Digital System Design

Usage of Workstation

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Date: 2011.03.02
Workstation

✓ A powerful computer for massive tasks by multiple remote users concurrently
  ✓ Multi-user multi-tasking
  ✓ Must be stable and equipped with high-end CPU and memory
  ✓ UNIX-like OS is most commonly used

✓ Workstation used in this class: *PUMA*
  ✓ Owned by Access IC Lab, GIEE
  ✓ Intel Xeon 2.66GHz, 8 Cores, 26G Memory
  ✓ OS: RedHat Enterprise 5 Linux
Remote Computing by SSH

- Since multiple users log on to the workstation simultaneously, every user should use their PC as the terminal and run their tasks through a protocol called SSH

- In brief, we need one program to log in
  - MobaXterm: The terminal program and window server for running GUI programs on workstation
  - It is freeware
MobaXterm Setting (1/1)

ssh id@140.112.18.86
MobaXterm Setting (1/2)
Basic Linux Commands (1/2)

- `man instruction_name`: manual page
- `ls`: List a directory’s contents
  - `ls -a`: List the hidden files
  - `ls -aux`: List all files with detailed information
- `cp`: Copy files from one directory to another
  - `cp source_file destination_file`
  - `cp -r source_dir destination_dir`: Copy directory from one directory to another
- `mkdir dir_name`: Make a new directory
- `pwd`: Display your current path
- `vim filename`: Text editor
Basic Linux Commands (2/2)

- **cd dir_name**: Change directory
  - **cd ~**: Go to your home directory
  - **cd ..**: Go to upper directory

- **ps**: Display process status by process identification number and name

- **kill –9 process_number**: Terminate a running process
  - **kill -9 1234**

- **rm**: delete files
  - **rm -r**: remove directory

- **tar**: compress files
  - **-cvf**: for creating compressed file
  - **-xvf**: for extracting compressed file

- **mv**: move or rename file

- **exit**: turn the terminal off
Tool Usage (1/2)

Command: tool

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Tool Usage (2/2)

- Waveform viewer: nWave
  - Type "tool" -> "1" to source the environment settings for nWave
  - Type "nWave &" to launch

- Verilog simulator: ncverilog
  - Type "tool" -> "2" to source the environment settings for ncverilog
  - Type "ncverilog +access+r [testbench.v] [design.v]" to run the simulation
  - Note nWave environment should be sourced before running the simulator!
Other Tips

- File transfer between workstation & PC
  - Use FTP software, recommend the software “filezilla” (freeware)
  - IP: 140.112.18.86, port 21
  - Use the workstation account to log in

- Text editor for writing Verilog code
  - Recommend the software “notepad++” (freeware)