Computer Communications Networks

ENGR 476

# Lab 1: Intro to Arista-7050T Switches

## Purpose:

This lab allows the student to become familiar with basic command line interface of the switch and the process of getting the switch started. The student will learn how to connect to the console of a switch as well as learning basic Arista command syntax.

## Background:

Students are expected to know some basic Linux structure and commands and have read some chapters from the Data Communications and Networking textbook required by this course. Specifically, chapter 14 on Ethernet terminology and concepts.

Additionally, examine the Arista documentation for the 7050T series switches and the user manual provided below. This will allow the student to find details on all the Ethernet cabling, power and full command guides for the version of EOS being used for the lab.

**Resources:**

Datasheet Link:

* <https://www.arista.com/assets/data/pdf/Datasheets/7050T_Datasheet.pdf>

User manual Link:

* <https://www.arista.com/assets/data/docs/Manuals/EOS-4.15.3F-Manual.pdf>

# Wikipedia:

<https://en.wikipedia.org/wiki/Ethernet>

<https://en.wikipedia.org/wiki/Registered_jack>

<https://en.wikipedia.org/wiki/IP_address>

**Note points:**

* All Arista commands can be abbreviated using the first 3 letters of each command

Ex: **show running-config** command can be typed as **sho run**

* The EXEC mode is divided into two access levels: user and privileged. The user EXEC mode is used by local and general system administrators, while the privileged EXEC mode is used by the root administrator.
* **Privilege** is defined as the delegation of authority over a computer system. Users who lack most privileges are defined as unprivileged, regular, or normal users.
* Arista’s **Zero Touch Provisioning (ZTP)** is used to configure a switch without user intervention. Built to fully leverage the power of Arista’s Extensible Operating System (EOS), ZTP provides a flexible solution, provisioning the network infrastructure without requiring a network engineer present at install.

**Assignment and Write-up:**

Make a word document by answering all the underlined questions from the procedure section below.

Each student is responsible for handing in their own copy of the assignment. Please clearly mention your name on the assignment.

## Procedure:

1. Connect your serial cable from the back of your computer to the RJ-45 jack on the back of your Arista switch. Use the RJ-45 port at one corner of a switch, right of USB Port, the top one. You will need the RJ-45 to DB-9 adapter cable for this. Open a terminal program (putty) and use it to connect to your computer’s serial. This connection is made with the fixed communication settings of **9600-8-N-1**.

What do each of the values in the string 9600-8-N-1 mean? – You can check the settings for the serial port in putty.

Note: There should probably be a screen capture of the serial port settings here.

1. Once connected, power the switch on (or if already on, powercycle it off then on again). Watch the boot sequence and see if you can figure out what its doing. Once it finishes booting, It gives you

“*Localhost login:*” Enter admin as it is the default login.

*Localhost login: admin*

1. You are now at the unprivileged command prompt. Typing **?** at that prompt will show you a list of commands you can execute on the switch. This is a low level of access.

Now what is the Privilege level for Unprivileged EXEC mode? – type the command **show privilege** to check for it (1)

1. To change things and really see what is going on we will need to enter privileged mode. Type the command **enable** and notice that the prompt has changed to

*Localhost#*

What is the Privilege level for Privileged EXEC mode? – type the same command in point 3

1. As per the previous command prompt, type **?** and look at the much larger list of commands that the privileged user. Some of the commands are actually the first part of a larger branch of commands.

Take a screenshot of all the commands in the Privileged EXEC mode

1. Type the command **zerotouch cancel** when you are in privileged modeand observe the boot sequence.

Print the status of the zerotouch mode by using **show** command after the boot sequence

1. Log back on, and enable to get into admin mode. Examine the configuration that the router is currently running with by typing **show running-config** or **sho run** command.
2. Type the command **configure terminal** or **conf t** to enter global configuration mode. Note that the prompt has changed. Later, should you want to get out of configure mode or any other sub-mode, type **end**.

Now, do the following two Cases below. For each case you will need to be in the appropriate mode to configure, use the steps above to enter the appropriate mode.

**Case: 1**

**Assigning an IP Address to a Specific Ethernet Management Port**

1. First take an Ethernet cable and make a connection between the computer and the management port. After that, enter into the global configuration mode and then type the command **interface management 1** to enter interface configuration mode.

*localhost(config)#****interface management 1***

*localhost(config-if-Ma1)#*

1. To assign an IP address to the port, type ip address followed by the desired address. The below command assigns the IP address 10.0.2.8 to management 1 port.

*localhost(config-if-Ma1)#****ip address*** *10.0.2.8/24*

1. Type the command **end** at the interface configuration prompt to return to Privileged EXEC mode.

*localhost(config-if-Ma1)#****end***

1. Type the command **sho run** command to see how the changes you made are reflected in the configuration.
2. Type **write** to save the new configuration to the startup-config file.

*localhost#* ***write***

Type the command **show interfaces** to display the running or saved config file from your localhost. Cut and paste the management interface config from your localhost into the word document.

**Case: 2**

**Assigning an IP Address to a Specific Ethernet Interface Port**

1. For this, the connection should be made between the computer and any of the Ethernet interface port. Arista switch Ethernet ports are usually addressed with the port designation, counting from one.
2. Let’s examine the interface we just attached. The command **show interface Ethernet x** will display the interface details of Ethernet port x, where x is the Ethernet port number you selected.
3. Enter into the global configuration mode by typing the command **configure terminal**. Note that the prompt has changed.

Ex: *localhost#****conf t***

1. Enter into the interface configuration sub-prompt via the command **interface Ethernet x**. Notice the prompt change.

Ex: *localhost(config)#****interface Ethernet x***

*localhost(config-if-etx)#*

1. Now set the ip address by typing the command **ip address 192.168.1.x 255.255.255.0** where “x” is any number from 1 to 10
2. IP configuration will be ignored while interface Ethernet1 is not a routed port.

Here the interface was in switchport mode. To disable this, type the command **no switchport (**no switchport allows you to assign an address that would leave the switch based off of the routing table)

1. Enter the command **show interface Ethernet x** to see how the changes you made are reflected in the configuration.
2. In general, the way to negate any command is to prefix it with the word **no**. For example, if you wanted to remove the ip address you had just entered, you would type **no ip address 192.168.1.x 255.255.255.0**, again replacing the x with your selected number. Once you’ve finished the configuration, exit out of config mode by typing the command **end**