# PALO ALTO NETWORKS EDU 210

# Lab 5: Configuring Security Policy Rules and NAT Rules

**Document Version: 2021-09-27**

# Contents

## Introduction

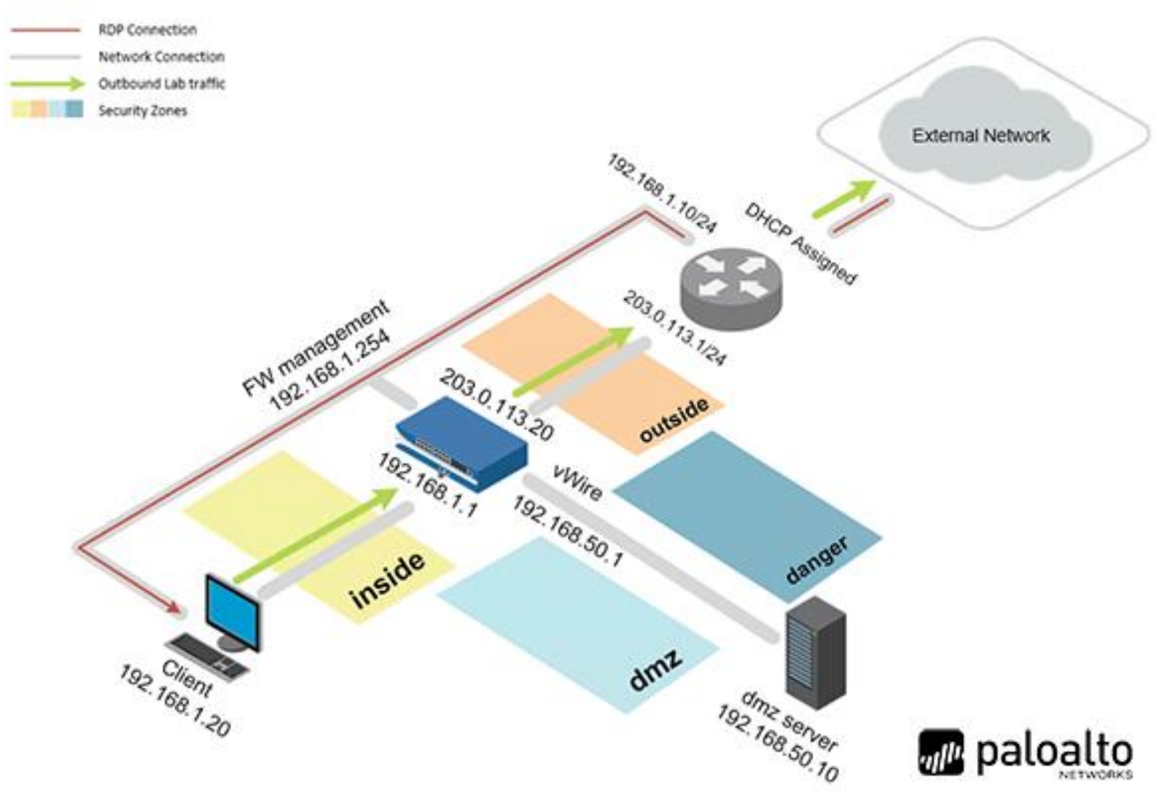
In this lab, you will allow network traffic from the Users_Net security zone to the Extranet security zone so that employees can access various business applications. You will create, modify, and test a security policy rule to allow access between these two zones. Once your rule is successfully in place, 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

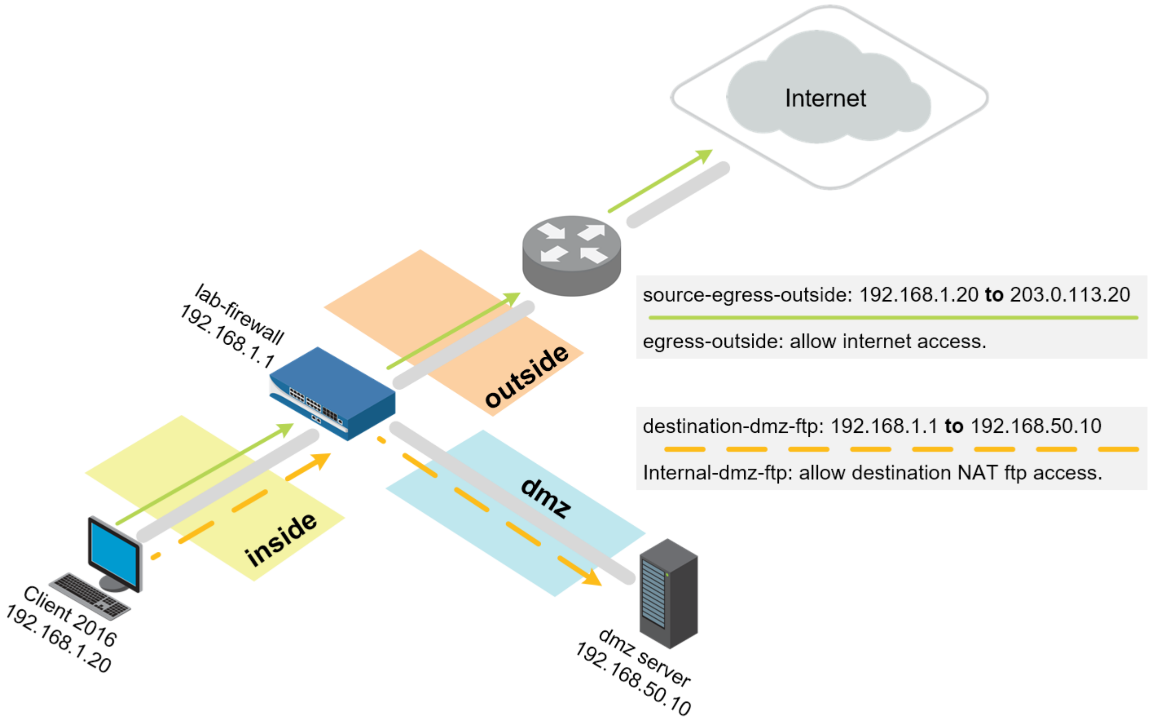
In this lab, you will perform the following tasks:

- 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


Internet
lab-firewall
192.168.1.1
outside
source-egress-outside: 192.168.1.20 to 203.0.113.20
egress-outside: allow internet access.
destination-dmz-ftp: 192.168.1.1 to 192.168.50.10
Internal-dmz-ftp: allow destination NAT ftp access.
dmz
inside
Client 2016
192.168.1.20
dmz server
192.168.50.10

## 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.

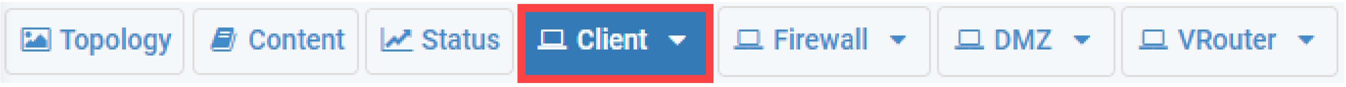
| **Virtual Machine** | **IP Address** | **Account**<br>(if needed) | **Password**<br>(if needed) |
|---|---|---|---|
| Client | 192.168.1.20 | lab-user | **Pal0Alt0!** |
| DMZ | 192.168.50.10 | root | **Pal0Alt0!** |
| Firewall | 192.168.1.254 | admin | **Pal0Alt0!** |
| VRouter | 192.168.1.10 | root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

# 5 Configuring Security Policy and NAT Rules

## 5.1 Apply a Baseline Configuration to the Firewall

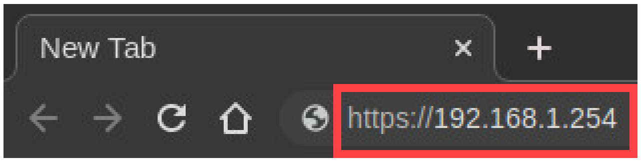
In this section, you will load the firewall configuration file.

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

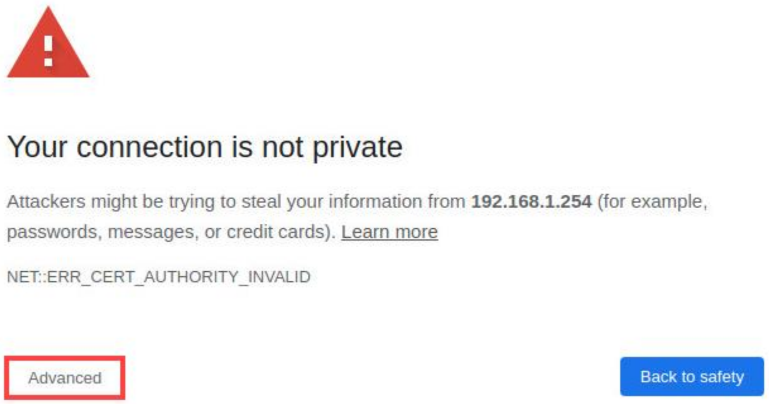


2. Double-click the **Chromium Web Browser** icon located on the *desktop*.

3. In the *Chromium* address field, type **`https://192.168.1.254`** and press **Enter**.



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



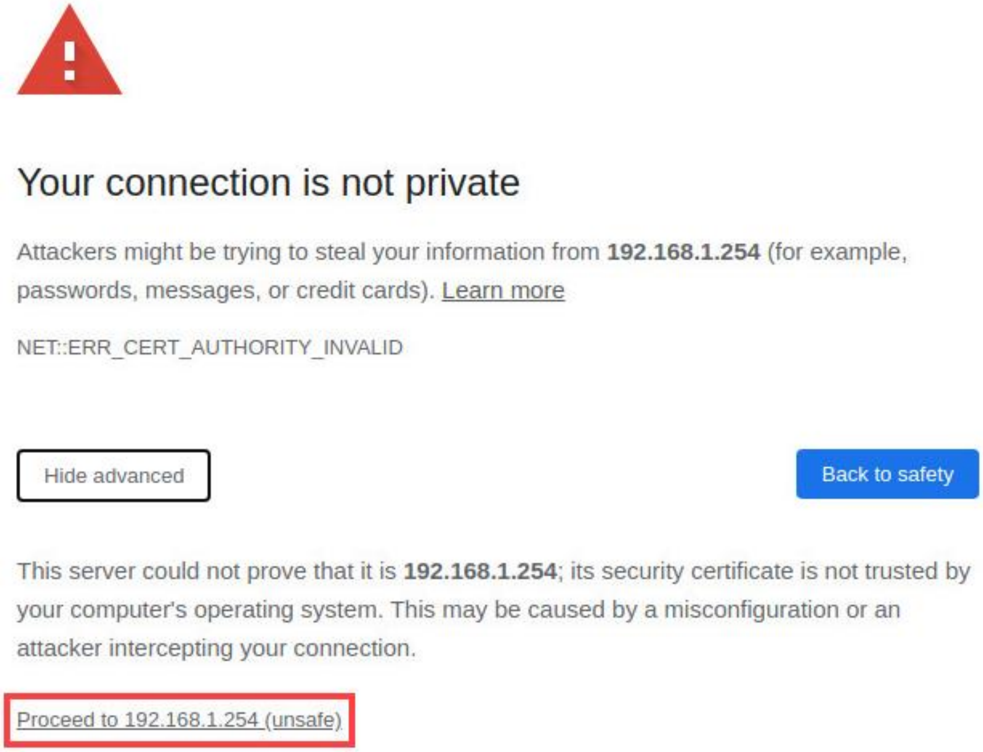
Your connection is not private

Attackers might be trying to steal your information from **192.168.1.254** (for example, passwords, messages, or credit cards). Learn more

NET::ERR_CERT_AUTHORITY_INVALID

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)**.



Your connection is not private

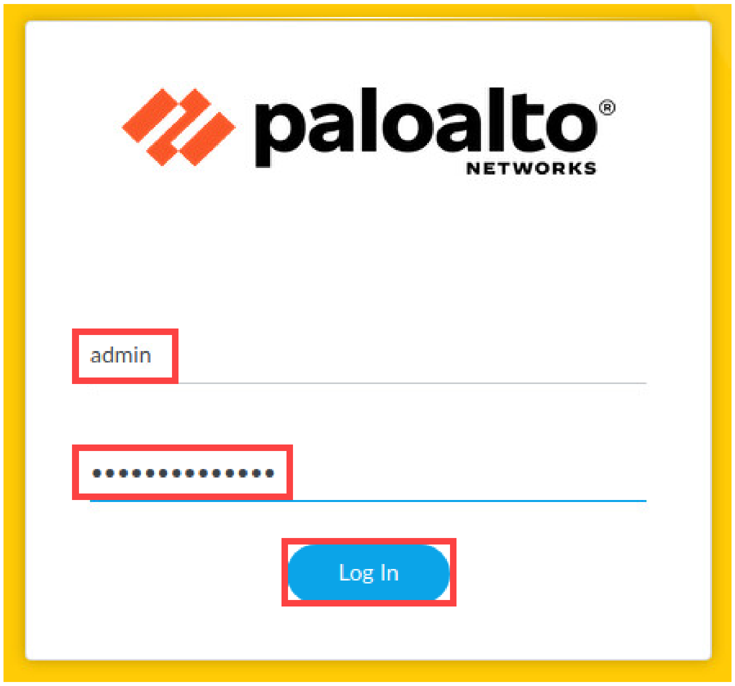
Attackers might be trying to steal your information from **192.168.1.254** (for example, passwords, messages, or credit cards). Learn more

NET::ERR_CERT_AUTHORITY_INVALID

This server could not prove that it is **192.168.1.254**; its security certificate is not trusted by your computer's operating system. This may be caused by a misconfiguration or an attacker intercepting your connection.

Proceed to 192.168.1.254 (unsafe)

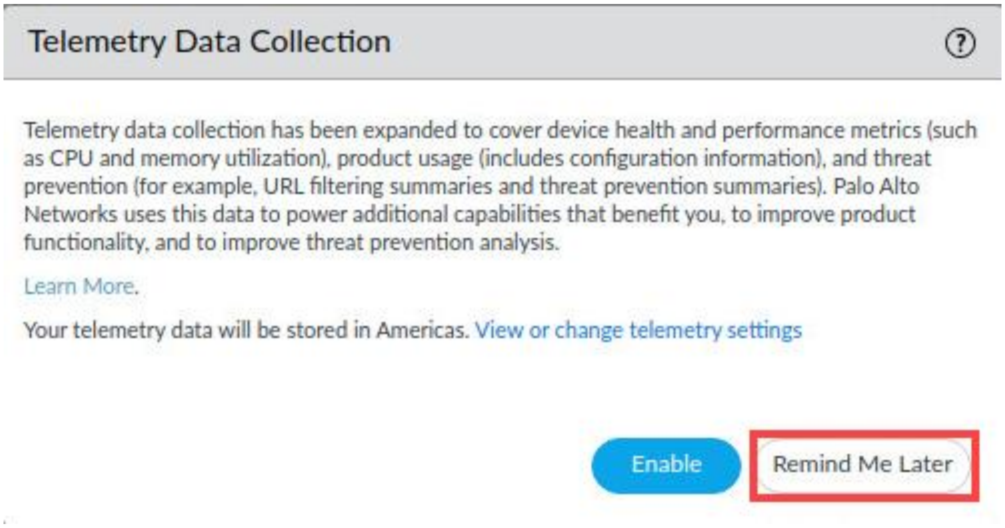
6. Log in to the firewall web interface as username **`admin`**, password **`Pal0Alt0!`.**



admin

••••••••••••••

7. In the *Telemetry Data Collection* pop-up, click **Remind Me Later**.



Telemetry Data Collection

Telemetry data collection has been expanded to cover device health and performance metrics (such as CPU and memory utilization), product usage (includes configuration information), and threat prevention (for example, URL filtering summaries and threat prevention summaries). Palo Alto Networks uses this data to power additional capabilities that benefit you, to improve product functionality, and to improve threat prevention analysis.

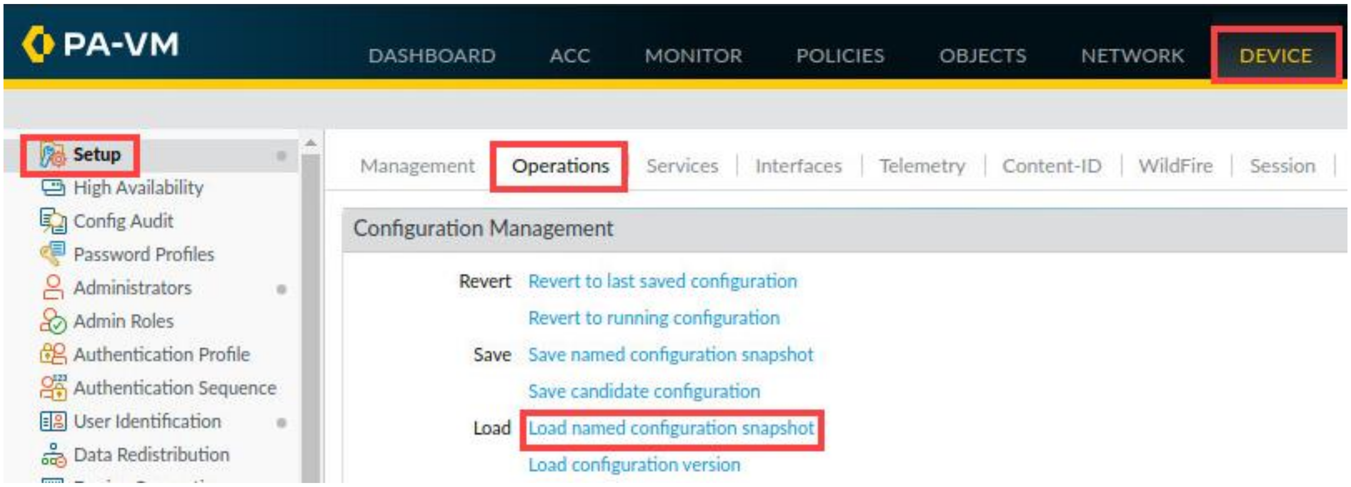
Learn More.

Your telemetry data will be stored in Americas. View or change telemetry settings

Please Note

Before you can enable Telemetry Data Collection, you would need to install a device certificate. For this lab, you will not be using Telemetry Data Collection.

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



Configuration Management

Revert Revert to last saved configuration

Revert to running configuration

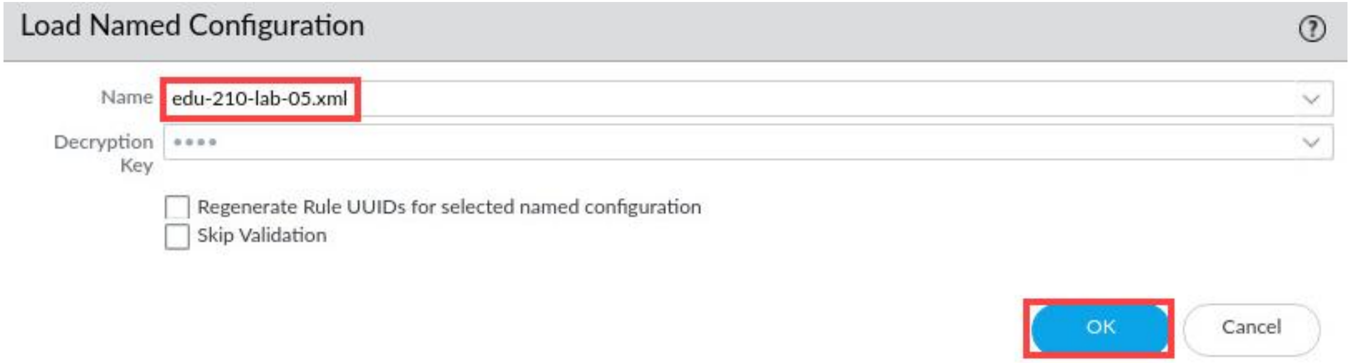
Save Save named configuration snapshot

Save candidate configuration

Load Load named configuration snapshot

Load configuration version

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



Load Named Configuration

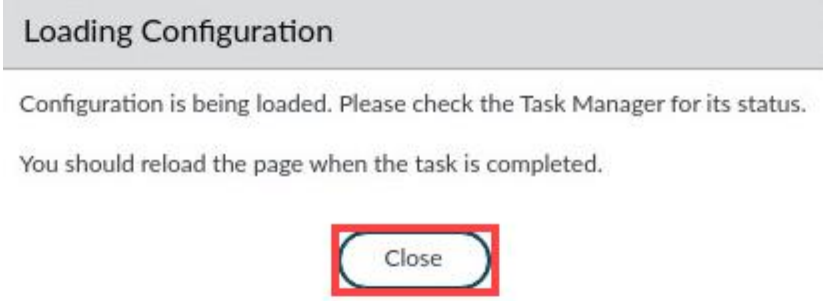
Name: edu-210-lab-05.xml

Decryption Key: ••••

☐ Regenerate Rule UUIDs for selected named configuration

☐ Skip Validation

10. 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.

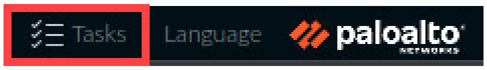


Loading Configuration

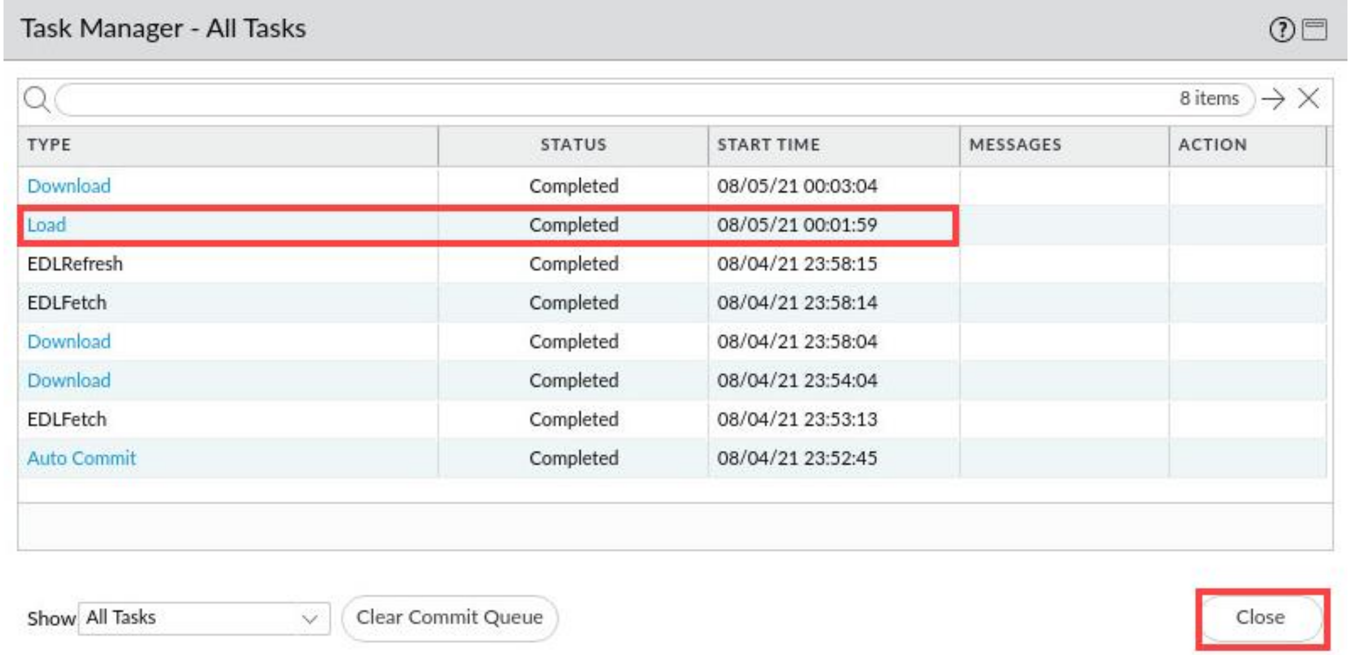
Configuration is being loaded. Please check the Task Manager for its status.

You should reload the page when the task is completed.

