



DDoS Defense: Next-Generation Firewall versus Traditional Firewall

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DEGREE PROJECT

Network Technology and IT-security, 120 HE Credits

Department of Engineering Science, University West, Sweden

DDoS försvar: Nästa generationens brandvägg kontra traditionell brandvägg

Sammanfattning

Syftet med detta examensarbete var att utvärdera hur två olika brandväggar, en nästa generationens brandvägg och en traditionell brandvägg, hanterade en mindre distribuerad denial of service-attack. Enheterna kördes så nära dess förkonfiguration som möjligt. Testningen genomfördes i en kontrollerad labbmiljö på Högskolan Väst.

Ett botnät bestående av 17 datorer användes och styrdes via en kommandocentral som använde IRC för att utföra attackerna. Enheterna testades med TCP- och UDP-baserade attacker under en tid av fyra minuter vardera. En dator var ansluten till det interna gränssnittet där vi kontrollerade minnet, CPU och latensen. En annan dator från botnätgränssnittet kontrollerade latensen från botnät.

Resultaten visar att nästa generationens brandvägg (FortiGate40F) presterar bättre än den traditionell brandväggen (ASA 5506-X). Både Cisco ASA 5506-X och FortiGate 40F kör med 4 CPU-kärnor, där ASA 5506-X har 1250 MHz per kärna medan FortiGate 40F bara har 1200M MHz per kärna. ASA 5506-X har också 113,24% mer RAM än FortiGate. Trots att ASA 5506-X har fördelen när det gäller hårdvara, presterande FortiGate 40F bättre vid varje attack. Detta beror med stor sannolikhet på skillnaden i mjukvara hos de olika brandväggarna

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DEGREE PROJECT

DDoS Defense: Next-Generation Firewall versus Traditional Firewall

Summary

The purpose of this degree project was to evaluate how two different firewalls, one next-generation and one traditional handled a small-scale distributed denial of service attack while being as close to out-of-the-box configure as possible. The entirety of the testing was done in a controlled lab environment at University West.

A botnet of 17 computers was used and controlled via a command central using IRC to perform the attacks. The devices were tested with TCP- and UDP-based attacks for a duration of four minutes each. One computer was connected to the inside interface where we checked the memory and CPU and latency. Another computer from the botnet interface checked the botnet's latency.

The results show that the next-generation firewall (FortiGate40F) outperformed the traditional firewall (ASA 5506-X). Both Cisco ASA 5506-X and FortiGate 40F are running 4 CPU cores with ASA 5506-X having 1250 MHz per core, while FortiGate 40F only has 1200 MHz per core. The ASA 5506-X also has 113.24% more ram than the FortiGate. Despite the ASA 5506-X having the edge when looking at hardware, the FortiGate 40F did outperform in every attack. This is most likely due to the different software between the two firewalls.

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Preface

This degree project has been supervised by Kim Carlsson, whom we would like to thank for their guidance during the project. Much of the degree project work has been done together and some parts separately. The degree project has been divided equally between the two authors, William Andell, and Filip Eskel. The practical work of the degree project has been performed together. The writing workload is illustrated below in the table.

Chapter	William	Filip
1 Introduction		×
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2 Background		×
2.1 Denial-of-Service		×
2.2 Botnets		×
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Nomenclature

NGFW	Next-Generation Firewall
DoS	Denial of Service
DDoS	Distributed Denial of Service
IPS	Intrusion Prevention System
UDP	User Datagram Protocol
TCP	Transmission Control Protocol
SYN	Synchronize
CPU	Central Processing Unit
RAM	Random Access Memory
ACK	Acknowledgement
C&C	Command and Control
IP	Internet Protocol
ms	Millisecond
IRC	Internet Relay Chat
Mb/s	Megabits per second
MHz	Megahertz

1 Introduction

Network security is a topic that is increasingly popular due to the growing number of aspects of our lives that rely on networks, such as e-commerce, online banking, remote work, and education. However, as the network usage expands, so does the threats against them, including attacks like ransomware, malware, and distributed denial of service (DDoS).

DDoS attacks are increasing in society today [15]. Targets range from businesses and individuals to government facilities. A company suffering from downtime during a DDoS attack will not only lose out on revenue during the downtime but might also suffer long-term consequences with a tarnished reputation. Firewalls often serve as a first line of defense against external threats, so having the right equipment in the right place can save a company both time and money that is why it is critical to know what the most effective way is to protect your network from attacks such as DDoS.

A Distributed Denial of Service attack has become more accessible since botnets are available for purchase or rent on the Darknet [16]. There are also possibilities to commission DDoS attacks that the criminal organization carries out. A person with little to no knowledge about networking or programming can now purchase a complete attack and be a threat to organizations. When the DDoS attacks are more available for even personal use, there is an increased risk for even smaller companies and organizations to be under attack and must protect themselves with appropriate equipment in the form of Firewalls.

There are a lot of different firewalls available on the market today; all with their different strengths and features. So, choosing the right firewall can be a daunting task. This degree project will go through and compare how Cisco ASA 5506-X and FortiGate 40F withstand two attacks: one UDP flood-based attack, and one TCP SYN attack as they have been two of the top three most used DDoS attacks during 2022 [15].

1.1 Purpose

The purpose of this degree project is to compare the effectiveness a next-generation firewall Fortinet FortiGate 40F versus a traditional firewall Cisco ASA 5506-X in Distributed Denial-of-Service (DDoS) attacks. The DDoS attacks will be performed in a controlled environment at University West.

2 Background

The background section will cover the following topics: 2.1 Denial of Service, 2.2 Botnets, 2.3 Distributed Denial of Service, 2.4 Transmission Control Protocol Synchronization Flood Attack, 2.5. User Datagram Protocol Flood Attack, 2.6. Low Orbit Ion Cannon, 2.7 Firewall, and 2.8 Next-Generation Firewall.

2.1 Denial of Service

Denial of service (DoS) [10] occurs when a user sends a large amount of traffic toward a device to overburden it. The goal of a DoS attack is to exhaust the resources of the targeted device such as its processing power, memory, or network bandwidth. For instance, if a device is exposed to an Internet Control Message Protocol (ICMP) flood attack. It begins with decoding the header of the package and checking the information to see if the package destination internet protocol (IP) address is the same as the host's IP address. It begins to process the ICMP packet and then sends out an Echo-Reply on its own to the source IP address of the received packet.

When a device deals with this process repeatedly, it will deplete the resources of the device that may cause the receiver of the attack to drop legitimate traffic, since it does not have enough resources to deal with it.

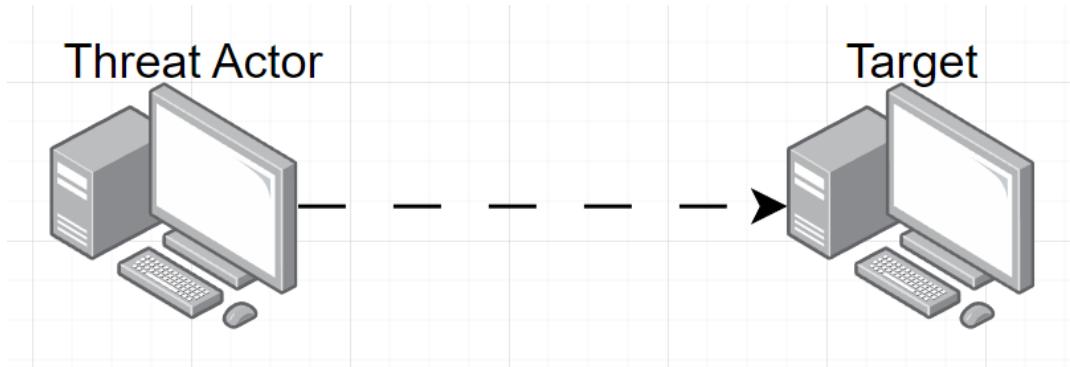


Figure 1. Traffic flow during an attack.

As shown in figure 1, the traffic flows directly from the threat actor toward the target device.

Different types of DoS attacks deplete the target's resources in various ways. Bandwidth-focused attacks aim to disrupt the device's possibility to process legitimate traffic by sending too much information for the device to handle. Central processing unit (CPU) attacks aim at sending requests for the device to process, therefore overbearing the device's CPU, making them slow which might even lead to a crash. A single DoS attack is not always powerful enough on its own to disrupt a device's baseline function.

2.2 Botnets

Botnets can be used for various things, such as cryptocurrency mining, keyloggers, or spreading malware [9].

A botnet is a network of an unspecified number of computers infected with malicious software that lets the Command-And-Conquer (C&C) Server [1] use the infected computers as an amplification method to launch attacks from multiple sources. A botnet can scale well since you can add more bots to increase the number of packets that your botnet can send. Since the attacker never comes in direct contact with the target, it will be harder to trace the attack since it will come from a variety of IP addresses.

With the Internet of Things (IoT) [11] on the rise, we now have more devices that can be used as a bot within a botnet, for example, electrical sockets, voice assistants, and refrigerators can all be used as a part of a botnet.

2.3 Distributed Denial of Service

Distributed Denial of Service (DDoS) is a more sophisticated version of DoS attacks they use similar techniques as DoS. However, the difference is that DDoS uses a botnet to amplify the amount of traffic reaching the target. The attacker will send out a command to instruct the bots of the botnet to launch a DoS attack toward a target, thus creating the DDoS attack. The type of traffic the DDoS attacks use can vary; some examples of common attacks are Ping Flood attacks and SYN Flood attacks, both having the same goal but different ways to reach it [6]. During a DDoS attack, the target receives packets from various IP addresses out of the botnet, therefore it is harder to apply access-lists to block out the malicious traffic causing the attack to continue for longer.

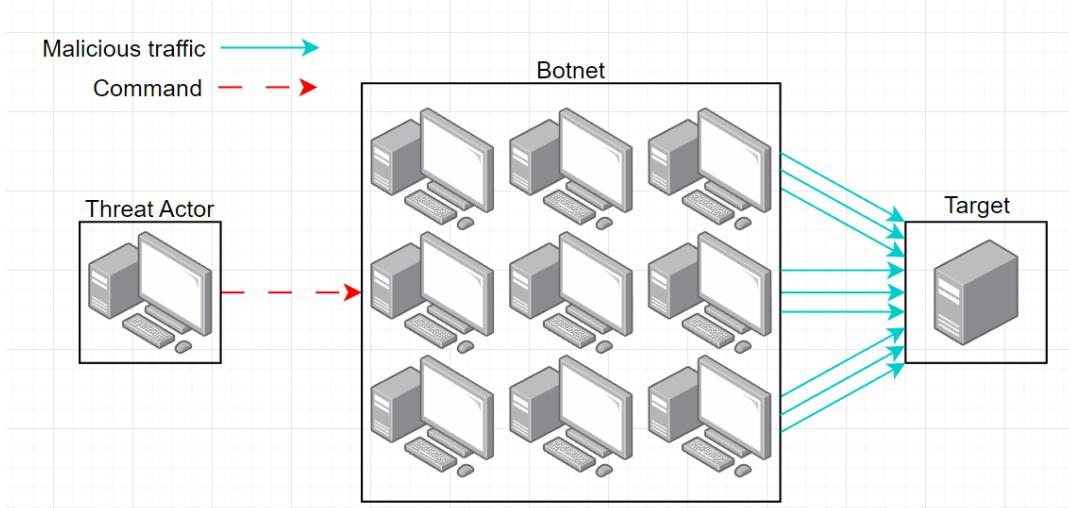


Figure 2. A DDoS attack.

The threat actor launching the DDoS attack would typically operate from a control center of a botnet. In figure 2, the dotted arrow represents the initial command sent by the threat actor to commence the attack. Each bot in the botnet then sends the packets as instructed by the threat actor, and the resulting malicious traffic is represented by the blue lines.

2.4 Transmission Control Protocol Synchronization Flood Attack

Transmission Control Protocol (TCP) [17] is a transport layer protocol that provides reliable and ordered data between hosts. The way TCP can guarantee data to be delivered is by setting up a session between the two communicating hosts. This is done via a function called TCP Three-way Handshake.

A Transmission Control Protocol Synchronization Flood attack (TCP SYN Flood)

works by exploiting a feature in the three-way handshake that is used for establishing connections between devices. The connections establish in three phases. First, the initiating device sends a Synchronization (SYN) package the receiving device accepts this information and sends back a Synchronization acknowledgment (SYN, ACK) to the initiating device, who replies with an acknowledgment (ACK). After these three steps are done there is an established connection between the devices. Figure 3 below shows how the data flows during the TCP three-way handshake.

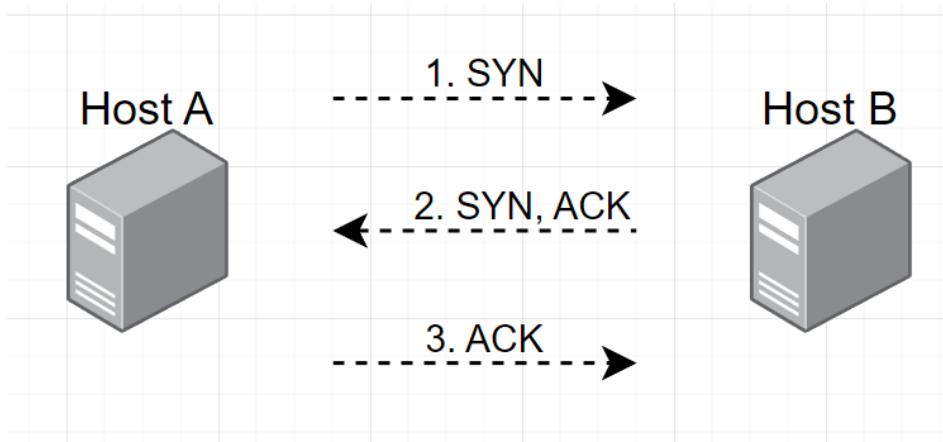


Figure 3. TCP Three-way Handshake.

A TCP SYN flood [18] is when you take advantage of the three-way handshake by only sending SYN messages. This makes it so that the receiver of the SYN messages will begin to establish sessions by sending back SYN ACKs responding to all the fraudulent SYN messages that it receives, and either must manually shut down the connections or wait for them to time out. Figure 4 below illustrates a TCP SYN flood attack.

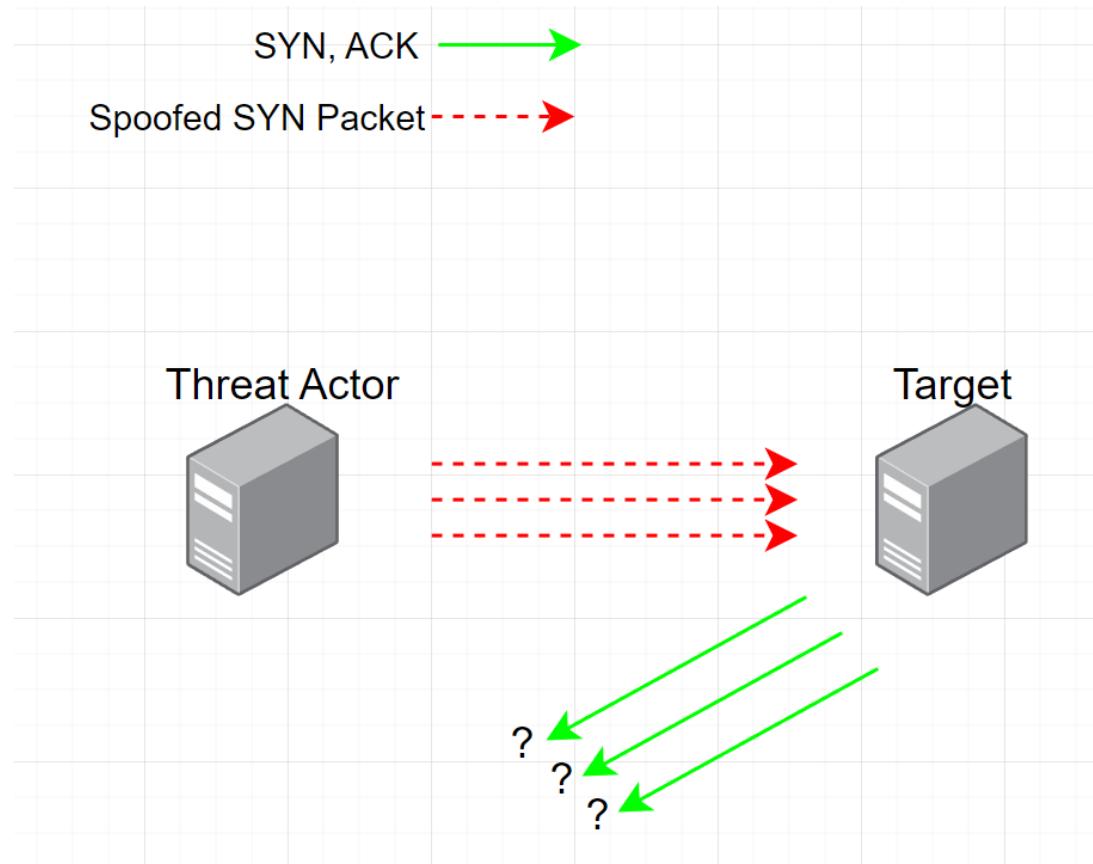


Figure 4. TCP SYN flood attack

2.5 User Datagram Protocol Flood Attack

User Datagram Protocol (UDP) [8] is a transport layer protocol. Compared to TCP, UDP is a connectionless protocol that does not guarantee reliable packet delivery between sender and receiver. Another difference is that UDP does not establish a session before sending traffic. It is often used for time-critical applications where delays are not feasible, such as voice and video traffic. UDP traffic can, however, be lost in transit due to the unreliability. When data is lost in transit it is not retransmitted. Figure 5 illustrates how UDP operates between two devices. It shows how it sends traffic without reliability and acknowledgments as TCP does.

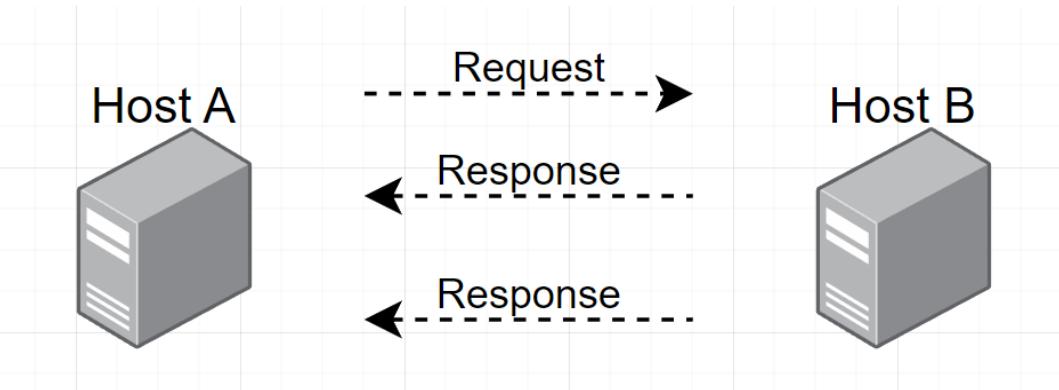


Figure 5. UDP operation between two devices.

A UDP flood attack [12] works by overwhelming a targeted server or a network with a large amount of UDP packets, flooding it with UDP traffic until it is unavailable to legitimate users. Attackers can spoof the source address of the UDP packets and make it difficult for the firewall to see the difference between malicious and legitimate traffic. A variety of techniques can be used to launch a UDP flood attack, such as botnets. In figure 6 below, a DDoS UDP flood attack is being performed at a target device with spoofed packets. At the same time, a legitimate user is trying to access the target device. The target device is overwhelmed with the processing of the traffic and its resources become exhausted, resulting in a successful DDoS attack where the legitimate user cannot access the target device's resources.

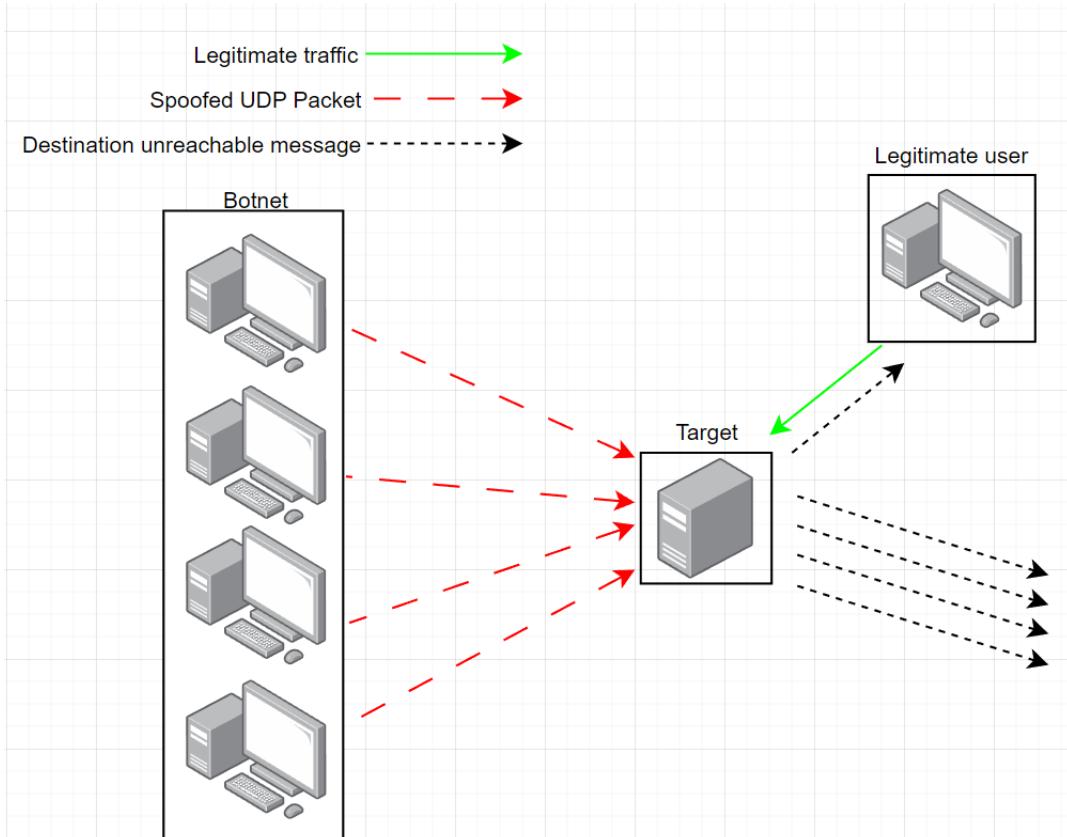


Figure 6. UDP flood attack.

2.6 Low Orbit Ion Cannon

Low Orbit Ion Cannon (LOIC) [13] is a tool that was developed for legitimate purposes, such as network stress testing. Since the tool is user-friendly, it has been used for DDoS attacks. With LOIC, an attacker can create and control a botnet and launch a DDoS attack with TCP or UDP packets against a target. To coordinate attacks, a LOIC hivemind is used by a primary computer to control several other computers with the help of Internet Relay Chat (IRC).

2.7 Firewall

A firewall [4, 5] is the first line of defense in network security. It creates a barrier between a secure internal network and an untrusted external network, such as the internet. The firewall analyzes each packet of data traveling in and out of the network and decides whether to allow or block it based on predefined security policies. These policies can consider various factors like source and destination addresses, port numbers, and type of data. Figure 7 illustrates basic firewall operations on how it enforces security policies. It demonstrates how external traffic originating from the internet is blocked since it is untrusted. Traffic originating from the internal network is allowed to access the internet since it is trusted.

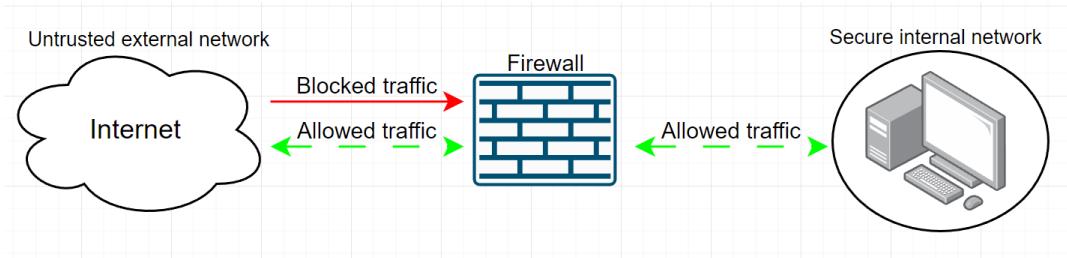


Figure 7. Basic firewall operation.

The term "Traditional firewalls" [5] encompasses a range of firewall types, including packet filtering, stateful, application-gateway, circuit-gateway, web-application, and Unified Threat Management firewalls. These firewalls operate at varying layers of the Open Systems Interconnection (OSI) model and table 1 provides a summary of their characteristics, pros and cons, and their specific place within the OSI model.

Table 1. Traditional Firewall Comparison [5]

Types of Firewall	Firewall Features		
	OSI Model Layer	Advantages	Disadvantages
Packet Filtering Firewall	Network Layer (Layer 3)	Efficient Easy to set up	Do not inspect the payload No user authentication
Stateful Firewall	Network Layer (Layer 3)	More efficient	Takes more space

			Vulnerable to DoS attack
Circuit-Gateway Firewall	Session Layer (Layer 5)	Defense in layer 5 Detects if data is being exfiltrated	Additional time to process traffic
Application-Gateway Firewall	Application Layer (Layer 7)	Defense in layer 7 Detect malicious payload	Additional time to process traffic
Web-Application Firewall (WAF)	Application Layer (Layer 7)	Defense against known web attacks	Unable to detect zero-day attacks
Unified Threat Management (UTM)	All Layers	All layer protection Additional protection, such as anti-spam	Single point of failure Could decrease performance drastically

Traditional firewalls [3, 4] pose a security risk and are obsolete, as they cannot meet enterprise demands for security and defend against emerging network security threats. The emerging security threats [4] that made the traditional firewalls obsolete are as follows: Advanced Evasion Techniques, Targeted Cyber-Attacks (Intelligence Gathering, Point of Entry, C&C, et cetera...), Web Application Attacks, and Data Focused Attacks.

2.8 Next-Generation Firewall

Due to the traditional firewalls posing a risk to network security, as they are obsolete, the next-generation firewall (NGFW) [3] was developed to secure enterprise networks from emerging threats. NGFW [3, 5] is an advanced firewall technology that is designed for enterprise-level environments and combines all the traditional firewall features, such as packet filtering, network address translation (NAT), and virtual private network (VPN) into the firewall. The NGFW also integrates advanced features, such as deep packet inspection (DPI), Intrusion Prevention System (IPS), application awareness, and malware protection, into the firewall. In the early days of the NGFW, it was comparable to the UTM traditional firewall but has since then developed into a superior firewall.

Potential future applications [5] that are the subject of ongoing research include machine learning and effective Internet of Things (IoT) defense to further enhance the NGFW.

3 Method

This section explains the methodology of this degree project. It is divided into two subsections, 3.1 Setting, and 3.2 Attack Scenarios.

3.1 Setting

The degree project was done in a controlled environment at University West.

