PALO ALTO NETWORKS EDU 210

Lab 5: Configuring Security Policy Rules and NAT Rules

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Contents

Introduction

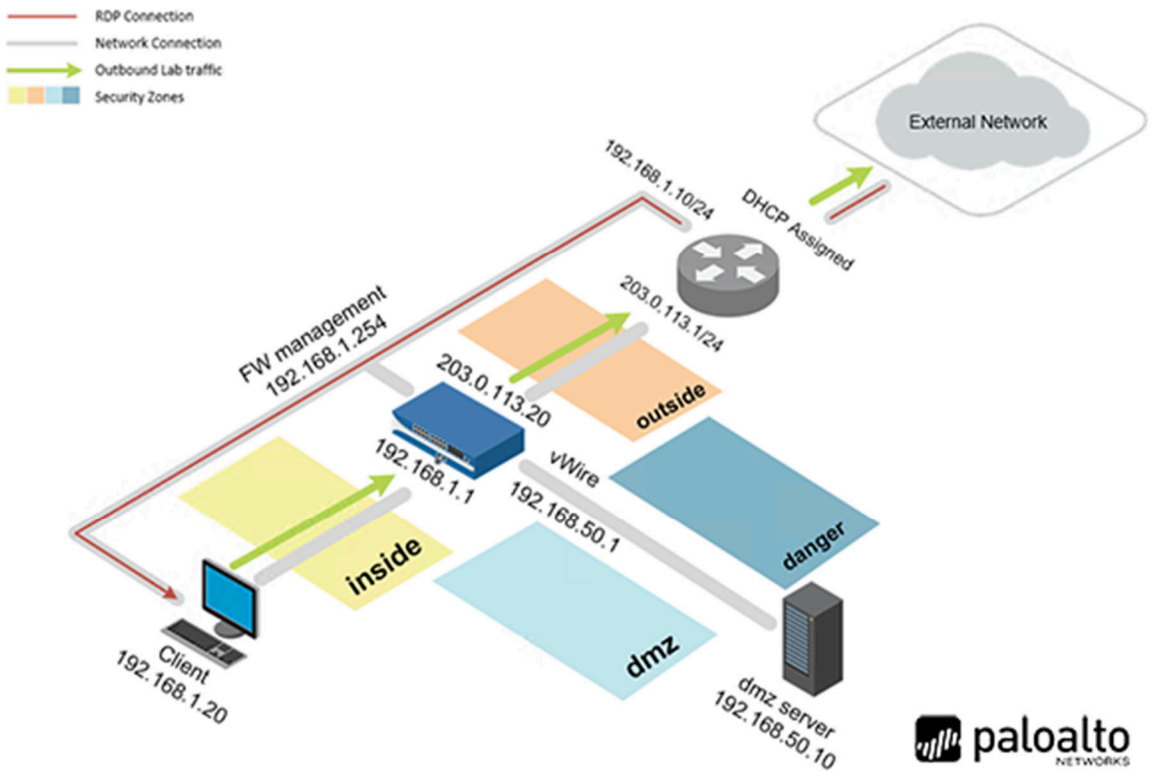
In this lab, you will allow network traffic from the Users_Net security zone to the Extranet security zone so that employees can access various business applications. You will create, modify, and test a security policy rule to allow access between these two zones. Once your rule is successfully in place, you will examine hit counters in the security policy rule table and examine the Traffic Log. Next, you will create security policy rules to allow hosts in your network to access the internet. You will then create source and destination NAT policy rules.

Objective

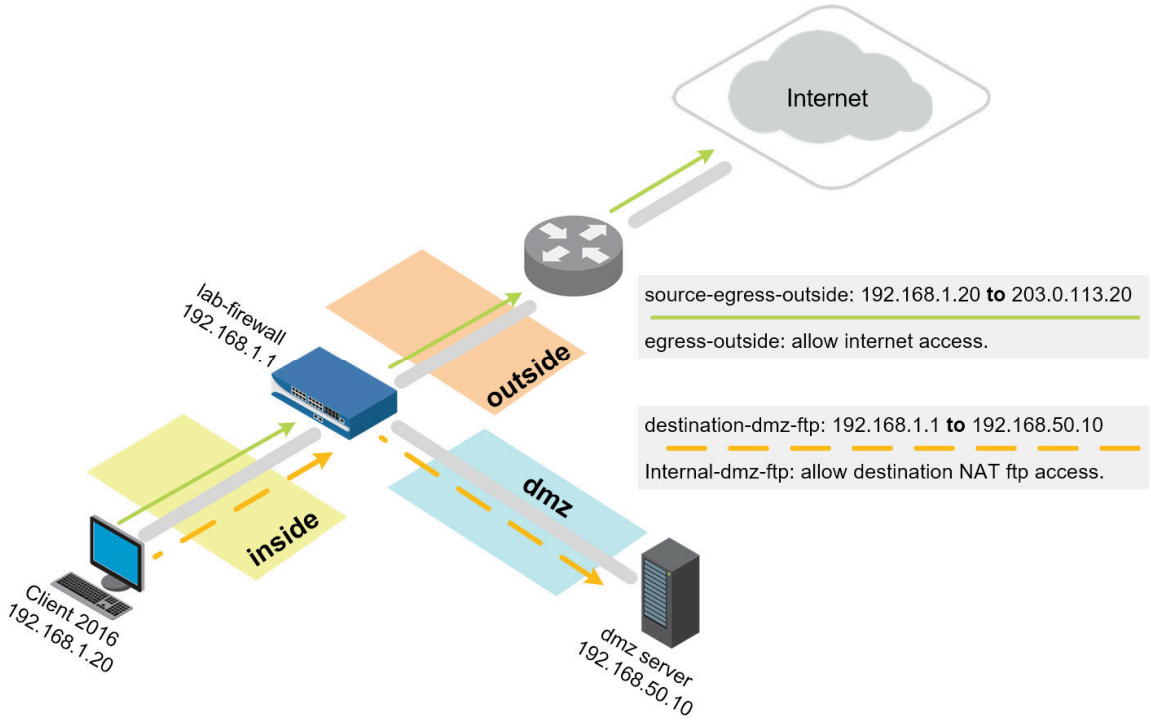
In this lab, you will perform the following tasks:

- Apply a baseline configuration to the firewall
- Create and test a security policy rule
- Modify security policy table columns
- Examine and reset the Rule Hit Count
- Examine the Traffic Log
- Create security rules for internet access
- Ping the internet host from the client
- Create source and destination NAT Policies

Lab Topology



Theoretical Lab Topology



Lab Settings

The information in the table below will be needed to complete the lab. The task sections below provide details on the use of this information.

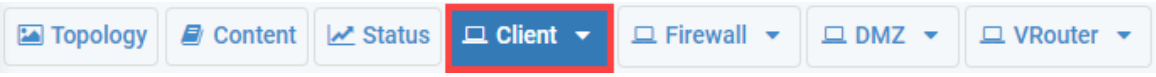
Virtual Machine	IP Address	Account (if needed)	Password (if needed)
Client	192.168.1.20	lab-user	**Pal0Alt0!**
DMZ	192.168.50.10	root	**Pal0Alt0!**
Firewall	192.168.1.254	admin	**Pal0Alt0!**
VRouter	192.168.1.10	root	**Pal0Alt0!**

1 Configuring Security Policy and NAT Rules

1.1 Apply a Baseline Configuration to the Firewall

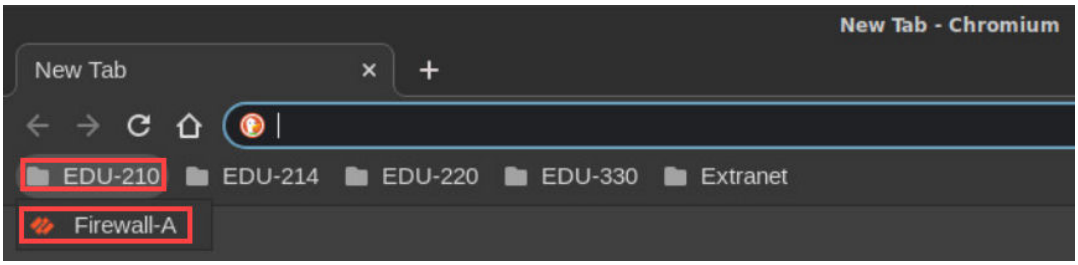
In this section, you will load the firewall configuration file.

1. Click on the **Client** tab to access the Client PC.

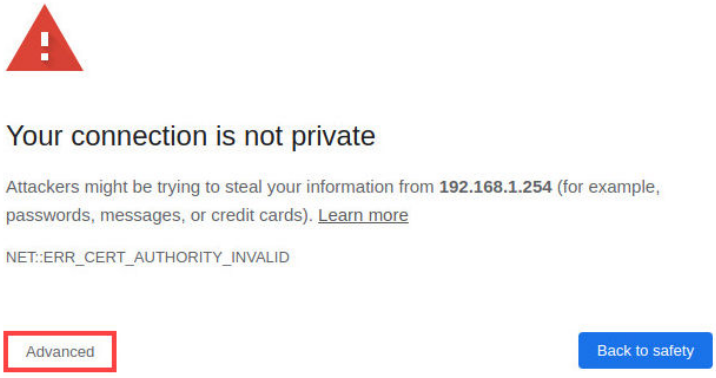


2. Double-click the **Chromium Web Browser** icon located on the desktop.

3. In the *Chromium* web browser, click on the **EDU-210** bookmark folder in the bookmarks bar and then click on **Firewall-A**.

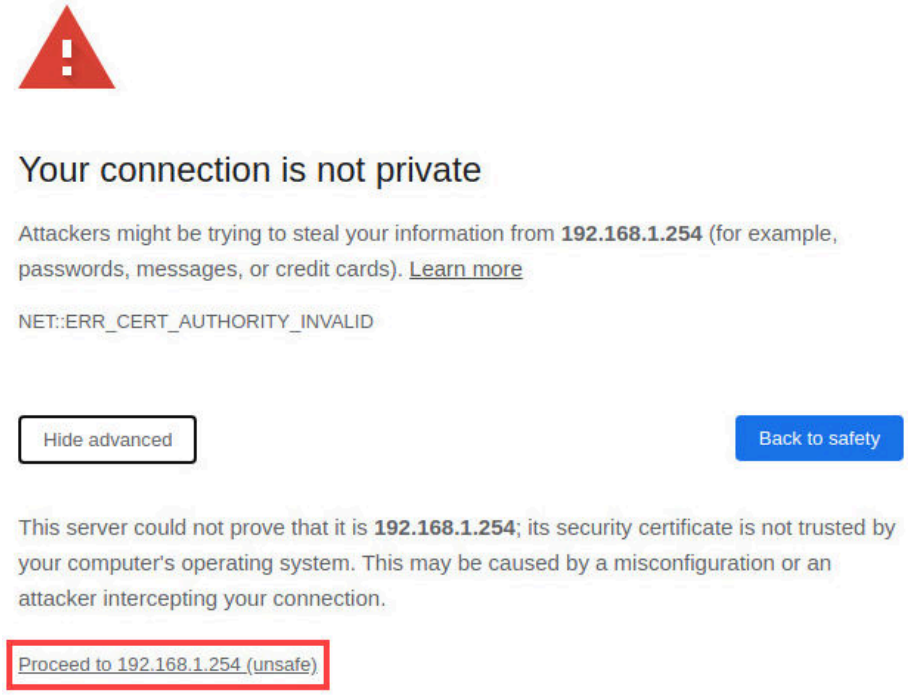


4. You will see a "*Your connection is not private*" message. Next, click on the **ADVANCED** link.



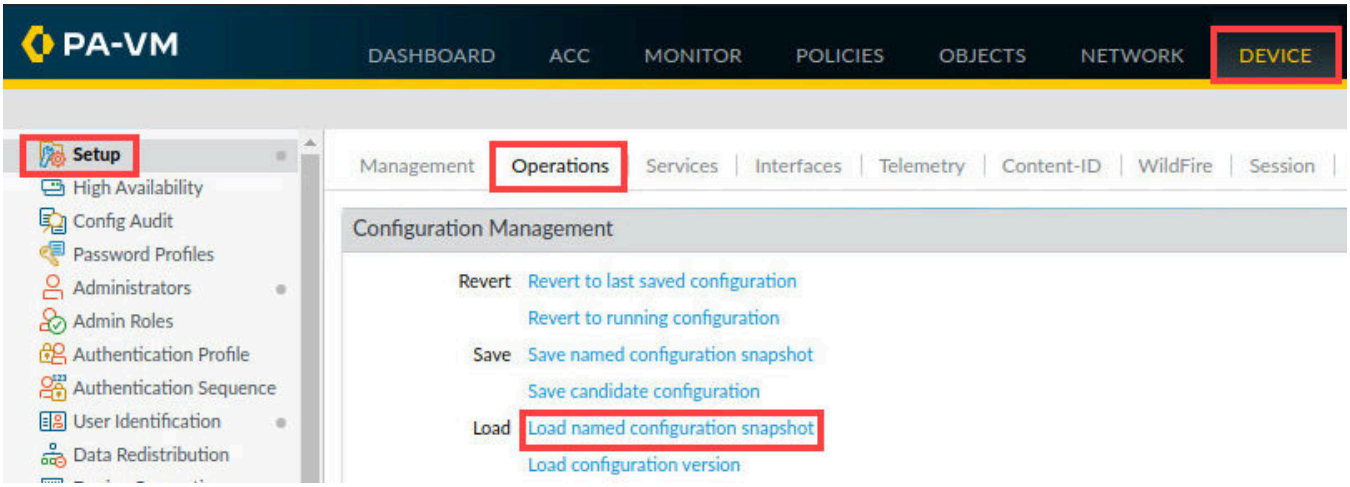
If you experience the “Unable to connect” or “502 Bad Gateway” message while attempting to connect to the specified IP above, please wait an additional 1-3 minutes for the Firewall to fully initialize. Refresh the page to continue.

5. Click on **Proceed to 192.168.1.254 (unsafe)**.

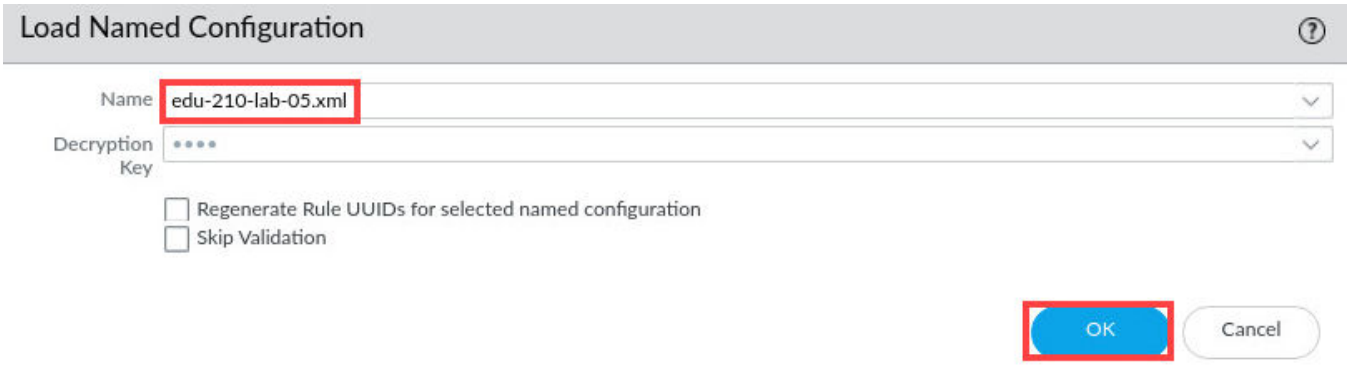


6. Log in to the firewall web interface as username **`admin`**, password **`Pal0Alt0!.`**

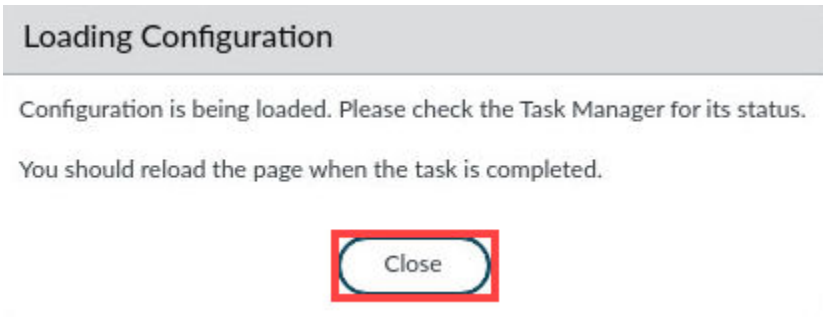
7. In the web interface, navigate to **Device > Setup > Operations** and click on **Load named configuration snapshot** underneath the *Configuration Management* section.



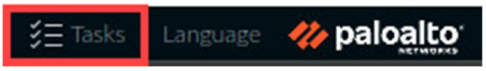
8. In the *Load Named Configuration* window, select **edu-210-lab-05.xml** from the *Name* dropdown box and click **OK**.



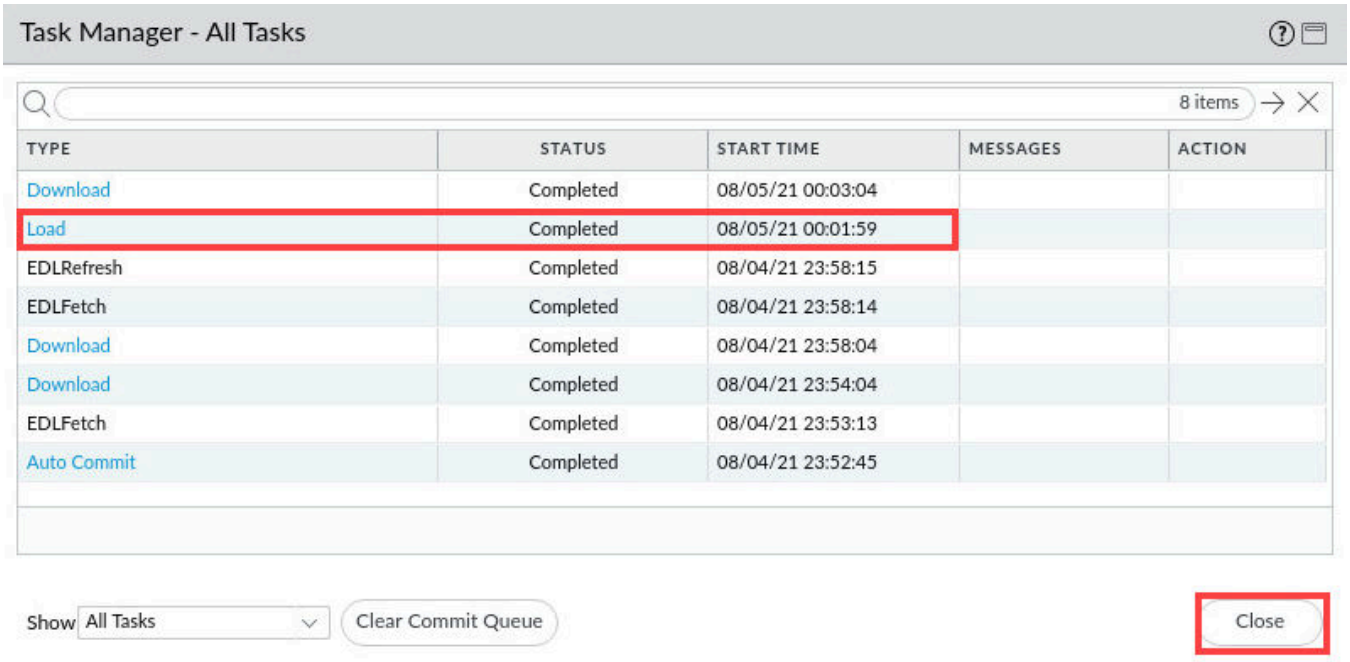
9. In the *Loading Configuration* window, a message will show *Configuration is being loaded. Please check the Task Manager for its status. You should reload the page when the task is completed.* Click **Close** to continue.



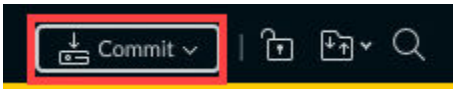
10. Click the **Tasks** icon located at the bottom-right of the web interface.



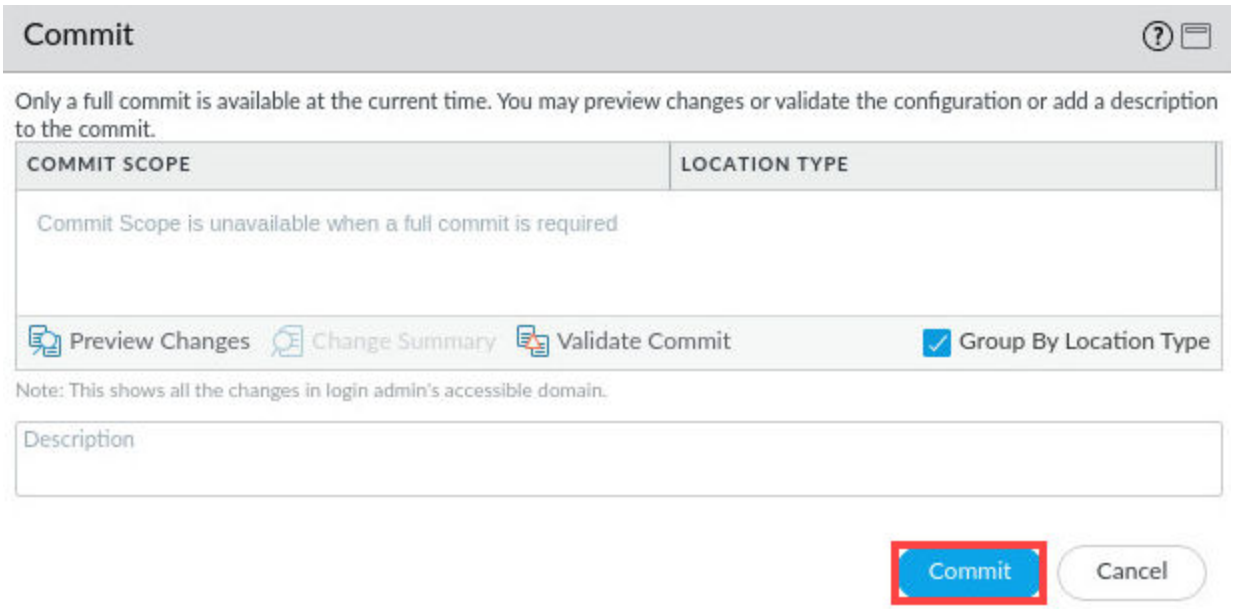
11. In the *Task Manager – All Tasks* window, verify the *Load* type has successfully completed. Click **Close**.



