PALO ALTO NETWORKS EDU-210

Lab 5.1: Content ID Malware/Virus Protection

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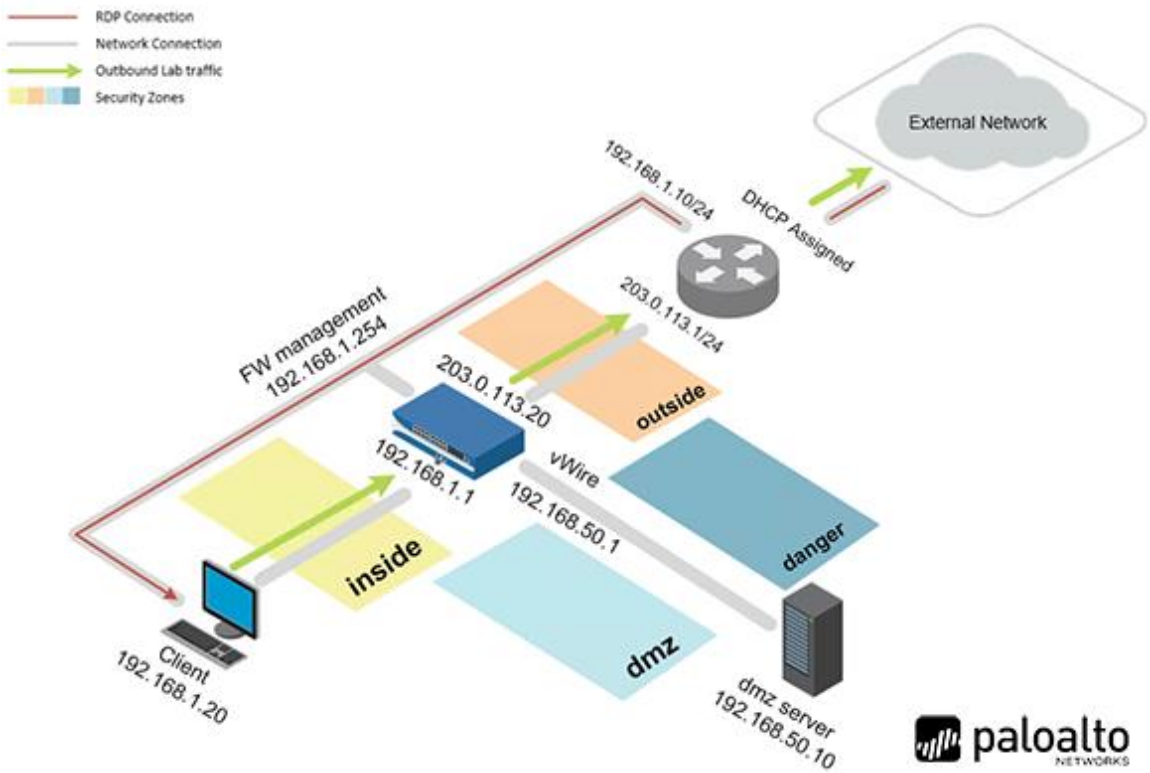
Introduction

The Palo Alto Networks next-generation firewall has been deployed. The company has setup policies to allow certain types of applications. Now we need begin scanning the traffic as it passes through the firewall for threats. We need to look for exploits, viruses, spyware and other malicious threats.

Objectives

- Configure and test a Vulnerability Security Profile.
- Configure and test a File Blocking Security Profile.
- Use the Virtual Wire mode and configure the danger zone.
- Generate threats and observe the actions taken.

Lab Topology



Lab Settings

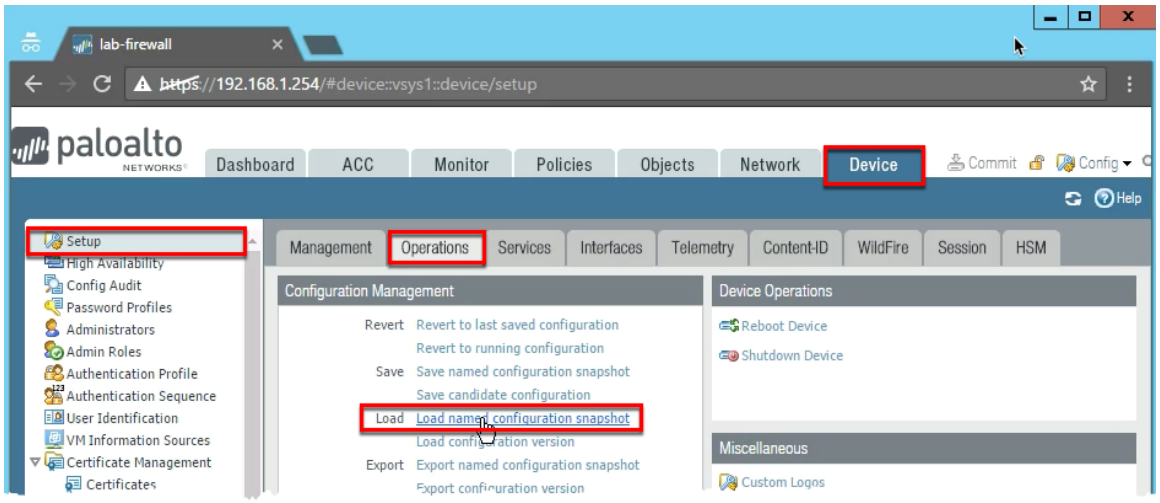
The information in the table below will be needed in order to complete the lab. The task sections below provide details on the use of this information.

Virtual Machine	IP Address	Account (if needed)	Password (if needed)
Client – Windows 2012 R2	192.168.1.20	lab-user	Pal0Alt0
Firewall – PA-VM	192.168.1.254	admin	admin