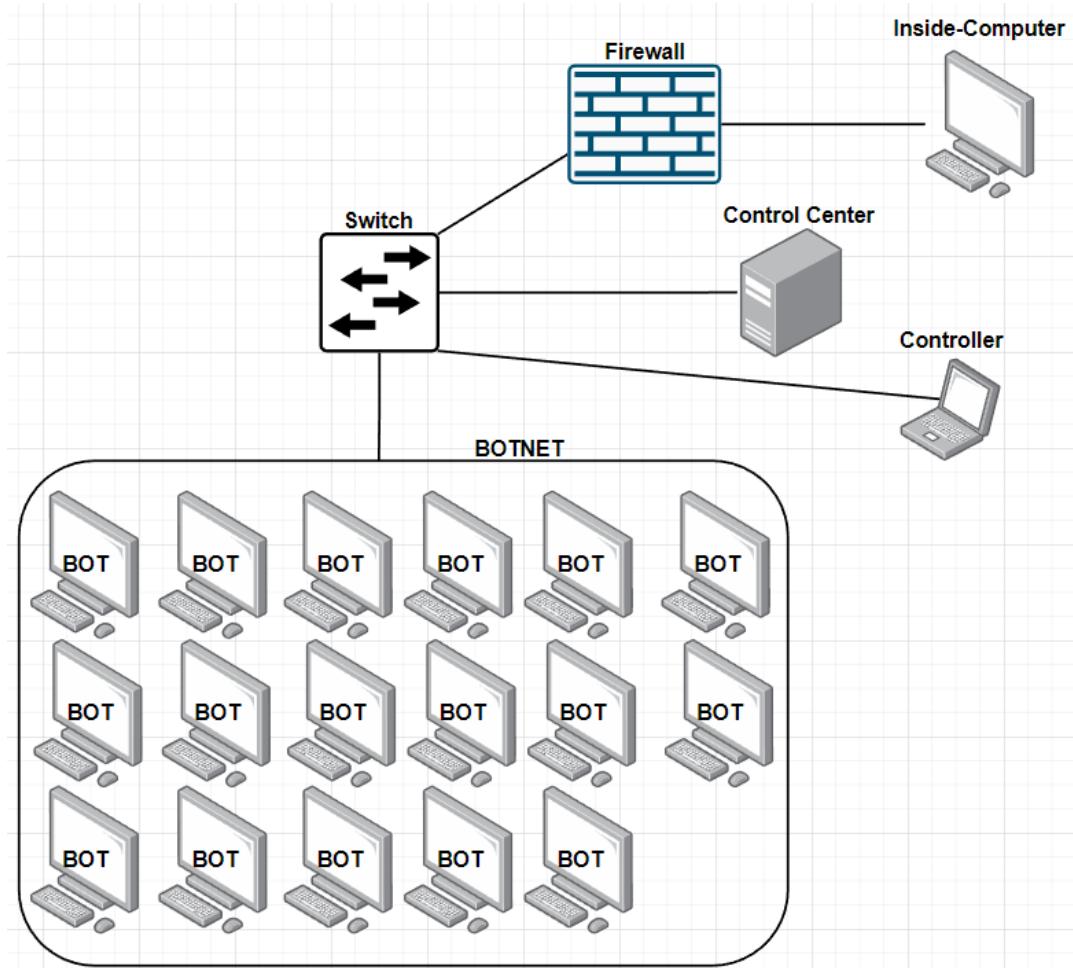


Figure 8. Topology of the controlled environment.

Figure 8 displays the topology we set up in the controlled environment. The topology consists of a firewall, botnet, switch and several other computers with different functions. This topology will be the subject of two different DDoS attack scenarios. With these DDoS attacks we tested two different firewalls. The attack scenarios and testing are explained further in subsection 3.2. The firewalls that were tested are the Fortinet FortiGate 40F and Cisco ASA 5506-X. The FortiGate 40F is a next-generation firewall, and the ASA 5506-X is a traditional firewall. The specifications for these firewalls are specified below in table 2.

Table 2. Firewall specifications

	Cisco ASA 5506-X	FortiGate 40F
RAM	4096 MB	1919 MB

CPU	Atom C2000 series 4 Cores 1250 MHz	ARMv8 processor 4 cores 1200 MHz
Software version	Cisco ASA 9.12(4)	FortiOS v6.4.6
Firewall throughput	750 Mb/s [19]	800 Mb/s [20]
Licenses	Base License	Intrusion Prevention Antivirus Web Filtering Outbreak Prevention

The botnet in the topology (figure 8) was controlled the help of Low Orbit Ion Cannon (LOIC) Hivemind in the controlled environment. The botnet consisted of 17 bots (computers) with the operating system Windows 10. The botnet was controlled through internet relay chat (IRC). The IRC server (Control Center) was hosted on a Raspberry Pie running IRCD-Hybrid. The attacks were launched from a laptop (Controller) with the operating system Windows 11. The controller connected to the control center through mIRC in order to command and control the botnet. The botnet was then connected to a switch that connected the firewalls outside interface. For a further explanation of how the tests were conducted, can be read in Appendix A.

3.2 Attack Scenarios

In scenario one, a TCP SYN flood attack was launched at the firewalls. In scenario two, a UDP flood attack was performed instead. The attack duration was four minutes each. Each attack scenario was performed seven times to achieve a scientific and reliable result. Since we are evaluating two firewalls, the attacks were performed 28 times in total. The total time for the testing was 112 minutes.

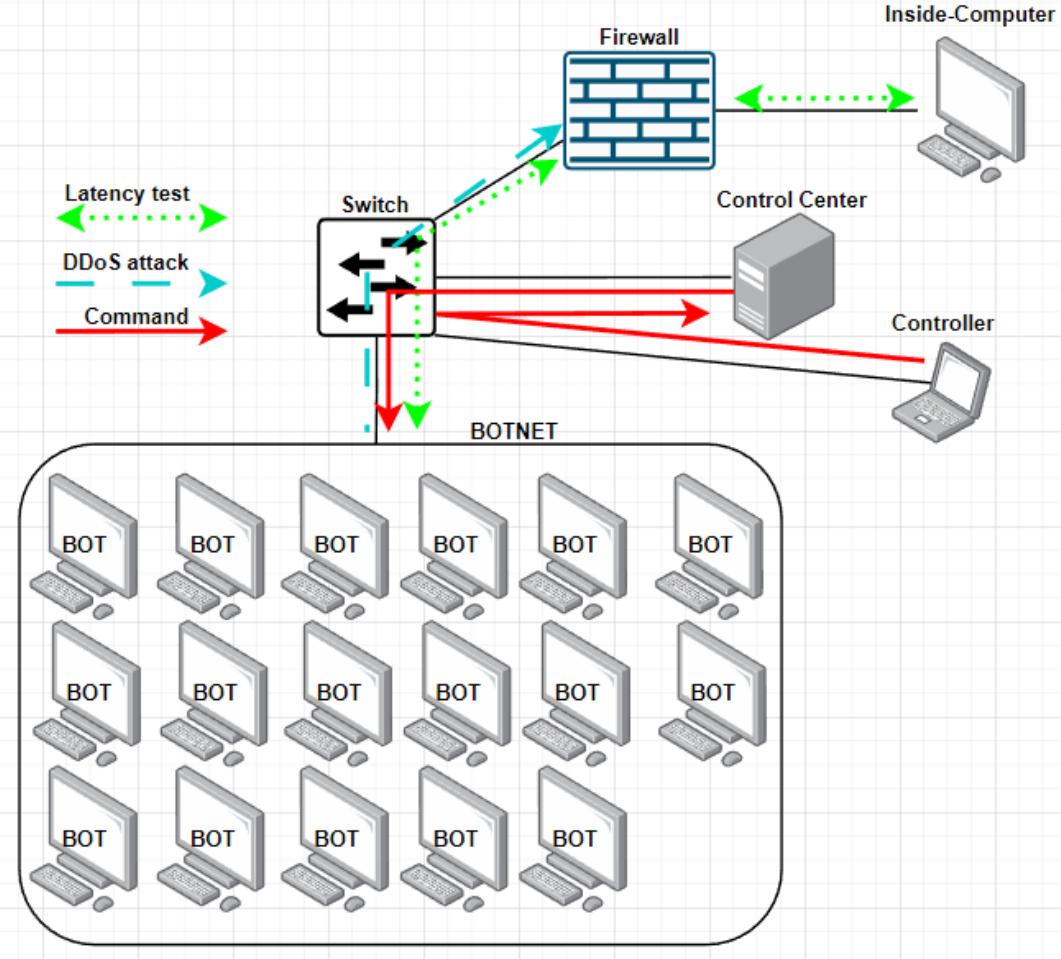


Figure 9. Testing in the controlled environment.

Figure 9 explains how the testing occurred. Latency tests with ping from one inside-computer and a bot-computer was performed. The controller sent a command to the control center, which then sent the command to the bot-computers in the botnet. When the bots received the command, the DDoS attack launched at the firewall.

On the firewalls, the Central Processing Unit (CPU) and Random Access Memory (RAM) usage was measured. The amount of packets generated by the botnet was also measured on the firewall interface. These parameters will be used to determine a firewall's effectiveness. The firewalls were tested with default configurations. Some configurations were done to set IP addresses and mirror the default interface settings to the interfaces connected to the inside-computer and botnet. Full configurations for the devices in the topology can be found in the appendices.

To measure response time and packet loss from the firewall, we had two PC's constantly sending pings throughout the attacks. The pings were sent from the PC on the inside interface and from one of the bots.

4 Results

This section presents the results of the DDoS UDP flood and TCP SYN flood attacks. The value in the staple diagrams is the average value of every measurement performed. A total of 28 measurements for 112 minutes was completed.

4.1 TCP SYN Flood Attack

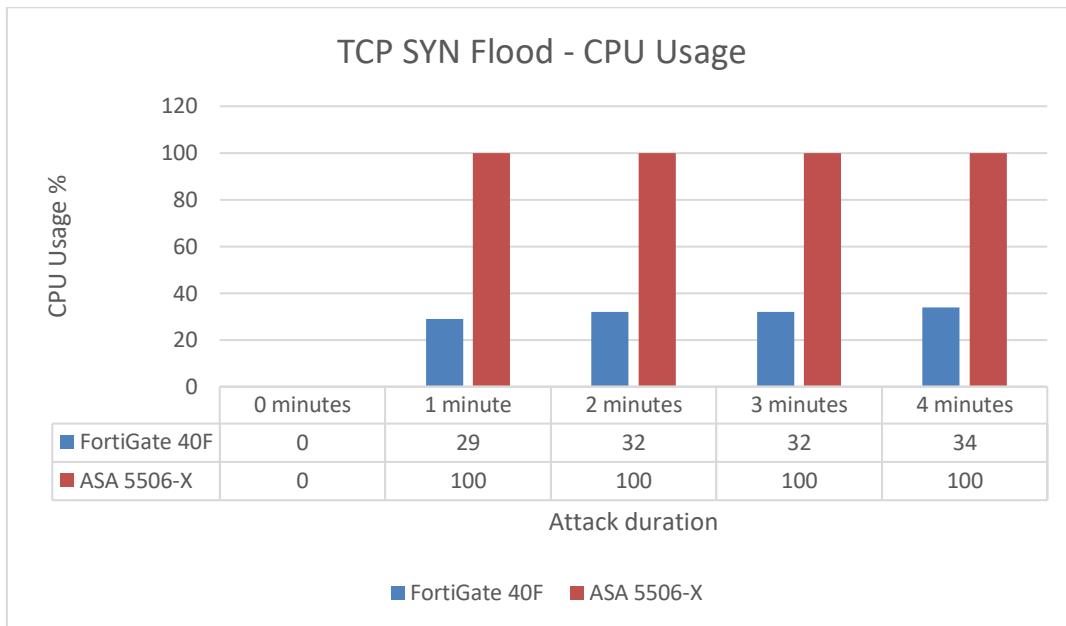


Figure 10. CPU Usage during TCP SYN flood attack.

Figure 10 displays the CPU usage of a FortiGate 40f represented in blue and ASA 5506-X represented in red. The Y-axis shows the CPU usage percentage, while the X-axis shows the time intervals during the attack. Each bar in the graph represents a specific time interval and its corresponding CPU usage percentage during the TCP SYN Flood.

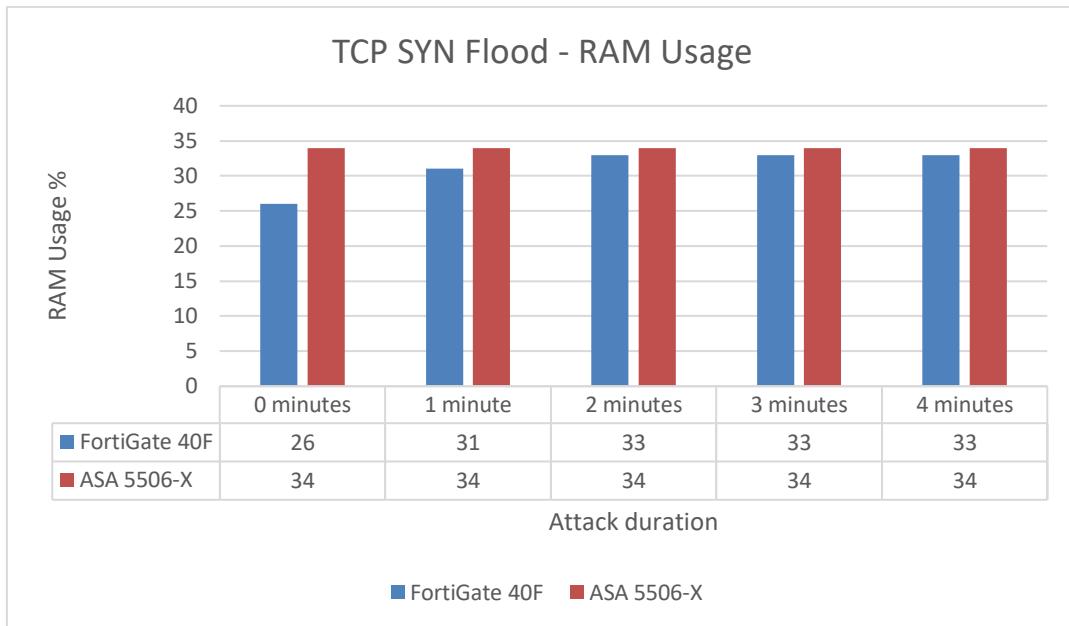


Figure 11. RAM Usage during TCP SYN flood attack.

Figure 11 displays the RAM usage of a FortiGate 40f represented in blue and ASA 5506-X represented in red. The Y-axis shows the RAM usage percentage, while the X-axis shows the time intervals during the attack. Each bar in the graph represents a specific time interval and its corresponding RAM usage percentage during the TCP SYN Flood

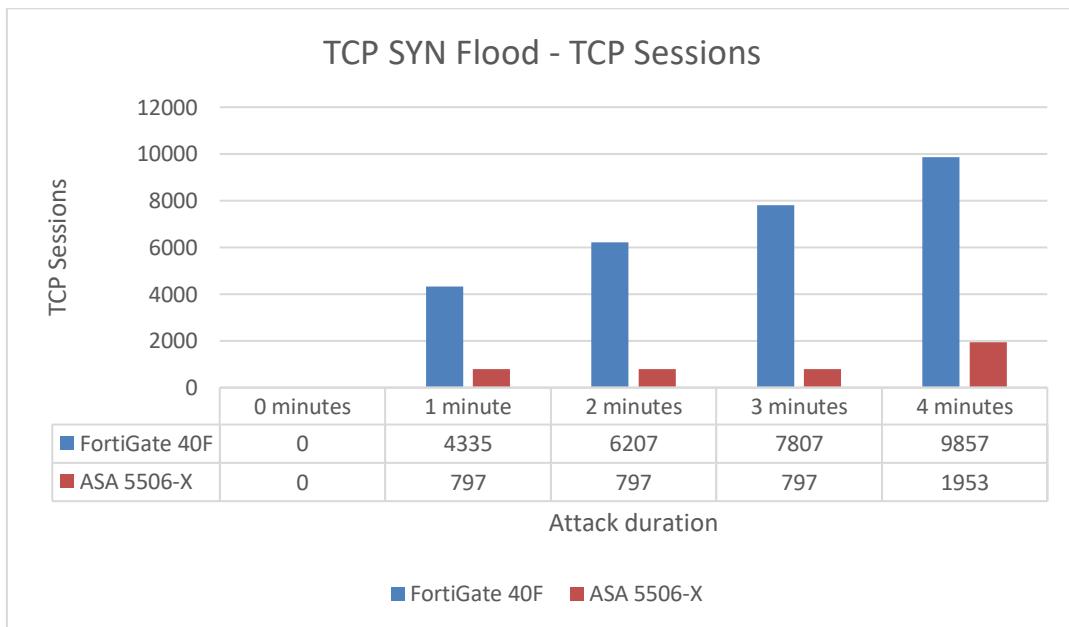


Figure 12. TCP sessions during the SYN flood attack.

Figure 12 displays the number of TCP sessions created by the FortiGate 40F and the ASA 5506-x during a TCP SYN flood attack. The Y-axis shows the number of sessions created, while the X-axis shows the time intervals during the attack. Each bar

represents a specific time interval and its corresponding number of TCP sessions created.

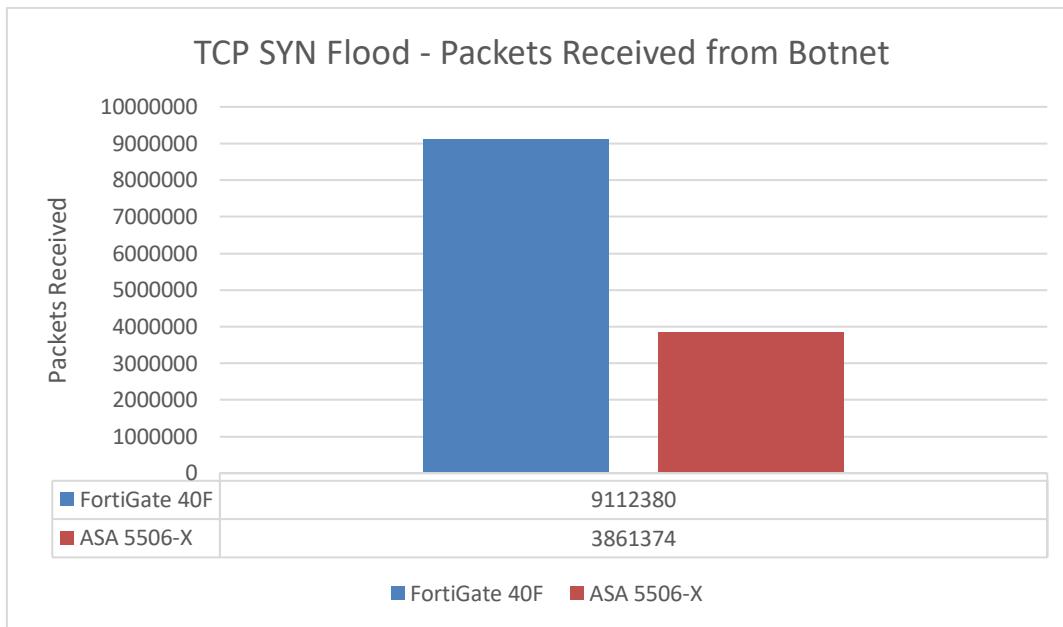


Figure 13. Packets received during TCP SYN flood.

Figure 13 displays the number of packets received during the DDoS attack. The FortiGate 40F received 9112380 packets during this attack. The ASA 5506-X received 3861374 packets during this attack.

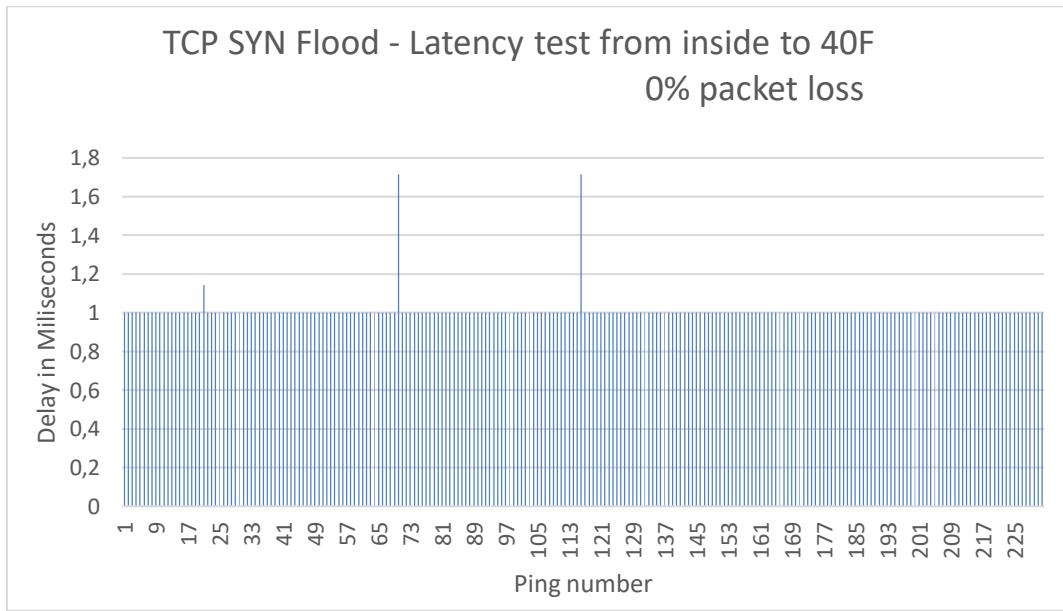


Figure 14. Latency and packet loss during TCP SYN flood from inside

Figure 14 represents the average delay in Milliseconds and packet loss percentages from the FortiGate 40F during the TCP SYN flood. Where the X-axis displays the

number of pings, and the Y-axis displays the delay from the perspective of the inside PC.

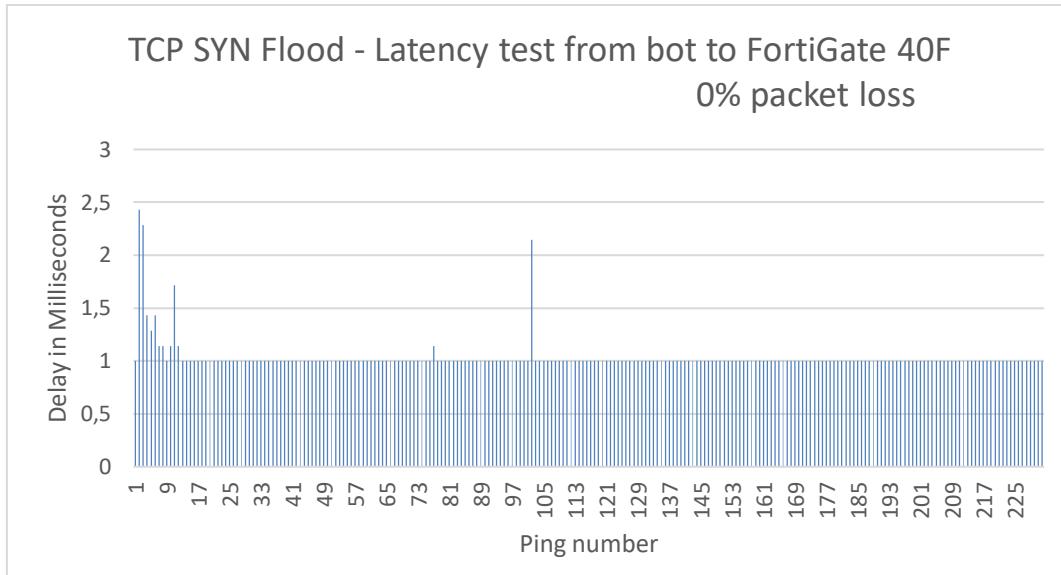


Figure 13. FortiGate 40F latency test during TCP SYN flood from bot.

Figure 16 represents the average delay in milliseconds and packet loss percentages from the FortiGate 40F TCP SYN flood. Where the X-axis displays the number of pings and the Y-axis displays the delay from the perspective of one of the bots.

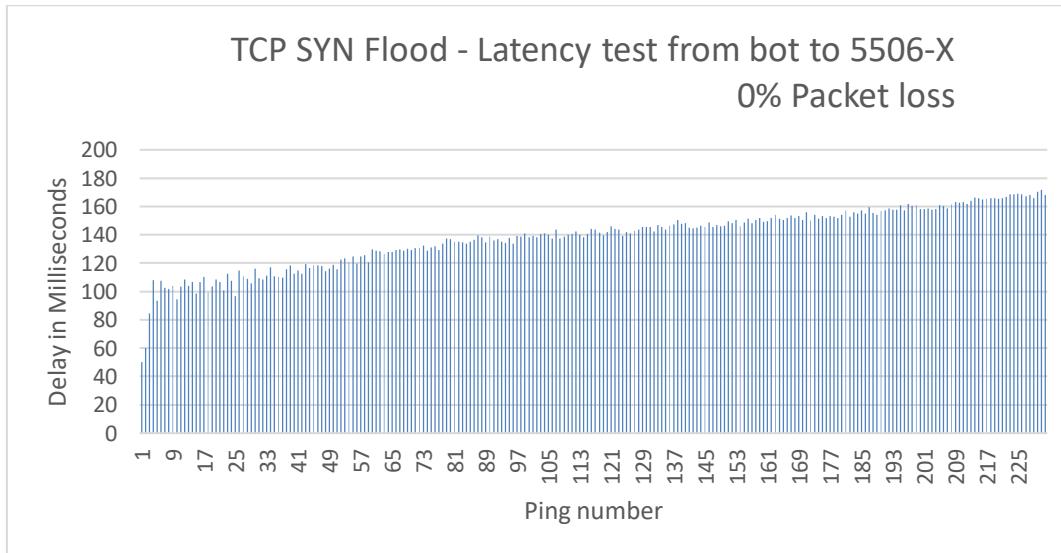


Figure 14. ASA 5506-X latency test during TCP SYN flood from bot.

Figure 17 represents the average delay in milliseconds and packet loss percentages from the ASA 5506-X during the TCP SYN flood. Where the X-axis displays the number of pings, and the Y-axis displays the delay from the perspective one of the bots.

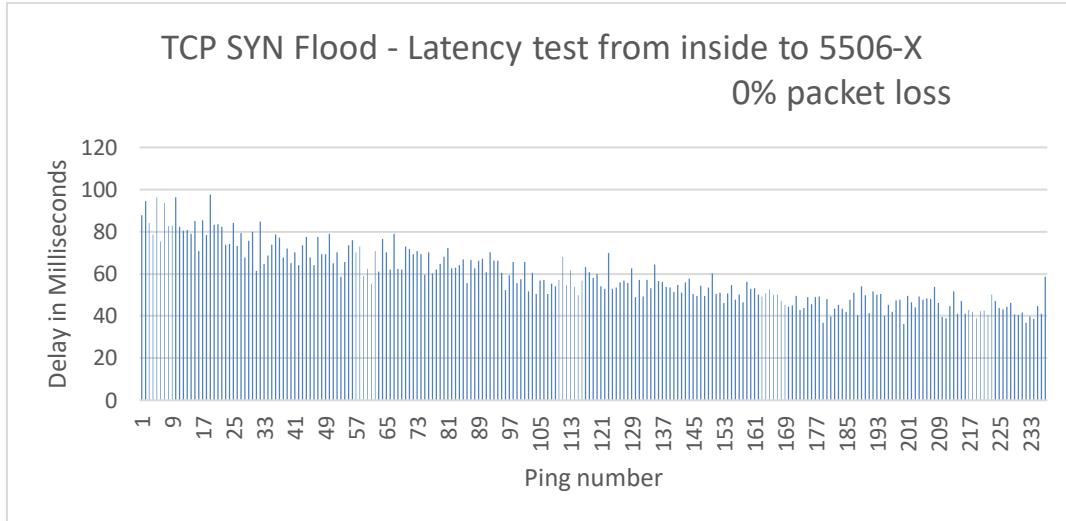


Figure 15. ASA 5506-X latency test during TCP SYN flood from inside.

Figure 18 represents the average delay in Milliseconds and packet loss percentages from the ASA 5506-x during TCP SYN flood. Where the X-axis displays the number of pings, and the Y-axis displays the delay from the perspective of the inside PC.