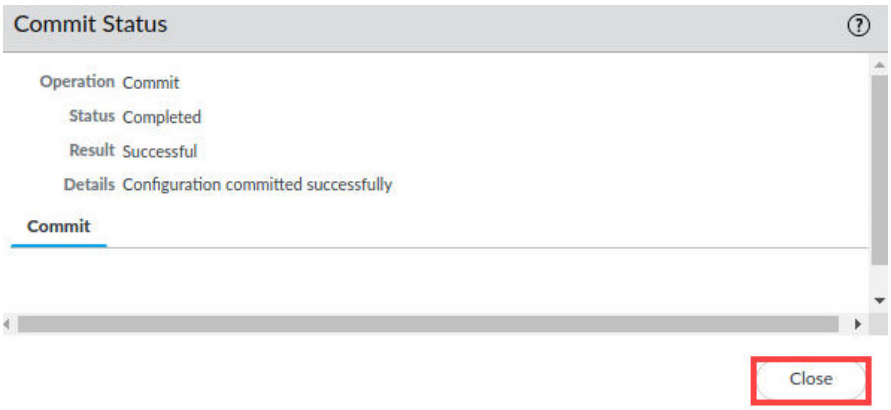
12. Click the **Commit** link located at the top-right of the web interface.



13. In the *Commit* window, click **Commit** to proceed with committing the changes.



14. When the *Commit* operation successfully completes, click **Close** to continue.



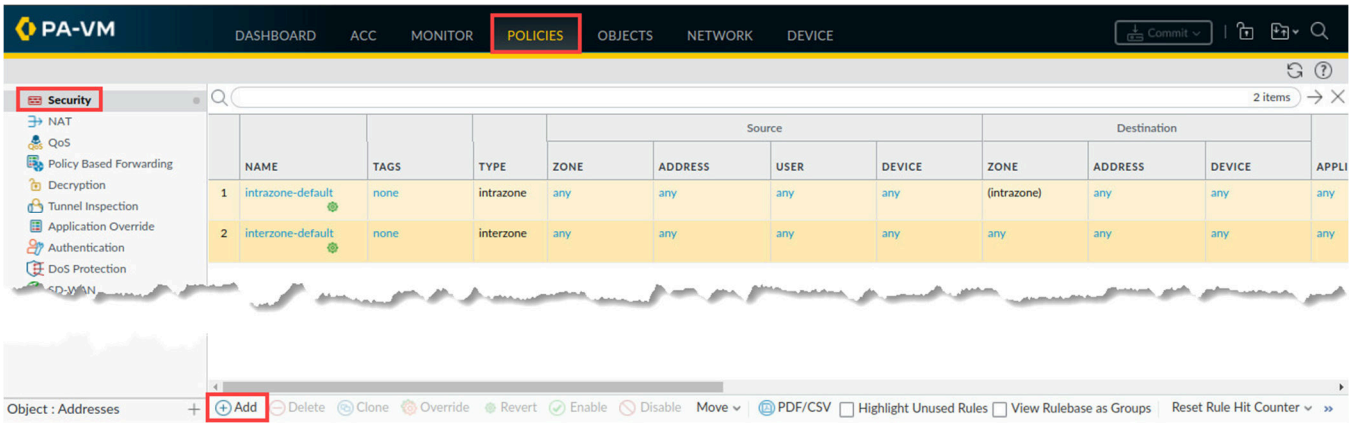
The commit process takes changes made to the firewall and copies them to the running configuration, which will activate all configuration changes since the last commit.

16. Leave the *Palo Alto Networks Firewall* open and continue to the next task.

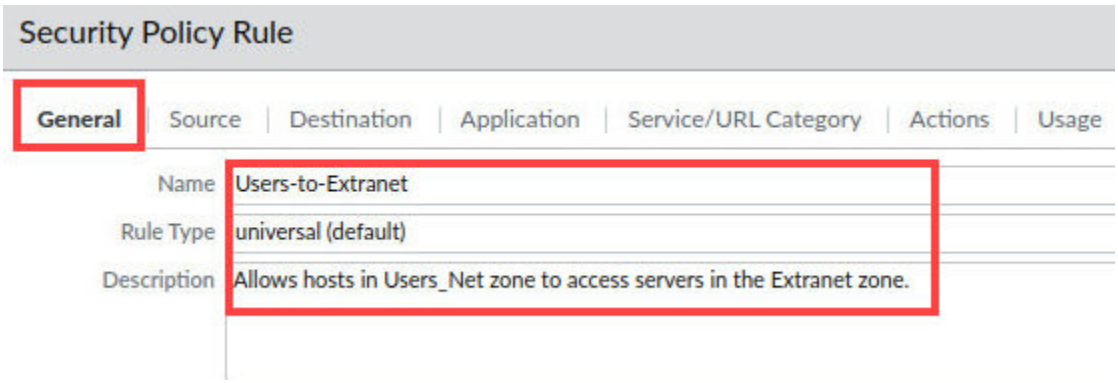
1.2 Create a Security Policy Rule

You need to allow network traffic from the Users_Net security zone to the Extranet security zone so that employees can access various business applications. In this section, you will create a security policy rule to allow access between these two zones

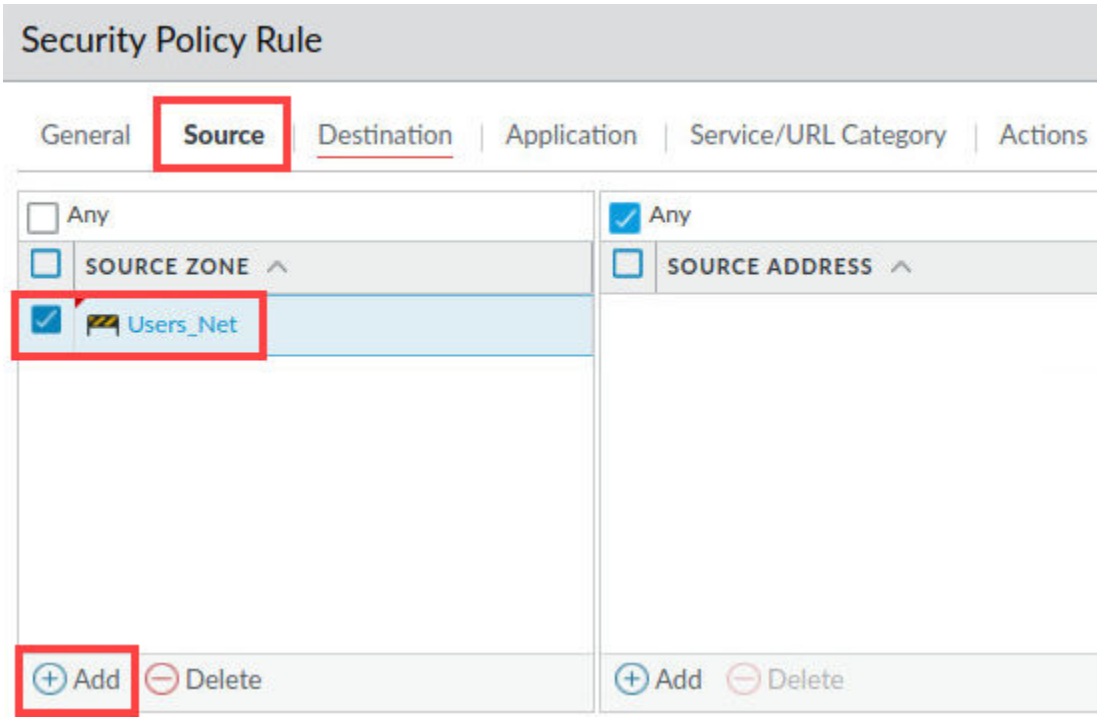
1. In the web interface, select **Policies > Security**. Click **Add**.



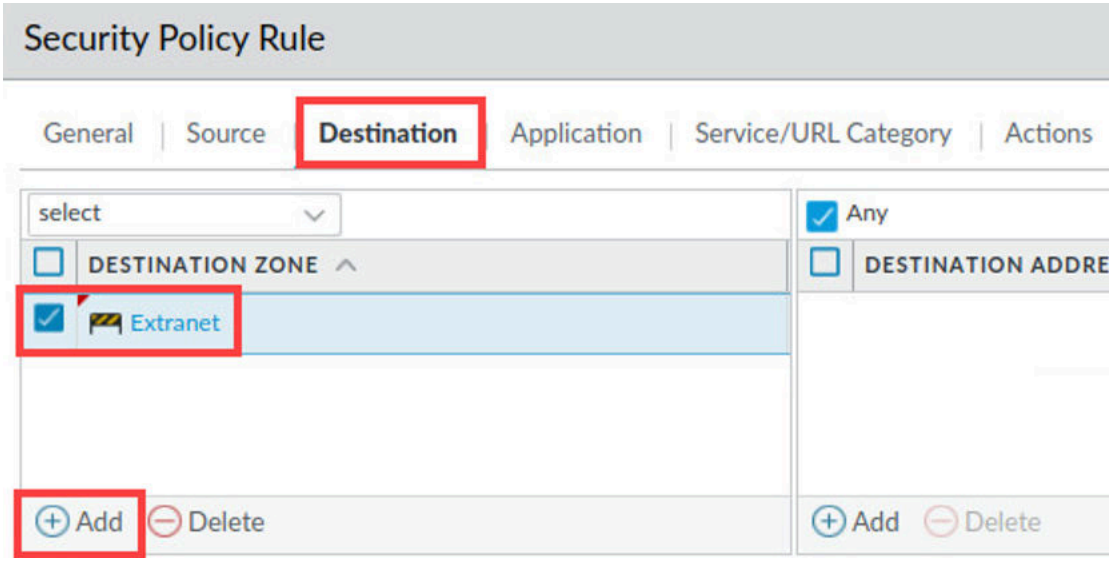
2. In the *Security Policy Rule* window, on the *General* tab. Type **`Users-to-Extranet`** for the N*ame*. For *Description*, enter **`Allows hosts in Users_Net zone to access servers in Extranet zone`**.



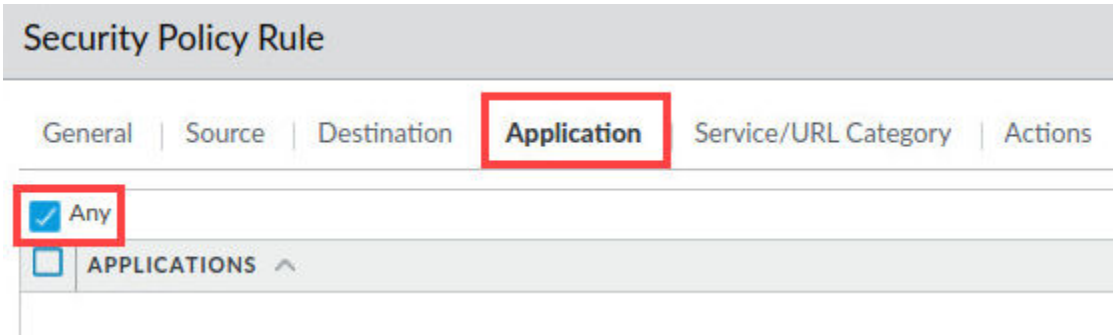
3. Select the **Source** tab. Under the *Source Zone* section, click **Add,** and select **Users_Net**.



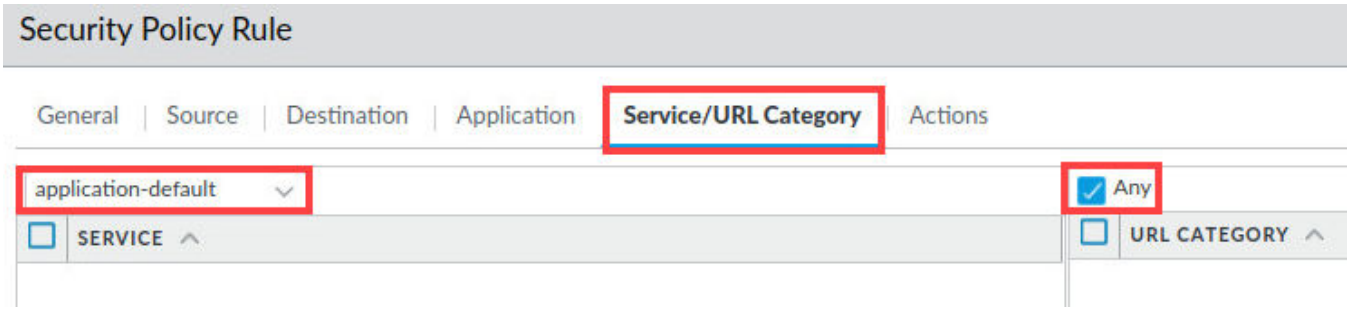
4. Select the **Destination** tab. Under the *Destination Zone* section, click **Add** and select **Extranet**.



5. Select the **Application** tab. Verify **Any** is selected for *Applications*.

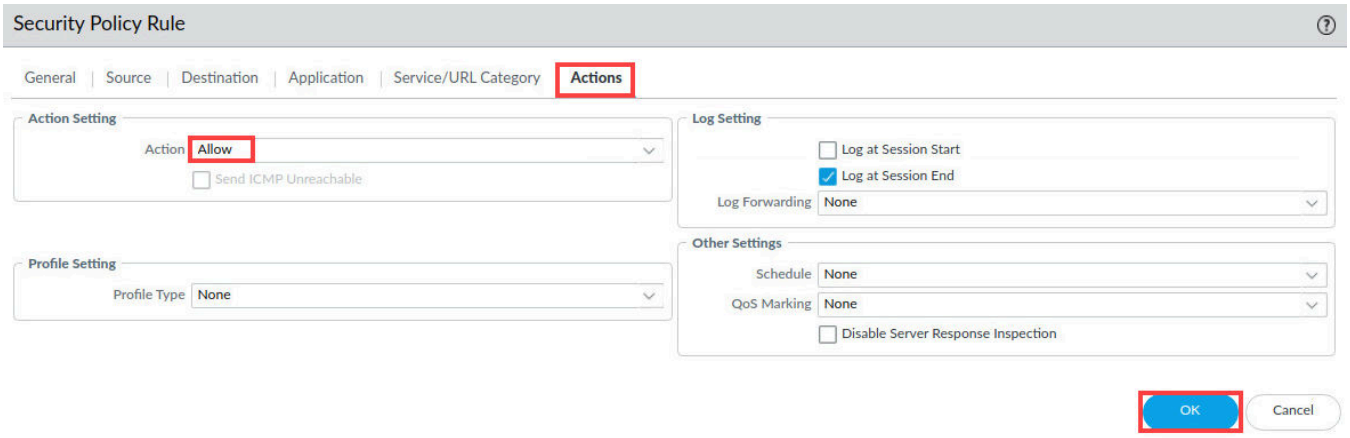


6. Select the **Service/URL Category** tab. Verify **Application Default** is selected for *Service,* and **Any** is selected for *URL Category.*



The application-default setting instructs the firewall to allow an application such as web-browsing as long as that application is using the predefined service (or destination port). For an application like web-browsing, the application default service is TCP 80; for an application such as SSL, the application default service is TCP 443.

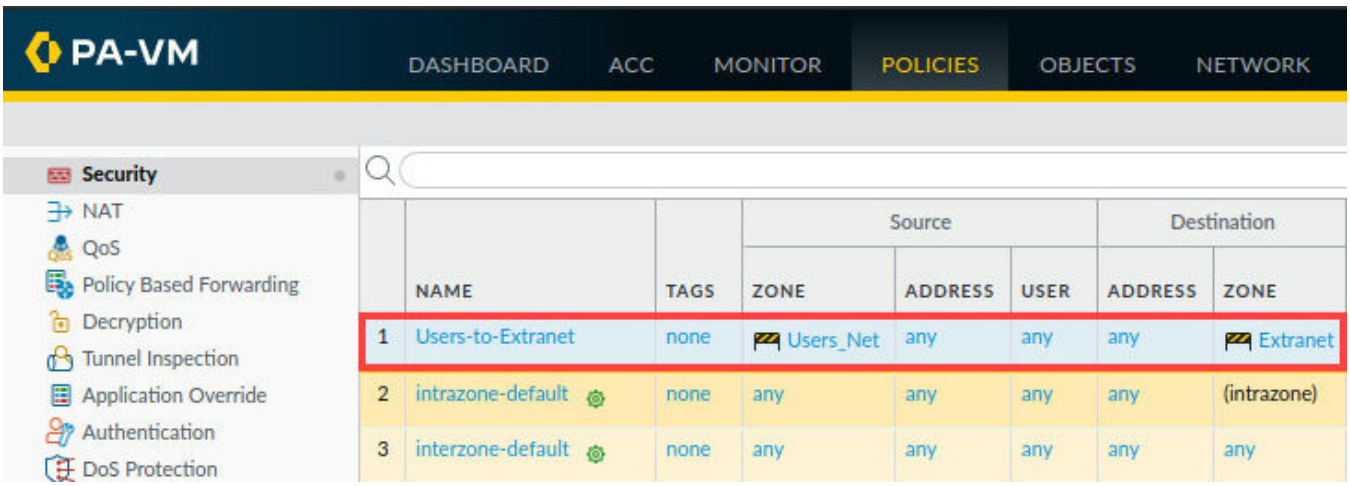
7. Select the **Actions** tab. Do not make any changes in this section but notice that the *Action* is set to **Allow** by default**.** Click **OK**.



Please Note

When you create a new security policy rule, the Action is automatically set to Allow. If you are creating a rule to block traffic, make sure you select the Actions tab and change the Action before you commit the rule.

8. Verify the *Users to Extranet* security policy rule appears in the *Security Policies* window.

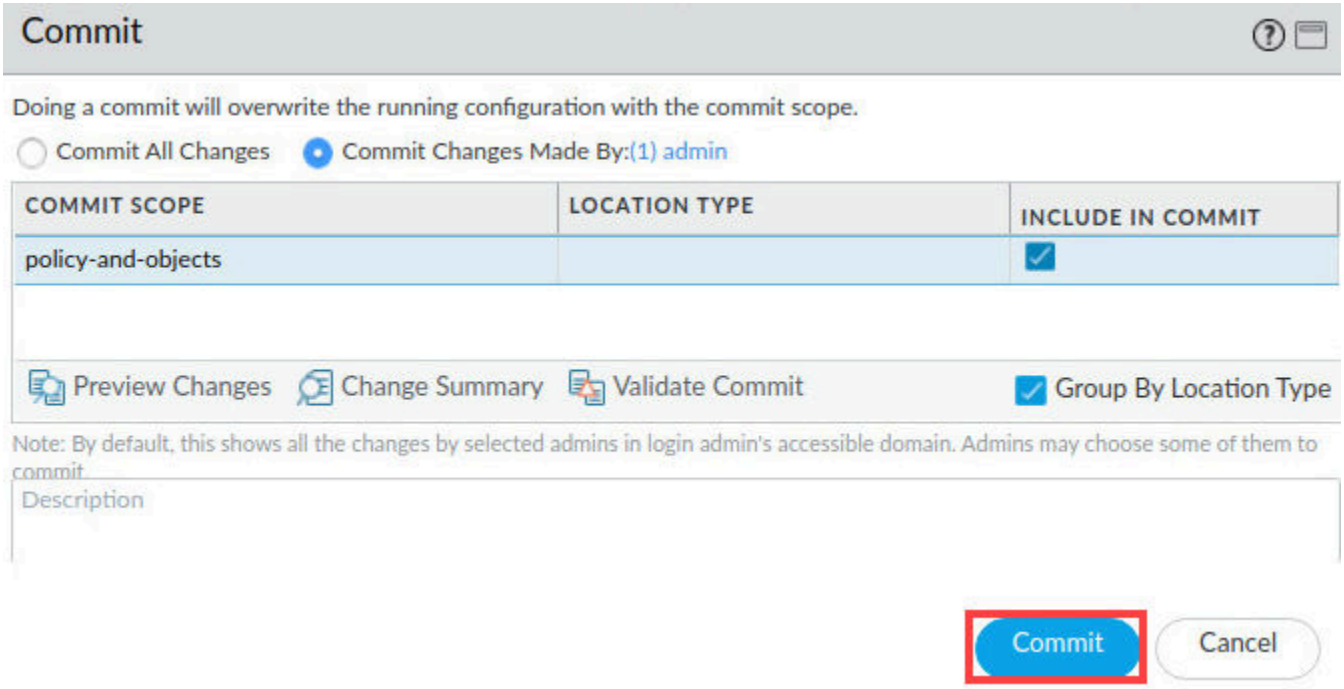


Please Note

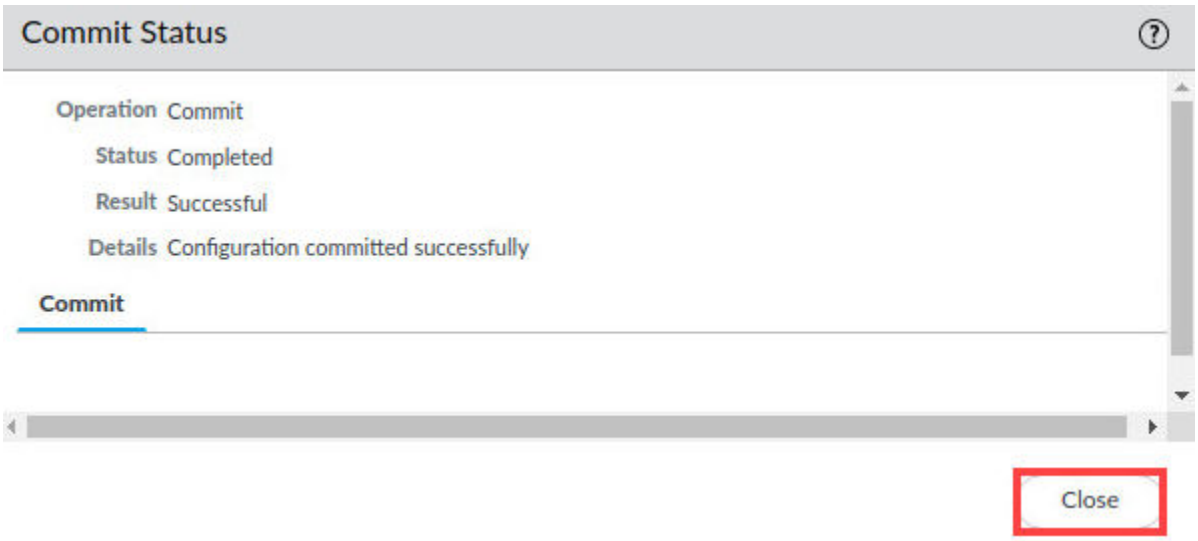
The rule appears above the two preconfigured entries intrazone-default and interzone-default. These two rules always appear at the bottom of the ruleset.

