

CS 344 – UNIX OS

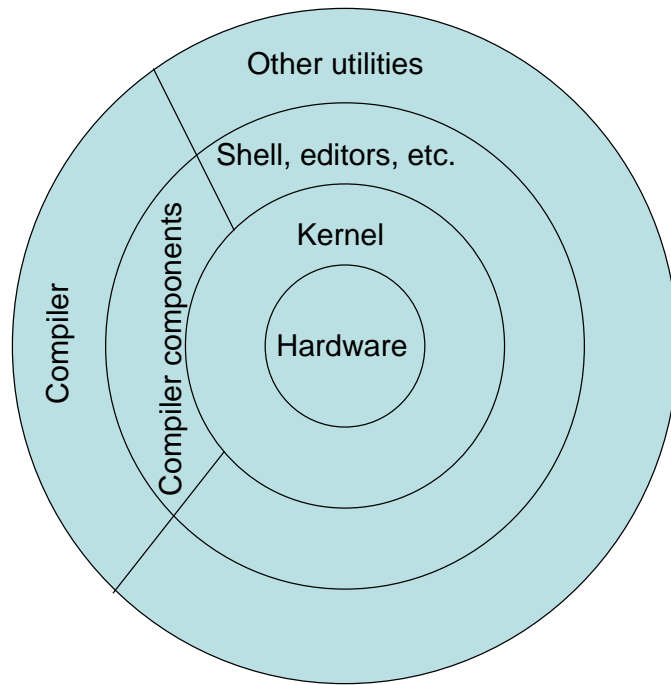
Fundamentals – Lecture #1

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Operating System

- Acts as an interface between the user and the computer hardware
- A program that controls the execution of other programs
- Responsible for managing different computer resources (CPU, memory, disk, display, keyboard, etc.)

UNIX OS

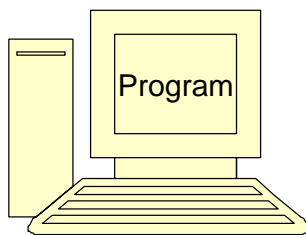


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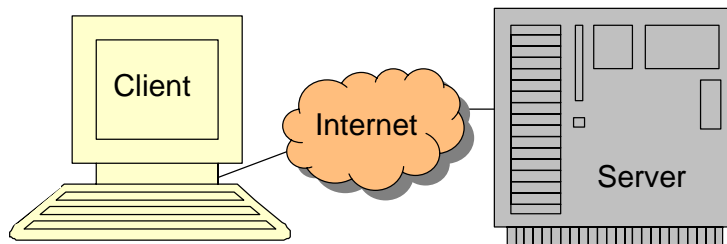
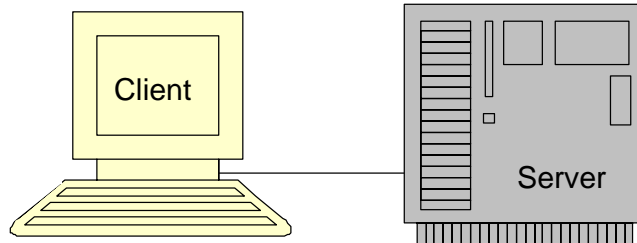
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Desktops vs. Servers

- Desktops



- Servers



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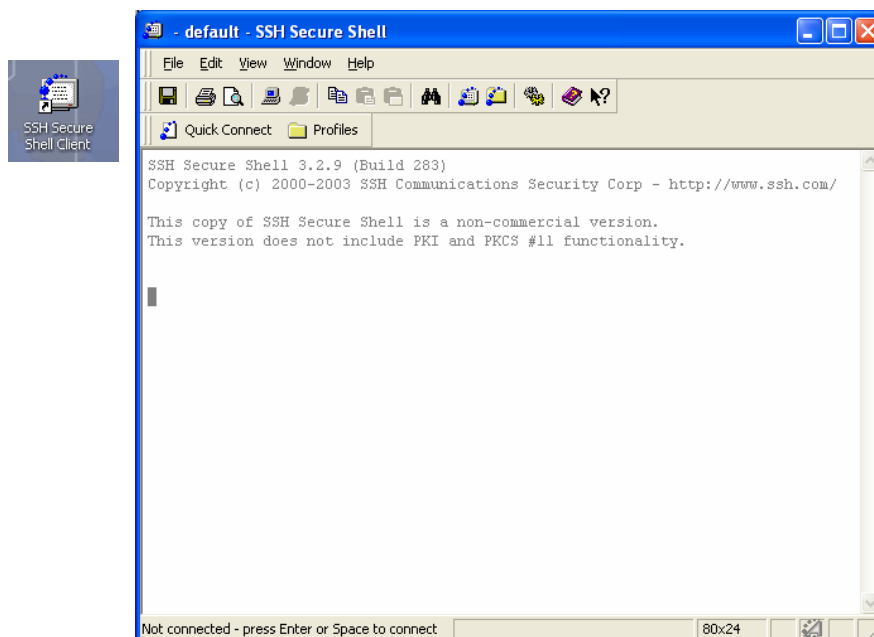
Accessing UNIX systems