4.2 UDP Flood Attack

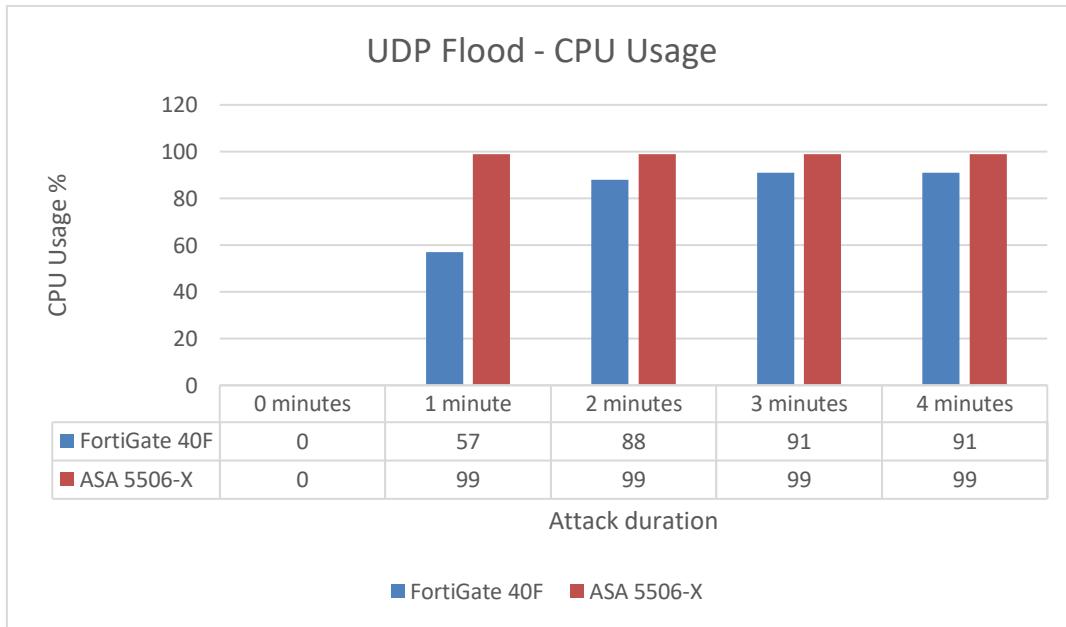


Figure 16. CPU usage during UDP flood.

Figure 19 displays the CPU usage of a FortiGate 40f represented in blue and ASA 5506-X represented in red. The Y-axis shows the CPU usage percentage, while the X-axis shows the time intervals during the attack. Each bar in the graph represents a specific time interval and its corresponding CPU usage percentage during the UDP Flood

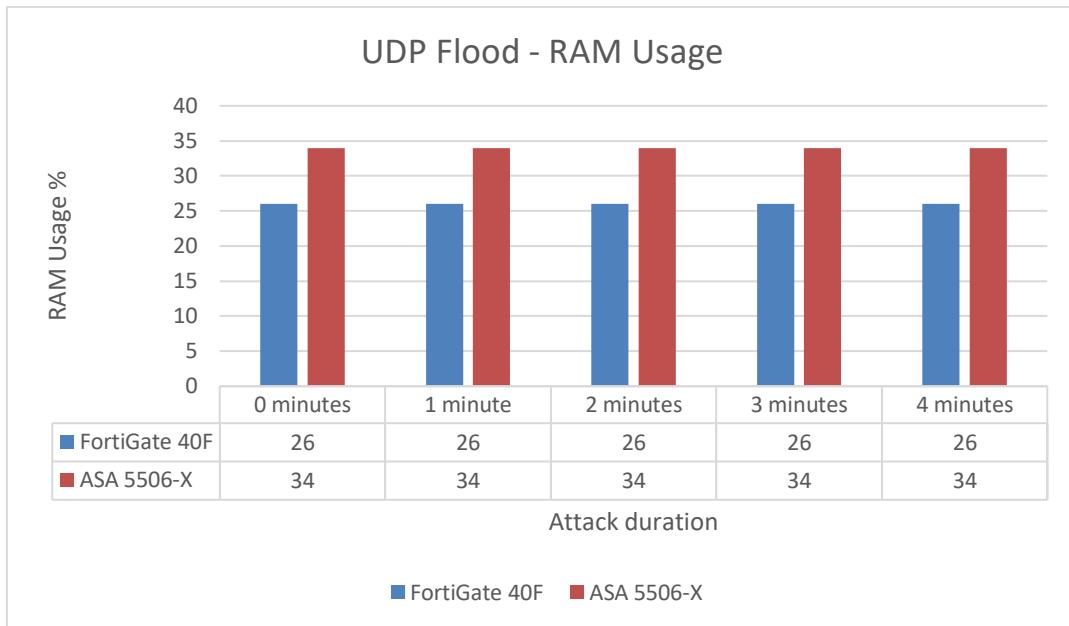


Figure 17. RAM usage during UDP flood.

Figure 20 displays the RAM usage of a FortiGate 40f represented in blue and ASA 5506-X represented in red. The Y-axis shows the RAM usage percentage, while the X-axis shows the time intervals during the attack. Each bar in the graph represents a specific time interval and its corresponding RAM usage percentage during the UDP flood.

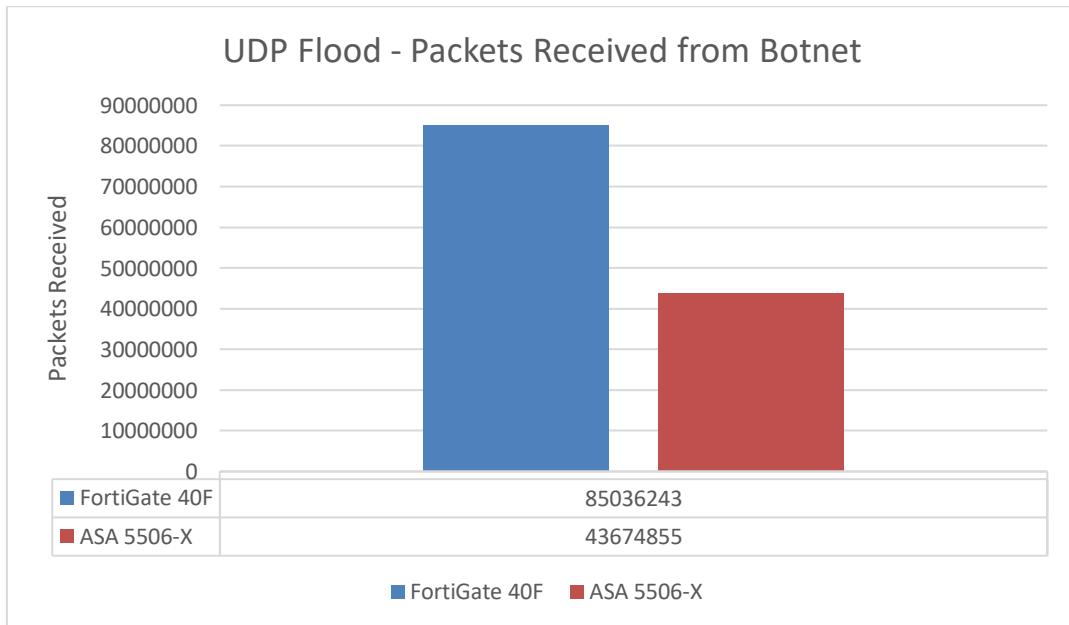


Figure 18. Packets received from the botnet during the UDP flood.

Figure 21 presents the packets received from the botnet during the UDP flood. During this attack the FortiGate 40F received 85036243 packets, when the ASA 5506-X was tested it received 43674855 packets.

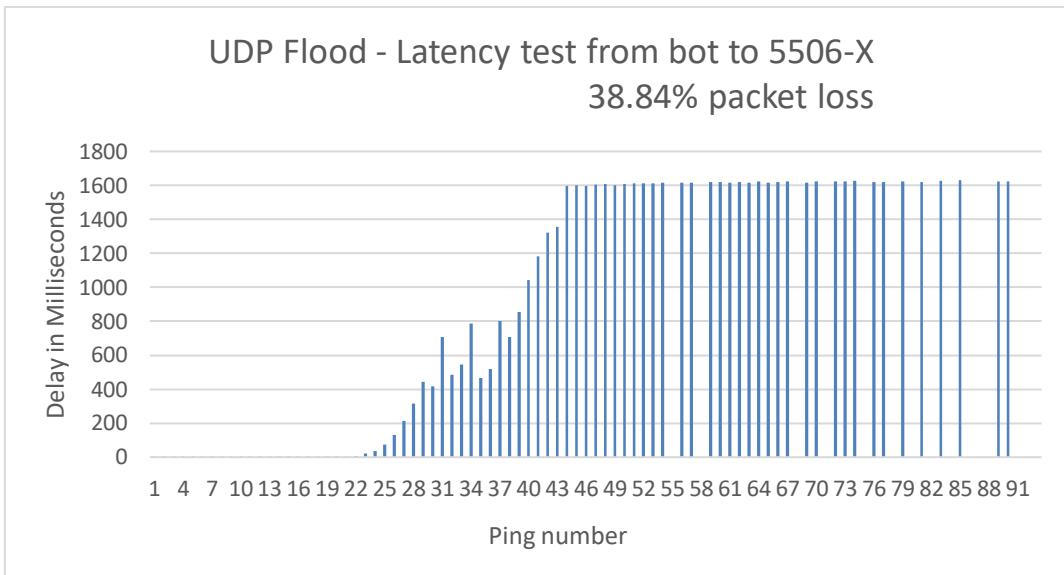


Figure 19. ASA 5506-X latency test from bot during UDP flood.

Figure 22 represents the average delay in milliseconds and packet loss percentages from the ASA 5506-x during UDP flood. The X-axis displays the number of pings, and the Y-axis displays the delay from the perspective of one of the bots.

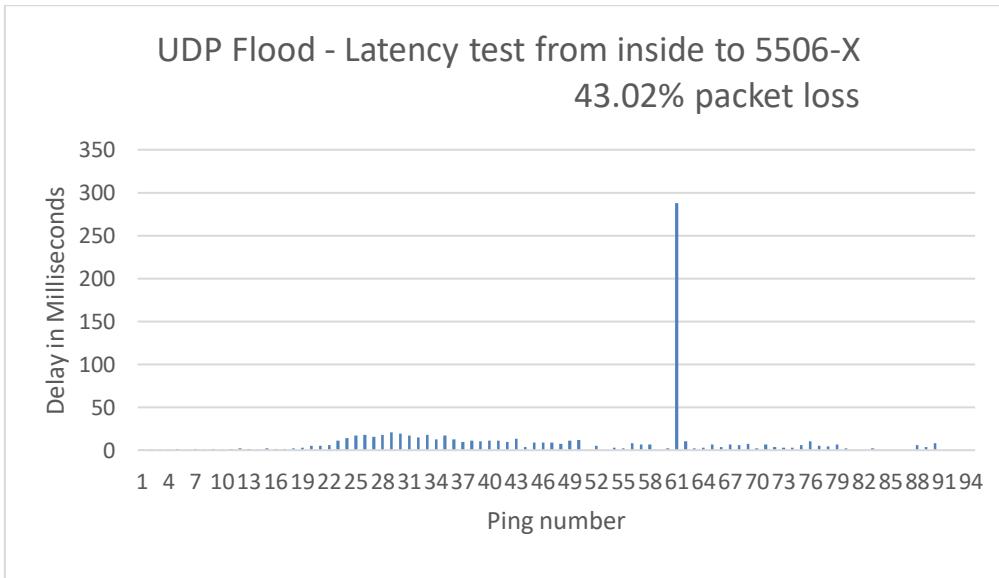


Figure 20. ASA 5506-X latency test from inside during UDP flood.

Figure 23 represents the average delay in Milliseconds and packet loss percentages from the ASA 5506-x during UDP flood. The X-axis displays the number of pings, and the Y-axis displays the delay from the perspective of the inside PC.

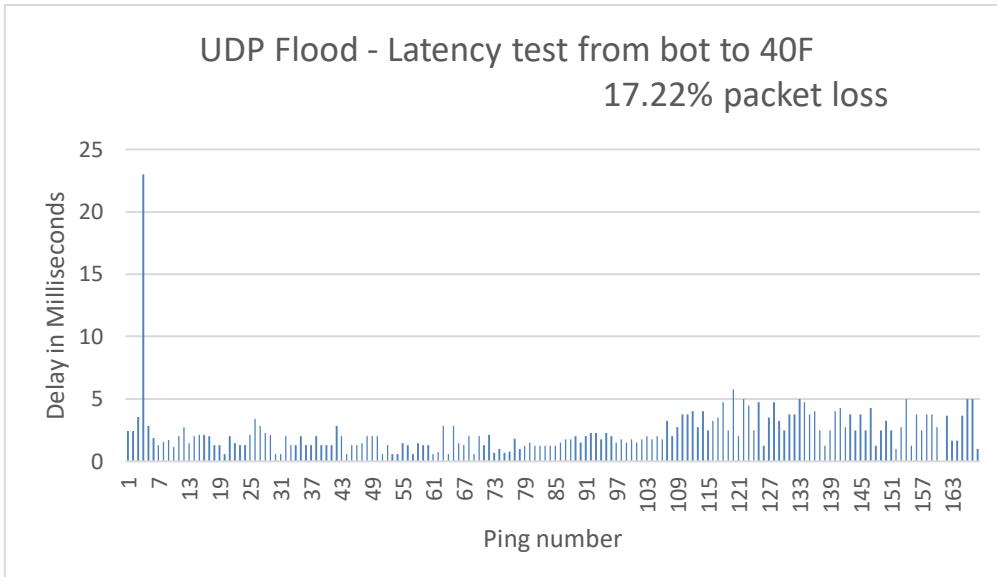


Figure 21. FortiGate 40F latency test from bot during UDP flood.

Figure 24 represents the average delay in milliseconds and packet loss percentages from the FortiGate 40F during UDP flood. The X-axis displays the number of pings, and the Y-axis displays the delay from the perspective of one of the bots.

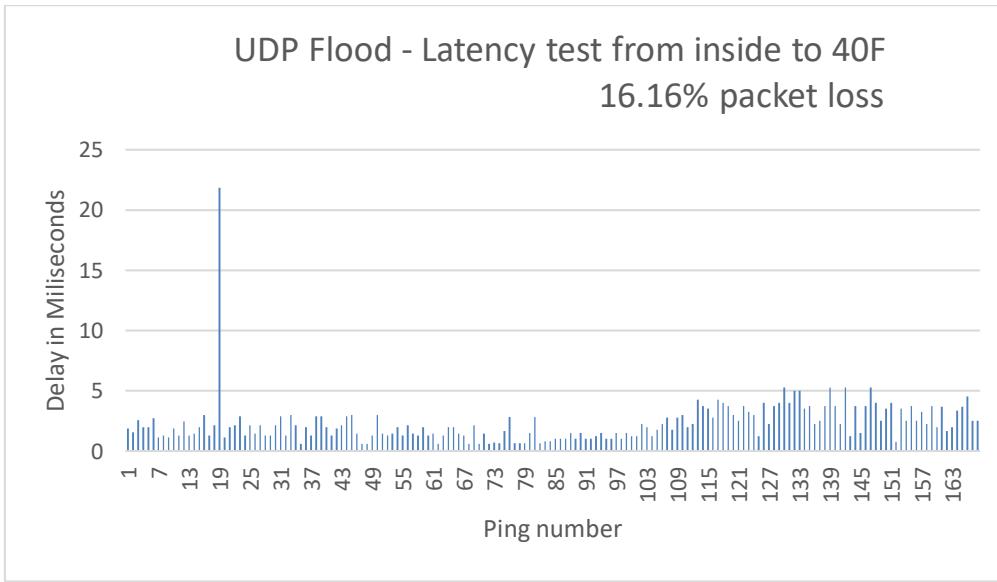


Figure 22. FortiGate 40F latency test from inside during UDP flood.

Figure 25 represents the average delay in milliseconds and packet loss percentages from the FortiGate 40F during UDP flood. The X-axis displays the number of pings, and the Y-axis displays the delay from the perspective of the inside PC.

5 Discussion & Analysis

This discussion is divided into two sections to discuss the results of the attacks, 5.1 TCP SYN Flood Attack, and 5.2 UDP Flood Attack.

5.1 TCP SYN Flood Attack

During the TCP SYN flood attack both firewalls had elevated levels of CPU usage, as depicted in figure 10. The FortiGate had its highest CPU usage on 32% while the ASA 5506-X had its highest spike at 100%. Both firewalls had similar levels of RAM usage, however the FortiGate 40F climbed from its baseline usage (26%) to maximum of 33%. The ASA 5506-X did not exceed its baseline RAM usage (34%). In this case the FortiGate 40F is the best performer, due to the FortiGate40F CPU usage being considerably lower than the 5506-X.

The measurement (figure 12) that caught our attention is the TCP sessions created on the device, the FortiGate 40F had at the 4-minute mark, 9857 TCP sessions active while the ASA 5506-X had 1953 sessions active. Even though the ASA 5506-X only created 19.81% of the sessions the FortiGate did, it used 68% less CPU resources than the ASA 5506-X. We argue that in this case the FortiGate 40F is the best performer out of the two, on the grounds that the FortiGate 40F had an ample amount of TCP sessions compared to the 5506-X, and still having a much lower hardware usage.

Another measurement (figure 13), exhibits that the FortiGate 40F received on average 235.99% more packets in comparison to the 5506-X. The firewalls were tested with the same botnet in exactly same conditions, which shows that the FortiGate 40F is 235.99% more effective than the ASA 5506-X in processing packets during the TCP SYN Flood. It could also indicate that the 5506-X has a better packet rate-limiter in the default configuration.

The FortiGate 40F barely suffered an increase in latency and both firewalls had 0% packet loss. Meanwhile the ASA 5506-X had an ms of 170 at the end of the latency test from the bot, which is 16000% higher ms than the FortiGate 40F. At the end of the inside latency test the 5506-X had 58 ms, which is 5700% higher than the 40F.

As the results have shown, the NGFW FortiGate 40F is superior in operating during the TCP SYN flood attack, compared to the traditional firewall ASA 5506-X. The only category the 5506-X was more efficient in, was conserving RAM.

5.2 UDP Flood Attack

The results showed that the ASA 5506-X CPU reached 99% usage during the UDP flood attack, while the FortiGate 40F did not exceed 91% CPU usage. RAM usage on both firewalls did not exceed their baseline during the attack. In this attack scenario, we deem the FortiGate 40F the better performer as the average CPU usage was lower, in comparison to the 5506-X.

The FortiGate 40F received an average of 85,036,243 packets during the UDP flood, while the ASA 5506-X received an average of 43,674,855 packets, which is an increase of 194.7%. Once again, the FortiGate is 194.7% more effective than the 5506-X in processing packets, or the 5506-X has a better rate-limiter in the default configuration.

Regardless, the FortiGate40F has a lower CPU usage than the 5506-X when it received 194.7% more packets.

During the latency test from the bot, the 5506-X suffered 39% packet loss and 43% packet loss from the inside. The FortiGate 40F had 17% packet loss from the bot and 16% packet loss from the inside. At the final stage of the attack from the bot-computer, the 5506-X had a 31900% higher ms than the FortiGate 40F. The ASA 5506-X only had 60% higher ms from the inside compared to the FortiGate 40F.

The results shows that the NGFW FortiGate 40F is far superior to the ASA 5506-X in operating during an DDoS UDP flood attack.

6 Conclusions

The purpose of this degree project was to compare and evaluate how two different firewalls, the traditional firewall Cisco ASA 5506-X, and the next-generation firewall FortiGate 40F, perform during a TCP SYN flood and a UDP flood with as close to out-of-the-box settings as possible.

Even though the FortiGate 40F received on average more packets than the 5506-X in both attack scenarios and had plentiful of TCP sessions compared to the 5506-X, it had a lower strain on its hardware resources. It has proven to be more efficient, which is also apparent in the latency tests, where the FortiGate 40F has lower latency.

The results show that both firewalls did protect against the attacks and would be a good implementation if you need a firewall. However, as the results have shown, you need to optimize the firewall configurations. The NGFW Fortinet FortiGate 40F, did outperform the traditional firewall Cisco ASA 5506-X in every attack, therefore the FortiGate 40F is the better choice for protection against these types of attacks. This is most likely to the software differences, as the NGFW is more advanced than a traditional firewall. In a production environment, there are other criteria than pure performance, such as cost and compatibility with other devices, which we did not investigate during this degree project.

Future research on DDoS defense could include increasing the attack duration and expanding the botnet.

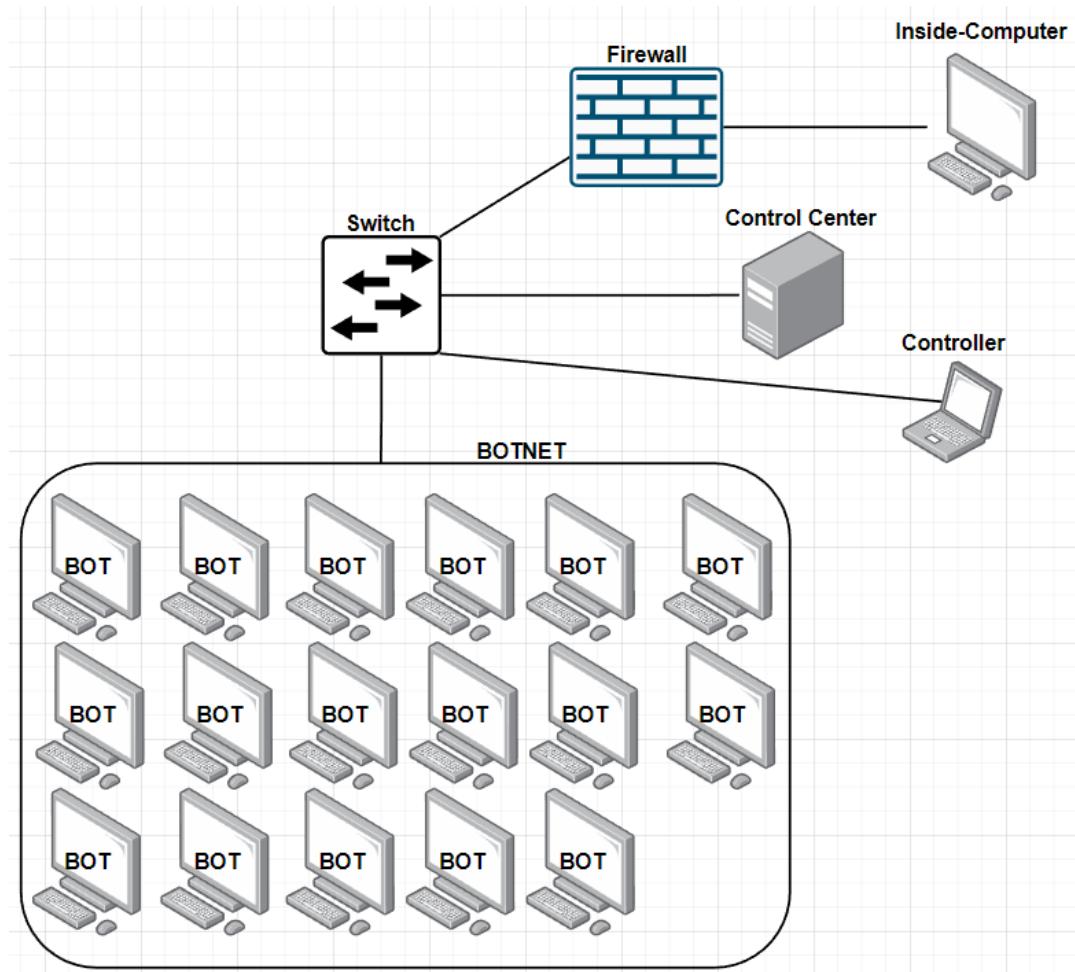
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A. Environment

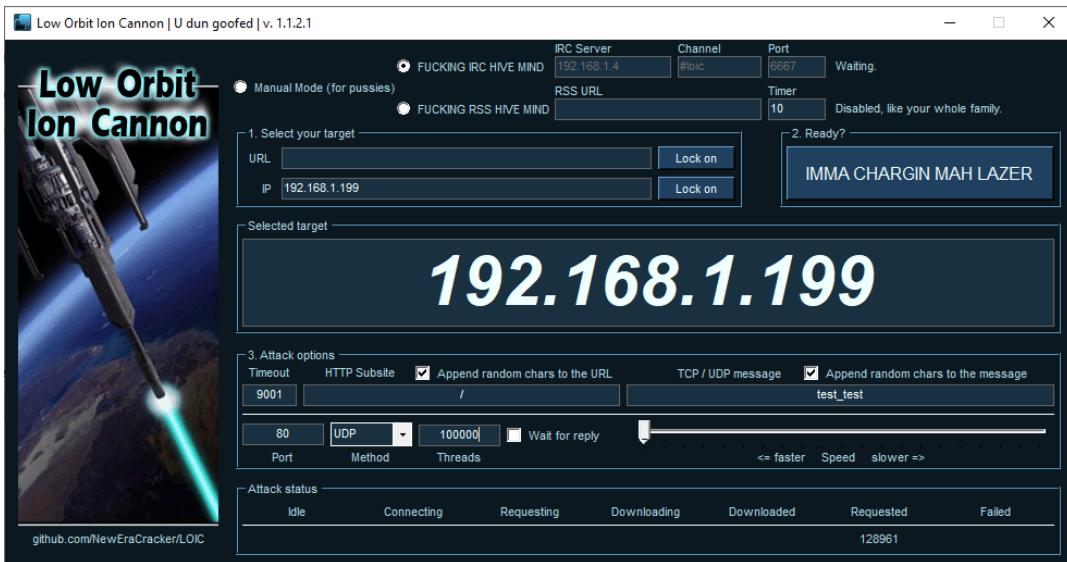
The controlled environment was set up at University West in room B123. We used a DHCP server on the switch to give the botnet IP addresses. Recall the topology below to set up the environment.



The table below shows the IP addressing of the topology.

Device(s)	IP address	Subnet
Botnet	DHCP	DHCP
Control Center (Raspberry Pi)	DHCP	DHCP
Controller (Laptop)	DHCP	DHCP
Syslog Computer	DHCP	DHCP
Switch (VLAN 1)	192.168.1.1	255.255.255.0
Firewall (Inside interface)	192.168.2.99	255.255.255.0
Firewall (Interface to botnet)	192.168.1.199	255.255.255.0
Inside-Computer	192.168.2.1	255.255.255.0

LOIC Hivemind is required to make this work. To join the botnet, open LOIC and select the IRC Hive mind option and enter the IRC server IP address, channel, and port. The option “Threads” simulates the number of users in LOIC. We used 100000 threads since the bot-computers cannot simulate more users than that without being unstable. The figure below explains what settings we used in LOIC on every bot-computer. During the TCP-based attack the method was TCP and port 443. The UDP-based attack used UDP and port 80. Below is an example of LOIC.