9. Click the **Commit** button at the upper-right of the web interface.

10. In the *Commit* window, click **Commit**.



11. Wait until the *Commit* process is complete. Click **Close**.

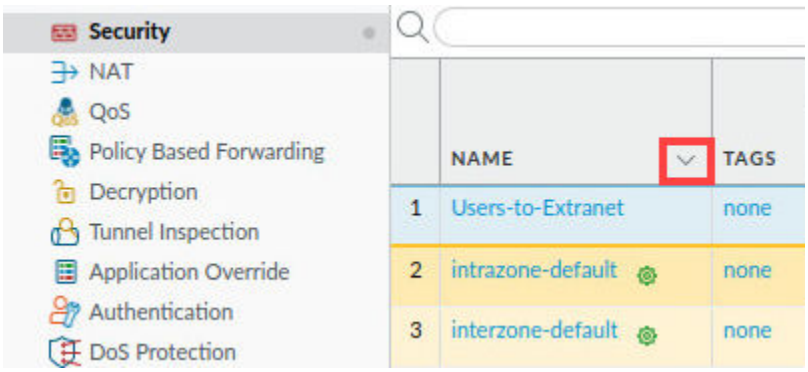


12. Leave the web interface open and continue to the next task.

1.3 Modify Security Policy Table Columns

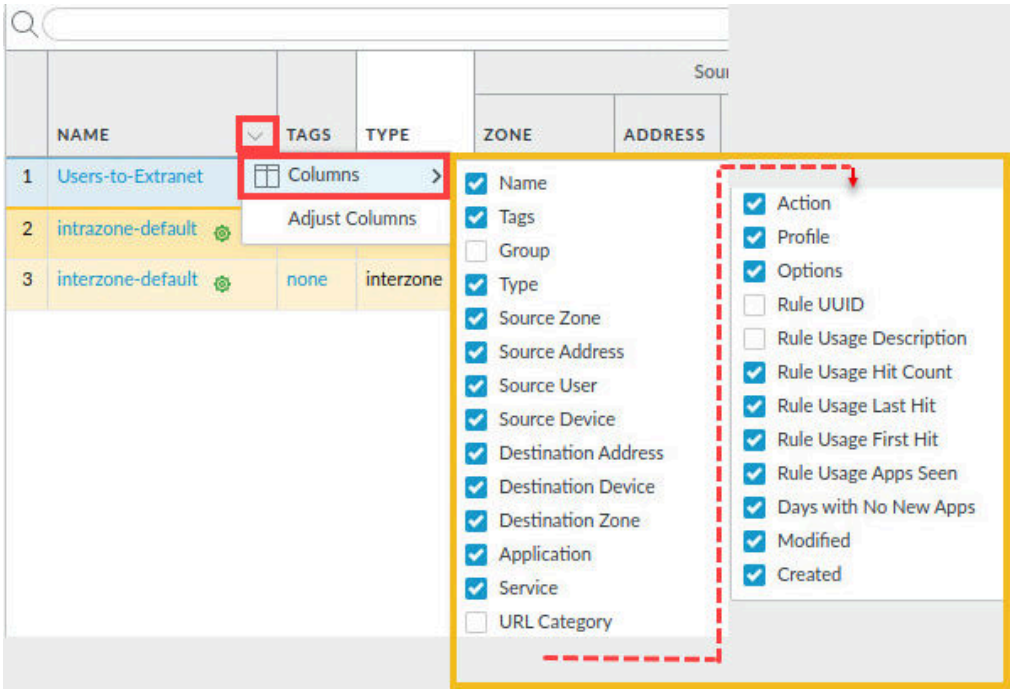
You can customize the information presented in the Security Policy table to fit your needs. In this section, you will hide some of the columns and display others that may be of more interest. You will also move columns around and use the Adjust Column feature.

1. In the *Security Policy* window, click the **small dropdown** icon next to the *Name* column in the *Security Policy* table. You may need to hover your pointer over the icon for it to appear.



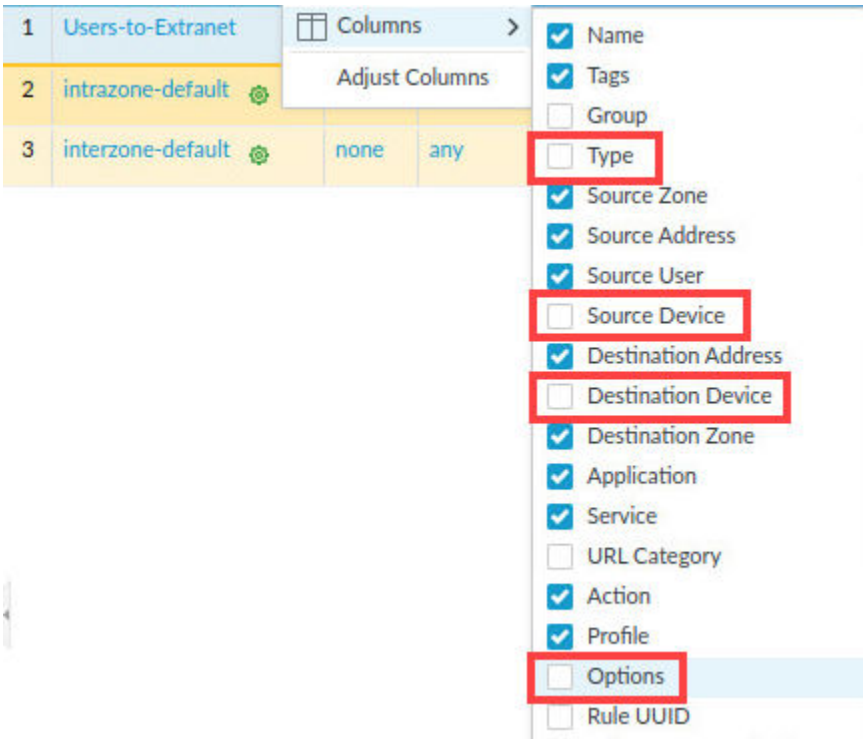
> **Please Note** This icon is available next to all column headers.

2. Choose **Columns** and note the available columns that you can hide or display in this table.



> **Please Note** Note that the column list in this image has been cropped and wrapped to make it clearer in the lab guide.

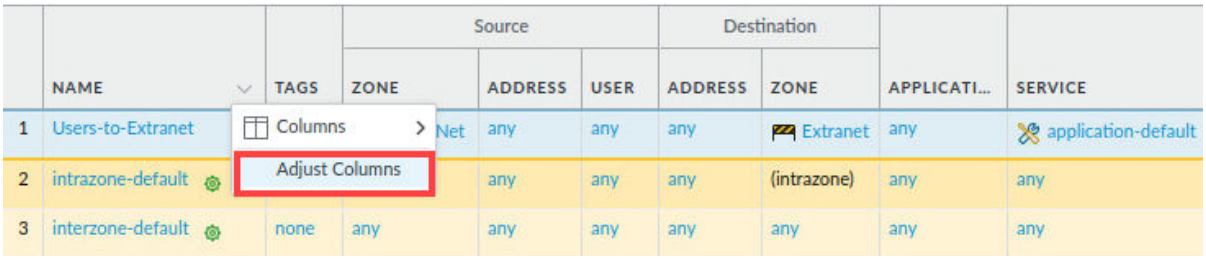
3. In the *Columns*, uncheck **Type**, **Source Device**, **Destination Device,** and **Options**.



Please Note

These changes are optional. You do not have to show or hide columns or rearrange items in any of the firewall tables. However, you may find that there are certain columns in certain tables that you never use, and you can hide them to provide more room in the table. You may also find that there are certain columns that you scan frequently, and you can move those to locations that are easier to see. You can use these same steps to show, hide or move columns in all firewall tables.

4. At the top of the *Name* column, click the **dropdown** icon again and choose **Adjust Columns**.



5. This action will resize the displayed columns to best fit in the browser window**.**

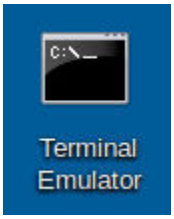
	NAME	TAGS	Source ZONE	Source ADDRESS	Source USER	Destination ADDRESS	Destination ZONE	APPLICATI...	SERVICE	ACTION	PROFILE	Rule Usage HIT COUNT	Rule Usage LAST HIT	Rule Usage FIRST HIT
1	Users-to-Extranet	none	Users_Net	any	any	any	Extranet	any	application-default	Allow	none	1166	2021-08-06 23:14:...	2021-08-06 22:49:...
2	intrazone-default	none	any	any	any	any	(intrazone)	any	any	Allow	none	2702	2021-08-06 23:11:...	2020-02-27 02:30:...
3	interzone-default	none	any	any	any	any	any	any	any	Deny	none	10594	2021-08-06 23:14:...	2020-02-27 19:18:...

6. Minimize the *PA-VM* firewall by clicking the **minimize** icon in the upper-right of the web interface and continue to the next task.

1.4 Test New Security Policy Rule

In this section, you will test the new security policy rule you created in a previous task.

1. Open the **Terminal Emulator** on the *client desktop*.



2. Issue the following command below to ensure your security policy rule is functioning correctly.

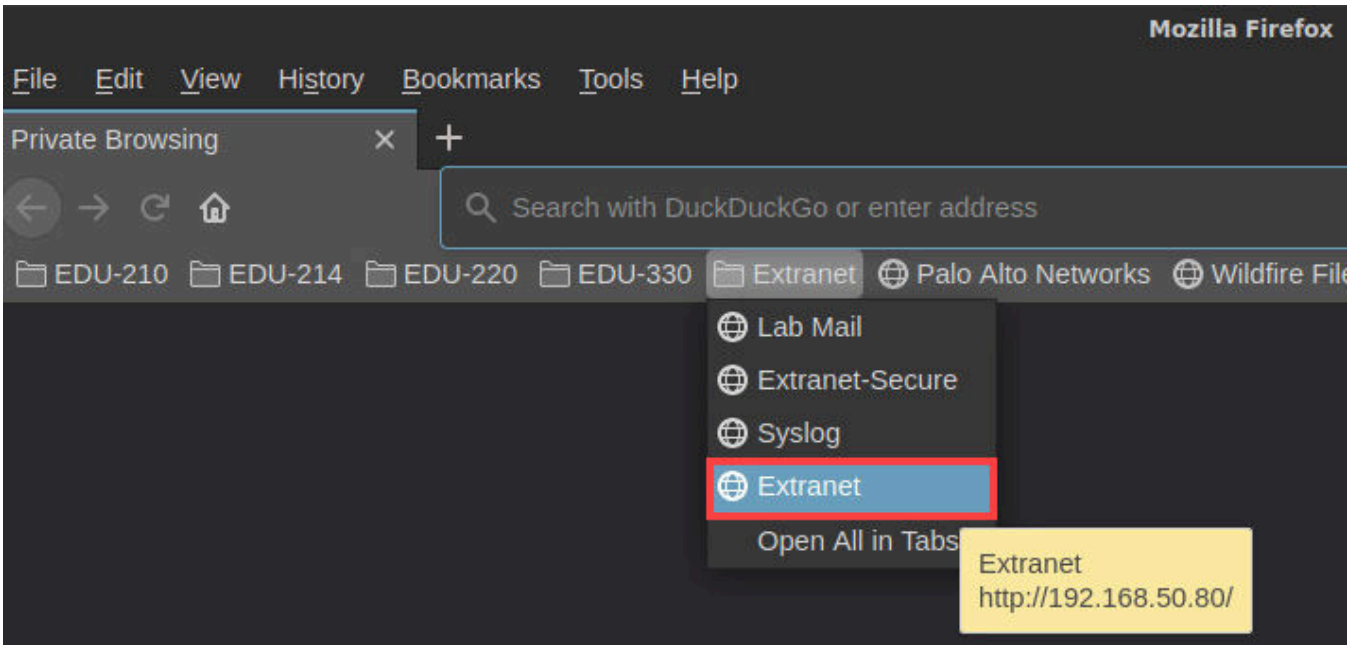
```
C:\home\lab-user\Desktop\Lab-Files> ping 192.168.50.80 <Enter>
```

3. Wait a few seconds and use **Ctrl+C** to stop the command. If you see a reply from 192.168.50.80, then your security policy rule is configured correctly! If not, review the previous steps and try this test again.

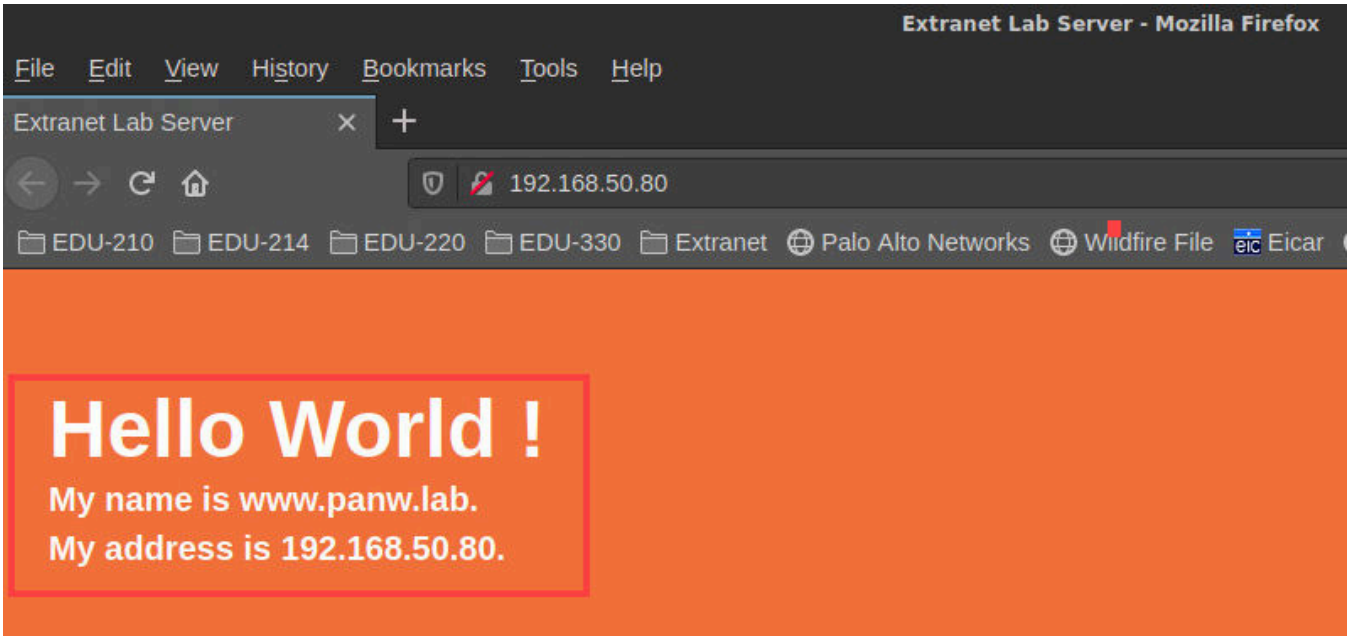
```
PING 192.168.50.80 (192.168.50.80) 56(84) bytes of data.
64 bytes from 192.168.50.80: icmp_seq=2 ttl=63 time=0.691 ms
64 bytes from 192.168.50.80: icmp_seq=3 ttl=63 time=0.703 ms
64 bytes from 192.168.50.80: icmp_seq=4 ttl=63 time=0.583 ms
^C
--- 192.168.50.80 ping statistics ---
4 packets transmitted, 3 received, 25% packet loss, time 3058ms
rtt min/avg/max/mdev = 0.583/0.659/0.703/0.053 ms
C:\home\lab-user\Desktop\Lab-Files>
```

4. On the *client desktop*, double-click the **Firefox** browser to open it.

5. Use the *Bookmark* bar and select **Extranet > Extranet**.



6. You should see a *webpage* displayed by the server. If you are seeing **Hello World !**, you have properly configured the security policy.



7. Close the *Firefox* browser. Click the **close** icon in the upper-right.

8. Reopen the *PA-VM firewall* interface by clicking the **Chromium** icon in the taskbar.

9. Leave the terminal and firewall web interface open and continue to the next task.

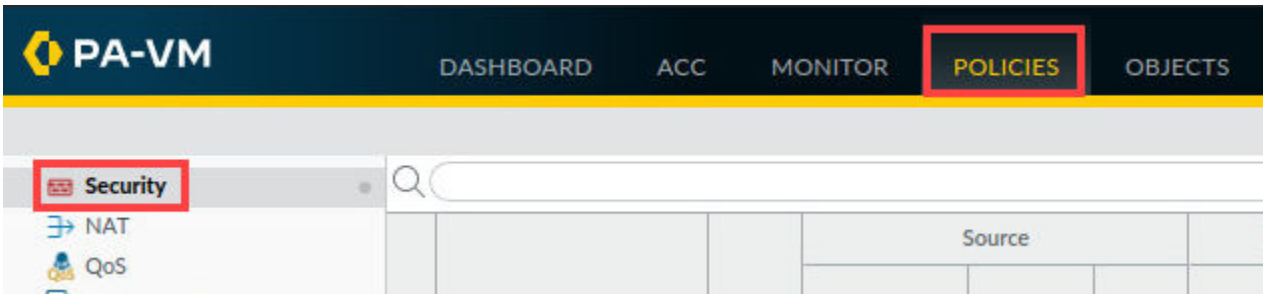
1.5 Examine and Reset the Rule Hit Count

With your rule successfully in place, you can now examine hit counters in the security policy rule table. These counters can be useful for troubleshooting. If a rule is not being hit, you may need to modify it.

Rule hit counts are very useful to track whether a rule is configured correctly. You can reset the counters for all security policy rules or for a single rule.

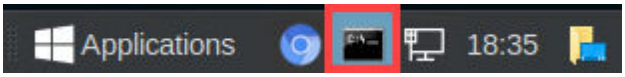
In this section, you will examine and reset the counters for the **Users_to_Extranet** rule.

1. In the firewall interface, select **Policies > Security**.



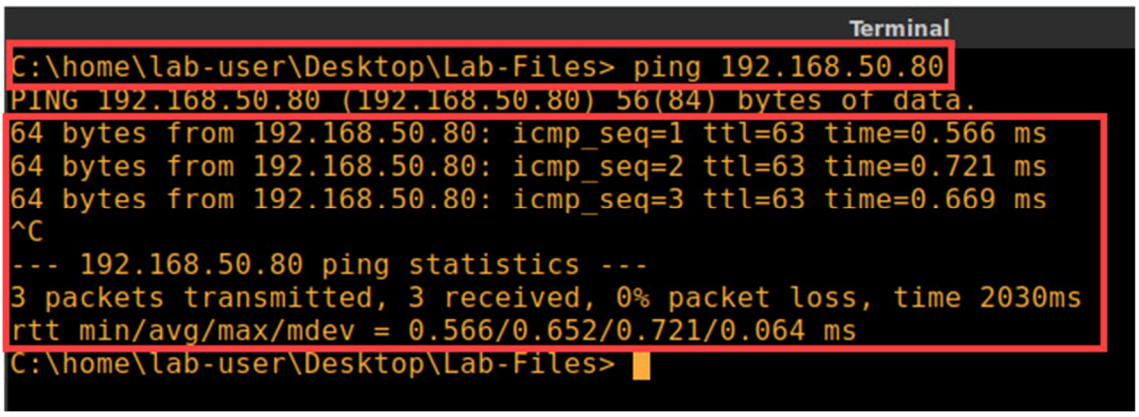
2. In the *Security Policies* window, scroll to the right and locate the column for **Hit Count.** Note the number of hits on the Users to Extranet Rule. For this lab, there were **1166** hits. You may get different results, but the conclusion will be the same.

3. Return to the terminal window by clicking on the **terminal** icon in the taskbar of your *client desktop*.



4. In the CLI connection to the firewall, use the **ping** command to check network connectivity to the panw.lab server. Notice the ping was successful. Wait a few seconds and use **Ctrl+C** to stop the command.

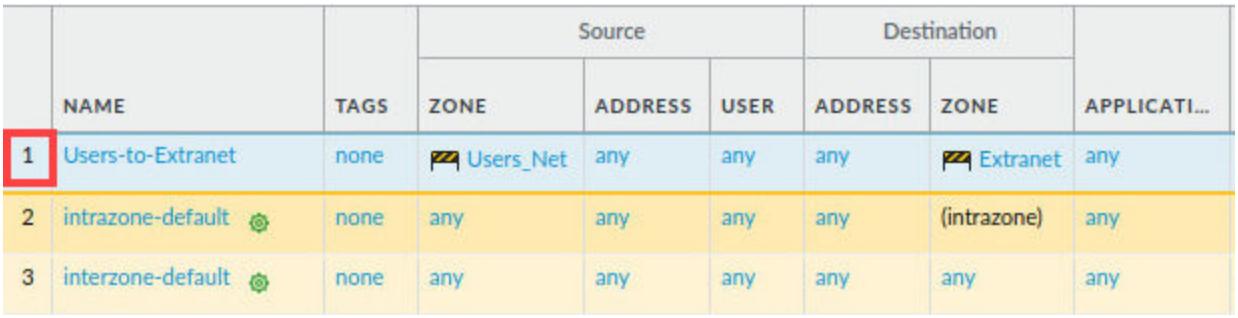
```
C:\home\lab-user\Desktop\Lab-Files> ping 192.168.50.80 <Enter>
```



5. Return to the *PA-VM firewall* interface and update the security policy rules table by clicking the **Refresh** button in the upper-right corner of the window. Notice the increase in the *Hit Count* for the **Users to Extranet** security policy rule has increased.

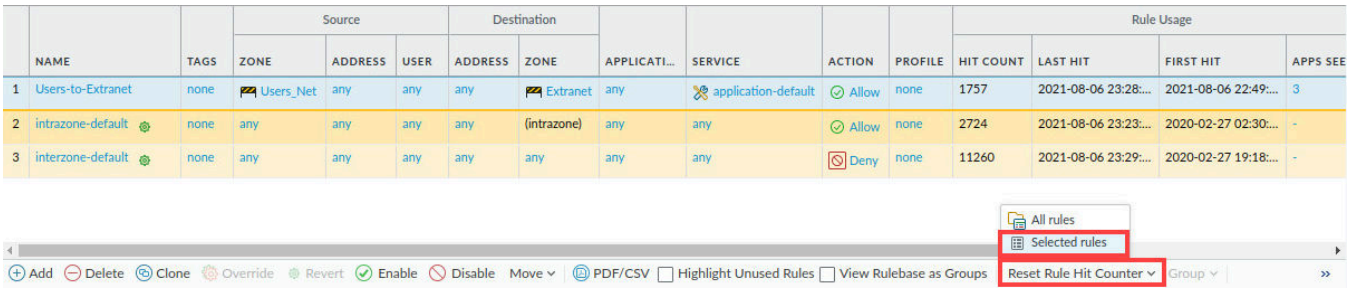
	NAME	TAGS	ZONE	ACTION	PROFILE	Rule Usage HIT COUNT	LAST HIT	FIRST HIT
1	Users-to-Extranet	none	Users	Allow	none	1757	2021-08-06 23:28:...	2021-08-06 22:49:...
2	intrazone-default	none	any	Allow	none	2724	2021-08-06 23:23:...	2020-02-27 02:30:...
3	interzone-default	none	any	Deny	none	11260	2021-08-06 23:29:...	2020-02-27 19:18:...