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



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

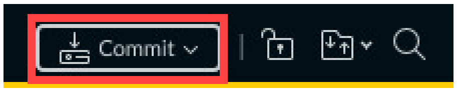


Task Manager - All Tasks

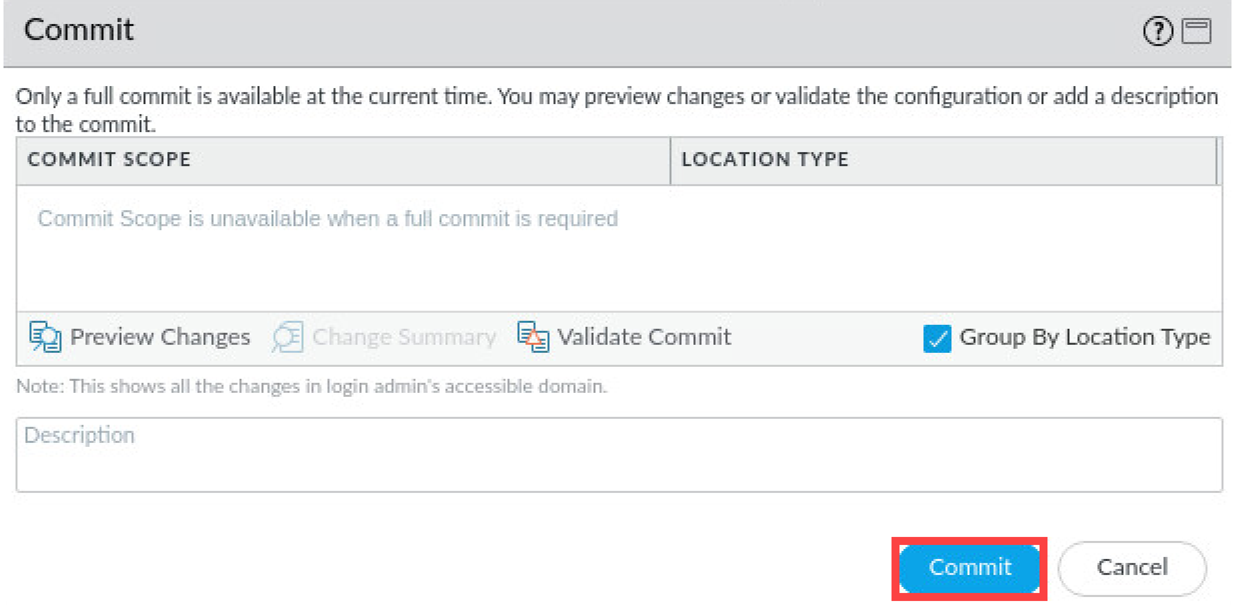
8 items

| TYPE | STATUS | START TIME | MESSAGES | ACTION |
|---|---|---|---|---|
| Download | Completed | 08/05/21 00:03:04 | | |
| Load | Completed | 08/05/21 00:01:59 | | |
| EDLRefresh | Completed | 08/04/21 23:58:15 | | |
| EDLFetch | Completed | 08/04/21 23:58:14 | | |
| Download | Completed | 08/04/21 23:58:04 | | |
| Download | Completed | 08/04/21 23:54:04 | | |
| EDLFetch | Completed | 08/04/21 23:53:13 | | |
| Auto Commit | Completed | 08/04/21 23:52:45 | | |

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



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



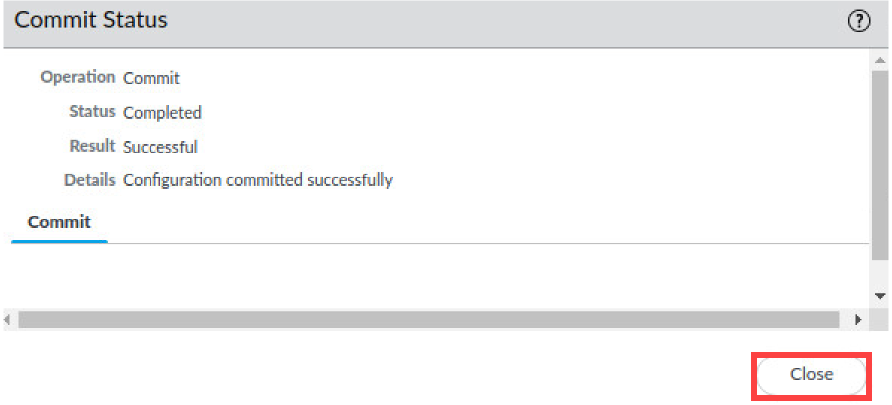
Commit

Only a full commit is available at the current time. You may preview changes or validate the configuration or add a description to the commit.

| COMMIT SCOPE | LOCATION TYPE |
|---|---|
| Commit Scope is unavailable when a full commit is required | |

Note: This shows all the changes in login admin's accessible domain.

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



Commit Status

Operation Commit
Status Completed
Result Successful
Details Configuration committed successfully

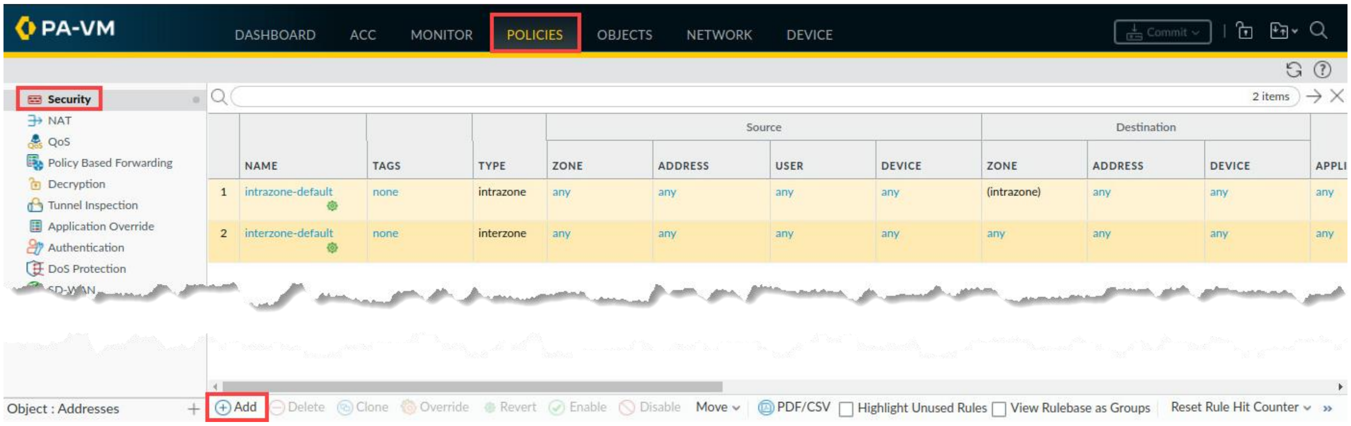
The commit process takes changes made to the firewall and copies them to the running configuration, which will activate all configuration changes since the last commit.

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

## 5.2 Create a Security Policy Rule

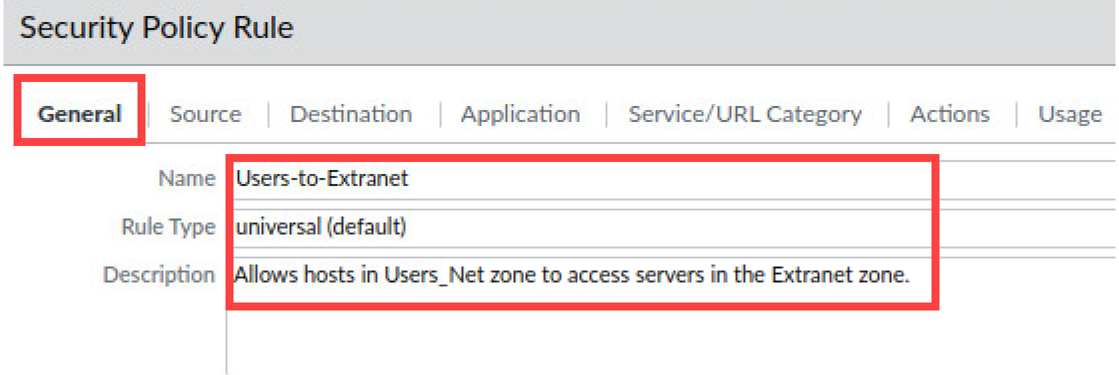
You need to allow network traffic from the Users_Net security zone to the Extranet security zone so that employees can access various business applications. In this section, you will create a security policy rule to allow access between these two zones

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



| | | | | Source | | | | Destination | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | NAME | TAGS | TYPE | ZONE | ADDRESS | USER | DEVICE | ZONE | ADDRESS | DEVICE | APPLI |
| 1 | intrazone-default | none | intrazone | any | any | any | any | (intrazone) | any | any | any |
| 2 | interzone-default | none | interzone | any | any | any | any | any | any | any | any |

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



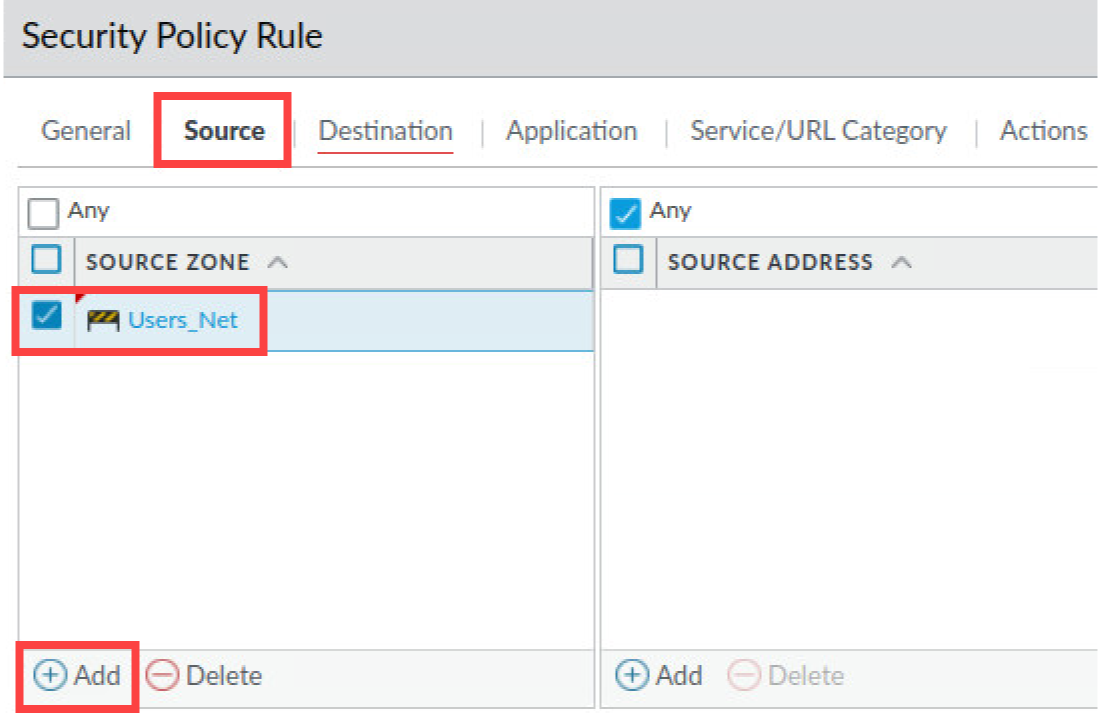
Security Policy Rule

Name: Users-to-Extranet

Rule Type: universal (default)

Description: Allows hosts in Users_Net zone to access servers in the Extranet zone.

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



Security Policy Rule

□ Any

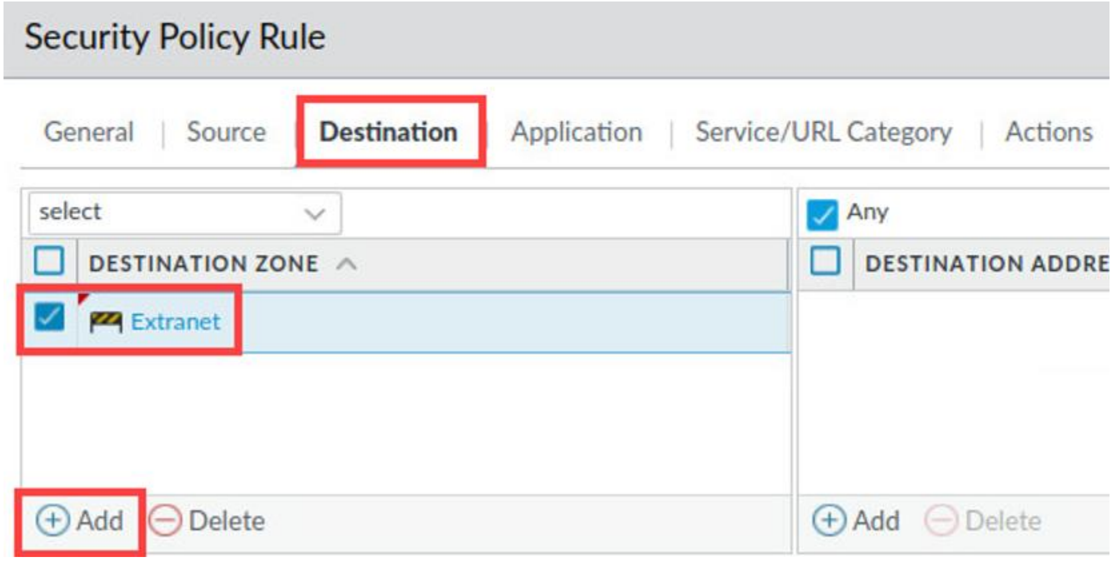
□ SOURCE ZONE

☑ Users_Net

☑ Any

□ SOURCE ADDRESS

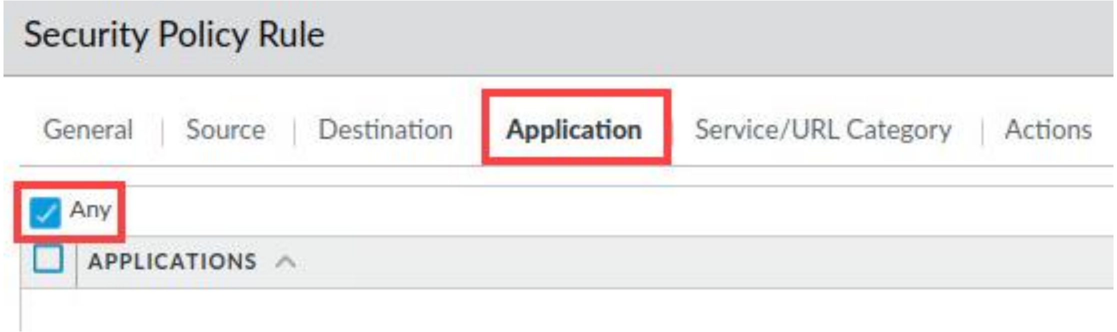
4. Select the **Destination** tab. Under the *Destination Zone* section, click **Add** and select **Extranet**.



☑ Any

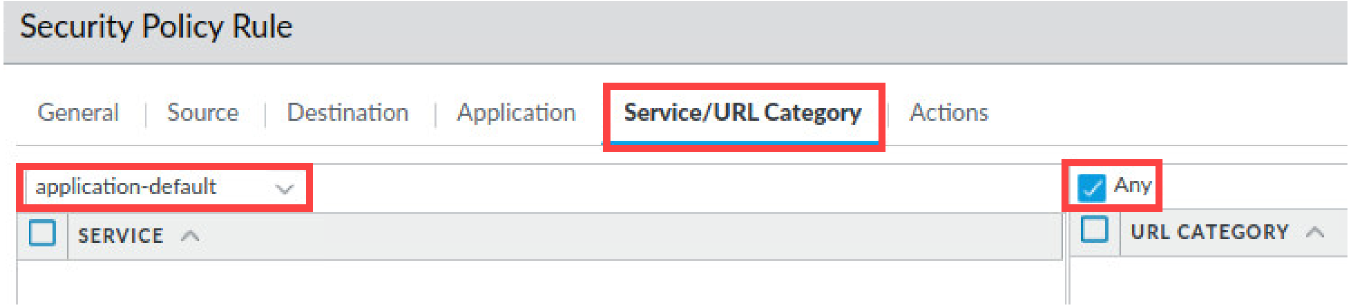
☑ Extranet

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



☑ Any

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

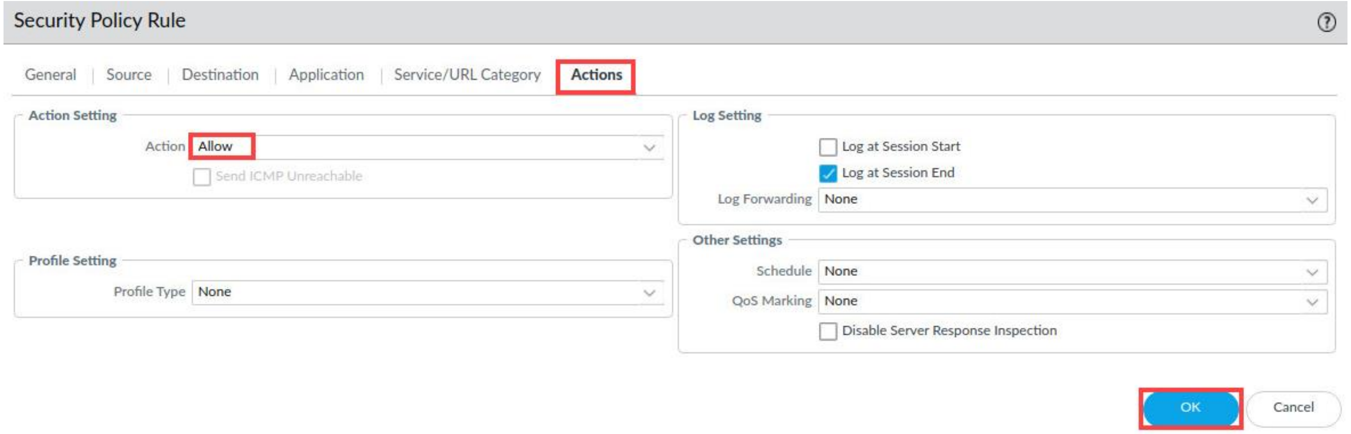


application-default

☑ Any

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**.



Security Policy Rule

General | Source | Destination | Application | Service/URL Category | Actions

Action Setting
Action: Allow
□ Send ICMP Unreachable

Profile Setting
Profile Type: None

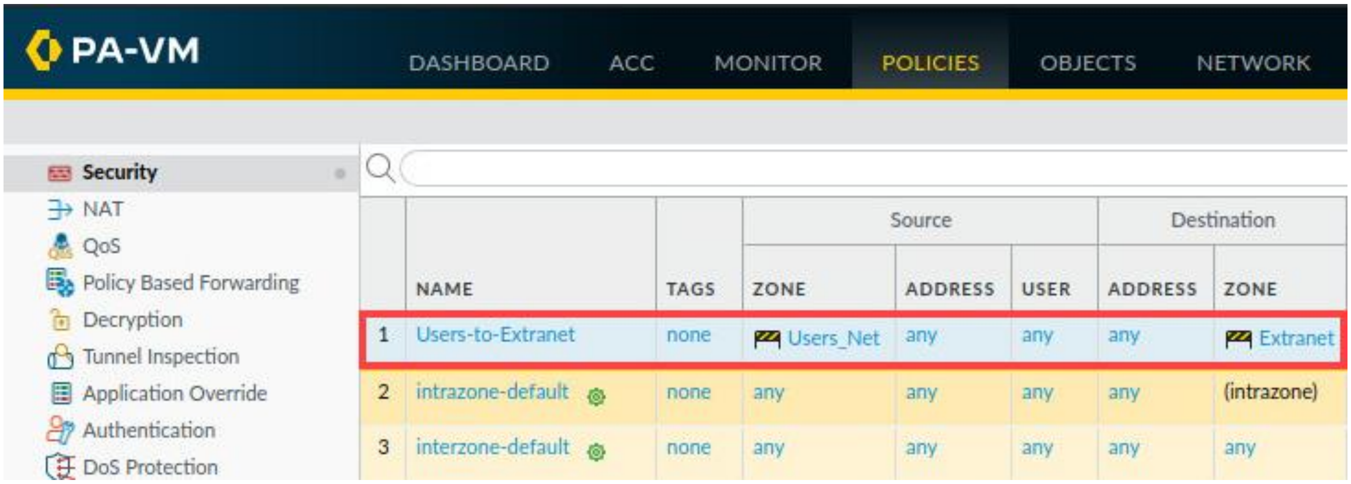
Log Setting
□ Log at Session Start
☑ Log at Session End
Log Forwarding: None

Other Settings
Schedule: None
QoS Marking: None
□ Disable Server Response Inspection

**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.

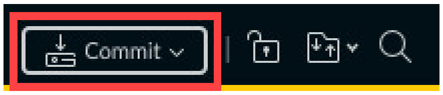


| | | | Source | | | Destination | |
|---|---|---|---|---|---|---|---|
| | NAME | TAGS | ZONE | ADDRESS | USER | ADDRESS | ZONE |
| 1 | Users-to-Extranet | none | Users_Net | any | any | any | Extranet |
| 2 | intrazone-default | none | any | any | any | any | (intrazone) |
| 3 | interzone-default |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

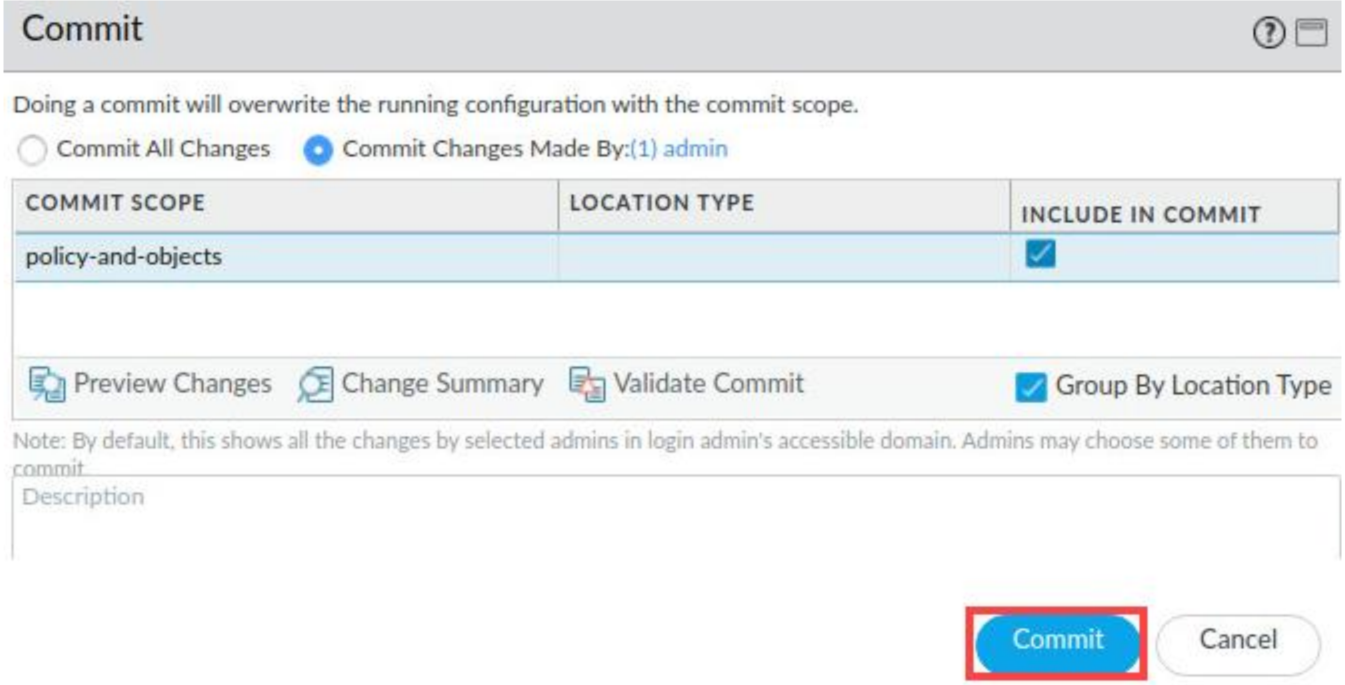
**Please Note**

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**.



Commit

Doing a commit will overwrite the running configuration with the commit scope.

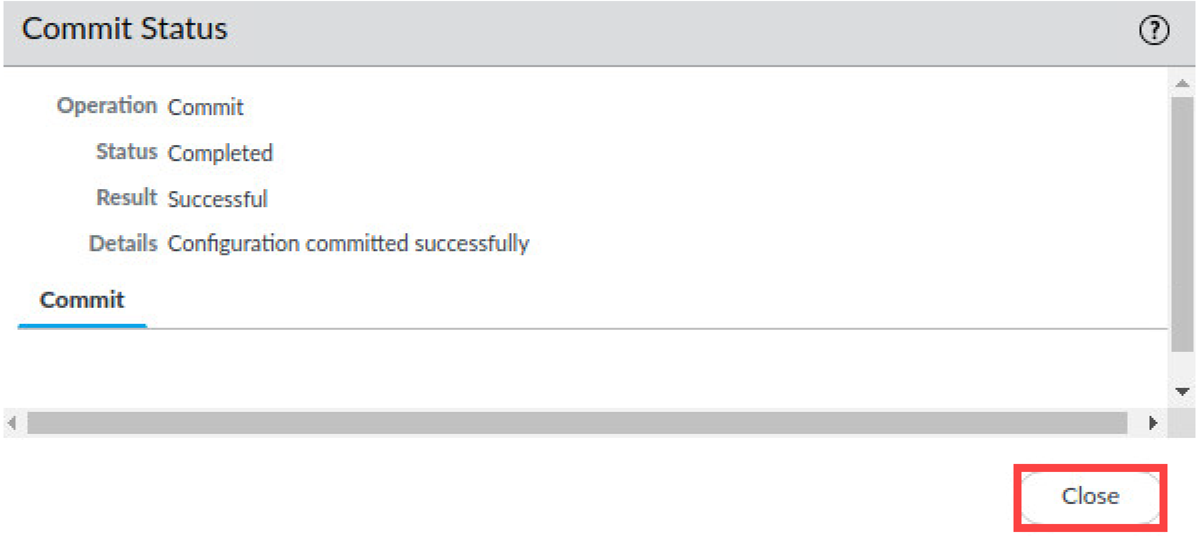
○ Commit All Changes ● Commit Changes Made By:(1) admin

| COMMIT SCOPE | LOCATION TYPE | INCLUDE IN COMMIT |
|---|---|---|
| policy-and-objects | | ☑ |

☑ Group By Location Type

Note: By default, this shows all the changes by selected admins in login admin's accessible domain. Admins may choose some of them to commit.

