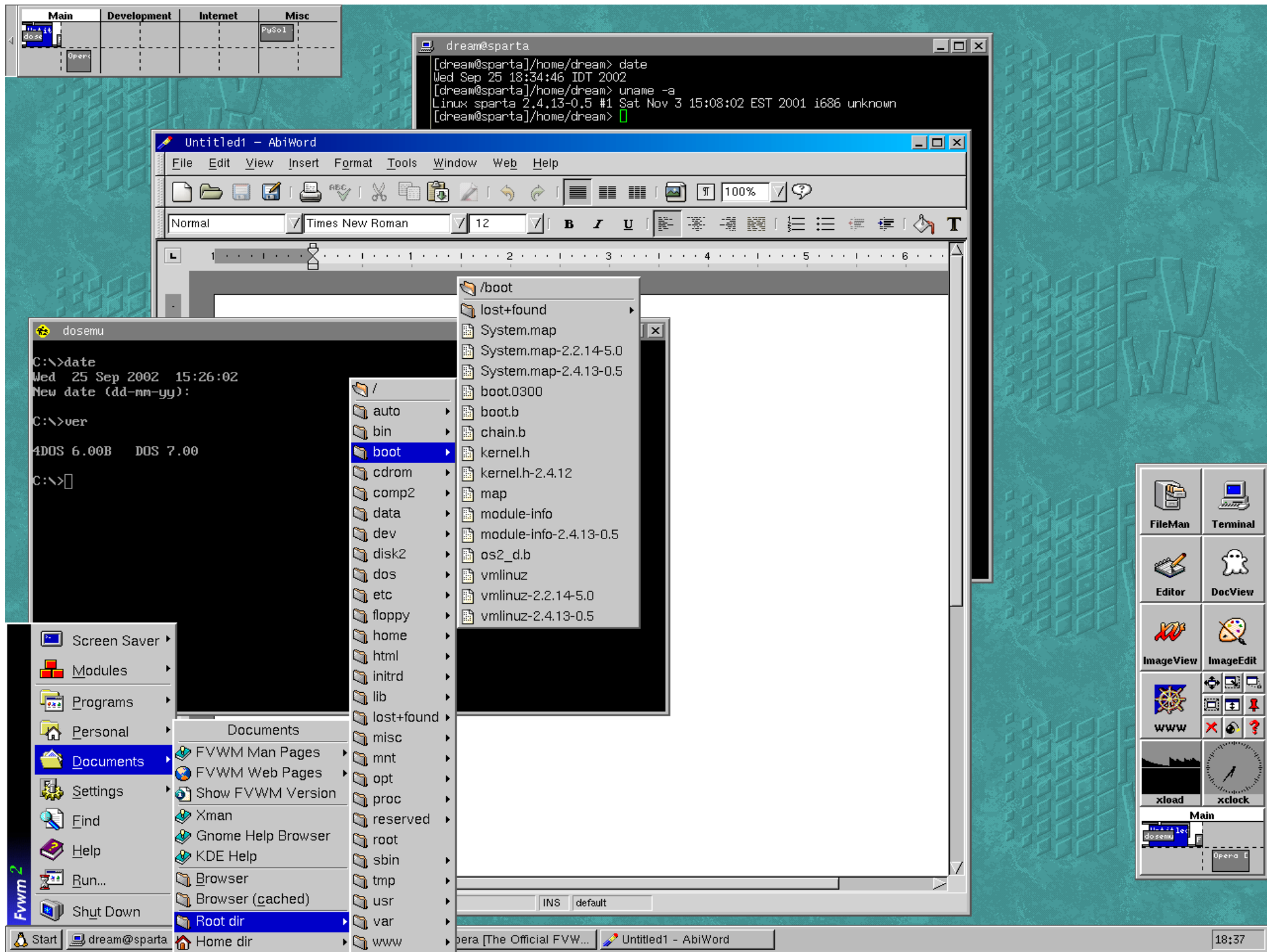


Choice is good II

- International users can customize their WM with non-English languages
- A choice of window manager/theme gives users something harmless to customize their environment with
- Windows users can have a Windows-like DM (FVWM with RedmondXP or Redmond98)