6. Highlight the **Users to Extranet** security policy rule. But do not open it.



	NAME	TAGS	Source ZONE	Source ADDRESS	Source USER	Destination ADDRESS	Destination ZONE	APPLICATI...
1	Users-to-Extranet	none	Users_Net	any	any	any	Extranet	any
2	intrazone-default	none	any	any	any	any	(intrazone)	any
3	interzone-default	none	any	any	any	any	any	any

7. At the bottom of the *security policy* rules window, select **Reset Rule Hit Counter > Selected rules**.



8. Notice the *Hit Count* for *Users to Extranet* has been reset to **0**.

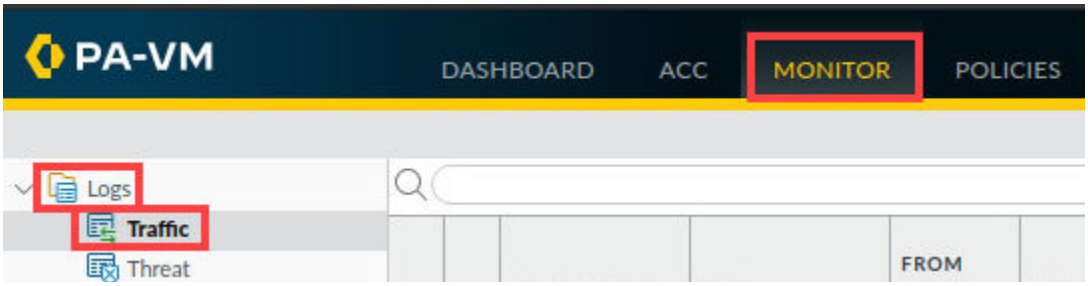
	NAME	TAGS	ZONE	ACTION	PROFILE	Rule Usage HIT COUNT	LAST HIT	FIRST HIT
1	Users-to-Extranet	none	Users_Ne	Allow	none	0	-	-
2	intrazone-default	none	any	Allow	none	2724	2021-08-06 23:23:...	2020-02-27 02:30:...
3	interzone-default	none	any	Deny	none	11260	2021-08-06 23:29:...	2020-02-27 19:18:...

9. Leave the firewall interface open and continue to the next task.

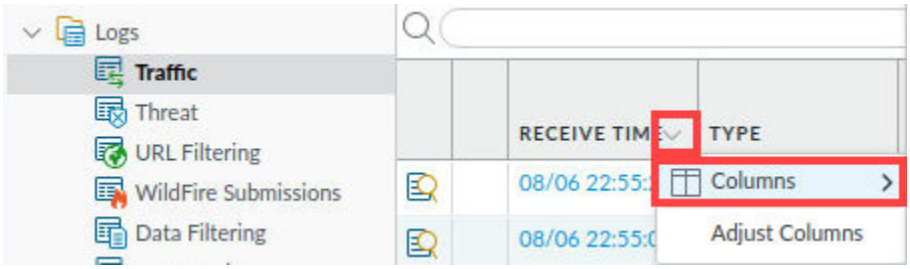
1.6 Examine the Traffic Log

The Traffic Log contains information about sessions that the firewall allows or blocks. In this section, you will examine the Traffic Log to locate entries for sessions between the Users_Net zone and the Extranet zone.

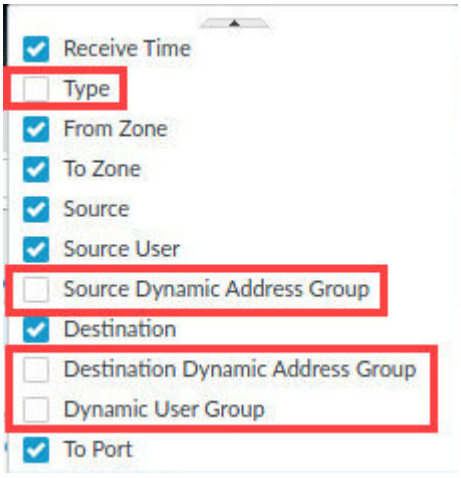
1. In the *firewall* interface, select **Monitor > Logs > Traffic**.



2. Click the dropdown icon next to **Receive Time** and choose **Columns**.



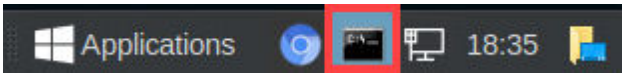
3. Uncheck **Type**, **Source Dynamic Address Group**, **Destination Dynamic Address Group,** and **Dynamic User Group** to hide their columns.



Please Note

This is not a requirement, but we will not be using information from these columns in any lab for this course.

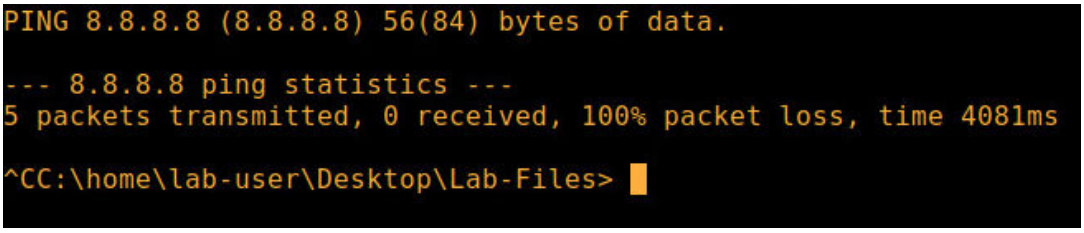
4. Return to the terminal window by clicking on the terminal icon in the taskbar of your *client desktop*.



5. From the *terminal* window on the *desktop*, ping an address on the internet by issuing the following command.

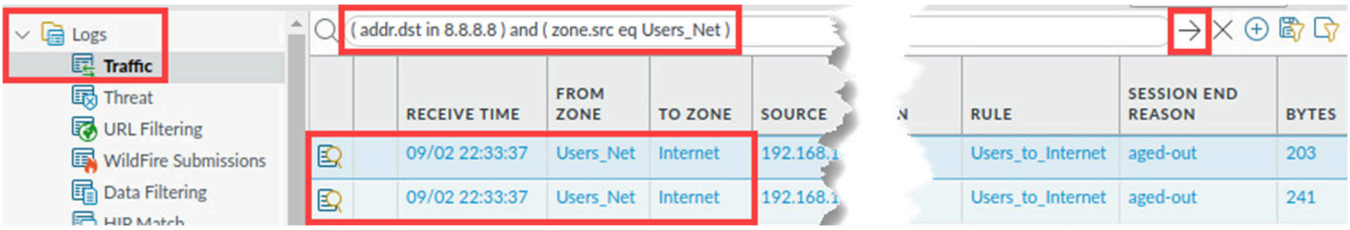
```
C:\home\lab-user\Desktop\Lab-Files> ping 8.8.8.8 <Enter>
```

6. After a few seconds, use **Ctrl+C** to stop the connection because it will not succeed.



7. Minimize the *Terminal* window open on the client because you will perform this same task in a later step.

8. Examine the traffic log again and use a simple filter to see if there are any entries for this session that failed. Ensure you are still viewing the *traffic logs*. In the filter field, enter **(addr.dst eq 8.8.8.8) and (zone.src eq Users_Net).** Click the **Apply Filter** button in the upper-right corner of the window. You will notice the firewall did not log your ping session to an external address. Notice the last successful log was on 09/02 from the *Users_net* to *Internet*. You should not see any entries on the date you complete this lab in this step.



Please Note

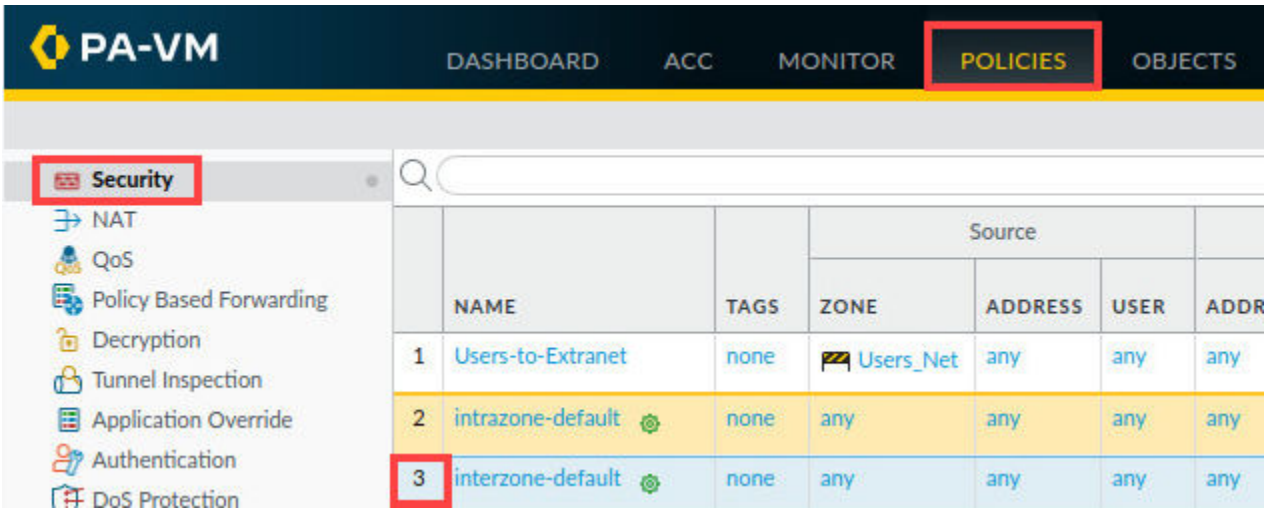
Filters are case sensitive so be precise! Also, note that there is a space after the first parentheses mark and right before the last parentheses mark.

There are two reasons why the firewall did not log the ping session.

First, you do not have a security policy rule in place to allow traffic from the Users_Net zone to the internet zone. As the firewall examines the ping session, the only rule that matches is the interzone-default, which denies any traffic from one zone to another. The ping session matches this rule; however, there are no entries in the Traffic log indicating the match.

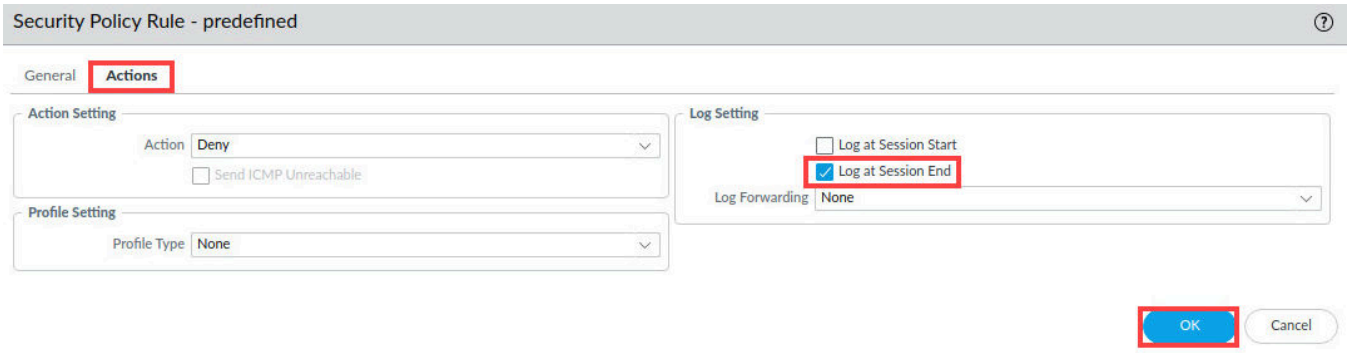
Second, remember that traffic that hits the interzone-default rule is not automatically logged. You must manually change a setting on this rule to see entries in the Traffic log. You will enable this setting now and perform the test again.

9. For the firewall to see the entries in the Traffic log, enable *Log at Session End* in the *interzone-default* rule. Navigate to **Policies > Security**. Highlight the **interzone-default** rule but do not open it.



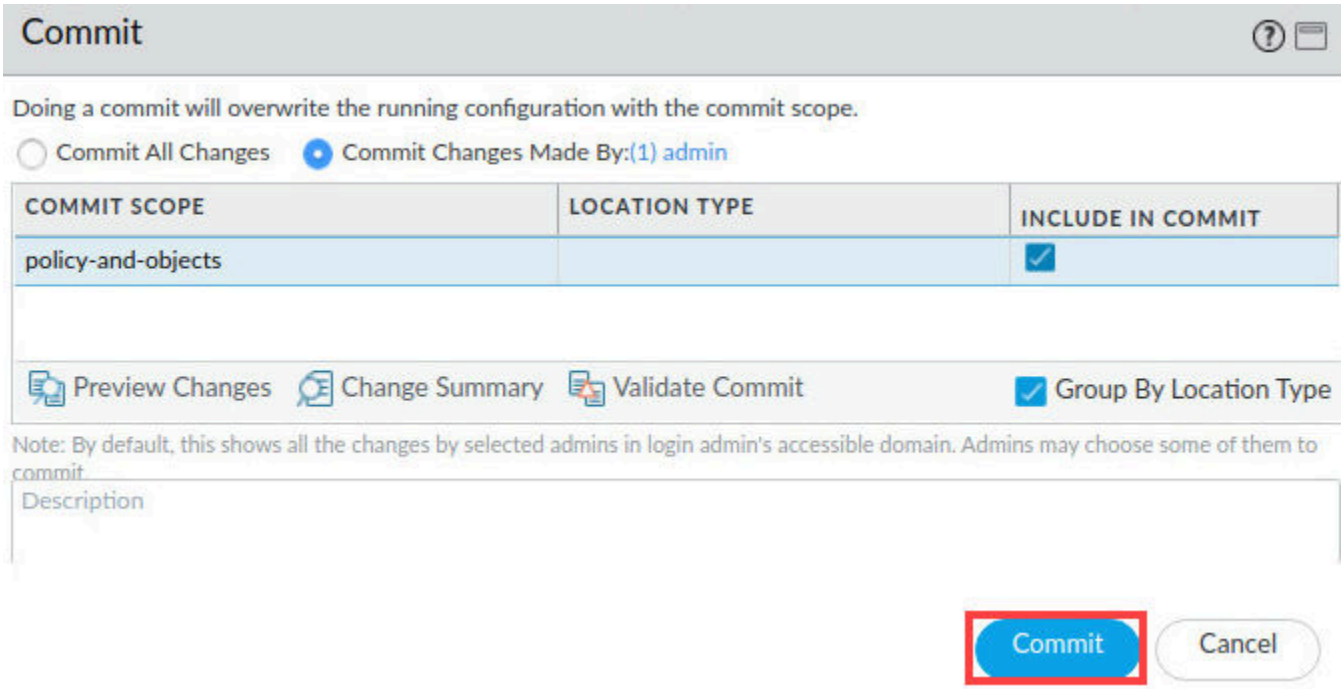
10. Click the **Override** button at the bottom of the window.

11. In the *Security Policy Rule – predefined* window, click the **Actions** tab. Select **Log at Session End** and click **OK**.

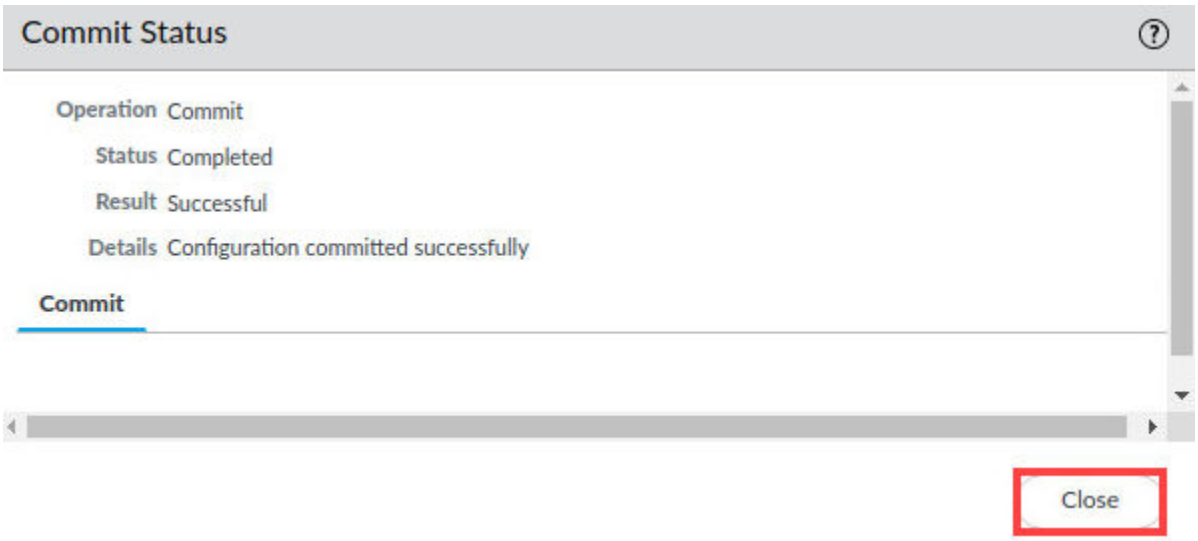


12. Click the **Commit** button at the upper-right of the web interface.

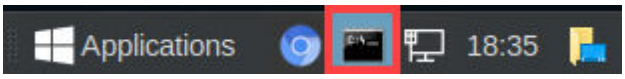
13. In the *Commit* window, click **Commit**.



14. Wait until the *Commit* process is complete. Click **Close**.



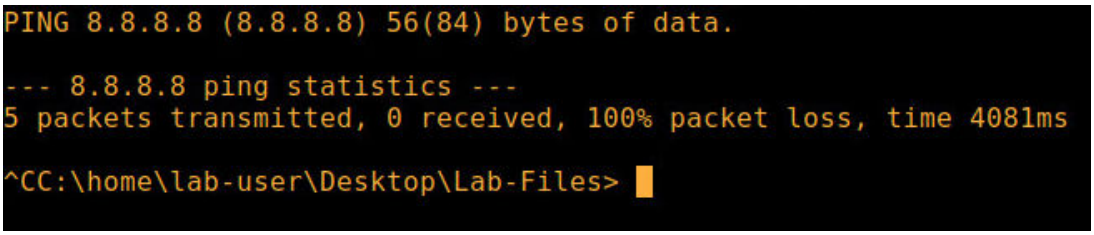
15. Return to the terminal window by clicking on the *terminal* icon in the taskbar of your *client desktop*.



16. From the *terminal* window on the *desktop*, ping an address on the internet by issuing the following command.

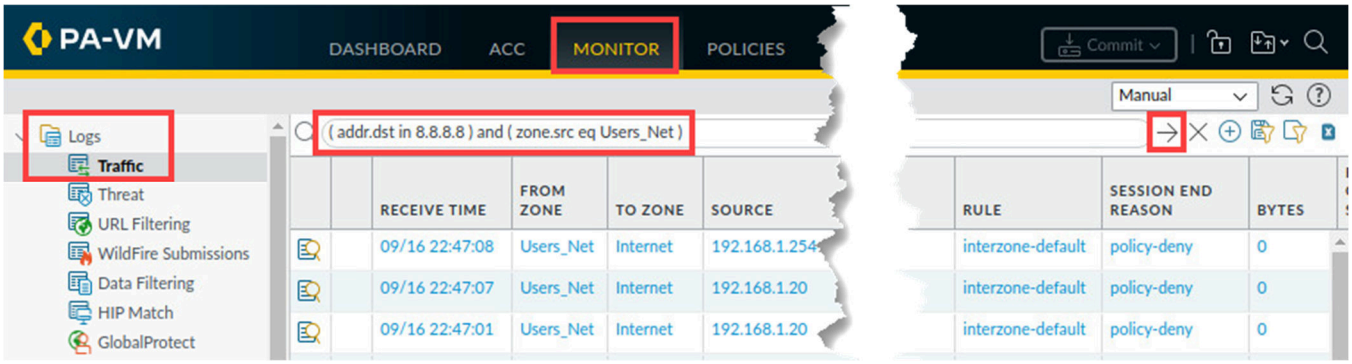
```
C:\home\lab-user\Desktop\Lab-Files> ping 8.8.8.8 <Enter>
```

17. After a few seconds, use **Ctrl+C** to stop the connection because it will not succeed.



18. Minimize the *Terminal* window open on the client because you will perform this same task in a later step.

19. Examine the traffic log again and use a simple filter to see if there are any entries for this session that failed. Navigate to **Monitor > Logs > Traffic**. In the filter field, enter **`( addr.dst eq 8.8.8.8 ) and ( zone.src eq Users_Net )`.** Click the **Apply Filter** button in the upper right corner of the window. You will notice the firewall is now logging entries on the date you complete this step matching your filter.

