**CSCE 4535 Lab 1-2 – Basic Device Configuration & using CLI**

**Final Grade 0%**

**Lab 1: Start packet Tracer**

1. **Install a new PC. Name it PC1.**
2. **Getting familiar with your PC (step 3-8)**
3. **Power PC1 off and install NM-1CFE and power it back on.**
4. **Review and note the following applications on the <Desktop>**
   1. **IP Configuration**
   2. **Terminal**
   3. **Command prompt**
   4. **Web browser**
   5. **Text Editor**
   6. **TFTP Service**
5. **Go to <Desktop>, <IP Configuration> tab.**
6. **Configure**
   1. **IP address: 192.168.100.100**
   2. **Network mask: 255.255.255.0**
   3. **Default Gateway: 192.168.100.1**
7. **Go to <Desktop>, <Command Prompt> tab.**

|  |
| --- |
| **Paste output of C:\ipconfig /all below:** |
| FastEthernet0 Connection:(default port)  Connection-specific DNS Suffix..:  Physical Address................: 0001.6458.73B1  Link-local IPv6 Address.........: FE80::201:64FF:FE58:73B1  IPv6 Address....................: ::  IPv4 Address....................: 192.168.100.100  Subnet Mask.....................: 255.255.255.0  Default Gateway.................: ::  192.168.100.1  DHCP Servers....................: 0.0.0.0  DHCPv6 IAID.....................:  DHCPv6 Client DUID..............: 00-01-00-01-32-9B-E3-C5-00-01-64-58-73-B1  DNS Servers.....................: ::  0.0.0.0  Bluetooth Connection:  Connection-specific DNS Suffix..:  Physical Address................: 0060.5C3B.CC41  Link-local IPv6 Address.........: ::  IPv6 Address....................: ::  IPv4 Address....................: 0.0.0.0  Subnet Mask.....................: 0.0.0.0  Default Gateway.................: ::  0.0.0.0  DHCP Servers....................: 0.0.0.0  DHCPv6 IAID.....................:  DHCPv6 Client DUID..............: 00-01-00-01-32-9B-E3-C5-00-01-64-58-73-B1  DNS Servers.....................: ::  0.0.0.0 |

1. **Record the output for each interface in the table below:**

|  |  |  |
| --- | --- | --- |
| **Interface Name 🡪** | **FastEthernet0** |  |
|  |  |  |
| **Physical Address** | 0001.6458.73B1 |  |
| **Link-Local IPV6 Address** | FE80::201:64FF:FE58:73B1 |  |
| **IPV4 Address** | 192.168.100.100 |  |
| **Subnet Mask** | 255.255.255.0 |  |
| **Default Gateway** | 192.168.100.1 |  |
| **DHCP Servers** | **0.0.0.0** |  |
| **DNS Servers** | **0.0.0.0.** |  |

1. **Install a generic Switch-1 (2960-24TT)**
2. **Getting familiar with your Switch (step 12-17)**
3. **Connect PC-1 to Switch-1 to access switch configuration using:**

**Console cable** **PC-1 (RS232) to Switch-1 (Console)**

1. **Review the current configuration**
   1. **now you have local console connection.**
   2. **You are in user exec mode “>”.**
   3. **Use “?” to see available commands**
   4. **Use enable to go in privileged exec mode “#”**
   5. **Use “?” to see available commands**
   6. **Use config terminal to enter configuration mode**
   7. **Use “?” to see available commands**
   8. **Change the host name using hostname command.**
   9. **Change switch name to Switch-1**
   10. **Exit the config mode using “^c”**
   11. **Save configuration using “copy running-config startup-config”**
   12. **Show running-configuration**
   13. **Show startup-configuration**
   14. **Show version**
   15. **Go to config mode and test the commands**

**Erase, Save, Load, Export, Merge**

1. **Connect PC-1 to Switch-1 to access switch configuration using:**

**Ethernet cable PC-1 (Fast Ethernet) to Switch-1 (FastEthernet0/1)**

1. **Configure Switch-1**
   1. **Int vlan 1**
   2. **IP address: 192.168.100.2**
   3. **Network mask: 255.255.255.0**
   4. **no shutdown**
   5. **IP Default-gateway: 192.168.100.1**