As the bots have connected to the botnet the admin of the IRC server can set the target ip address and what settings they do want to use by entering the following command into the IRC chat:

!lazor targetip=(targets ip) message=(optional) port=(what port the traffic should use) method(here you chose either TCP,UDP, or HTTP) wait=(false/true, depending on if the bot should wait for replies before continuing to send) random=true

Then to start the attack the server admin sends the command:

!lazor start

B. Switch Configuration

```
Switch#show run
Building configuration...

Current configuration : 1818 bytes
!
! Last configuration change at 04:19:22 UTC Fri Feb 9 2018
!
version 15.2
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname Switch
!
boot-start-marker
boot-end-marker
!
!
no aaa new-model
switch 1 provision ws-c2960x-24ts-1
!
!
!
!
!
ip dhcp pool EXJOBB
network 192.168.1.0 255.255.255.0
default-router 192.168.1.1
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
spanning-tree mode rapid-pvst
spanning-tree extend system-id
!
!
!
```

```
vlan internal allocation policy ascending
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
interface FastEthernet0
no ip address
shutdown
!
interface GigabitEthernet1/0/1
!
interface GigabitEthernet1/0/2
!
interface GigabitEthernet1/0/3
!
interface GigabitEthernet1/0/4
!
interface GigabitEthernet1/0/5
!
interface GigabitEthernet1/0/6
!
interface GigabitEthernet1/0/7
!
interface GigabitEthernet1/0/8
!
interface GigabitEthernet1/0/9
!
interface GigabitEthernet1/0/10
!
interface GigabitEthernet1/0/11
!
interface GigabitEthernet1/0/12
!
interface GigabitEthernet1/0/13
!
interface GigabitEthernet1/0/14
!
interface GigabitEthernet1/0/15
!
interface GigabitEthernet1/0/16
!
interface GigabitEthernet1/0/17
```

```
!
interface GigabitEthernet1/0/18
!
interface GigabitEthernet1/0/19
!
interface GigabitEthernet1/0/20
!
interface GigabitEthernet1/0/21
!
interface GigabitEthernet1/0/22
!
interface GigabitEthernet1/0/23
!
interface GigabitEthernet1/0/24
!
interface GigabitEthernet1/0/25
!
interface GigabitEthernet1/0/26
!
interface GigabitEthernet1/0/27
!
interface GigabitEthernet1/0/28
!
interface Vlan1
 ip address 192.168.1.1 255.255.255.0
!
interface Vlan99
 no ip address
!
!
ip http server
ip http secure-server
!
!
!
!
line con 0
line vty 5 15
!
!
monitor session 1 source interface Gi1/0/1
monitor session 1 destination interface Gi1/0/24
!
end
```

C. ASA 5506-X Configuration

```
ciscoasa# sh run
: Saved

:
: Serial Number: JAD24380H28
: Hardware: ASA5506, 4096 MB RAM, CPU Atom C2000 series 1250 MHz, 1 CPU (4
cores)
:
ASA Version 9.12(1)2
!
hostname ciscoasa
enable password ***** pbkdf2
names
no mac-address auto

!
interface GigabitEthernet1/1
nameif INSIDE
security-level 100
ip address 192.168.2.99 255.255.255.0
!
interface GigabitEthernet1/2
nameif BOTNET
security-level 100
ip address 192.168.1.199 255.255.255.0
!
interface GigabitEthernet1/3
shutdown
no nameif
no security-level
no ip address
!
interface GigabitEthernet1/4
shutdown
no nameif
no security-level
no ip address
!
interface GigabitEthernet1/5
shutdown
no nameif
no security-level
no ip address
!
interface GigabitEthernet1/6
shutdown
```

```
no nameif
no security-level
no ip address
!
interface GigabitEthernet1/7
shutdown
no nameif
no security-level
no ip address
!
interface GigabitEthernet1/8
shutdown
no nameif
no security-level
no ip address
!
interface Management1/1
management-only
shutdown
no nameif
no security-level
no ip address
!
ftp mode passive
pager lines 24
mtu INSIDE 1500
mtu BOTNET 1500
icmp unreachable rate-limit 1 burst-size 1
no asdm history enable
arp timeout 14400
no arp permit-nonconnected
arp rate-limit 16384
timeout xlate 3:00:00
timeout pat-xlate 0:00:30
timeout conn 1:00:00 half-closed 0:10:00 udp 0:02:00 sctp 0:02:00 icmp 0:00:02
timeout sunrpc 0:10:00 h323 0:05:00 h225 1:00:00 mgcp 0:05:00 mgcp-pat 0:05:00
timeout sip 0:30:00 sip_media 0:02:00 sip-invite 0:03:00 sip-disconnect 0:02:00
timeout sip-provisional-media 0:02:00 uauth 0:05:00 absolute
timeout tcp-proxy-reassembly 0:01:00
timeout floating-conn 0:00:00
timeout conn-holddown 0:00:15
timeout igp stale-route 0:01:10
user-identity default-domain LOCAL
aaa authentication login-history
http server enable
http 0.0.0 0.0.0.0 BOTNET
http 0.0.0 0.0.0.0 INSIDE
no snmp-server location
no snmp-server contact
```

```
service sw-reset-button
crypto ipsec security-association pmtu-aging infinite
crypto ca trustpool policy
telnet timeout 5
ssh stricthostkeycheck
ssh timeout 5
console timeout 0

threat-detection basic-threat
threat-detection statistics access-list
no threat-detection statistics tcp-intercept
dynamic-access-policy-record DfltAccessPolicy
username admin password ***** pbkdf2
!
class-map inspection_default
match default-inspection-traffic
!
!
policy-map type inspect dns preset_dns_map
parameters
  message-length maximum client auto
  message-length maximum 512
  no tcp-inspection
policy-map global_policy
  class inspection_default
    inspect ftp
    inspect h323 h225
    inspect h323 ras
    inspect ip-options
    inspect netbios
    inspect rsh
    inspect rtsp
    inspect skinny
    inspect esmtp
    inspect sqlnet
    inspect sunrpc
    inspect tftp
    inspect sip
    inspect xdmcp
    inspect dns preset_dns_map
    inspect icmp
policy-map type inspect dns migrated_dns_map_2
parameters
  message-length maximum client auto
  message-length maximum 512
  no tcp-inspection
policy-map type inspect dns migrated_dns_map_1
parameters
  message-length maximum client auto
```

```
message-length maximum 512
no tcp-inspection
!
service-policy global_policy global
prompt hostname context
no call-home reporting anonymous
call-home
profile CiscoTAC-1
no active
destination address http https://tools.cisco.com/its/service/oddce/services/DDCEService
destination address email callhome@cisco.com
destination transport-method http
subscribe-to-alert-group diagnostic
subscribe-to-alert-group environment
subscribe-to-alert-group inventory periodic monthly
subscribe-to-alert-group configuration periodic monthly
subscribe-to-alert-group telemetry periodic daily
Cryptochecksum:c2ca5a7b8efe3a7fbe42a819b3a083b9
:end
```

D. Fortigate 40F Configuration

```
#config-version=FGT40F-6.4.6-FW-build1879-210729:opmode=0:vdom=0:user=admin
#conf_file_ver=279177169271954
#buildno=6083
#global_vdom=1
config system global
    set alias "FortiGate-40F"
    set hostname "FortiGate-40F"
    set switch-controller enable
    set timezone 26
end
config system accprofile
    edit "prof_admin"
        set secfabgrp read-write
        set ftviewgrp read-write
        set authgrp read-write
        set sysgrp read-write
        set netgrp read-write
        set loggrp read-write
        set fwgrp read-write
        set vpngrp read-write
        set utmgtp read-write
        set wifi read-write
    next
end
config system interface
    edit "wan"
        set vdom "root"
        set mode dhcp
        set allowaccess ping fgfm
        set type physical
        set role wan
        set snmp-index 1
    next
    edit "a"
        set vdom "root"
        set type physical
        set snmp-index 2
    next
    edit "modem"
        set vdom "root"
        set mode pppoe
        set type physical
        set snmp-index 3
    next
    edit "ssl.root"
        set vdom "root"
```

```
set type tunnel
set alias "SSL VPN interface"
set snmp-index 4
next
edit "lan"
    set vdom "root"
    set ip 192.168.2.99 255.255.255.0
    set allowaccess ping https ssh fgfm fabric
    set type hard-switch
    set stp enable
    set role lan
    set snmp-index 5
next
edit "fortilink"
    set vdom "root"
    set fortilink enable
    set ip 169.254.1.1 255.255.255.0
    set allowaccess ping fabric
    set type aggregate
    set member "a"
    set lldp-reception enable
    set lldp-transmission enable
    set snmp-index 6
next
edit "botnet"
    set vdom "root"
    set ip 192.168.1.199 255.255.255.0
    set allowaccess ping https ssh http fgfm fabric
    set type hard-switch
    set device-identification enable
    set lldp-transmission enable
    set role lan
    set snmp-index 8
next
end
config system physical-switch
    edit "sw0"
        set age-val 0
    next
end
config system virtual-switch
    edit "lan"
        set physical-switch "sw0"
        config port
            edit "lan1"
            next
            edit "lan2"
            next
        end
    end
```

```
next
edit "botnet"
    set physical-switch "sw0"
    config port
        edit "lan3"
            next
        end
    next
end
config system custom-language
    edit "en"
        set filename "en"
    next
    edit "fr"
        set filename "fr"
    next
    edit "sp"
        set filename "sp"
    next
    edit "pg"
        set filename "pg"
    next
    edit "x-sjis"
        set filename "x-sjis"
    next
    edit "big5"
        set filename "big5"
    next
    edit "GB2312"
        set filename "GB2312"
    next
    edit "euc-kr"
        set filename "euc-kr"
    next
end
config system admin
    edit "admin"
        set accprofile "super_admin"
        set vdom "root"
        config gui-dashboard
            edit 1
                set name "Status"
                set vdom "root"
                set permanent enable
                set csf disable
                config widget
                    edit 1
                        set width 1
                        set height 1
```

```
set fortigate "FGT40FTK22024324"
next
edit 2
    set type licinfo
    set x-pos 1
    set width 1
    set height 1
    set fortigate "FGT40FTK22024324"
next
edit 3
    set type forticloud
    set x-pos 2
    set width 1
    set height 1
    set fortigate "FGT40FTK22024324"
next
edit 4
    set type security-fabric
    set x-pos 3
    set width 1
    set height 1
    set fortigate "FGT40FTK22024324"
next
edit 5
    set type admins
    set x-pos 4
    set width 1
    set height 1
    set fortigate "FGT40FTK22024324"
next
edit 6
    set type cpu-usage
    set x-pos 5
    set width 2
    set height 1
    set fortigate "FGT40FTK22024324"
next
edit 7
    set type memory-usage
    set x-pos 6
    set width 2
    set height 1
    set fortigate "FGT40FTK22024324"
next
edit 8
    set type sessions
    set x-pos 7
    set width 2
    set height 1
```

```
set fortigate "FGT40FTK22024324"
next
end
next
edit 2
    set name "Security"
    set vdom "root"
    config widget
        edit 1
            set type fortiview
            set width 2
            set height 1
            set fortiview-type "compromisedHosts"
            set fortiview-sort-by "verdict"
            set fortiview-timeframe "hour"
            set fortiview-visualization "table"
        next
        edit 2
            set type fortiview
            set x-pos 1
            set width 2
            set height 1
            set fortiview-type "threats"
            set fortiview-sort-by "threatLevel"
            set fortiview-timeframe "hour"
            set fortiview-visualization "table"
        next
        edit 3
            set type vulnerability-summary
            set x-pos 2
            set width 2
            set height 1
        next
        edit 4
            set type host-scan-summary
            set x-pos 3
            set width 1
            set height 1
        next
        edit 5
            set type fortiview
            set x-pos 4
            set width 2
            set height 1
            set fortiview-type "endpointDevices"
            set fortiview-sort-by "vulnerabilities"
            set fortiview-timeframe "hour"
            set fortiview-visualization "table"
        next
```

```
    end
next
edit 3
set name "Network"
set vdom "root"
config widget
edit 1
set type routing
set width 2
set height 1
set router-view-type "staticdynamic"
next
edit 2
set type dhcp
set x-pos 1
set width 2
set height 1
next
edit 3
set type virtual-wan
set x-pos 2
set width 2
set height 1
next
edit 4
set type ipsec-vpn
set x-pos 3
set width 2
set height 1
next
edit 5
set type ssl-vpn
set x-pos 4
set width 2
set height 1
next
end
next
edit 4
set name "Users & Devices"
set vdom "root"
config widget
edit 1
set type device-inventory
set width 2
set height 1
set table-visualization "charts"
set device-list-view-type "hardware_vendor"
next
```

```
edit 2
    set type forticlient
    set x-pos 1
    set width 2
    set height 1
    set table-visualization "charts"
    set device-list-online "online"
    set device-list-telemetry "sending"
    set device-list-view-type "interface"
next
edit 3
    set type firewall-user
    set x-pos 2
    set width 2
    set height 1
next
edit 4
    set type quarantine
    set x-pos 3
    set width 2
    set height 1
next
end
next
edit 5
    set name "WiFi"
    set vdom "root"
    config widget
        edit 1
            set type ap-status
            set width 2
            set height 1
        next
        edit 2
            set type channel-utilization
            set x-pos 1
            set width 2
            set height 1
            set wifi-band "both"
        next
        edit 3
            set type clients-by-ap
            set x-pos 2
            set width 2
            set height 1
            set wifi-band "both"
        next
        edit 4
            set type client-signal-strength
```

```
set x-pos 3
set width 2
set height 1
set wifi-band "both"
next
edit 5
    set type rogue-ap
    set x-pos 4
    set width 2
    set height 1
next
edit 6
    set type historical-clients
    set x-pos 5
    set width 2
    set height 1
    set wifi-band "both"
next
edit 7
    set type interfering-ssids
    set x-pos 6
    set width 2
    set height 1
    set wifi-band "both"
next
edit 8
    set type wifi-login-failures
    set x-pos 7
    set width 2
    set height 1
next
end
next
edit 6
    set name "FortiView Sources"
    set vdom "root"
    set layout-type standalone
    set csf disable
    config widget
        edit 1
            set type fortiview
            set width 6
            set height 3
            set fortiview-type "source"
            set fortiview-sort-by "bytes"
            set fortiview-timeframe "hour"
            set fortiview-visualization "table"
        next
    end
```

```
next
edit 7
    set name "FortiView Destinations"
    set vdom "root"
    set layout-type standalone
    set csf disable
    config widget
        edit 1
            set type fortiview
            set width 6
            set height 3
            set fortiview-type "destination"
            set fortiview-sort-by "bytes"
            set fortiview-timeframe "hour"
            set fortiview-visualization "table"
        next
    end
next
edit 8
    set name "FortiView Applications"
    set vdom "root"
    set layout-type standalone
    set csf disable
    config widget
        edit 1
            set type fortiview
            set width 6
            set height 3
            set fortiview-type "application"
            set fortiview-sort-by "bytes"
            set fortiview-timeframe "hour"
            set fortiview-visualization "table"
        next
    end
next
edit 9
    set name "FortiView Web Sites"
    set vdom "root"
    set layout-type standalone
    set csf disable
    config widget
        edit 1
            set type fortiview
            set width 6
            set height 3
            set fortiview-type "website"
            set fortiview-sort-by "sessions"
            set fortiview-timeframe "hour"
            set fortiview-visualization "table"
```

```
        next
    end
next
edit 10
    set name "FortiView Policies"
    set vdom "root"
    set layout-type standalone
    set csf disable
    config widget
        edit 1
            set type fortiview
            set width 6
            set height 3
            set fortiview-type "policy"
            set fortiview-sort-by "bytes"
            set fortiview-timeframe "hour"
            set fortiview-visualization "table"
        next
    end
next
edit 11
    set name "FortiView Sessions"
    set vdom "root"
    set layout-type standalone
    set csf disable
    config widget
        edit 1
            set type fortiview
            set width 6
            set height 3
            set fortiview-type "realtimeSessions"
            set fortiview-sort-by "bytes"
            set fortiview-timeframe "realtime"
            set fortiview-visualization "table"
        next
    end
next
end
set password ENC SH2/u9VAiLncbwRYxupeBgICthqqHg0pvuOk25jR9fQN-
yhD/G2j4PP4luRv1ic=
next
end
config system sso-admin
end
config system np6xlite
    edit "np6xlite_0"
next
end
config system ha
```

```
    set override disable
end
config system dns
    set primary 208.91.112.53
    set secondary 208.91.112.52
end
config system replacemsg-image
    edit "logo_fnet"
        set image-type gif
next
    edit "logo_fguard_wf"
        set image-type gif
next
    edit "logo_v3_fguard_app"
next
end
config system replacemsg mail "partial"
end
config system replacemsg http "url-block"
end
config system replacemsg http "urlfilter-err"
end
config system replacemsg http "infocache-block"
end
config system replacemsg http "http-contenttypeblock"
end
config system replacemsg http "https-invalid-cert-block"
end
config system replacemsg http "https-untrusted-cert-block"
end
config system replacemsg http "https-blacklisted-cert-block"
end
config system replacemsg http "switching-protocols-block"
end
config system replacemsg http "http-antiphish-block"
end
config system replacemsg webproxy "deny"
end
config system replacemsg webproxy "user-limit"
end
config system replacemsg webproxy "auth-challenge"
end
config system replacemsg webproxy "auth-login-fail"
end
config system replacemsg webproxy "auth-group-info-fail"
end
config system replacemsg webproxy "http-err"
end
config system replacemsg webproxy "auth-ip-blackout"
```

```
end
config system replacemsg ftp "ftp-explicit-banner"
end
config system replacemsg fortiguard-wf "ftgd-block"
end
config system replacemsg fortiguard-wf "ftgd-ovrd"
end
config system replacemsg fortiguard-wf "ftgd-quota"
end
config system replacemsg fortiguard-wf "ftgd-warning"
end
config system replacemsg spam "ipblocklist"
end
config system replacemsg spam "smtp-spam-dnsbl"
end
config system replacemsg spam "smtp-spam-feip"
end
config system replacemsg spam "smtp-spam-helo"
end
config system replacemsg spam "smtp-spam-emailblack"
end
config system replacemsg spam "smtp-spam-mimeheader"
end
config system replacemsg spam "reversedns"
end
config system replacemsg spam "smtp-spam-ase"
end
config system replacemsg spam "submit"
end
config system replacemsg alertmail "alertmail-virus"
end
config system replacemsg alertmail "alertmail-block"
end
config system replacemsg alertmail "alertmail-nids-event"
end
config system replacemsg alertmail "alertmail-crit-event"
end
config system replacemsg alertmail "alertmail-disk-full"
end
config system replacemsg admin "pre_admin-disclaimer-text"
end
config system replacemsg admin "post_admin-disclaimer-text"
end
config system replacemsg auth "auth-disclaimer-page-1"
end
config system replacemsg auth "auth-disclaimer-page-2"
end
config system replacemsg auth "auth-disclaimer-page-3"
end
```

```
config system replacemsg auth "auth-reject-page"
end
config system replacemsg auth "auth-login-page"
end
config system replacemsg auth "auth-login-failed-page"
end
config system replacemsg auth "auth-token-login-page"
end
config system replacemsg auth "auth-token-login-failed-page"
end
config system replacemsg auth "auth-success-msg"
end
config system replacemsg auth "auth-challenge-page"
end
config system replacemsg auth "auth-keepalive-page"
end
config system replacemsg auth "auth-portal-page"
end
config system replacemsg auth "auth-password-page"
end
config system replacemsg auth "auth-fortitoken-page"
end
config system replacemsg auth "auth-next-fortitoken-page"
end
config system replacemsg auth "auth-email-token-page"
end
config system replacemsg auth "auth-sms-token-page"
end
config system replacemsg auth "auth-email-harvesting-page"
end
config system replacemsg auth "auth-email-failed-page"
end
config system replacemsg auth "auth-cert-passwd-page"
end
config system replacemsg auth "auth-guest-print-page"
end
config system replacemsg auth "auth-guest-email-page"
end
config system replacemsg auth "auth-success-page"
end
config system replacemsg auth "auth-block-notification-page"
end
config system replacemsg auth "auth-quarantine-page"
end
config system replacemsg auth "auth-qtn-reject-page"
end
config system replacemsg auth "auth-saml-page"
end
config system replacemsg sslvpn "sslvpn-login"
```

```
end
config system replacemsg sslvpn "sslvpn-header"
end
config system replacemsg sslvpn "sslvpn-limit"
end
config system replacemsg sslvpn "hostcheck-error"
end
config system replacemsg sslvpn "sslvpn-provision-user"
end
config system replacemsg sslvpn "sslvpn-provision-user-sms"
end
config system replacemsg nac-quar "nac-quar-virus"
end
config system replacemsg nac-quar "nac-quar-dos"
end
config system replacemsg nac-quar "nac-quar-ips"
end
config system replacemsg nac-quar "nac-quar-dlp"
end
config system replacemsg nac-quar "nac-quar-admin"
end
config system replacemsg nac-quar "nac-quar-app"
end
config system replacemsg traffic-quota "per-ip-shaper-block"
end
config system replacemsg utm "virus-html"
end
config system replacemsg utm "client-virus-html"
end
config system replacemsg utm "virus-text"
end
config system replacemsg utm "dlp-html"
end
config system replacemsg utm "dlp-text"
end
config system replacemsg utm "appblk-html"
end
config system replacemsg utm "ipsblk-html"
end
config system replacemsg utm "ipsfail-html"
end
config system replacemsg utm "exe-text"
end
config system replacemsg utm "waf-html"
end
config system replacemsg utm "outbreak-prevention-html"
end
config system replacemsg utm "outbreak-prevention-text"
end
```

```
config system replacemsg utm "file-filter-html"
end
config system replacemsg utm "file-filter-text"
end
config system replacemsg utm "file-size-text"
end
config system replacemsg utm "transfer-size-text"
end
config system replacemsg utm "internal-error-text"
end
config system replacemsg utm "archive-block-html"
end
config system replacemsg utm "archive-block-text"
end
config system replacemsg utm "file-av-fail-text"
end
config system replacemsg utm "transfer-av-fail-text"
end
config system replacemsg utm "banned-word-html"
end
config system replacemsg utm "banned-word-text"
end
config system replacemsg utm "block-html"
end
config system replacemsg utm "block-text"
end
config system replacemsg utm "decompress-limit-text"
end
config system replacemsg utm "dlp-subject-text"
end
config system replacemsg utm "file-size-html"
end
config system replacemsg utm "client-file-size-html"
end
config system replacemsg icap "icap-req-resp"
end
config system snmp sysinfo
end
config system central-management
    set type fortiguard
end
config firewall internet-service-name
    edit "Google-Other"
        set internet-service-id 65536
    next
    edit "Google-Web"
        set internet-service-id 65537
    next
    edit "Google-ICMP"
```

```
    set internet-service-id 65538
next
edit "Google-DNS"
    set internet-service-id 65539
next
edit "Google-Outbound_Email"
    set internet-service-id 65540
next
edit "Google-SSH"
    set internet-service-id 65542
next
edit "Google-FTP"
    set internet-service-id 65543
next
edit "Google-NTP"
    set internet-service-id 65544
next
edit "Google-Inbound_Email"
    set internet-service-id 65545
next
edit "Google-LDAP"
    set internet-service-id 65550
next
edit "Google-NetBIOS.Session.Service"
    set internet-service-id 65551
next
edit "Google-RTMP"
    set internet-service-id 65552
next
edit "Google-NetBIOS.Name.Service"
    set internet-service-id 65560
next
edit "Google-Google.Cloud"
    set internet-service-id 65641
next
edit "Google-Google.Bot"
    set internet-service-id 65643
next
edit "Google-Gmail"
    set internet-service-id 65646
next
edit "Facebook-Other"
    set internet-service-id 131072
next
edit "Facebook-Web"
    set internet-service-id 131073
next
edit "Facebook-ICMP"
    set internet-service-id 131074
```

```
next
edit "Facebook-DNS"
    set internet-service-id 131075
next
edit "Facebook-Outbound_Email"
    set internet-service-id 131076
next
edit "Facebook-SSH"
    set internet-service-id 131078
next
edit "Facebook-FTP"
    set internet-service-id 131079
next
edit "Facebook-NTP"
    set internet-service-id 131080
next
edit "Facebook-Inbound_Email"
    set internet-service-id 131081
next
edit "Facebook-LDAP"
    set internet-service-id 131086
next
edit "Facebook-NetBIOS.Session.Service"
    set internet-service-id 131087
next
edit "Facebook-RTMP"
    set internet-service-id 131088
next
edit "Facebook-NetBIOS.Name.Service"
    set internet-service-id 131096
next
edit "Facebook-Whatsapp"
    set internet-service-id 131184
next
edit "Facebook-Instagram"
    set internet-service-id 131189
next
edit "Apple-Other"
    set internet-service-id 196608
next
edit "Apple-Web"
    set internet-service-id 196609
next
edit "Apple-ICMP"
    set internet-service-id 196610
next
edit "Apple-DNS"
    set internet-service-id 196611
next
```

```
edit "Apple-Outbound_Email"
    set internet-service-id 196612
next
edit "Apple-SSH"
    set internet-service-id 196614
next
edit "Apple-FTP"
    set internet-service-id 196615
next
edit "Apple-NTP"
    set internet-service-id 196616
next
edit "Apple-Inbound_Email"
    set internet-service-id 196617
next
edit "Apple-LDAP"
    set internet-service-id 196622
next
edit "Apple-NetBIOS.Session.Service"
    set internet-service-id 196623
next
edit "Apple-RTMP"
    set internet-service-id 196624
next
edit "Apple-NetBIOS.Name.Service"
    set internet-service-id 196632
next
edit "Apple-App.Store"
    set internet-service-id 196723
next
edit "Apple-APNs"
    set internet-service-id 196747
next
edit "Yahoo-Other"
    set internet-service-id 262144
next
edit "Yahoo-Web"
    set internet-service-id 262145
next
edit "Yahoo-ICMP"
    set internet-service-id 262146
next
edit "Yahoo-DNS"
    set internet-service-id 262147
next
edit "Yahoo-Outbound_Email"
    set internet-service-id 262148
next
edit "Yahoo-SSH"
```

```
    set internet-service-id 262150
next
edit "Yahoo-FTP"
    set internet-service-id 262151
next
edit "Yahoo-NTP"
    set internet-service-id 262152
next
edit "Yahoo-Inbound_Email"
    set internet-service-id 262153
next
edit "Yahoo-LDAP"
    set internet-service-id 262158
next
edit "Yahoo-NetBIOS.Session.Service"
    set internet-service-id 262159
next
edit "Yahoo-RTMP"
    set internet-service-id 262160
next
edit "Yahoo-NetBIOS.Name.Service"
    set internet-service-id 262168
next
edit "Microsoft-Other"
    set internet-service-id 327680
next
edit "Microsoft-Web"
    set internet-service-id 327681
next
edit "Microsoft-ICMP"
    set internet-service-id 327682
next
edit "Microsoft-DNS"
    set internet-service-id 327683
next
edit "Microsoft-Outbound_Email"
    set internet-service-id 327684
next
edit "Microsoft-SSH"
    set internet-service-id 327686
next
edit "Microsoft-FTP"
    set internet-service-id 327687
next
edit "Microsoft-NTP"
    set internet-service-id 327688
next
edit "Microsoft-Inbound_Email"
    set internet-service-id 327689
```

```
next
edit "Microsoft-LDAP"
    set internet-service-id 327694
next
edit "Microsoft-NetBIOS.Session.Service"
    set internet-service-id 327695
next
edit "Microsoft-RTMP"
    set internet-service-id 327696
next
edit "Microsoft-NetBIOS.Name.Service"
    set internet-service-id 327704
next
edit "Microsoft-Skype_Teams"
    set internet-service-id 327781
next
edit "Microsoft-Office365"
    set internet-service-id 327782
next
edit "Microsoft-Azure"
    set internet-service-id 327786
next
edit "Microsoft-Bing.Bot"
    set internet-service-id 327788
next
edit "Microsoft-Outlook"
    set internet-service-id 327791
next
edit "Microsoft-Microsoft.Update"
    set internet-service-id 327793
next
edit "Microsoft-Dynamics"
    set internet-service-id 327837
next
edit "Microsoft-WNS"
    set internet-service-id 327839
next
edit "Microsoft-Office365.Published"
    set internet-service-id 327880
next
edit "Amazon-Other"
    set internet-service-id 393216
next
edit "Amazon-Web"
    set internet-service-id 393217
next
edit "Amazon-ICMP"
    set internet-service-id 393218
next
```

```
edit "Amazon-DNS"
    set internet-service-id 393219
next
edit "Amazon-Outbound_Email"
    set internet-service-id 393220
next
edit "Amazon-SSH"
    set internet-service-id 393222
next
edit "Amazon-FTP"
    set internet-service-id 393223
next
edit "Amazon-NTP"
    set internet-service-id 393224
next
edit "Amazon-Inbound_Email"
    set internet-service-id 393225
next
edit "Amazon-LDAP"
    set internet-service-id 393230
next
edit "Amazon-NetBIOS.Session.Service"
    set internet-service-id 393231
next
edit "Amazon-RTMP"
    set internet-service-id 393232
next
edit "Amazon-NetBIOS.Name.Service"
    set internet-service-id 393240
next
edit "Amazon-AWS"
    set internet-service-id 393320
next
edit "Amazon-AWS.WorkSpaces.Gateway"
    set internet-service-id 393403
next
edit "eBay-Other"
    set internet-service-id 458752
next
edit "eBay-Web"
    set internet-service-id 458753
next
edit "eBay-ICMP"
    set internet-service-id 458754
next
edit "eBay-DNS"
    set internet-service-id 458755
next
edit "eBay-Outbound_Email"
```

```
    set internet-service-id 458756
next
edit "eBay-SSH"
    set internet-service-id 458758
next
edit "eBay-FTP"
    set internet-service-id 458759
next
edit "eBay-NTP"
    set internet-service-id 458760
next
edit "eBay-Inbound_Email"
    set internet-service-id 458761
next
edit "eBay-LDAP"
    set internet-service-id 458766
next
edit "eBay-NetBIOS.Session.Service"
    set internet-service-id 458767
next
edit "eBay-RTMP"
    set internet-service-id 458768
next
edit "eBay-NetBIOS.Name.Service"
    set internet-service-id 458776
next
edit "PayPal-Other"
    set internet-service-id 524288
next
edit "PayPal-Web"
    set internet-service-id 524289
next
edit "PayPal-ICMP"
    set internet-service-id 524290
next
edit "PayPal-DNS"
    set internet-service-id 524291
next
edit "PayPal-Outbound_Email"
    set internet-service-id 524292
next
edit "PayPal-SSH"
    set internet-service-id 524294
next
edit "PayPal-FTP"
    set internet-service-id 524295
next
edit "PayPal-NTP"
    set internet-service-id 524296
```

```
next
edit "PayPal-Inbound_Email"
    set internet-service-id 524297
next
edit "PayPal-LDAP"
    set internet-service-id 524302
next
edit "PayPal-NetBIOS.Session.Service"
    set internet-service-id 524303
next
edit "PayPal-RTMP"
    set internet-service-id 524304
next
edit "PayPal-NetBIOS.Name.Service"
    set internet-service-id 524312
next
edit "Box-Other"
    set internet-service-id 589824
next
edit "Box-Web"
    set internet-service-id 589825
next
edit "Box-ICMP"
    set internet-service-id 589826
next
edit "Box-DNS"
    set internet-service-id 589827
next
edit "Box-Outbound_Email"
    set internet-service-id 589828
next
edit "Box-SSH"
    set internet-service-id 589830
next
edit "Box-FTP"
    set internet-service-id 589831
next
edit "Box-NTP"
    set internet-service-id 589832
next
edit "Box-Inbound_Email"
    set internet-service-id 589833
next
edit "Box-LDAP"
    set internet-service-id 589838
next
edit "Box-NetBIOS.Session.Service"
    set internet-service-id 589839
next
```

```
edit "Box-RTMP"
    set internet-service-id 589840
next
edit "Box-NetBIOS.Name.Service"
    set internet-service-id 589848
next
edit "Salesforce-Other"
    set internet-service-id 655360
next
edit "Salesforce-Web"
    set internet-service-id 655361
next
edit "Salesforce-ICMP"
    set internet-service-id 655362
next
edit "Salesforce-DNS"
    set internet-service-id 655363
next
edit "Salesforce-Outbound_Email"
    set internet-service-id 655364
next
edit "Salesforce-SSH"
    set internet-service-id 655366
next
edit "Salesforce-FTP"
    set internet-service-id 655367
next
edit "Salesforce-NTP"
    set internet-service-id 655368
next
edit "Salesforce-Inbound_Email"
    set internet-service-id 655369
next
edit "Salesforce-LDAP"
    set internet-service-id 655374
next
edit "Salesforce-NetBIOS.Session.Service"
    set internet-service-id 655375
next
edit "Salesforce-RTMP"
    set internet-service-id 655376
next
edit "Salesforce-NetBIOS.Name.Service"
    set internet-service-id 655384
next
edit "Salesforce-Email.Relay"
    set internet-service-id 655530
next
edit "Dropbox-Other"
```

```
    set internet-service-id 720896
next
edit "Dropbox-Web"
    set internet-service-id 720897
next
edit "Dropbox-ICMP"
    set internet-service-id 720898
next
edit "Dropbox-DNS"
    set internet-service-id 720899
next
edit "Dropbox-Outbound_Email"
    set internet-service-id 720900
next
edit "Dropbox-SSH"
    set internet-service-id 720902
next
edit "Dropbox-FTP"
    set internet-service-id 720903
next
edit "Dropbox-NTP"
    set internet-service-id 720904
next
edit "Dropbox-Inbound_Email"
    set internet-service-id 720905
next
edit "Dropbox-LDAP"
    set internet-service-id 720910
next
edit "Dropbox-NetBIOS.Session.Service"
    set internet-service-id 720911
next
edit "Dropbox-RTMP"
    set internet-service-id 720912
next
edit "Dropbox-NetBIOS.Name.Service"
    set internet-service-id 720920
next
edit "Netflix-Other"
    set internet-service-id 786432
next
edit "Netflix-Web"
    set internet-service-id 786433
next
edit "Netflix-ICMP"
    set internet-service-id 786434
next
edit "Netflix-DNS"
    set internet-service-id 786435
```

```
next
edit "Netflix-Outbound_Email"
    set internet-service-id 786436
next
edit "Netflix-SSH"
    set internet-service-id 786438
next
edit "Netflix-FTP"
    set internet-service-id 786439
next
edit "Netflix-NTP"
    set internet-service-id 786440
next
edit "Netflix-Inbound_Email"
    set internet-service-id 786441
next
edit "Netflix-LDAP"
    set internet-service-id 786446
next
edit "Netflix-NetBIOS.Session.Service"
    set internet-service-id 786447
next
edit "Netflix-RTMP"
    set internet-service-id 786448
next
edit "Netflix-NetBIOS.Name.Service"
    set internet-service-id 786456
next
edit "LinkedIn-Other"
    set internet-service-id 851968
next
edit "LinkedIn-Web"
    set internet-service-id 851969
next
edit "LinkedIn-ICMP"
    set internet-service-id 851970
next
edit "LinkedIn-DNS"
    set internet-service-id 851971
next
edit "LinkedIn-Outbound_Email"
    set internet-service-id 851972
next
edit "LinkedIn-SSH"
    set internet-service-id 851974
next
edit "LinkedIn-FTP"
    set internet-service-id 851975
next
```

```
edit "LinkedIn-NTP"
    set internet-service-id 851976
next
edit "LinkedIn-Inbound_Email"
    set internet-service-id 851977
next
edit "LinkedIn-LDAP"
    set internet-service-id 851982
next
edit "LinkedIn-NetBIOS.Session.Service"
    set internet-service-id 851983
next
edit "LinkedIn-RTMP"
    set internet-service-id 851984
next
edit "LinkedIn-NetBIOS.Name.Service"
    set internet-service-id 851992
next
edit "Adobe-Other"
    set internet-service-id 917504
next
edit "Adobe-Web"
    set internet-service-id 917505
next
edit "Adobe-ICMP"
    set internet-service-id 917506
next
edit "Adobe-DNS"
    set internet-service-id 917507
next
edit "Adobe-Outbound_Email"
    set internet-service-id 917508
next
edit "Adobe-SSH"
    set internet-service-id 917510
next
edit "Adobe-FTP"
    set internet-service-id 917511
next
edit "Adobe-NTP"
    set internet-service-id 917512
next
edit "Adobe-Inbound_Email"
    set internet-service-id 917513
next
edit "Adobe-LDAP"
    set internet-service-id 917518
next
edit "Adobe-NetBIOS.Session.Service"
```

```
    set internet-service-id 917519
next
edit "Adobe-RTMP"
    set internet-service-id 917520
next
edit "Adobe-NetBIOS.Name.Service"
    set internet-service-id 917528
next
edit "Adobe-Adobe.Cloud"
    set internet-service-id 917640
next
edit "Oracle-Other"
    set internet-service-id 983040
next
edit "Oracle-Web"
    set internet-service-id 983041
next
edit "Oracle-ICMP"
    set internet-service-id 983042
next
edit "Oracle-DNS"
    set internet-service-id 983043
next
edit "Oracle-Outbound_Email"
    set internet-service-id 983044
next
edit "Oracle-SSH"
    set internet-service-id 983046
next
edit "Oracle-FTP"
    set internet-service-id 983047
next
edit "Oracle-NTP"
    set internet-service-id 983048
next
edit "Oracle-Inbound_Email"
    set internet-service-id 983049
next
edit "Oracle-LDAP"
    set internet-service-id 983054
next
edit "Oracle-NetBIOS.Session.Service"
    set internet-service-id 983055
next
edit "Oracle-RTMP"
    set internet-service-id 983056
next
edit "Oracle-NetBIOS.Name.Service"
    set internet-service-id 983064
```

```
next
edit "Oracle-Oracle.Cloud"
    set internet-service-id 983171
next
edit "Hulu-Other"
    set internet-service-id 1048576
next
edit "Hulu-Web"
    set internet-service-id 1048577
next
edit "Hulu-ICMP"
    set internet-service-id 1048578
next
edit "Hulu-DNS"
    set internet-service-id 1048579
next
edit "Hulu-Outbound_Email"
    set internet-service-id 1048580
next
edit "Hulu-SSH"
    set internet-service-id 1048582
next
edit "Hulu-FTP"
    set internet-service-id 1048583
next
edit "Hulu-NTP"
    set internet-service-id 1048584
next
edit "Hulu-Inbound_Email"
    set internet-service-id 1048585
next
edit "Hulu-LDAP"
    set internet-service-id 1048590
next
edit "Hulu-NetBIOS.Session.Service"
    set internet-service-id 1048591
next
edit "Hulu-RTMP"
    set internet-service-id 1048592
next
edit "Hulu-NetBIOS.Name.Service"
    set internet-service-id 1048600
next
edit "Pinterest-Other"
    set internet-service-id 1114112
next
edit "Pinterest-Web"
    set internet-service-id 1114113
next
```

```
edit "Pinterest-ICMP"
    set internet-service-id 1114114
next
edit "Pinterest-DNS"
    set internet-service-id 1114115
next
edit "Pinterest-Outbound_Email"
    set internet-service-id 1114116
next
edit "Pinterest-SSH"
    set internet-service-id 1114118
next
edit "Pinterest-FTP"
    set internet-service-id 1114119
next
edit "Pinterest-NTP"
    set internet-service-id 1114120
next
edit "Pinterest-Inbound_Email"
    set internet-service-id 1114121
next
edit "Pinterest-LDAP"
    set internet-service-id 1114126
next
edit "Pinterest-NetBIOS.Session.Service"
    set internet-service-id 1114127
next
edit "Pinterest-RTMP"
    set internet-service-id 1114128
next
edit "Pinterest-NetBIOS.Name.Service"
    set internet-service-id 1114136
next
edit "LogMeIn-Other"
    set internet-service-id 1179648
next
edit "LogMeIn-Web"
    set internet-service-id 1179649
next
edit "LogMeIn-ICMP"
    set internet-service-id 1179650
next
edit "LogMeIn-DNS"
    set internet-service-id 1179651
next
edit "LogMeIn-Outbound_Email"
    set internet-service-id 1179652
next
edit "LogMeIn-SSH"
```

```
    set internet-service-id 1179654
next
edit "LogMeIn-FTP"
    set internet-service-id 1179655
next
edit "LogMeIn-NTP"
    set internet-service-id 1179656
next
edit "LogMeIn-Inbound_Email"
    set internet-service-id 1179657
next
edit "LogMeIn-LDAP"
    set internet-service-id 1179662
next
edit "LogMeIn-NetBIOS.Session.Service"
    set internet-service-id 1179663
next
edit "LogMeIn-RTMP"
    set internet-service-id 1179664
next
edit "LogMeIn-NetBIOS.Name.Service"
    set internet-service-id 1179672
next
edit "LogMeIn-GoTo.Suite"
    set internet-service-id 1179767
next
edit "Fortinet-Other"
    set internet-service-id 1245184
next
edit "Fortinet-Web"
    set internet-service-id 1245185
next
edit "Fortinet-ICMP"
    set internet-service-id 1245186
next
edit "Fortinet-DNS"
    set internet-service-id 1245187
next
edit "Fortinet-Outbound_Email"
    set internet-service-id 1245188
next
edit "Fortinet-SSH"
    set internet-service-id 1245190
next
edit "Fortinet-FTP"
    set internet-service-id 1245191
next
edit "Fortinet-NTP"
    set internet-service-id 1245192
```

```
next
edit "Fortinet-Inbound_Email"
    set internet-service-id 1245193
next
edit "Fortinet-LDAP"
    set internet-service-id 1245198
next
edit "Fortinet-NetBIOS.Session.Service"
    set internet-service-id 1245199
next
edit "Fortinet-RTMP"
    set internet-service-id 1245200
next
edit "Fortinet-NetBIOS.Name.Service"
    set internet-service-id 1245208
next
edit "Fortinet-FortiGuard"
    set internet-service-id 1245324
next
edit "Fortinet-FortiMail.Cloud"
    set internet-service-id 1245325
next
edit "Fortinet-FortiCloud"
    set internet-service-id 1245326
next
edit "Kaspersky-Other"
    set internet-service-id 1310720
next
edit "Kaspersky-Web"
    set internet-service-id 1310721
next
edit "Kaspersky-ICMP"
    set internet-service-id 1310722
next
edit "Kaspersky-DNS"
    set internet-service-id 1310723
next
edit "Kaspersky-Outbound_Email"
    set internet-service-id 1310724
next
edit "Kaspersky-SSH"
    set internet-service-id 1310726
next
edit "Kaspersky-FTP"
    set internet-service-id 1310727
next
edit "Kaspersky-NTP"
    set internet-service-id 1310728
next
```

```
edit "Kaspersky-Inbound_Email"
    set internet-service-id 1310729
next
edit "Kaspersky-LDAP"
    set internet-service-id 1310734
next
edit "Kaspersky-NetBIOS.Session.Service"
    set internet-service-id 1310735
next
edit "Kaspersky-RTMP"
    set internet-service-id 1310736
next
edit "Kaspersky-NetBIOS.Name.Service"
    set internet-service-id 1310744
next
edit "McAfee-Other"
    set internet-service-id 1376256
next
edit "McAfee-Web"
    set internet-service-id 1376257
next
edit "McAfee-ICMP"
    set internet-service-id 1376258
next
edit "McAfee-DNS"
    set internet-service-id 1376259
next
edit "McAfee-Outbound_Email"
    set internet-service-id 1376260
next
edit "McAfee-SSH"
    set internet-service-id 1376262
next
edit "McAfee-FTP"
    set internet-service-id 1376263
next
edit "McAfee-NTP"
    set internet-service-id 1376264
next
edit "McAfee-Inbound_Email"
    set internet-service-id 1376265
next
edit "McAfee-LDAP"
    set internet-service-id 1376270
next
edit "McAfee-NetBIOS.Session.Service"
    set internet-service-id 1376271
next
edit "McAfee-RTMP"
```

