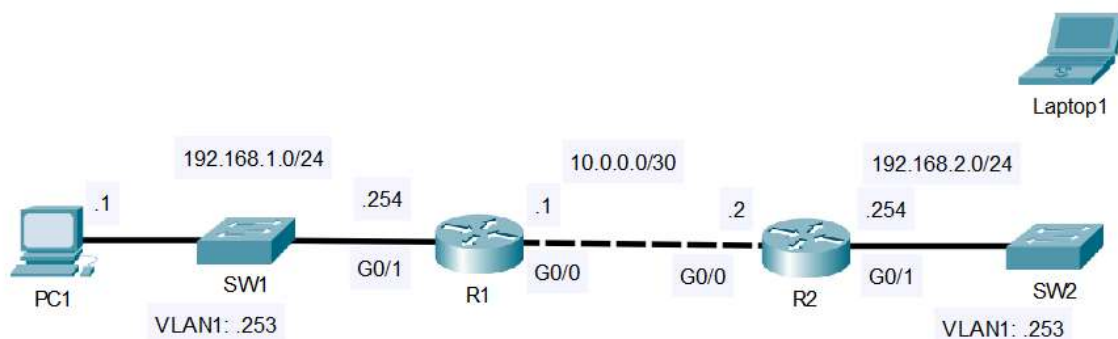


SSH Configuration on a Cisco Switch

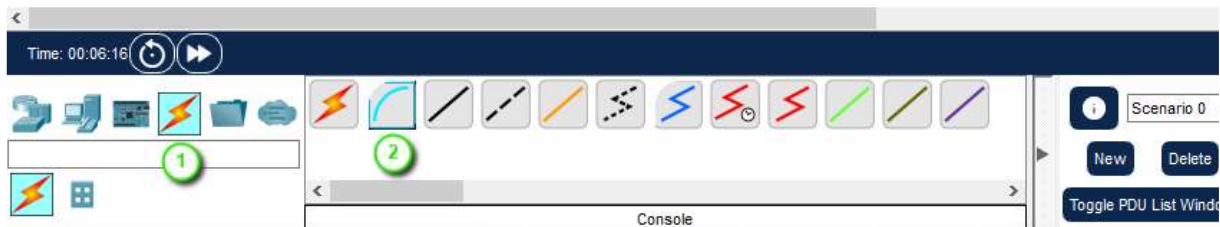
In this lab, we'll configure SSH on a Cisco switch for remote access. **SSH (Secure Shell)** is a cryptographic network protocol that ensures secure communication over an otherwise unsecured network. SSH was designed to replace insecure protocols like **Telnet** and other remote Unix shell protocols. You can follow along by downloading this [SSH Config Packet Tracer File](#) and opening it in [Cisco's Free Packet Tracer Simulator](#) (*create a free account, enroll in one of the free courses and download the free software*).



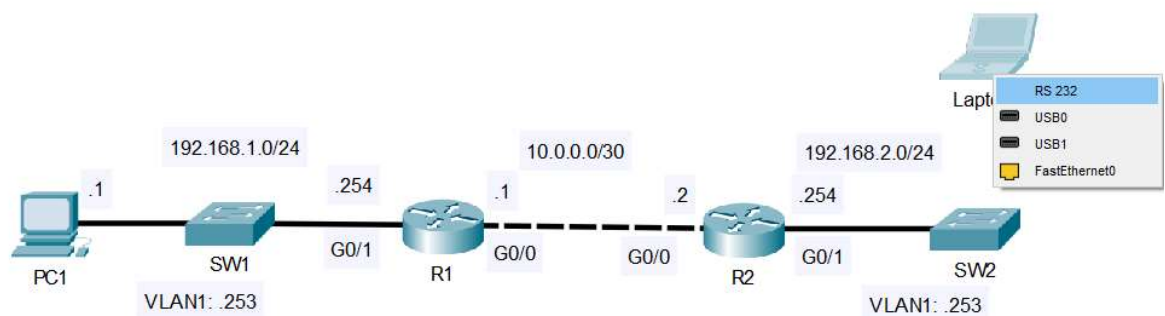
*SW2 has been newly added to the network, but has not yet been configured.

