

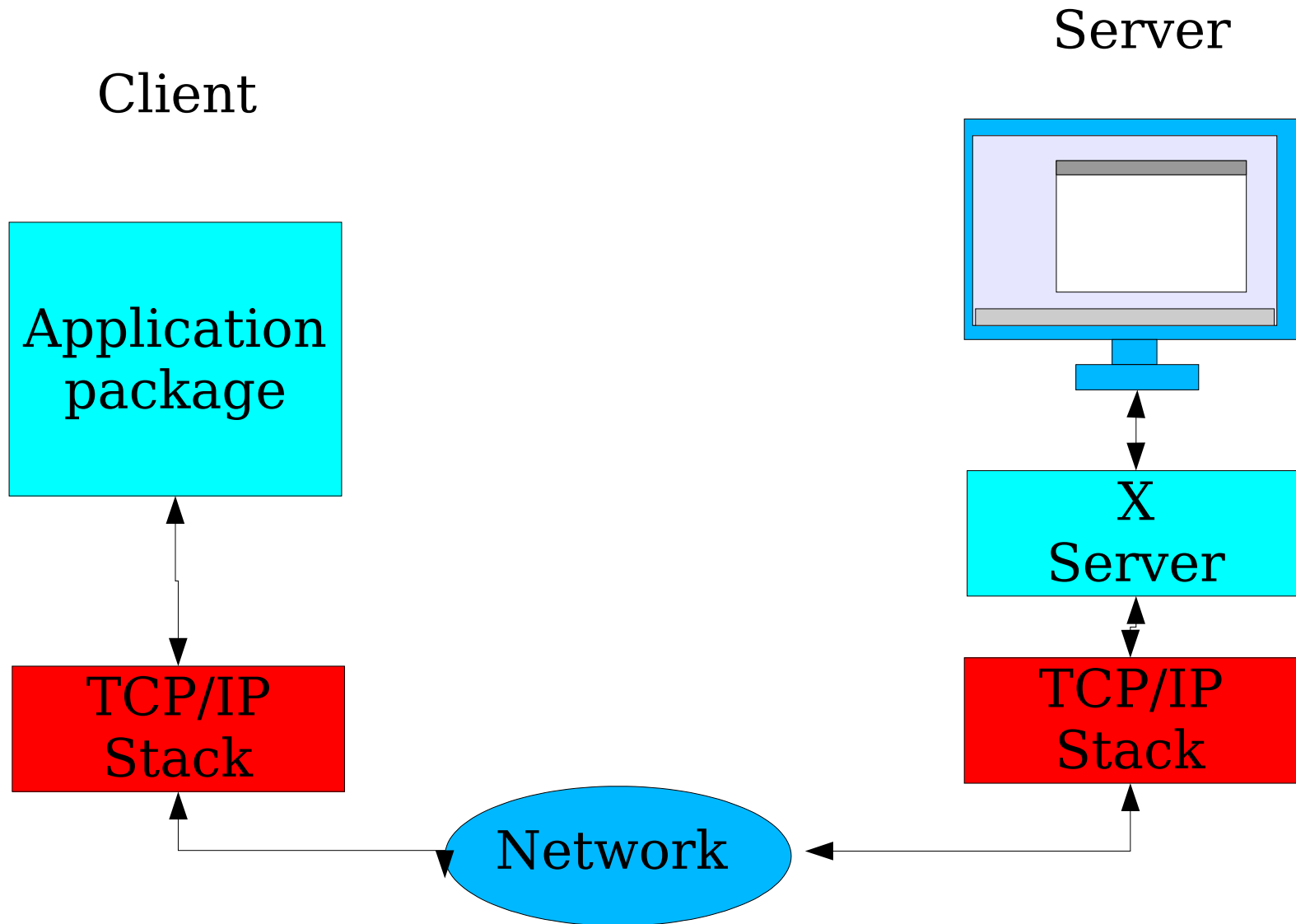
Basic UNIX 4: More on the GUI

- 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`)