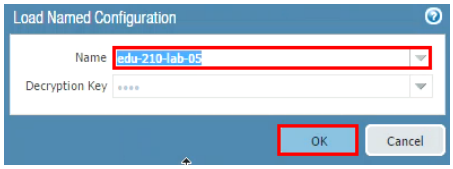
5.1 Lab: Interface Configuration

5.1.0 Load Lab Configuration

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



3. Select **edu-210-lab-05** and click **OK**.

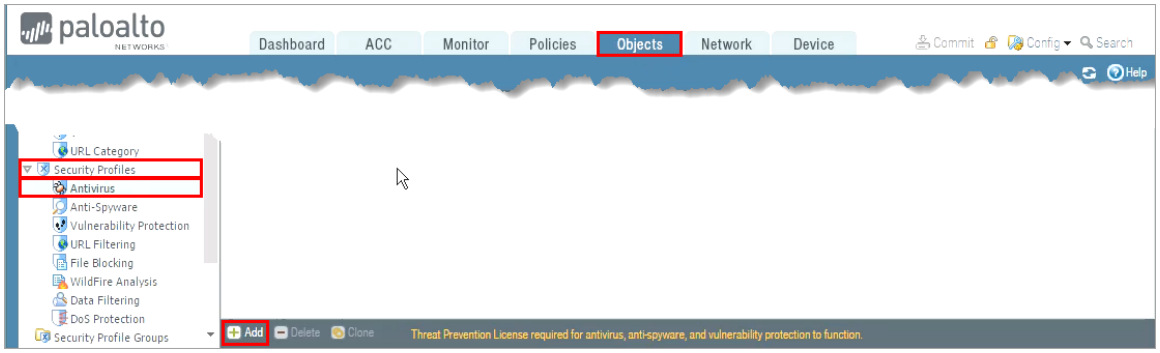


4. Click **Close**.
5. **Commit** all changes.

5.1.1 Create Security Policy Rule with an Antivirus Profile

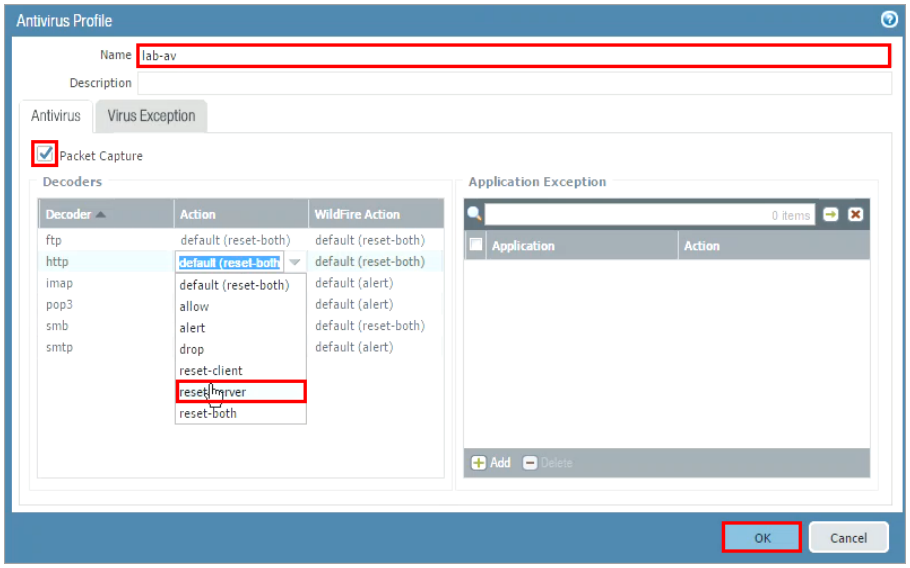
Use an Antivirus Profile object to configure options to have the firewall scan for viruses on traffic matching a Security policy rule.

1. Select **Objects > Security Profiles > Antivirus** then click **Add** to create a Antivirus Profile.

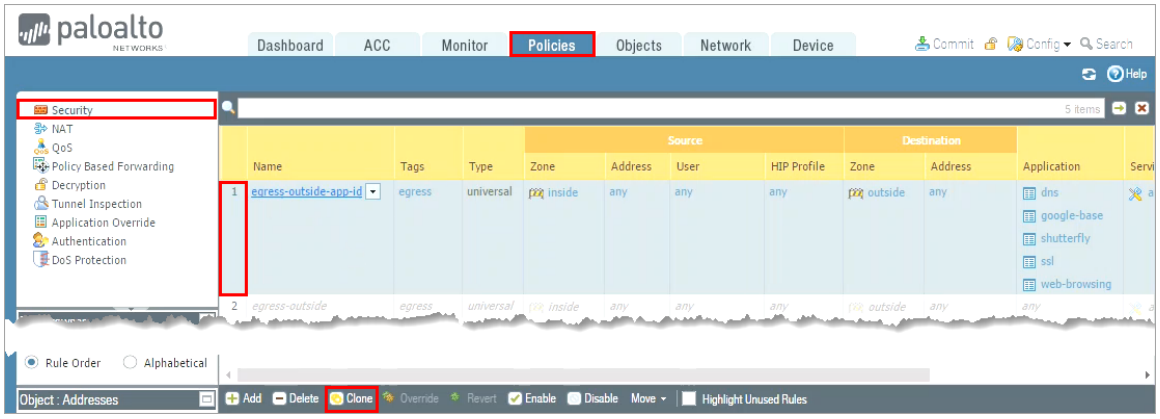


2. In the **Antivirus Profile** window configure the following the click **OK**.

Parameter	Value
Name	`lab-av`
Packet Capture	**Checked**
Decoders	
http	**reset-server**



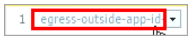
3. Select **Policies > Security**, select the **egress-outside-app-id** security policy rule without opening it then click **Clone**.



4. Select **Move top** from the Rule order drop-down list then click **OK**.

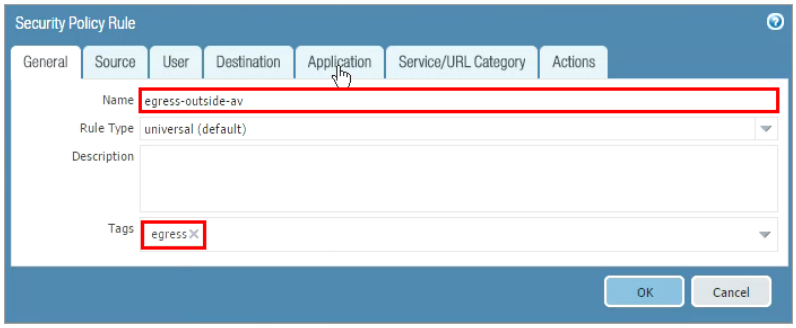
5. With the original egress-outside-app-id still selected, click **Disable**.

6. Click to open the cloned Security policy rule named **egress-outside-app-id-1**.



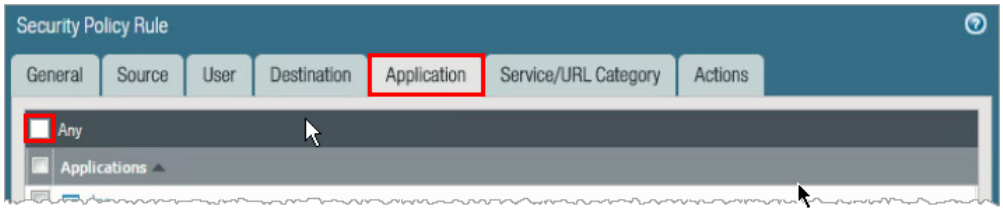
7. In the **Security Policy Rule** window under the **General** tag configure the following.