1. Connect Laptop1 to SW2's console port to perform the following configurations:
Host name: SW2
Enable secret: cna
Username/PW: aaron/ccna
VLAN1 SVI: 192.168.2.253/24
Default gateway: R2
2. Configure the following console line security settings on SW2:
Authentication: Local user
Exec timeout: 5 minutes
3. Configure SW2 for remote access via SSH:
Domain name: aaronguild.net
RSA key size: 2048 bits
Authentication: Local user
Exec timeout: 5 minutes
Protocols: SSH only
+Limit access to PC1 ONLY

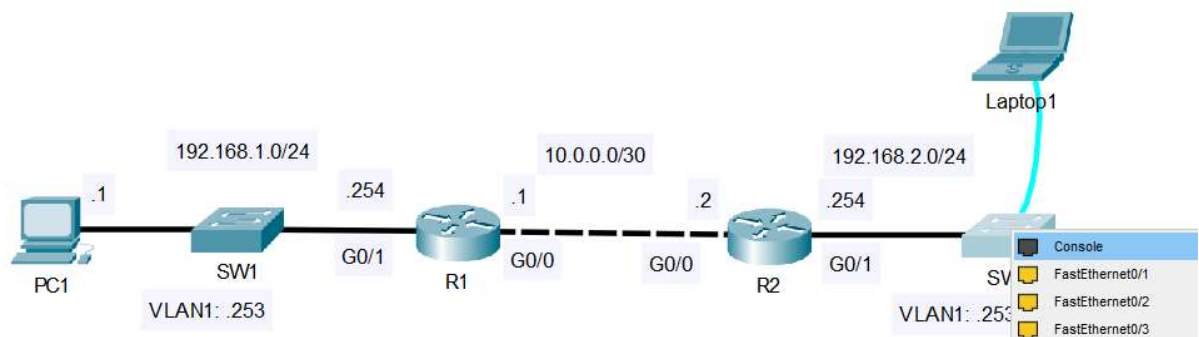
First we need to connect Laptop1 to SW2 via a console cable:



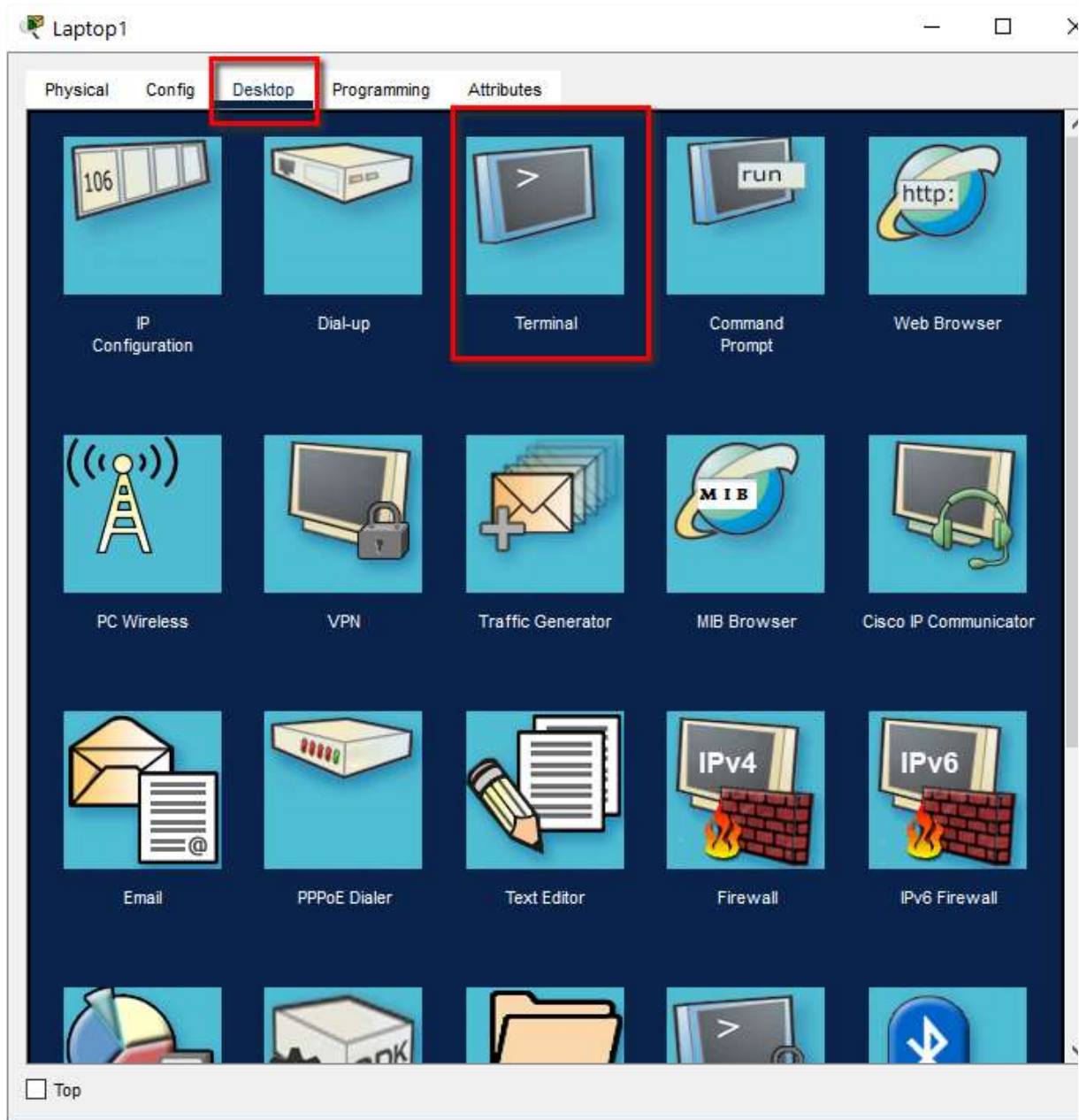
Now make the connection by clicking on Laptop1 and selecting the **RS 232** port:



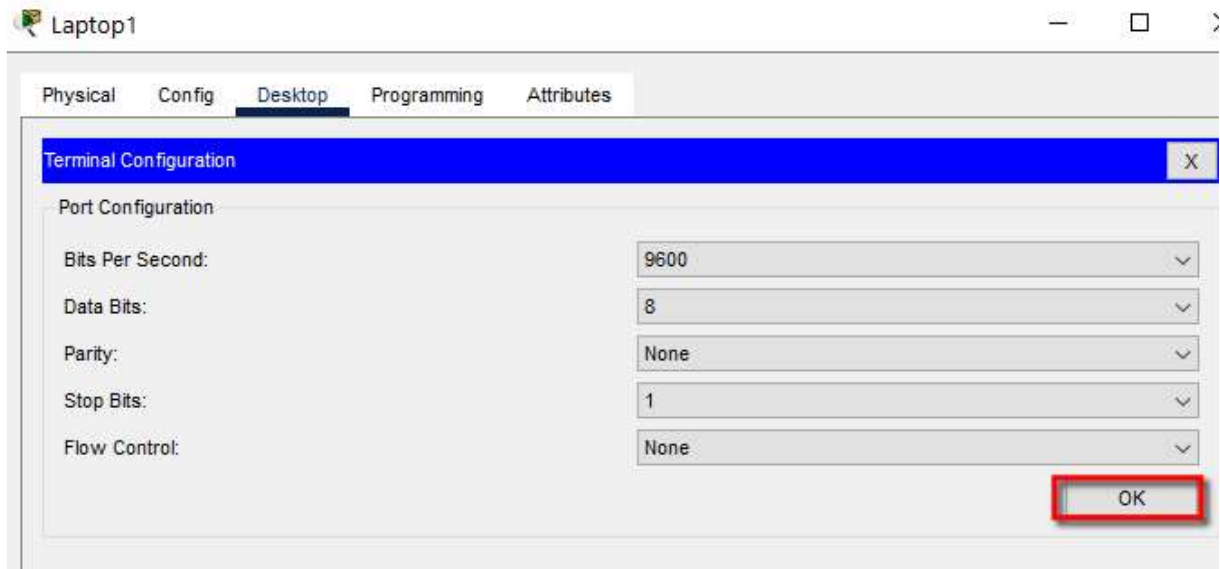
Next click on SW2 and select the Console port:



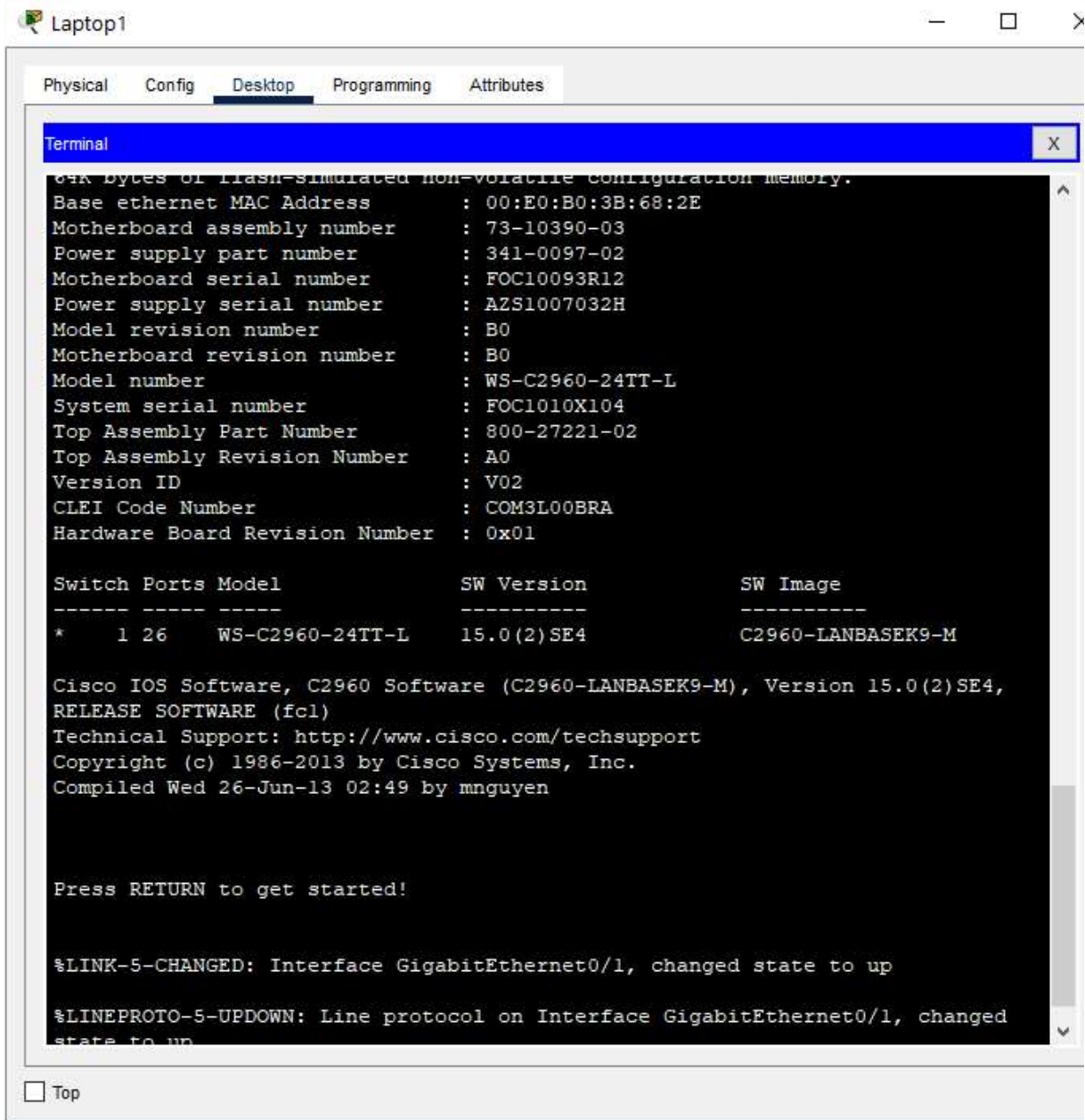
Click on Laptop1 and open the Desktop tab. From there open the Terminal connection:



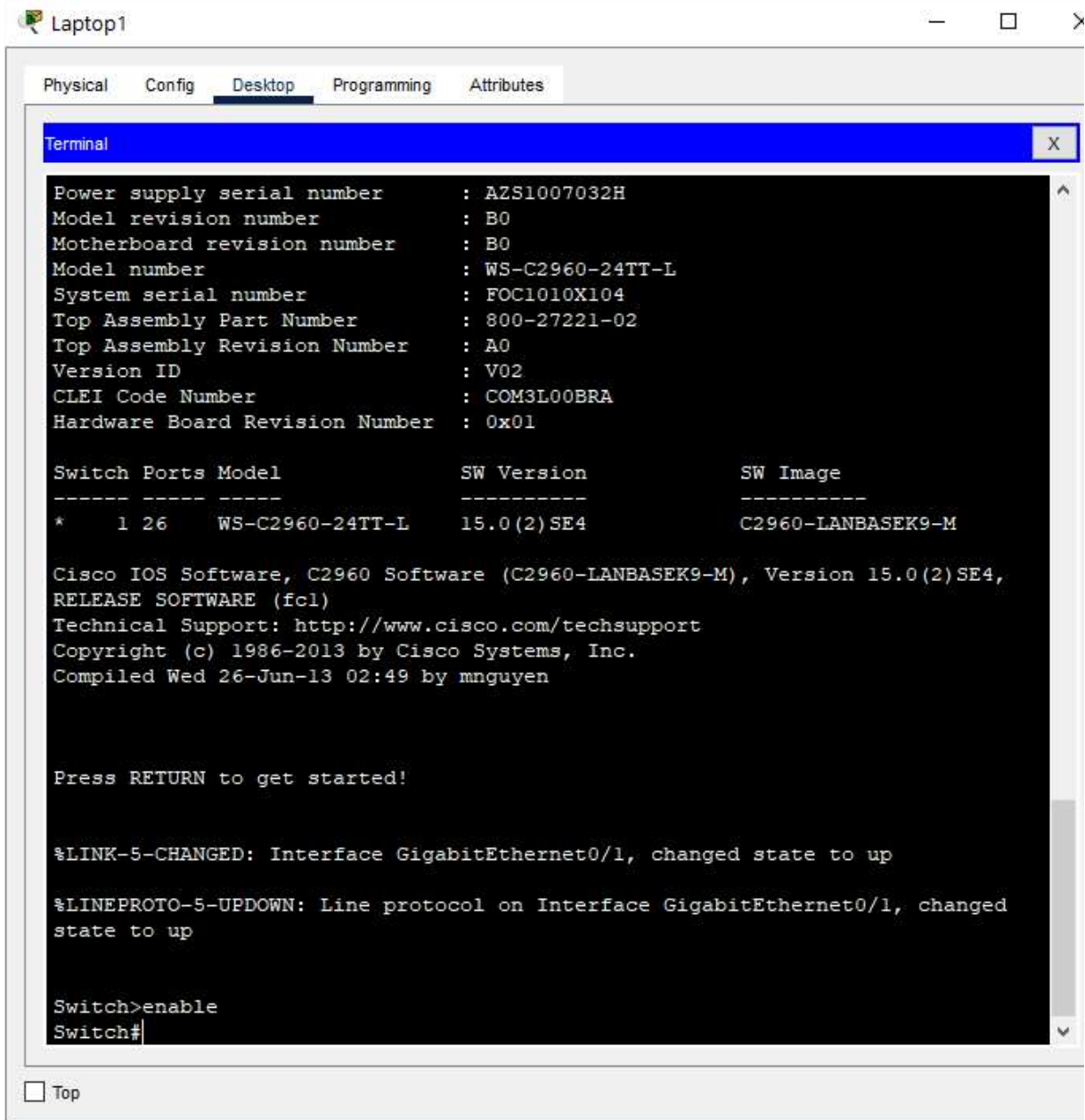
Leave the Terminal Configuration screen at their defaults and hit OK:



If you've followed the previous steps correctly, you should see information about SW2:



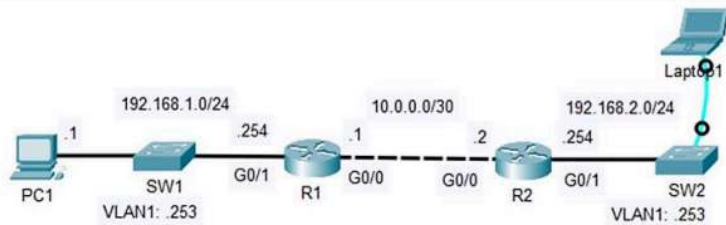
Click in the Terminal > press **Enter** > issue the **enable** command:



Now you're ready to actually start the SSH configuration process. Use the below commands to correctly finish the labs:

Required for SSH:

1. Change hostname to anything but the default.
2. The device must have an IP address.
3. Config a DNS domain name
4. Generate RSA key pair
5. Config an enable secret for 'enable mode'.
6. Config a Username/PW for SSH login
7. Config the VTY lines



*SW2 has been newly added to the network, but has not yet been configured.

1. Connect Laptop1 to SW2's console port to perform the following configurations:

Host name: SW2

Enable secret: ccna

Username/PW: aaron/ccna

VLAN1 SVI: 192.168.2.253/24

Default gateway: R2

2. Configure the following console line security settings on SW2:

Authentication: Local user

Exec timeout: 5 minutes

3. Configure SW2 for remote access via SSH:

Domain name: aaronguild.net

RSA key size: 2048 bits

Authentication: Local user

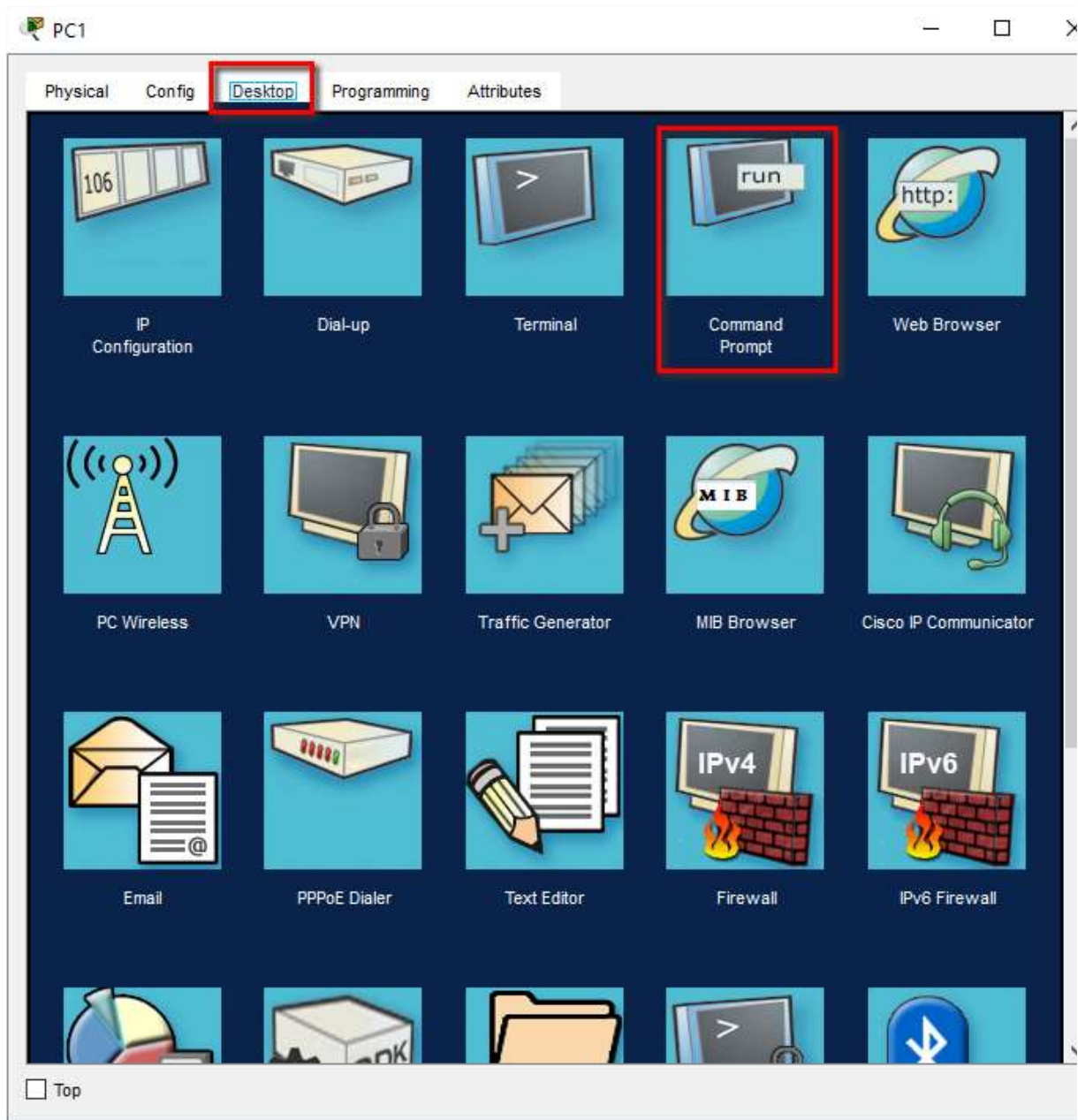
Exec timeout: 5 minutes

Protocols: SSH only

+Limit access to PC1 ONLY

Switch>enable	Moves you into privileged mode.
Switch#conf t	Moves you into global configuration mode on.
Switch(config)#hostname SW2	Changes the hostname from Switch to SW2.
SW2 (config)#enable secret ccna	Configure an enable password in the most secure method supported with a password of ccna