**Now the switch has ethernet configuration.**

1. **Telnet 192.168.100.2**
   1. **Do you have remote console connection? No**
   2. **Why not? We have not set this up yet**
   3. **We will set this up in lab2**
2. **Save Config**
   1. **to local memory (copy run start)**
   2. **to local storage (Flash)**
   3. **to remote storage (tftp)**
3. **Ping test**
   1. **PC-1 to switch-1**
   2. **Switch-1 to PC-1**
4. **Save PT config**
   1. **Export Switch-1 configuration to your desktop.**

|  |
| --- |
| **Paste Switch1 configuration below:** |
| **!**  **version 15.0**  **no service timestamps log datetime msec**  **no service timestamps debug datetime msec**  **no service password-encryption**  **!**  **hostname Switch-1**  **!**  **!**  **!**  **!**  **!**  **!**  **spanning-tree mode pvst**  **spanning-tree extend system-id**  **!**  **interface FastEthernet0/1**  **!**  **interface FastEthernet0/2**  **!**  **interface FastEthernet0/3**  **!**  **interface FastEthernet0/4**  **!**  **interface FastEthernet0/5**  **!**  **interface FastEthernet0/6**  **!**  **interface FastEthernet0/7**  **!**  **interface FastEthernet0/8**  **!**  **interface FastEthernet0/9**  **!**  **interface FastEthernet0/10**  **!**  **interface FastEthernet0/11**  **!**  **interface FastEthernet0/12**  **!**  **interface FastEthernet0/13**  **!**  **interface FastEthernet0/14**  **!**  **interface FastEthernet0/15**  **!**  **interface FastEthernet0/16**  **!**  **interface FastEthernet0/17**  **!**  **interface FastEthernet0/18**  **!**  **interface FastEthernet0/19**  **!**  **interface FastEthernet0/20**  **!**  **interface FastEthernet0/21**  **!**  **interface FastEthernet0/22**  **!**  **interface FastEthernet0/23**  **!**  **interface FastEthernet0/24**  **!**  **interface GigabitEthernet0/1**  **!**  **interface GigabitEthernet0/2**  **!**  **interface Vlan1**  **ip address 192.168.100.2 255.255.255.0**  **!**  **!**  **!**  **!**  **line con 0**  **!**  **line vty 0 4**  **login**  **line vty 5 15**  **login**  **!**  **!**  **!**  **!**  **end** |

1. **Save PT Activity**
   1. **Save Packet Tracer Activity to your desktop for future use.**
2. **Turn in PC1 Configuration (step 8) and Switch1 configuration (step 18) for grading in this lab work sheet.**

**Lab 2: How to Perform a Basic Software Configuration Using the Cisco IOS CLI**

**Start packet Tracer**

1. **Install a new PC-1 IP 192.168.100.100, Gwy: 192.168.100.1 [Add 1CGE NM]**

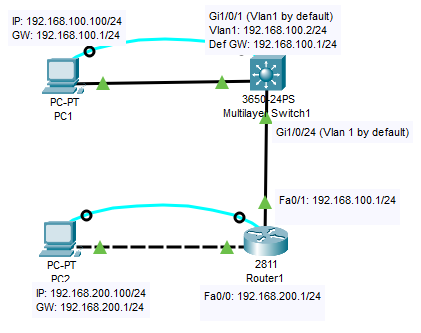
**PC-2 IP 192.168.200.100, Gwy: 192.168.200.1 [Add 1CFE NM]**

1. **Install a generic Switch-1, MLS1 3650-24PS) [Add Power Supply]**

**IP 192.168.100.2/24, Gwy: 192.168.100.1**

**Install a generic Router-1, 2811, IP 192.168.200.1/24, Gwy: 192.168.200.1**

1. **Connect PC-1 to MLS1 with console cable & Ethernet Cable,** port **Gi 1/0/1**
2. **Connect PC-2 to 2811** **with console cable & Ethernet Cable, port Fa0/0**
3. **Connect MLS1 port Gi1/0/24 with 2811** **port Fa0/1 with Ethernet Cable**