Choosing a Window Manger

- On startup – choose from the “Session” menu in the login screen
- Set a user default – insert
`PREFERRED="windowmanagerapp"`
into `~/.Xclients`
- Setting system default – put
`DESKTOP="KDE"`
`DESKTOP="GNOME"`
`DESKTOP="windowmanagerapp"`
into `/etc/sysconfig/desktop`



Switching Between Windows

- Varies; most modern WM accept the Windows <Alt/Tab> and clicking on the window
- Some window managers (like Blackbox and TWM) insist that you click on the window titlebar or use arrows on the manager bar



Capturing the Screen

- Used to be an application in the menu, left out in new version
- Graphics > The GIMP
- Choose File > Acquire > Screen Shot
- Choose window or entire screen
- Click OK
- Save the file as an appropriate graphics type



Setting the Time

- Select System -> Administration -> Date & Time
- Enter the root password
- Make sure that the time zone is set correctly for your location
- If not Internet connected, turn off “Enable Network Time Protocol” and set time and date; otherwise, just select a time server (time.iastate.edu works fine)



Moving the Panels

- Right-click on the panel
- Choose Properties
- Click “General”
- Under Orientation, choose where you'd like the panel to appear.
- Under Size, choose the panel height in pixels.
- Click Apply, then OK.



Editing the Menus

- Right-click on the Applications menu
- Select “Edit Menus”
- You can:
 - Add sub-menus and items
 - Remove items
 - Rearrange entries
- You cannot change the Places menu.



Adding a Menu Item

- Highlight the folder you want the item to appear in
- Click “New Item”
- Enter the values for the program:
 - Name
 - Comment
 - Command (with options if necessary)
- Click Close



Moving a Menu Item

- Click on the item to be moved
- Either
 - Move up or down with the Move Up and Move Down buttons

OR

- Click, hold and drag the icon to its new location



Desktop Preferences

- Under System -> Preferences
- Most Gnome preferences are user-oriented and don't require root access.
- Useful preferences:
 - About Me – personal information
 - Desktop Background
 - Remote Desktop – desktop sharing



System Administration

- Choose System -> Administration
- Choices beyond the user, so need the root password
- We'll work with many of these things in the System Administration modules



Assistive Technology

- Gnome comes with assistive technology built in
- System -> Preferences -> Accessibility
 - > Keyboard – enables special keyboard features (slow/sticky/mouse keys)
- System -> Preferences -> Accessibility
 - > Assistive Technology Support – activate screen magnifier, on-screen keyboard and audio screenreader (Gnopernicus)



Why KDE?

- One of the two desktop environments installed by Red Hat Enterprise Linux
- More Windows-like than Gnome
- Has most complete set of applets and management tools
- Default file manager (Konqueror) works better with AFS volumes than Nautilus (Gnome)



KDE Control Center

- Used to make a wide variety of system settings in KDE
- Select “Control Center” from the Start Applications Menu



Appearance and Themes

- Background
- Screen Savers
- Styles
- Theme Manager



Desktop

- Behavior
 - What mouse clicks do
 - What devices appear on the desktop
 - Show previews for files
- Multiple Desktops
- Panels
 - Where the KDE Panel appears



Peripherals

- Digital Camera
- Display
 - Screen size, refresh rate and orientation (where applicable)
- Mouse
- Printers
 - CUPS server must be running



Mousing Without a Mouse

- Must turn on in Control Center under Peripherals -> Mouse
- Press <Shift/NumLock>
- Move mouse pointer with the numbers around the numeric keypad
- Click mouse button with keypad 5
 - / for left, * for middle, - for right, then 5
- Click-and-hold with keypad 0
- Press <Shift/NumLock> again to turn off



Starting Apps Automatically

KDE-aware apps left open at logout will automatically reopen at your next login.