SW2 (config)#username aaron secret ccna	Configure a user named aaron with a secret password of ccna
SW2 (config)#interface vlan 1	Create an SVI for remote access
SW2 (config-if)#ip address 192.168.2.253 255.255.255.0	Config an IP address and mask for SVI
SW2 (config-if)#no shut	Enable the SVI
SW2 (config-if)#exit	Exit to global config mode
SW2 (config)#ip default-gateway 192.168.2.254	Give the Switch a default gateway
SW2 (config)#line console 0 SW2 (config-line)#login local	Move into console line configuration mode and configure it to require login using the local user database.
SW2 (config-line)#exec-timeout 5	Config the console to disconnect if idle 5 min
SW2 (config)#ip domain-name aaronguild.net	Configure a domain-name of aaronguild.net
SW2 (config)#crypto key generate rsa	Generate an RSA key pair using a 2048 bit key.
SW2 (config)#ip ssh version 2	Enable SSH version 2
SW2 (config)#access-list 1 permit 192.168.1.1	Configure a standard ACL 1 permitting the management server IP address 192.168.1.1
SW2 (config-line)#line vty 0 15 SW2 (config-line)#login local	Move into terminal line configuration mode and also configure it to require a login using the local user database
SW2 (config-line)#exec-timeout 5	Config the VTY lines to disconnect if idle 5 min
SW2 (config-line)#transport input ssh	Configure the lines to only support SSH logins
SW2 (config-line)#access-class 1 in	Configure the lines to only allow access from the address specified in ACL 1.