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



Commit Status

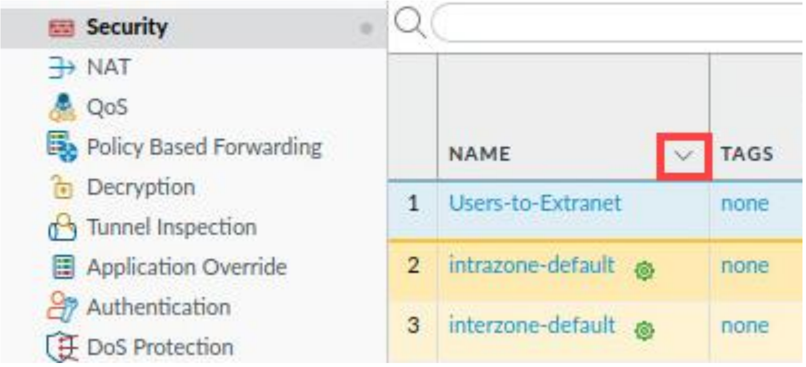
| | |
|---|---|
| Operation | Commit |
| Status | Completed |
| Result | Successful |
| Details | Configuration committed successfully |

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

## 5.3 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.

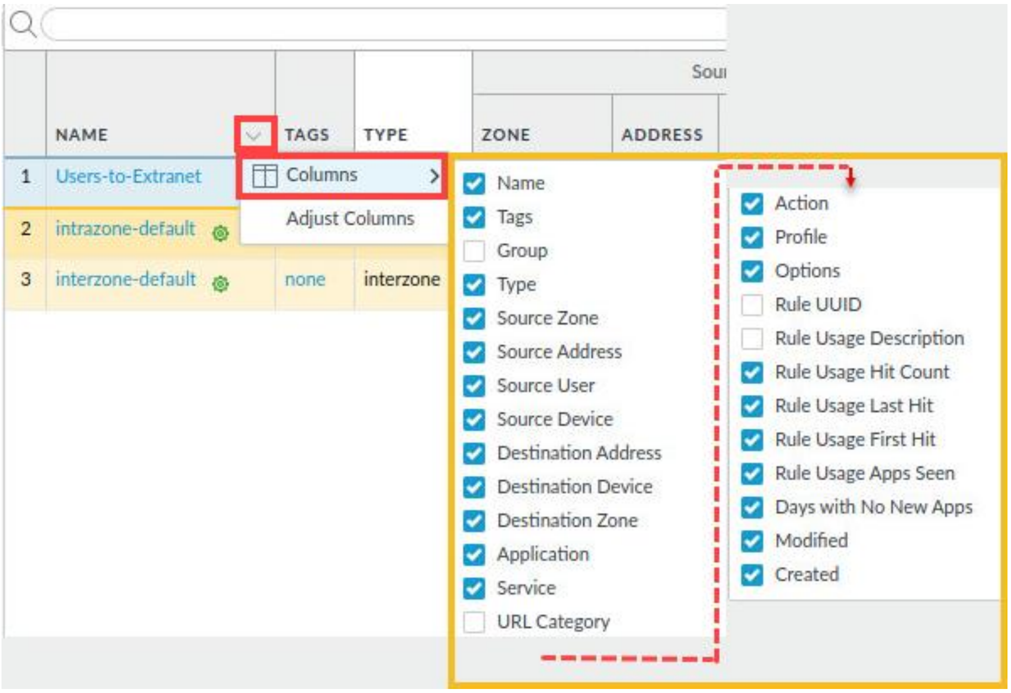


| | NAME | TAGS |
|---|---|---|
| 1 | Users-to-Extranet | none |
| 2 | intrazone-default | none |
| 3 | interzone-default | none |

**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.



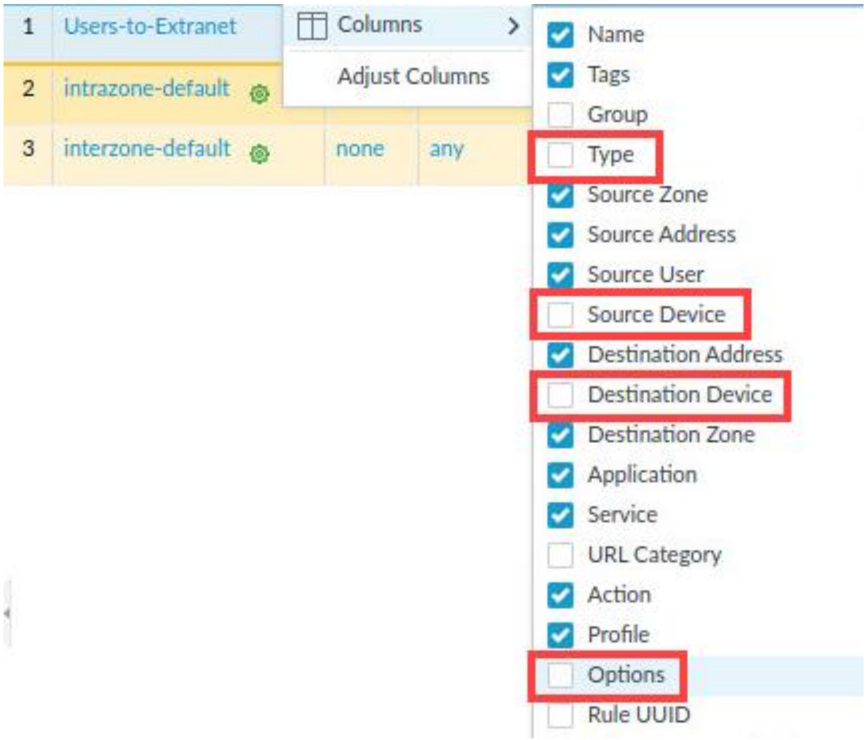
| | NAME | TAGS | TYPE |
|---|---|---|---|
| 1 | Users-to-Extranet | | |
| 2 | intrazone-default | | |
| 3 | interzone-default | none | interzone |

☑ Name
☑ Tags
☐ Group
☑ Type
☑ Source Zone
☑ Source Address
☑ Source User
☑ Source Device
☑ Destination Address
☑ Destination Device
☑ Destination Zone
☑ Application
☑ Service
☐ URL Category
☑ Action
☑ Profile
☑ Options
☐ Rule UUID
☐ Rule Usage Description
☑ Rule Usage Hit Count
☑ Rule Usage Last Hit
☑ Rule Usage First Hit
☑ Rule Usage Apps Seen
☑ Days with No New Apps
☑ Modified
☑ Created

**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**.



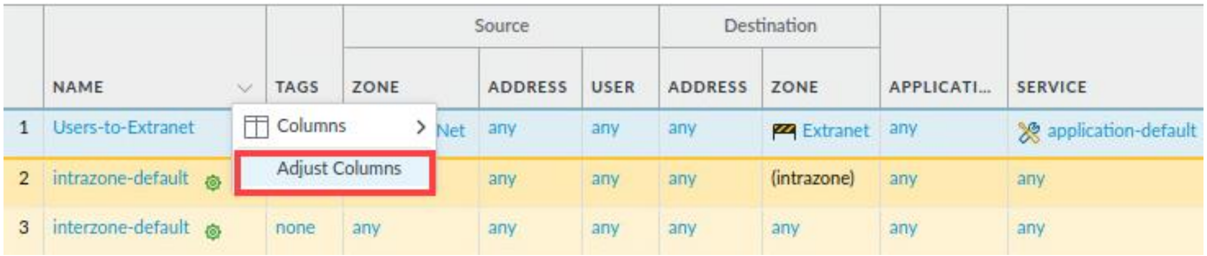
1 Users-to-Extranet
2 intrazone-default
3 interzone-default none any

☑ Name
☑ Tags
☐ Group
☐ Type
☑ Source Zone
☑ Source Address
☑ Source User
☐ Source Device
☑ Destination Address
☐ Destination Device
☑ Destination Zone
☑ Application
☑ Service
☐ URL Category
☑ Action
☑ Profile
☐ Options
☐ Rule UUID

Please Note

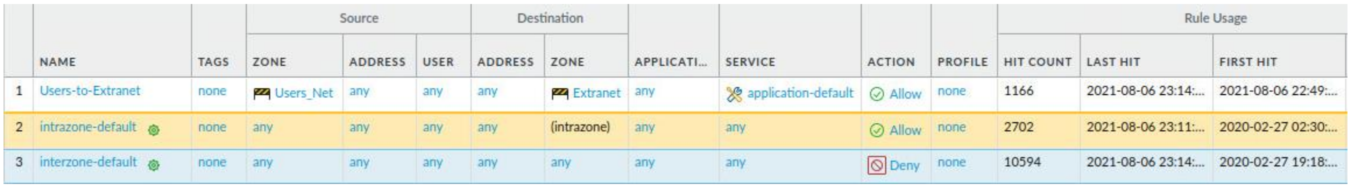
These changes are optional. You do not have to show or hide columns or rearrange items in any of the firewall tables. However, you may find that there are certain columns in certain tables that you never use, and you can hide them to provide more room in the table. You may also find that there are certain 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**.



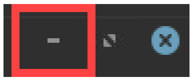
| | | | Source | | | Destination | | | |
|---|---|---|---|---|---|---|---|---|---|
| | NAME | TAGS | ZONE | ADDRESS | USER | ADDRESS | ZONE | APPLICATI... | SERVICE |
| 1 | Users-to-Extranet | | Net | any | any | any | Extranet | any | application-default |
| 2 | intrazone-default | | | any | any | any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

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



| | | | Source | | | Destination | | | | | | Rule Usage | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NAME | TAGS | ZONE | ADDRESS | USER | ADDRESS | ZONE | APPLICATI... | SERVICE | ACTION | PROFILE | HIT COUNT | LAST HIT | 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:... |

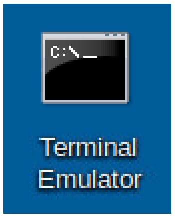
6. Minimize the *PA-VM* firewall by clicking the **minimize** icon in the upper-right of the web interface and continue to the next task.



## 5.4 Test New Security Policy Rule

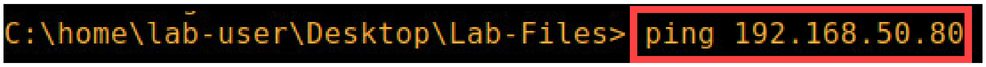
In this section, you will test the new security policy rule you created in a previous task.

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



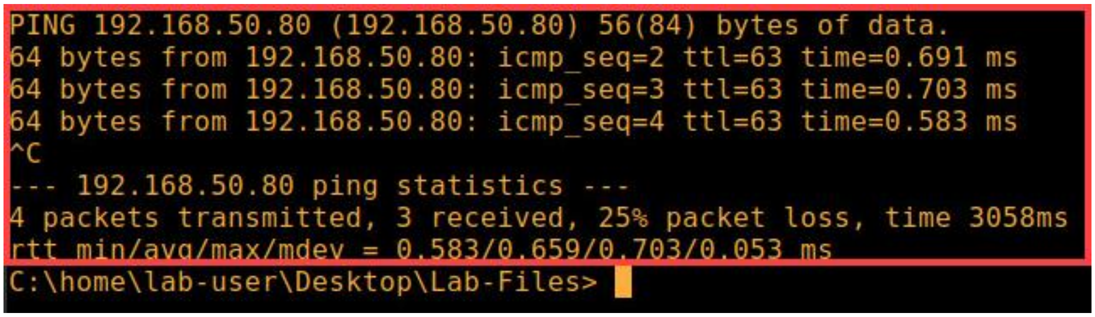
2. Issue the following command below to ensure your security policy rule is functioning correctly.

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



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

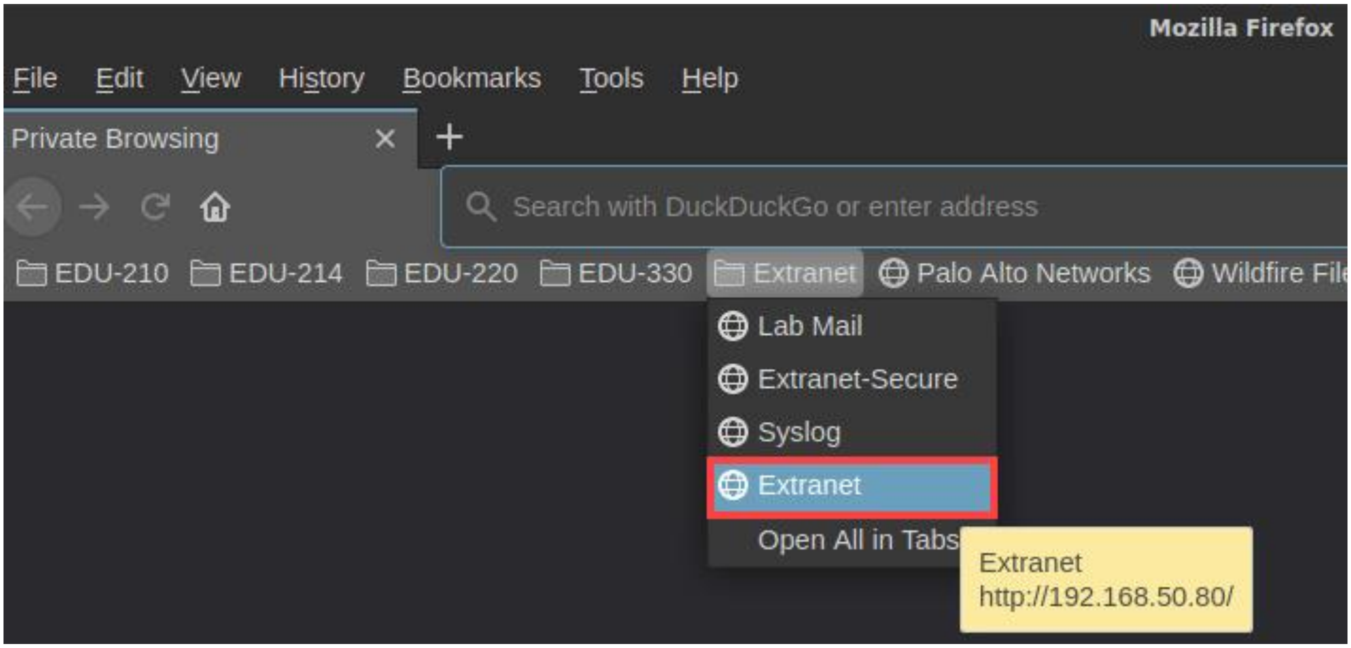
3. Wait a few seconds and use **Ctrl+C** to stop the command. If you see a reply from 192.168.50.80, then your security policy rule is configured correctly! If not, review the previous steps and try this test again.