- Using client programs on Windows machines
 - PuTTY -
<http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>
 - SSH Secure Shell Client -
<http://www.icrew.org/mirror/ssh/SSHSecureShellClient-3.2.9.exe>
- Other options:
 - Login to one of the SUN desktops in the lab
 - Install Linux on your computer (dual boot)
 - Use Knoppix Live CD (no need to install anything)
 - Use Cygwin/VM Ware (runs as a windows process)

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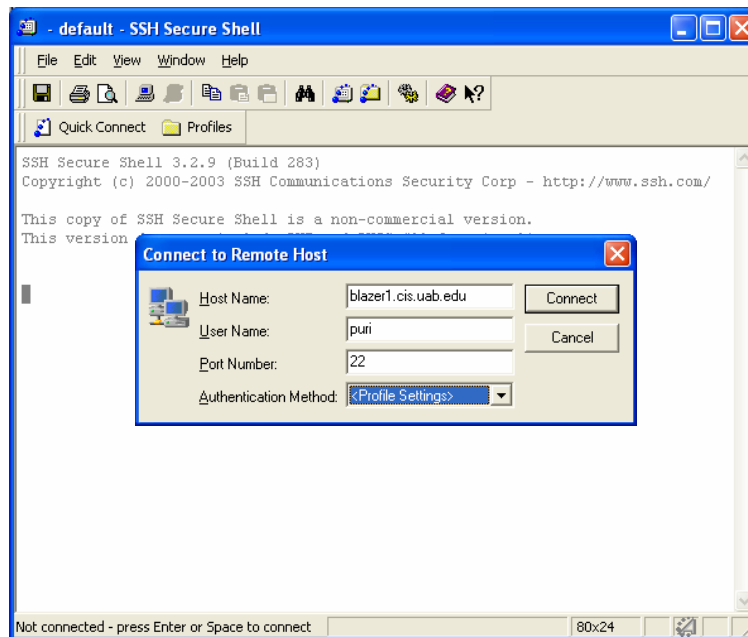
Double click on the SSH Secure Shell Client, the following window will appear



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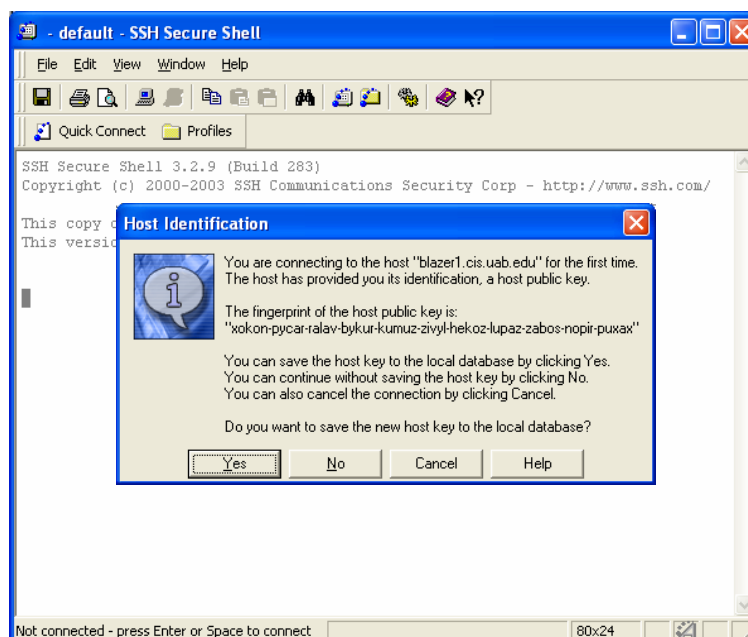
1. Press ENTER key, another pop-up window will appear
2. Enter the hostname and username
3. Click on "Connect" button



