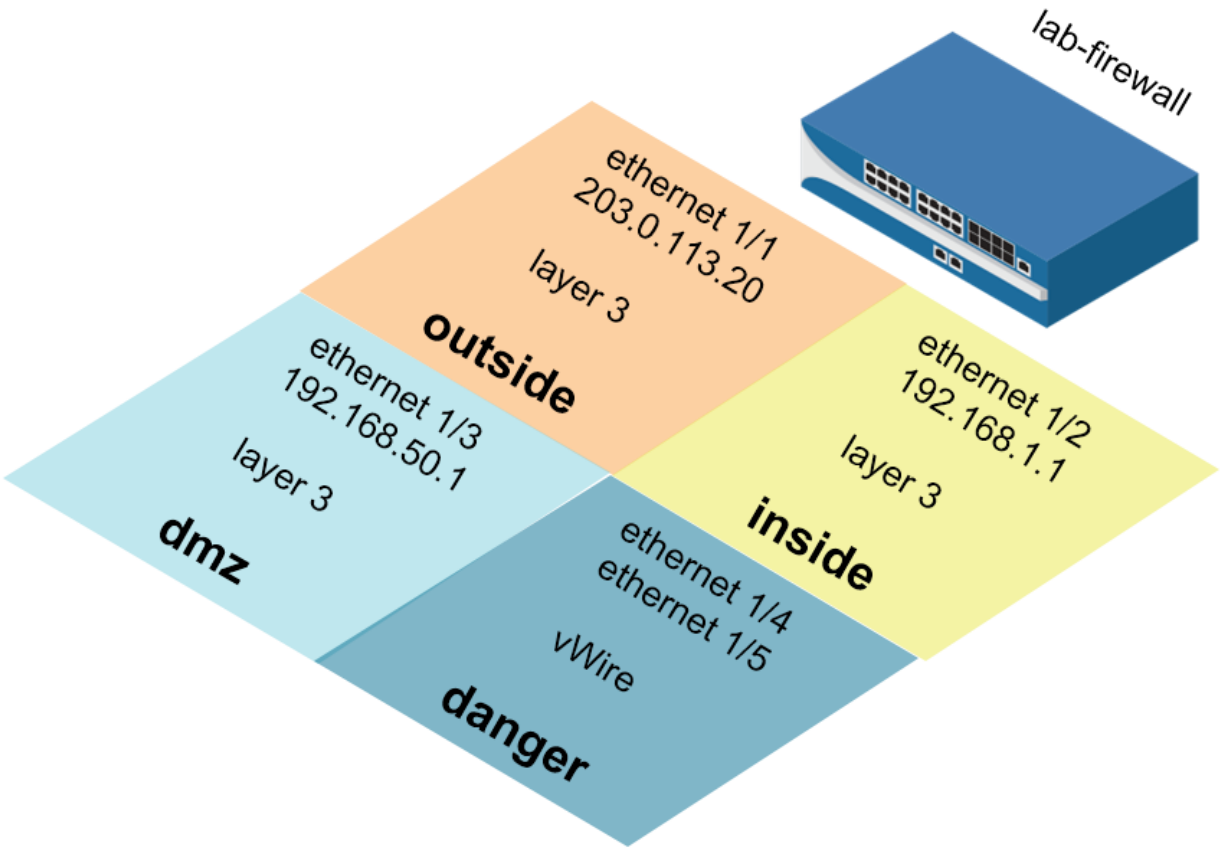
2. Lab: Interface Configuration

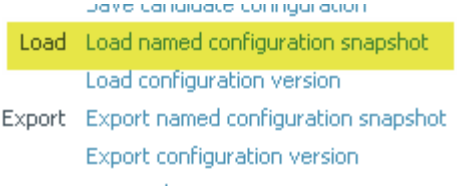


Lab Objectives

- Create Security zones two different ways and observe the time saved.
- Create Interface Management Profiles to allow ping and responses pages.
- Configure Ethernet interfaces to observe DHCP client options and static configuration.
- Create a virtual router and attach configured Ethernet interfaces.
- Test connectivity with automatic default route configuration and static configuration.