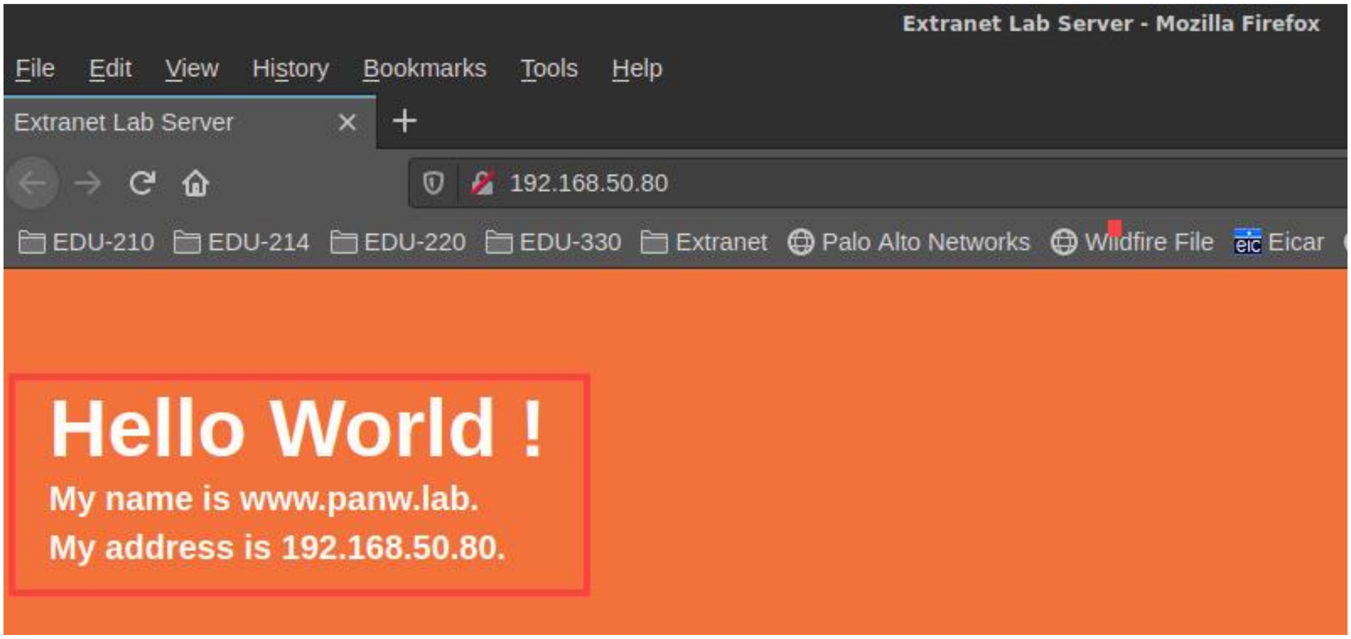
```
PING 192.168.50.80 (192.168.50.80) 56(84) bytes of data.
64 bytes from 192.168.50.80: icmp_seq=2 ttl=63 time=0.691 ms
64 bytes from 192.168.50.80: icmp_seq=3 ttl=63 time=0.703 ms
64 bytes from 192.168.50.80: icmp_seq=4 ttl=63 time=0.583 ms
^C
--- 192.168.50.80 ping statistics ---
4 packets transmitted, 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**.


Mozilla Firefox
File Edit View History Bookmarks Tools Help
Private Browsing
Search with DuckDuckGo or enter address
EDU-210 EDU-214 EDU-220 EDU-330 Extranet Palo Alto Networks Wildfire File
Lab Mail
Extranet-Secure
Syslog
Extranet
Open All in Tabs
Extranet
http://192.168.50.80/

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

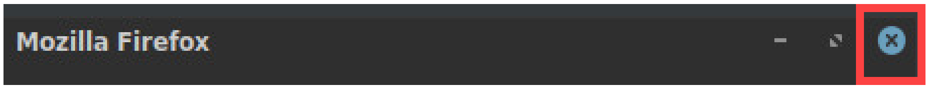


Hello World !

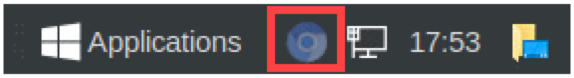
My name is www.panw.lab.

My address is 192.168.50.80.

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.

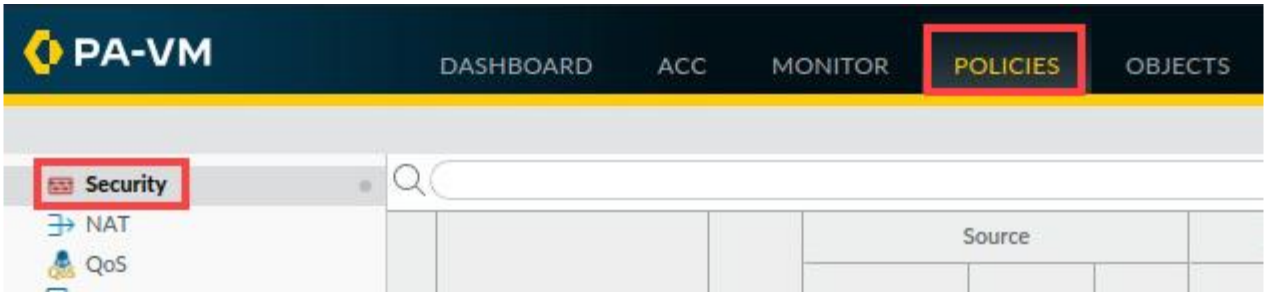
## 5.5 Examine and Reset the Rule Hit Count

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.

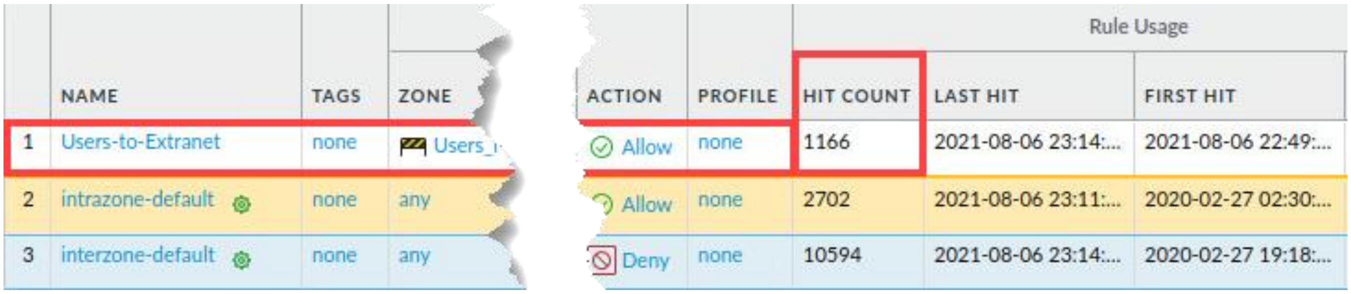
Rule hit counts are very useful to track whether a rule is configured correctly. You can reset the counters for all security policy rules or for a single rule.

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

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

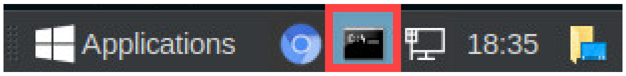


2. In the *Security Policies* window, scroll to the right and locate the column for **Hit Count**. Note the number of hits on the Users to Extranet Rule. For this lab, there were **1166** hits. You may get different results, but the conclusion will be the same.



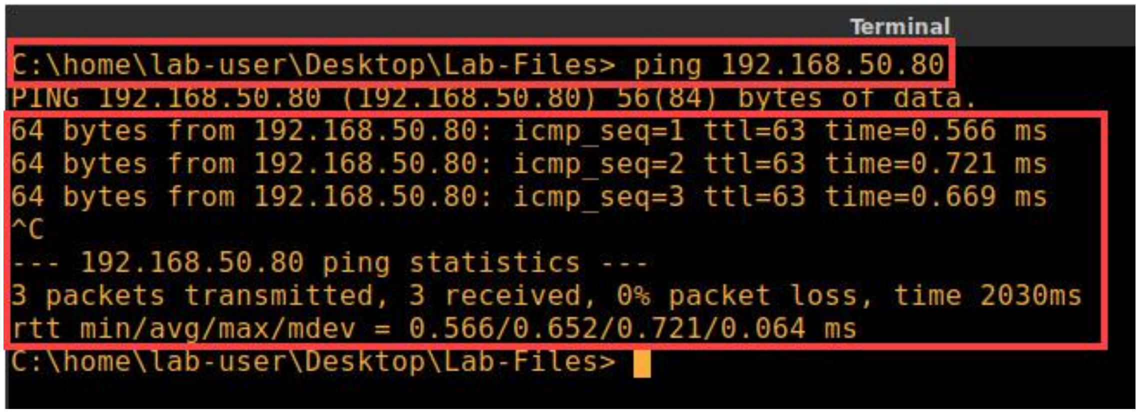
| | NAME | TAGS | ZONE | ACTION | PROFILE | HIT COUNT | LAST HIT | FIRST HIT |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Rule Usage | | |
| 1 | Users-to-Extranet | none | Users_ | Allow | none | 1166 | 2021-08-06 23:14:... | 2021-08-06 22:49:... |
| 2 | intrazone-default | none | any | Allow | none | 2702 | 2021-08-06 23:11:... | 2020-02-27 02:30:... |
| 3 | interzone-default | none | any | Deny | none | 10594 | 2021-08-06 23:14:... | 2020-02-27 19:18:... |

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



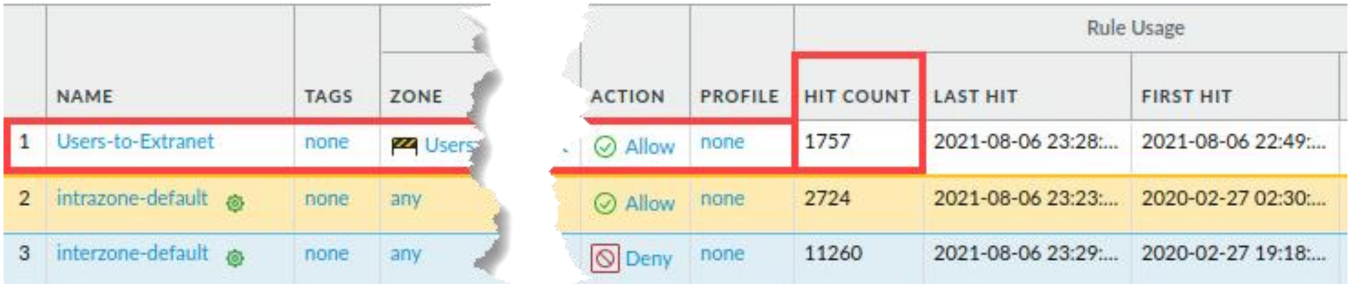
4. In the CLI connection to the firewall, use the **ping** command to check network connectivity to the panw.lab server. Notice the ping was successful. Wait a few seconds and use **Ctrl+C** to stop the command.

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



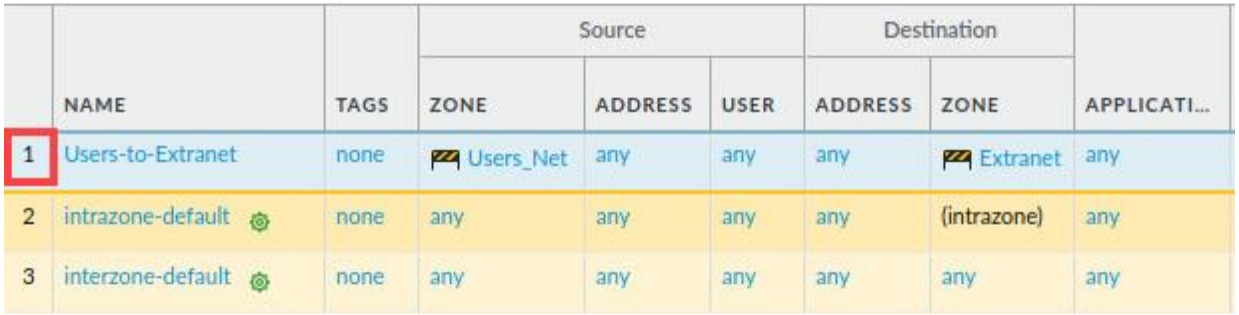
```
C:\home\lab-user\Desktop\Lab-Files> ping 192.168.50.80
PING 192.168.50.80 (192.168.50.80) 56(84) bytes of data.
64 bytes from 192.168.50.80: icmp_seq=1 ttl=63 time=0.566 ms
64 bytes from 192.168.50.80: icmp_seq=2 ttl=63 time=0.721 ms
64 bytes from 192.168.50.80: icmp_seq=3 ttl=63 time=0.669 ms
^C
--- 192.168.50.80 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2030ms
rtt min/avg/max/mdev = 0.566/0.652/0.721/0.064 ms
C:\home\lab-user\Desktop\Lab-Files>
```

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.



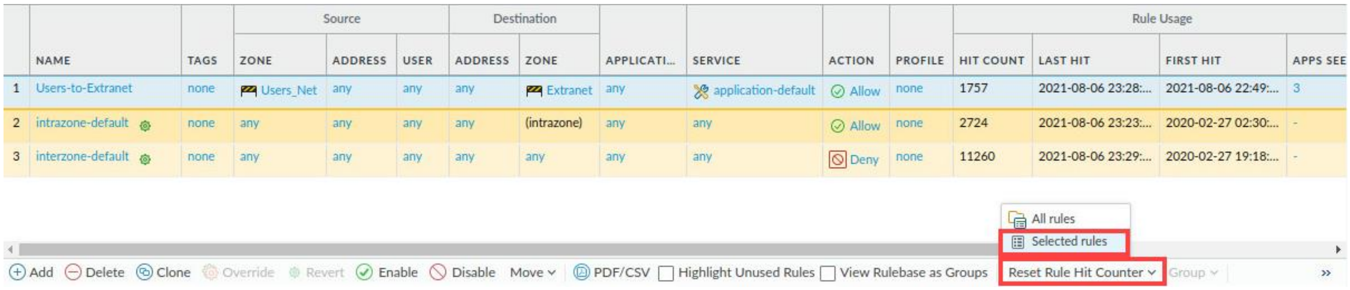
| | | | | | | Rule Usage | | |
|---|---|---|---|---|---|---|---|---|
| | NAME | TAGS | ZONE | ACTION | PROFILE | HIT COUNT | LAST HIT | FIRST HIT |
| 1 | Users-to-Extranet | none | Users | Allow | none | 1757 | 2021-08-06 23:28:... | 2021-08-06 22:49:... |
| 2 | intrazone-default | none | any | Allow | 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.



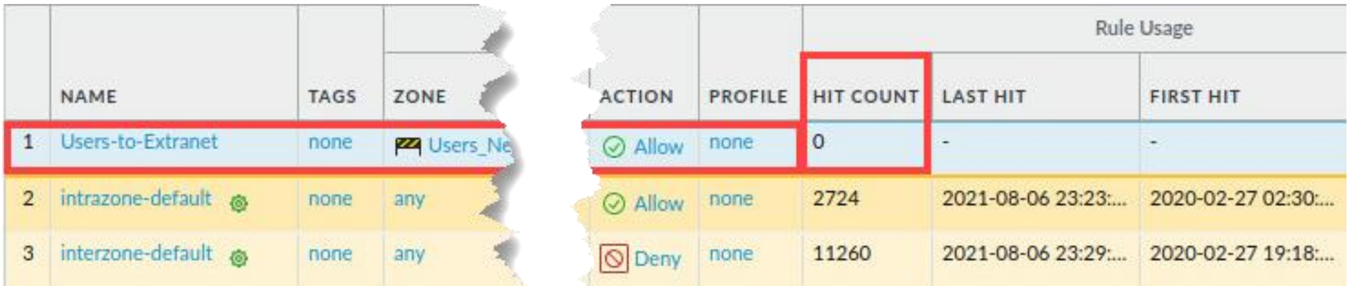
| | | | Source | | | Destination | | |
|---|---|---|---|---|---|---|---|---|
| | NAME | TAGS | ZONE | ADDRESS | USER | ADDRESS | ZONE | APPLICATI... |
| 1 | Users-to-Extranet | none | Users_Net | any | any | any | Extranet | any |
| 2 | intrazone-default | none | any | any | any | any | (intrazone) |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



| | | | Source | | | Destination | | | | | | Rule Usage | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NAME | TAGS | ZONE | ADDRESS | USER | ADDRESS | ZONE | APPLICATI... | SERVICE | ACTION | PROFILE | HIT COUNT | LAST HIT | FIRST HIT | APPS SEE |
| 1 | Users-to-Extranet | none | Users_Net | any | any | any | Extranet | any | application-default | Allow | none | 1757 | 2021-08-06 23:28:... | 2021-08-06 22:49:... | 3 |
| 2 | intrazone-default | none | any | any | any | any | (intrazone) | any | any | Allow | none | 2724 | 2021-08-06 23:23:... | 2020-02-27 02:30:... | - |
| 3 | interzone-default | none | any | any | any | any | any | any | any | Deny | none | 11260 | 2021-08-06 23:29:... | 2020-02-27 19:18:... | - |

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



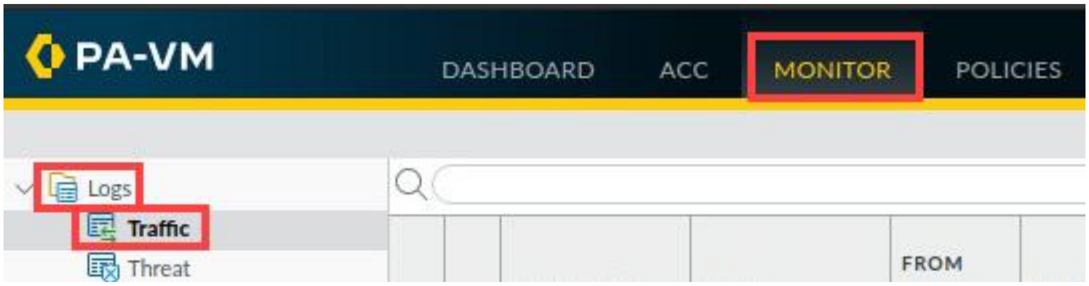
| | | | | | | Rule Usage | | |
|---|---|---|---|---|---|---|---|---|
| | NAME | TAGS | ZONE | ACTION | PROFILE | HIT COUNT | LAST HIT | FIRST HIT |
| 1 | Users-to-Extranet | none | Users_Ne | Allow | none | 0 | - | - |
| 2 | intrazone-default | none | any | Allow | none | 2724 | 2021-08-06 23:23:... | 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.

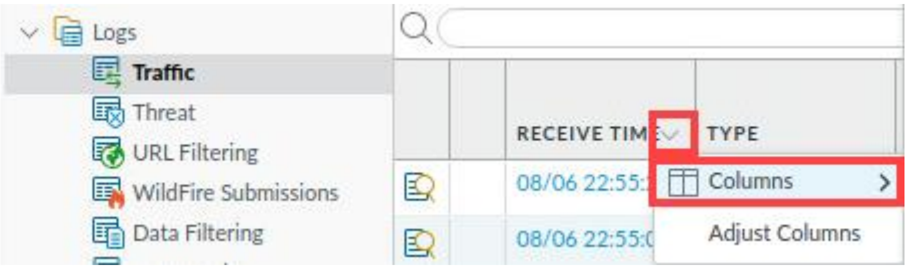
## 5.6 Examine the Traffic Log

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.

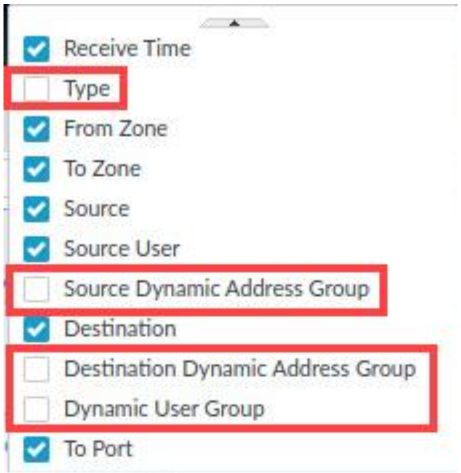
1. In the *firewall* interface, select **Monitor > Logs > Traffic**.



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



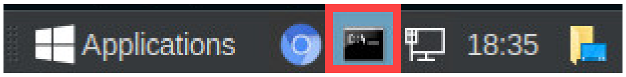
3. Uncheck **Type**, **Source Dynamic Address Group**, **Destination Dynamic Address Group,** and **Dynamic User Group** to hide their columns.



☑ Receive Time
□ Type
☑ From Zone
☑ To Zone
☑ Source
☑ Source User
□ Source Dynamic Address Group
☑ Destination
□ Destination Dynamic Address Group
□ Dynamic User Group
☑ To Port

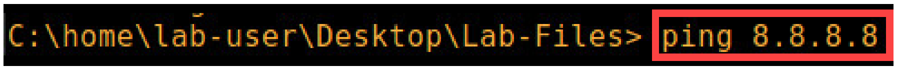
**Please Note** This is not a requirement, but we will not be using information from these columns in any lab for this course.

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



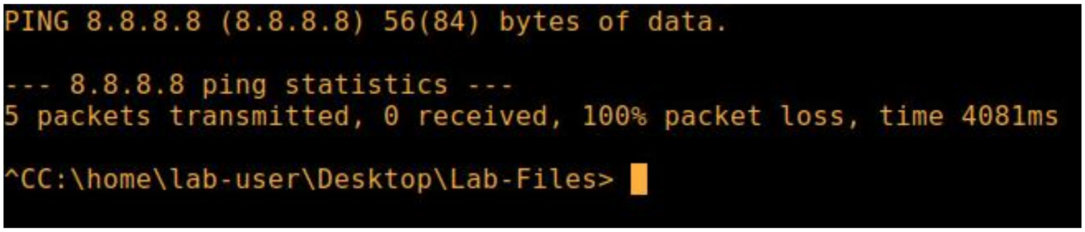
5. From the *terminal* window on the *desktop*, ping an address on the internet by issuing the following command.

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



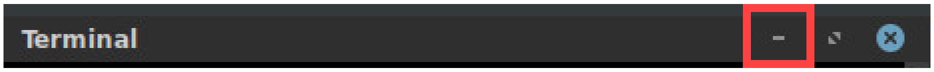
```
C:\home\lab-user\Desktop\Lab-Files> ping 8.8.8.8
```

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

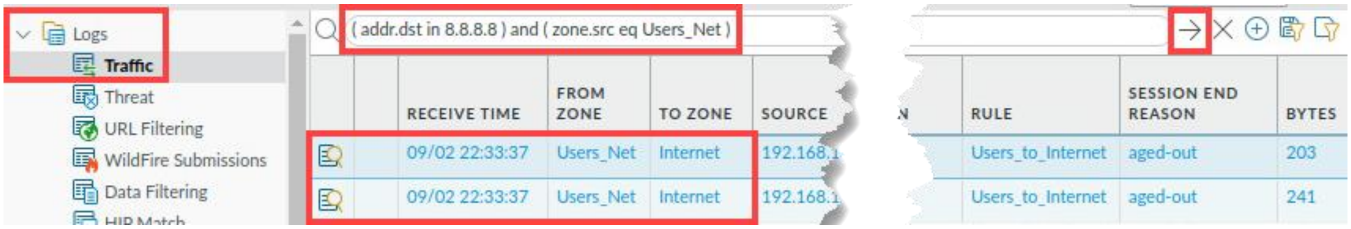


```
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.

--- 8.8.8.8 ping statistics ---
5 packets transmitted, 0 received, 100% packet loss, time 4081ms

^CC:\home\lab-user\Desktop\Lab-Files> 
```

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.



( addr.dst in 8.8.8.8 ) and ( zone.src eq Users_Net )

| | RECEIVE TIME | FROM ZONE | TO ZONE | SOURCE | N | RULE | SESSION END REASON | BYTES |
|---|---|---|---|---|---|---|---|---|
| | 09/02 22:33:37 | Users_Net | Internet | 192.168.1 | | Users_to_Internet | aged-out | 203 |
| | 09/02 22:33:37 | Users_Net | Internet | 192.168.1 | | Users_to_Internet | aged-out | 241 |

Please Note

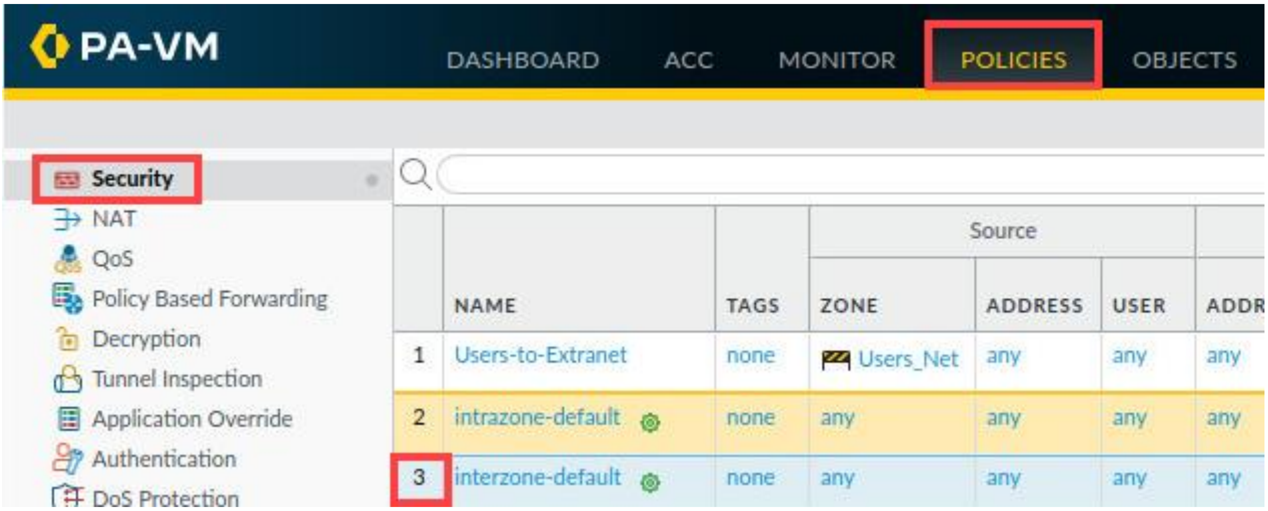
Filters are case sensitive so be precise! Also, note that there is a space after the first parentheses mark and right before the last parentheses mark.

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.

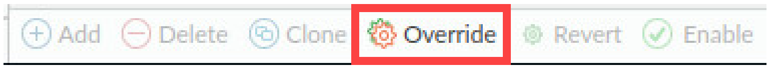
Second, remember that traffic that hits the interzone-default rule is not automatically logged. You must manually change a setting on this rule to see entries in the Traffic log. You will enable this setting now and perform the test again.

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.

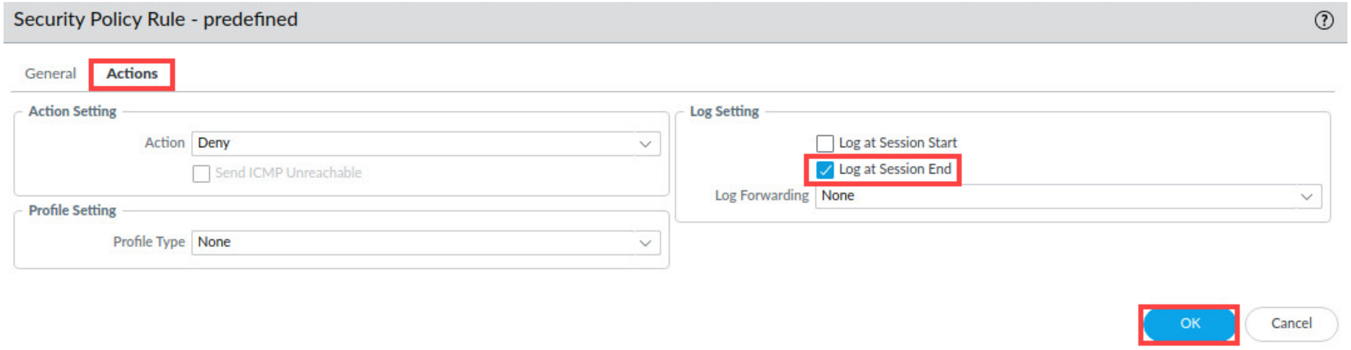


| | | | Source | | | |
|---|---|---|---|---|---|---|
| | NAME | TAGS | ZONE | ADDRESS | USER | ADDR |
| 1 | Users-to-Extranet | none | Users_Net | any | any | any |
| 2 | intrazone-default | none | any | any | any | any |
| 3 | interzone-default | none | any | any | any | any |

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**.



Security Policy Rule - predefined

General | Actions

Action Setting

Action: Deny

□ Send ICMP Unreachable

Profile Setting

Profile Type: None

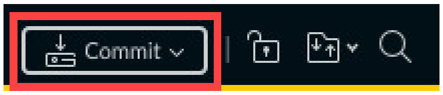
Log Setting

□ Log at Session Start

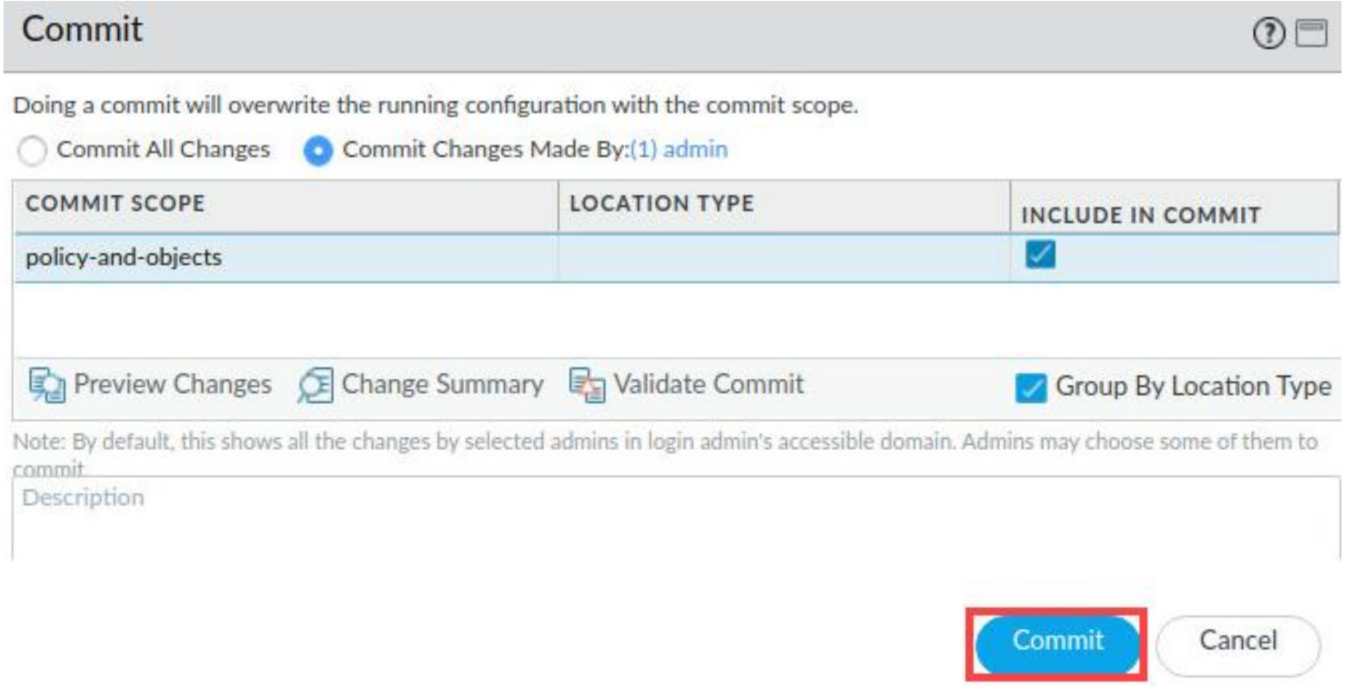
☑ Log at Session End

Log Forwarding: None

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



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



Commit

Doing a commit will overwrite the running configuration with the commit scope.

○ Commit All Changes ● Commit Changes Made By:(1) admin

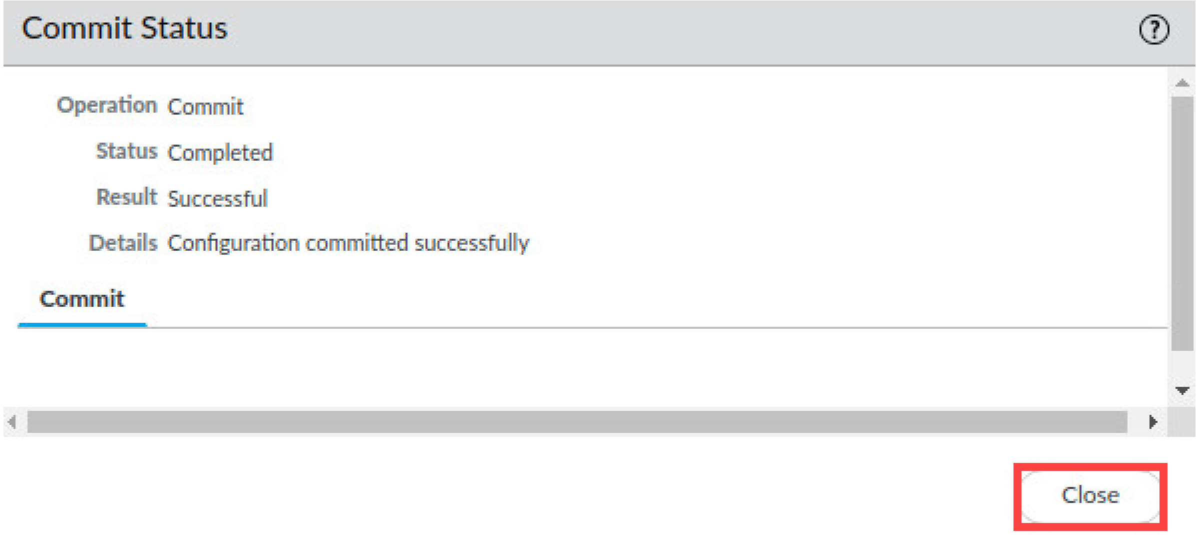
| COMMIT SCOPE | LOCATION TYPE | INCLUDE IN COMMIT |
|---|---|---|
| policy-and-objects | | ☑ |

☑ Group By Location Type

Note: By default, this shows all the changes by selected admins in login admin's accessible domain. Admins may choose some of them to commit

Description

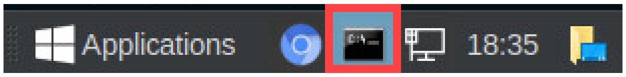
14. Wait until the *Commit* process is complete. Click **Close**.



Commit Status

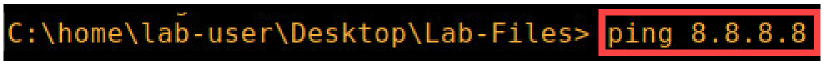
Operation Commit
Status Completed
Result Successful
Details Configuration committed successfully

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



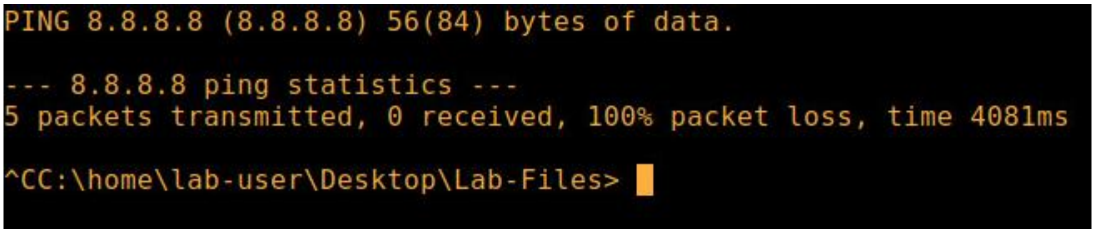
16. From the *terminal* window on the *desktop*, ping an address on the internet by issuing the following command.

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



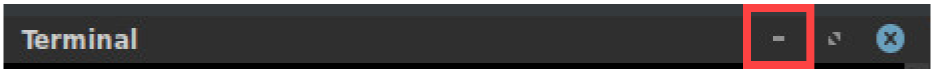
```
C:\home\lab-user\Desktop\Lab-Files> ping 8.8.8.8
```

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

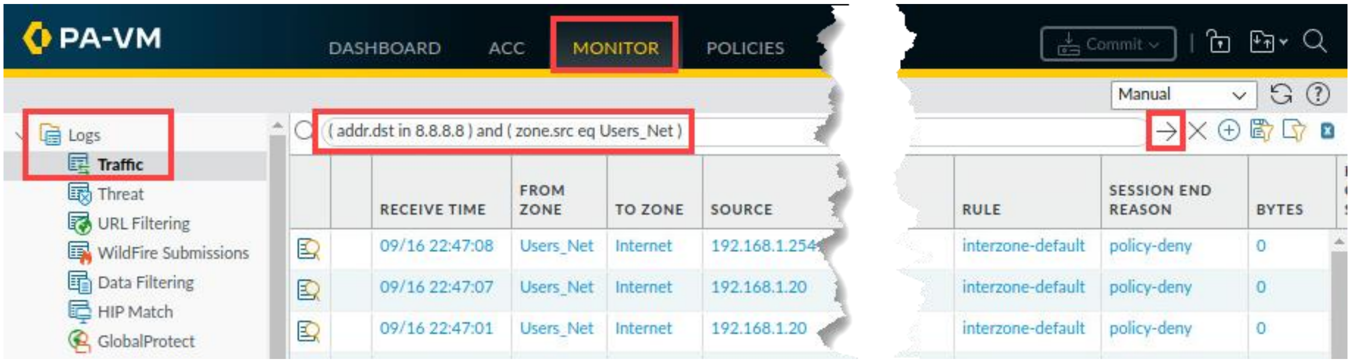