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    set internet-service-id 1376272
next
edit "McAfee-NetBIOS.Name.Service"
    set internet-service-id 1376280
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edit "Symantec-Other"
    set internet-service-id 1441792
next
edit "Symantec-Web"
    set internet-service-id 1441793
next
edit "Symantec-ICMP"
    set internet-service-id 1441794
next
edit "Symantec-DNS"
    set internet-service-id 1441795
next
edit "Symantec-Outbound_Email"
    set internet-service-id 1441796
next
edit "Symantec-SSH"
    set internet-service-id 1441798
next
edit "Symantec-FTP"
    set internet-service-id 1441799
next
edit "Symantec-NTP"
    set internet-service-id 1441800
next
edit "Symantec-Inbound_Email"
    set internet-service-id 1441801
next
edit "Symantec-LDAP"
    set internet-service-id 1441806
next
edit "Symantec-NetBIOS.Session.Service"
    set internet-service-id 1441807
next
edit "Symantec-RTMP"
    set internet-service-id 1441808
next
edit "Symantec-NetBIOS.Name.Service"
    set internet-service-id 1441816
next
edit "Symantec-Symantec.Cloud"
    set internet-service-id 1441922
next
edit "VMware-Other"
    set internet-service-id 1507328
```

```
next
edit "VMware-Web"
    set internet-service-id 1507329
next
edit "VMware-ICMP"
    set internet-service-id 1507330
next
edit "VMware-DNS"
    set internet-service-id 1507331
next
edit "VMware-Outbound_Email"
    set internet-service-id 1507332
next
edit "VMware-SSH"
    set internet-service-id 1507334
next
edit "VMware-FTP"
    set internet-service-id 1507335
next
edit "VMware-NTP"
    set internet-service-id 1507336
next
edit "VMware-Inbound_Email"
    set internet-service-id 1507337
next
edit "VMware-LDAP"
    set internet-service-id 1507342
next
edit "VMware-NetBIOS.Session.Service"
    set internet-service-id 1507343
next
edit "VMware-RTMP"
    set internet-service-id 1507344
next
edit "VMware-NetBIOS.Name.Service"
    set internet-service-id 1507352
next
edit "VMware-Airwatch"
    set internet-service-id 1507461
next
edit "AOL-Other"
    set internet-service-id 1572864
next
edit "AOL-Web"
    set internet-service-id 1572865
next
edit "AOL-ICMP"
    set internet-service-id 1572866
next
```

```
edit "AOL-DNS"
    set internet-service-id 1572867
next
edit "AOL-Outbound_Email"
    set internet-service-id 1572868
next
edit "AOL-SSH"
    set internet-service-id 1572870
next
edit "AOL-FTP"
    set internet-service-id 1572871
next
edit "AOL-NTP"
    set internet-service-id 1572872
next
edit "AOL-Inbound_Email"
    set internet-service-id 1572873
next
edit "AOL-LDAP"
    set internet-service-id 1572878
next
edit "AOL-NetBIOS.Session.Service"
    set internet-service-id 1572879
next
edit "AOL-RTMP"
    set internet-service-id 1572880
next
edit "AOL-NetBIOS.Name.Service"
    set internet-service-id 1572888
next
edit "RealNetworks-Other"
    set internet-service-id 1638400
next
edit "RealNetworks-Web"
    set internet-service-id 1638401
next
edit "RealNetworks-ICMP"
    set internet-service-id 1638402
next
edit "RealNetworks-DNS"
    set internet-service-id 1638403
next
edit "RealNetworks-Outbound_Email"
    set internet-service-id 1638404
next
edit "RealNetworks-SSH"
    set internet-service-id 1638406
next
edit "RealNetworks-FTP"
```

```
    set internet-service-id 1638407
next
edit "RealNetworks-NTP"
    set internet-service-id 1638408
next
edit "RealNetworks-Inbound_Email"
    set internet-service-id 1638409
next
edit "RealNetworks-LDAP"
    set internet-service-id 1638414
next
edit "RealNetworks-NetBIOS.Session.Service"
    set internet-service-id 1638415
next
edit "RealNetworks-RTMP"
    set internet-service-id 1638416
next
edit "RealNetworks-NetBIOS.Name.Service"
    set internet-service-id 1638424
next
edit "Zoho-Other"
    set internet-service-id 1703936
next
edit "Zoho-Web"
    set internet-service-id 1703937
next
edit "Zoho-ICMP"
    set internet-service-id 1703938
next
edit "Zoho-DNS"
    set internet-service-id 1703939
next
edit "Zoho-Outbound_Email"
    set internet-service-id 1703940
next
edit "Zoho-SSH"
    set internet-service-id 1703942
next
edit "Zoho-FTP"
    set internet-service-id 1703943
next
edit "Zoho-NTP"
    set internet-service-id 1703944
next
edit "Zoho-Inbound_Email"
    set internet-service-id 1703945
next
edit "Zoho-LDAP"
    set internet-service-id 1703950
```

```
next
edit "Zoho-NetBIOS.Session.Service"
    set internet-service-id 1703951
next
edit "Zoho-RTMP"
    set internet-service-id 1703952
next
edit "Zoho-NetBIOS.Name.Service"
    set internet-service-id 1703960
next
edit "Mozilla-Other"
    set internet-service-id 1769472
next
edit "Mozilla-Web"
    set internet-service-id 1769473
next
edit "Mozilla-ICMP"
    set internet-service-id 1769474
next
edit "Mozilla-DNS"
    set internet-service-id 1769475
next
edit "Mozilla-Outbound_Email"
    set internet-service-id 1769476
next
edit "Mozilla-SSH"
    set internet-service-id 1769478
next
edit "Mozilla-FTP"
    set internet-service-id 1769479
next
edit "Mozilla-NTP"
    set internet-service-id 1769480
next
edit "Mozilla-Inbound_Email"
    set internet-service-id 1769481
next
edit "Mozilla-LDAP"
    set internet-service-id 1769486
next
edit "Mozilla-NetBIOS.Session.Service"
    set internet-service-id 1769487
next
edit "Mozilla-RTMP"
    set internet-service-id 1769488
next
edit "Mozilla-NetBIOS.Name.Service"
    set internet-service-id 1769496
next
```

```
edit "TeamViewer-Other"
    set internet-service-id 1835008
next
edit "TeamViewer-Web"
    set internet-service-id 1835009
next
edit "TeamViewer-ICMP"
    set internet-service-id 1835010
next
edit "TeamViewer-DNS"
    set internet-service-id 1835011
next
edit "TeamViewer-Outbound_Email"
    set internet-service-id 1835012
next
edit "TeamViewer-SSH"
    set internet-service-id 1835014
next
edit "TeamViewer-FTP"
    set internet-service-id 1835015
next
edit "TeamViewer-NTP"
    set internet-service-id 1835016
next
edit "TeamViewer-Inbound_Email"
    set internet-service-id 1835017
next
edit "TeamViewer-LDAP"
    set internet-service-id 1835022
next
edit "TeamViewer-NetBIOS.Session.Service"
    set internet-service-id 1835023
next
edit "TeamViewer-RTMP"
    set internet-service-id 1835024
next
edit "TeamViewer-NetBIOS.Name.Service"
    set internet-service-id 1835032
next
edit "TeamViewer-TeamViewer"
    set internet-service-id 1835117
next
edit "HP-Other"
    set internet-service-id 1900544
next
edit "HP-Web"
    set internet-service-id 1900545
next
edit "HP-ICMP"
```

```
    set internet-service-id 1900546
next
edit "HP-DNS"
    set internet-service-id 1900547
next
edit "HP-Outbound_Email"
    set internet-service-id 1900548
next
edit "HP-SSH"
    set internet-service-id 1900550
next
edit "HP-FTP"
    set internet-service-id 1900551
next
edit "HP-NTP"
    set internet-service-id 1900552
next
edit "HP-Inbound_Email"
    set internet-service-id 1900553
next
edit "HP-LDAP"
    set internet-service-id 1900558
next
edit "HP-NetBIOS.Session.Service"
    set internet-service-id 1900559
next
edit "HP-RTMP"
    set internet-service-id 1900560
next
edit "HP-NetBIOS.Name.Service"
    set internet-service-id 1900568
next
edit "HP-Aruba"
    set internet-service-id 1900726
next
edit "Cisco-Other"
    set internet-service-id 1966080
next
edit "Cisco-Web"
    set internet-service-id 1966081
next
edit "Cisco-ICMP"
    set internet-service-id 1966082
next
edit "Cisco-DNS"
    set internet-service-id 1966083
next
edit "Cisco-Outbound_Email"
    set internet-service-id 1966084
```

```
next
edit "Cisco-SSH"
    set internet-service-id 1966086
next
edit "Cisco-FTP"
    set internet-service-id 1966087
next
edit "Cisco-NTP"
    set internet-service-id 1966088
next
edit "Cisco-Inbound_Email"
    set internet-service-id 1966089
next
edit "Cisco-LDAP"
    set internet-service-id 1966094
next
edit "Cisco-NetBIOS.Session.Service"
    set internet-service-id 1966095
next
edit "Cisco-RTMP"
    set internet-service-id 1966096
next
edit "Cisco-NetBIOS.Name.Service"
    set internet-service-id 1966104
next
edit "Cisco-Webex"
    set internet-service-id 1966183
next
edit "Cisco-Meraki.Cloud"
    set internet-service-id 1966218
next
edit "Cisco-Duo.Security"
    set internet-service-id 1966225
next
edit "Cisco-AppDynamic"
    set internet-service-id 1966260
next
edit "IBM-Other"
    set internet-service-id 2031616
next
edit "IBM-Web"
    set internet-service-id 2031617
next
edit "IBM-ICMP"
    set internet-service-id 2031618
next
edit "IBM-DNS"
    set internet-service-id 2031619
next
```

```
edit "IBM-Outbound_Email"
    set internet-service-id 2031620
next
edit "IBM-SSH"
    set internet-service-id 2031622
next
edit "IBM-FTP"
    set internet-service-id 2031623
next
edit "IBM-NTP"
    set internet-service-id 2031624
next
edit "IBM-Inbound_Email"
    set internet-service-id 2031625
next
edit "IBM-LDAP"
    set internet-service-id 2031630
next
edit "IBM-NetBIOS.Session.Service"
    set internet-service-id 2031631
next
edit "IBM-RTMP"
    set internet-service-id 2031632
next
edit "IBM-NetBIOS.Name.Service"
    set internet-service-id 2031640
next
edit "IBM-IBM.Cloud"
    set internet-service-id 2031748
next
edit "Citrix-Other"
    set internet-service-id 2097152
next
edit "Citrix-Web"
    set internet-service-id 2097153
next
edit "Citrix-ICMP"
    set internet-service-id 2097154
next
edit "Citrix-DNS"
    set internet-service-id 2097155
next
edit "Citrix-Outbound_Email"
    set internet-service-id 2097156
next
edit "Citrix-SSH"
    set internet-service-id 2097158
next
edit "Citrix-FTP"
```

```
    set internet-service-id 2097159
next
edit "Citrix-NTP"
    set internet-service-id 2097160
next
edit "Citrix-Inbound_Email"
    set internet-service-id 2097161
next
edit "Citrix-LDAP"
    set internet-service-id 2097166
next
edit "Citrix-NetBIOS.Session.Service"
    set internet-service-id 2097167
next
edit "Citrix-RTMP"
    set internet-service-id 2097168
next
edit "Citrix-NetBIOS.Name.Service"
    set internet-service-id 2097176
next
edit "Twitter-Other"
    set internet-service-id 2162688
next
edit "Twitter-Web"
    set internet-service-id 2162689
next
edit "Twitter-ICMP"
    set internet-service-id 2162690
next
edit "Twitter-DNS"
    set internet-service-id 2162691
next
edit "Twitter-Outbound_Email"
    set internet-service-id 2162692
next
edit "Twitter-SSH"
    set internet-service-id 2162694
next
edit "Twitter-FTP"
    set internet-service-id 2162695
next
edit "Twitter-NTP"
    set internet-service-id 2162696
next
edit "Twitter-Inbound_Email"
    set internet-service-id 2162697
next
edit "Twitter-LDAP"
    set internet-service-id 2162702
```

```
next
edit "Twitter-NetBIOS.Session.Service"
    set internet-service-id 2162703
next
edit "Twitter-RTMP"
    set internet-service-id 2162704
next
edit "Twitter-NetBIOS.Name.Service"
    set internet-service-id 2162712
next
edit "Dell-Other"
    set internet-service-id 2228224
next
edit "Dell-Web"
    set internet-service-id 2228225
next
edit "Dell-ICMP"
    set internet-service-id 2228226
next
edit "Dell-DNS"
    set internet-service-id 2228227
next
edit "Dell-Outbound_Email"
    set internet-service-id 2228228
next
edit "Dell-SSH"
    set internet-service-id 2228230
next
edit "Dell-FTP"
    set internet-service-id 2228231
next
edit "Dell-NTP"
    set internet-service-id 2228232
next
edit "Dell-Inbound_Email"
    set internet-service-id 2228233
next
edit "Dell-LDAP"
    set internet-service-id 2228238
next
edit "Dell-NetBIOS.Session.Service"
    set internet-service-id 2228239
next
edit "Dell-RTMP"
    set internet-service-id 2228240
next
edit "Dell-NetBIOS.Name.Service"
    set internet-service-id 2228248
next
```

