

# Announcements

- Start your project and don't wait until the day before is due
- Next in-class discussion will be this Wednesday. Remember you can bring copies of the articles to class
- Fugu GUI for ssh/scp in Mac (link available in Resources section of class web page)

# Remote Connection Protocols

- Different ways in which we can connect to a remote machine over the internet
- Protocols
  - telnet (typically for Unix systems, not encrypted)
  - ssh (typically for unix system, with information being encrypted)
  - rdc (to connect to Win 2000/2003 server or Win XP machine)
- All the above application work using the client/server model

# What happens in a remote connection

- Client and server machines communicate using the same protocol
- Client will
  - Create TCP connection
  - Accept your input
  - Reorganize data into a transmission format
  - Send data to remote computer (host)
  - Receive data from remote computer
  - Reformat and display information to you

# What happens in a remote connection

- Server will
  - Wait for a request to set a connection
  - Help establish the TCP connection
  - Process client input and process request
  - Send results back to the client
  - Go back to wait for a connection request

# Default Mode for Servers

- Most telnet/ssh servers and rdc servers set up by default to service remote login
- Other servers provide a specific service (e.g. a library service)
- We no longer can use telnet to login to Campus

# CGI-BIN directories

- You can trigger the execution of programs present on the remote machine running the web server.
- Most of these programs are known as Common Gateway Interface (CGI) scripts.
- CGI script – simple program that performs a specific task.
- The script usually resides in a cgi-bin folder
- URL provides the location of the cgi-bin
- Example
- <http://www.m-w.com/cgi-bin/dictionary?clown>

# Remote Login Intro

- How to run F-Secure
- How to open a login window
- How to transfer file
- Basic commands
  - ls
  - ls -al

# Accessing Your Data Remotely

- Several applications allow you to access your computer remotely
- The following are some of those applications (these links appear in the PC World Issue of March 06)
  - TightVNC – [tightvnc.com](http://tightvnc.com) – Allows you to see and control the desktop of a remote computer. Free
  - GoToMyPC – [gotomypc.com](http://gotomypc.com) – (Not Free)
  - Laplink Everywhere – [www.laplink.com](http://www.laplink.com) (Not Free)
- Other applications allows you to access files:
  - [www.foldershare.com](http://www.foldershare.com)



# UMD Clusters

- Class Cluster vs. WAM Cluster
- Hostname wam.umd.edu
  - Load balancing alias for the WAM Cluster
  - Several computers providing service.
    - rac2.wam.umd.edu
    - rac3.wam.umd.edu
- Class cluster
  - Two types of Machines
    - Linux – load balancing hostname is linux.grace.umd.edu
    - Solaris – load balancing hostname is solaris.grace.umd.edu
- Creating Profiles Using F-Secure

# Telnet

- Telnet –
  - Protocol for communicating between computers
  - Operates using TCP/IP
  - Remote login is one use of that protocol
  - You can use the protocol to provide specific services
  - telnet also refers to the application that implements the protocol and allows remote logins
- Example of telnet where services are provided
  - Local Public Library - telnet heron.wico.lib.md.us
  - Weather Report - telnet rainmaker.wunderground.com
- telnet vs ssh
  - ssh is secure and what we want to use
  - F-Secure provide us with ssh

# Port

- What is a port?
  - A number representing an application (program) running in a machine (host)
  - Assuming the hostname is a phone number, the port represents a phone number extension.
  - A server machine could have several applications (programs) “listening” to different ports
- Examples of telnet services where a port number is specified
  - telnet msdnaa.cs.umd.edu 12345
- You don't need to use a browser to contact a web server
  - telnet www.cs.umd.edu 80
    - After connection type GET /class/spring2006/cmssc102/archive.shtml
- ssh port number is 22
- Web servers port number is 80
- Complete list at: [www.iana.org/assignments/port-numbers](http://www.iana.org/assignments/port-numbers)