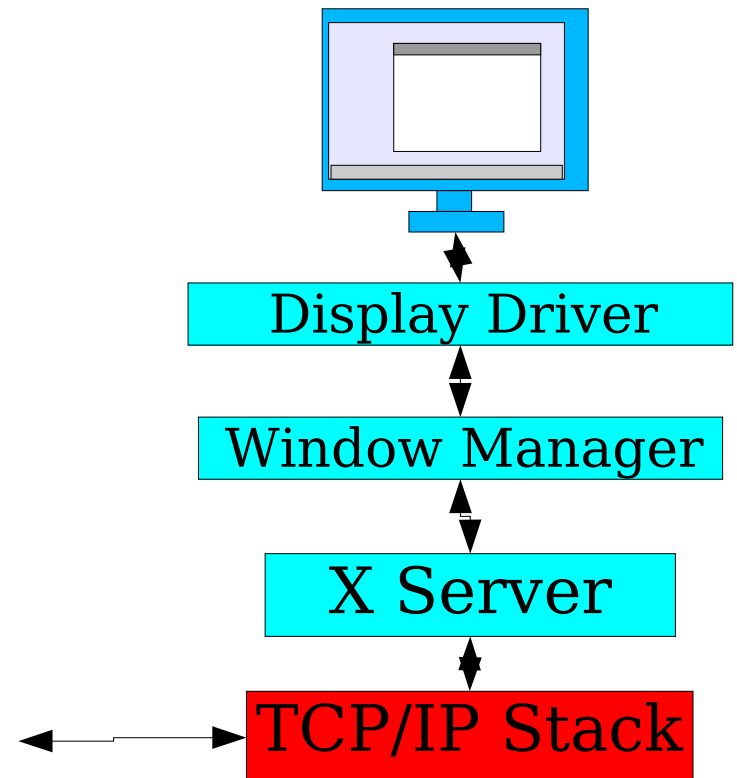
```
ssh -X netid@sas.iastate.edu
```

- 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
 - Sawfish
 - etc., etc., etc., etc.




```
belgarath@1s:
Mail
XBanner
rpm-defaults
appres
archive
bin
belgarath@1s:
rpm-bin
connect.log
rsync
dl
game-over.au
smstcp
bin
java
lib
misc
nvw
new_html
util.html
pics
publ.html
quake
scripts
simul.html
skel
split
src
stuff
top
app
```

nv1

emacs: *scratch*

Options: Buffers Tools Help



- Applications
ito
xTerm
xJed
Workspace
Applications
editors
Miscellaneous
Jlib
Workspace
Shell

- Workspace
Background
Setup Gradients
De Cliffs
Show
Applications
Access
Lock
Save Workspace

Xemacs: *scratch* Clisp Interaction Window

System tray area containing icons for a clock, system status, and application shortcuts.

Taskbar area at the bottom of the screen with application icons and window management buttons.

