CS 380
Switch/Router Lab Project
Introduction

Network Diagram

Password for Router 1 & Router 2: router
Password for Switch 1 & Switch 2: switch
IOS Basics

• IOS (Cisco’s Internetwork Operation System)
  - for all Cisco routers and the Cisco 1900 Series Switches
  - second most used OS in the world
  - covered about 70% of the Internet

Two main modes of operations

1. USER EXEC
   - access only a limited # of basic monitoring command

2. PRIVILEGED EXEC
   - access all router commands (e.g. configuration and management)
   - allow only authorized users (Password protected)

IOS Functionality

“USER EXEC” Mode

“PRIVILEGED EXEC” Mode

“CONFIGURATION” Mode

SHOW

“ENABLE”

“EXIT” Or “DISABLE”

“EXIT”

“CONFIGURE <something>”

IP

CDP

NEIGHBOR

INTERFACE

CS380
Int. to Comp. Networks

Switch/Router Lab Project Intro.

3
Understanding Cisco Hardware

FLASH serves like the Hard Drive in the PC

Turn on the Cisco Router
→ POST (power on self-test)
→ FLASH (IOS with startup_config)
→ Decompress IOS from Flash and load it to RAM
→ You will see “######## ……. ” on your screen

Access to the Router/Switch

Method 1
1. Use a “rollover” cable to connect the PC directly to the “Console” port of the Router/Switch
2. Use HyperTerminal to login

Method 2
1. Use telnet to login
   (You need to have the password to login)
Back of the Router

2nd Slot: Slot#1

1st Slot: Slot#0

Serial Interface
- might connect to a leased line or WAN connection

E 0/0
S 0/0
S 0/1

E 0/1

Ethernet 0/0

Modem
Connected To AUX

Connect To PC As “Console”

Useful Keys

< prefix> ? → Context sensitive HELP
will tell you all possible commands with the given <prefix>

en TAB → enable

Shorthand:
e.g. en – “enable”
conf t – “configure terminal”
Project#2: Switch Lab
(Individual work)

The purpose of this lab is to acquaint you with the CISCO switch family and the IOS software by having you perform a few tasks with the switches in the lab. By the end of this lab you should know how to:

- Log into a CISCO switch using Telnet.
- Look up the configuration.
- Use basic IOS functionality.
- Change modes in IOS.
- Reconfigure a CISCO switch.

Project#3: Router Lab
(Team work, 2 students per team)

The purpose of this lab is to give you some basic experience configuring a routing protocol between two routers, and also to familiarize you with the router version of the CISCO IOS software.

By the end of this lab you should be able to:

- Navigate through the IOS software on a CISCO router.
- Look up basic connection information on a router.
- Configure different interfaces of a router.
- Disable and Configure the RIP protocol on a CISCO Router.
Lab Hour Reservation

Project#2: 75-minute (on your own)
→ There are multiple seats (Switches) in the CS Network Lab, located at 3-2642.
→ Should be done before the Router Lab Day.
→ Just walk-in to work on your project during CS Network Lab opening hours (Check it out). FCFS policy.

Project#3: 75-minute (with your teammate)
→ Form teams.
→ Pick time slots from the Router Lab Day.

*Project#3 Schedule* will be posted @ the CS Network Lab.