```
edit "Vimeo-Other"
    set internet-service-id 2293760
next
edit "Vimeo-Web"
    set internet-service-id 2293761
next
edit "Vimeo-ICMP"
    set internet-service-id 2293762
next
edit "Vimeo-DNS"
    set internet-service-id 2293763
next
edit "Vimeo-Outbound_Email"
    set internet-service-id 2293764
next
edit "Vimeo-SSH"
    set internet-service-id 2293766
next
edit "Vimeo-FTP"
    set internet-service-id 2293767
next
edit "Vimeo-NTP"
    set internet-service-id 2293768
next
edit "Vimeo-Inbound_Email"
    set internet-service-id 2293769
next
edit "Vimeo-LDAP"
    set internet-service-id 2293774
next
edit "Vimeo-NetBIOS.Session.Service"
    set internet-service-id 2293775
next
edit "Vimeo-RTMP"
    set internet-service-id 2293776
next
edit "Vimeo-NetBIOS.Name.Service"
    set internet-service-id 2293784
next
edit "Redhat-Other"
    set internet-service-id 2359296
next
edit "Redhat-Web"
    set internet-service-id 2359297
next
edit "Redhat-ICMP"
    set internet-service-id 2359298
next
edit "Redhat-DNS"
```

```
    set internet-service-id 2359299
next
edit "Redhat-Outbound_Email"
    set internet-service-id 2359300
next
edit "Redhat-SSH"
    set internet-service-id 2359302
next
edit "Redhat-FTP"
    set internet-service-id 2359303
next
edit "Redhat-NTP"
    set internet-service-id 2359304
next
edit "Redhat-Inbound_Email"
    set internet-service-id 2359305
next
edit "Redhat-LDAP"
    set internet-service-id 2359310
next
edit "Redhat-NetBIOS.Session.Service"
    set internet-service-id 2359311
next
edit "Redhat-RTMP"
    set internet-service-id 2359312
next
edit "Redhat-NetBIOS.Name.Service"
    set internet-service-id 2359320
next
edit "VK-Other"
    set internet-service-id 2424832
next
edit "VK-Web"
    set internet-service-id 2424833
next
edit "VK-ICMP"
    set internet-service-id 2424834
next
edit "VK-DNS"
    set internet-service-id 2424835
next
edit "VK-Outbound_Email"
    set internet-service-id 2424836
next
edit "VK-SSH"
    set internet-service-id 2424838
next
edit "VK-FTP"
    set internet-service-id 2424839
```

```
next
edit "VK-NTP"
    set internet-service-id 2424840
next
edit "VK-Inbound_Email"
    set internet-service-id 2424841
next
edit "VK-LDAP"
    set internet-service-id 2424846
next
edit "VK-NetBIOS.Session.Service"
    set internet-service-id 2424847
next
edit "VK-RTMP"
    set internet-service-id 2424848
next
edit "VK-NetBIOS.Name.Service"
    set internet-service-id 2424856
next
edit "TrendMicro-Other"
    set internet-service-id 2490368
next
edit "TrendMicro-Web"
    set internet-service-id 2490369
next
edit "TrendMicro-ICMP"
    set internet-service-id 2490370
next
edit "TrendMicro-DNS"
    set internet-service-id 2490371
next
edit "TrendMicro-Outbound_Email"
    set internet-service-id 2490372
next
edit "TrendMicro-SSH"
    set internet-service-id 2490374
next
edit "TrendMicro-FTP"
    set internet-service-id 2490375
next
edit "TrendMicro-NTP"
    set internet-service-id 2490376
next
edit "TrendMicro-Inbound_Email"
    set internet-service-id 2490377
next
edit "TrendMicro-LDAP"
    set internet-service-id 2490382
next
```

```
edit "TrendMicro-NetBIOS.Session.Service"
    set internet-service-id 2490383
next
edit "TrendMicro-RTMP"
    set internet-service-id 2490384
next
edit "TrendMicro-NetBIOS.Name.Service"
    set internet-service-id 2490392
next
edit "Tencent-Other"
    set internet-service-id 2555904
next
edit "Tencent-Web"
    set internet-service-id 2555905
next
edit "Tencent-ICMP"
    set internet-service-id 2555906
next
edit "Tencent-DNS"
    set internet-service-id 2555907
next
edit "Tencent-Outbound_Email"
    set internet-service-id 2555908
next
edit "Tencent-SSH"
    set internet-service-id 2555910
next
edit "Tencent-FTP"
    set internet-service-id 2555911
next
edit "Tencent-NTP"
    set internet-service-id 2555912
next
edit "Tencent-Inbound_Email"
    set internet-service-id 2555913
next
edit "Tencent-LDAP"
    set internet-service-id 2555918
next
edit "Tencent-NetBIOS.Session.Service"
    set internet-service-id 2555919
next
edit "Tencent-RTMP"
    set internet-service-id 2555920
next
edit "Tencent-NetBIOS.Name.Service"
    set internet-service-id 2555928
next
edit "Ask-Other"
```

```
    set internet-service-id 2621440
next
edit "Ask-Web"
    set internet-service-id 2621441
next
edit "Ask-ICMP"
    set internet-service-id 2621442
next
edit "Ask-DNS"
    set internet-service-id 2621443
next
edit "Ask-Outbound_Email"
    set internet-service-id 2621444
next
edit "Ask-SSH"
    set internet-service-id 2621446
next
edit "Ask-FTP"
    set internet-service-id 2621447
next
edit "Ask-NTP"
    set internet-service-id 2621448
next
edit "Ask-Inbound_Email"
    set internet-service-id 2621449
next
edit "Ask-LDAP"
    set internet-service-id 2621454
next
edit "Ask-NetBIOS.Session.Service"
    set internet-service-id 2621455
next
edit "Ask-RTMP"
    set internet-service-id 2621456
next
edit "Ask-NetBIOS.Name.Service"
    set internet-service-id 2621464
next
edit "CNN-Other"
    set internet-service-id 2686976
next
edit "CNN-Web"
    set internet-service-id 2686977
next
edit "CNN-ICMP"
    set internet-service-id 2686978
next
edit "CNN-DNS"
    set internet-service-id 2686979
```

```
next
edit "CNN-Outbound_Email"
    set internet-service-id 2686980
next
edit "CNN-SSH"
    set internet-service-id 2686982
next
edit "CNN-FTP"
    set internet-service-id 2686983
next
edit "CNN-NTP"
    set internet-service-id 2686984
next
edit "CNN-Inbound_Email"
    set internet-service-id 2686985
next
edit "CNN-LDAP"
    set internet-service-id 2686990
next
edit "CNN-NetBIOS.Session.Service"
    set internet-service-id 2686991
next
edit "CNN-RTMP"
    set internet-service-id 2686992
next
edit "CNN-NetBIOS.Name.Service"
    set internet-service-id 2687000
next
edit "Myspace-Other"
    set internet-service-id 2752512
next
edit "Myspace-Web"
    set internet-service-id 2752513
next
edit "Myspace-ICMP"
    set internet-service-id 2752514
next
edit "Myspace-DNS"
    set internet-service-id 2752515
next
edit "Myspace-Outbound_Email"
    set internet-service-id 2752516
next
edit "Myspace-SSH"
    set internet-service-id 2752518
next
edit "Myspace-FTP"
    set internet-service-id 2752519
next
```

```
edit "Myspace-NTP"
    set internet-service-id 2752520
next
edit "Myspace-Inbound_Email"
    set internet-service-id 2752521
next
edit "Myspace-LDAP"
    set internet-service-id 2752526
next
edit "Myspace-NetBIOS.Session.Service"
    set internet-service-id 2752527
next
edit "Myspace-RTMP"
    set internet-service-id 2752528
next
edit "Myspace-NetBIOS.Name.Service"
    set internet-service-id 2752536
next
edit "Tor-Relay.Node"
    set internet-service-id 2818238
next
edit "Tor-Exit.Node"
    set internet-service-id 2818243
next
edit "Baidu-Other"
    set internet-service-id 2883584
next
edit "Baidu-Web"
    set internet-service-id 2883585
next
edit "Baidu-ICMP"
    set internet-service-id 2883586
next
edit "Baidu-DNS"
    set internet-service-id 2883587
next
edit "Baidu-Outbound_Email"
    set internet-service-id 2883588
next
edit "Baidu-SSH"
    set internet-service-id 2883590
next
edit "Baidu-FTP"
    set internet-service-id 2883591
next
edit "Baidu-NTP"
    set internet-service-id 2883592
next
edit "Baidu-Inbound_Email"
```

```
    set internet-service-id 2883593
next
edit "Baidu-LDAP"
    set internet-service-id 2883598
next
edit "Baidu-NetBIOS.Session.Service"
    set internet-service-id 2883599
next
edit "Baidu-RTMP"
    set internet-service-id 2883600
next
edit "Baidu-NetBIOS.Name.Service"
    set internet-service-id 2883608
next
edit "ntp.org-Other"
    set internet-service-id 2949120
next
edit "ntp.org-Web"
    set internet-service-id 2949121
next
edit "ntp.org-ICMP"
    set internet-service-id 2949122
next
edit "ntp.org-DNS"
    set internet-service-id 2949123
next
edit "ntp.org-Outbound_Email"
    set internet-service-id 2949124
next
edit "ntp.org-SSH"
    set internet-service-id 2949126
next
edit "ntp.org-FTP"
    set internet-service-id 2949127
next
edit "ntp.org-NTP"
    set internet-service-id 2949128
next
edit "ntp.org-Inbound_Email"
    set internet-service-id 2949129
next
edit "ntp.org-LDAP"
    set internet-service-id 2949134
next
edit "ntp.org-NetBIOS.Session.Service"
    set internet-service-id 2949135
next
edit "ntp.org-RTMP"
    set internet-service-id 2949136
```

```
next
edit "ntp.org-NetBIOS.Name.Service"
    set internet-service-id 2949144
next
edit "Proxy-Proxy.Server"
    set internet-service-id 3014850
next
edit "Botnet-C&C.Server"
    set internet-service-id 3080383
next
edit "Spam-Spamming.Server"
    set internet-service-id 3145920
next
edit "Phishing-Phishing.Server"
    set internet-service-id 3211457
next
edit "Zendesk-Other"
    set internet-service-id 3407872
next
edit "Zendesk-Web"
    set internet-service-id 3407873
next
edit "Zendesk-ICMP"
    set internet-service-id 3407874
next
edit "Zendesk-DNS"
    set internet-service-id 3407875
next
edit "Zendesk-Outbound_Email"
    set internet-service-id 3407876
next
edit "Zendesk-SSH"
    set internet-service-id 3407878
next
edit "Zendesk-FTP"
    set internet-service-id 3407879
next
edit "Zendesk-NTP"
    set internet-service-id 3407880
next
edit "Zendesk-Inbound_Email"
    set internet-service-id 3407881
next
edit "Zendesk-LDAP"
    set internet-service-id 3407886
next
edit "Zendesk-NetBIOS.Session.Service"
    set internet-service-id 3407887
next
```

```
edit "Zendesk-RTMP"
    set internet-service-id 3407888
next
edit "Zendesk-NetBIOS.Name.Service"
    set internet-service-id 3407896
next
edit "Zendesk-Zendesk.Suite"
    set internet-service-id 3408047
next
edit "DocuSign-Other"
    set internet-service-id 3473408
next
edit "DocuSign-Web"
    set internet-service-id 3473409
next
edit "DocuSign-ICMP"
    set internet-service-id 3473410
next
edit "DocuSign-DNS"
    set internet-service-id 3473411
next
edit "DocuSign-Outbound_Email"
    set internet-service-id 3473412
next
edit "DocuSign-SSH"
    set internet-service-id 3473414
next
edit "DocuSign-FTP"
    set internet-service-id 3473415
next
edit "DocuSign-NTP"
    set internet-service-id 3473416
next
edit "DocuSign-Inbound_Email"
    set internet-service-id 3473417
next
edit "DocuSign-LDAP"
    set internet-service-id 3473422
next
edit "DocuSign-NetBIOS.Session.Service"
    set internet-service-id 3473423
next
edit "DocuSign-RTMP"
    set internet-service-id 3473424
next
edit "DocuSign-NetBIOS.Name.Service"
    set internet-service-id 3473432
next
edit "ServiceNow-Other"
```

```
    set internet-service-id 3538944
next
edit "ServiceNow-Web"
    set internet-service-id 3538945
next
edit "ServiceNow-ICMP"
    set internet-service-id 3538946
next
edit "ServiceNow-DNS"
    set internet-service-id 3538947
next
edit "ServiceNow-Outbound_Email"
    set internet-service-id 3538948
next
edit "ServiceNow-SSH"
    set internet-service-id 3538950
next
edit "ServiceNow-FTP"
    set internet-service-id 3538951
next
edit "ServiceNow-NTP"
    set internet-service-id 3538952
next
edit "ServiceNow-Inbound_Email"
    set internet-service-id 3538953
next
edit "ServiceNow-LDAP"
    set internet-service-id 3538958
next
edit "ServiceNow-NetBIOS.Session.Service"
    set internet-service-id 3538959
next
edit "ServiceNow-RTMP"
    set internet-service-id 3538960
next
edit "ServiceNow-NetBIOS.Name.Service"
    set internet-service-id 3538968
next
edit "GitHub-GitHub"
    set internet-service-id 3604638
next
edit "Workday-Other"
    set internet-service-id 3670016
next
edit "Workday-Web"
    set internet-service-id 3670017
next
edit "Workday-ICMP"
    set internet-service-id 3670018
```

```
next
edit "Workday-DNS"
    set internet-service-id 3670019
next
edit "Workday-Outbound_Email"
    set internet-service-id 3670020
next
edit "Workday-SSH"
    set internet-service-id 3670022
next
edit "Workday-FTP"
    set internet-service-id 3670023
next
edit "Workday-NTP"
    set internet-service-id 3670024
next
edit "Workday-Inbound_Email"
    set internet-service-id 3670025
next
edit "Workday-LDAP"
    set internet-service-id 3670030
next
edit "Workday-NetBIOS.Session.Service"
    set internet-service-id 3670031
next
edit "Workday-RTMP"
    set internet-service-id 3670032
next
edit "Workday-NetBIOS.Name.Service"
    set internet-service-id 3670040
next
edit "HubSpot-Other"
    set internet-service-id 3735552
next
edit "HubSpot-Web"
    set internet-service-id 3735553
next
edit "HubSpot-ICMP"
    set internet-service-id 3735554
next
edit "HubSpot-DNS"
    set internet-service-id 3735555
next
edit "HubSpot-Outbound_Email"
    set internet-service-id 3735556
next
edit "HubSpot-SSH"
    set internet-service-id 3735558
next
```

```
edit "HubSpot-FTP"
    set internet-service-id 3735559
next
edit "HubSpot-NTP"
    set internet-service-id 3735560
next
edit "HubSpot-Inbound_Email"
    set internet-service-id 3735561
next
edit "HubSpot-LDAP"
    set internet-service-id 3735566
next
edit "HubSpot-NetBIOS.Session.Service"
    set internet-service-id 3735567
next
edit "HubSpot-RTMP"
    set internet-service-id 3735568
next
edit "HubSpot-NetBIOS.Name.Service"
    set internet-service-id 3735576
next
edit "Twilio-Other"
    set internet-service-id 3801088
next
edit "Twilio-Web"
    set internet-service-id 3801089
next
edit "Twilio-ICMP"
    set internet-service-id 3801090
next
edit "Twilio-DNS"
    set internet-service-id 3801091
next
edit "Twilio-Outbound_Email"
    set internet-service-id 3801092
next
edit "Twilio-SSH"
    set internet-service-id 3801094
next
edit "Twilio-FTP"
    set internet-service-id 3801095
next
edit "Twilio-NTP"
    set internet-service-id 3801096
next
edit "Twilio-Inbound_Email"
    set internet-service-id 3801097
next
edit "Twilio-LDAP"
```

```
    set internet-service-id 3801102
next
edit "Twilio-NetBIOS.Session.Service"
    set internet-service-id 3801103
next
edit "Twilio-RTMP"
    set internet-service-id 3801104
next
edit "Twilio-NetBIOS.Name.Service"
    set internet-service-id 3801112
next
edit "Twilio-Elastic.SIP.Trunking"
    set internet-service-id 3801277
next
edit "Coupa-Other"
    set internet-service-id 3866624
next
edit "Coupa-Web"
    set internet-service-id 3866625
next
edit "Coupa-ICMP"
    set internet-service-id 3866626
next
edit "Coupa-DNS"
    set internet-service-id 3866627
next
edit "Coupa-Outbound_Email"
    set internet-service-id 3866628
next
edit "Coupa-SSH"
    set internet-service-id 3866630
next
edit "Coupa-FTP"
    set internet-service-id 3866631
next
edit "Coupa-NTP"
    set internet-service-id 3866632
next
edit "Coupa-Inbound_Email"
    set internet-service-id 3866633
next
edit "Coupa-LDAP"
    set internet-service-id 3866638
next
edit "Coupa-NetBIOS.Session.Service"
    set internet-service-id 3866639
next
edit "Coupa-RTMP"
    set internet-service-id 3866640
```

```
next
edit "Coupa-NetBIOS.Name.Service"
    set internet-service-id 3866648
next
edit "Atlassian-Other"
    set internet-service-id 3932160
next
edit "Atlassian-Web"
    set internet-service-id 3932161
next
edit "Atlassian-ICMP"
    set internet-service-id 3932162
next
edit "Atlassian-DNS"
    set internet-service-id 3932163
next
edit "Atlassian-Outbound_Email"
    set internet-service-id 3932164
next
edit "Atlassian-SSH"
    set internet-service-id 3932166
next
edit "Atlassian-FTP"
    set internet-service-id 3932167
next
edit "Atlassian-NTP"
    set internet-service-id 3932168
next
edit "Atlassian-Inbound_Email"
    set internet-service-id 3932169
next
edit "Atlassian-LDAP"
    set internet-service-id 3932174
next
edit "Atlassian-NetBIOS.Session.Service"
    set internet-service-id 3932175
next
edit "Atlassian-RTMP"
    set internet-service-id 3932176
next
edit "Atlassian-NetBIOS.Name.Service"
    set internet-service-id 3932184
next
edit "Xero-Other"
    set internet-service-id 3997696
next
edit "Xero-Web"
    set internet-service-id 3997697
next
```

```
edit "Xero-ICMP"
    set internet-service-id 3997698
next
edit "Xero-DNS"
    set internet-service-id 3997699
next
edit "Xero-Outbound_Email"
    set internet-service-id 3997700
next
edit "Xero-SSH"
    set internet-service-id 3997702
next
edit "Xero-FTP"
    set internet-service-id 3997703
next
edit "Xero-NTP"
    set internet-service-id 3997704
next
edit "Xero-Inbound_Email"
    set internet-service-id 3997705
next
edit "Xero-LDAP"
    set internet-service-id 3997710
next
edit "Xero-NetBIOS.Session.Service"
    set internet-service-id 3997711
next
edit "Xero-RTMP"
    set internet-service-id 3997712
next
edit "Xero-NetBIOS.Name.Service"
    set internet-service-id 3997720
next
edit "Zuora-Other"
    set internet-service-id 4063232
next
edit "Zuora-Web"
    set internet-service-id 4063233
next
edit "Zuora-ICMP"
    set internet-service-id 4063234
next
edit "Zuora-DNS"
    set internet-service-id 4063235
next
edit "Zuora-Outbound_Email"
    set internet-service-id 4063236
next
edit "Zuora-SSH"
```

```
    set internet-service-id 4063238
next
edit "Zuora-FTP"
    set internet-service-id 4063239
next
edit "Zuora-NTP"
    set internet-service-id 4063240
next
edit "Zuora-Inbound_Email"
    set internet-service-id 4063241
next
edit "Zuora-LDAP"
    set internet-service-id 4063246
next
edit "Zuora-NetBIOS.Session.Service"
    set internet-service-id 4063247
next
edit "Zuora-RTMP"
    set internet-service-id 4063248
next
edit "Zuora-NetBIOS.Name.Service"
    set internet-service-id 4063256
next
edit "AdRoll-Other"
    set internet-service-id 4128768
next
edit "AdRoll-Web"
    set internet-service-id 4128769
next
edit "AdRoll-ICMP"
    set internet-service-id 4128770
next
edit "AdRoll-DNS"
    set internet-service-id 4128771
next
edit "AdRoll-Outbound_Email"
    set internet-service-id 4128772
next
edit "AdRoll-SSH"
    set internet-service-id 4128774
next
edit "AdRoll-FTP"
    set internet-service-id 4128775
next
edit "AdRoll-NTP"
    set internet-service-id 4128776
next
edit "AdRoll-Inbound_Email"
    set internet-service-id 4128777
```

```
next
edit "AdRoll-LDAP"
    set internet-service-id 4128782
next
edit "AdRoll-NetBIOS.Session.Service"
    set internet-service-id 4128783
next
edit "AdRoll-RTMP"
    set internet-service-id 4128784
next
edit "AdRoll-NetBIOS.Name.Service"
    set internet-service-id 4128792
next
edit "Xactly-Other"
    set internet-service-id 4194304
next
edit "Xactly-Web"
    set internet-service-id 4194305
next
edit "Xactly-ICMP"
    set internet-service-id 4194306
next
edit "Xactly-DNS"
    set internet-service-id 4194307
next
edit "Xactly-Outbound_Email"
    set internet-service-id 4194308
next
edit "Xactly-SSH"
    set internet-service-id 4194310
next
edit "Xactly-FTP"
    set internet-service-id 4194311
next
edit "Xactly-NTP"
    set internet-service-id 4194312
next
edit "Xactly-Inbound_Email"
    set internet-service-id 4194313
next
edit "Xactly-LDAP"
    set internet-service-id 4194318
next
edit "Xactly-NetBIOS.Session.Service"
    set internet-service-id 4194319
next
edit "Xactly-RTMP"
    set internet-service-id 4194320
next
```

```
edit "Xactly-NetBIOS.Name.Service"
    set internet-service-id 4194328
next
edit "Intuit-Other"
    set internet-service-id 4259840
next
edit "Intuit-Web"
    set internet-service-id 4259841
next
edit "Intuit-ICMP"
    set internet-service-id 4259842
next
edit "Intuit-DNS"
    set internet-service-id 4259843
next
edit "Intuit-Outbound_Email"
    set internet-service-id 4259844
next
edit "Intuit-SSH"
    set internet-service-id 4259846
next
edit "Intuit-FTP"
    set internet-service-id 4259847
next
edit "Intuit-NTP"
    set internet-service-id 4259848
next
edit "Intuit-Inbound_Email"
    set internet-service-id 4259849
next
edit "Intuit-LDAP"
    set internet-service-id 4259854
next
edit "Intuit-NetBIOS.Session.Service"
    set internet-service-id 4259855
next
edit "Intuit-RTMP"
    set internet-service-id 4259856
next
edit "Intuit-NetBIOS.Name.Service"
    set internet-service-id 4259864
next
edit "Marketo-Other"
    set internet-service-id 4325376
next
edit "Marketo-Web"
    set internet-service-id 4325377
next
edit "Marketo-ICMP"
```

```
    set internet-service-id 4325378
next
edit "Marketo-DNS"
    set internet-service-id 4325379
next
edit "Marketo-Outbound_Email"
    set internet-service-id 4325380
next
edit "Marketo-SSH"
    set internet-service-id 4325382
next
edit "Marketo-FTP"
    set internet-service-id 4325383
next
edit "Marketo-NTP"
    set internet-service-id 4325384
next
edit "Marketo-Inbound_Email"
    set internet-service-id 4325385
next
edit "Marketo-LDAP"
    set internet-service-id 4325390
next
edit "Marketo-NetBIOS.Session.Service"
    set internet-service-id 4325391
next
edit "Marketo-RTMP"
    set internet-service-id 4325392
next
edit "Marketo-NetBIOS.Name.Service"
    set internet-service-id 4325400
next
edit "Bill-Other"
    set internet-service-id 4456448
next
edit "Bill-Web"
    set internet-service-id 4456449
next
edit "Bill-ICMP"
    set internet-service-id 4456450
next
edit "Bill-DNS"
    set internet-service-id 4456451
next
edit "Bill-Outbound_Email"
    set internet-service-id 4456452
next
edit "Bill-SSH"
    set internet-service-id 4456454
```

```
next
edit "Bill-FTP"
    set internet-service-id 4456455
next
edit "Bill-NTP"
    set internet-service-id 4456456
next
edit "Bill-Inbound_Email"
    set internet-service-id 4456457
next
edit "Bill-LDAP"
    set internet-service-id 4456462
next
edit "Bill-NetBIOS.Session.Service"
    set internet-service-id 4456463
next
edit "Bill-RTMP"
    set internet-service-id 4456464
next
edit "Bill-NetBIOS.Name.Service"
    set internet-service-id 4456472
next
edit "Shopify-Other"
    set internet-service-id 4521984
next
edit "Shopify-Web"
    set internet-service-id 4521985
next
edit "Shopify-ICMP"
    set internet-service-id 4521986
next
edit "Shopify-DNS"
    set internet-service-id 4521987
next
edit "Shopify-Outbound_Email"
    set internet-service-id 4521988
next
edit "Shopify-SSH"
    set internet-service-id 4521990
next
edit "Shopify-FTP"
    set internet-service-id 4521991
next
edit "Shopify-NTP"
    set internet-service-id 4521992
next
edit "Shopify-Inbound_Email"
    set internet-service-id 4521993
next
```

```
edit "Shopify-LDAP"
    set internet-service-id 4521998
next
edit "Shopify-NetBIOS.Session.Service"
    set internet-service-id 4521999
next
edit "Shopify-RTMP"
    set internet-service-id 4522000
next
edit "Shopify-NetBIOS.Name.Service"
    set internet-service-id 4522008
next
edit "Shopify-Shopify"
    set internet-service-id 4522162
next
edit "MuleSoft-Other"
    set internet-service-id 4587520
next
edit "MuleSoft-Web"
    set internet-service-id 4587521
next
edit "MuleSoft-ICMP"
    set internet-service-id 4587522
next
edit "MuleSoft-DNS"
    set internet-service-id 4587523
next
edit "MuleSoft-Outbound_Email"
    set internet-service-id 4587524
next
edit "MuleSoft-SSH"
    set internet-service-id 4587526
next
edit "MuleSoft-FTP"
    set internet-service-id 4587527
next
edit "MuleSoft-NTP"
    set internet-service-id 4587528
next
edit "MuleSoft-Inbound_Email"
    set internet-service-id 4587529
next
edit "MuleSoft-LDAP"
    set internet-service-id 4587534
next
edit "MuleSoft-NetBIOS.Session.Service"
    set internet-service-id 4587535
next
edit "MuleSoft-RTMP"
```

```
    set internet-service-id 4587536
next
edit "MuleSoft-NetBIOS.Name.Service"
    set internet-service-id 4587544
next
edit "Cornerstone-Other"
    set internet-service-id 4653056
next
edit "Cornerstone-Web"
    set internet-service-id 4653057
next
edit "Cornerstone-ICMP"
    set internet-service-id 4653058
next
edit "Cornerstone-DNS"
    set internet-service-id 4653059
next
edit "Cornerstone-Outbound_Email"
    set internet-service-id 4653060
next
edit "Cornerstone-SSH"
    set internet-service-id 4653062
next
edit "Cornerstone-FTP"
    set internet-service-id 4653063
next
edit "Cornerstone-NTP"
    set internet-service-id 4653064
next
edit "Cornerstone-Inbound_Email"
    set internet-service-id 4653065
next
edit "Cornerstone-LDAP"
    set internet-service-id 4653070
next
edit "Cornerstone-NetBIOS.Session.Service"
    set internet-service-id 4653071
next
edit "Cornerstone-RTMP"
    set internet-service-id 4653072
next
edit "Cornerstone-NetBIOS.Name.Service"
    set internet-service-id 4653080
next
edit "Eventbrite-Other"
    set internet-service-id 4718592
next
edit "Eventbrite-Web"
    set internet-service-id 4718593
```