For others:

- In Konqueror, open `~/.kde/AutoStart`
- In another Konqueror window, browse to the application you want to run at startup
- Drag the icon of the app to the AutoStart window
- Choose “Link Here”



System Administration

- To actually make changes here, you'll need the root password. (Click “Administrator Mode”.)
- Font Installer
- Login Manager
 - Customize the login screen
 - Sessions – control who can shut down machine from the console or remotely



Settings

- About Myself – stores personal information (real name, phone number, default shell, etc.)
- Password – sets new password (including the Kerberos password, if Kerberos is used for authentication)



System Settings

- Administration -> Server Settings -> Services
Used to start, stop and control system services
 - See info about a service: highlight the service name
 - Start/stop a service: highlight the name, click the start or stop buttons
 - Schedule a service to start at machine startup: turn on the check box to the left of the service name
 - Actually runs system-config-services



System -> Add/Remove Software

- Used to install and remove programs from the Red Hat CDs
- To install a package, click details, the check box next to the package name, click Close, then click Update.
- To remove a package, click Details, clear the check box next to the package name, click Close, then click Update.



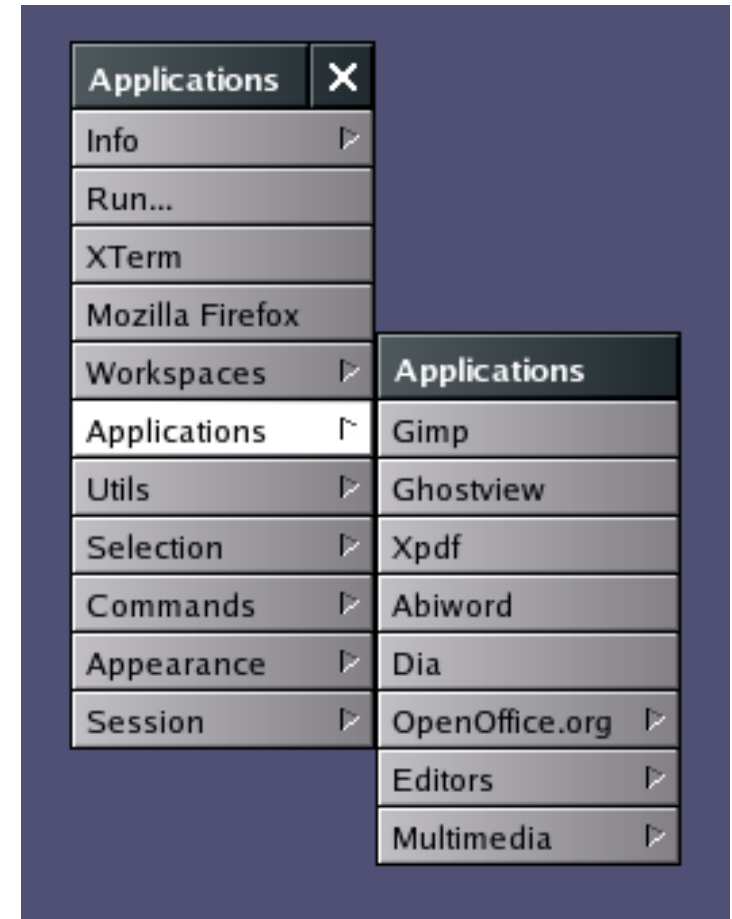
WindowMaker

- Window manager (not a desktop environment)
 - Lower overhead, good choice for smaller machines
 - No applets to clutter screen, take up CPU time
- Part of GNUStep project, derived from OpenStep, derived from NeXTStep (which also was the origin of Mac OS X)



