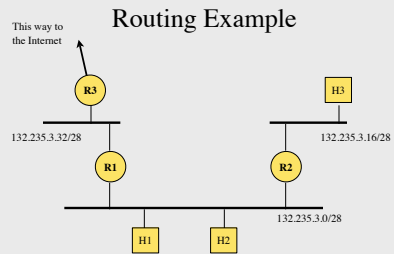


## Cisco Command Interface

ITL

ITL: ©2000-2009 H. Kruse, S. Ostermann, C. Bruggeman, J. Tysko



ITL: ©2000-2009 H. Kruse, S. Ostermann, C. Bruggeman, J. Tysko

2

## Hosts

- Almost always we need just the default route; but if not:
  - Mac OS (BSD Unix)
    - `sudo route add target_gateway`
    - `...route add 10.10.5.0/24 10.10.5.254`
  - Linux
    - `sudo route add target gw gateway`
    - `...route add 10.10.5.0/24 gw 10.10.5.254`
  - Windows
    - `route ADD target MASK mask gateway`
    - *netsh (later in the quarter)*

ITL: ©2000-2009 H. Kruse, S. Ostermann, C. Bruggeman, J. Tysko

3

## Routers

- Special Purpose Systems
  - Distributed processing architecture
  - Several dedicated processors for routing tasks
- Access is possible via
  - Telnet (usually over Ethernet, Token Ring, etc)
  - SNMP
  - Serial Port

ITL: ©2000-2009 H. Kruse, S. Ostermann, C. Bruggeman, J. Tysko

4

## Cisco - Access Levels

- Basic Access
  - Display commands
  - Password protected
- Privileged Mode – second password
  - Access to all information
  - Reset and reboot commands
  - sub-levels for complex commands
- Configuration Command Mode
  - sub-levels, e.g. interface config

## Locating Interfaces

- On simple routers
  - Interface type and number
    - Serial 0, or Ethernet 1
- On modular routers
  - Interface Type, slot, and port
    - Ethernet 0/0
    - Serial 1/1

## Useful Things

- Help command
  - “?” command
    - Type a partial command followed by “?”
    - Example “show s?”
    - Tab completes a partial command
- Command recall and editing
  - Emacs-style keys
  - Arrow keys, delete, etc.

## Useful things to do

- Get information
  - “show interface ethernet 0/0”
  - Is an interface up or down?
  - What are the parameters for the interface
  - What are the statistics
    - Packets/Octets received or sent
    - Number of errors
    - Queue length, current occupancy, packets dropped

## Configuration

- Router Configuration
  - Set general parameters
  - Configure each interface
    - Give each interface an address and mask
  - Set up routes
    - Which interface should the router use for any given address

## Configuration Mode

- “configure terminal”
  - Puts you into configuration mode taking input from the terminal
  - Command mode verbs will not work (e.g. show interface)
  - Help and “?” do work

## Interface Configuration

- In configuration mode:
  - “interface ethernet 0/0”
  - Puts you into interface configuration mode
  - Set address and mask and turn the interface on
  - Set interface-specific parameters

## Command Summary

- In enable mode:
  - Show interface ....
  - Show ip route
  - Ping
  - Traceroute
  - Configure terminal
  - exit

## Configuration Commands

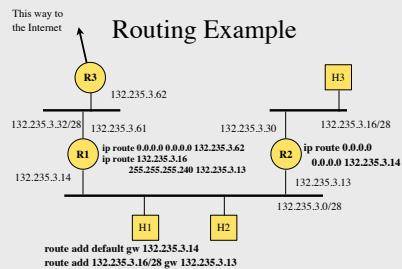
- In configuration mode
  - Interface ....
    - ip address <addr> <mask>
    - no shutdown
    - exit
  - ip route <destination> <mask> <gateway>
    - ip route 10.10.5.0 255.255.255.0 10.10.5.254
  - exit
- “no” followed by a configuration command reverses the effect of the command

## Hints

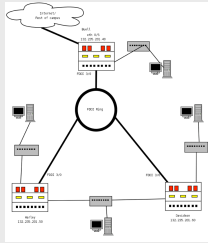
- Learn what the prompts mean!
  - You’ll use “show interface ethernet0/1” a lot (for example),
    - but it doesn’t work in “config” mode
  - Same thing for “show ip route”
  - You can only change routes in “config mode”
  - You can only change interfaces in “interface config mode”

## Warnings!

- Type what you mean ...
  - I strongly recommend that you use “TAB” rather than relying on command abbreviations
  - For example “sh” means “show” in enable mode, but “shutdown” in interface configure
- Remember that other groups are using the same routers
  - Verify all interfaces before making changes
  - Don’t erase another table’s routes without talking to them (even if they’re wrong!)



## The Lab 2 Network (almost)



ITL - ©2000-2009 H. Kruse, S. Ostermann, C. Bruggeman, J. Tysko

17

---

---

---

---

---

---

---

---

## Documentation/Help

- Cisco documentation is on-line
  - <http://www.cisco.com>
    - Link to technical documentation
    - Hardware descriptions
    - IOS Command Reference
  - [safari.oreilly.com](http://safari.oreilly.com)
    - Much of Cisco Press books are online

ITL - ©2000-2009 H. Kruse, S. Ostermann, C. Bruggeman, J. Tysko

18

---

---

---

---

---

---

---

---