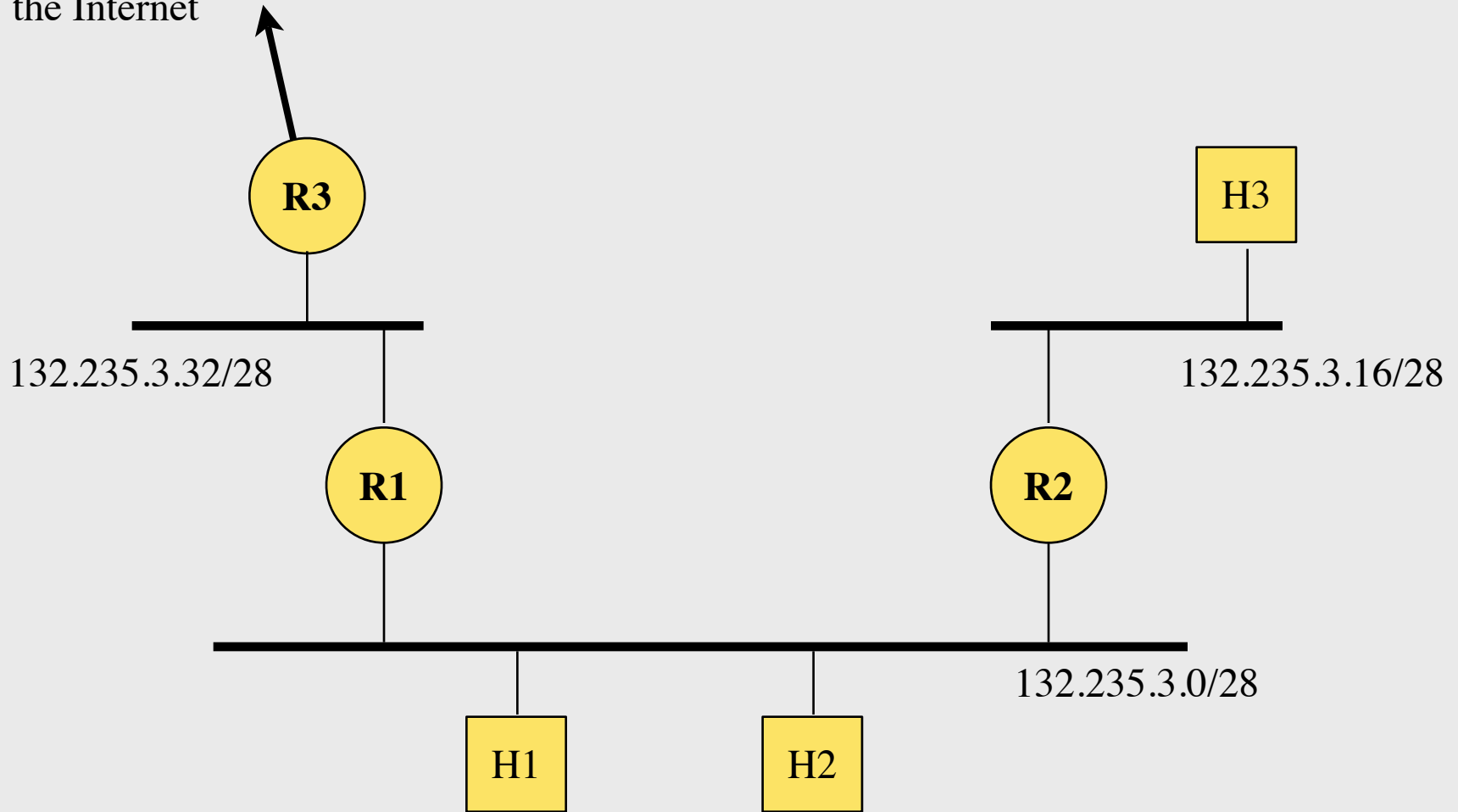


Cisco Command Interface

ITL

Routing Example

This way to
the Internet



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)*

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

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

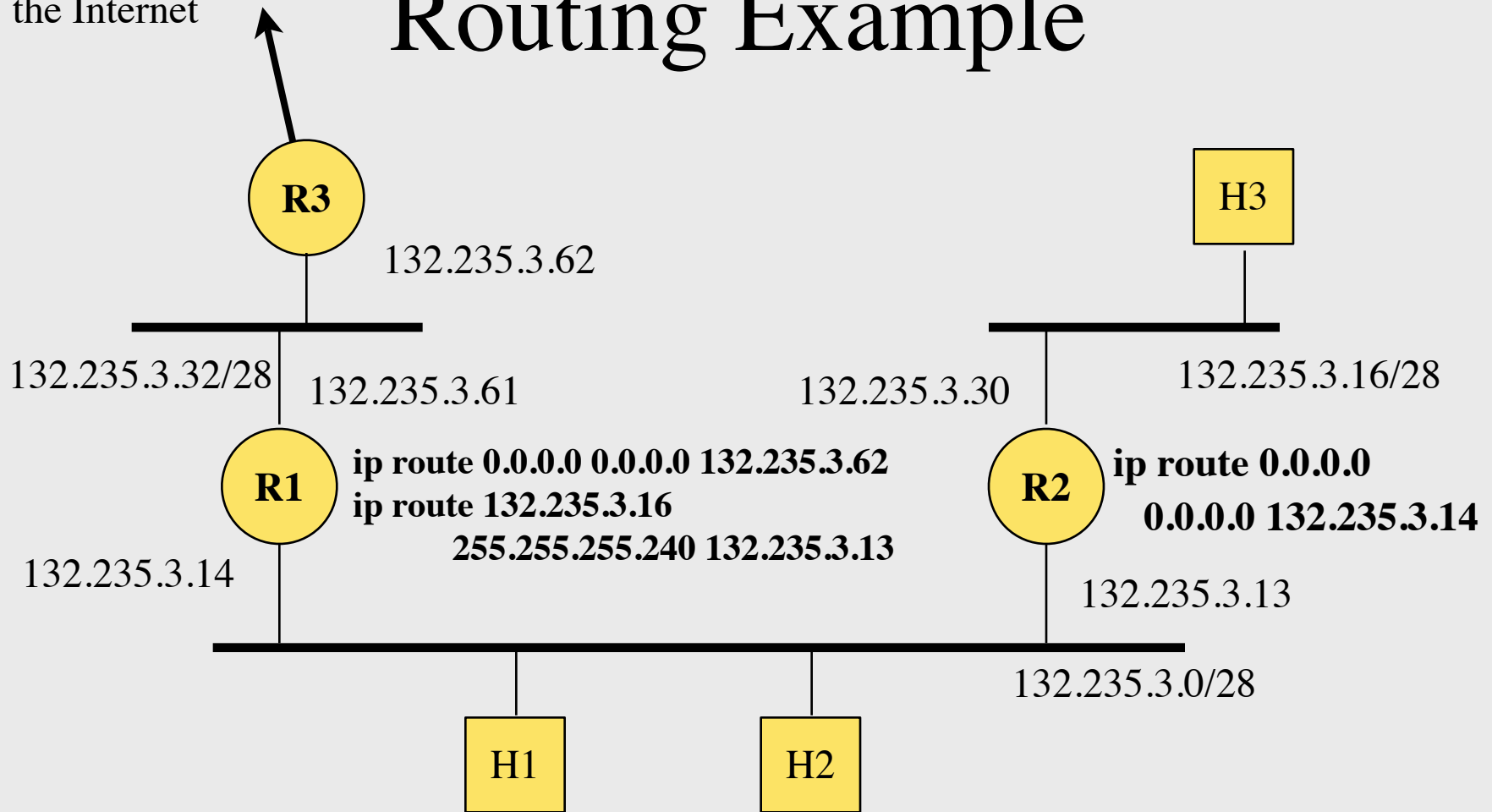
- Learn what the prompts mean!
 - You'll use “show interface ethernet0/1” a lot (for example),
 - but it doesn't work in “config” mode
 - Same thing for “show ip route”
 - You can only change routes in “config mode”
 - You can only change interfaces in “interface config mode”

Warnings!