**Lab 2 includes the following procedures:**

<https://www.cisco.com/c/en/us/td/docs/routers/access/vg224/software/configuration/guide/scg/scgconf.html>

This link presents the following major topics, Use CLI to configure them as specified below:

1. •**Configuring the Host Name, Password, Line on Router1 & MLS1**
   1. enable
   2. **config terminal**

service password-encryption

hostname [MLS1 | Router1]

enable secret cisco

**line con 0**

exec-timeout 5 0

password 7 0822455D0A16

login

exit

line vty 0 15

exec-timeout 5 0

password 7 0822455D0A16

login

transport input telnet

exit

* 1. banner motd $\*\*\*\*\* Authorized users Only \*\*\*\*\*$
  2. show running-config
  3. exit
  4. enable (password is cisco)

1. [**Configuring Fast Ethernet Interfaces**](https://www.cisco.com/c/en/us/td/docs/routers/access/vg224/software/configuration/guide/scg/scgconf.html#wp1040071) **on Router1**
   1. **config terminal**

interface fastethernet 0/1

ip address 192.168.100.1 255.255.255.0

no shutdown

exit

interface fastethernet 0/0

ip address 192.168.200.1 255.255.255.0

no shutdown

exit

1. **•**[**Configuring Vlan Interfaces**](https://www.cisco.com/c/en/us/td/docs/routers/access/vg224/software/configuration/guide/scg/scgconf.html#wp1040071) **on MLS1** 
   1. **config terminal**

interface Gigabitethernet 1/0/1

switchport access vlan 1

no shutdown

exit

interface Gigabitethernet 1/0/24

switchport access vlan 1

no shutdown

exit

interface vlan 1

ip address 192.168.100.2 255.255.255.0

no shutdown

exit

exit

* 1. **show running-config**

1. •**Saving Configuration Changes** 
   1. copy running-config startup-config
   2. **exit**
2. •**Use this link for practice to familiarize yourself with various commands and what they do. This link presents the following major topics, Use CLI to configure them to get familiar with them for Lab 2 configuration:**

<https://www.cisco.com/en/US/docs/routers/access/800/850/software/configuration/guide/baskills.pdf>

1. **Configuring the Router from a PC**
   1. Console port using terminal emulation software
   2. Telnet or ssh over the network
2. **Understanding Command Modes** (We did some of this in Lab1)
   1. User EXEC
   2. Privileged EXEC
   3. Global configuration
   4. Interface configuration
   5. Routing configuration
   6. Line configuration
3. **Getting Help**
   1. \*?
4. **Enable Secret Passwords and Enable Passwords**
   1. basic password
   2. secure password
5. **Entering Global Configuration Mode**
   1. config terminal
6. **Using Commands**
   1. enough characters to identify command (sh v = show version)
   2. negate command with “no \*”
7. **Saving Configuration Changes**
   1. copy run start
   2. write mem
   3. write term
8. **Export Router1 & MLS1 configuration to desktop for future use**
9. **Save Packet Tracer Activity for future use**
10. **Learn Scripting the CLI configuration for future use**
11. **Create a Security Script for a basic Switch / Router based on this Lab and Turn it in for grading. You will use this script for all future Lab configurations.**
12. **Turn in all PC1, PC2, Router1 & MLS1 Configurations in a word document as we did in Lab1 along with the security script for grading.**

**PC1 Configuration**

GigabitEthernet0 Connection:(default port)

Connection-specific DNS Suffix..:

Physical Address................: 00E0.8F4E.2D9C

Link-local IPv6 Address.........: FE80::2E0:8FFF:FE4E:2D9C

IPv6 Address....................: ::

IPv4 Address....................: 192.168.100.100

Subnet Mask.....................: 255.255.255.0

Default Gateway.................: ::