Parameter	Value
Name	`egress-outside-av`
Tags	egress



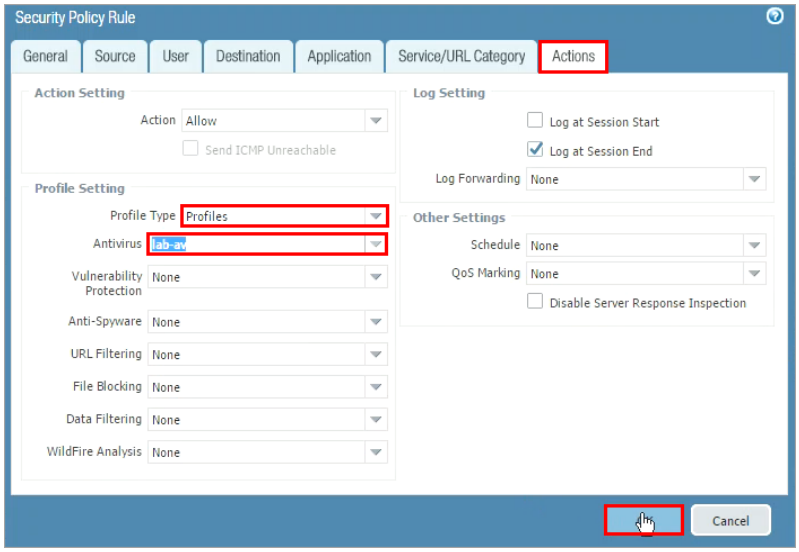
8. Click the **Application** tab and configure the following:

Parameter	Value
Any	Checked



9. Click the **Actions** tab and configure the following:

Parameter	Value
Profile Type	Profiles
Profile Setting	
Antivirus	lab-av



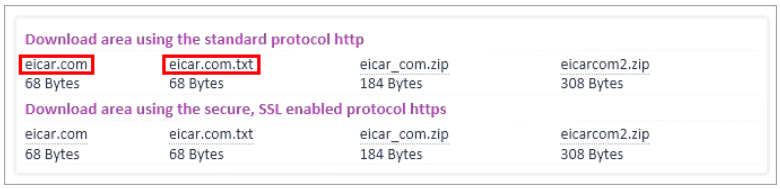
10. Click **OK** to close the Security Policy Rule configuration window.
11. **Commit** all changes.

5.1.2 Test Security Policy Rule

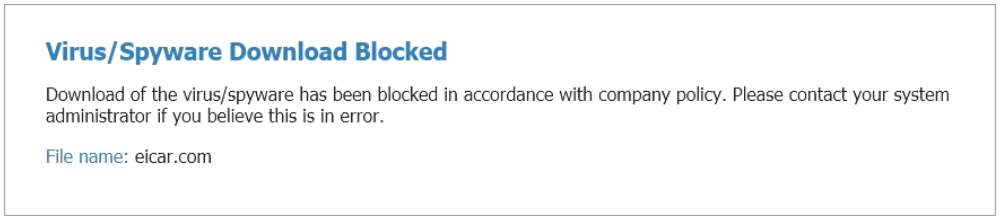
1. On your desktop, open a new browser in private/incognito mode and browse to `http://www.eicar.org`.
2. Click the **DOWNLOAD ANTIMALWARE TESTFILE** image in the top-right corner:

3. Click the **Download** link on the left of the web page:

4. Within the Download area at the bottom of the page, click either the **eicar.com** or the **eicar.com.txt** file to download the file using standard HTTP and not SSL-enabled HTTPS. The firewall will not be able to detect the viruses in an HTTPS connection until decryption is configured.



5. If prompted, **Save** the file. Do not open or run the file.



6. **Close** the browser window.

5.1.3 Review Logs

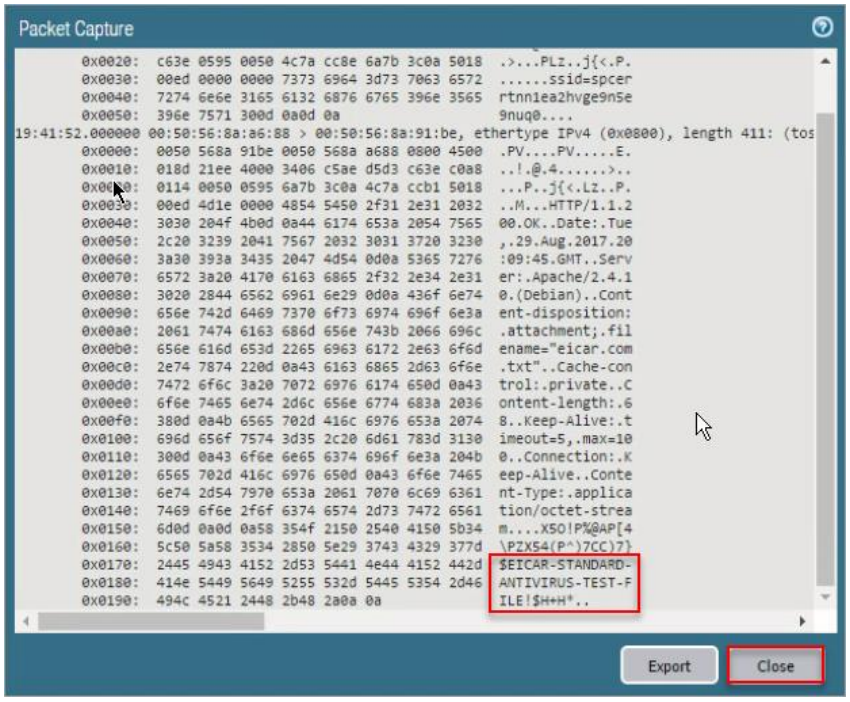
1. In the WebUI select **Monitor > Logs > Threat**.
2. Find the log message that detected the **Eicar Test File**. Notice that the action for the file is **reset-server**.

To Port	Application	Action	Severity	File Name
56835	web-browsing	reset-server	medium	eicar.com.txt

3. Click the **Packet Capture Download** icon on the left side of the entry for the **Eicar Test File** to display the packet capture (pcap):

		Receive Time	Type	Name	From Zone	To Zone	Attacker
		08/29 19:41:52	virus	Eicar Test File	outside	inside	213.211.198.62

Here is an example of what a pcap might look like:



Captured packets can be exported in pcap format and examined with an offline analyzer for further investigation.

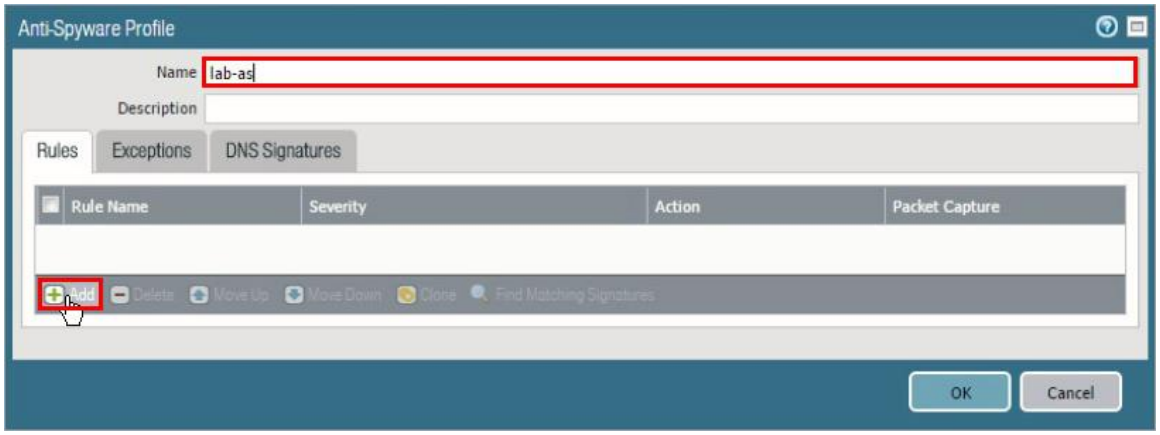
4. After viewing the pcap, click **Close**.