2.0 Load Lab Configuration

1. In the WebUI select **Device > Setup > Operations**.
2. Click **Load named configuration snapshot**:



3. Select **edu-210-lab-02** and click **OK**.
4. Click **Close**.
5. Commit all changes.

2.1 Create New Security Zones

Security zones are a logical way to group physical and virtual interfaces on the firewall in order to control and log the traffic that traverses your network through the firewall. An interface on the firewall must be assigned to a Security zone before the interface can process traffic. A zone can have multiple interfaces of the same type (for example, Tap, Layer 2, or Layer 3 interfaces) assigned to it, but an interface can belong to only one zone.

1. Select **Network > Zones**. Zones
2. Click Add to create a new zone. The Zone configuration window opens.
3. Configure the following:

Parameter	Value
Name	`outside`
Type	**Layer3**

4. Click **OK** to close the Zone configuration window. The outside zone is the only zone created in this task. You will add an Ethernet interface to this zone in a later lab step.

2.2 Create Interface Management Profiles

An Interface Management Profile protects the firewall from unauthorized access by defining the services and IP addresses that a firewall interface permits. You can assign an Interface Management Profile to Layer 3 Ethernet interfaces (including subinterfaces) and to logical interfaces (Aggregate, VLAN, Loopback, and Tunnel interfaces).

1. Select **Network > Network Profiles > Interface Mgmt**. Interface Mgmt
2. Click Add to open the Interface Management Profile configuration window.
3. Configure the following:

Parameter	Value
Name	`ping-response-pages`
Permitted Services	☑ Ping ☑ Response Pages

4. Click **OK** to close the Interface Management Profile configuration window.

5. Click 

to create another Interface Management Profile.
6. Configure the following:

Parameter	Value
Name	`ping`
Permitted Services	

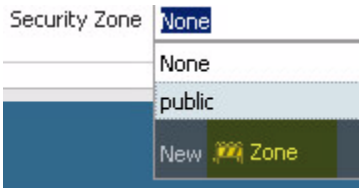
7. Click **OK** to close the Interface Management Profile configuration window.

2.3 Configure Ethernet Interfaces

1. Select **Network > Interfaces > Ethernet**.
2. Click to open **ethernet1/2**.
3. Configure the following:

Parameter	Value
Comment	`inside interface`
Interface Type	**Layer3**
Virtual Router	**None**

4. Click the **Security Zone** drop-down list and select **New Zone**:



The Zone configuration window opens.

5. Configure the following:

Parameter	Value
Name	`inside`
Type	Select **Layer3**

6. Click **OK** to close the Zone configuration window.
7. Click the Ethernet Interface **IPv4** tab.
8. Configure the following:

Parameter	Value
Type	**Static**
IP	Click **Add** and type `192.168.1.1/24`

9. Click the **Advanced** tab.
10. Click the **Management Profile** drop-down list and select **ping-response-pages**.
11. Click **OK** to close the Ethernet Interface configuration window.
12. Click to open **ethernet1/3**.
13. Configure the following:

Parameter	Value
Comment	`dmz interface`
Interface Type	**Layer3**
Virtual Router	**None**

14. Click the **Security Zone** drop-down list and select **New Zone**. The Zone configuration window opens.
15. Configure the following:

Parameter	Value
Name	`dmz`
Type	**Layer3** should be selected

16. Click **OK** to close the Zone configuration window.
17. Click the **IPv4** tab.
18. Configure the following:

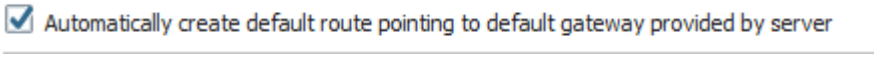
Parameter	Value
Type	**Static**
IP	Click **Add** and type `192.168.50.1/24`

19. Click the **Advanced** tab.
20. Click the **Management Profile** drop-down list and select **ping**.
21. Click **OK** to close the Ethernet Interface configuration window.
22. Click to open **ethernet1/1**.
23. Configure the following:

Parameter	Value
Comment	`outside interface`
Interface Type	**Layer3**
Virtual Router	**None**
Security Zone	**outside**

24. Click the **IPv4** tab and configure the following:

Parameter	Value
Type	**DHCP Client**

Note the 

option. This option will automatically install a default route based on DHCP-option 3.