192.168.100.1

DHCP Servers....................: 0.0.0.0

DHCPv6 IAID.....................:

DHCPv6 Client DUID..............: 00-01-00-01-0C-6C-24-77-00-E0-8F-4E-2D-9C

DNS Servers.....................: ::

0.0.0.0

Bluetooth Connection:

Connection-specific DNS Suffix..:

Physical Address................: 0060.2F13.BA72

Link-local IPv6 Address.........: ::

IPv6 Address....................: ::

IPv4 Address....................: 0.0.0.0

Subnet Mask.....................: 0.0.0.0

Default Gateway.................: ::

0.0.0.0

DHCP Servers....................: 0.0.0.0

DHCPv6 IAID.....................:

DHCPv6 Client DUID..............: 00-01-00-01-0C-6C-24-77-00-E0-8F-4E-2D-9C

DNS Servers.....................: ::

0.0.0.0

**PC2 Configuration**

FastEthernet0 Connection:(default port)

Connection-specific DNS Suffix..:

Physical Address................: 0003.E4C1.EDE6

Link-local IPv6 Address.........: FE80::203:E4FF:FEC1:EDE6

IPv6 Address....................: ::

IPv4 Address....................: 192.168.200.100

Subnet Mask.....................: 255.255.255.0

Default Gateway.................: ::

192.168.200.1

DHCP Servers....................: 0.0.0.0

DHCPv6 IAID.....................:

DHCPv6 Client DUID..............: 00-01-00-01-DC-A1-AA-49-00-03-E4-C1-ED-E6

DNS Servers.....................: ::

0.0.0.0

Bluetooth Connection:

Connection-specific DNS Suffix..:

Physical Address................: 0001.64C0.A5C1

Link-local IPv6 Address.........: ::

IPv6 Address....................: ::

IPv4 Address....................: 0.0.0.0

Subnet Mask.....................: 0.0.0.0

Default Gateway.................: ::

0.0.0.0

DHCP Servers....................: 0.0.0.0

DHCPv6 IAID.....................:

DHCPv6 Client DUID..............: 00-01-00-01-DC-A1-AA-49-00-03-E4-C1-ED-E6

DNS Servers.....................: ::