```
next
edit "Eventbrite-ICMP"
    set internet-service-id 4718594
next
edit "Eventbrite-DNS"
    set internet-service-id 4718595
next
edit "Eventbrite-Outbound_Email"
    set internet-service-id 4718596
next
edit "Eventbrite-SSH"
    set internet-service-id 4718598
next
edit "Eventbrite-FTP"
    set internet-service-id 4718599
next
edit "Eventbrite-NTP"
    set internet-service-id 4718600
next
edit "Eventbrite-Inbound_Email"
    set internet-service-id 4718601
next
edit "Eventbrite-LDAP"
    set internet-service-id 4718606
next
edit "Eventbrite-NetBIOS.Session.Service"
    set internet-service-id 4718607
next
edit "Eventbrite-RTMP"
    set internet-service-id 4718608
next
edit "Eventbrite-NetBIOS.Name.Service"
    set internet-service-id 4718616
next
edit "Paychex-Other"
    set internet-service-id 4784128
next
edit "Paychex-Web"
    set internet-service-id 4784129
next
edit "Paychex-ICMP"
    set internet-service-id 4784130
next
edit "Paychex-DNS"
    set internet-service-id 4784131
next
edit "Paychex-Outbound_Email"
    set internet-service-id 4784132
next
```

```
edit "Paychex-SSH"
    set internet-service-id 4784134
next
edit "Paychex-FTP"
    set internet-service-id 4784135
next
edit "Paychex-NTP"
    set internet-service-id 4784136
next
edit "Paychex-Inbound_Email"
    set internet-service-id 4784137
next
edit "Paychex-LDAP"
    set internet-service-id 4784142
next
edit "Paychex-NetBIOS.Session.Service"
    set internet-service-id 4784143
next
edit "Paychex-RTMP"
    set internet-service-id 4784144
next
edit "Paychex-NetBIOS.Name.Service"
    set internet-service-id 4784152
next
edit "NewRelic-Other"
    set internet-service-id 4849664
next
edit "NewRelic-Web"
    set internet-service-id 4849665
next
edit "NewRelic-ICMP"
    set internet-service-id 4849666
next
edit "NewRelic-DNS"
    set internet-service-id 4849667
next
edit "NewRelic-Outbound_Email"
    set internet-service-id 4849668
next
edit "NewRelic-SSH"
    set internet-service-id 4849670
next
edit "NewRelic-FTP"
    set internet-service-id 4849671
next
edit "NewRelic-NTP"
    set internet-service-id 4849672
next
edit "NewRelic-Inbound_Email"
```

```
    set internet-service-id 4849673
next
edit "NewRelic-LDAP"
    set internet-service-id 4849678
next
edit "NewRelic-NetBIOS.Session.Service"
    set internet-service-id 4849679
next
edit "NewRelic-RTMP"
    set internet-service-id 4849680
next
edit "NewRelic-NetBIOS.Name.Service"
    set internet-service-id 4849688
next
edit "Splunk-Other"
    set internet-service-id 4915200
next
edit "Splunk-Web"
    set internet-service-id 4915201
next
edit "Splunk-ICMP"
    set internet-service-id 4915202
next
edit "Splunk-DNS"
    set internet-service-id 4915203
next
edit "Splunk-Outbound_Email"
    set internet-service-id 4915204
next
edit "Splunk-SSH"
    set internet-service-id 4915206
next
edit "Splunk-FTP"
    set internet-service-id 4915207
next
edit "Splunk-NTP"
    set internet-service-id 4915208
next
edit "Splunk-Inbound_Email"
    set internet-service-id 4915209
next
edit "Splunk-LDAP"
    set internet-service-id 4915214
next
edit "Splunk-NetBIOS.Session.Service"
    set internet-service-id 4915215
next
edit "Splunk-RTMP"
    set internet-service-id 4915216
```

```
next
edit "Splunk-NetBIOS.Name.Service"
    set internet-service-id 4915224
next
edit "Domo-Other"
    set internet-service-id 4980736
next
edit "Domo-Web"
    set internet-service-id 4980737
next
edit "Domo-ICMP"
    set internet-service-id 4980738
next
edit "Domo-DNS"
    set internet-service-id 4980739
next
edit "Domo-Outbound_Email"
    set internet-service-id 4980740
next
edit "Domo-SSH"
    set internet-service-id 4980742
next
edit "Domo-FTP"
    set internet-service-id 4980743
next
edit "Domo-NTP"
    set internet-service-id 4980744
next
edit "Domo-Inbound_Email"
    set internet-service-id 4980745
next
edit "Domo-LDAP"
    set internet-service-id 4980750
next
edit "Domo-NetBIOS.Session.Service"
    set internet-service-id 4980751
next
edit "Domo-RTMP"
    set internet-service-id 4980752
next
edit "Domo-NetBIOS.Name.Service"
    set internet-service-id 4980760
next
edit "FreshBooks-Other"
    set internet-service-id 5046272
next
edit "FreshBooks-Web"
    set internet-service-id 5046273
next
```

```
edit "FreshBooks-ICMP"
    set internet-service-id 5046274
next
edit "FreshBooks-DNS"
    set internet-service-id 5046275
next
edit "FreshBooks-Outbound_Email"
    set internet-service-id 5046276
next
edit "FreshBooks-SSH"
    set internet-service-id 5046278
next
edit "FreshBooks-FTP"
    set internet-service-id 5046279
next
edit "FreshBooks-NTP"
    set internet-service-id 5046280
next
edit "FreshBooks-Inbound_Email"
    set internet-service-id 5046281
next
edit "FreshBooks-LDAP"
    set internet-service-id 5046286
next
edit "FreshBooks-NetBIOS.Session.Service"
    set internet-service-id 5046287
next
edit "FreshBooks-RTMP"
    set internet-service-id 5046288
next
edit "FreshBooks-NetBIOS.Name.Service"
    set internet-service-id 5046296
next
edit "Tableau-Other"
    set internet-service-id 5111808
next
edit "Tableau-Web"
    set internet-service-id 5111809
next
edit "Tableau-ICMP"
    set internet-service-id 5111810
next
edit "Tableau-DNS"
    set internet-service-id 5111811
next
edit "Tableau-Outbound_Email"
    set internet-service-id 5111812
next
edit "Tableau-SSH"
```

```
    set internet-service-id 5111814
next
edit "Tableau-FTP"
    set internet-service-id 5111815
next
edit "Tableau-NTP"
    set internet-service-id 5111816
next
edit "Tableau-Inbound_Email"
    set internet-service-id 5111817
next
edit "Tableau-LDAP"
    set internet-service-id 5111822
next
edit "Tableau-NetBIOS.Session.Service"
    set internet-service-id 5111823
next
edit "Tableau-RTMP"
    set internet-service-id 5111824
next
edit "Tableau-NetBIOS.Name.Service"
    set internet-service-id 5111832
next
edit "Druva-Other"
    set internet-service-id 5177344
next
edit "Druva-Web"
    set internet-service-id 5177345
next
edit "Druva-ICMP"
    set internet-service-id 5177346
next
edit "Druva-DNS"
    set internet-service-id 5177347
next
edit "Druva-Outbound_Email"
    set internet-service-id 5177348
next
edit "Druva-SSH"
    set internet-service-id 5177350
next
edit "Druva-FTP"
    set internet-service-id 5177351
next
edit "Druva-NTP"
    set internet-service-id 5177352
next
edit "Druva-Inbound_Email"
    set internet-service-id 5177353
```

```
next
edit "Druva-LDAP"
    set internet-service-id 5177358
next
edit "Druva-NetBIOS.Session.Service"
    set internet-service-id 5177359
next
edit "Druva-RTMP"
    set internet-service-id 5177360
next
edit "Druva-NetBIOS.Name.Service"
    set internet-service-id 5177368
next
edit "Act-on-Other"
    set internet-service-id 5242880
next
edit "Act-on-Web"
    set internet-service-id 5242881
next
edit "Act-on-ICMP"
    set internet-service-id 5242882
next
edit "Act-on-DNS"
    set internet-service-id 5242883
next
edit "Act-on-Outbound_Email"
    set internet-service-id 5242884
next
edit "Act-on-SSH"
    set internet-service-id 5242886
next
edit "Act-on-FTP"
    set internet-service-id 5242887
next
edit "Act-on-NTP"
    set internet-service-id 5242888
next
edit "Act-on-Inbound_Email"
    set internet-service-id 5242889
next
edit "Act-on-LDAP"
    set internet-service-id 5242894
next
edit "Act-on-NetBIOS.Session.Service"
    set internet-service-id 5242895
next
edit "Act-on-RTMP"
    set internet-service-id 5242896
next
```

```
edit "Act-on-NetBIOS.Name.Service"
    set internet-service-id 5242904
next
edit "GoodData-Other"
    set internet-service-id 5308416
next
edit "GoodData-Web"
    set internet-service-id 5308417
next
edit "GoodData-ICMP"
    set internet-service-id 5308418
next
edit "GoodData-DNS"
    set internet-service-id 5308419
next
edit "GoodData-Outbound_Email"
    set internet-service-id 5308420
next
edit "GoodData-SSH"
    set internet-service-id 5308422
next
edit "GoodData-FTP"
    set internet-service-id 5308423
next
edit "GoodData-NTP"
    set internet-service-id 5308424
next
edit "GoodData-Inbound_Email"
    set internet-service-id 5308425
next
edit "GoodData-LDAP"
    set internet-service-id 5308430
next
edit "GoodData-NetBIOS.Session.Service"
    set internet-service-id 5308431
next
edit "GoodData-RTMP"
    set internet-service-id 5308432
next
edit "GoodData-NetBIOS.Name.Service"
    set internet-service-id 5308440
next
edit "SurveyMonkey-Other"
    set internet-service-id 5373952
next
edit "SurveyMonkey-Web"
    set internet-service-id 5373953
next
edit "SurveyMonkey-ICMP"
```

```
    set internet-service-id 5373954
next
edit "SurveyMonkey-DNS"
    set internet-service-id 5373955
next
edit "SurveyMonkey-Outbound_Email"
    set internet-service-id 5373956
next
edit "SurveyMonkey-SSH"
    set internet-service-id 5373958
next
edit "SurveyMonkey-FTP"
    set internet-service-id 5373959
next
edit "SurveyMonkey-NTP"
    set internet-service-id 5373960
next
edit "SurveyMonkey-Inbound_Email"
    set internet-service-id 5373961
next
edit "SurveyMonkey-LDAP"
    set internet-service-id 5373966
next
edit "SurveyMonkey-NetBIOS.Session.Service"
    set internet-service-id 5373967
next
edit "SurveyMonkey-RTMP"
    set internet-service-id 5373968
next
edit "SurveyMonkey-NetBIOS.Name.Service"
    set internet-service-id 5373976
next
edit "Cvent-Other"
    set internet-service-id 5439488
next
edit "Cvent-Web"
    set internet-service-id 5439489
next
edit "Cvent-ICMP"
    set internet-service-id 5439490
next
edit "Cvent-DNS"
    set internet-service-id 5439491
next
edit "Cvent-Outbound_Email"
    set internet-service-id 5439492
next
edit "Cvent-SSH"
    set internet-service-id 5439494
```

```
next
edit "Cvent-FTP"
    set internet-service-id 5439495
next
edit "Cvent-NTP"
    set internet-service-id 5439496
next
edit "Cvent-Inbound_Email"
    set internet-service-id 5439497
next
edit "Cvent-LDAP"
    set internet-service-id 5439502
next
edit "Cvent-NetBIOS.Session.Service"
    set internet-service-id 5439503
next
edit "Cvent-RTMP"
    set internet-service-id 5439504
next
edit "Cvent-NetBIOS.Name.Service"
    set internet-service-id 5439512
next
edit "Blackbaud-Other"
    set internet-service-id 5505024
next
edit "Blackbaud-Web"
    set internet-service-id 5505025
next
edit "Blackbaud-ICMP"
    set internet-service-id 5505026
next
edit "Blackbaud-DNS"
    set internet-service-id 5505027
next
edit "Blackbaud-Outbound_Email"
    set internet-service-id 5505028
next
edit "Blackbaud-SSH"
    set internet-service-id 5505030
next
edit "Blackbaud-FTP"
    set internet-service-id 5505031
next
edit "Blackbaud-NTP"
    set internet-service-id 5505032
next
edit "Blackbaud-Inbound_Email"
    set internet-service-id 5505033
next
```

```
edit "Blackbaud-LDAP"
    set internet-service-id 5505038
next
edit "Blackbaud-NetBIOS.Session.Service"
    set internet-service-id 5505039
next
edit "Blackbaud-RTMP"
    set internet-service-id 5505040
next
edit "Blackbaud-NetBIOS.Name.Service"
    set internet-service-id 5505048
next
edit "InsideSales-Other"
    set internet-service-id 5570560
next
edit "InsideSales-Web"
    set internet-service-id 5570561
next
edit "InsideSales-ICMP"
    set internet-service-id 5570562
next
edit "InsideSales-DNS"
    set internet-service-id 5570563
next
edit "InsideSales-Outbound_Email"
    set internet-service-id 5570564
next
edit "InsideSales-SSH"
    set internet-service-id 5570566
next
edit "InsideSales-FTP"
    set internet-service-id 5570567
next
edit "InsideSales-NTP"
    set internet-service-id 5570568
next
edit "InsideSales-Inbound_Email"
    set internet-service-id 5570569
next
edit "InsideSales-LDAP"
    set internet-service-id 5570574
next
edit "InsideSales-NetBIOS.Session.Service"
    set internet-service-id 5570575
next
edit "InsideSales-RTMP"
    set internet-service-id 5570576
next
edit "InsideSales-NetBIOS.Name.Service"
```

```
    set internet-service-id 5570584
next
edit "ServiceMax-Other"
    set internet-service-id 5636096
next
edit "ServiceMax-Web"
    set internet-service-id 5636097
next
edit "ServiceMax-ICMP"
    set internet-service-id 5636098
next
edit "ServiceMax-DNS"
    set internet-service-id 5636099
next
edit "ServiceMax-Outbound_Email"
    set internet-service-id 5636100
next
edit "ServiceMax-SSH"
    set internet-service-id 5636102
next
edit "ServiceMax-FTP"
    set internet-service-id 5636103
next
edit "ServiceMax-NTP"
    set internet-service-id 5636104
next
edit "ServiceMax-Inbound_Email"
    set internet-service-id 5636105
next
edit "ServiceMax-LDAP"
    set internet-service-id 5636110
next
edit "ServiceMax-NetBIOS.Session.Service"
    set internet-service-id 5636111
next
edit "ServiceMax-RTMP"
    set internet-service-id 5636112
next
edit "ServiceMax-NetBIOS.Name.Service"
    set internet-service-id 5636120
next
edit "Apptio-Other"
    set internet-service-id 5701632
next
edit "Apptio-Web"
    set internet-service-id 5701633
next
edit "Apptio-ICMP"
    set internet-service-id 5701634
```

```
next
edit "Apptio-DNS"
    set internet-service-id 5701635
next
edit "Apptio-Outbound_Email"
    set internet-service-id 5701636
next
edit "Apptio-SSH"
    set internet-service-id 5701638
next
edit "Apptio-FTP"
    set internet-service-id 5701639
next
edit "Apptio-NTP"
    set internet-service-id 5701640
next
edit "Apptio-Inbound_Email"
    set internet-service-id 5701641
next
edit "Apptio-LDAP"
    set internet-service-id 5701646
next
edit "Apptio-NetBIOS.Session.Service"
    set internet-service-id 5701647
next
edit "Apptio-RTMP"
    set internet-service-id 5701648
next
edit "Apptio-NetBIOS.Name.Service"
    set internet-service-id 5701656
next
edit "Veracode-Other"
    set internet-service-id 5767168
next
edit "Veracode-Web"
    set internet-service-id 5767169
next
edit "Veracode-ICMP"
    set internet-service-id 5767170
next
edit "Veracode-DNS"
    set internet-service-id 5767171
next
edit "Veracode-Outbound_Email"
    set internet-service-id 5767172
next
edit "Veracode-SSH"
    set internet-service-id 5767174
next
```

```
edit "Veracode-FTP"
    set internet-service-id 5767175
next
edit "Veracode-NTP"
    set internet-service-id 5767176
next
edit "Veracode-Inbound_Email"
    set internet-service-id 5767177
next
edit "Veracode-LDAP"
    set internet-service-id 5767182
next
edit "Veracode-NetBIOS.Session.Service"
    set internet-service-id 5767183
next
edit "Veracode-RTMP"
    set internet-service-id 5767184
next
edit "Veracode-NetBIOS.Name.Service"
    set internet-service-id 5767192
next
edit "Anaplan-Other"
    set internet-service-id 5832704
next
edit "Anaplan-Web"
    set internet-service-id 5832705
next
edit "Anaplan-ICMP"
    set internet-service-id 5832706
next
edit "Anaplan-DNS"
    set internet-service-id 5832707
next
edit "Anaplan-Outbound_Email"
    set internet-service-id 5832708
next
edit "Anaplan-SSH"
    set internet-service-id 5832710
next
edit "Anaplan-FTP"
    set internet-service-id 5832711
next
edit "Anaplan-NTP"
    set internet-service-id 5832712
next
edit "Anaplan-Inbound_Email"
    set internet-service-id 5832713
next
edit "Anaplan-LDAP"
```

```
    set internet-service-id 5832718
next
edit "Anaplan-NetBIOS.Session.Service"
    set internet-service-id 5832719
next
edit "Anaplan-RTMP"
    set internet-service-id 5832720
next
edit "Anaplan-NetBIOS.Name.Service"
    set internet-service-id 5832728
next
edit "Rapid7-Other"
    set internet-service-id 5898240
next
edit "Rapid7-Web"
    set internet-service-id 5898241
next
edit "Rapid7-ICMP"
    set internet-service-id 5898242
next
edit "Rapid7-DNS"
    set internet-service-id 5898243
next
edit "Rapid7-Outbound_Email"
    set internet-service-id 5898244
next
edit "Rapid7-SSH"
    set internet-service-id 5898246
next
edit "Rapid7-FTP"
    set internet-service-id 5898247
next
edit "Rapid7-NTP"
    set internet-service-id 5898248
next
edit "Rapid7-Inbound_Email"
    set internet-service-id 5898249
next
edit "Rapid7-LDAP"
    set internet-service-id 5898254
next
edit "Rapid7-NetBIOS.Session.Service"
    set internet-service-id 5898255
next
edit "Rapid7-RTMP"
    set internet-service-id 5898256
next
edit "Rapid7-NetBIOS.Name.Service"
    set internet-service-id 5898264
```

```
next
edit "Anydesk-Anydesk"
    set internet-service-id 5963927
next
edit "ESET-Eset.Service"
    set internet-service-id 6029426
next
edit "Slack-Other"
    set internet-service-id 6094848
next
edit "Slack-Web"
    set internet-service-id 6094849
next
edit "Slack-ICMP"
    set internet-service-id 6094850
next
edit "Slack-DNS"
    set internet-service-id 6094851
next
edit "Slack-Outbound_Email"
    set internet-service-id 6094852
next
edit "Slack-SSH"
    set internet-service-id 6094854
next
edit "Slack-FTP"
    set internet-service-id 6094855
next
edit "Slack-NTP"
    set internet-service-id 6094856
next
edit "Slack-Inbound_Email"
    set internet-service-id 6094857
next
edit "Slack-LDAP"
    set internet-service-id 6094862
next
edit "Slack-NetBIOS.Session.Service"
    set internet-service-id 6094863
next
edit "Slack-RTMP"
    set internet-service-id 6094864
next
edit "Slack-NetBIOS.Name.Service"
    set internet-service-id 6094872
next
edit "Slack-Slack"
    set internet-service-id 6095024
next
```

```
edit "ADP-Other"
    set internet-service-id 6160384
next
edit "ADP-Web"
    set internet-service-id 6160385
next
edit "ADP-ICMP"
    set internet-service-id 6160386
next
edit "ADP-DNS"
    set internet-service-id 6160387
next
edit "ADP-Outbound_Email"
    set internet-service-id 6160388
next
edit "ADP-SSH"
    set internet-service-id 6160390
next
edit "ADP-FTP"
    set internet-service-id 6160391
next
edit "ADP-NTP"
    set internet-service-id 6160392
next
edit "ADP-Inbound_Email"
    set internet-service-id 6160393
next
edit "ADP-LDAP"
    set internet-service-id 6160398
next
edit "ADP-NetBIOS.Session.Service"
    set internet-service-id 6160399
next
edit "ADP-RTMP"
    set internet-service-id 6160400
next
edit "ADP-NetBIOS.Name.Service"
    set internet-service-id 6160408
next
edit "Blackboard-Other"
    set internet-service-id 6225920
next
edit "Blackboard-Web"
    set internet-service-id 6225921
next
edit "Blackboard-ICMP"
    set internet-service-id 6225922
next
edit "Blackboard-DNS"
```

```
    set internet-service-id 6225923
next
edit "Blackboard-Outbound_Email"
    set internet-service-id 6225924
next
edit "Blackboard-SSH"
    set internet-service-id 6225926
next
edit "Blackboard-FTP"
    set internet-service-id 6225927
next
edit "Blackboard-NTP"
    set internet-service-id 6225928
next
edit "Blackboard-Inbound_Email"
    set internet-service-id 6225929
next
edit "Blackboard-LDAP"
    set internet-service-id 6225934
next
edit "Blackboard-NetBIOS.Session.Service"
    set internet-service-id 6225935
next
edit "Blackboard-RTMP"
    set internet-service-id 6225936
next
edit "Blackboard-NetBIOS.Name.Service"
    set internet-service-id 6225944
next
edit "SAP-Other"
    set internet-service-id 6291456
next
edit "SAP-Web"
    set internet-service-id 6291457
next
edit "SAP-ICMP"
    set internet-service-id 6291458
next
edit "SAP-DNS"
    set internet-service-id 6291459
next
edit "SAP-Outbound_Email"
    set internet-service-id 6291460
next
edit "SAP-SSH"
    set internet-service-id 6291462
next
edit "SAP-FTP"
    set internet-service-id 6291463
```

```
next
edit "SAP-NTP"
    set internet-service-id 6291464
next
edit "SAP-Inbound_Email"
    set internet-service-id 6291465
next
edit "SAP-LDAP"
    set internet-service-id 6291470
next
edit "SAP-NetBIOS.Session.Service"
    set internet-service-id 6291471
next
edit "SAP-RTMP"
    set internet-service-id 6291472
next
edit "SAP-NetBIOS.Name.Service"
    set internet-service-id 6291480
next
edit "SAP-HANA"
    set internet-service-id 6291612
next
edit "SAP-SuccessFactors"
    set internet-service-id 6291618
next
edit "Snap-Snapchat"
    set internet-service-id 6357108
next
edit "Zoom.us-Zoom.Meeting"
    set internet-service-id 6422646
next
edit "Sophos-Other"
    set internet-service-id 6488064
next
edit "Sophos-Web"
    set internet-service-id 6488065
next
edit "Sophos-ICMP"
    set internet-service-id 6488066
next
edit "Sophos-DNS"
    set internet-service-id 6488067
next
edit "Sophos-Outbound_Email"
    set internet-service-id 6488068
next
edit "Sophos-SSH"
    set internet-service-id 6488070
next
```

```
edit "Sophos-FTP"
    set internet-service-id 6488071
next
edit "Sophos-NTP"
    set internet-service-id 6488072
next
edit "Sophos-Inbound_Email"
    set internet-service-id 6488073
next
edit "Sophos-LDAP"
    set internet-service-id 6488078
next
edit "Sophos-NetBIOS.Session.Service"
    set internet-service-id 6488079
next
edit "Sophos-RTMP"
    set internet-service-id 6488080
next
edit "Sophos-NetBIOS.Name.Service"
    set internet-service-id 6488088
next
edit "Cloudflare-Other"
    set internet-service-id 6553600
next
edit "Cloudflare-Web"
    set internet-service-id 6553601
next
edit "Cloudflare-ICMP"
    set internet-service-id 6553602
next
edit "Cloudflare-DNS"
    set internet-service-id 6553603
next
edit "Cloudflare-Outbound_Email"
    set internet-service-id 6553604
next
edit "Cloudflare-SSH"
    set internet-service-id 6553606
next
edit "Cloudflare-FTP"
    set internet-service-id 6553607
next
edit "Cloudflare-NTP"
    set internet-service-id 6553608
next
edit "Cloudflare-Inbound_Email"
    set internet-service-id 6553609
next
edit "Cloudflare-LDAP"
```

```
    set internet-service-id 6553614
next
edit "Cloudflare-NetBIOS.Session.Service"
    set internet-service-id 6553615
next
edit "Cloudflare-RTMP"
    set internet-service-id 6553616
next
edit "Cloudflare-NetBIOS.Name.Service"
    set internet-service-id 6553624
next
edit "Cloudflare-CDN"
    set internet-service-id 6553737
next
edit "Pexip-Pexip.Meeting"
    set internet-service-id 6619256
next
edit "Zscaler-Other"
    set internet-service-id 6684672
next
edit "Zscaler-Web"
    set internet-service-id 6684673
next
edit "Zscaler-ICMP"
    set internet-service-id 6684674
next
edit "Zscaler-DNS"
    set internet-service-id 6684675
next
edit "Zscaler-Outbound_Email"
    set internet-service-id 6684676
next
edit "Zscaler-SSH"
    set internet-service-id 6684678
next
edit "Zscaler-FTP"
    set internet-service-id 6684679
next
edit "Zscaler-NTP"
    set internet-service-id 6684680
next
edit "Zscaler-Inbound_Email"
    set internet-service-id 6684681
next
edit "Zscaler-LDAP"
    set internet-service-id 6684686
next
edit "Zscaler-NetBIOS.Session.Service"
    set internet-service-id 6684687
```

```
next
edit "Zscaler-RTMP"
    set internet-service-id 6684688
next
edit "Zscaler-NetBIOS.Name.Service"
    set internet-service-id 6684696
next
edit "Zscaler-Zscaler.Cloud"
    set internet-service-id 6684793
next
edit "Yandex-Other"
    set internet-service-id 6750208
next
edit "Yandex-Web"
    set internet-service-id 6750209
next
edit "Yandex-ICMP"
    set internet-service-id 6750210
next
edit "Yandex-DNS"
    set internet-service-id 6750211
next
edit "Yandex-Outbound_Email"
    set internet-service-id 6750212
next
edit "Yandex-SSH"
    set internet-service-id 6750214
next
edit "Yandex-FTP"
    set internet-service-id 6750215
next
edit "Yandex-NTP"
    set internet-service-id 6750216
next
edit "Yandex-Inbound_Email"
    set internet-service-id 6750217
next
edit "Yandex-LDAP"
    set internet-service-id 6750222
next
edit "Yandex-NetBIOS.Session.Service"
    set internet-service-id 6750223
next
edit "Yandex-RTMP"
    set internet-service-id 6750224
next
edit "Yandex-NetBIOS.Name.Service"
    set internet-service-id 6750232
next
```