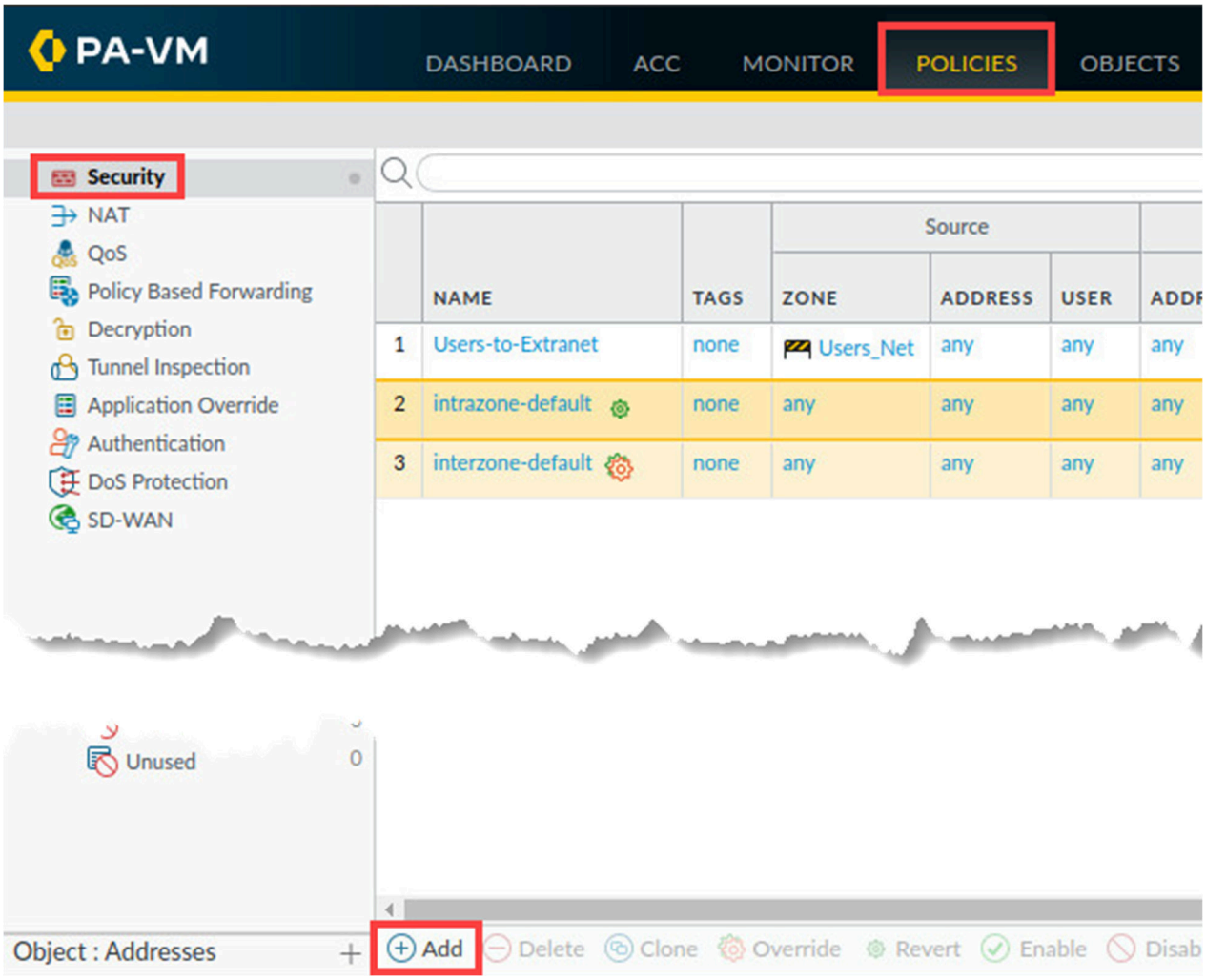


20. Leave the web interface open and continue to the next task.

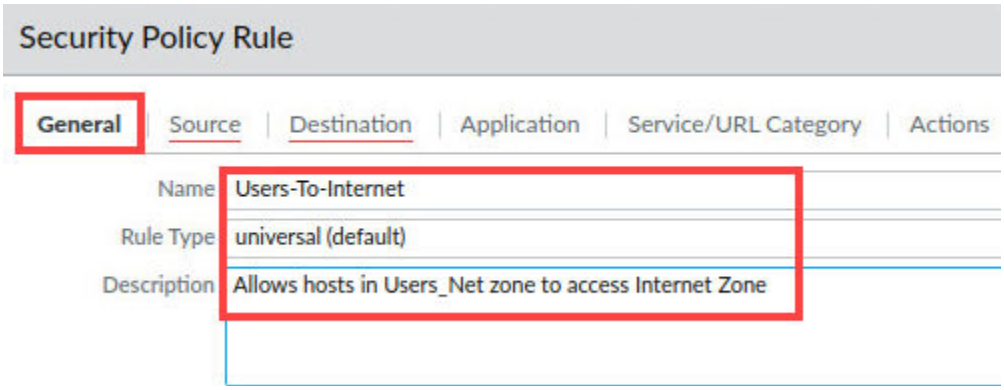
1.7 Create Security Rules for Internet Access

In this section, you will create security policy rules to allow hosts in your network to access the internet. You need to create a rule for hosts in the Users_Net security zone to access hosts in the internet security zone. You also need to create a rule to allow hosts in the Extranet security zone to access hosts in the internet security zone.

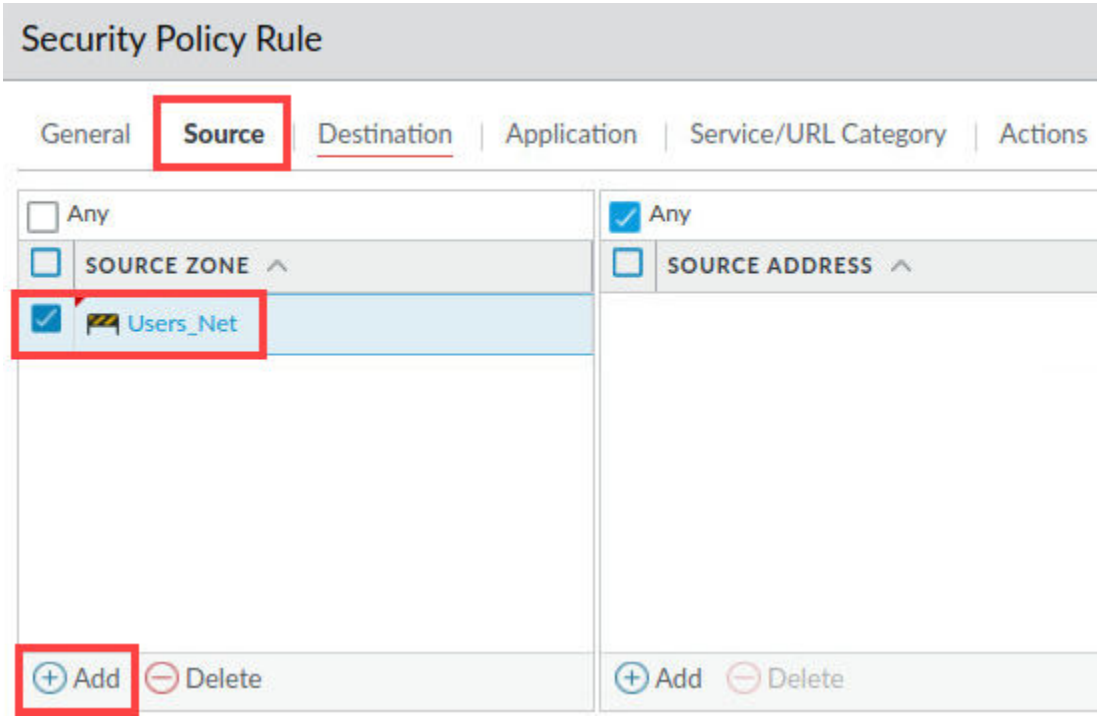
1. In the *PA-VM firewall* web interface, navigate to **Policies > Security**. Click **Add** at the bottom of the window.



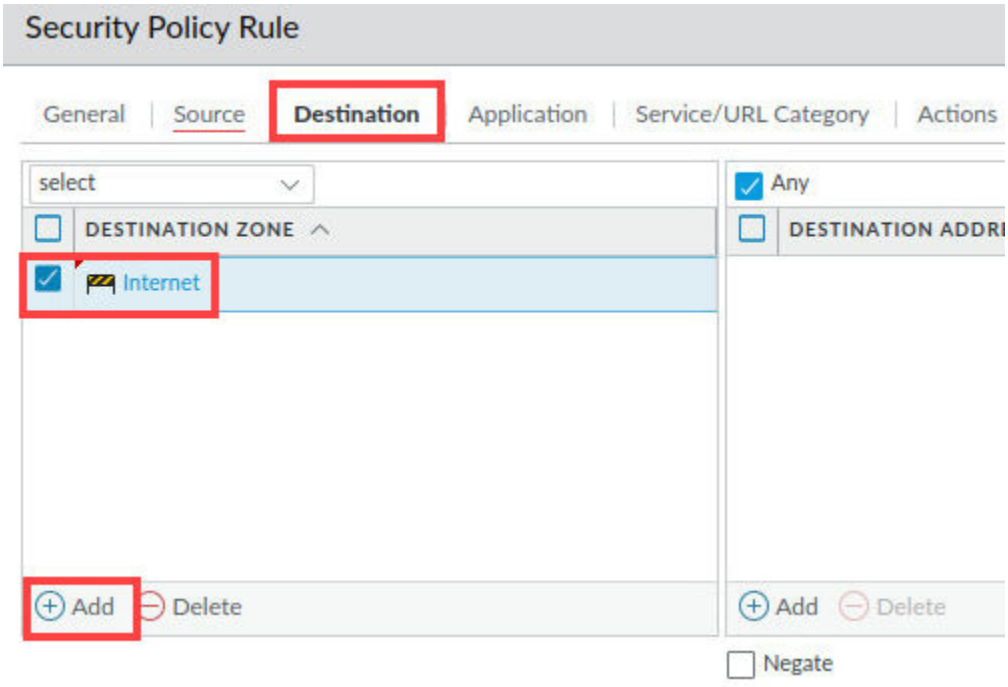
2. In the *Security Policy Rule* window, on the *General* tab. Type **`Users-to-Internet`** for the *Name*. For *Description*, enter **`Allows hosts in Users_Net zone to access Internet zone`**.



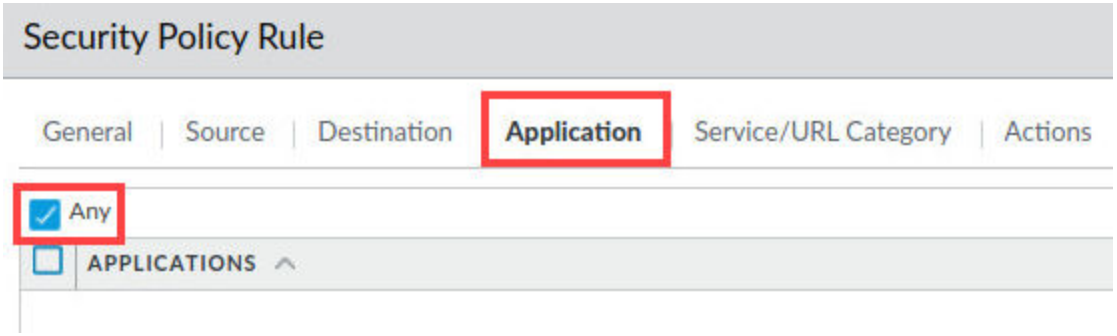
3. Select the **Source** tab. Under the *Source Zone* section, click **Add,** and select **Users_Net**.



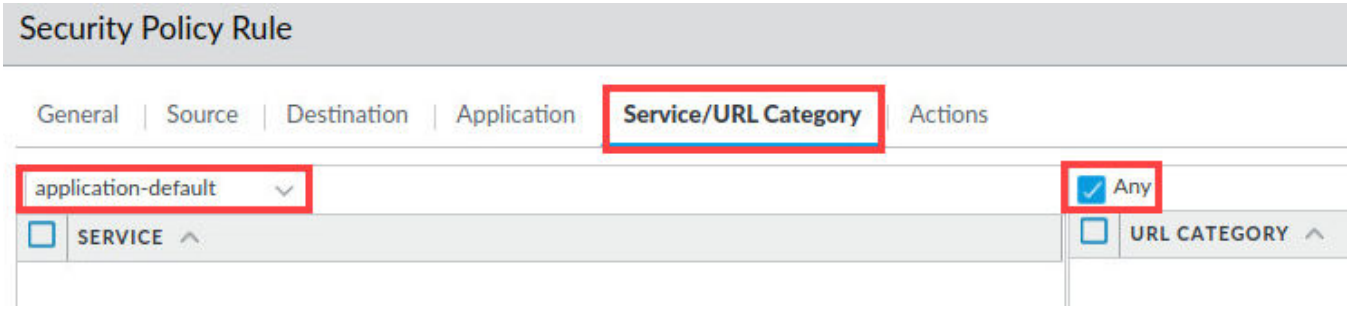
4. Select the **Destination** tab. Under the *Destination Zone* section, click **Add,** and select **Internet**.



5. Select the **Application** tab. Verify **Any** is selected for *Applications*.

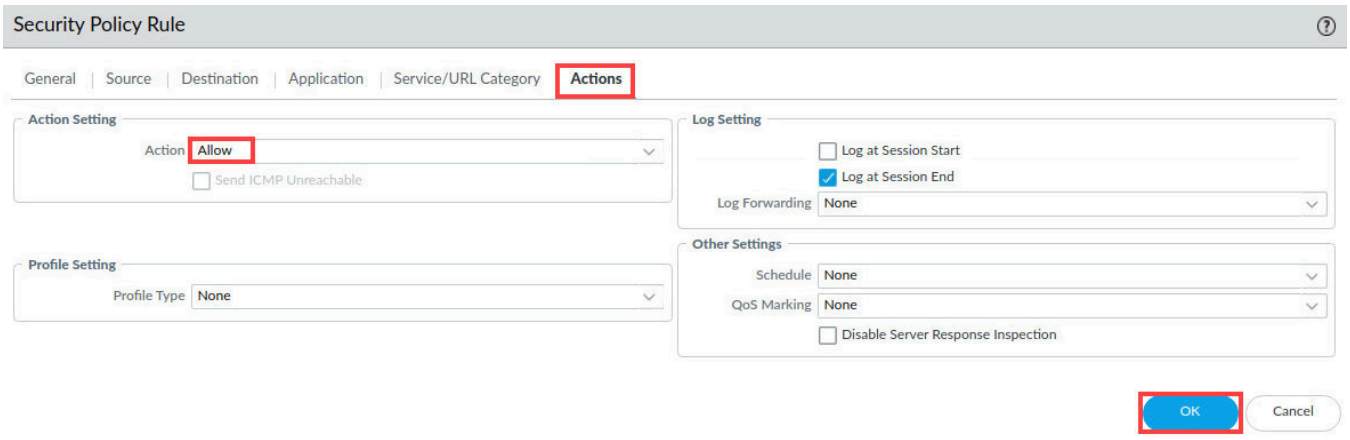


6. Select the **Service/URL Category** tab. Verify **Application Default** is selected for *Service,* and **Any** is selected for *URL Category.*



The application-default setting instructs the firewall to allow an application such as web-browsing as long as that application is using the predefined service (or destination port). For an application like web-browsing, the application default service is TCP 80; for an application such as SSL, the application default service is TCP 443.

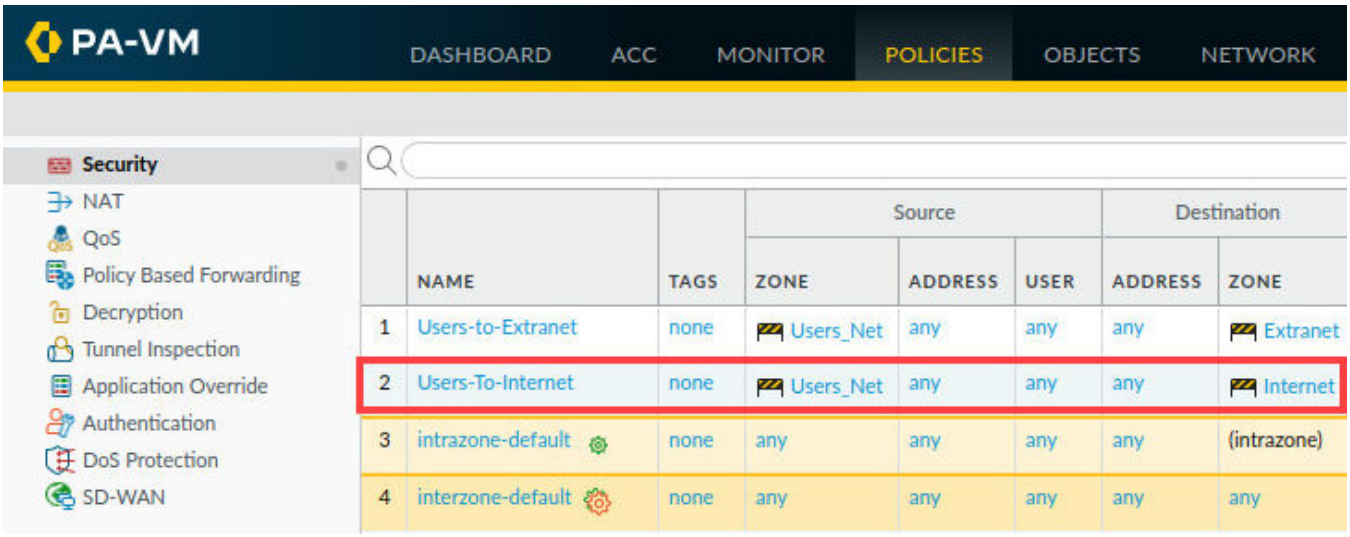
7. Select the **Actions** tab. Do not make any changes in this section but notice that the *Action* is set to **Allow** by default**.** Click **OK**.



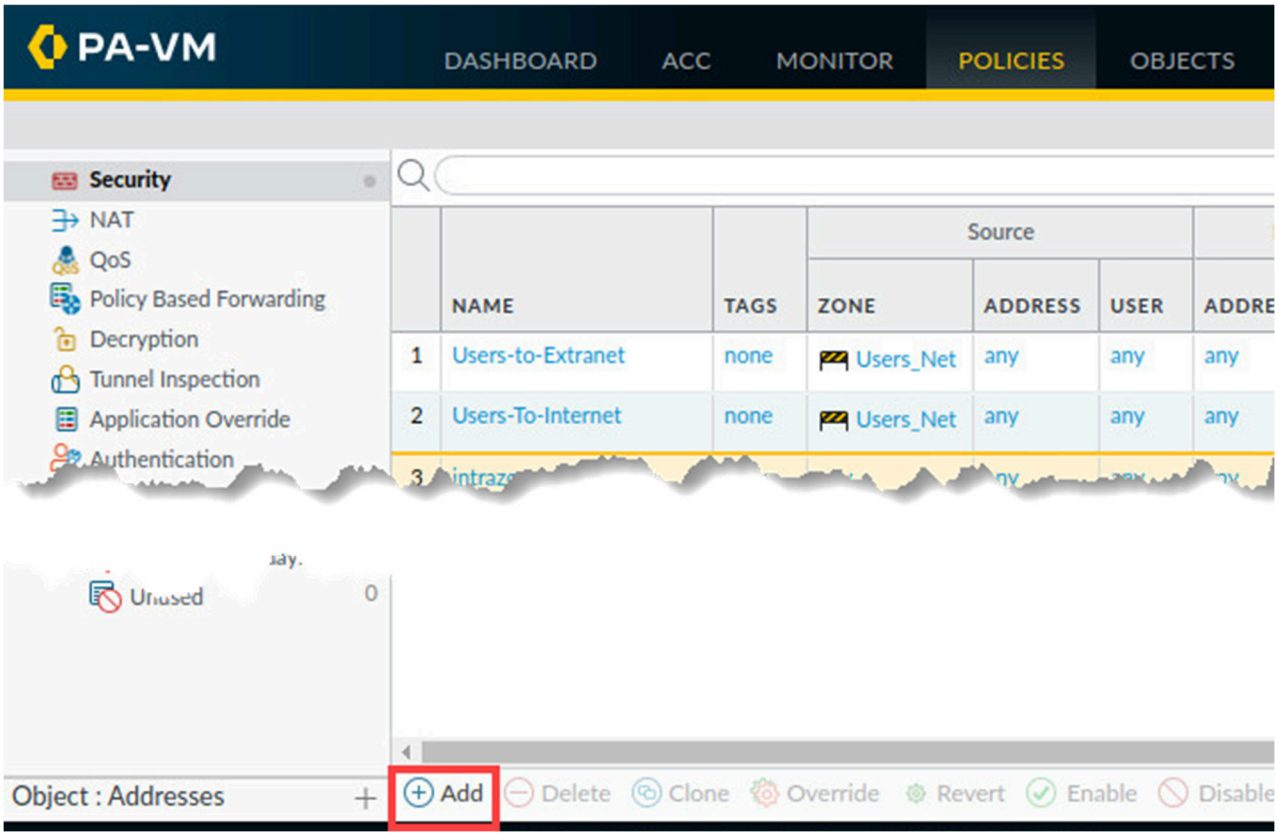
Please Note

When you create a new security policy rule, the Action is automatically set to Allow. If you are creating a rule to block traffic, make sure you select the Actions tab and change the Action before you commit the rule.

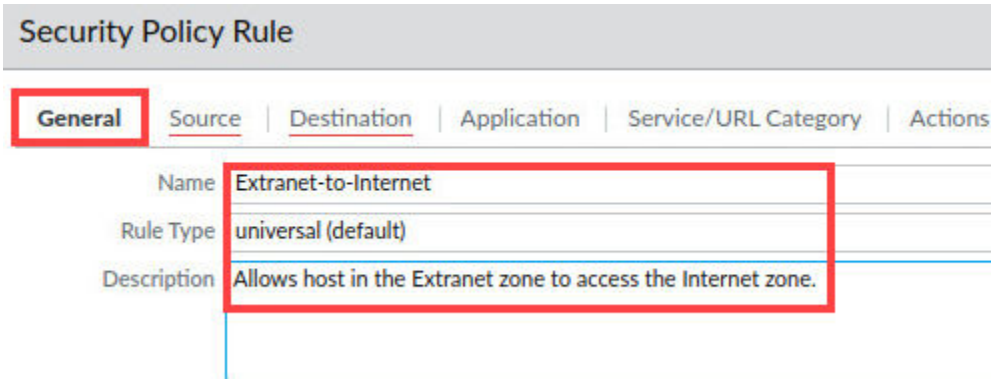
8. Verify the *Users-to-Internet* security policy rule appears in the *Security Policies* window.