```
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.

--- 8.8.8.8 ping statistics ---
5 packets transmitted, 0 received, 100% packet loss, time 4081ms

^CC:\home\lab-user\Desktop\Lab-Files>
```

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.



( addr.dst in 8.8.8.8 ) and ( zone.src eq Users_Net )

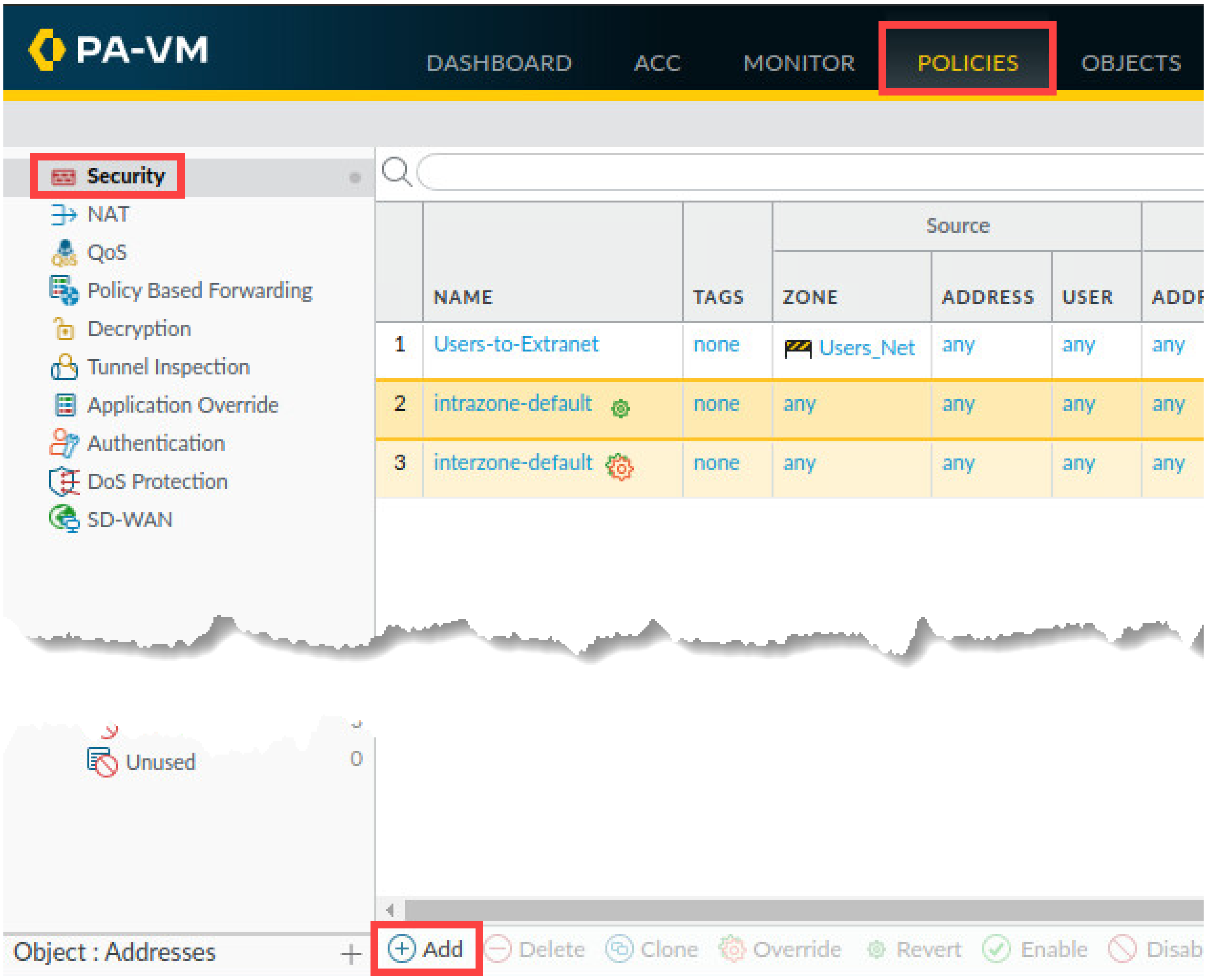
| RECEIVE TIME | FROM ZONE | TO ZONE | SOURCE | RULE | SESSION END REASON | BYTES |
|---|---|---|---|---|---|---|
| 09/16 22:47:08 | Users_Net | Internet | 192.168.1.254 | interzone-default | policy-deny | 0 |
| 09/16 22:47:07 | Users_Net | Internet | 192.168.1.20 | interzone-default | policy-deny | 0 |
| 09/16 22:47:01 | Users_Net | Internet | 192.168.1.20 | interzone-default | policy-deny | 0 |

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

## 5.7 Create Security Rules for Internet Access

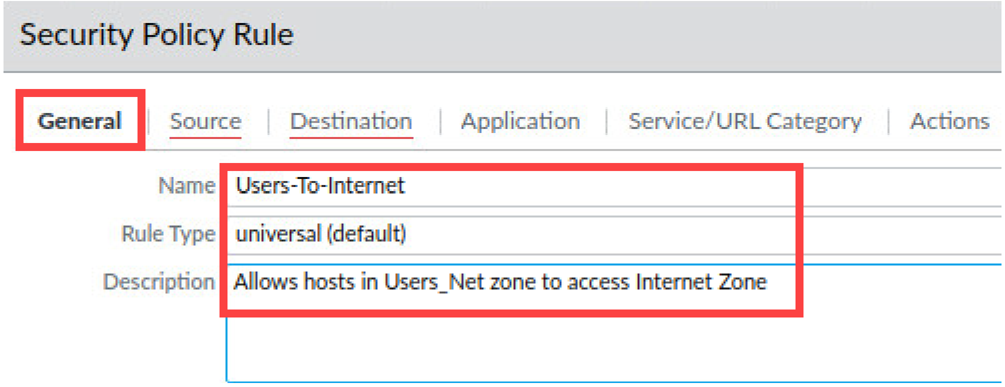
In this section, you will create security policy rules to allow hosts in your network to access the internet. You need to create a rule for hosts in the Users_Net security zone to access hosts in the internet security zone. You also need to create a rule to allow hosts in the Extranet security zone to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



| | | | Source | | | |
|---|---|---|---|---|---|---|
| | NAME | TAGS | ZONE | ADDRESS | USER | ADDF |
| 1 | Users-to-Extranet | none | Users_Net | any | any | any |
| 2 | intrazone-default | none | any | any | any | any |
| 3 | interzone-default | none | any | any | any | any |

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`**.

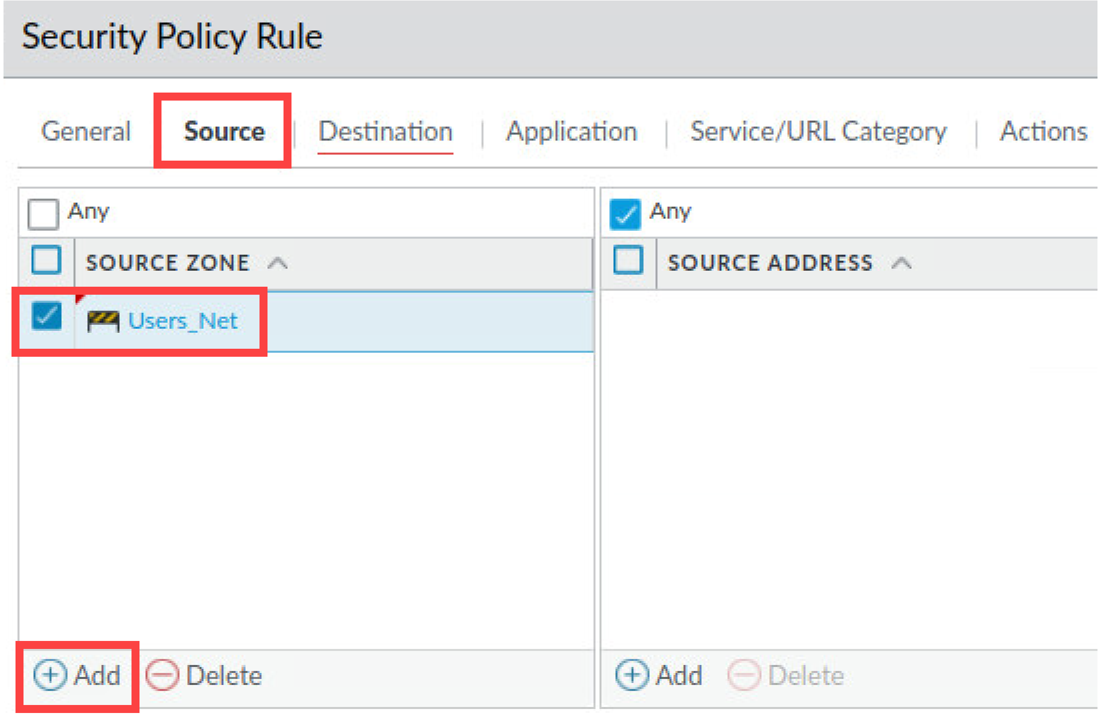


Name Users-To-Internet

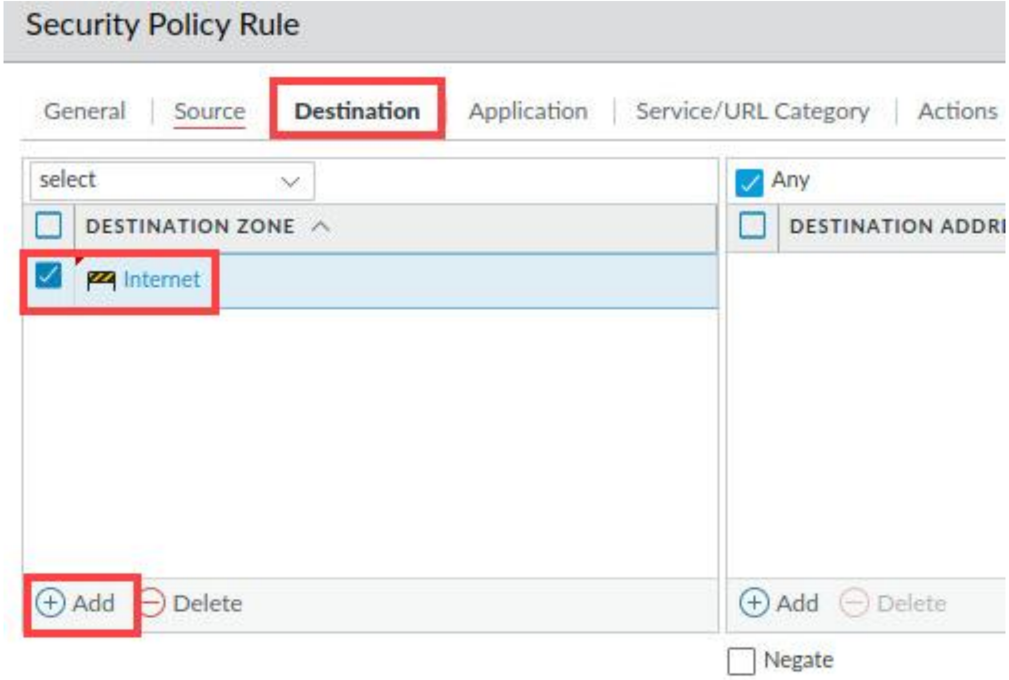
Rule Type universal (default)

Description Allows hosts in Users_Net zone to access Internet Zone

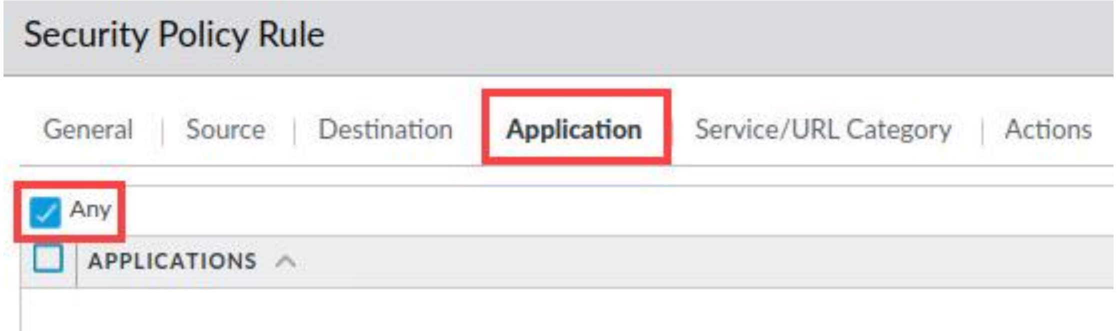
3. Select the **Source** tab. Under the *Source Zone* section, click **Add,** and select **Users_Net**.



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



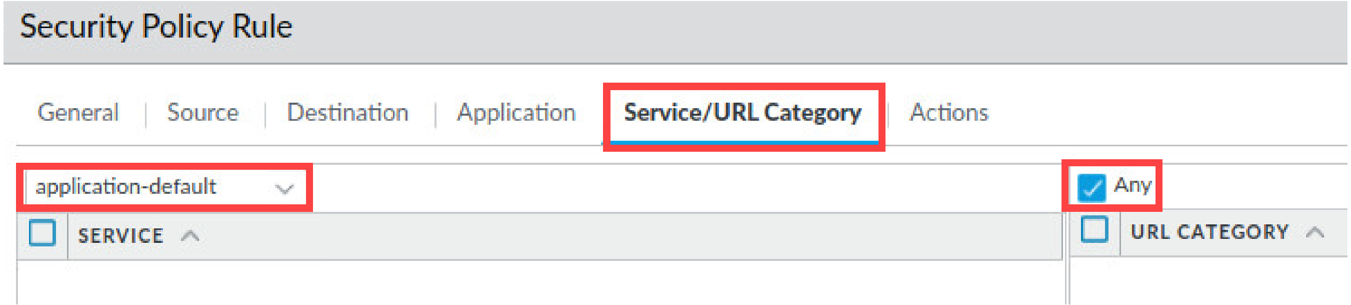
5. Select the **Application** tab. Verify **Any** is selected for *Applications*.



☑ Any

□ APPLICATIONS

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



application-default

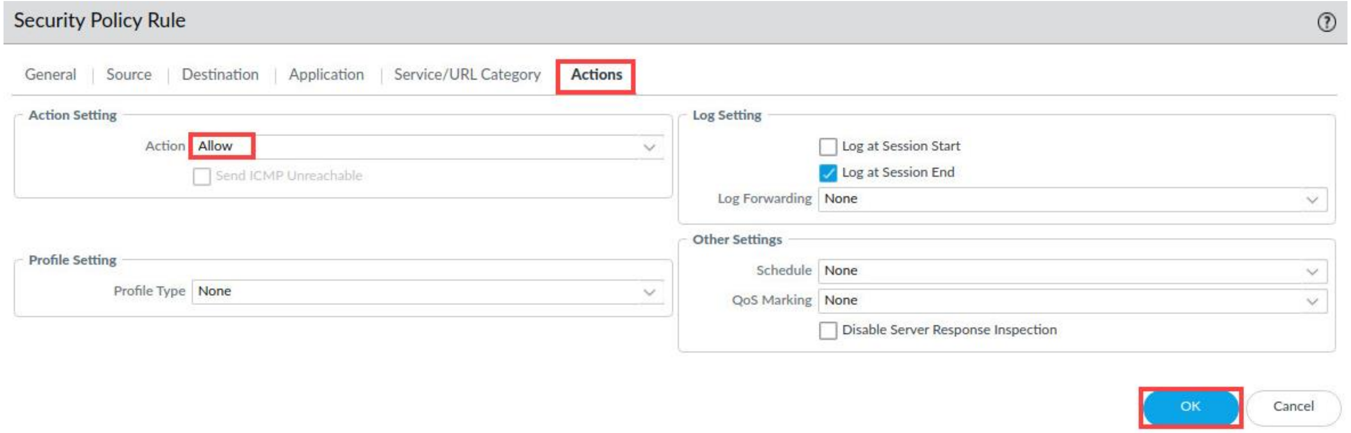
□ SERVICE

☑ Any

□ 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**.



Action Setting

Action: Allow

□ Send ICMP Unreachable

Profile Setting

Profile Type: None

Log Setting

□ Log at Session Start

☑ Log at Session End

Log Forwarding: None

Other Settings

Schedule: None

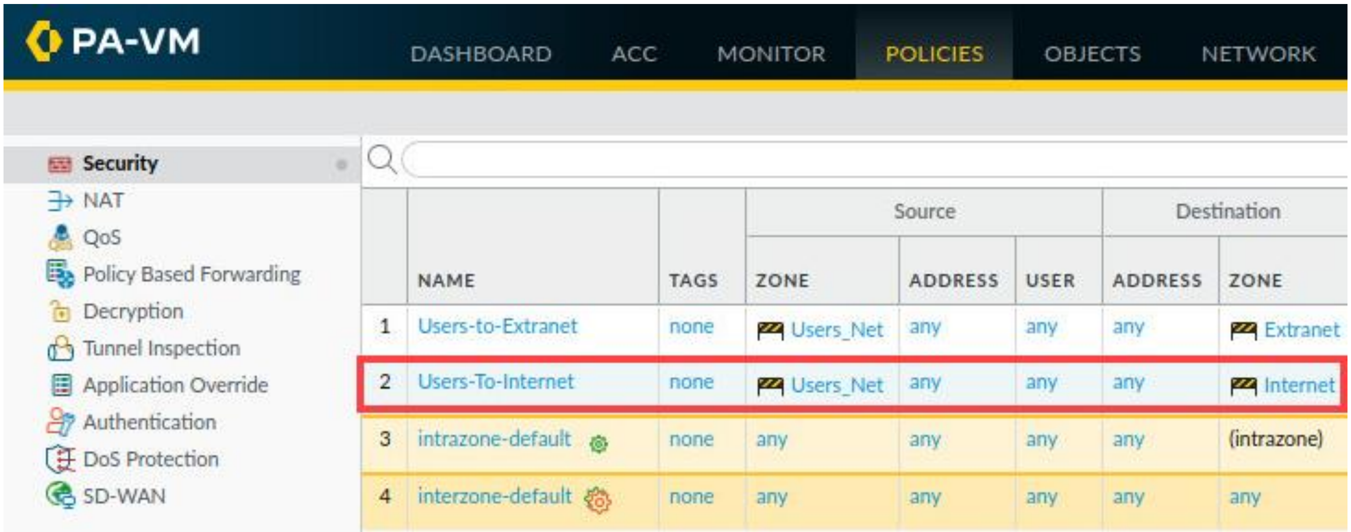
QoS Marking: None

□ Disable Server Response Inspection

Please Note

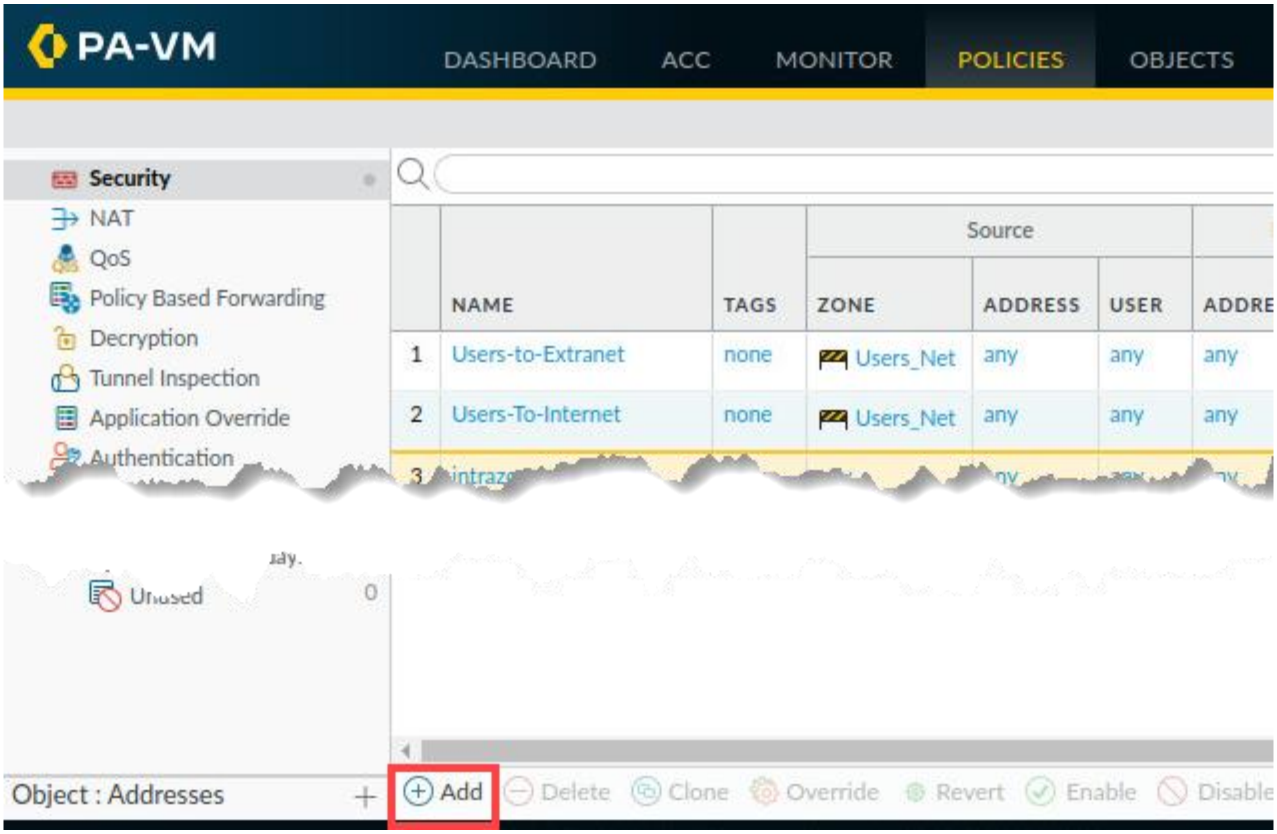
When you create a new security policy rule, the Action is automatically set to Allow. If you are creating a rule to block traffic, make sure you select the Actions tab and change the Action before you commit the rule.

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



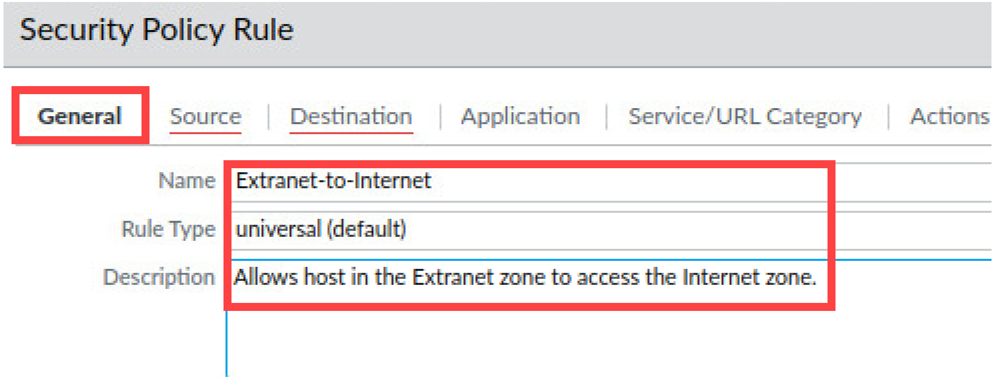
| | | | Source | | | Destination | |
|---|---|---|---|---|---|---|---|
| | NAME | TAGS | ZONE | ADDRESS | USER | ADDRESS | ZONE |
| 1 | Users-to-Extranet | none | Users_Net | any | any | any | Extranet |
| 2 | Users-To-Internet | none | Users_Net | any | any | any | Internet |
| 3 | intrazone-default | none | any | any | any | any | (intrazone) |
| 4 | interzone-default | none | any | any | any | any | any |

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



| | | | Source | | | |
|---|---|---|---|---|---|---|
| | NAME | TAGS | ZONE | ADDRESS | USER | ADDRE |
| 1 | Users-to-Extranet | none | Users_Net | any | any | any |
| 2 | Users-To-Internet | none | Users_Net | any | any | any |
| 3 | intraz | | | | | |

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`**.

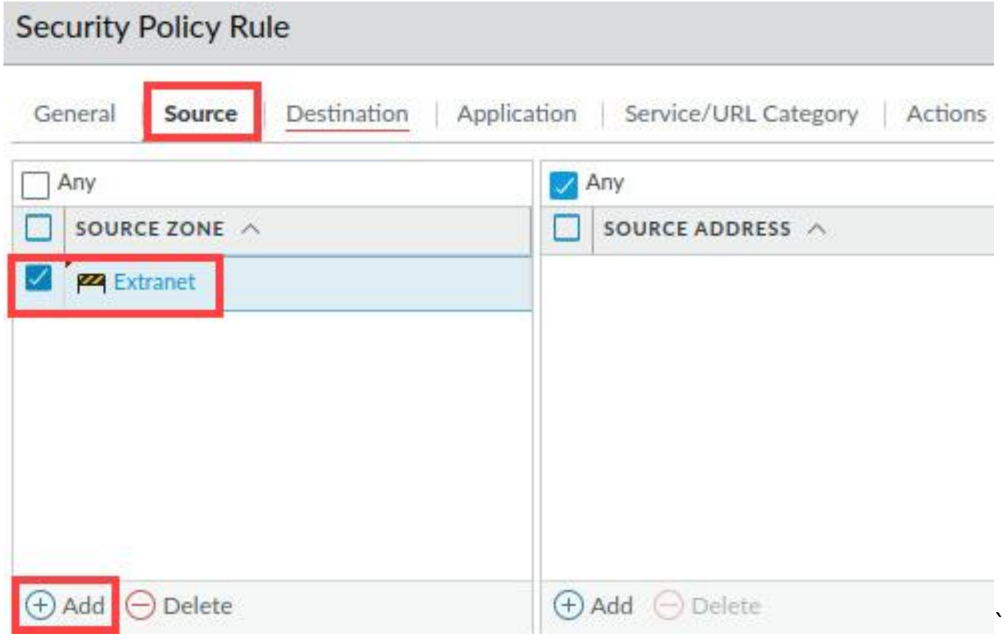

Security Policy Rule

Name: Extranet-to-Internet

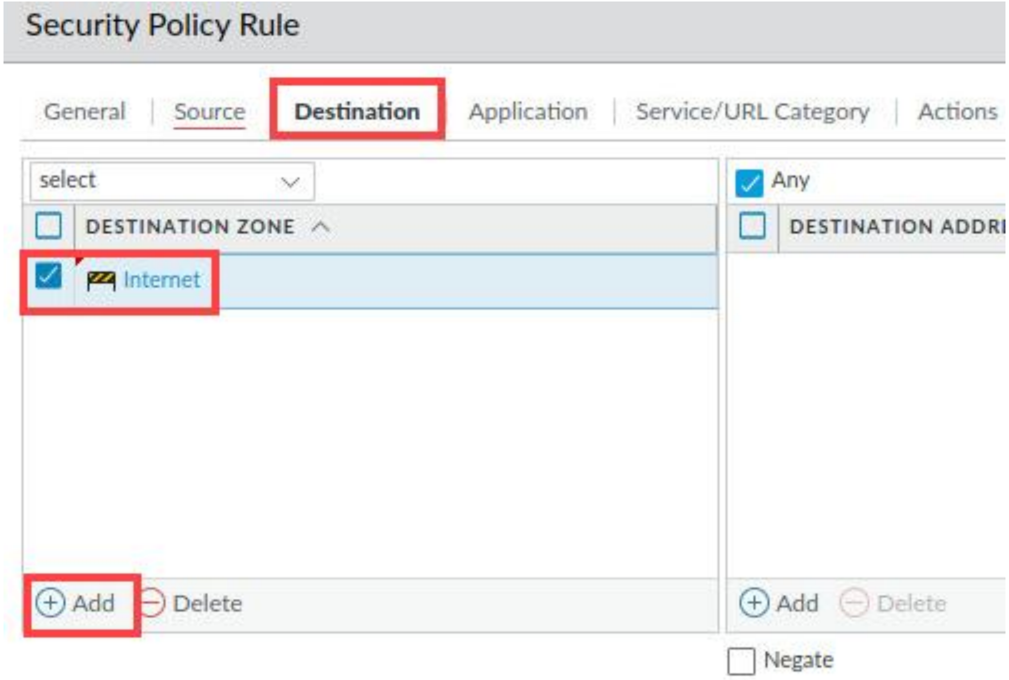