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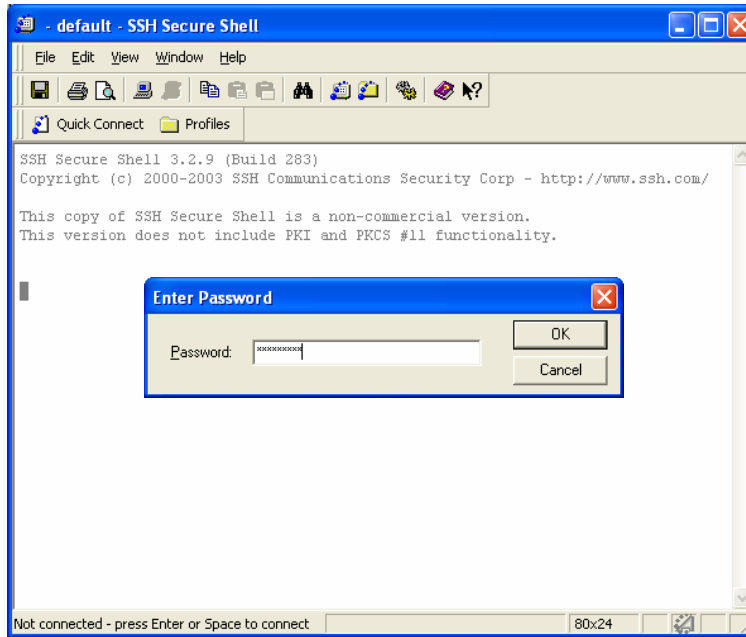
Click on Yes



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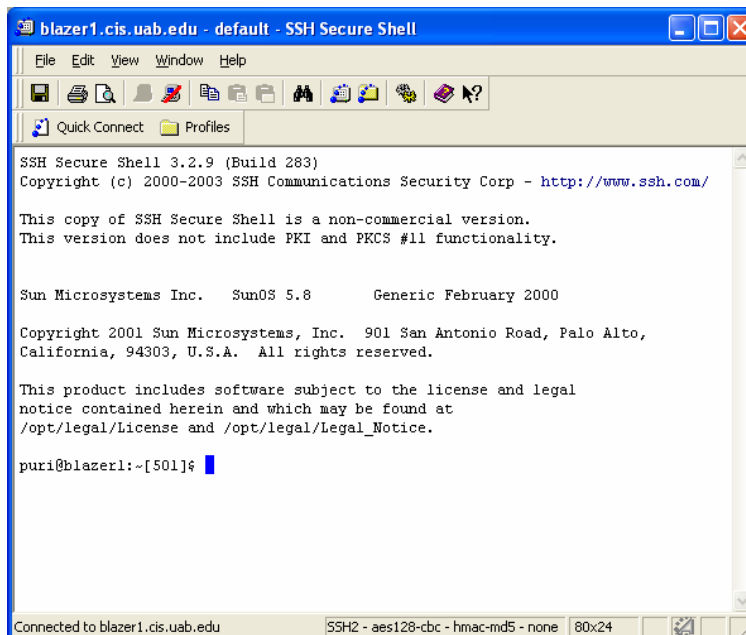
Enter password



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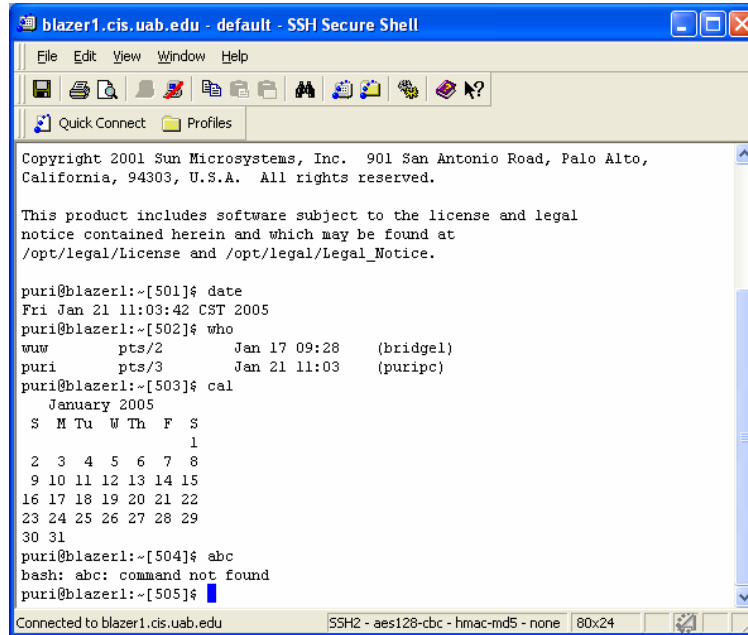
Now you are ready to enter commands at the UNIX Shell prompt