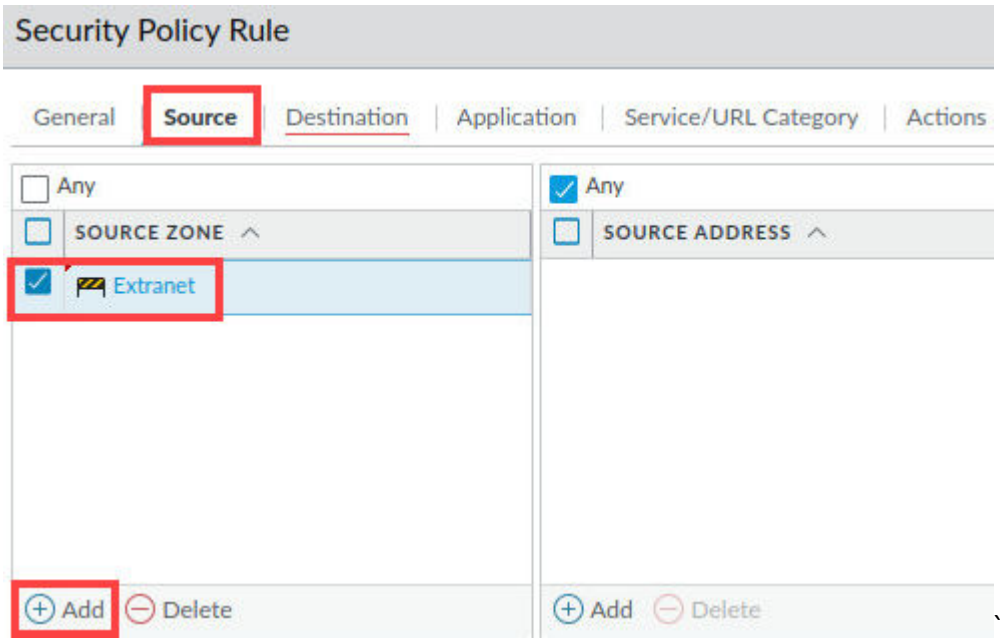
9. Click **Add** at the bottom of the *Security Policies* window.



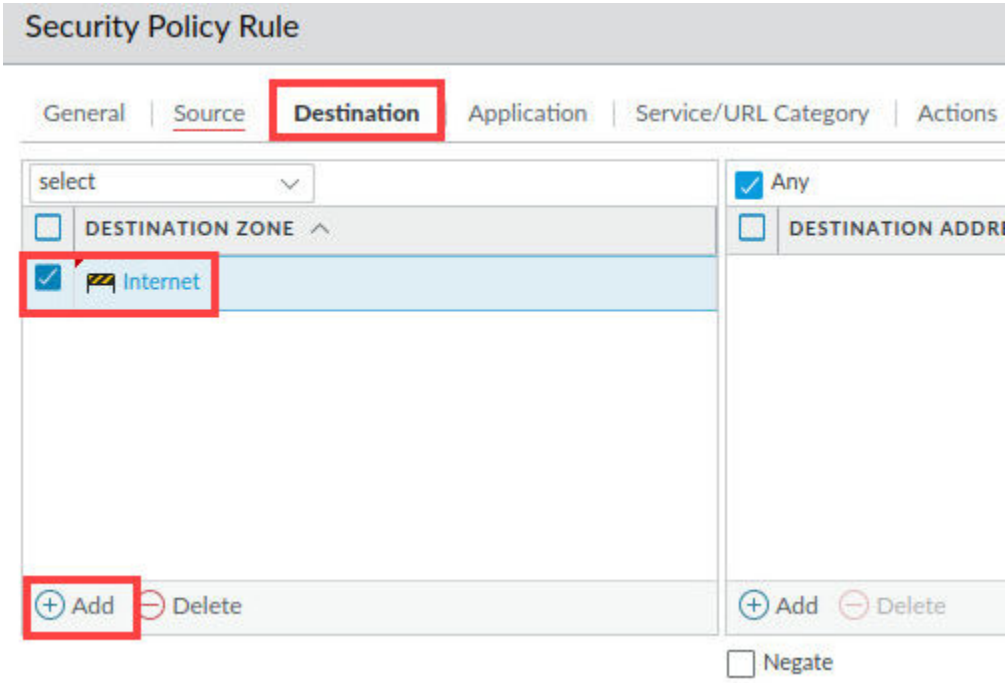
10. In the *Security Policy Rule* window, on the *General* tab. Type **`Extranet-to-Internet`** for the *Name*. For *Description*, enter **`Allows hosts in Extranet zone to access Internet zone`**.



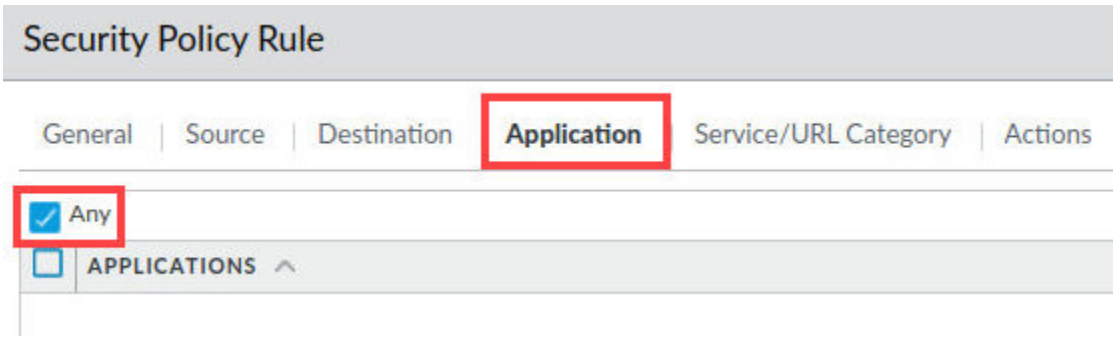
11. Select the **Source** tab. Under the *Source Zone* section, click **Add,** and select **Extranet**.



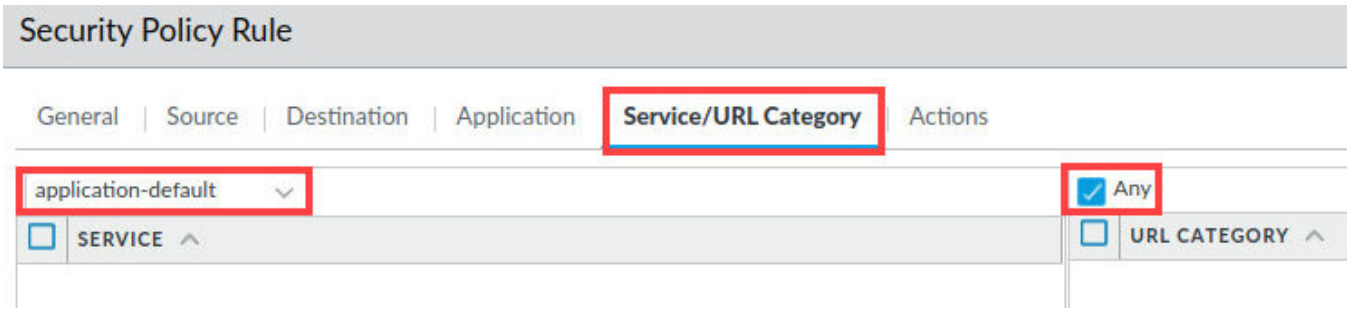
12. Select the **Destination** tab. Under the *Destination Zone* section, click **Add,** and select **Internet**.



13. Select the **Application** tab. Verify **Any** is selected for *Applications*.

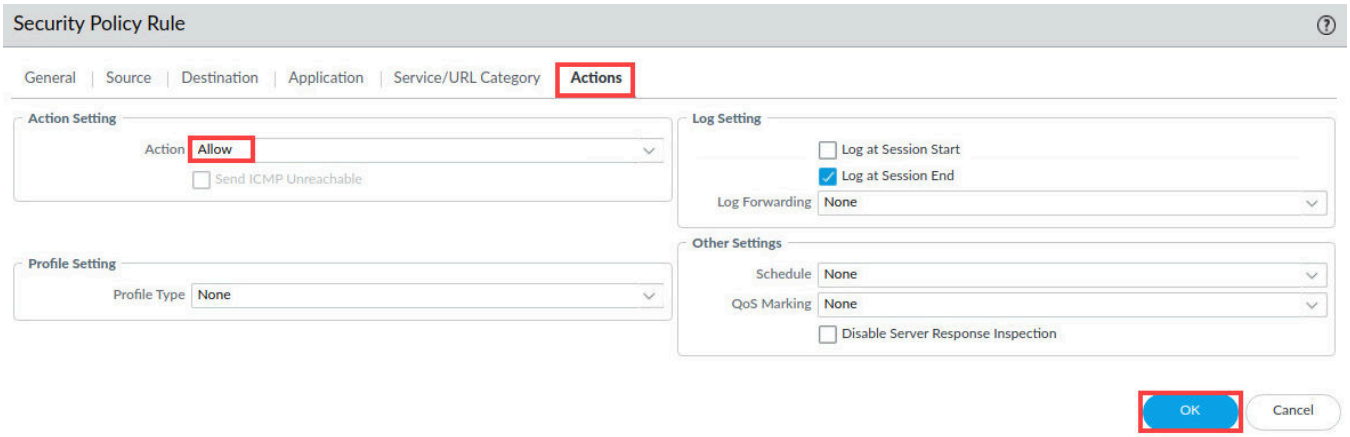


14. Select the **Service/URL Category** tab. Verify **Application Default** is selected for *Service,* and **Any** is selected for *URL Category.*



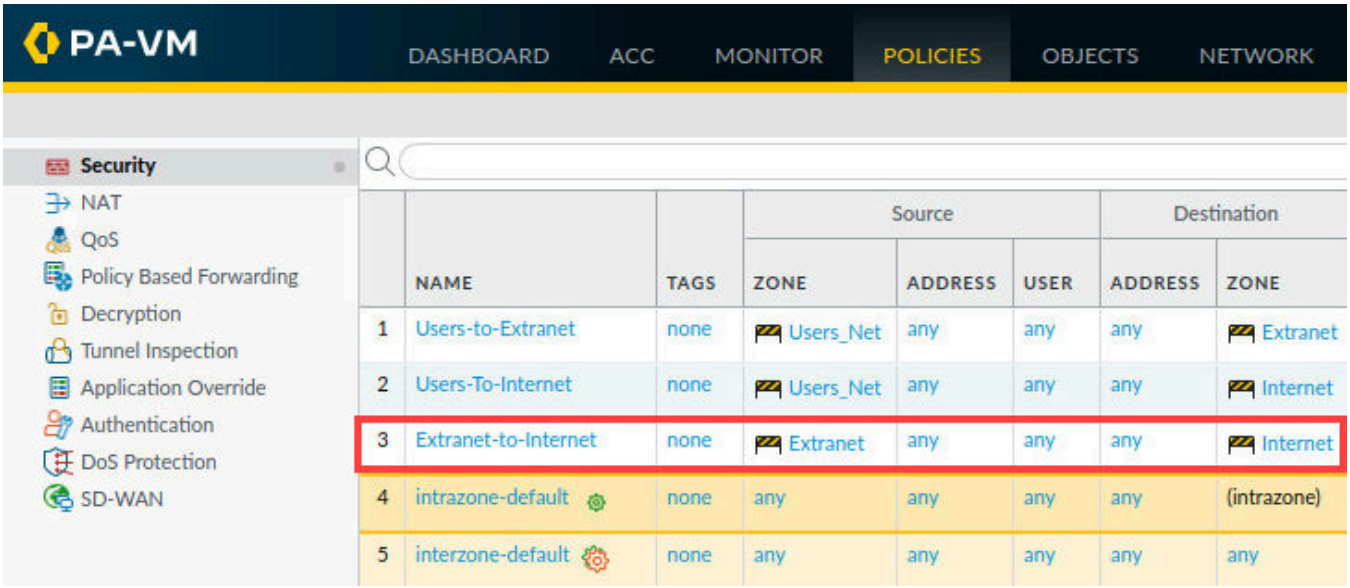
The application-default setting instructs the firewall to allow an application such as web-browsing as long as that application is using the predefined service (or destination port). For an application like web-browsing, the application default service is TCP 80; for an application such as SSL, the application default service is TCP 443.

15. Select the **Actions** tab. Do not make any changes in this section but notice that the *Action* is set to **Allow** by default**.** Click **OK**.



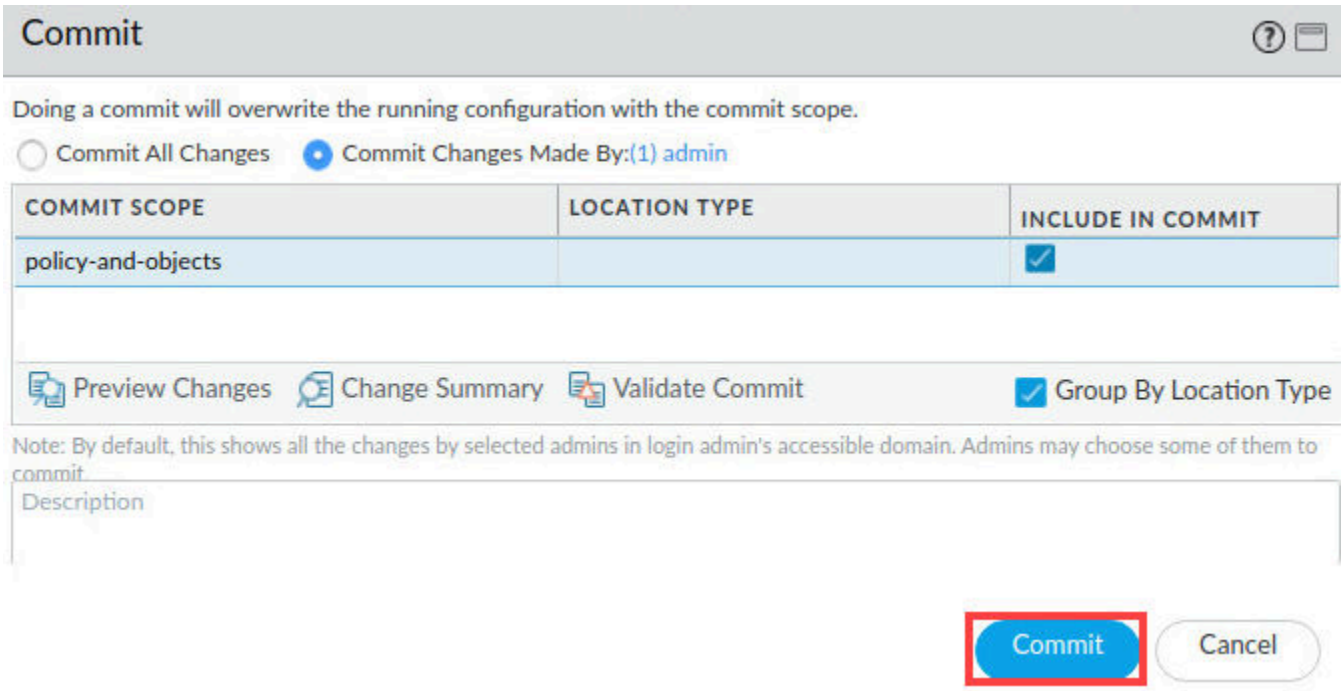
When you create a new security policy rule, the Action is automatically set to Allow. If you are creating a rule to block traffic, make sure you select the Actions tab and change the Action before you commit the rule.

16. Verify the *Extranet-to-Internet* security policy rule appears in the Security policies window.

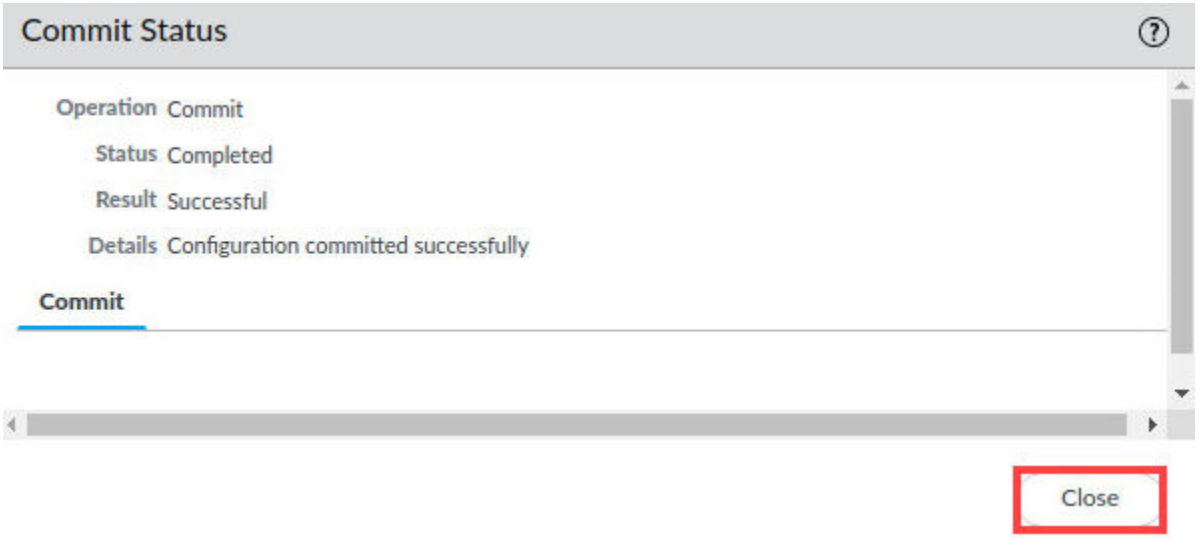


17. Click the **Commit** button at the upper right of the web interface.

18. In the *Commit* window, click **Commit**.



19. Wait until the Commit process is complete. Click **Close**.

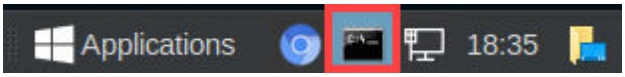


20. Minimize the *Chromium* browser by clicking the **minimize** icon and continue to the next task.

1.8 Ping Internet Host from Client

In this section, you verify that your Security Policy rule is allowing traffic; you will ping an internet host from the client workstation and examine the Traffic log to see the results.

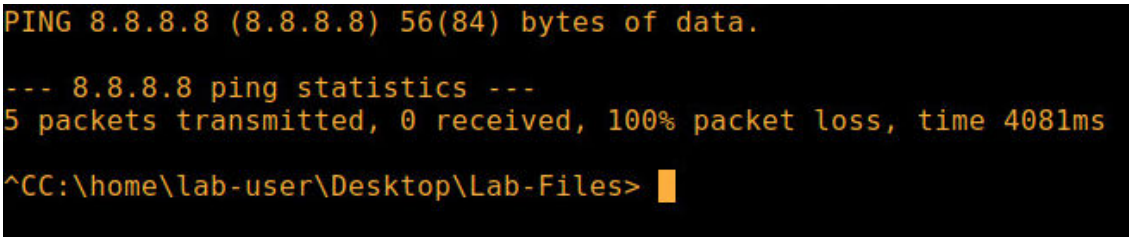
1. Return to the *terminal* window by clicking on the **terminal** icon in the taskbar of your *client desktop*.



2. From the *terminal* window on the *desktop*, ping an address on the internet by issuing the following command.

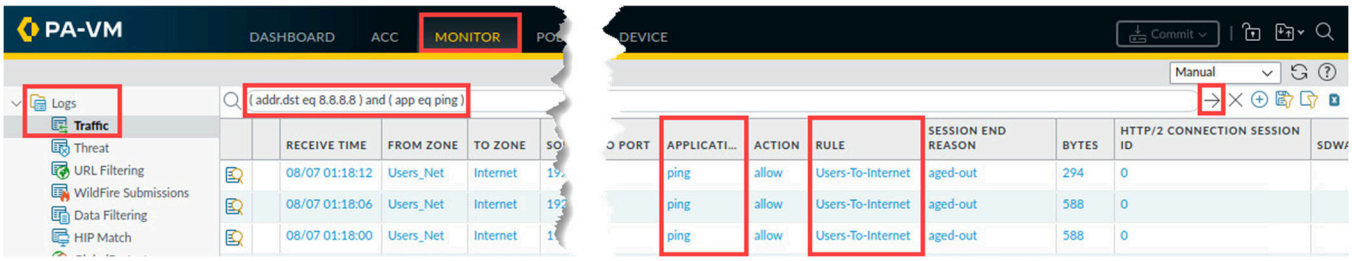
```
C:\home\lab-user\Desktop\Lab-Files> ping 8.8.8.8 <Enter>
```

3. After a few seconds, use **Ctrl+C** to stop the connection because it will not succeed.



4. Minimize the *Terminal* window open on the client because you will perform this same task in a later step.

5. Reopen the firewall interface if you minimized it. Examine the traffic log again and use a simple filter to see if there are any entries for this session that failed. Navigate to **Monitor > Logs > Traffic**. In the filter field, enter **`( addr.dst eq 8.8.8.8 ) and ( app eq ping ).`** Click the **Apply Filter** button in the upper right corner of the window. You will notice the firewall is now logging entries hitting the **Users-to-Internet** rule. You may need to refresh the Traffic logs every one to two minutes for the Traffic logs to update.



Notice the ping failed. It failed because your ping session from the client to the Internet host did not get a reply even though the firewall is allowing the traffic. For the ping to be successful, you will need to create a NAT policy.

6. Leave the firewall open and continue to the next task.

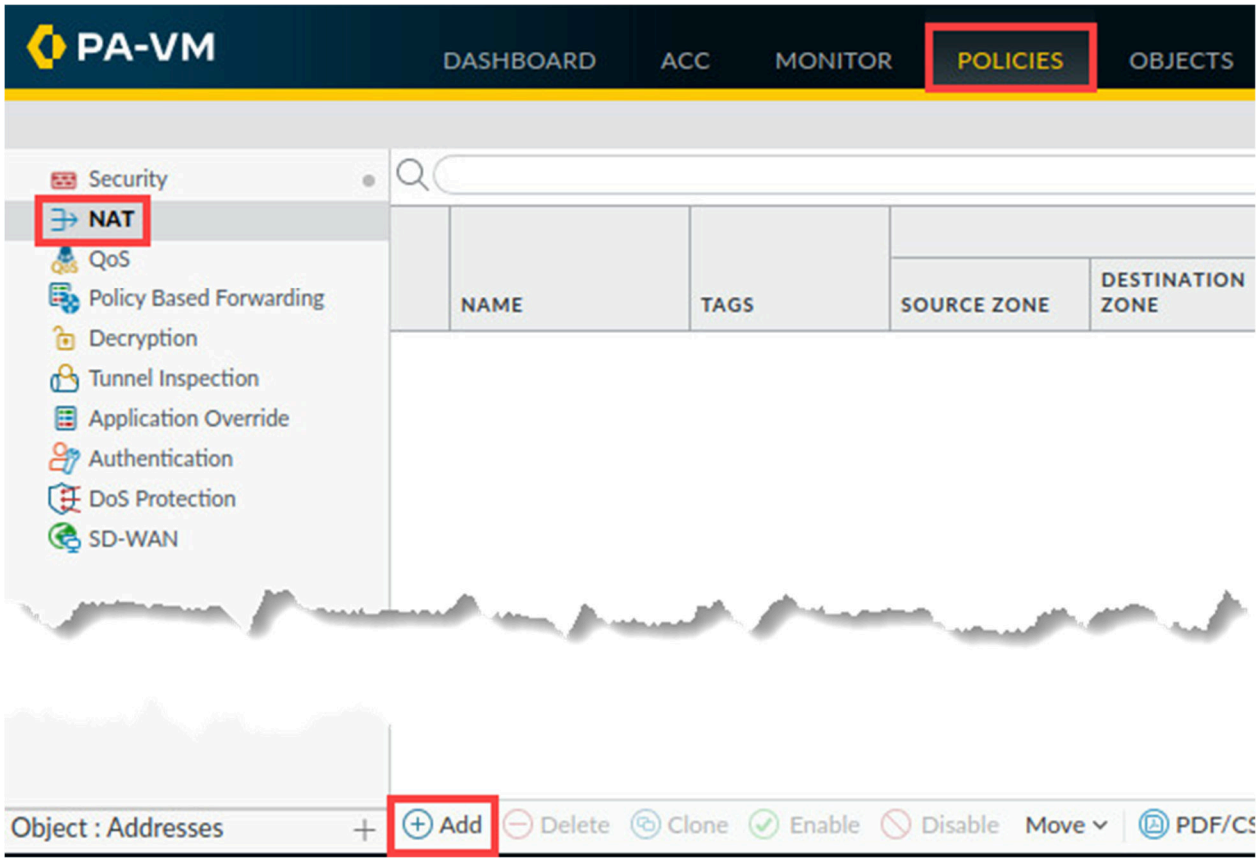
1.9 Create a Source NAT Policy

You must create entries in the firewall's NAT Policy table to translate traffic from internal hosts (often on private networks) to a public, routable address (often an interface on the firewall itself). NAT rules provide address translation and are different from security policy rules, which allow and deny packets. You can configure a NAT policy rule to match a packet's source and destination zone, destination interface, source and destination address, and service.