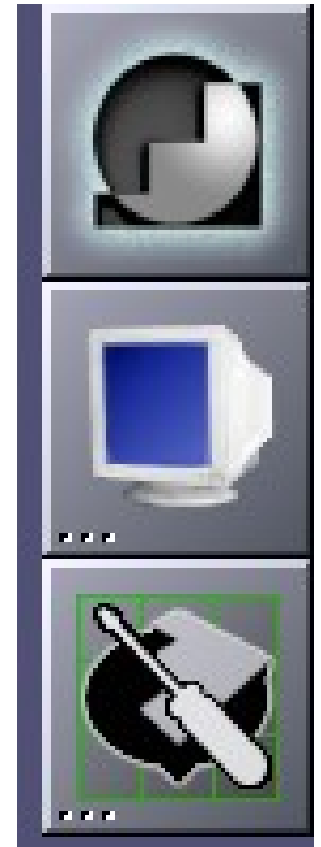
Where's the Start Menu?

- Everywhere! Just right-click on the Desktop.
- Move the menu to make it stick
- Sub-menus can be dragged off the menu to stick independently



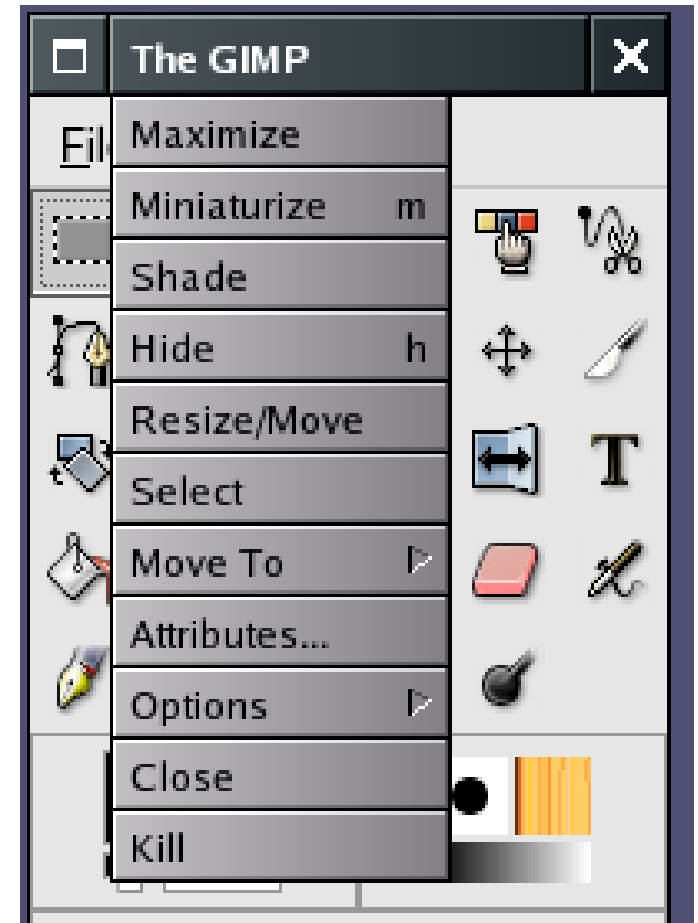
The Dock

- Double-click on icon to launch app (if 3 dots appear)
- To add icons, open an app and drag its icon to the Dock, then enter the command to start it
- Drag icon out of Dock to remove
- “Screwdriver” icon starts the WindowMaker Preferences tool
- Many dockapps are available



Handling Windows

- Left title-bar button minimizes (double-click icon below to restore)
- Right title-bar button closes
- Double-click title bar to windowshade
- Right-click-and-hold title bar to get window menu



Workspaces in WindowMaker

- Only one workspace at startup, create new workspaces as necessary
- From Application menu, choose Workspaces -> New
- Use the Application menu or arrows on the Clip to switch workspaces
- To remove a workspace, empty it, leave it and choose Workspaces > Destroy Last



The Failsafe WM

- Failsafe is an extremely primitive window manager
- You may find yourself in Failsafe when KDE and/or Gnome get corrupted somehow
- To exit Failsafe, press <Ctrl/D> in the terminal window.