5.1.4 Create Security Policy Rule with an Anti-Spyware Profile

1. Select **Objects > Security Profiles > Anti-Spyware** then click **Add** to create an Anti-Spyware Profile.

2. In the **Anti-Spyware Profile** window configure the following then click Add under the **Rules** tab.

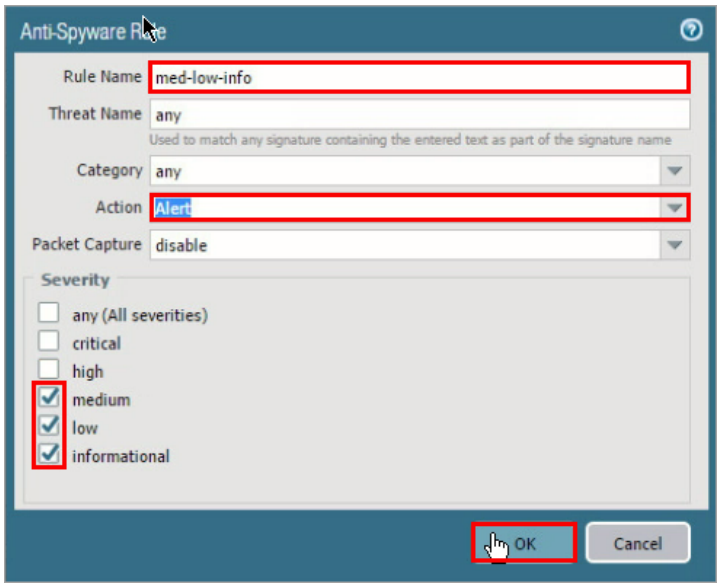
Parameter	Value
Name	`lab-as`



3. In the **Anti-Spyware Rule** window configure the following then click **OK**.

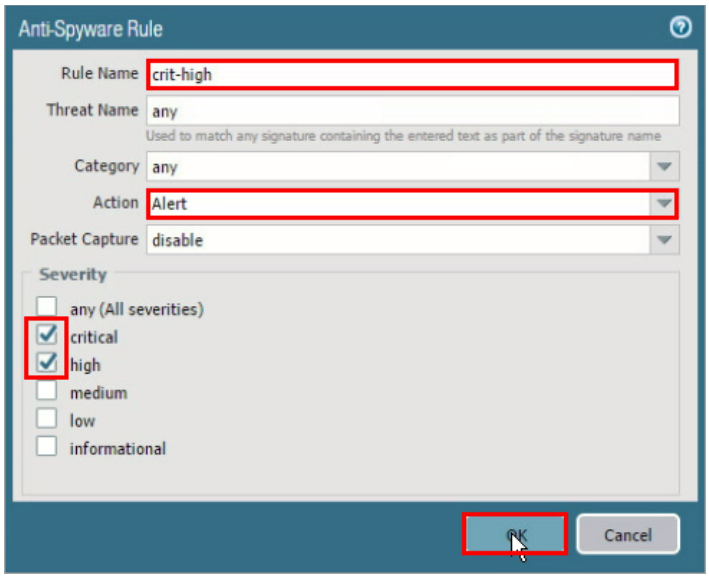
Parameter	Value
Rule Name	`med-low-info`
Action	**`Alert`**

Severity	`medium`
	`low`
	`informational`

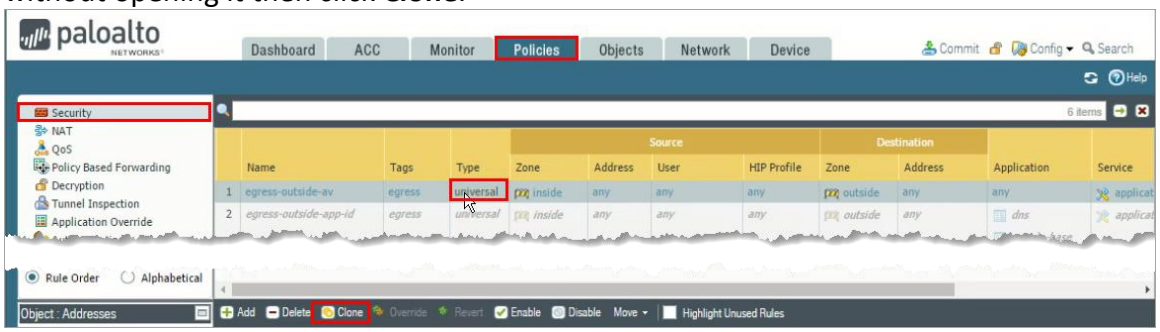


4. Click **Add** to create a new **Anti-Spyware Rule** then fill in the following data and click **OK**.

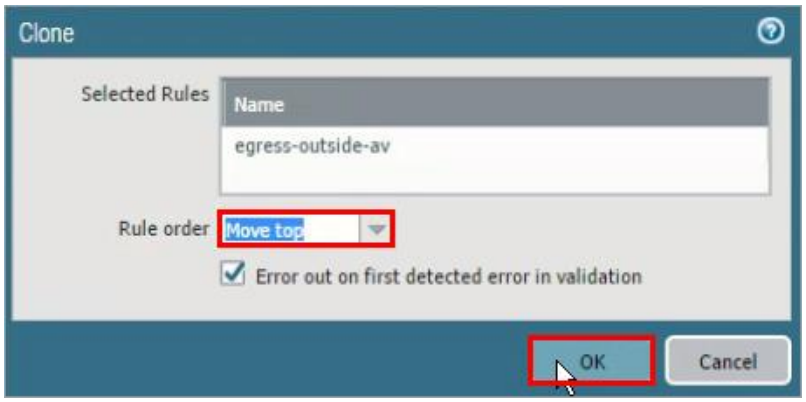
Parameter	Value
Rule Name	`crit-high`
Action	**`Alert`**
Severity	`critical` `high`



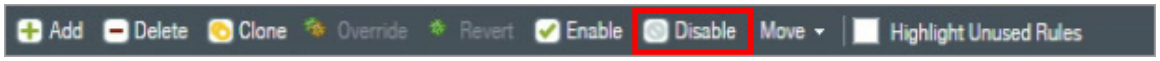
5. Click **OK** to close the **Anti-Spyware Profile** window.
6. Under **Policies > Security** select the **egress-outside-av** Security policy rule without opening it then click **Clone**.



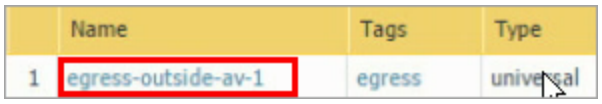
7. Select **Move top** from the Rule order drop-down list then click **OK**.