In your previous ping test to an internet host, the ping traffic from your client is allowed by the Security Policy rule, but the packets leave the firewall with a non-routable source IP address from the private network of 192.168.1.0/24.

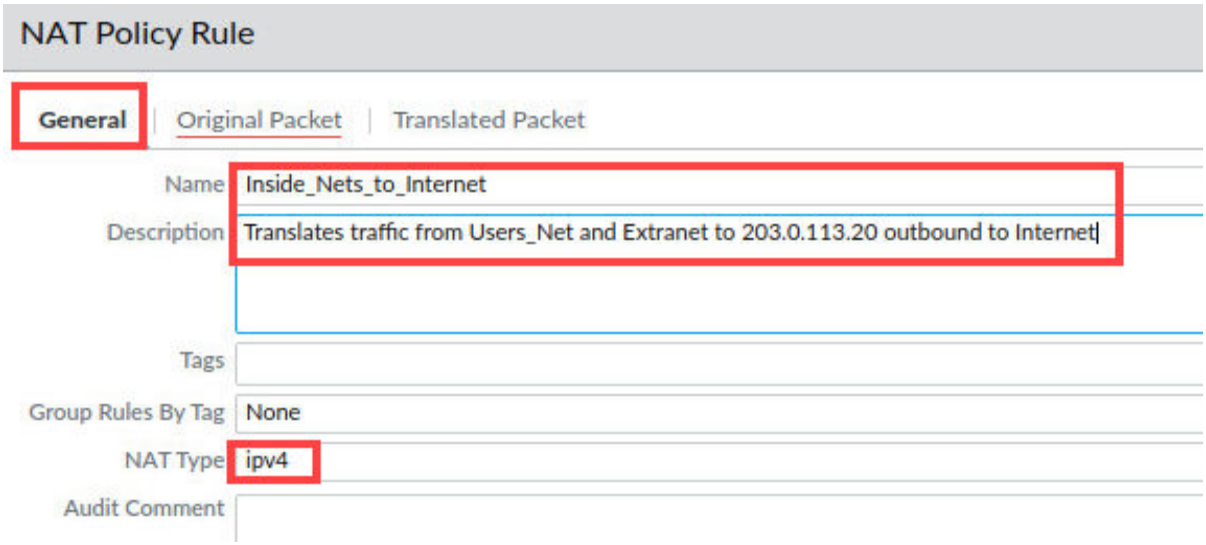
In this section, you will create a NAT policy rule to translate traffic from the private networks in the Users_Net and Extranet security zones to a routable address. You will use the same interface IP address on the firewall (203.0.113.20) as the source IP for outbound traffic from both Users_Net and Extranet hosts.

1. In the web interface, navigate to **Policies > NAT**. Click **Add** to define a new *source NAT policy*.



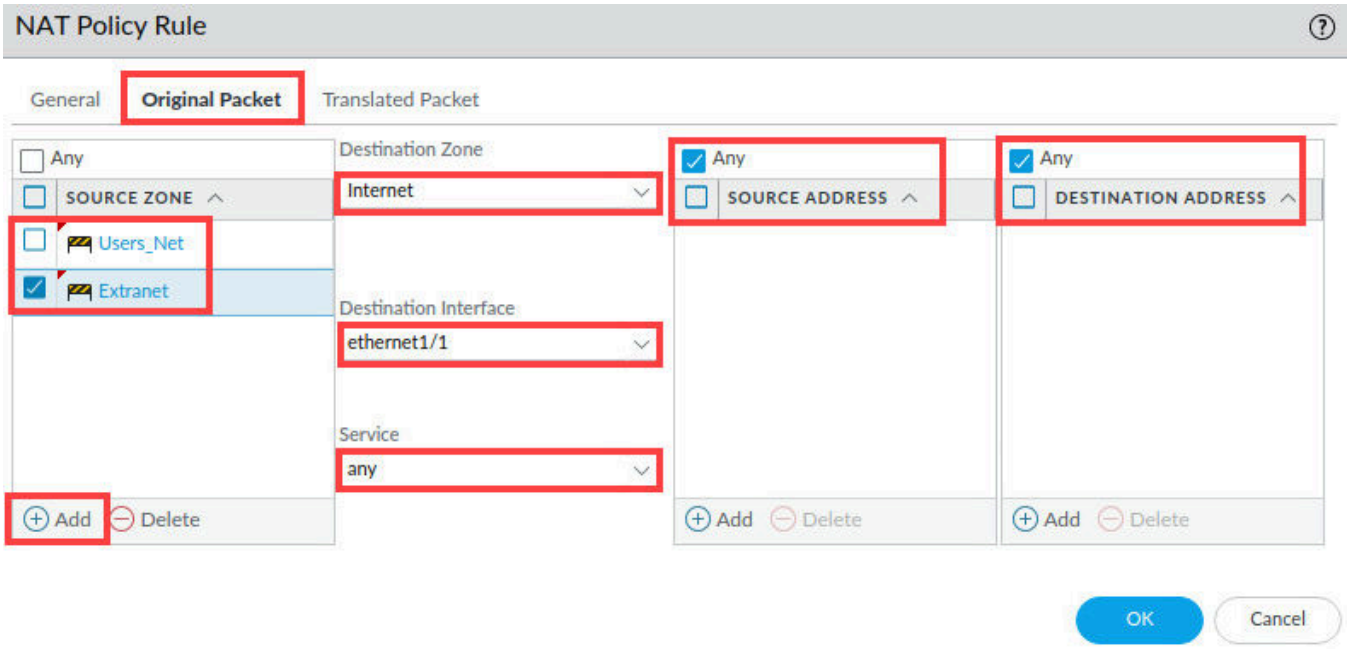
2. In the *NAT Policy Rule* window, configure the following on the *General* tab:

Parameter	Value
Name	`Inside_Nets_to_Internet`
NAT Type	Verify **ipv4** is selected
Description	`Translates traffic from Users_Net and Extranet to 203.0.113.20 outbound to Internet`



3. Click the **Original Packet** tab and configure the following.

Parameter	Value
Source Zone	Click **Add** and select the **Users_Net** zone Click **Add** and select the **Extranet** zone
Destination Zone	Select **Internet** from the dropdown list
Destination Interface	Select **ethernet1/1** from the dropdown list
Service	Verify that the **any** is selected
Source Address	Verify that the **Any** check box is selected
Destination Address	Verify that the **Any** check box is selected



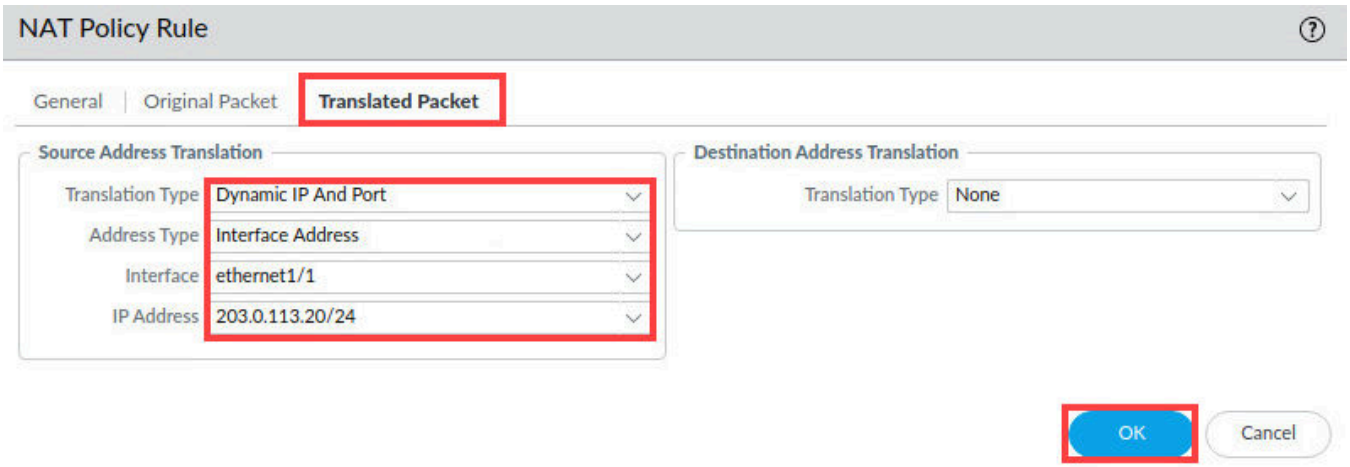
Please Note

This section defines what the packet will look like when it reaches the firewall. Note that we are using a single NAT rule to translate both source zones to the same interface on the firewall. You could accomplish this same task by creating two separate rules – one for each source zone – and using the same external firewall interface.

4. Click the **Translated Packet** tab and configure the following under the section for **Source Address Translation**. Click **OK**.

Parameter	Value
Translation Type	Select **Dynamic IP And Port** from the dropdown list
Address Type	Select **Interface Address** from the dropdown list
Interface	Select **ethernet1/1** from the dropdown list

Parameter	Value
IP Address	Select **203.0.113.20/24** from the dropdown list. (Make sure that you **select** the interface IP address from the dropdown list and ***do not type it***.)

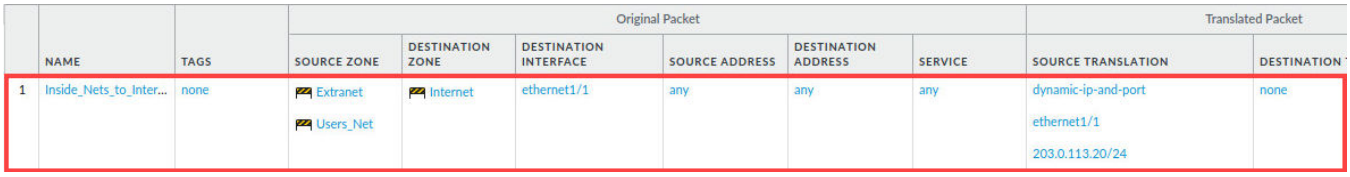


Please Note

This section defines how the firewall will translate the packet.

You are configuring *only* the **Source Address Translation** part of this window. Leave the destination address translation **Translation Type** set to **None**.

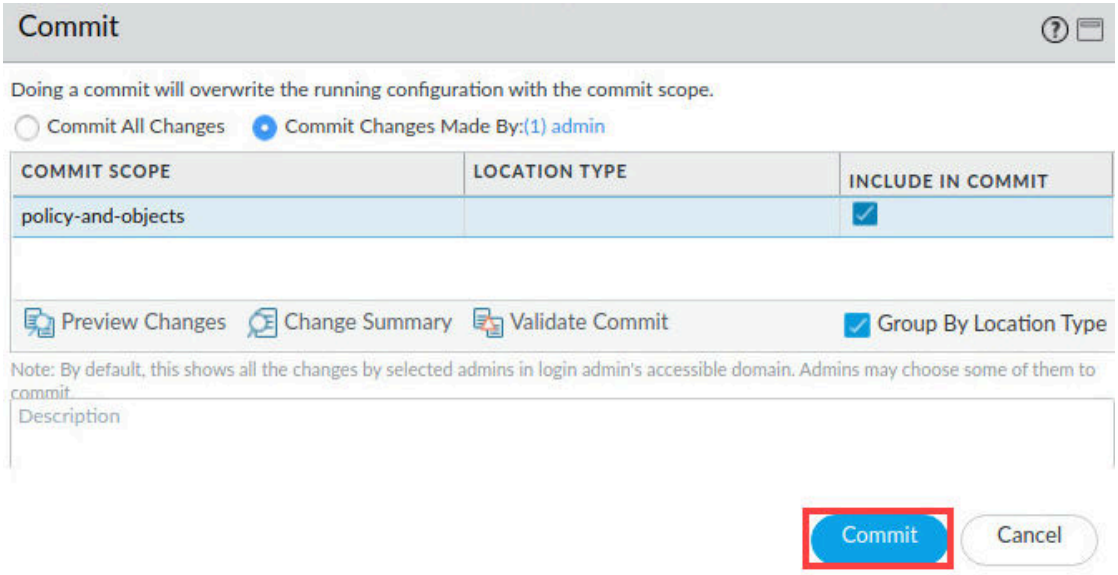
5. Verify that the **Inside_Nets_to_Internet** *NAT* policy is showing.



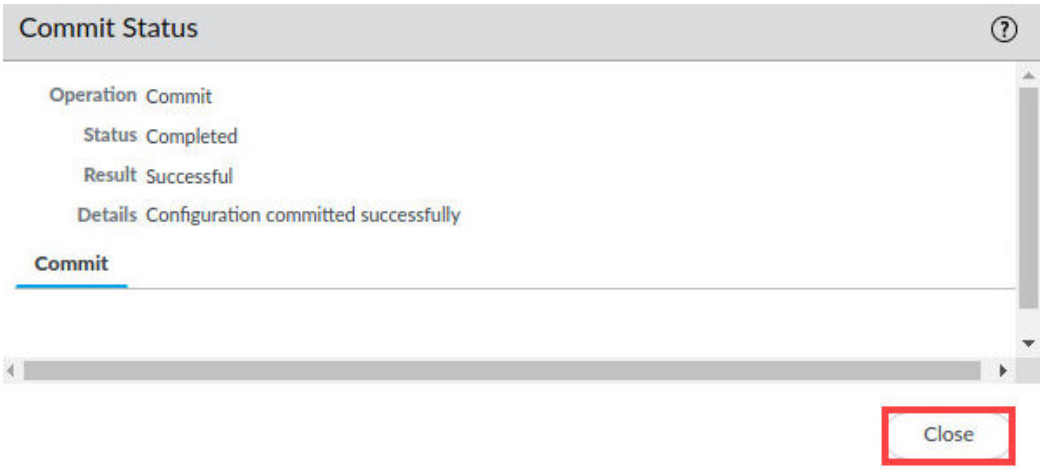
	NAME	TAGS	Original Packet						Translated Packet	
			SOURCE ZONE	DESTINATION ZONE	DESTINATION INTERFACE	SOURCE ADDRESS	DESTINATION ADDRESS	SERVICE	SOURCE TRANSLATION	DESTINATION
1	Inside_Nets_to_Inter...	none	Extranet Users_Net	Internet	ethernet1/1	any	any	any	dynamic-ip-and-port ethernet1/1 203.0.113.20/24	none

6. Click the **Commit** button at the upper right of the web interface.

7. In the *Commit* window, click **Commit**.

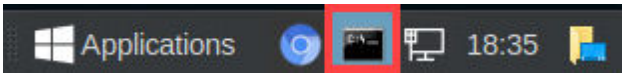


8. Wait until the *Commit* process is complete. Click **Close**.



9. Minimize the *Chromium* browser by clicking the **minimize** icon and continue to the next task.

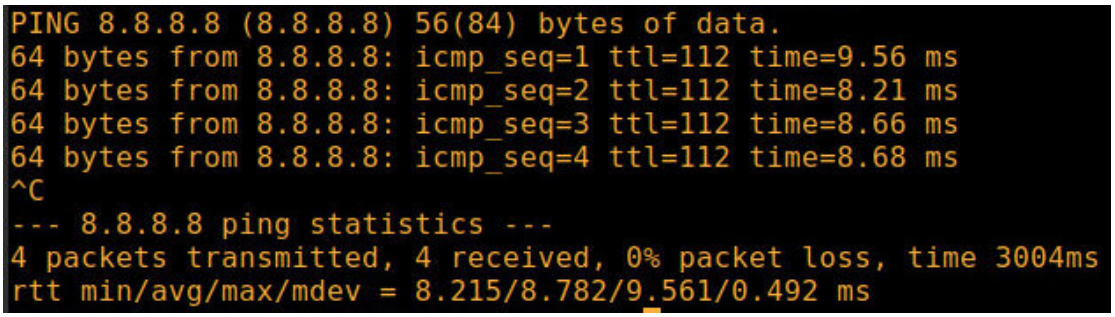
10. Return to the terminal window by clicking on the terminal icon in the taskbar of your *client desktop*.



11. From the *terminal* window on the *desktop*, ping an address on the internet by issuing the following command.

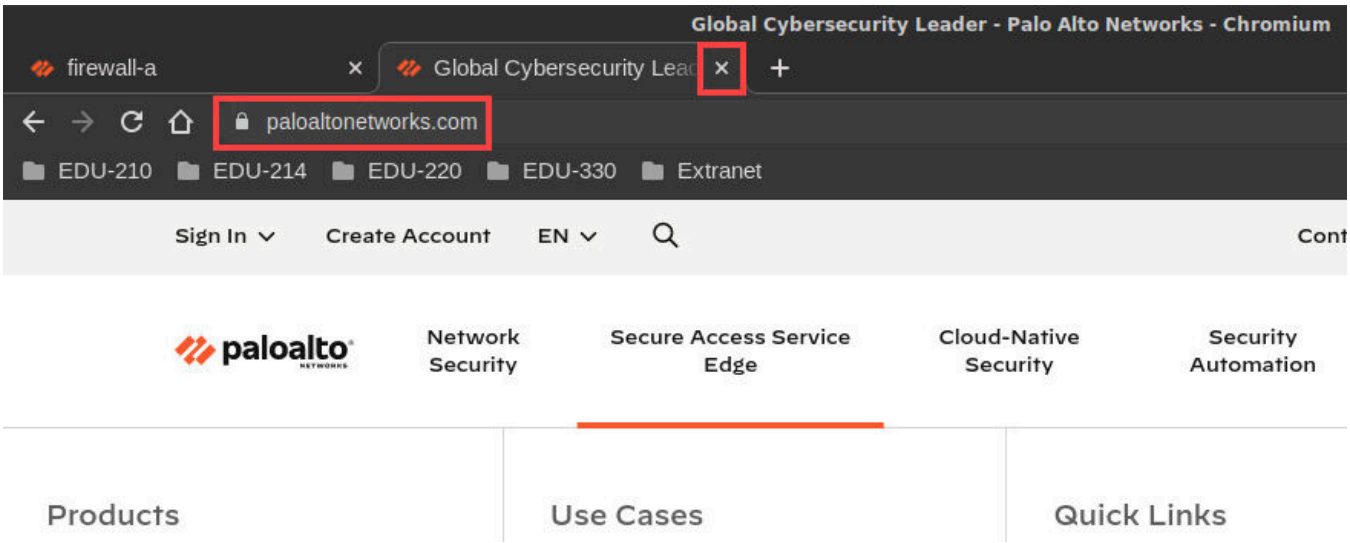
```
C:\home\lab-user\Desktop\Lab-Files> ping 8.8.8.8 <Enter>
```

12. After a few seconds, use **Ctrl+C** to stop the connection. You should now receive a successful reply.

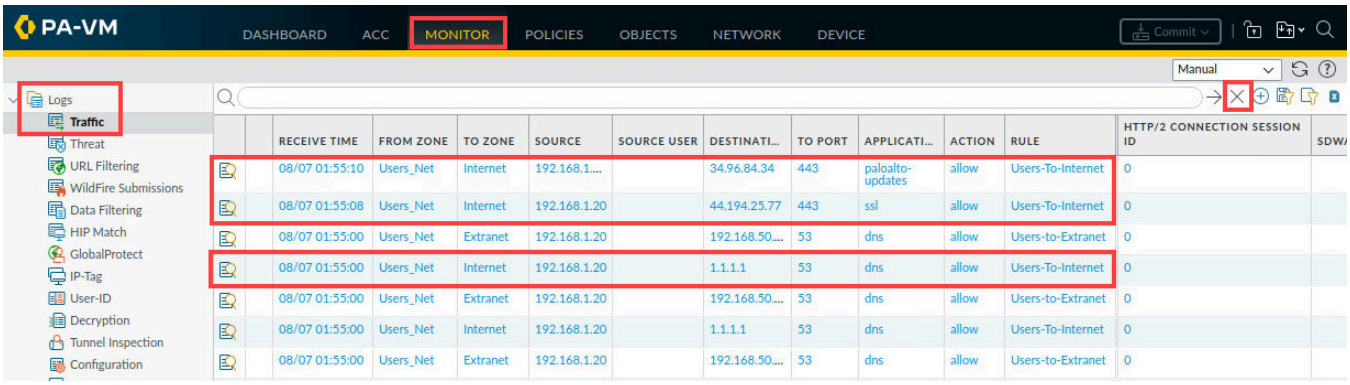


13. Minimize the *Terminal* window open on the client because you will perform this same task in a later step.

14. Open a new tab on the *Chromium* web browser. Type **www.paloaltonetworks.com** and verify connectivity. Close the newly opened tab by clicking the **X** icon.