0.0.0.0

**Router1 Configuration**

**!**

**version 15.1**

**no service timestamps log datetime msec**

**no service timestamps debug datetime msec**

**service password-encryption**

**!**

**hostname Router1**

**!**

**!**

**!**

**enable secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0**

**!**

**!**

**!**

**!**

**!**

**!**

**no ip cef**

**no ipv6 cef**

**!**

**!**

**!**

**!**

**license udi pid CISCO2811/K9 sn FTX1017B9U0-**

**!**

**!**

**!**

**!**

**!**

**!**

**!**

**!**

**!**

**!**

**!**

**spanning-tree mode pvst**

**!**

**!**

**!**

**!**

**!**

**!**

**interface FastEthernet0/0**

**ip address 192.168.200.1 255.255.255.0**

**duplex auto**

**speed auto**

**!**

**interface FastEthernet0/1**

**ip address 192.168.100.1 255.255.255.0**

**duplex auto**

**speed auto**

**!**

**interface FastEthernet0/0/0**

**switchport mode access**

**!**

**interface FastEthernet0/0/1**

**switchport mode access**

**!**

**interface FastEthernet0/0/2**

**switchport mode access**

**!**

**interface FastEthernet0/0/3**

**switchport mode access**

**!**

**interface FastEthernet0/1/0**

**switchport mode access**

**!**

**interface FastEthernet0/1/1**

**switchport mode access**

**!**

**interface FastEthernet0/1/2**

**switchport mode access**

**!**

**interface FastEthernet0/1/3**

**switchport mode access**

**!**

**interface FastEthernet0/2/0**

**switchport mode access**

**!**

**interface FastEthernet0/2/1**

**switchport mode access**

**!**

**interface FastEthernet0/2/2**

**switchport mode access**

**!**

**interface FastEthernet0/2/3**

**switchport mode access**

**!**

**interface FastEthernet0/3/0**

**switchport mode access**

**!**

**interface FastEthernet0/3/1**

**switchport mode access**

**!**

**interface FastEthernet0/3/2**

**switchport mode access**

**!**

**interface FastEthernet0/3/3**

**switchport mode access**

**!**

**interface FastEthernet1/0**

**no ip address**

**shutdown**

**!**

**interface Vlan1**

**no ip address**

**shutdown**

**!**

**ip classless**

**!**

**ip flow-export version 9**

**!**

**!**

**!**

**banner motd $\*\*\*\*\* Authorized users Only \*\*\*\*\*$**

**!**

**!**

**!**

**!**

**line con 0**

**exec-timeout 5 0**

**password 7 0822455D0A16**

**login**

**!**

**line aux 0**

**!**

**line vty 0 4**

**exec-timeout 5 0**

**password 7 0822455D0A16**

**login**

**transport input telnet**

**line vty 5 15**

**exec-timeout 5 0**

**password 7 0822455D0A16**

**login**

**transport input telnet**

**!**

**!**

**!**

**End**

**MLS1 Configuration**

**!**

**version 16.3.2**

**no service timestamps log datetime msec**

**no service timestamps debug datetime msec**

**service password-encryption**

**!**

**hostname MLS1**

**!**

**!**

**enable secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0**

**!**

**!**

**!**

**!**

**!**

**!**

**no ip cef**

**no ipv6 cef**

**!**

**!**

**!**

**!**

**!**

**!**

**!**

**!**

**!**

**!**

**!**

**!**

**!**

**!**

**spanning-tree mode pvst**

**!**

**!**

**!**

**!**

**!**

**!**

**interface GigabitEthernet1/0/1**

**!**

**interface GigabitEthernet1/0/2**

**!**

**interface GigabitEthernet1/0/3**

**!**

**interface GigabitEthernet1/0/4**

**!**

**interface GigabitEthernet1/0/5**

**!**

**interface GigabitEthernet1/0/6**

**!**

**interface GigabitEthernet1/0/7**

**!**

**interface GigabitEthernet1/0/8**

**!**

**interface GigabitEthernet1/0/9**

**!**

**interface GigabitEthernet1/0/10**

**!**

**interface GigabitEthernet1/0/11**

**!**

**interface GigabitEthernet1/0/12**

**!**

**interface GigabitEthernet1/0/13**

**!**

**interface GigabitEthernet1/0/14**

**!**

**interface GigabitEthernet1/0/15**

**!**

**interface GigabitEthernet1/0/16**

**!**

**interface GigabitEthernet1/0/17**

**!**

**interface GigabitEthernet1/0/18**

**!**

**interface GigabitEthernet1/0/19**

**!**

**interface GigabitEthernet1/0/20**

**!**

**interface GigabitEthernet1/0/21**

**!**

**interface GigabitEthernet1/0/22**

**!**

**interface GigabitEthernet1/0/23**

**!**

**interface GigabitEthernet1/0/24**

**!**

**interface GigabitEthernet1/1/1**

**!**

**interface GigabitEthernet1/1/2**

**!**

**interface GigabitEthernet1/1/3**

**!**

**interface GigabitEthernet1/1/4**

**!**

**interface Vlan1**

**ip address 192.168.100.2 255.255.255.0**

**!**

**ip classless**

**!**

**ip flow-export version 9**

**!**

**!**

**!**

**banner motd $\*\*\*\*\* Authorized users Only \*\*\*\*\*$**

**!**

**!**

**!**

**!**

**line con 0**

**exec-timeout 5 0**

**password 7 0822455D0A16**

**login**

**!**

**line aux 0**

**!**

**line vty 0 4**

**exec-timeout 5 0**

**password 7 0822455D0A16**

**login**

**transport input telnet**

**line vty 5 15**

**exec-timeout 5 0**

**password 7 0822455D0A16**

**login**

**transport input telnet**

**!**

**!**

**!**

**!**

**end**