- Type what you mean ...
 - I strongly recommend that use 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!)

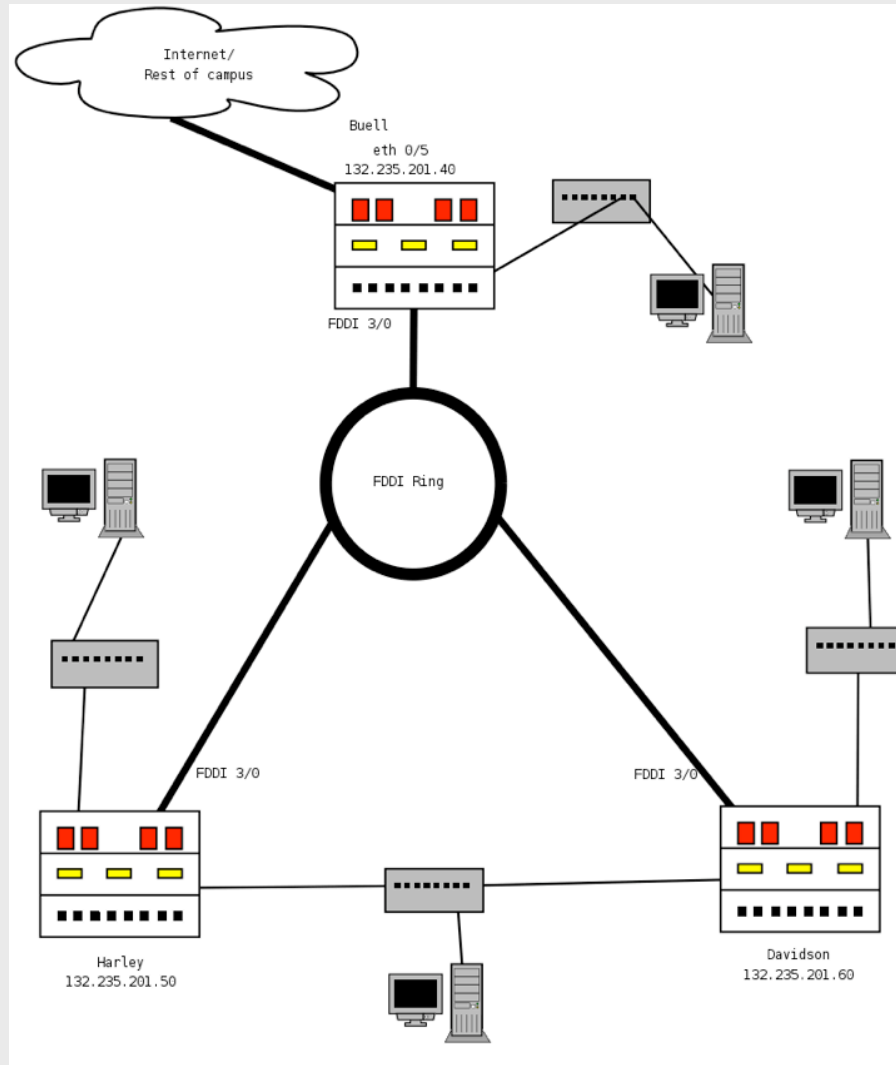
This way to
the Internet

Routing Example



```
route add default gw 132.235.3.14
route add 132.235.3.16/28 gw 132.235.3.13
```

The Lab 2 Network (almost)



Documentation/Help

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