Rule Type: universal (default)

Description: Allows host in the Extranet zone to access the Internet zone.

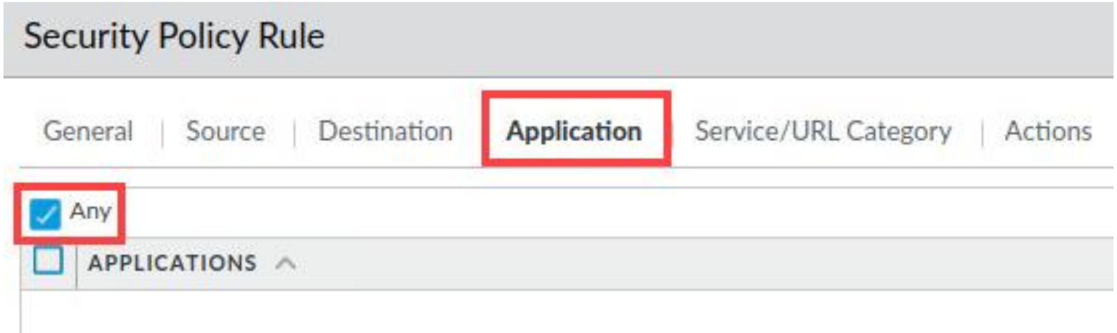
11. Select the **Source** tab. Under the *Source Zone* section, click **Add,** and select **Extranet**.


Security Policy Rule

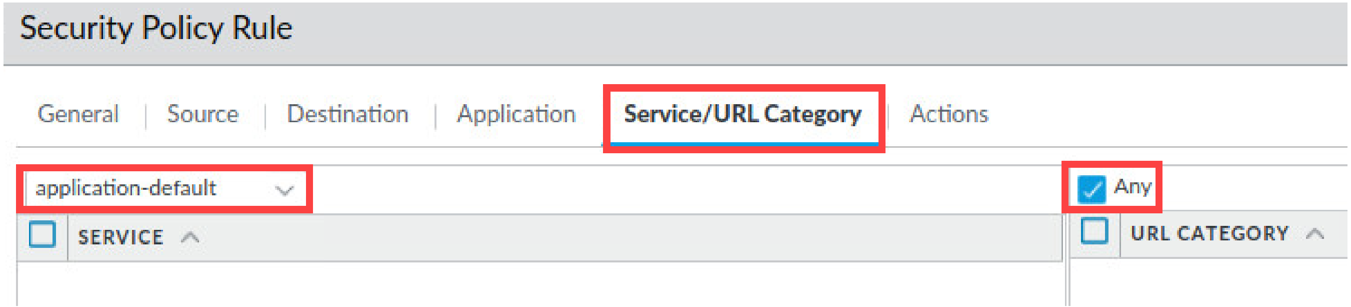
12. Select the **Destination** tab. Under the *Destination Zone* section, click **Add,** and select **Internet**.



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

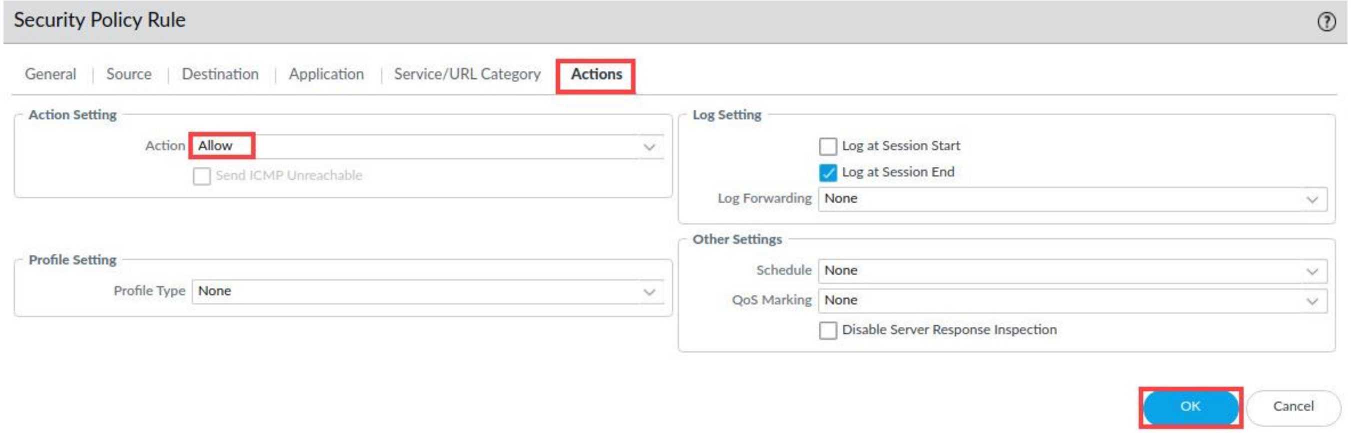

Security Policy Rule
General | Source | Destination | Application | Service/URL Category | Actions
☑ Any
□ APPLICATIONS

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


Security Policy Rule
General | Source | Destination | Application | Service/URL Category | Actions
application-default
☑ Any
□ SERVICE
□ 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**.



Security Policy Rule

General | Source | Destination | Application | Service/URL Category | Actions

Action Setting

Action: Allow

☐ Send ICMP Unreachable

Log Setting

☐ Log at Session Start

☑ Log at Session End

Log Forwarding: None

Profile Setting

Profile Type: None

Other Settings

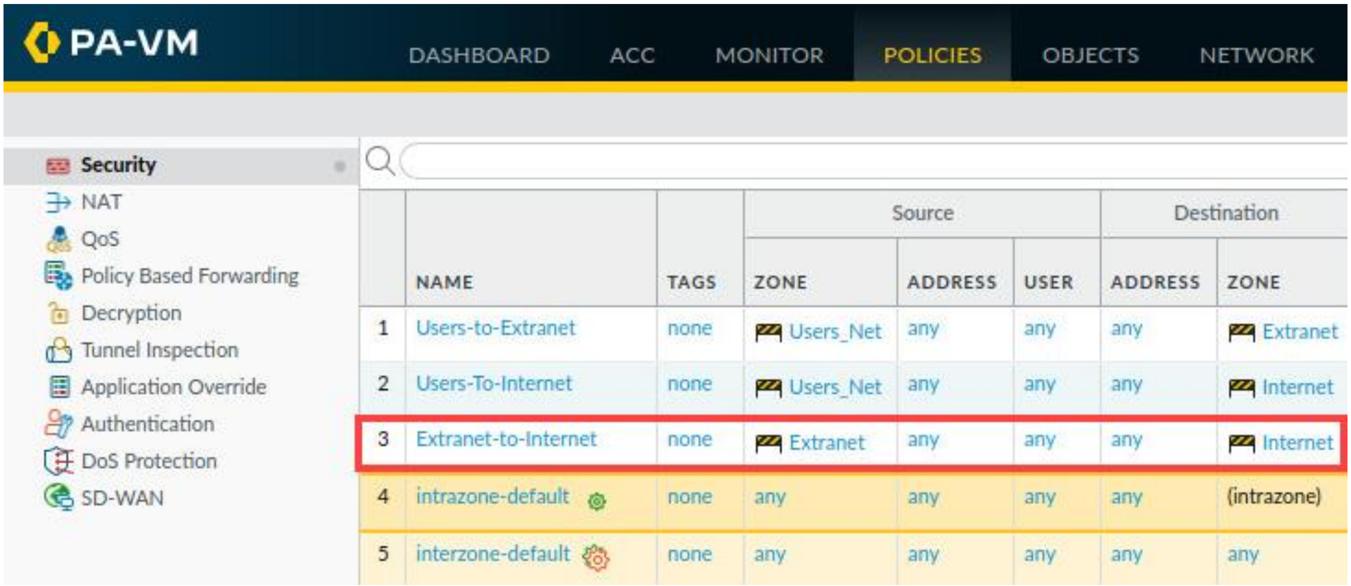
Schedule: None

QoS Marking: None

☐ Disable Server Response Inspection

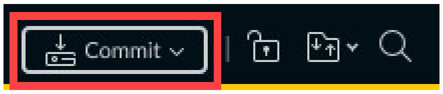
> **Please Note**
>
> When you create a new security policy rule, the Action is automatically set to Allow. If you are creating a rule to block traffic, make sure you select the Actions tab and change the Action before you commit the rule.

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

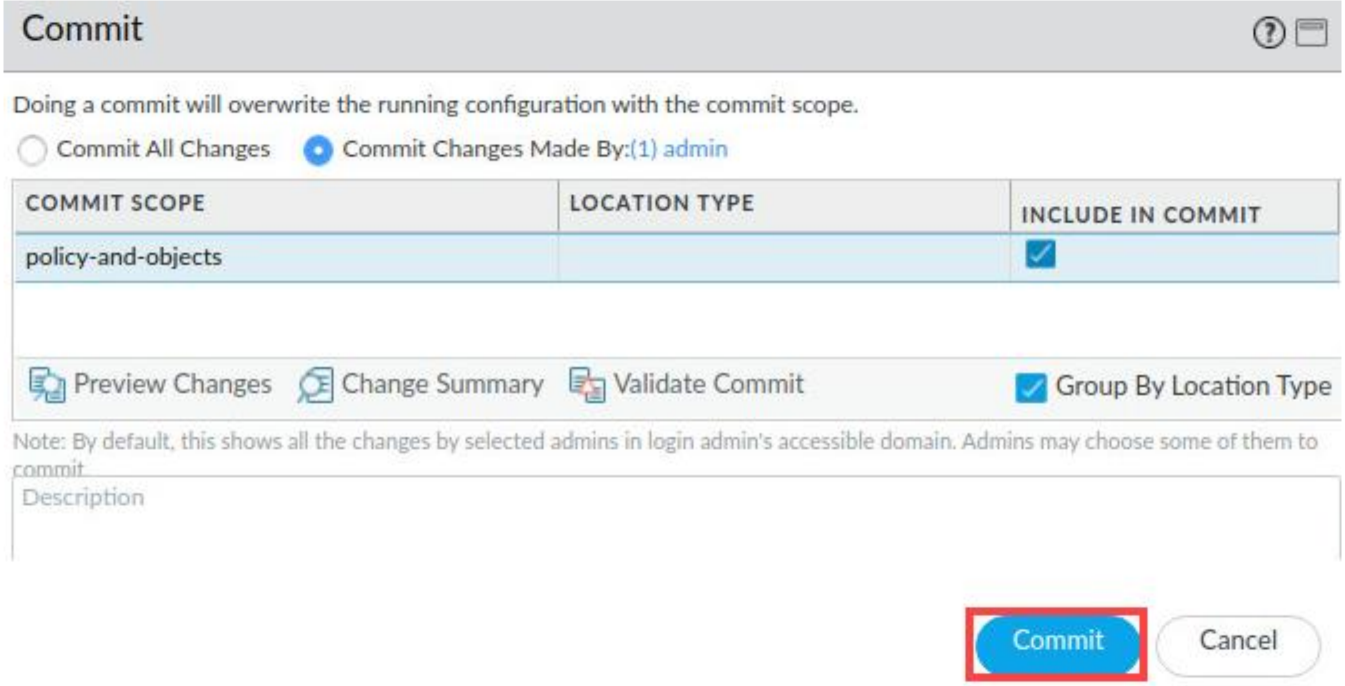


| | | | Source | | | Destination | |
|---|---|---|---|---|---|---|---|
| | NAME | TAGS | ZONE | ADDRESS | USER | ADDRESS | ZONE |
| 1 | Users-to-Extranet | none | Users_Net | any | any | any | Extranet |
| 2 | Users-To-Internet | none | Users_Net | any | any | any | Internet |
| 3 | Extranet-to-Internet | none | Extranet | any | any | any | Internet |
| 4 | intrazone-default | none | any | any | any | any | (intrazone) |
| 5 | interzone-default | none | any | any | any | any | any |

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



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



Commit

Doing a commit will overwrite the running configuration with the commit scope.

○ Commit All Changes ● Commit Changes Made By:(1) admin

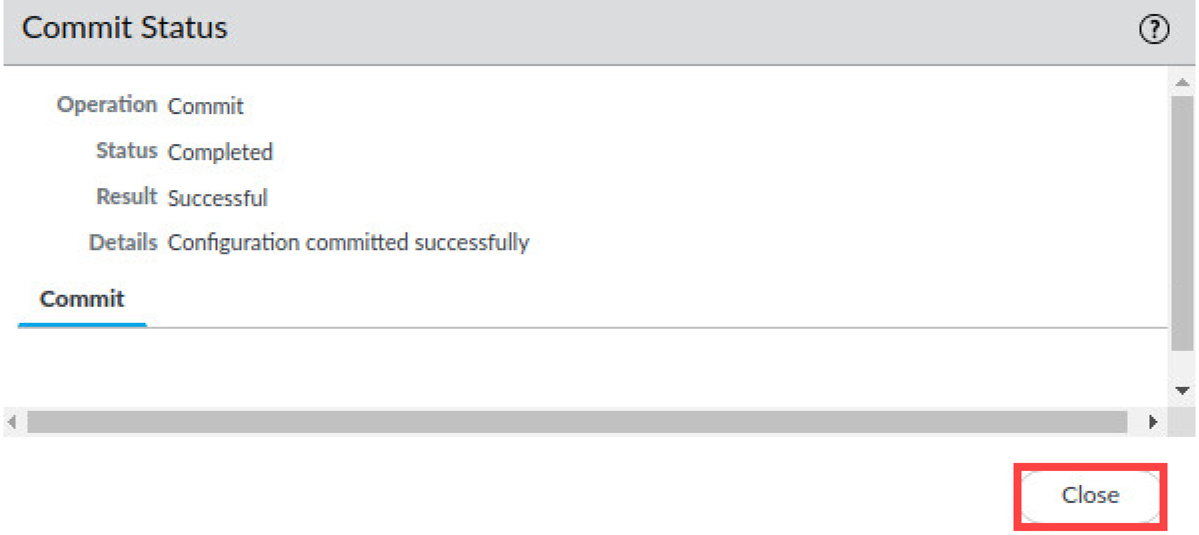
| COMMIT SCOPE | LOCATION TYPE | INCLUDE IN COMMIT |
|---|---|---|
| policy-and-objects | | ☑ |

☑ Group By Location Type

Note: By default, this shows all the changes by selected admins in login admin's accessible domain. Admins may choose some of them to commit.

Description

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



Commit Status

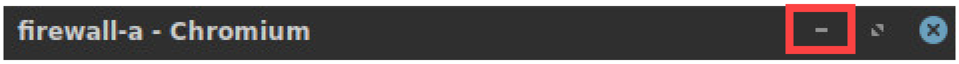
Operation Commit

Status Completed

Result Successful

Details Configuration committed successfully

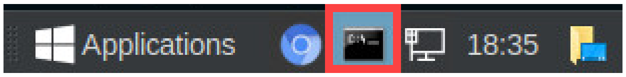
20. Minimize the *Chromium* browser by clicking the **minimize** icon and continue to the next task.



## 5.8 Ping Internet Host from Client

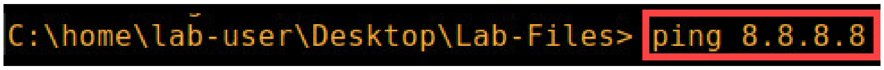
In this section, you verify that your Security Policy rule is allowing traffic; you will ping an internet host from the client workstation and examine the Traffic log to see the results.

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



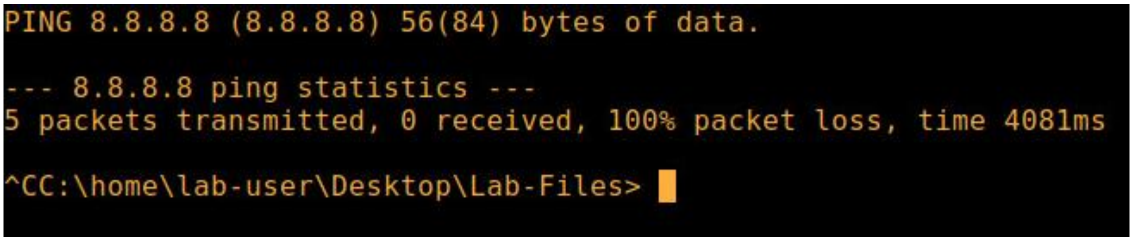
2. From the *terminal* window on the *desktop*, ping an address on the internet by issuing the following command.

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



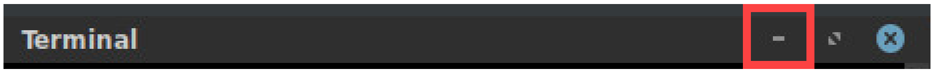
```
C:\home\lab-user\Desktop\Lab-Files> ping 8.8.8.8
```

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

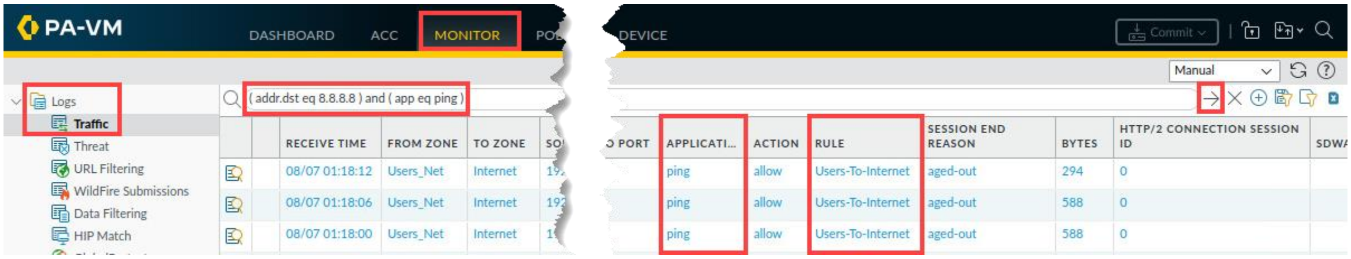


```
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.