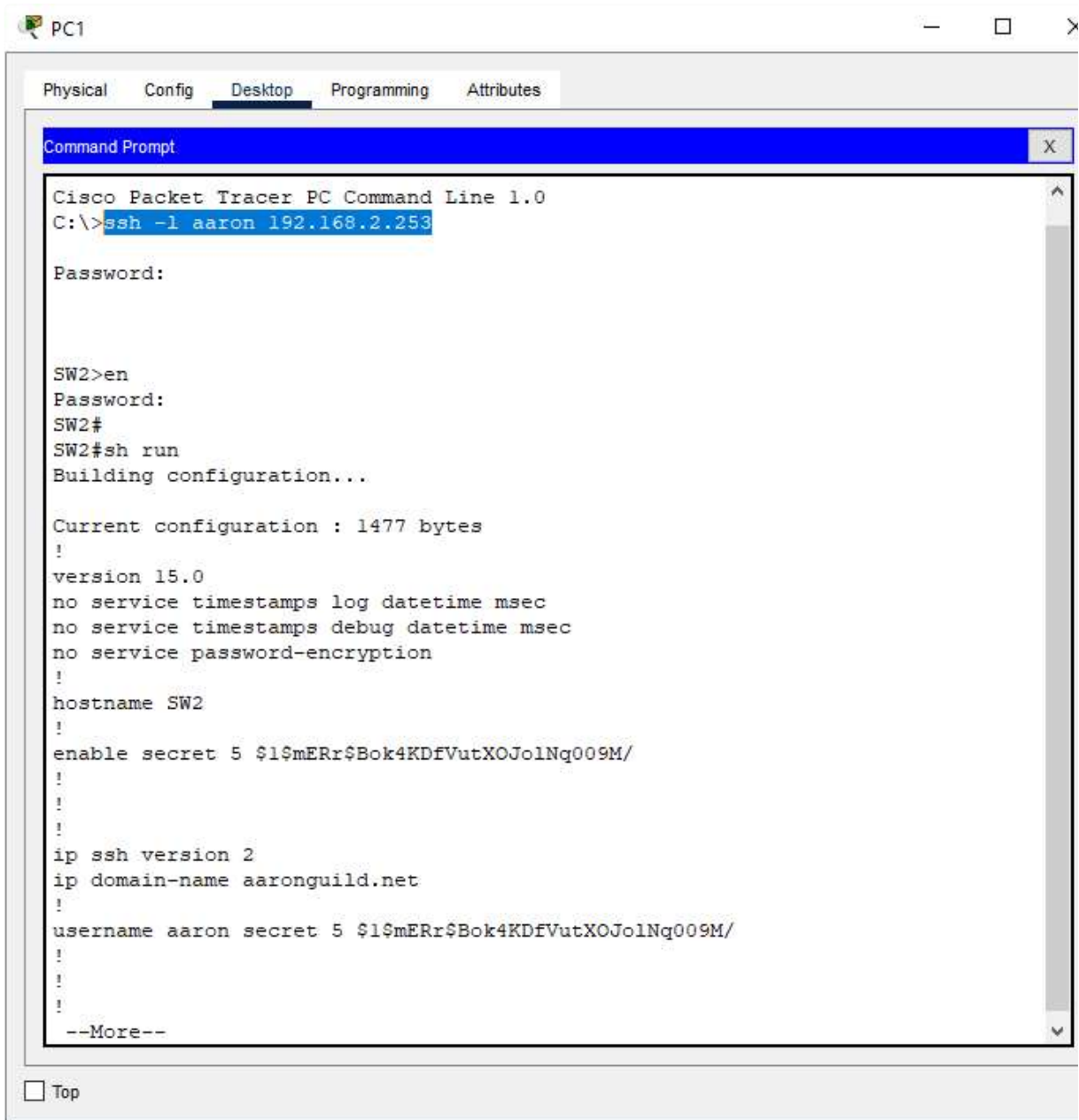
Test the configuration by connecting to SW2 via SSH from PC1 > Desktop > Command Prompt:



In PC1s command prompt issue the following command:

ssh -l aaron 192.168.2.253

Enter the password: **ccna**



The screenshot shows a Cisco Packet Tracer interface with a PC named PC1. The 'Desktop' tab is selected, displaying a 'Command Prompt' window. The command prompt shows the execution of an SSH command to connect to a switch named SW2. The connection is successful, and the user is prompted to enter a password. After entering the password, the user is placed in the enable mode of the switch. The user then enters the command 'sh run' to display the current configuration of the switch. The configuration output is shown, including the version, service timestamps, hostname, enable secret, and SSH settings. The output is truncated with '--More--' at the bottom.

```
PC1
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ssh -l aaron 192.168.2.253

Password:

SW2>en
Password:
SW2#
SW2#sh run
Building configuration...

Current configuration : 1477 bytes
!
version 15.0
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname SW2
!
enable secret 5 $1$mERr$Bok4KdFVutXOJolNq009M/
!
!
!
ip ssh version 2
ip domain-name aaronguild.net
!
username aaron secret 5 $1$mERr$Bok4KdFVutXOJolNq009M/
!
!
!
--More--
```

And it works! You're now remotely connected to SW2 over the Secure Shell protocol.