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8 Steps to Configure Your Network Switch

Follow these simple best practices to set up a new network switch.

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Just like riding a bicycle, nobody's born knowing how to setup a **network switch**. And this process is a little more advanced than, say, setting up your home Internet or even a plug-and-play type switch. But, with the right guidance, a can-do attitude, and a dash of bravery, even newbie IT professionals can integrate a new Cisco switch into their business environment. As your virtual training wheels, we've broken down the task into its simplest parts so you can successfully create client VLANS, build DHCP systems, and assign access ports without skinning your knees.

Step 1: Inspect your hardware

Check the model number of your shiny new switch. Or, if you are using a spare, check the device hardware and its connected cables for any damages. If everything checks out, power on the switch and verify that all the indicator lights are in working order. Next, use a rollover cable to console into the switch from your computer. To do this, you will need to download and install Putty (or a similar, fun-named software tool). Run Putty and select the 9600 speed serial connection. You are now connected to the switch and ready to check the output of the following commands:

- show version
- show running-config
- show VLAN brief
- show VTP status
  - (config)# IP domain-name routerfreak.com
  - (config)# hostname Switch01
  - (config)# interface VLAN1
  - (config)# description Management VLAN
  - (config)# IP address 192.168.101.1 255.255.255.0
  - vtp [client | server | transparent]
  - vtp domain name
  - description *** DESCRIPTION ***
  - switchport access vlan ###
  - sswitchport mode access

- power inline consumption ###
- queue-set 2
- mls qos trust dscp
- storm-control multicast level 50.00
- no cdp enable
- spanning-tree portfast
- spanning-tree bpduguard enable

- Interface GigabitEthernet1/0/1
- description *** UPLINK ***
- switchport trunk encapsulation dot1q
- switchport mode trunk
- speed 1000
- duplex full

- Switch01(config)# crypto key generate rsa
- The name for the keys will be:
- Switch01.routerfreak.com

- How many bits in the modulus [512]: 1024
- % Generating 1024 bit RSA keys, keys will be non-exportable...[OK]

- # line vty 0 4
- (config-line)# transport input ssh
- (config-line)# login local
- (config-line)# password routerfreak
- (config-line)# exit

- # line console 0
- (config-line)# logging synchronous
- (config-line)# login local

- Switch01# service password-encryption

- remote-computer# ssh 192.168..101.1
- Log in as: username
- Password:
- Switch01>en
- Password:
- Switch01#

For spare switches, make sure to delete the flash:vlan.dat file to erase the previous configuration.

Step 2: Set up management IP

Unlike with that punny name you gave your home Wi-Fi network, when setting up the hostname for your switch you should probably stick to a more professional and standard naming convention. Follow any preset naming assignment your company is using and then assign an IP address on the management VLAN. Next, make sure your switch has a set hostname and domain name:

Step 3: Check VTP revision number

Hit the show vtp status command to reveal your Virtual Trunking Protocol (VTP) revision numbers. The VTP revision numbers determine which updates are to be used in a VTP domain. When you set a VTP domain name, the revision number is set to zero—after which each

change to the VLAN database increases the revision number by one. Your switch will only process data from a neighboring switch coming from the same domain and if the revision number of the neighboring switch is higher than its own. This means that the switches will update their VLAN configuration based on the VTP information being sent by the switch with the highest revision number.

So, before you add your switch to the network, you're going to want to set its revision number to zero. To easily reset the domain back to zero, change the config mode to transparent:

Step 4: Configure access ports

You might already have a template ready for access port configuration, but in case you don't, here are some commands you should use:

Step 5: Configure trunk ports

Enter the command sh int g0/1 capabilities and check the trunking protocol supported. If ISL is supported, you have to issue the switchport trunk encapsulation dot1q on the trunk port configuration. If not, simply type switchport mode trunk. It means there is no other encapsulation supported so there is no need for an encapsulation command. It only supports 802.1Q.

Step 6: Configure access ports

After already performing basic network switch configurations, it's time to generate RSA keys to be used during the SSH process, using the crypto commands shown here:

Choose the size of the key modulus in the range of 360 to 2048 for your General Purpose Keys. Choosing a key modulus greater than 512 may take a few minutes.

Step 7: Set up VTY line config

If you have not set the console line yet, you can easily input these values:

Set the enable password using the enable secret password command. Then, set the privilege exec password with username name privilege 15 secret password. Make sure that the password-encryption service is activated.

Verify SSH access by typing 'sh ip ssh' to confirm that the SSH is enabled. You can now try to log in from a remote machine to verify that you can ssh to your Cisco switch.

Finishing touches

You've made it through the learning process with (hopefully) minimum bumps and bruises, and you're just about ready to ride off. All that's left is to test your access, reload the switch, and ready the cables. Once that's done, label your switch, rack it up, and go enjoy doing anything that doesn't involve switch configuration!

Still fuzzy?

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