--- 8.8.8.8 ping statistics ---
5 packets transmitted, 0 received, 100% packet loss, time 4081ms

^CC:\home\lab-user\Desktop\Lab-Files> 
```

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.



( addr.dst eq 8.8.8.8 ) and ( app eq ping )

| RECEIVE TIME | FROM ZONE | TO ZONE | SO | O PORT | APPLICATI... | ACTION | RULE | SESSION END REASON | BYTES | HTTP/2 CONNECTION SESSION ID | SDWA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 08/07 01:18:12 | Users_Net | Internet | 19 | | ping | allow | Users-To-Internet | aged-out | 294 | 0 | |
| 08/07 01:18:06 | Users_Net | Internet | 192 | | ping | allow | Users-To-Internet | aged-out | 588 | 0 | |
| 08/07 01:18:00 | Users_Net | Internet | 1 | | ping | allow | Users-To-Internet | aged-out | 588 | 0 | |

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.

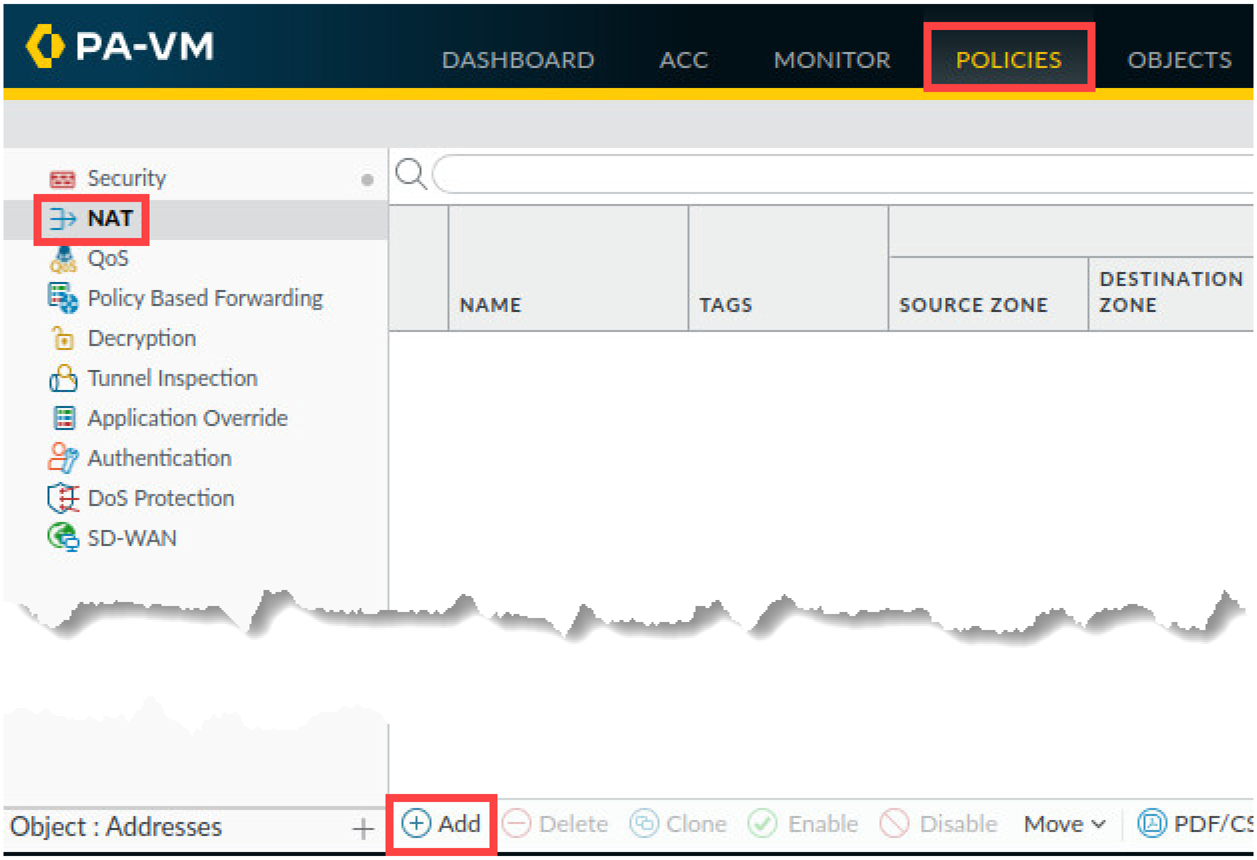
## 5.9 Create a Source NAT Policy

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.

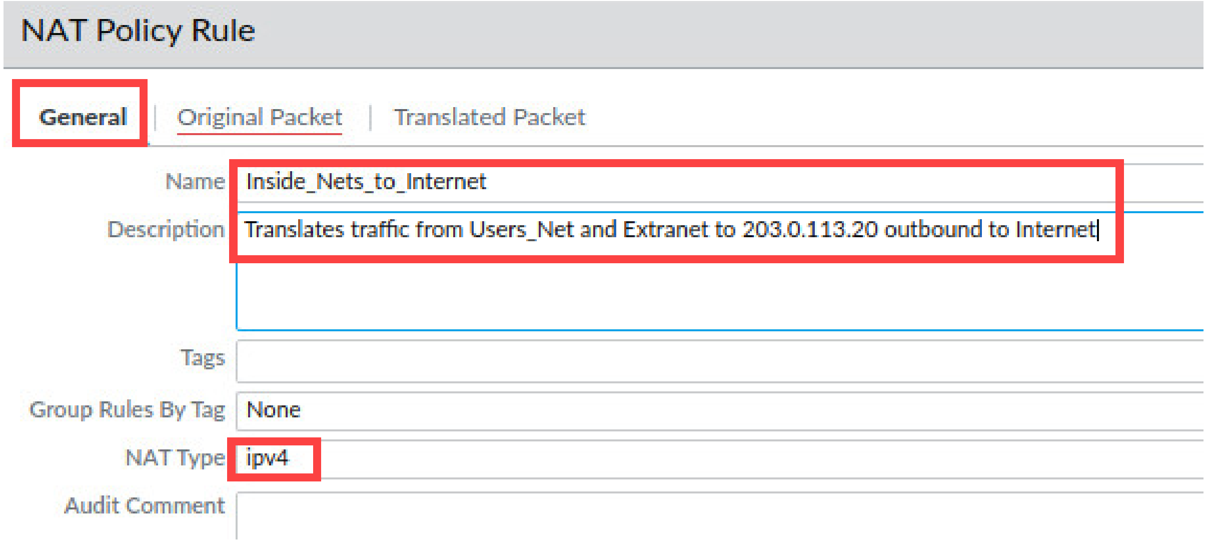
In this section, you will create a NAT policy rule to translate traffic from the private networks in the Users_Net and Extranet security zones to a routable address. You will use the same interface IP address on the firewall (203.0.113.20) as the source IP for outbound traffic from both Users_Net and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



Name: Inside_Nets_to_Internet

Description: Translates traffic from Users_Net and Extranet to 203.0.113.20 outbound to Internet

Tags:

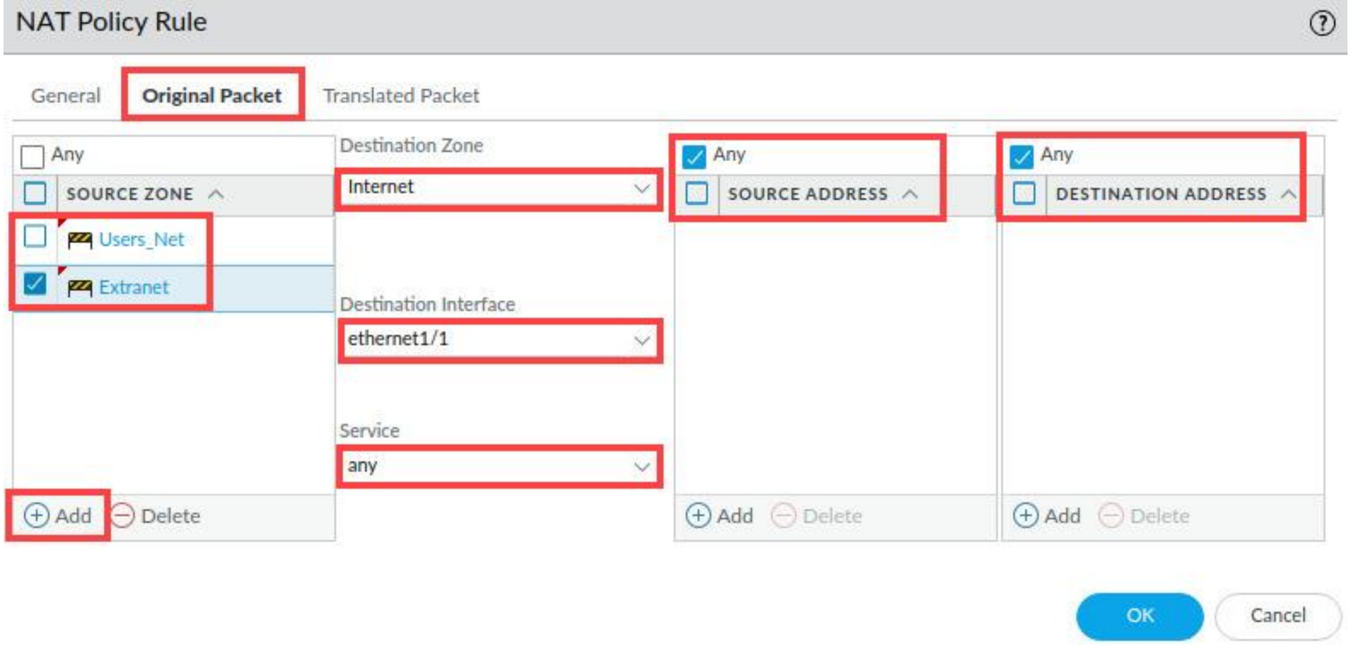
Group Rules By Tag: None

NAT Type: ipv4

Audit Comment:

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

| Parameter | Value |
|---|---|
| **Source Zone** | Click **Add** and select the **Users_Net** zone<br>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 |



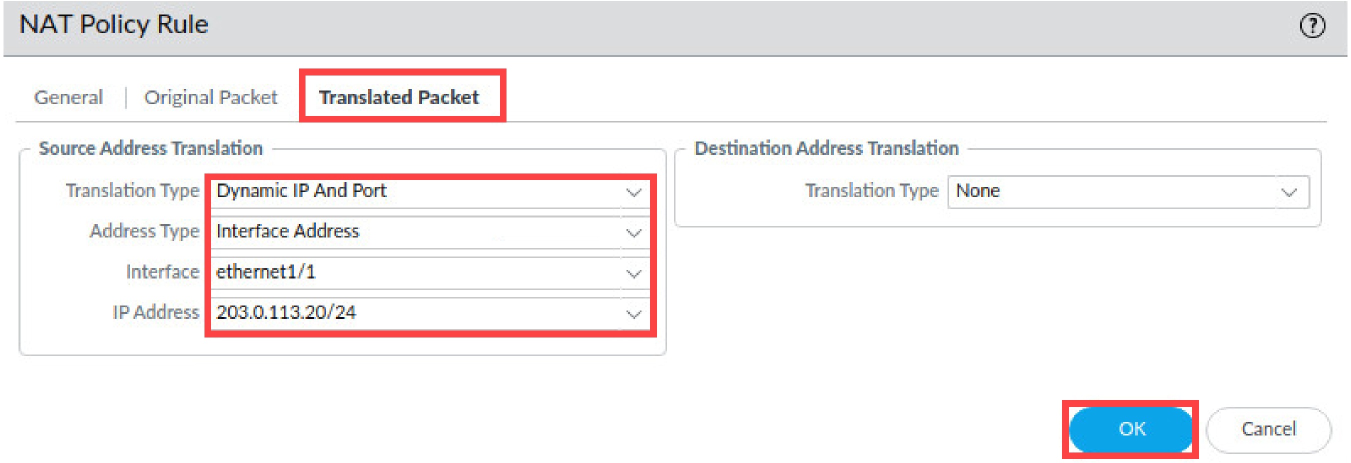
Please Note

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***.) |


NAT Policy Rule

General | Original Packet | Translated Packet

Source Address Translation

- Translation Type: Dynamic IP And Port
- Address Type: Interface Address
- Interface: ethernet1/1
- IP Address: 203.0.113.20/24

Destination Address Translation

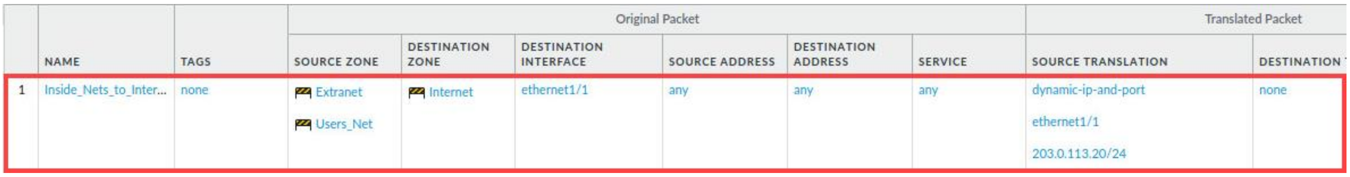
- Translation Type: None

**Please Note**

This section defines how the firewall will translate the packet.

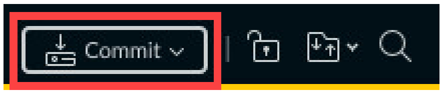
You are configuring *only* the **Source Address Translation** part of this window. Leave the destination address translation **Translation Type** set to **None**.

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

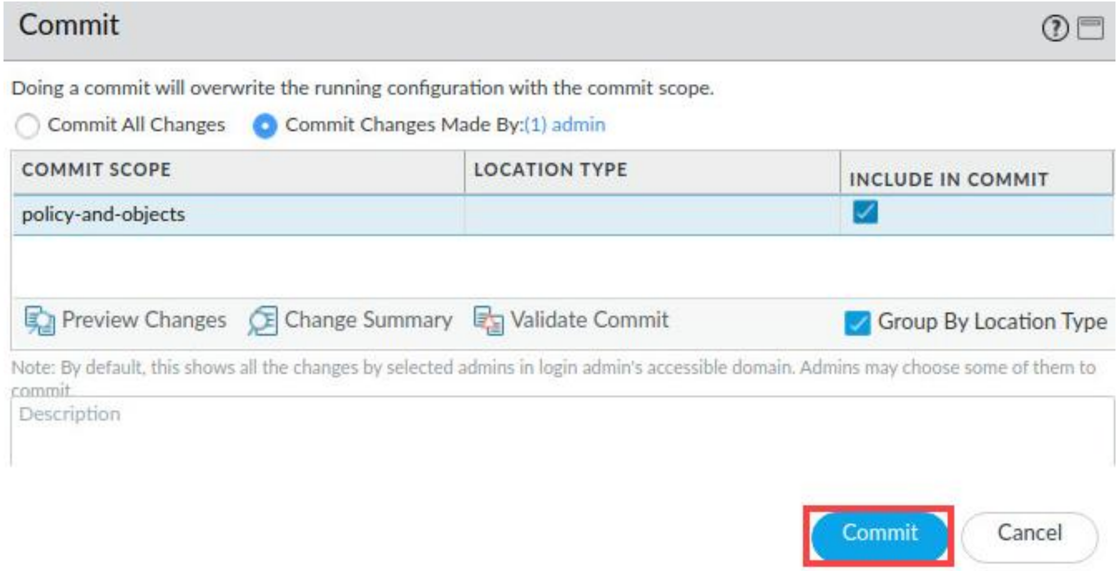


| | | | Original Packet | | | | | | Translated Packet | |
|---|---|---|---|---|---|---|---|---|---|---|
| | NAME | TAGS | SOURCE ZONE | DESTINATION ZONE | DESTINATION INTERFACE | SOURCE ADDRESS | DESTINATION ADDRESS | SERVICE | SOURCE TRANSLATION | DESTINATION |
| 1 | Inside_Nets_to_Inter... | none | Extranet<br>Users_Net | Internet | ethernet1/1 | any | any | any | dynamic-ip-and-port<br>ethernet1/1<br>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**.



Commit

Doing a commit will overwrite the running configuration with the commit scope.

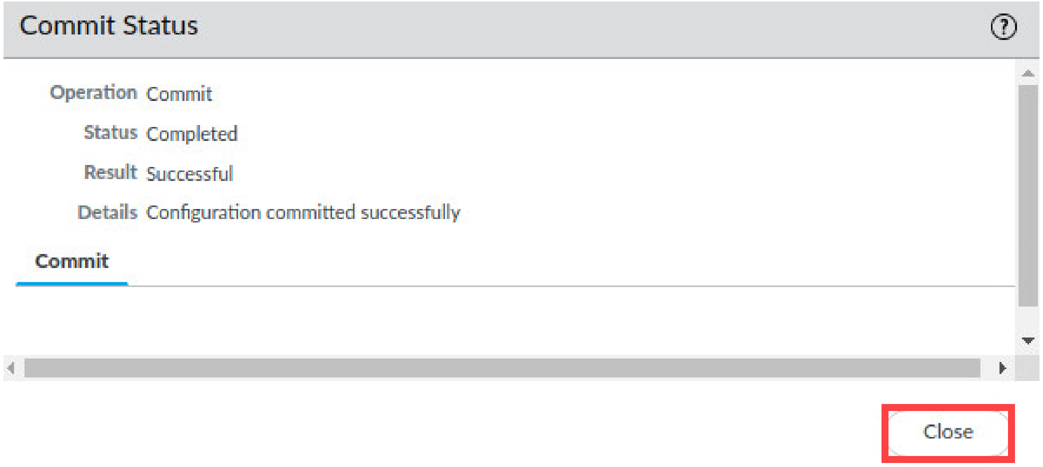
○ Commit All Changes ● Commit Changes Made By:(1) admin

| COMMIT SCOPE | LOCATION TYPE | INCLUDE IN COMMIT |
|---|---|---|
| policy-and-objects | | ☑ |

☑ Group By Location Type

Note: By default, this shows all the changes by selected admins in login admin's accessible domain. Admins may choose some of them to commit.

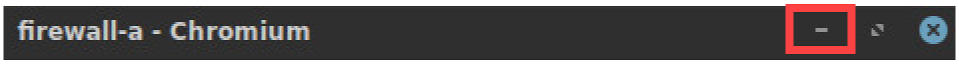
8. Wait until the *Commit* process is complete. Click **Close**.



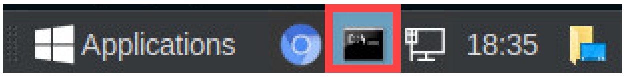
Commit Status

Operation Commit
Status Completed
Result Successful
Details Configuration committed successfully

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

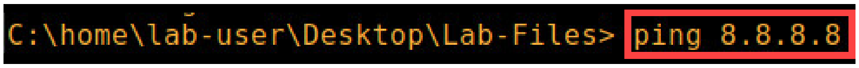


10. Return to the terminal window by clicking on the terminal icon in the taskbar of your *client desktop*.



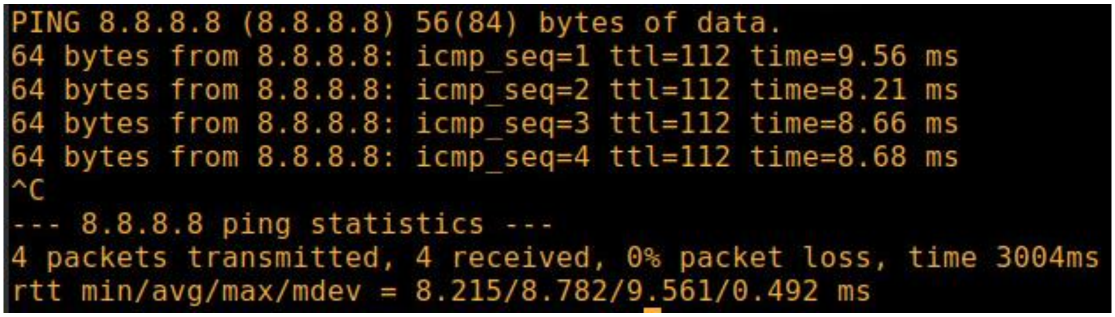
11. From the *terminal* window on the *desktop*, ping an address on the internet by issuing the following command.

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



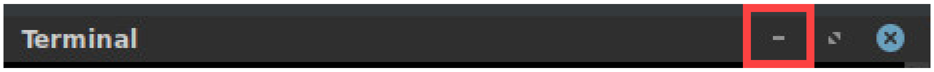
```
C:\home\lab-user\Desktop\Lab-Files> ping 8.8.8.8
```

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

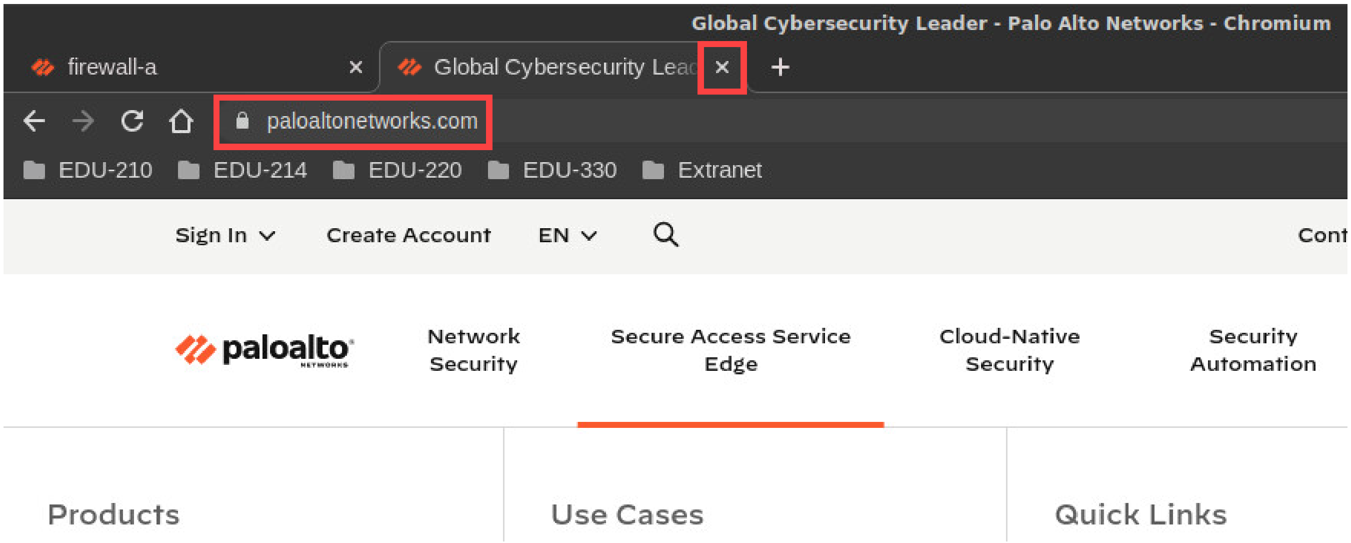