25. Click **OK** to close the Ethernet Interface configuration window.
26. Click to open **ethernet1/4**.
27. Configure the following:

Parameter	Value
Comment	`vWire danger`
Interface Type	**Virtual Wire**
Virtual Wire	**None**

28. Click the **Security Zone** drop-down list and select **New Zone**. The Zone configuration window opens.
29. Configure the following:

Parameter	Value
Name	`danger`
Type	**Virtual Wire** should be selected

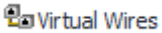
30. Click **OK** twice to close the Zone and Ethernet Interface configuration windows.
31. Click to open **ethernet1/5**.
32. Configure the following:

Parameter	Value
Comment	`vWire danger`
Interface Type	**Virtual Wire**
Virtual Wire	**None**
Security Zone	**danger**

33. Click **OK** to close the Ethernet Interface configuration window.

2.4 Create a Virtual Wire

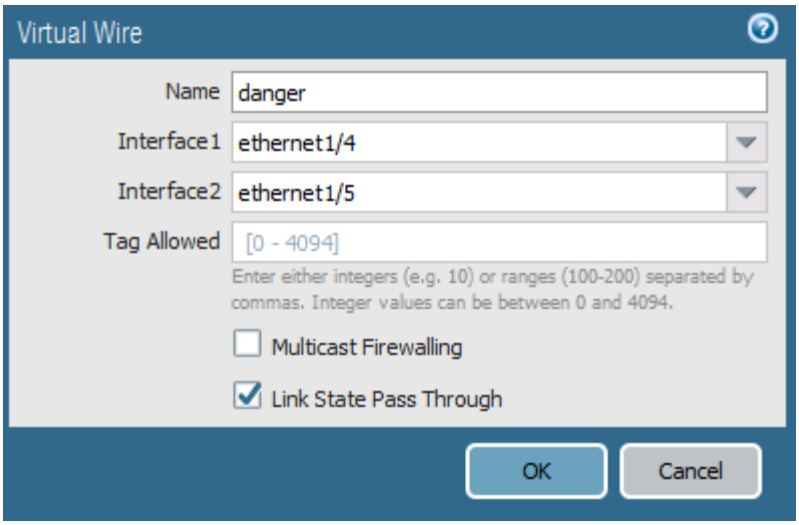
A virtual wire interface binds two Ethernet ports together. A virtual wire interface allows all traffic or just selected VLAN traffic to pass between the ports. No other switching or routing services are available.

1. Select **Network > Virtual Wires**. 

2. Click 

and configure the following:

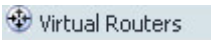
Parameter	Value
Name	`danger`
Interface 1	**ethernet1/4**
Interface 2	**ethernet1/5**



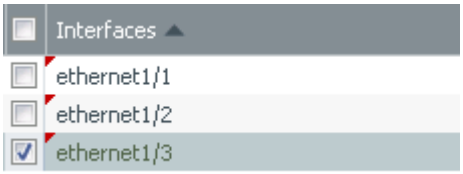
3. Click **OK**.

2.5 Create a Virtual Router

The firewall requires a virtual router to obtain routes to other subnets either using static routes that you manually define, or through participation in Layer 3 routing protocols that provide dynamic routes.

1. Select **Network > Virtual Routers**. 

2. Click the **default** virtual router.
3. Rename the default router `lab-vr`.
4. **Add** the following interfaces: **ethernet1/1**, **ethernet1/2**, and **ethernet1/3**.

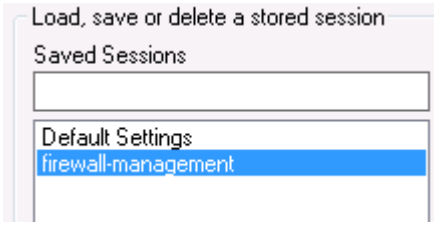


Note: This step also can be completed via each Ethernet Interface configuration window.