8. With the original egress-outside-av still selected, click **Disable**.

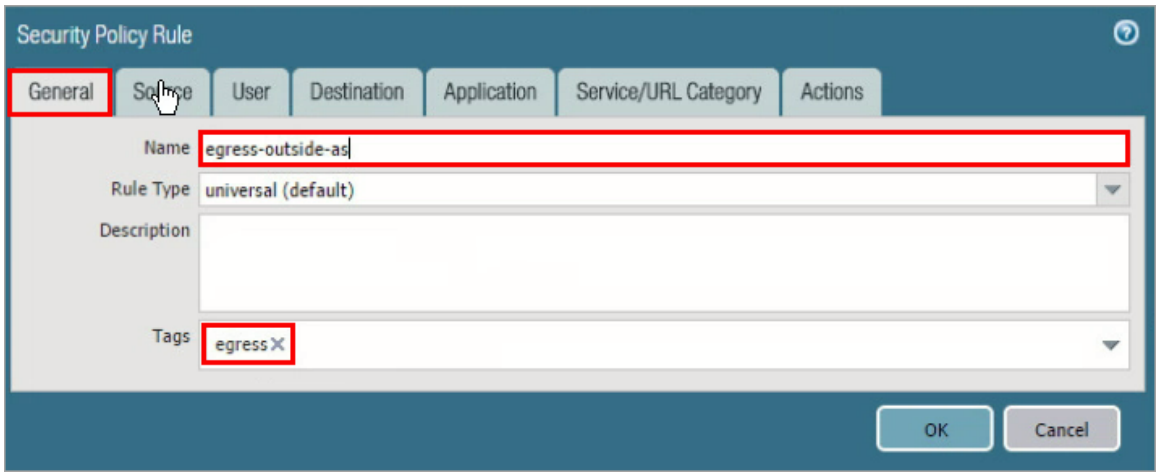


9. Click to open the cloned Security policy rule named **egress-outside-av-1**.



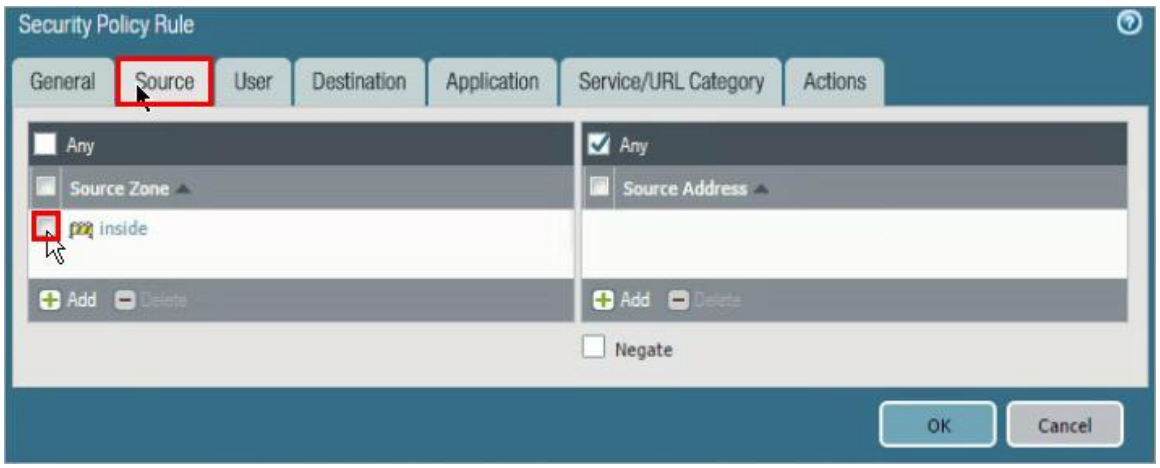
10. In the **Security Policy Rule** window under the **General** tab and configure the following.

Parameter	Value
Name	`egress-outside-as`
Tags	egress



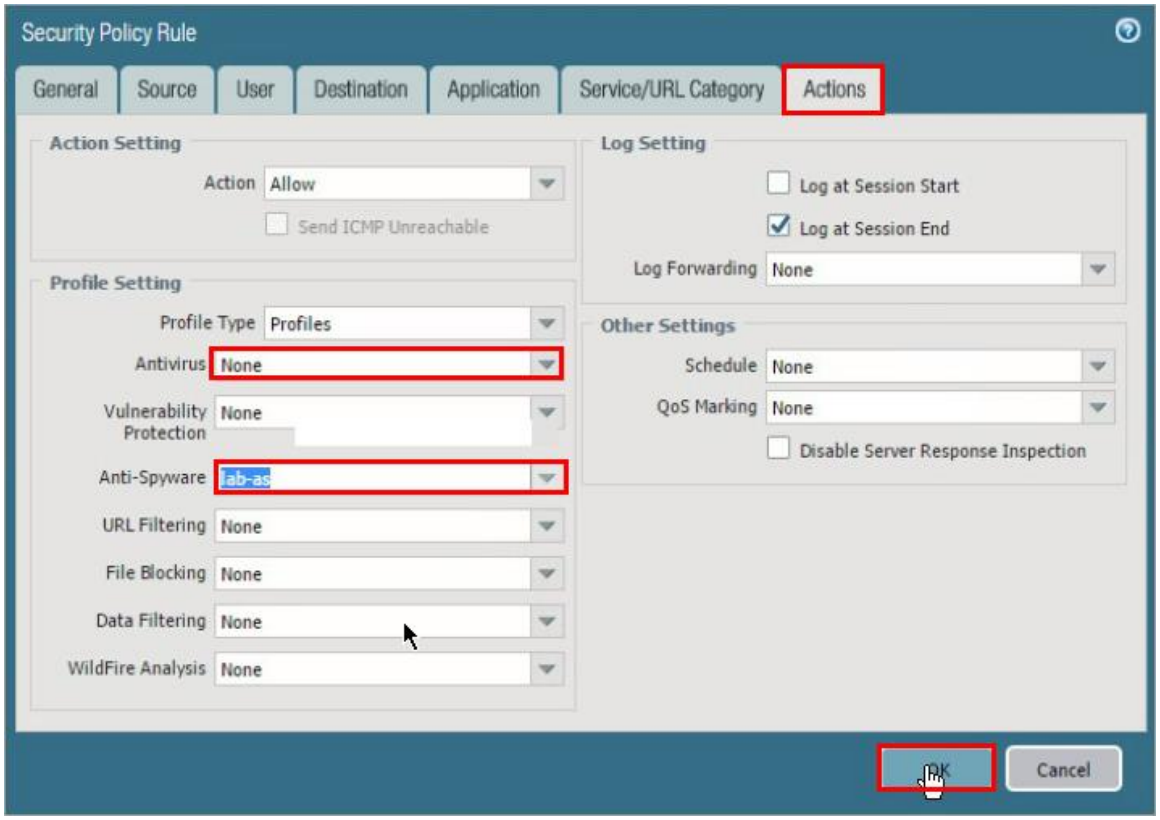
11. Under the **Source** tab is configure the following.

Parameter	Value
Source Zone	`inside`



12. Under the **Actions** tab configure the following then click **OK**.

Parameter	Value
Antivirus	`None`
Anti-Spyware	lab-as



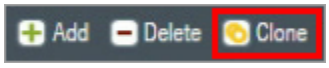
13. Click **OK** to close the Security Policy Rule configuration window.

