

Network Design and Implementation – Tests

Device Commands

◇ All Routers (except CME)

- show ip interface brief
- show ip ospf neighbor
- show ip route

◇ Edge Router

- show ip nat translations
- show crypto ipsec sa
- IPSec VPN Test

Using Wireshark, verify ESP (Encapsulating Security Payload) traffic is seen on interface G0/1 of the Edge router.

◇ Router R1

- show ip dhcp binding

◇ Router R2

- show ip dhcp binding
- show crypto ipsec sa

◇ CME Router

- show ip interface brief
- show ephone

◇ All Switches

- show vlan brief
- show interface trunk

Montreal Site

♦ Ubuntu-IT-PC1

- Verify IP is in VLAN 10
- ping 8.8.8.8
- telnet 10.240.192.2 80
GET / HTTP/1.1
Host: 10.240.192.2
(Click on Enter twice) *You should see the index.html of the Alma Linux Web Server*
- SSH test:
Edge → ssh -oKexAlgorithms=+diffie-hellman-group14-sha1 -oHostKeyAlgorithms=+ssh-rsa atohme@10.240.128.1
R1 → ssh -oKexAlgorithms=+diffie-hellman-group14-sha1 -oHostKeyAlgorithms=+ssh-rsa atohme@10.240.255.1
SW1 → ssh -oKexAlgorithms=+diffie-hellman-group14-sha1 -oHostKeyAlgorithms=+ssh-rsa atohme@10.240.255.2
SW2 → ssh -oKexAlgorithms=+diffie-hellman-group14-sha1 -oHostKeyAlgorithms=+ssh-rsa atohme@10.240.255.3
HQ → ssh -oKexAlgorithms=+diffie-hellman-group14-sha1 -oHostKeyAlgorithms=+ssh-rsa atohme@209.100.78.2
R2 → ssh -oKexAlgorithms=+diffie-hellman-group14-sha1 -oHostKeyAlgorithms=+ssh-rsa atohme@60.100.78.1

♦ Ubuntu-HR-PC1

- Verify IP is in VLAN 30
- ping 8.8.8.8
- SSH test: ssh -oKexAlgorithms=+diffie-hellman-group14-sha1 atohme@10.240.128.1
(Should fail)

♦ Ubuntu-Sales-PC1

- Verify IP is in VLAN 20
- ping 8.8.8.8
- SSH test: ssh -oKexAlgorithms=+diffie-hellman-group14-sha1 atohme@10.240.128.1
(Should fail)

◇ IP-PHONE-1

- Check if connected and registered in Cisco Communicator with an extension.
- Access web: <http://10.240.192.2>

Toronto Site

◇ Ubuntu-HR-PC2

- Verify IP is in VLAN 30
- ping 8.8.8.8
- Ping **Ubuntu-HR-PC1**
- telnet 10.240.192.2 80
GET / HTTP/1.1
Host: 10.240.192.2
(Click on Enter twice)
You should see the index.html of the Alma Linux Web Server
- SSH test:

ssh -oKexAlgorithms=+diffie-hellman-group14-sha1 atohme@10.240.128.1
(Should fail)

◇ IP-PHONE-2

- Check registration in Cisco Communicator
- Call extension of **IP-PHONE-1**
- Access web: <http://10.240.192.2>

GNS3 VM / External NAT Test

- Connect to GNS3 VM via SSH
- Test the NAT rule on the router Edge that allow HTTP access from the Internet.

telnet 192.168.122.197 80 (*Where 192.168.122.197 is the IP of Edge router G0/0*)

GET / HTTP/1.1
Host: 10.240.192.2
(Click on Enter twice)
You should see the index.html of the Alma Linux Web Server