Networks and switching

Skills exam notes

Preface:

This document contains all the commands you will need to complete labs and pass the skills exam.

Some commands such as “ip ssh time-out <TIMEOUT>” are optional.

QOL Settings (Switch + Router)

1. Switch# configure terminal

2. Switch(config)# no ip domain lookup

3. Switch(config)# line console 0

4. Switch(config-line)# logging synchronous

Basic settings (Switch + Router)

1. Switch(config)# hostname <NAME>

2. Switch(config)# banner motd + <BANNER INFO> +

3. Switch(config)# ip default-gateway <IP ADDRESS>

Password (Switch + Router)

1. Switch(config)# enable secret <ADMIN PASSWORD>

2. Switch(config)# line console 0

3. Switch(config-line)# password <USER PASSWORD>

4. Switch(config-line)# login

5. Switch(config-line)# exec-timeout 0 0

Management VLAN (Switch)

1. Switch(config)# vlan <MANAGEMENT VLAN NUMBER>

2. Switch(config-vlan)# name <MANAGEMENT VLAN NAME>

3. Switch(config-vlan)# exit

4. Switch(config)# interface vlan <MANAGEMENT VLAN NUMBER>

5. Switch(config-if)# ip address <IP ADDRESS> <SUBNET MASK>

6. Switch(config-if)# description <DESCRIPTION>

SSH (Switch + Router)

1. Switch(config)# ip domain-name <DOMAIN NAME>

2. Switch(config)# username <USERNAME> privilege 15 secret <PASSWORD>

3. Switch(config)# crypto key generate rsa general-keys modulus 1024

4. Switch(config)# line vty 0 15

5. Switch(config-line)# transport input ssh

6. Switch(config-line)# login local

7. Switch(config-line)# exit

8. Switch(config)# ip ssh time-out <TIMEOUT>

Interface settings (Switch + Router)

1. Switch(config)# interface range f0/1-24, g0/1-2

2. Switch(config-if-range)# shutdown

3. Switch(config-if-range)# exit

4. Switch(config)# interface range f0/24, f0/A, f0/B …

5. Switch(config-if-range)# no shutdown

Access interfaces (Switch)

1. Switch(config)# interface range f0/X-Y, f0/Z

2. Switch(config-if-range)# description <DESCRIPTION>

3. Switch(config-if-range # switchport mode access

4. Switch(config-if-range)# switchport access vlan <VLAN NUMBER>

5. Switch(config-if-range)# spanning-tree cost <PORT COST>

6. Switch(config-if-range)# spanning-tree portfast

7. Switch(config-if-range)# spanning-tree bpduguard enable

8. Switch(config-if-range)# switchport port-security

9. Switch(config-if-range)# switchport port-security maximum <MAX MAC ADDRESSES>

10. Switch(config-if-range)# switchport port-security violation <RESPONSE>

11. Switch(config-if-range)# switchport port-security mac-address sticky

12. Switch(config-if-range)# switchport port-security mac-address <MAC ADDRESS>

Trunk interfaces + LACP (Switch)

1. Switch(config)# interface range f0/X-Y, f0/Z

2. Switch(config-if)# description <DESCRIPTION>

3. Switch(config-if)# Switchport mode trunk

4. Switch(config-if)# Switchport trunk native vlan <NATIVE VLAN>

5. Switch(config-if)# channel-group <CHANNEL ID> mode active

Spanning Tree (Switch)

1. Switch(config)# spanning-tree mode rapid-pvst

2. Switch(config)# spanning-tree vlan X, Y, Z root primary

3. Switch(config)# spanning-tree vlan X, Y, Z root secondary

4. Switch(config)# spanning-tree vlan X, Y, Z priority <4096 \*N>

Link Aggregation PAGP (Switch)

1. Switch(config)# interface range f0/X-Y, f0/Z

2. Switch(config-if-range)# channel-group <CHANNEL ID> mode desirable

3. Switch(config-if-range)# exit

4. Switch(config)# interface port-channel <CHANNEL ID>

5. Switch(config-if)# switchport mode trunk

6. Switch(config-if)# switchport trunk native vlan <NATIVE VLAN>

Loopback Interface X (Router)

1. Router (config)# interface loX

2. Router (config-subif)# description <DESCRIPTION>

3. Router (config-subif)# ip address <IP ADDRESS> <SUBNET MASK>

Router Sub-Interface V on interface X (Router)

1. Router# configure terminal

2. Router (config)# interface g0/0/X

3. Router (config-if)# no shutdown

4. Router (config-if)# exit

5. Router (config)# interface g0/0/X.V

6. Router (config-subif)# description <DESCRIPTION>

7. Router (config-subif)# encapsulation dot1Q V

8. Router (config-subif)# ip address <IP ADDRESS> <SUBNET MASK>

Check settings (Switch + Router)

1. Switch# show ip ssh

2. Switch# show ip interface brief

3. Switch# show vlan

4. Switch# show interfaces trunk

Check settings (Switch)

1. Switch# show interfaces f0/X-Y, f0/Z switchport

2. Switch# show spanning-tree

3. Switch# show mac address-table

4. Switch# show port-security

5. Switch# show spanning-tree

6. Switch# show etherchannel summary

Check settings (Router)

1. Router# show ip route