5.1.5 Create DMZ Security Policy

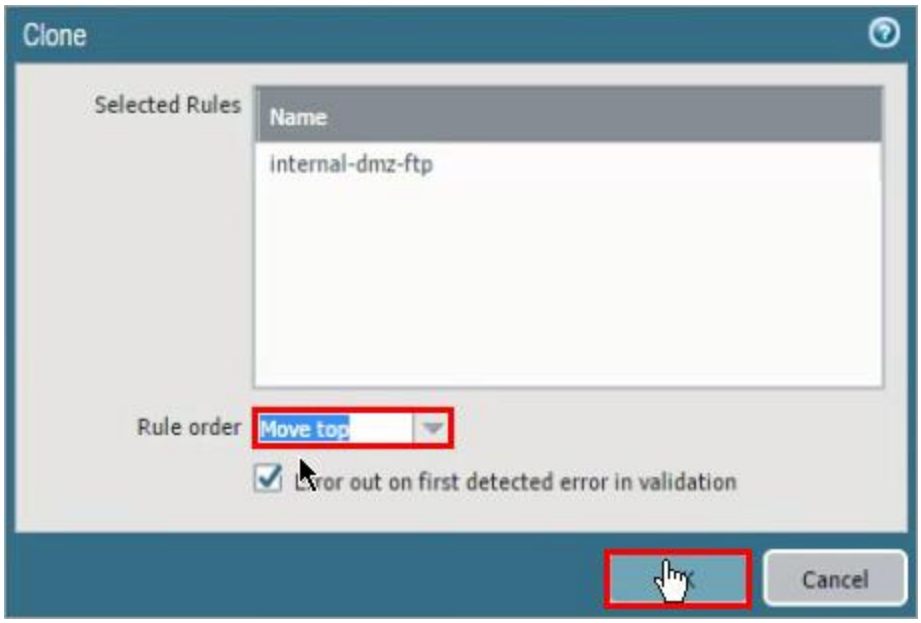
Because the management interface uses the inside interface as the gateway, you need to allow this traffic via a Security policy rule.

1. Select the **internal-dmz-ftp** Security policy rule without opening it.

2. Click **Clone**. The Clone configuration window opens.



3. Select **Move top** from the Rule order drop-down list then click **OK** to close the Clone configuration window.

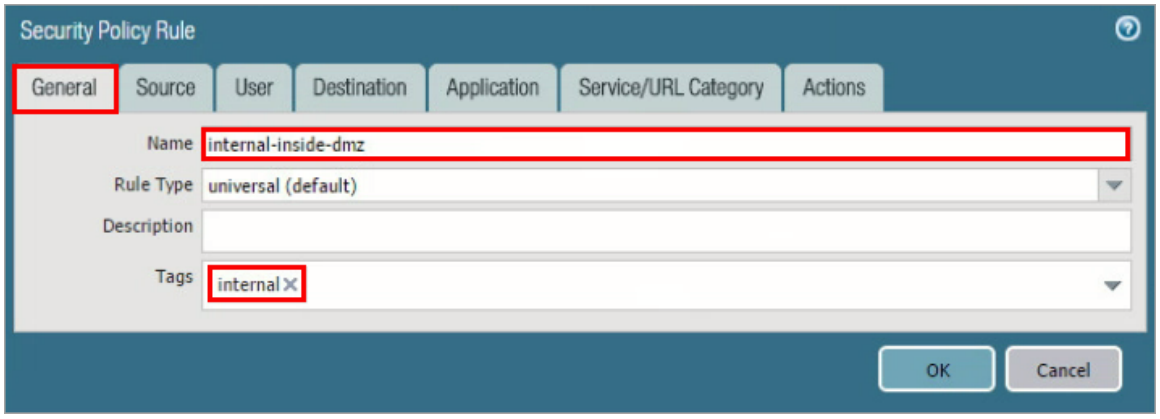


4. With the original internal-dmz-ftp still selected, click **Disable**.

5. Click to open the cloned Security policy rule named **internal-dmz-ftp-1**.

6. Under the **General** tab configure the following:

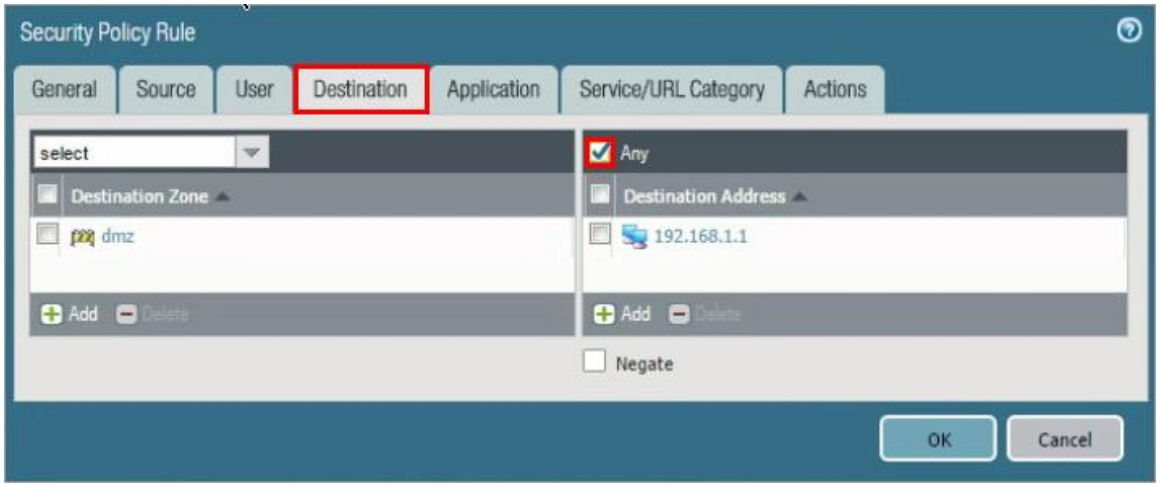
Parameter	Value
Name	`internal-inside-dmz`
Tags	**internal**