```
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.
64 bytes from 8.8.8.8: icmp_seq=1 ttl=112 time=9.56 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=112 time=8.21 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=112 time=8.66 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=112 time=8.68 ms
^C
--- 8.8.8.8 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3004ms
rtt min/avg/max/mdev = 8.215/8.782/9.561/0.492 ms
```

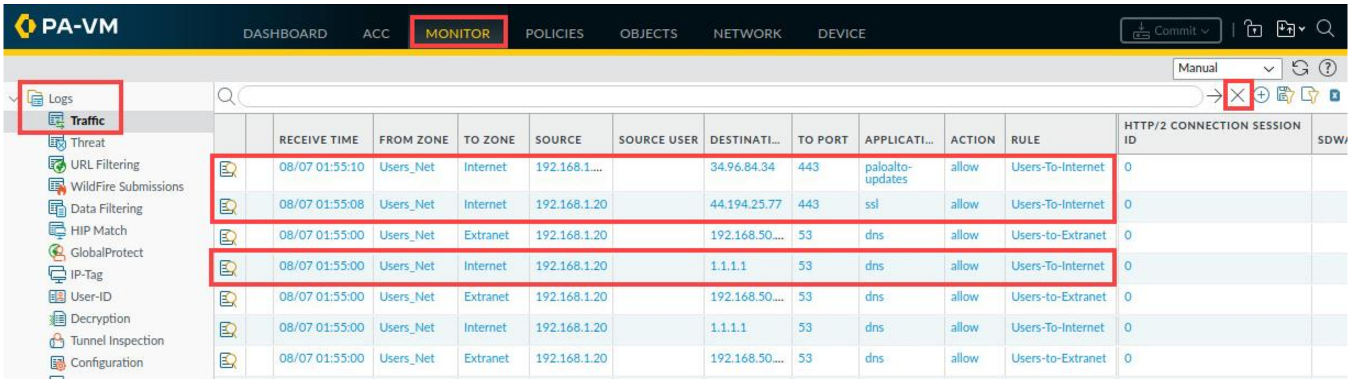
13. Minimize the *Terminal* window open on the client because you will perform this same task in a later step.



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.**



| | | RECEIVE TIME | FROM ZONE | TO ZONE | SOURCE | SOURCE USER | DESTINATI... | TO PORT | APPLICATI... | ACTION | RULE | HTTP/2 CONNECTION SESSION ID | SDWA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 08/07 01:55:10 | Users_Net | Internet | 192.168.1.... | | 34.96.84.34 | 443 | paloalto-updates | allow | Users-To-Internet | 0 | |
| | | 08/07 01:55:08 | Users_Net | Internet | 192.168.1.20 | | 44.194.25.77 | 443 | ssl | allow | Users-To-Internet | 0 | |
| | | 08/07 01:55:00 | Users_Net | Extranet | 192.168.1.20 | | 192.168.50.... | 53 | dns | allow | Users-to-Extranet | 0 | |
| | | 08/07 01:55:00 | Users_Net | Internet | 192.168.1.20 | | 1.1.1.1 | 53 | dns | allow | Users-To-Internet | 0 | |
| | | 08/07 01:55:00 | Users_Net | Extranet | 192.168.1.20 | | 192.168.50.... | 53 | dns | allow | Users-to-Extranet | 0 | |
| | | 08/07 01:55:00 | Users_Net | Internet | 192.168.1.20 | | 1.1.1.1 | 53 | dns | allow | Users-To-Internet | 0 | |
| | | 08/07 01:55:00 | Users_Net | Extranet | 192.168.1.20 | | 192.168.50.... | 53 | dns | allow | Users-to-Extranet | 0 | |

Please Note

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.

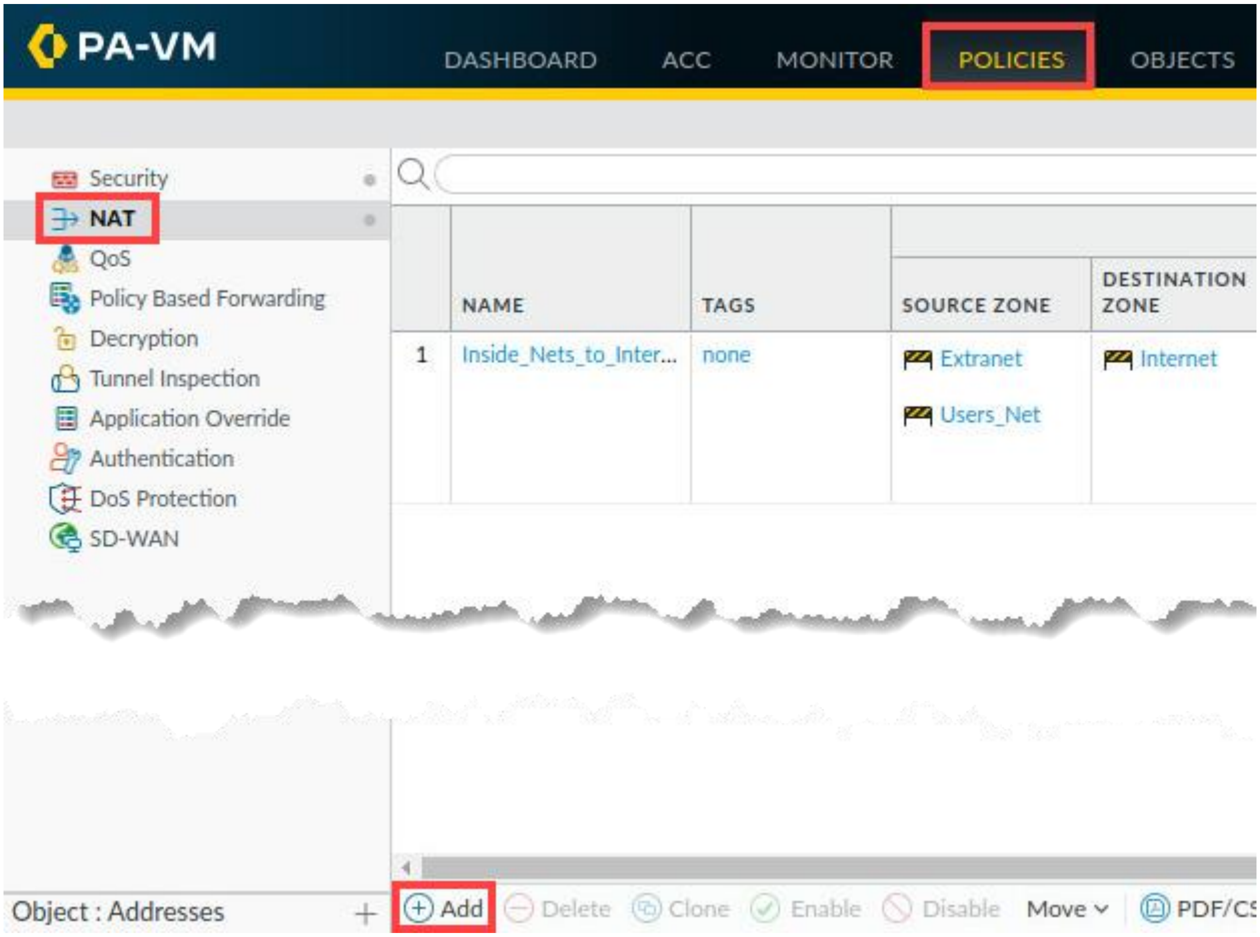
## 5.10 Create a Destination NAT Policy

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.

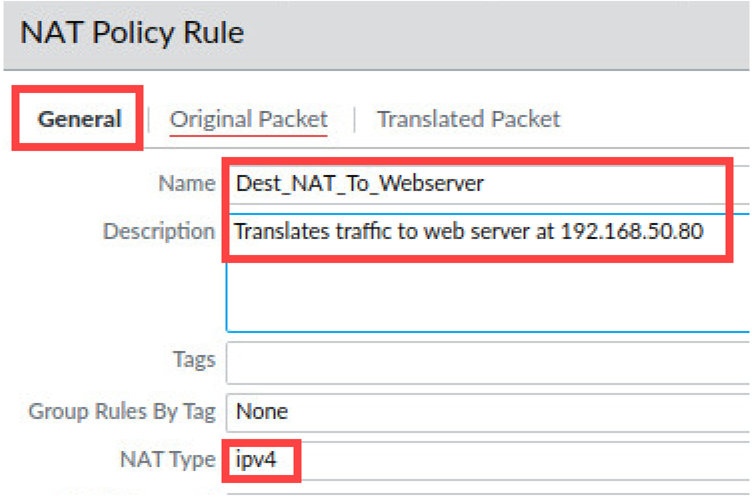
1. In the web interface, navigate to **Policies > NAT**. Click **Add** to define a new source NAT policy.



| | NAME | TAGS | SOURCE ZONE | DESTINATION ZONE |
|---|---|---|---|---|
| 1 | Inside_Nets_to_Inter... | none | Extranet<br>Users_Net | Internet |

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` |

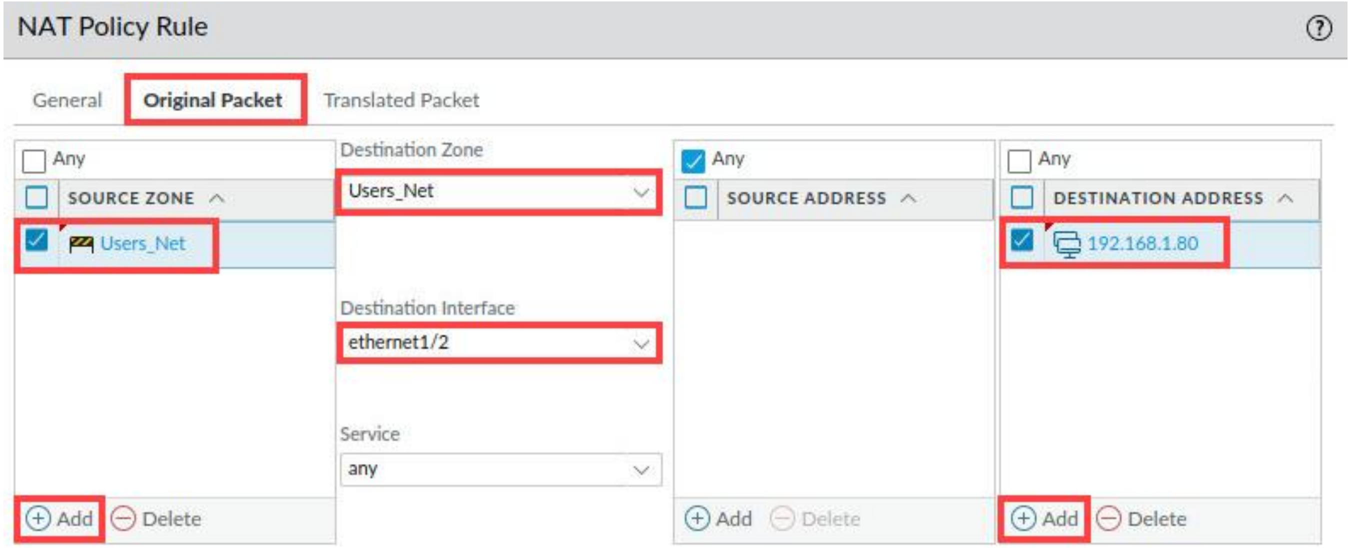


NAT Policy Rule

Name: Dest_NAT_To_Webserver
Description: Translates traffic to web server at 192.168.50.80
Tags:
Group Rules By Tag: None
NAT Type: ipv4

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`** |



☐ Any

☑ Users_Net

Destination Zone: Users_Net

Destination Interface: ethernet1/2

Service: any

☑ Any (Source Address)

☐ Any (Destination Address)

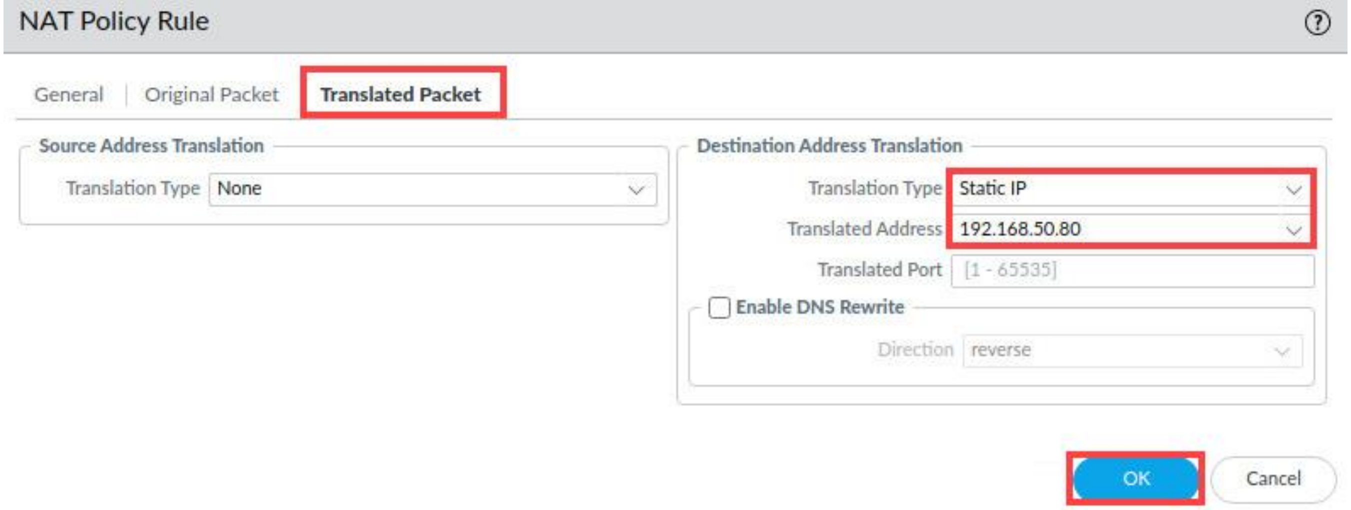
☑ 192.168.1.80

**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) |



NAT Policy Rule

Source Address Translation

Translation Type: None

Destination Address Translation

Translation Type: Static IP

Translated Address: 192.168.50.80

Translated Port: [1 - 65535]

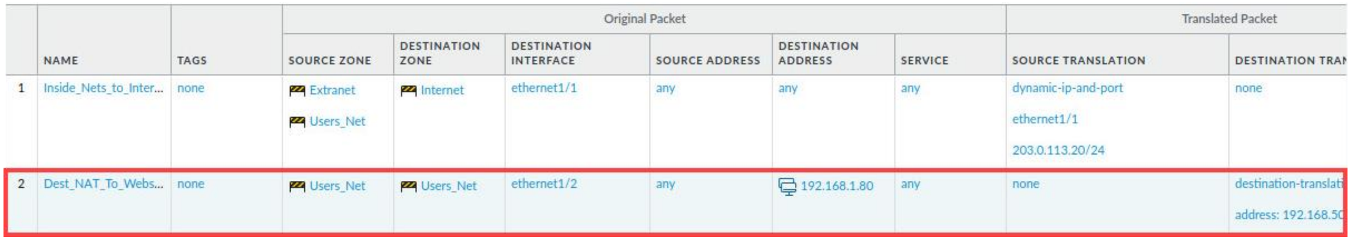
□ Enable DNS Rewrite

Direction: reverse

Please Note

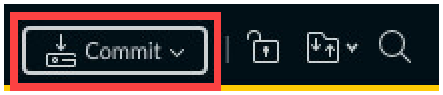
The **Translated Packet** tab defines how the firewall will translate a matching packet. Leave the **Source Address Translation** section set to **None** because we are performing only destination translation in this exercise.

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

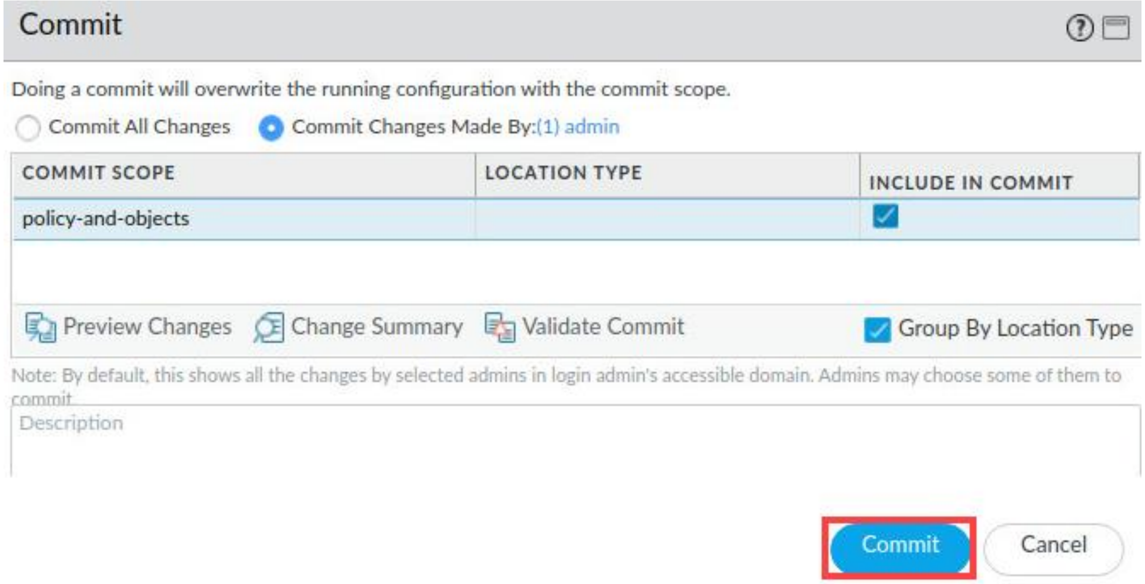


| | | | Original Packet | | | | | | Translated Packet | |
|---|---|---|---|---|---|---|---|---|---|---|
| | NAME | TAGS | SOURCE ZONE | DESTINATION ZONE | DESTINATION INTERFACE | SOURCE ADDRESS | DESTINATION ADDRESS | SERVICE | SOURCE TRANSLATION | DESTINATION TRAN |
| 1 | Inside_Nets_to_Inter... | none | Extranet<br>Users_Net | Internet | ethernet1/1 | any | any | any | dynamic-ip-and-port<br>ethernet1/1<br>203.0.113.20/24 | none |
| 2 | Dest_NAT_To_Webs... | none | Users_Net | Users_Net | ethernet1/2 | any | 192.168.1.80 | any | none | destination-translati<br>address: 192.168.50 |

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



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



Commit

Doing a commit will overwrite the running configuration with the commit scope.

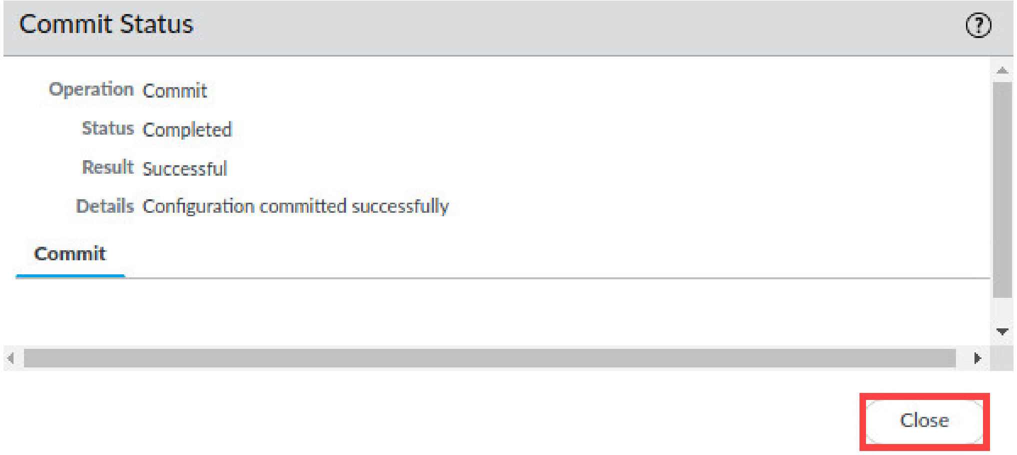
○ Commit All Changes ● Commit Changes Made By:(1) admin

| COMMIT SCOPE | LOCATION TYPE | INCLUDE IN COMMIT |
|---|---|---|
| policy-and-objects | | ☑ |

☑ Group By Location Type

Note: By default, this shows all the changes by selected admins in login admin's accessible domain. Admins may choose some of them to commit.

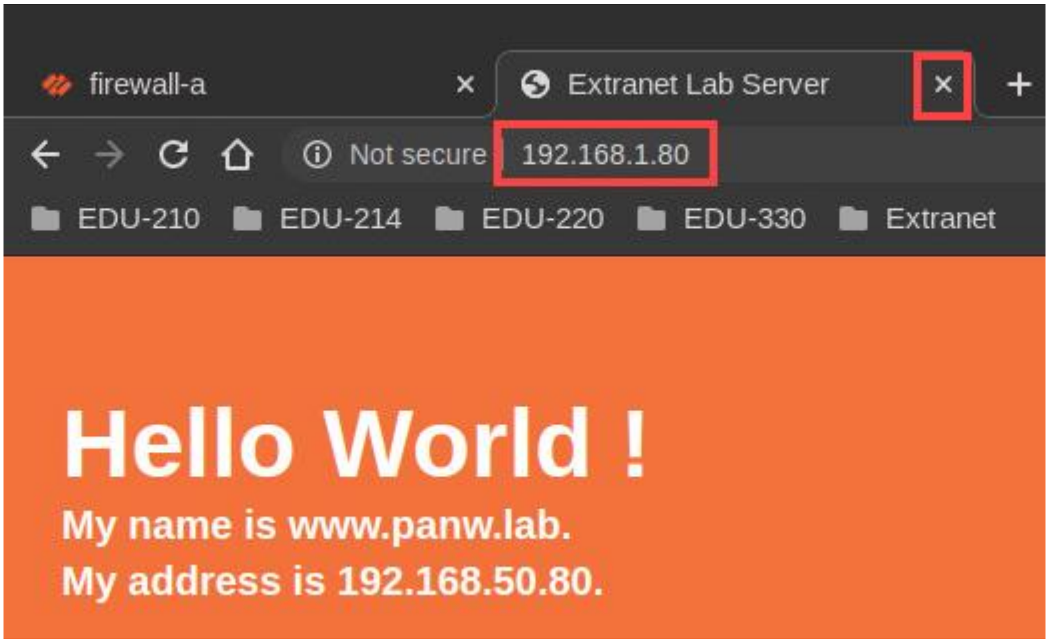
8. Wait until the *Commit* process is complete. Click **Close**.



Commit Status

Operation Commit
Status Completed
Result Successful
Details Configuration committed successfully

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.

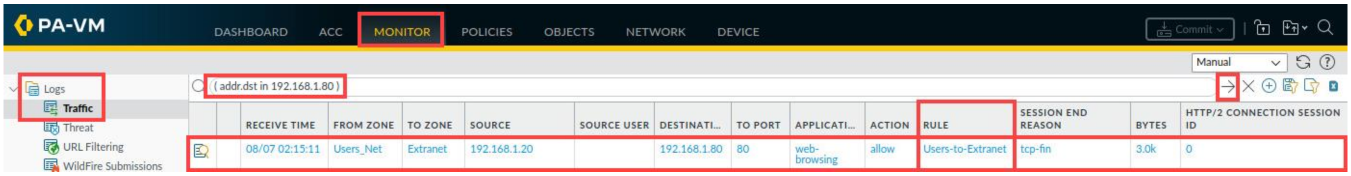


Hello World !

My name is www.panw.lab.

My address is 192.168.50.80.

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.**



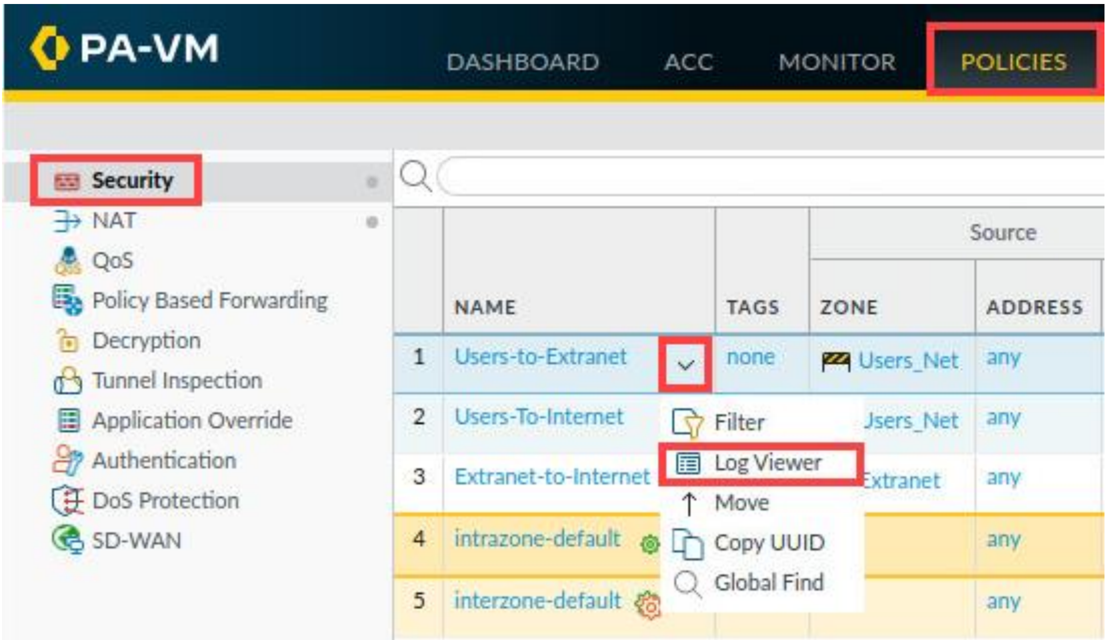
( addr.dst in 192.168.1.80 )

| | RECEIVE TIME | FROM ZONE | TO ZONE | SOURCE | SOURCE USER | DESTINATI... | TO PORT | APPLICATI... | ACTION | RULE | SESSION END REASON | BYTES | HTTP/2 CONNECTION SESSION ID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 08/07 02:15:11 | Users_Net | Extranet | 192.168.1.20 | | 192.168.1.80 | 80 | web-browsing | allow | Users-to-Extranet | tcp-fin | 3.0k | 0 |

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.