Desktop Environments

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

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

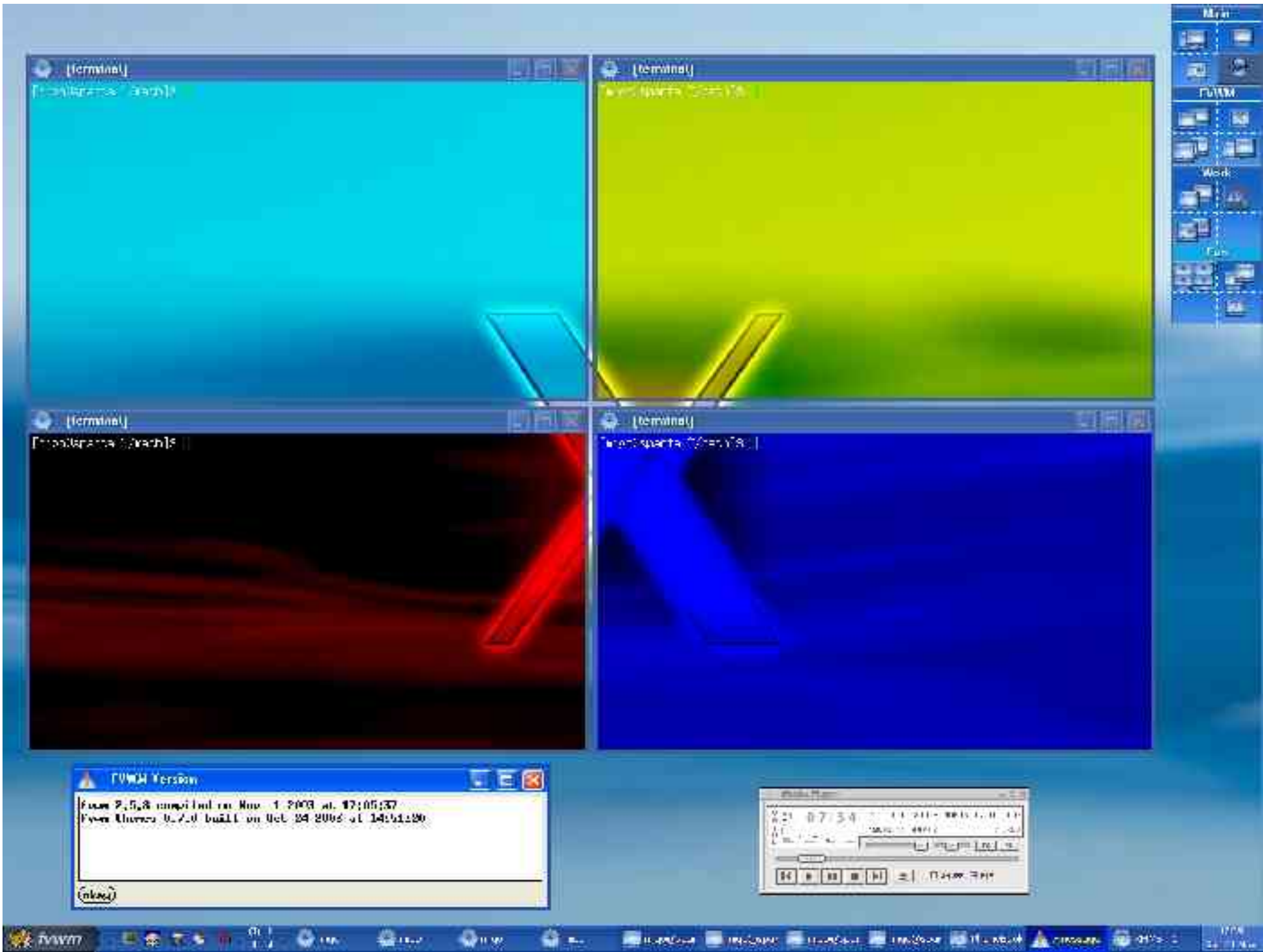
- Users have a choice of window/desktop manager (even in the stock RedHat install)
- Many desktop managers are themeable, i.e., FVWM may look completely different from FVWM on another machine depending on the choice of theme

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)



Mousing Without a 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

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

Virtual Desktops

- Used to organize groups of windows by task
- Change desktops by clicking in the desktop menu (often in the Taskbar at the bottom of the screen), arrows in the manager bar, or (sometimes) <Ctrl/Tab>
- Move a window to another desktop: click in upper left-hand corner, select desktop
- Advantage: <Alt/Tab> only switches windows in the current desktop

Why KDE?

- Most popular desktop manager for “large” systems
- One of the two desktop environments installed by Red Hat Enterprise Linux
- Has most complete set of applets and management tools
- Default file manager (Konqueror) works better with AFS volumes than Nautilus (Gnome)

Capturing the Screen

- Graphics > Screen Capture Program
- Full screen is already captured to a snapshot
- To capture a window, click “New Snapshot”, then click in a window
- Click “Save Snapshot” or “Print Snapshot”

Setting the Time

- Select System Settings -> Date and 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 KDE Panel

- Choose Preferences -> Configure Panel
- Click “Arrangement”
- Under Position, click where you'd like the panel to appear.
- Under Size, choose the icon size you'd like to use.
- Click Apply, then OK.

Editing the K Menu

- Right-click on the Start Applications icon
- Select “Menu Editor”
- You can:
 - Add entries
 - Remove entries
 - Rearrange entries

Adding a Menu Entry

- 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 “Apply”

Moving a Menu Entry

- Right-click on the item to be moved
- Select “Cut”
- Right-click on the folder you want it to appear in
- Select “Paste”
- Click “Apply”

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”

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
- Size & Orientation
 - Screen resolution
 - Rotation where available

Information

Information on almost all aspects of your machine and Linux installation

- Memory
- Network Interfaces
- Partitions
- Storage devices
- USB Devices
- X Server

System Administration

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

Preferences

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

System Settings

- 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 `redhat-config-services`

System Settings -> Add/Remove Programs

- 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.

Gnome Desktop Prefs

- Many Linux systems have both KDE and Gnome installed, and KDE utilities can be run from the Gnome Desktop (they usually show up under “More Preferences” or “More System Tools”)
- Most Gnome preferences can be set under Preferences -> Control Center or under the individual icons in Preferences

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.