15. Examine the firewall Traffic log by ensuring you are at **Monitor > Logs > Traffic**. Clear any filters you have in place by clicking the **Clear** Filter button in the upper right corner of the window. Verify that there is allowed traffic that matches the security policy rule **Users_to_Internet.**



Traffic log entries should be present based on the internet test. A minute or two may elapse for the log files to be updated. If the entries are not present, click the **refresh** icon

16. Leave the firewall open and continue to the next task.

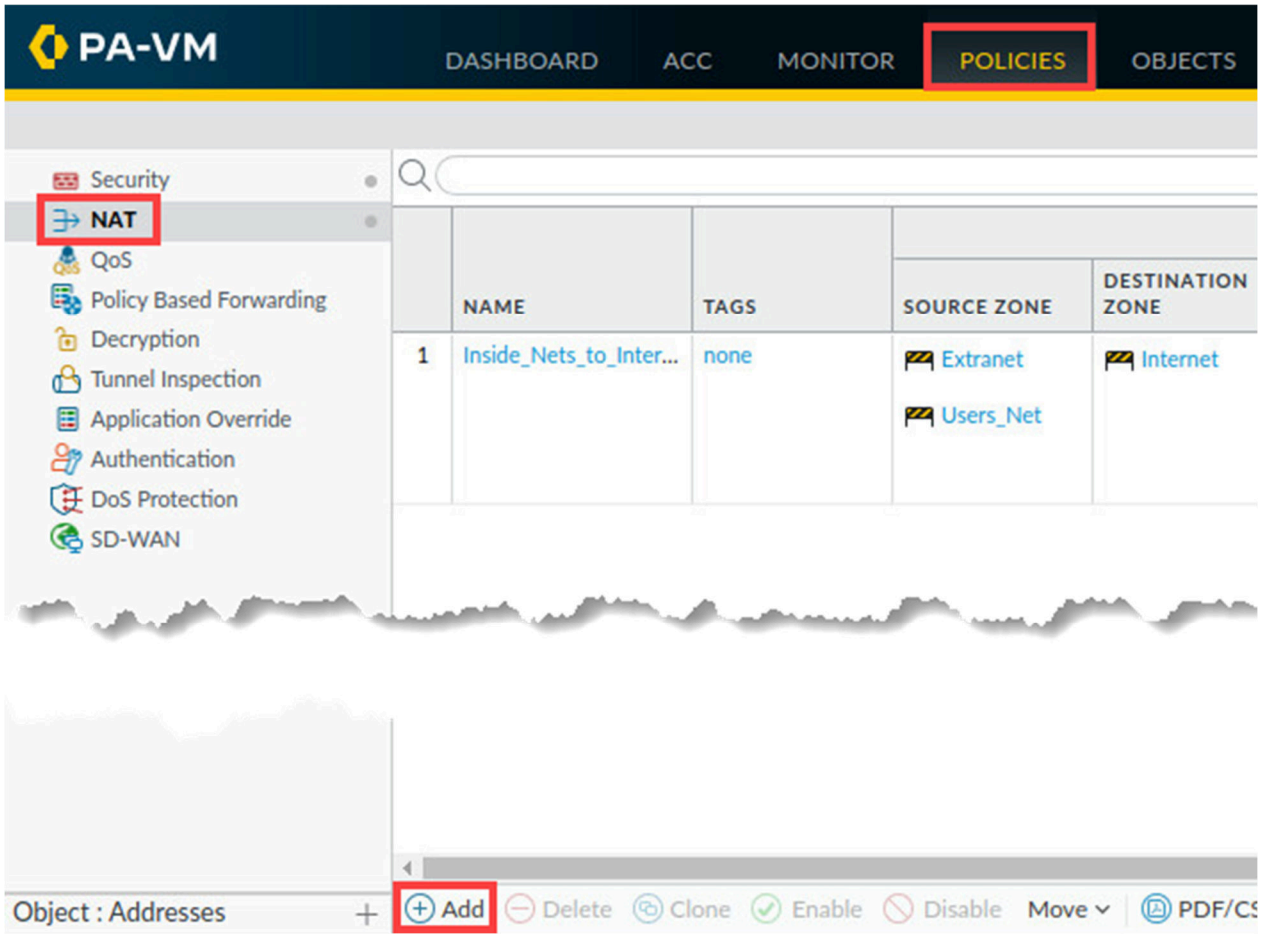
1.10 Create a Destination NAT Policy

In this section, you will create a NAT address on the firewall using an IP address on the Users_Net network. The firewall will translate traffic that hits this address to the destination IP address of the web server in the Extranet Zone.

You will connect from the client host (192.168.1.20) to the NAT IP address on the firewall (192.168.1.80). The firewall will translate this connection to the DMZ server at 192.168.50.10.

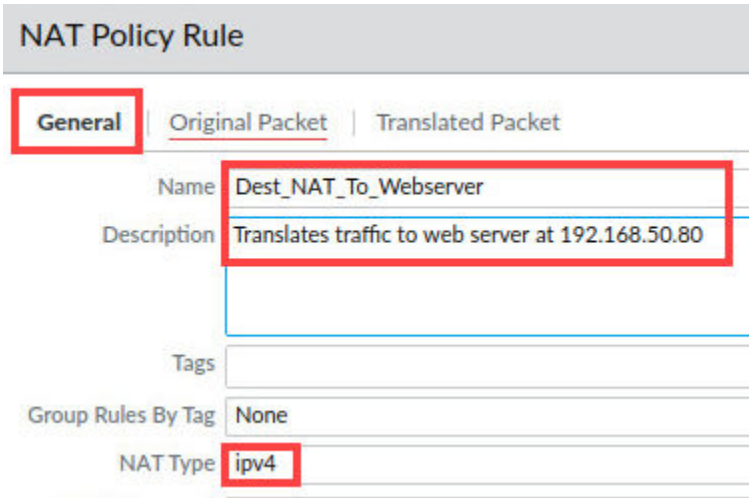
This exercise will help you see how to configure Destination NAT rules.

1. In the web interface, navigate to **Policies > NAT**. Click **Add** to define a new source NAT policy.



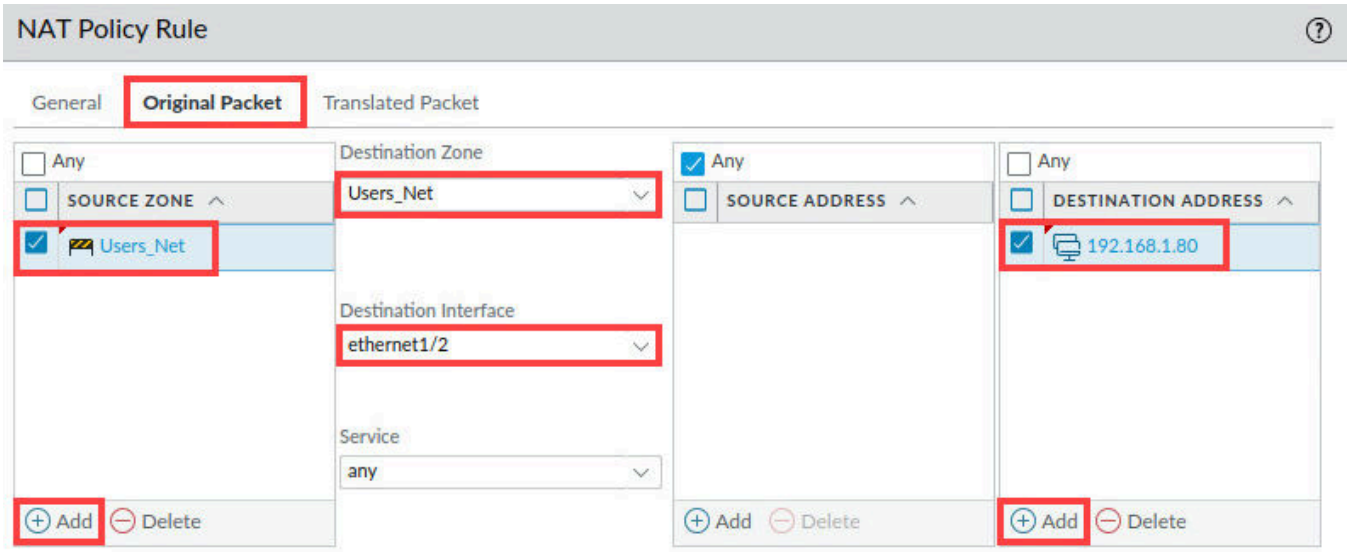
2. In *the NAT Policy Rule* window, configure the following on the **General** tab:

Parameter	Value
Name	`Dest_NAT_To_Webserver`
NAT Type	Verify that **ipv4** is selected
Description	`Translates traffic to web server at 192.168.50.80`



3. Click the **Original Packet** tab and configure the following.

Parameter	Value
Source Zone	Click **Add** and select the **Users_Net** zone
Destination Zone	Select **Users_Net** from the dropdown list
Destination Interface	Select **ethernet1/2** from the dropdown list
Service	Verify that **Any** is selected
Source Address	Verify that the **Any** check box is selected
Destination Address	Click **Add** and manually enter **192.168.1.80**

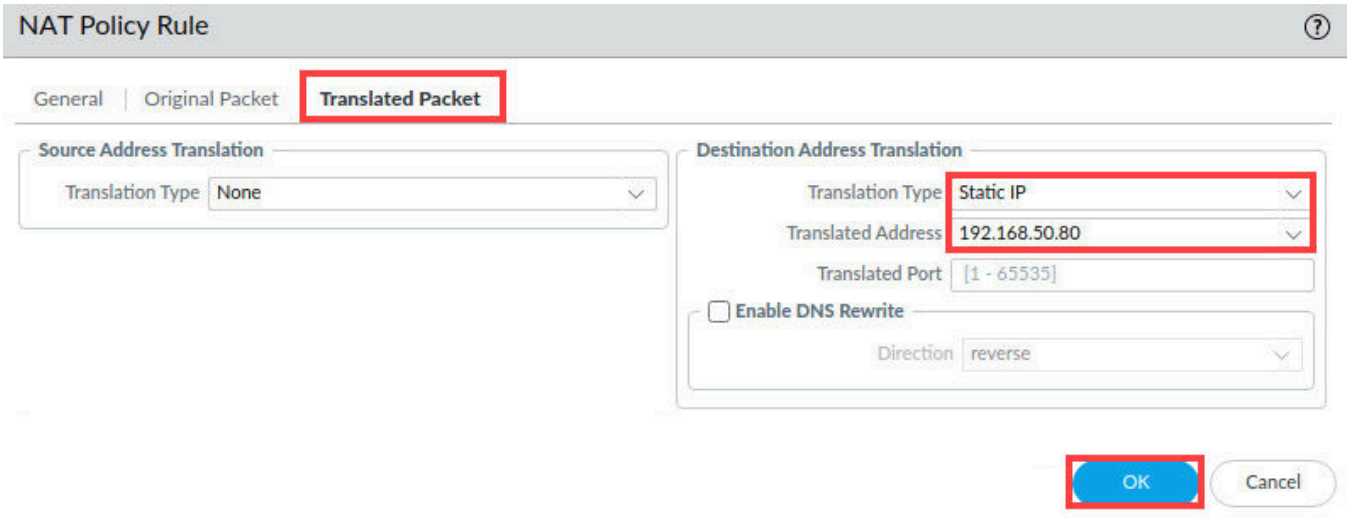


Please Note

The **Original Packet** tab defines how the packet will look when it reaches the firewall. When selecting the Destination Zone, remember that the IP address we are using (192.168.1.80) is one that resides on the firewall in the Users_Net security zone.

4. Click the **Translated Packet** tab and configure the following under the section for *Source Address Translation*. Click **OK**.

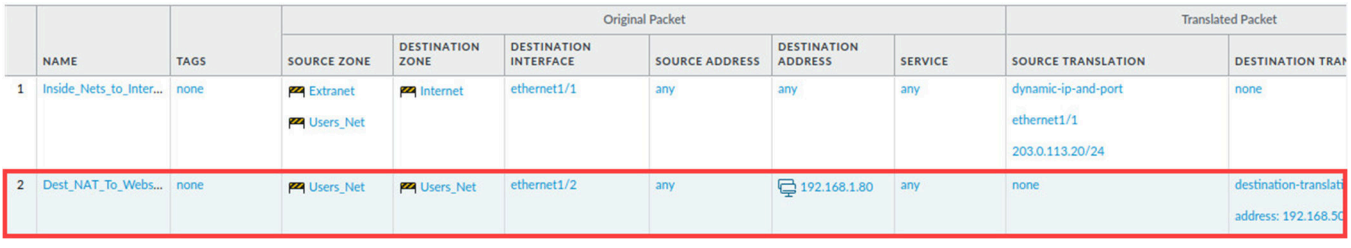
Parameter	Value
Translation Type	Select **Static IP** from the dropdown list
Translated Address	**`192.168.50.80`** (address of the Extranet web server)



Please Note

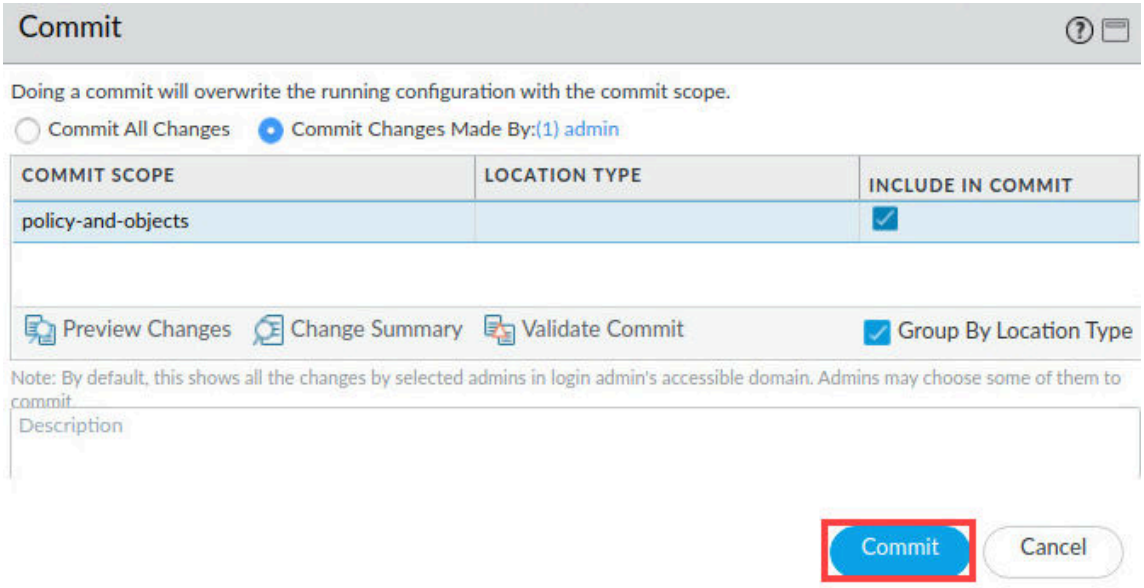
The **Translated Packet** tab defines how the firewall will translate a matching packet. Leave the **Source Address Translation** section set to **None** because we are performing only destination translation in this exercise.

5. Verify that the **Dest_NAT_To_Webserver** *NAT* policy is showing.

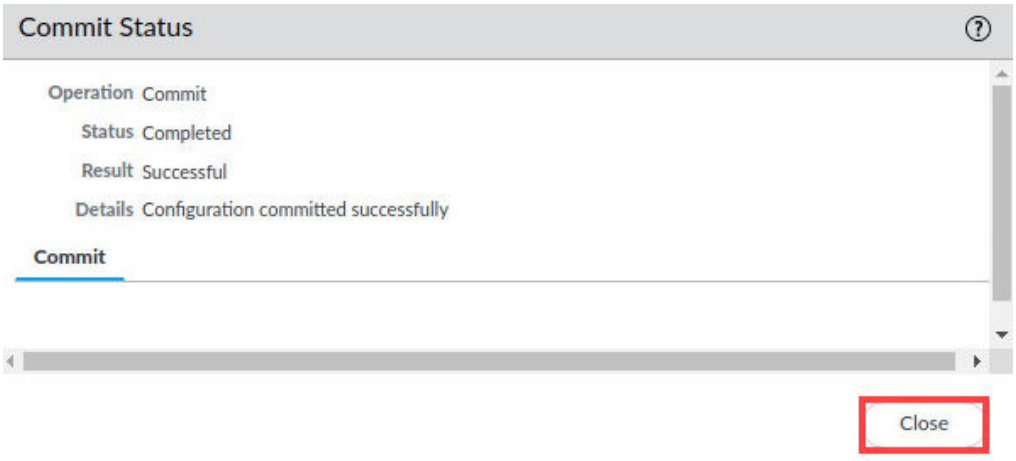


6. Click the **Commit** button at the upper right of the web interface.

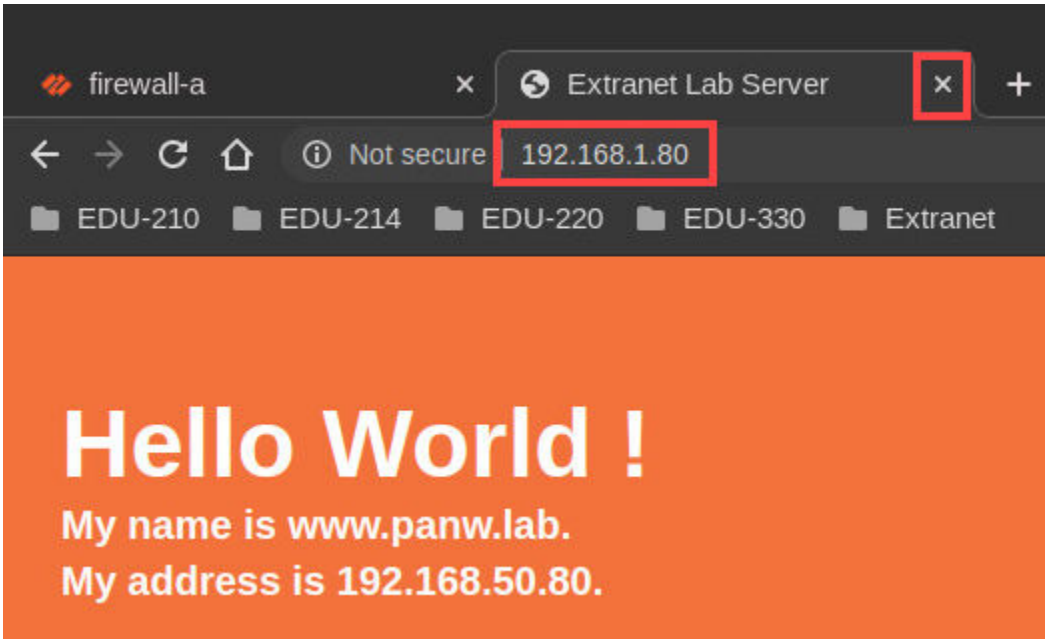
7. In the *Commit* window, click **Commit**.



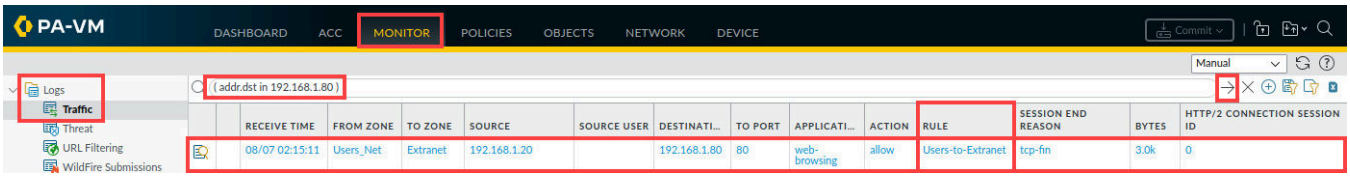
8. Wait until the *Commit* process is complete. Click **Close**.



9. Open a new tab on the *Chromium* web browser. Type **`http://192.168.1.80`** and verify connectivity to the *Extranet Server*. Close the newly opened tab by clicking the **X** icon.



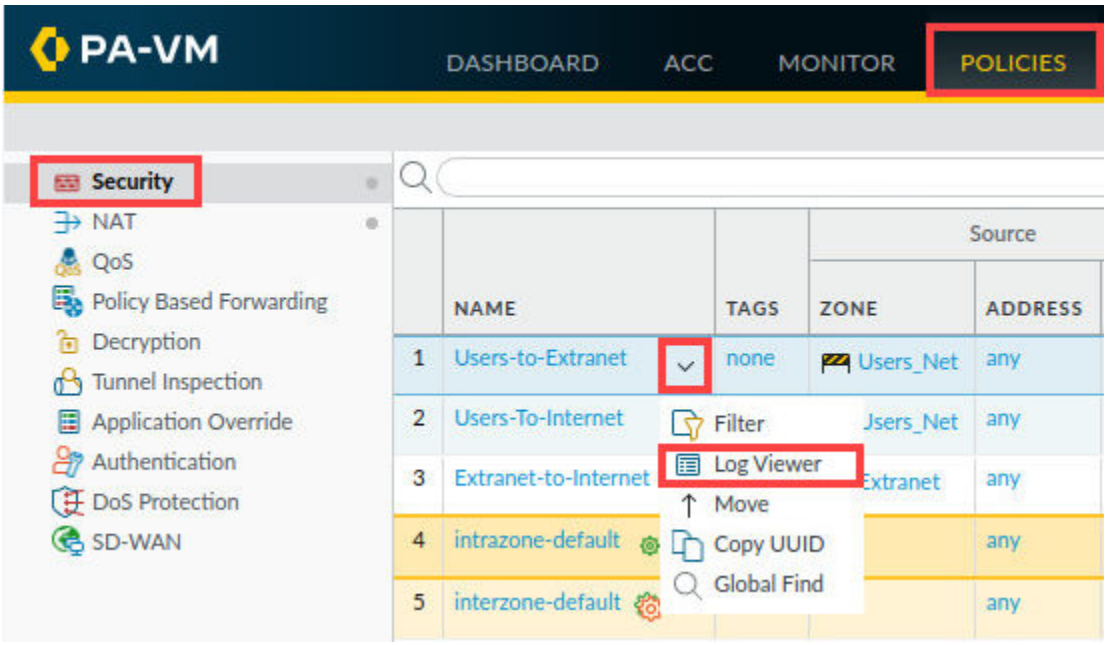
10. Examine the firewall Traffic log by ensuring you are at **Monitor > Logs > Traffic**. Use a filter to locate the entry for Destination IP 192.168.1.80 **`( addr.dst in 192.168.1.80 ).`** Verify that there is allowed traffic that matches the security policy rule **Users_to_Internet.**



Please Note

Note the security policy rule that was matched: **Users_to_Extranet**

11. As an alternate method to access the Traffic log in the web interface, select **Policies > Security**. Hover to the right of *Users-to-Extranet* to utilize the **dropdown** icon below the *Name* column, select **Log Viewer**.



When you use the Log Viewer option on a security policy, it opens the Traffic log and applies a filter automatically to display only those entries that match the security policy rule “Users_to_Extranet” that was selected.

12. The lab is now complete; you may end your reservation.