5. Click **OK**.
6. Commit all changes.

2.6 Test Connectivity

1. Open **PuTTY** from the Windows desktop.
2. Double-click **firewall-management**:



3. Log in using the following information:

Parameter	Value
Name	`admin`
Password	`admin`

4. Enter the command `ping source 203.0.113.21 host 8.8.8.8`.
   Because a default route was automatically installed, you should be getting replies from 8.8.8.8:

```
admin@PA-VM> ping source 203.0.113.21 host 8.8.8.8
PING 8.8.8.8 (8.8.8.8) from 203.0.113.21 : 56(84) bytes of data.
64 bytes from 8.8.8.8: icmp_seq=1 ttl=53 time=18.1 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=53 time=17.0 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=53 time=16.1 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=53 time=14.5 ms
```

5. On the lab environment Windows desktop, open a command-prompt window.
6. Type the command `ping 192.168.1.1`:

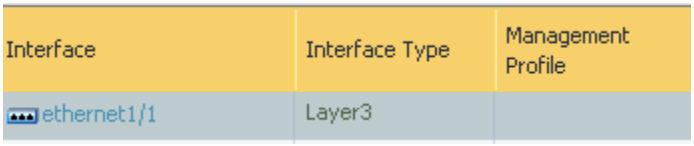
```
C:\Windows\System32>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.1: bytes=32 time=26ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Reply from 192.168.1.1: bytes=32 time=6ms TTL=64
Reply from 192.168.1.1: bytes=32 time=31ms TTL=64
```

7. Verify that you get a reply before proceeding.
8. Close the command-prompt window.

2.7 Modify Outside Interface Configuration

1. Select **Network > Interfaces > Ethernet**.
2. Select but, do not open: **ethernet1/1**.

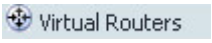


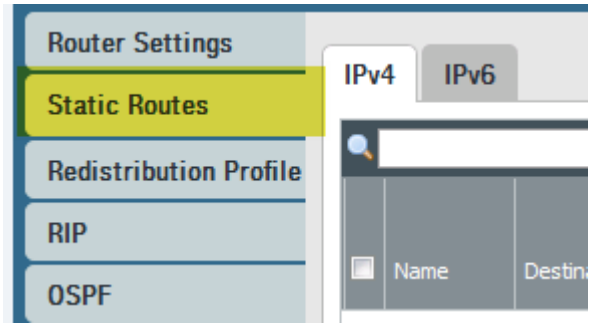
3. Click  then click **Yes**.
4. Click and open **ethernet 1/1**.
5. Configure the following:

Parameter	Value
Comment	`outside interface`
Interface Type	**Layer3**
Virtual Router	**lab-vr**
Security Zone	**outside**

6. Click the **IPv4** tab and configure the following:

Parameter	Value
Type	**Static**
IP	`203.0.113.20/24`

7. Click **OK** to close the Ethernet Interface configuration window.
8. Select **Network > Virtual Routers**. 
9. Click to open the **lab-vr** virtual router.
10. Click the **Static Routes** vertical tab:



11. Click  to configure the following static route:

Parameter	Value
Name	`default-route`
Destination	`0.0.0.0/0`
Interface	**ethernet1/1**
Next Hop	**IP Address**
Next Hop IP Address	`203.0.113.1`

12. Click **OK** to add the static route and then click **OK** again to close the Virtual Router – lab-vr configuration window.
13.  all changes.
14. Make the PuTTY window that was used to ping 8.8.8.8 the active window.
15. Type the command `ping source 203.0.113.20 host 8.8.8.8`.
    You should be able to successfully ping 8.8.8.8.

```
admin@PA-VM> ping source 203.0.113.20 host 8.8.8.8
PING 8.8.8.8 (8.8.8.8) from 203.0.113.20 : 56(84) bytes of data.
64 bytes from 8.8.8.8: icmp_seq=1 ttl=53 time=56.4 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=53 time=14.7 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=53 time=14.0 ms
```

16. Close the **PuTTY** window.

Stop. This is the end of the Interface Configuration lab.