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Some sample commands



```
blazer1.cis.uab.edu - default - SSH Secure Shell
File Edit View Window Help
Quick Connect Profiles
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California, 94303, U.S.A. All rights reserved.

This product includes software subject to the license and legal
notice contained herein and which may be found at
/opt/legal/License and /opt/legal/Legal_Notice.

puri@blazer1:~[501]$ date
Fri Jan 21 11:03:42 CST 2005
puri@blazer1:~[502]$ who
www pts/2 Jan 17 09:28 (bridgel)
puri pts/3 Jan 21 11:03 (puripc)
puri@blazer1:~[503]$ cal
January 2005
S M Tu W Th 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
puri@blazer1:~[504]$ abc
bash: abc: command not found
puri@blazer1:~[505]$
Connected to blazer1.cis.uab.edu SSH2 - aes128-cbc - hmac-md5 - none 80x24
```

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Interacting with the Shell

- Type a command and press ENTER
- Shell starts a new process for executing the requested command (utility)
- The new process executes the command and the shell displays any output generated by the command
- When the process completes, the shell displays the prompt and is ready to take the next command
- Additional arguments after the command are used to pass specific information to the command
- The command “exit” or CTRL-D kills the shell

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Sample Commands

- Identifying current directory
 - pwd
- Listing files
 - ls
- Passing arguments
 - Long listing: ls -l
- Listing processes
 - ps
 - ps -u <userid>
 - ps -ef

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Simple Operations with Files

- View Files with more
 - search for a string – /n
 - move forward and backwards – n and b
- Other options to view files – cat, head, tail
- Count lines, words, characters – wc
- Copy files – cp
- Rename files – mv
- Remove files – rm
- Sorting contents of a file – sort
- Locate specific lines in a file – grep

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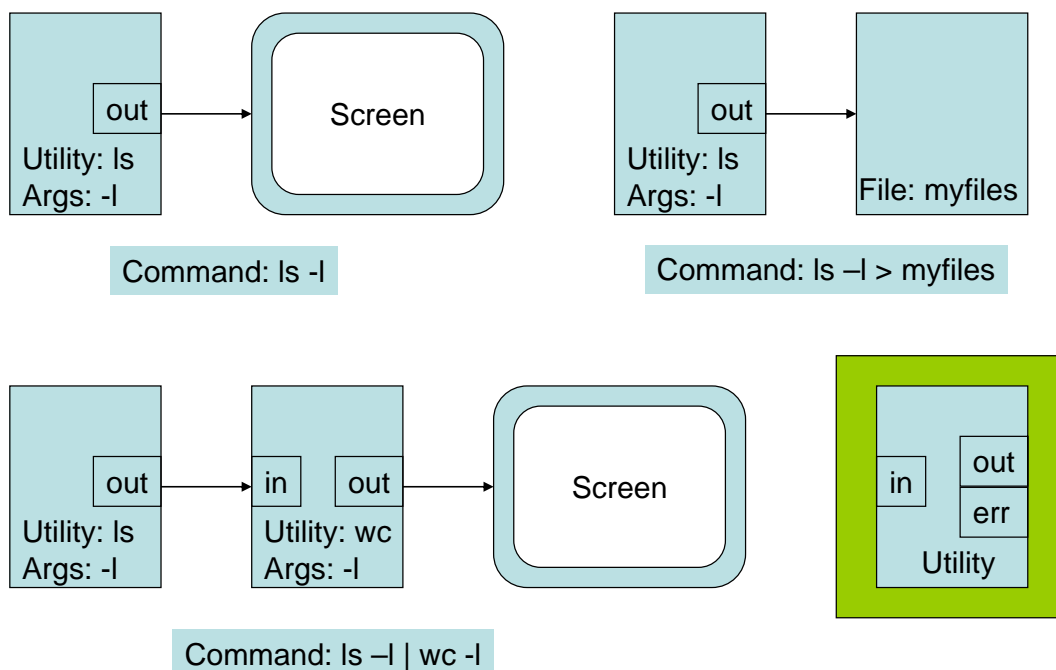
Redirecting Output

- By default output from a utility is sent to the terminal/screen
- Output can be redirected to a file or another utility
- The “>” symbol tells the shell to open a new file and send the output to that file
 - `ls -l > myfiles`
- The “|” symbol tells the shell to connect the output of the first process to the input of the second process
 - `ls -l | wc -l`
 - Two processes are created for each of the commands and the output of the first process is sent to the input of the second process

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Redirecting Output



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Miscellaneous

- How does the shell distinguish arguments from utilities?
 - A B C | D E | F > G
- Repeat commands (depends on the shell)
 - Repeat previous command - !!
 - Repeat a command starting with some string – !p
(execute last command starting with p)
- History – using the “history” command
- Shortcuts – using the “alias” command
 - Type: alias h=history and press ENTER
 - When you type h, the shell will execute the corresponding utility