7. Under the **Destination** tab and configure the following:

Parameter	Value
Destination Address	

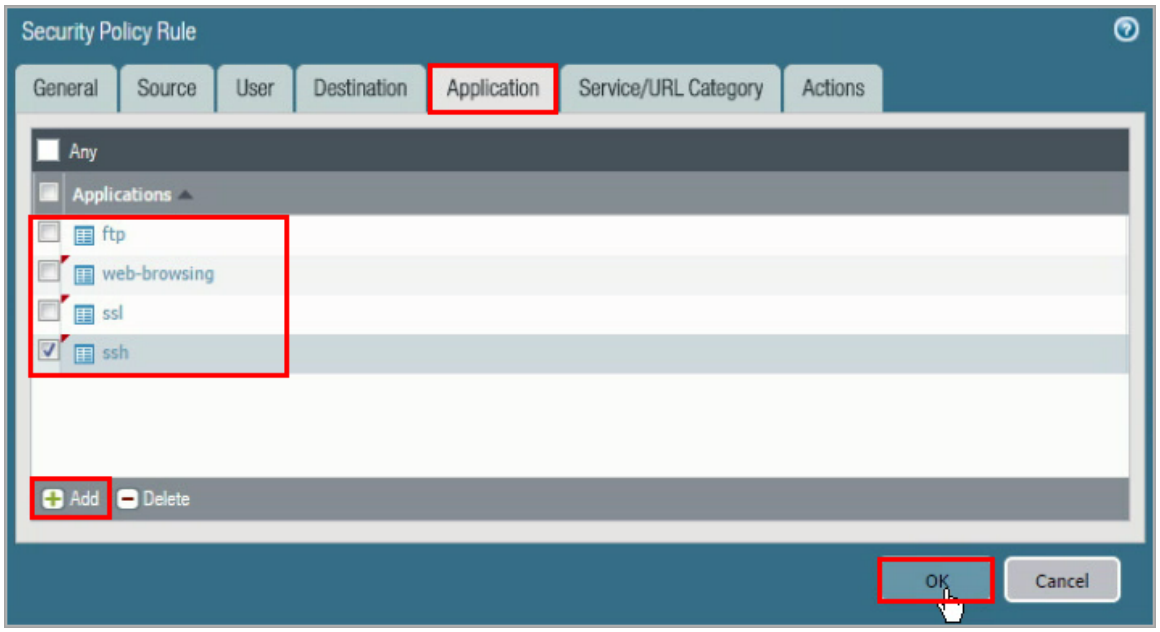
Any	**Checked**



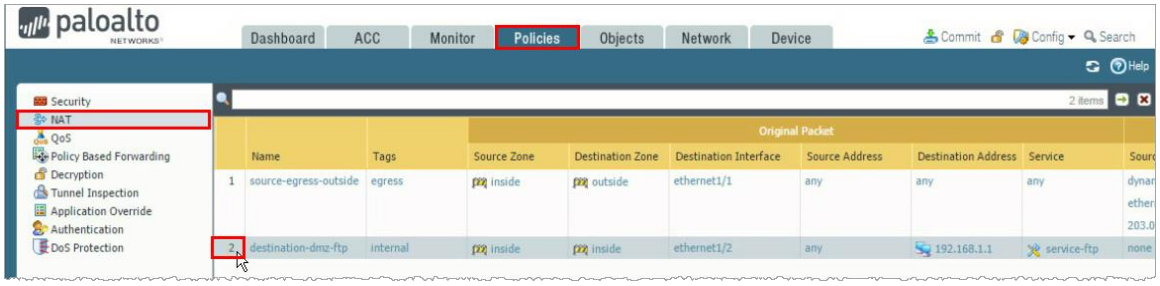
8. Click the **Application** tab to configure the following than click **OK**.

Parameter	Value

Applications	`web-browsing`
	`ssl`
	`ssh`
	`ftp`



9. Under **Policies > NAT s**elect the **destination-dmz-ftp** NAT policy rule without opening it.



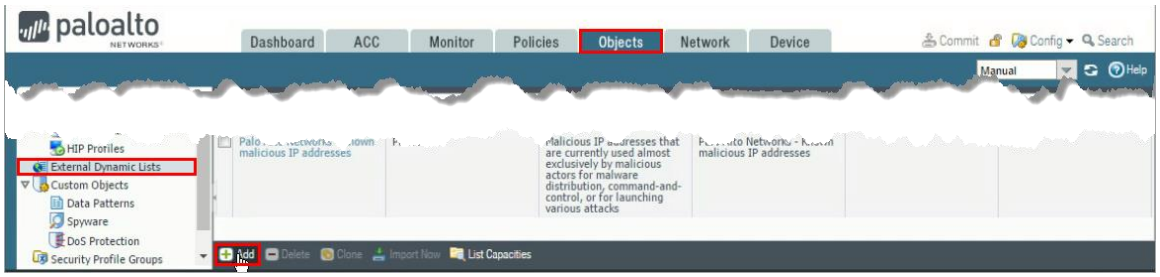
10. Click **Disable**.

11. **Commit** all changes.

5.1.6 Configure DNS-Sinkhole External Dynamic List

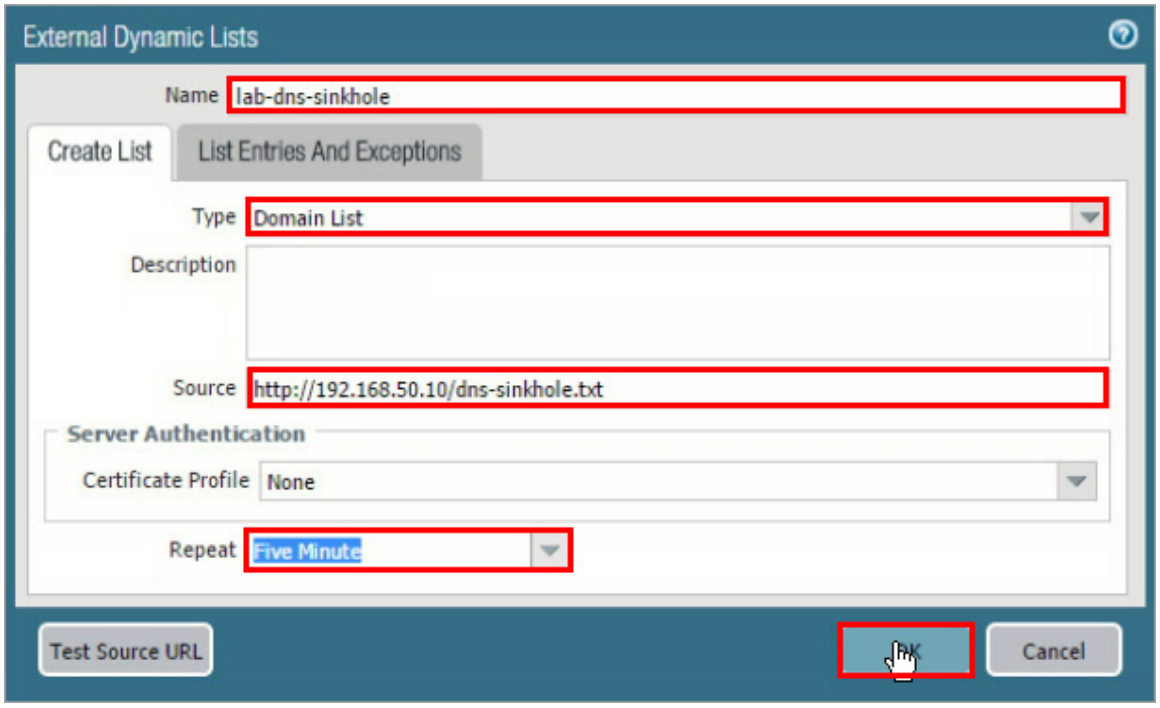
An External Dynamic List is an object that references an external list of IP addresses, URLs, or domain names that can be used in policy rules. You must create this list as a text file and save it to a web server that the firewall can access. By default, the firewall uses its management port to retrieve the list items.

1. Select **Objects > External Dynamic Lists** click **Add** to configure a new External Dynamic List.



2. In the External Dynamic Lists window, configure the following then click **OK**.

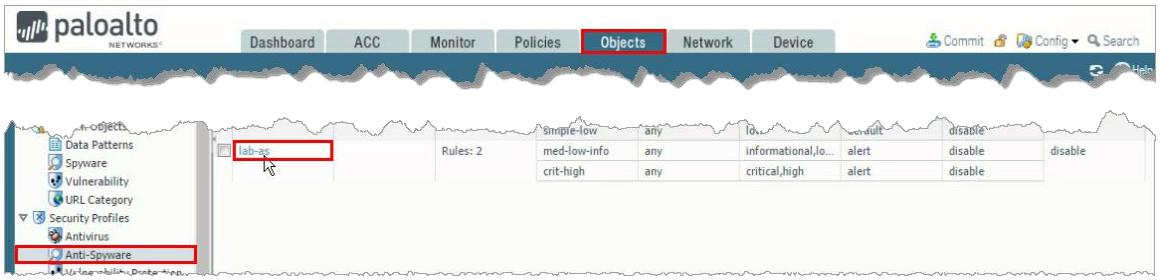
Parameter	Value
Name	`lab-dns-sinkhole`
Type	**Domain List**
Source	http://192.168.50.10/dns-sinkhole.txt (This is hosted on the DMZ server.)
Repeat	**Five Minute**



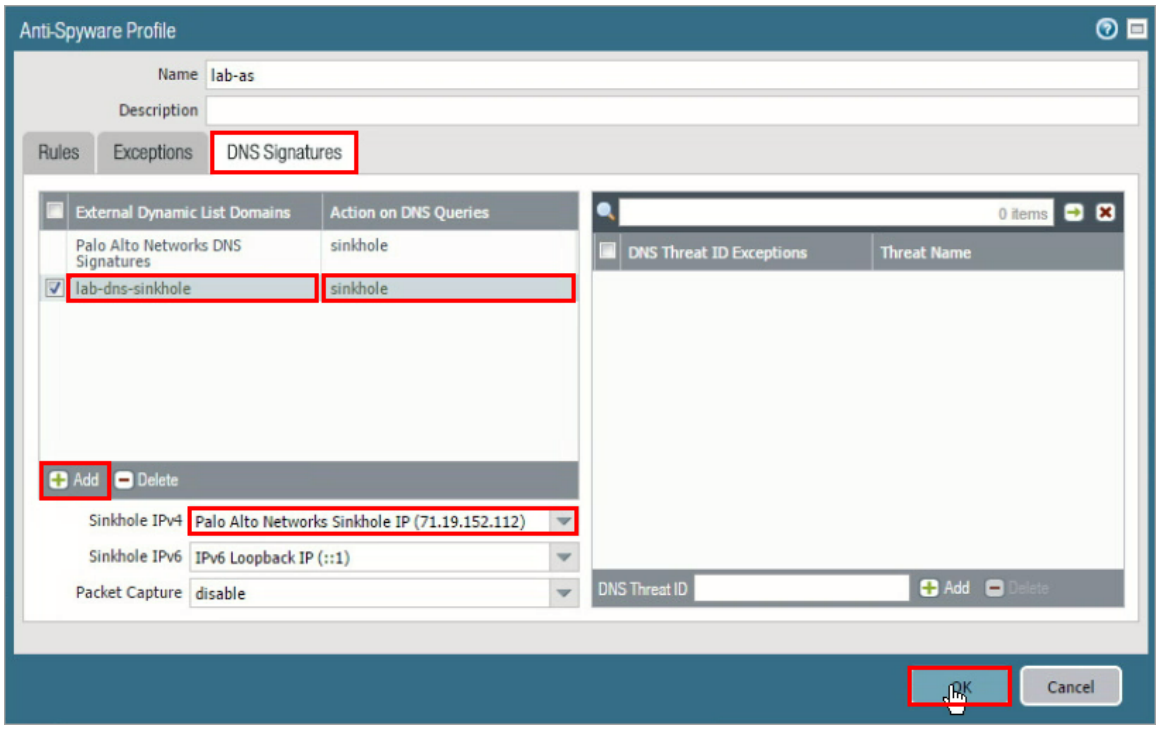
5.1.7 Anti-Spyware Profile with DNS Sinkhole

The DNS sinkhole action provides administrators with a method of identifying infected hosts on the network using DNS traffic, even when the firewall is north of a local DNS server (i.e., the firewall cannot see the originator of the DNS query).

1. Select **Objects > Security Profiles > Anti-Spyware** then click the Anti-Spyware Profile named **lab-as**.



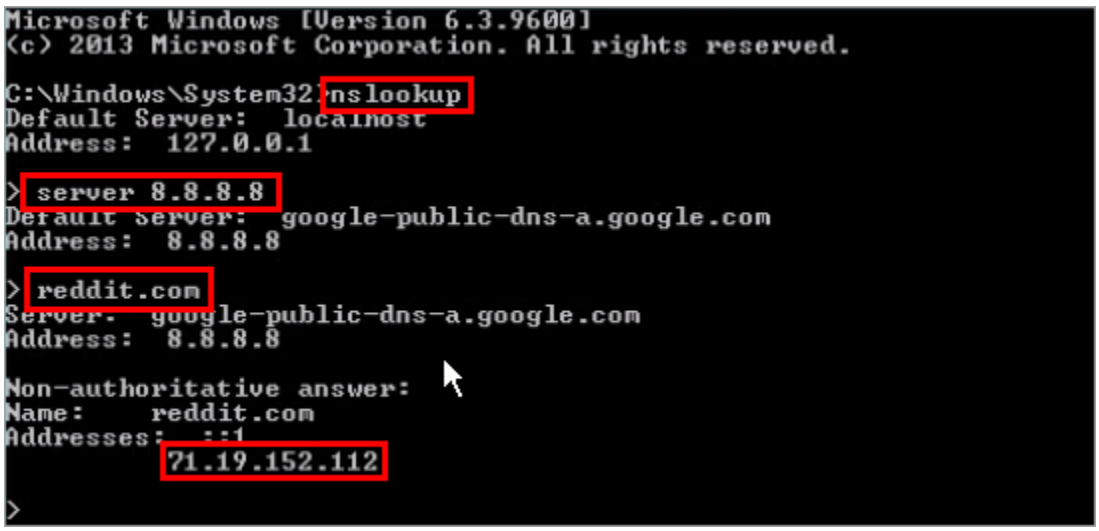
2. Click the **DNS Signatures** tab then click **Add** and select **lab-dns-sinkhole**.



3. Set the **Action on DNS Queries** to **sinkhole**:
4. Verify that the **Sinkhole IPv4** is set to 71.19.152.112.
5. Click **OK** to close the Anti-Spyware Profile configuration window.
6. **Commit** all changes.

5.1.8 Test Security Policy Rule

1. From the Windows desktop, open a command-prompt window.
2. Type the `nslookup` command and press the **Enter** key.
3. Type the command server `8.8.8.8` and press the **Enter** key:
4. At the `nslookup` command prompt, type `reddit.com`. and press the **Enter** key:



Notice that the reply for reddit.com is 71.19.152.112. The request has been sinkholed.

5.1.9 Review the Logs

1. Select **Monitor > Logs > Threat**.

You may need to clear the log filter to view the entries that you are interested in.

2. Identify the **Suspicious Domain** log entry. Notice that the action is **sinkhole**. Note that you will not see an entry for this activity in the Traffic log because the Windows system did not try to initiate a connection to 71.19.152.112:

		Receive Time	Type	Name	From Zone	To Zone	Attacker	Attacker Name	Victim
		08/29 19:52:46	spyware	Suspicious Domain	inside	outside	192.168.1.20		8.8.8.8

Stop. This is the end of the 5.1 Content ID Malware/Virus Protection lab.