```
edit "mail.ru-Other"
    set internet-service-id 6815744
next
edit "mail.ru-Web"
    set internet-service-id 6815745
next
edit "mail.ru-ICMP"
    set internet-service-id 6815746
next
edit "mail.ru-DNS"
    set internet-service-id 6815747
next
edit "mail.ru-Outbound_Email"
    set internet-service-id 6815748
next
edit "mail.ru-SSH"
    set internet-service-id 6815750
next
edit "mail.ru-FTP"
    set internet-service-id 6815751
next
edit "mail.ru-NTP"
    set internet-service-id 6815752
next
edit "mail.ru-Inbound_Email"
    set internet-service-id 6815753
next
edit "mail.ru-LDAP"
    set internet-service-id 6815758
next
edit "mail.ru-NetBIOS.Session.Service"
    set internet-service-id 6815759
next
edit "mail.ru-RTMP"
    set internet-service-id 6815760
next
edit "mail.ru-NetBIOS.Name.Service"
    set internet-service-id 6815768
next
edit "Alibaba-Other"
    set internet-service-id 6881280
next
edit "Alibaba-Web"
    set internet-service-id 6881281
next
edit "Alibaba-ICMP"
    set internet-service-id 6881282
next
edit "Alibaba-DNS"
```

```
    set internet-service-id 6881283
next
edit "Alibaba-Outbound_Email"
    set internet-service-id 6881284
next
edit "Alibaba-SSH"
    set internet-service-id 6881286
next
edit "Alibaba-FTP"
    set internet-service-id 6881287
next
edit "Alibaba-NTP"
    set internet-service-id 6881288
next
edit "Alibaba-Inbound_Email"
    set internet-service-id 6881289
next
edit "Alibaba-LDAP"
    set internet-service-id 6881294
next
edit "Alibaba-NetBIOS.Session.Service"
    set internet-service-id 6881295
next
edit "Alibaba-RTMP"
    set internet-service-id 6881296
next
edit "Alibaba-NetBIOS.Name.Service"
    set internet-service-id 6881304
next
edit "Alibaba-Alibaba.Cloud"
    set internet-service-id 6881402
next
edit "GoDaddy-Other"
    set internet-service-id 6946816
next
edit "GoDaddy-Web"
    set internet-service-id 6946817
next
edit "GoDaddy-ICMP"
    set internet-service-id 6946818
next
edit "GoDaddy-DNS"
    set internet-service-id 6946819
next
edit "GoDaddy-Outbound_Email"
    set internet-service-id 6946820
next
edit "GoDaddy-SSH"
    set internet-service-id 6946822
```

```
next
edit "GoDaddy-FTP"
    set internet-service-id 6946823
next
edit "GoDaddy-NTP"
    set internet-service-id 6946824
next
edit "GoDaddy-Inbound_Email"
    set internet-service-id 6946825
next
edit "GoDaddy-LDAP"
    set internet-service-id 6946830
next
edit "GoDaddy-NetBIOS.Session.Service"
    set internet-service-id 6946831
next
edit "GoDaddy-RTMP"
    set internet-service-id 6946832
next
edit "GoDaddy-NetBIOS.Name.Service"
    set internet-service-id 6946840
next
edit "GoDaddy-GoDaddy.Email"
    set internet-service-id 6946939
next
edit "Bluejeans-Other"
    set internet-service-id 7012352
next
edit "Bluejeans-Web"
    set internet-service-id 7012353
next
edit "Bluejeans-ICMP"
    set internet-service-id 7012354
next
edit "Bluejeans-DNS"
    set internet-service-id 7012355
next
edit "Bluejeans-Outbound_Email"
    set internet-service-id 7012356
next
edit "Bluejeans-SSH"
    set internet-service-id 7012358
next
edit "Bluejeans-FTP"
    set internet-service-id 7012359
next
edit "Bluejeans-NTP"
    set internet-service-id 7012360
next
```

```
edit "Bluejeans-Inbound_Email"
    set internet-service-id 7012361
next
edit "Bluejeans-LDAP"
    set internet-service-id 7012366
next
edit "Bluejeans-NetBIOS.Session.Service"
    set internet-service-id 7012367
next
edit "Bluejeans-RTMP"
    set internet-service-id 7012368
next
edit "Bluejeans-NetBIOS.Name.Service"
    set internet-service-id 7012376
next
edit "Bluejeans-Bluejeans.Meeting"
    set internet-service-id 7012476
next
edit "Webroot-Webroot.SecureAnywhere"
    set internet-service-id 7078013
next
edit "Avast-Other"
    set internet-service-id 7143424
next
edit "Avast-Web"
    set internet-service-id 7143425
next
edit "Avast-ICMP"
    set internet-service-id 7143426
next
edit "Avast-DNS"
    set internet-service-id 7143427
next
edit "Avast-Outbound_Email"
    set internet-service-id 7143428
next
edit "Avast-SSH"
    set internet-service-id 7143430
next
edit "Avast-FTP"
    set internet-service-id 7143431
next
edit "Avast-NTP"
    set internet-service-id 7143432
next
edit "Avast-Inbound_Email"
    set internet-service-id 7143433
next
edit "Avast-LDAP"
```

```
    set internet-service-id 7143438
next
edit "Avast-NetBIOS.Session.Service"
    set internet-service-id 7143439
next
edit "Avast-RTMP"
    set internet-service-id 7143440
next
edit "Avast-NetBIOS.Name.Service"
    set internet-service-id 7143448
next
edit "Avast-Avast.Security"
    set internet-service-id 7143550
next
edit "Wetransfer-Other"
    set internet-service-id 7208960
next
edit "Wetransfer-Web"
    set internet-service-id 7208961
next
edit "Wetransfer-ICMP"
    set internet-service-id 7208962
next
edit "Wetransfer-DNS"
    set internet-service-id 7208963
next
edit "Wetransfer-Outbound_Email"
    set internet-service-id 7208964
next
edit "Wetransfer-SSH"
    set internet-service-id 7208966
next
edit "Wetransfer-FTP"
    set internet-service-id 7208967
next
edit "Wetransfer-NTP"
    set internet-service-id 7208968
next
edit "Wetransfer-Inbound_Email"
    set internet-service-id 7208969
next
edit "Wetransfer-LDAP"
    set internet-service-id 7208974
next
edit "Wetransfer-NetBIOS.Session.Service"
    set internet-service-id 7208975
next
edit "Wetransfer-RTMP"
    set internet-service-id 7208976
```

```
next
edit "Wetransfer-NetBIOS.Name.Service"
    set internet-service-id 7208984
next
edit "Sendgrid-Sendgrid.Email"
    set internet-service-id 7274623
next
edit "Ubiquiti-UniFi"
    set internet-service-id 7340160
next
edit "Lifesize-Lifesize.Cloud"
    set internet-service-id 7405697
next
edit "Okta-Other"
    set internet-service-id 7471104
next
edit "Okta-Web"
    set internet-service-id 7471105
next
edit "Okta-ICMP"
    set internet-service-id 7471106
next
edit "Okta-DNS"
    set internet-service-id 7471107
next
edit "Okta-Outbound_Email"
    set internet-service-id 7471108
next
edit "Okta-SSH"
    set internet-service-id 7471110
next
edit "Okta-FTP"
    set internet-service-id 7471111
next
edit "Okta-NTP"
    set internet-service-id 7471112
next
edit "Okta-Inbound_Email"
    set internet-service-id 7471113
next
edit "Okta-LDAP"
    set internet-service-id 7471118
next
edit "Okta-NetBIOS.Session.Service"
    set internet-service-id 7471119
next
edit "Okta-RTMP"
    set internet-service-id 7471120
next
```

```
edit "Okta-NetBIOS.Name.Service"
    set internet-service-id 7471128
next
edit "Okta-Okta"
    set internet-service-id 7471307
next
edit "Cybozu-Other"
    set internet-service-id 7536640
next
edit "Cybozu-Web"
    set internet-service-id 7536641
next
edit "Cybozu-ICMP"
    set internet-service-id 7536642
next
edit "Cybozu-DNS"
    set internet-service-id 7536643
next
edit "Cybozu-Outbound_Email"
    set internet-service-id 7536644
next
edit "Cybozu-SSH"
    set internet-service-id 7536646
next
edit "Cybozu-FTP"
    set internet-service-id 7536647
next
edit "Cybozu-NTP"
    set internet-service-id 7536648
next
edit "Cybozu-Inbound_Email"
    set internet-service-id 7536649
next
edit "Cybozu-LDAP"
    set internet-service-id 7536654
next
edit "Cybozu-NetBIOS.Session.Service"
    set internet-service-id 7536655
next
edit "Cybozu-RTMP"
    set internet-service-id 7536656
next
edit "Cybozu-NetBIOS.Name.Service"
    set internet-service-id 7536664
next
edit "VNC-Other"
    set internet-service-id 7602176
next
edit "VNC-Web"
```

```
    set internet-service-id 7602177
next
edit "VNC-ICMP"
    set internet-service-id 7602178
next
edit "VNC-DNS"
    set internet-service-id 7602179
next
edit "VNC-Outbound_Email"
    set internet-service-id 7602180
next
edit "VNC-SSH"
    set internet-service-id 7602182
next
edit "VNC-FTP"
    set internet-service-id 7602183
next
edit "VNC-NTP"
    set internet-service-id 7602184
next
edit "VNC-Inbound_Email"
    set internet-service-id 7602185
next
edit "VNC-LDAP"
    set internet-service-id 7602190
next
edit "VNC-NetBIOS.Session.Service"
    set internet-service-id 7602191
next
edit "VNC-RTMP"
    set internet-service-id 7602192
next
edit "VNC-NetBIOS.Name.Service"
    set internet-service-id 7602200
next
edit "Egnyte-Egnyte"
    set internet-service-id 7667846
next
edit "CrowdStrike-CrowdStrike.Cloud"
    set internet-service-id 7733383
next
edit "Aruba.it-Other"
    set internet-service-id 7798784
next
edit "Aruba.it-Web"
    set internet-service-id 7798785
next
edit "Aruba.it-ICMP"
    set internet-service-id 7798786
```

```
next
edit "Aruba.it-DNS"
    set internet-service-id 7798787
next
edit "Aruba.it-Outbound_Email"
    set internet-service-id 7798788
next
edit "Aruba.it-SSH"
    set internet-service-id 7798790
next
edit "Aruba.it-FTP"
    set internet-service-id 7798791
next
edit "Aruba.it-NTP"
    set internet-service-id 7798792
next
edit "Aruba.it-Inbound_Email"
    set internet-service-id 7798793
next
edit "Aruba.it-LDAP"
    set internet-service-id 7798798
next
edit "Aruba.it-NetBIOS.Session.Service"
    set internet-service-id 7798799
next
edit "Aruba.it-RTMP"
    set internet-service-id 7798800
next
edit "Aruba.it-NetBIOS.Name.Service"
    set internet-service-id 7798808
next
edit "ISLOnline-Other"
    set internet-service-id 7864320
next
edit "ISLOnline-Web"
    set internet-service-id 7864321
next
edit "ISLOnline-ICMP"
    set internet-service-id 7864322
next
edit "ISLOnline-DNS"
    set internet-service-id 7864323
next
edit "ISLOnline-Outbound_Email"
    set internet-service-id 7864324
next
edit "ISLOnline-SSH"
    set internet-service-id 7864326
next
```

```
edit "ISLOnline-FTP"
    set internet-service-id 7864327
next
edit "ISLOnline-NTP"
    set internet-service-id 7864328
next
edit "ISLOnline-Inbound_Email"
    set internet-service-id 7864329
next
edit "ISLOnline-LDAP"
    set internet-service-id 7864334
next
edit "ISLOnline-NetBIOS.Session.Service"
    set internet-service-id 7864335
next
edit "ISLOnline-RTMP"
    set internet-service-id 7864336
next
edit "ISLOnline-NetBIOS.Name.Service"
    set internet-service-id 7864344
next
edit "Akamai-CDN"
    set internet-service-id 7929993
next
edit "Rackspace-CDN"
    set internet-service-id 7995529
next
edit "Instart-CDN"
    set internet-service-id 8061065
next
edit "Bitdefender-Other"
    set internet-service-id 8126464
next
edit "Bitdefender-Web"
    set internet-service-id 8126465
next
edit "Bitdefender-ICMP"
    set internet-service-id 8126466
next
edit "Bitdefender-DNS"
    set internet-service-id 8126467
next
edit "Bitdefender-Outbound_Email"
    set internet-service-id 8126468
next
edit "Bitdefender-SSH"
    set internet-service-id 8126470
next
edit "Bitdefender-FTP"
```

```
    set internet-service-id 8126471
next
edit "Bitdefender-NTP"
    set internet-service-id 8126472
next
edit "Bitdefender-Inbound_Email"
    set internet-service-id 8126473
next
edit "Bitdefender-LDAP"
    set internet-service-id 8126478
next
edit "Bitdefender-NetBIOS.Session.Service"
    set internet-service-id 8126479
next
edit "Bitdefender-RTMP"
    set internet-service-id 8126480
next
edit "Bitdefender-NetBIOS.Name.Service"
    set internet-service-id 8126488
next
edit "Pingdom-Other"
    set internet-service-id 8192000
next
edit "Pingdom-Web"
    set internet-service-id 8192001
next
edit "Pingdom-ICMP"
    set internet-service-id 8192002
next
edit "Pingdom-DNS"
    set internet-service-id 8192003
next
edit "Pingdom-Outbound_Email"
    set internet-service-id 8192004
next
edit "Pingdom-SSH"
    set internet-service-id 8192006
next
edit "Pingdom-FTP"
    set internet-service-id 8192007
next
edit "Pingdom-NTP"
    set internet-service-id 8192008
next
edit "Pingdom-Inbound_Email"
    set internet-service-id 8192009
next
edit "Pingdom-LDAP"
    set internet-service-id 8192014
```

```
next
edit "Pingdom-NetBIOS.Session.Service"
    set internet-service-id 8192015
next
edit "Pingdom-RTMP"
    set internet-service-id 8192016
next
edit "Pingdom-NetBIOS.Name.Service"
    set internet-service-id 8192024
next
edit "UptimeRobot-Other"
    set internet-service-id 8257536
next
edit "UptimeRobot-Web"
    set internet-service-id 8257537
next
edit "UptimeRobot-ICMP"
    set internet-service-id 8257538
next
edit "UptimeRobot-DNS"
    set internet-service-id 8257539
next
edit "UptimeRobot-Outbound_Email"
    set internet-service-id 8257540
next
edit "UptimeRobot-SSH"
    set internet-service-id 8257542
next
edit "UptimeRobot-FTP"
    set internet-service-id 8257543
next
edit "UptimeRobot-NTP"
    set internet-service-id 8257544
next
edit "UptimeRobot-Inbound_Email"
    set internet-service-id 8257545
next
edit "UptimeRobot-LDAP"
    set internet-service-id 8257550
next
edit "UptimeRobot-NetBIOS.Session.Service"
    set internet-service-id 8257551
next
edit "UptimeRobot-RTMP"
    set internet-service-id 8257552
next
edit "UptimeRobot-NetBIOS.Name.Service"
    set internet-service-id 8257560
next
```

```
edit "UptimeRobot-UptimeRobot.Monitor"
    set internet-service-id 8257709
next
edit "Quovadisglobal-Other"
    set internet-service-id 8323072
next
edit "Quovadisglobal-Web"
    set internet-service-id 8323073
next
edit "Quovadisglobal-ICMP"
    set internet-service-id 8323074
next
edit "Quovadisglobal-DNS"
    set internet-service-id 8323075
next
edit "Quovadisglobal-Outbound_Email"
    set internet-service-id 8323076
next
edit "Quovadisglobal-SSH"
    set internet-service-id 8323078
next
edit "Quovadisglobal-FTP"
    set internet-service-id 8323079
next
edit "Quovadisglobal-NTP"
    set internet-service-id 8323080
next
edit "Quovadisglobal-Inbound_Email"
    set internet-service-id 8323081
next
edit "Quovadisglobal-LDAP"
    set internet-service-id 8323086
next
edit "Quovadisglobal-NetBIOS.Session.Service"
    set internet-service-id 8323087
next
edit "Quovadisglobal-RTMP"
    set internet-service-id 8323088
next
edit "Quovadisglobal-NetBIOS.Name.Service"
    set internet-service-id 8323096
next
edit "Splashtop-Splashtop"
    set internet-service-id 8388751
next
edit "Zoox-Other"
    set internet-service-id 8454144
next
edit "Zoox-Web"
```

```
    set internet-service-id 8454145
next
edit "Zoox-ICMP"
    set internet-service-id 8454146
next
edit "Zoox-DNS"
    set internet-service-id 8454147
next
edit "Zoox-Outbound_Email"
    set internet-service-id 8454148
next
edit "Zoox-SSH"
    set internet-service-id 8454150
next
edit "Zoox-FTP"
    set internet-service-id 8454151
next
edit "Zoox-NTP"
    set internet-service-id 8454152
next
edit "Zoox-Inbound_Email"
    set internet-service-id 8454153
next
edit "Zoox-LDAP"
    set internet-service-id 8454158
next
edit "Zoox-NetBIOS.Session.Service"
    set internet-service-id 8454159
next
edit "Zoox-RTMP"
    set internet-service-id 8454160
next
edit "Zoox-NetBIOS.Name.Service"
    set internet-service-id 8454168
next
edit "Skyfii-Other"
    set internet-service-id 8519680
next
edit "Skyfii-Web"
    set internet-service-id 8519681
next
edit "Skyfii-ICMP"
    set internet-service-id 8519682
next
edit "Skyfii-DNS"
    set internet-service-id 8519683
next
edit "Skyfii-Outbound_Email"
    set internet-service-id 8519684
```

```
next
edit "Skyfii-SSH"
    set internet-service-id 8519686
next
edit "Skyfii-FTP"
    set internet-service-id 8519687
next
edit "Skyfii-NTP"
    set internet-service-id 8519688
next
edit "Skyfii-Inbound_Email"
    set internet-service-id 8519689
next
edit "Skyfii-LDAP"
    set internet-service-id 8519694
next
edit "Skyfii-NetBIOS.Session.Service"
    set internet-service-id 8519695
next
edit "Skyfii-RTMP"
    set internet-service-id 8519696
next
edit "Skyfii-NetBIOS.Name.Service"
    set internet-service-id 8519704
next
edit "CoffeeBean-Other"
    set internet-service-id 8585216
next
edit "CoffeeBean-Web"
    set internet-service-id 8585217
next
edit "CoffeeBean-ICMP"
    set internet-service-id 8585218
next
edit "CoffeeBean-DNS"
    set internet-service-id 8585219
next
edit "CoffeeBean-Outbound_Email"
    set internet-service-id 8585220
next
edit "CoffeeBean-SSH"
    set internet-service-id 8585222
next
edit "CoffeeBean-FTP"
    set internet-service-id 8585223
next
edit "CoffeeBean-NTP"
    set internet-service-id 8585224
next
```

```
edit "CoffeeBean-Inbound_Email"
    set internet-service-id 8585225
next
edit "CoffeeBean-LDAP"
    set internet-service-id 8585230
next
edit "CoffeeBean-NetBIOS.Session.Service"
    set internet-service-id 8585231
next
edit "CoffeeBean-RTMP"
    set internet-service-id 8585232
next
edit "CoffeeBean-NetBIOS.Name.Service"
    set internet-service-id 8585240
next
edit "Cloud4Wi-Other"
    set internet-service-id 8650752
next
edit "Cloud4Wi-Web"
    set internet-service-id 8650753
next
edit "Cloud4Wi-ICMP"
    set internet-service-id 8650754
next
edit "Cloud4Wi-DNS"
    set internet-service-id 8650755
next
edit "Cloud4Wi-Outbound_Email"
    set internet-service-id 8650756
next
edit "Cloud4Wi-SSH"
    set internet-service-id 8650758
next
edit "Cloud4Wi-FTP"
    set internet-service-id 8650759
next
edit "Cloud4Wi-NTP"
    set internet-service-id 8650760
next
edit "Cloud4Wi-Inbound_Email"
    set internet-service-id 8650761
next
edit "Cloud4Wi-LDAP"
    set internet-service-id 8650766
next
edit "Cloud4Wi-NetBIOS.Session.Service"
    set internet-service-id 8650767
next
edit "Cloud4Wi-RTMP"
```

```
    set internet-service-id 8650768
next
edit "Cloud4Wi-NetBIOS.Name.Service"
    set internet-service-id 8650776
next
edit "Panda-Panda.Security"
    set internet-service-id 8716432
next
edit "Ewon-Talk2M"
    set internet-service-id 8781970
next
edit "Nutanix-Nutanix.Cloud"
    set internet-service-id 8847507
next
edit "Backblaze-Other"
    set internet-service-id 8912896
next
edit "Backblaze-Web"
    set internet-service-id 8912897
next
edit "Backblaze-ICMP"
    set internet-service-id 8912898
next
edit "Backblaze-DNS"
    set internet-service-id 8912899
next
edit "Backblaze-Outbound_Email"
    set internet-service-id 8912900
next
edit "Backblaze-SSH"
    set internet-service-id 8912902
next
edit "Backblaze-FTP"
    set internet-service-id 8912903
next
edit "Backblaze-NTP"
    set internet-service-id 8912904
next
edit "Backblaze-Inbound_Email"
    set internet-service-id 8912905
next
edit "Backblaze-LDAP"
    set internet-service-id 8912910
next
edit "Backblaze-NetBIOS.Session.Service"
    set internet-service-id 8912911
next
edit "Backblaze-RTMP"
    set internet-service-id 8912912
```

```
next
edit "Backblaze-NetBIOS.Name.Service"
    set internet-service-id 8912920
next
edit "Aerohive-Aerohive.Cloud"
    set internet-service-id 8978580
next
edit "XING-Other"
    set internet-service-id 9043968
next
edit "XING-Web"
    set internet-service-id 9043969
next
edit "XING-ICMP"
    set internet-service-id 9043970
next
edit "XING-DNS"
    set internet-service-id 9043971
next
edit "XING-Outbound_Email"
    set internet-service-id 9043972
next
edit "XING-SSH"
    set internet-service-id 9043974
next
edit "XING-FTP"
    set internet-service-id 9043975
next
edit "XING-NTP"
    set internet-service-id 9043976
next
edit "XING-Inbound_Email"
    set internet-service-id 9043977
next
edit "XING-LDAP"
    set internet-service-id 9043982
next
edit "XING-NetBIOS.Session.Service"
    set internet-service-id 9043983
next
edit "XING-RTMP"
    set internet-service-id 9043984
next
edit "XING-NetBIOS.Name.Service"
    set internet-service-id 9043992
next
edit "Genesys-PureCloud"
    set internet-service-id 9109653
next
```

```
edit "BlackBerry-Cylance"
    set internet-service-id 9175190
next
edit "DigiCert-OCSP"
    set internet-service-id 9240728
next
edit "Infomaniak-SwissTransfer"
    set internet-service-id 9306265
next
edit "Fuze-Fuze"
    set internet-service-id 9371802
next
edit "Truecaller-Truecaller"
    set internet-service-id 9437339
next
edit "GlobalSign-OCSP"
    set internet-service-id 9502872
next
edit "VeriSign-OCSP"
    set internet-service-id 9568408
next
edit "Sony-PlayStation.Network"
    set internet-service-id 9633952
next
edit "Acronis-Cyber.Cloud"
    set internet-service-id 9699489
next
edit "RingCentral-RingCentral"
    set internet-service-id 9765027
next
edit "FSecure-FSecure"
    set internet-service-id 9830564
next
edit "Kaseya-Kaseya.Cloud"
    set internet-service-id 9896101
next
edit "Shodan-Scanner"
    set internet-service-id 9961638
next
edit "Censys-Scanner"
    set internet-service-id 10027174
next
edit "Valve-Steam"
    set internet-service-id 10092711
next
edit "YouSeeU-Bongo"
    set internet-service-id 10158248
next
edit "Cato-Cato.Cloud"
```

```
    set internet-service-id 10223785
next
edit "Solarwinds-SpamExperts"
    set internet-service-id 10289323
next
edit "Solarwinds-Pingdom.Probe"
    set internet-service-id 10289326
next
edit "8X8-8X8.Cloud"
    set internet-service-id 10354860
next
edit "Zattoo-Zattoo.TV"
    set internet-service-id 10420401
next
edit "Datto-Datto.RMM"
    set internet-service-id 10485939
next
edit "Barracuda-Barracuda.Cloud"
    set internet-service-id 10551477
next
edit "Naver-Line"
    set internet-service-id 10617015
next
edit "Disney-Disney+"
    set internet-service-id 10682552
next
edit "DNS-DoH_DoT"
    set internet-service-id 10748089
next
edit "Quad9-Quad9.Standard.DNS"
    set internet-service-id 10813626
next
edit "Stretchoid-Scanner"
    set internet-service-id 10879142
next
edit "Poly-RealConnect.Service"
    set internet-service-id 10944700
next
edit "Telegram-Telegram"
    set internet-service-id 11010249
next
edit "Spotify-Spotify"
    set internet-service-id 11075786
next
edit "NextDNS-NextDNS"
    set internet-service-id 11141324
next
edit "Fastly-CDN"
    set internet-service-id 11206793
```

```
next
edit "Neustar-UltraDNS.Probes"
    set internet-service-id 11272397
next
end
config firewall internet-service-definition
end
config system cluster-sync
end
config system email-server
    set server "notification.fortinet.net"
    set port 465
    set security smtps
end
config system session-helper
    edit 1
        set name pptp
        set protocol 6
        set port 1723
    next
    edit 2
        set name h323
        set protocol 6
        set port 1720
    next
    edit 3
        set name ras
        set protocol 17
        set port 1719
    next
    edit 4
        set name tns
        set protocol 6
        set port 1521
    next
    edit 5
        set name tftp
        set protocol 17
        set port 69
    next
    edit 6
        set name rtsp
        set protocol 6
        set port 554
    next
    edit 7
        set name rtsp
        set protocol 6
        set port 7070
```

```
next
edit 8
    set name rtsp
    set protocol 6
    set port 8554
next
edit 9
    set name ftp
    set protocol 6
    set port 21
next
edit 10
    set name mms
    set protocol 6
    set port 1863
next
edit 11
    set name pmap
    set protocol 6
    set port 111
next
edit 12
    set name pmap
    set protocol 17
    set port 111
next
edit 13
    set name sip
    set protocol 17
    set port 5060
next
edit 14
    set name dns-udp
    set protocol 17
    set port 53
next
edit 15
    set name rsh
    set protocol 6
    set port 514
next
edit 16
    set name rsh
    set protocol 6
    set port 512
next
edit 17
    set name dcerpc
    set protocol 6
```

```
    set port 135
next
edit 18
    set name dcerpc
    set protocol 17
    set port 135
next
edit 19
    set name mgcp
    set protocol 17
    set port 2427
next
edit 20
    set name mgcp
    set protocol 17
    set port 2727
next
end
config system auto-install
    set auto-install-config enable
    set auto-install-image enable
end
config system ntp
    set ntpsync enable
    set server-mode enable
    set interface "fortilink"
end
config system ftm-push
    set server-cert "Fortinet_Factory"
end
config system automation-trigger
    edit "Network Down"
        set event-type event-log
        set logid 20099
        config fields
            edit 1
                set name "status"
                set value "DOWN"
            next
        end
    next
    edit "HA Failover"
        set event-type ha-failover
    next
    edit "Reboot"
        set event-type reboot
    next
    edit "FortiAnalyzer Connection Down"
        set event-type event-log
```

```
    set logid 22902
next
edit "License Expired Notification"
    set event-type license-near-expiry
    set license-type any
next
edit "Compromised Host Quarantine"
next
edit "Incoming Webhook Call"
    set event-type incoming-webhook
next
edit "Security Rating Notification"
    set event-type security-rating-summary
next
end
config system automation-action
    edit "Network Down_email"
        set action-type email
        set email-subject "Network Down"
    next
    edit "HA Failover_email"
        set action-type email
        set email-subject "HA Failover"
    next
    edit "Reboot_email"
        set action-type email
        set email-subject "Reboot"
    next
    edit "FortiAnalyzer Connection Down_ios-notification"
        set action-type ios-notification
    next
    edit "License Expired Notification_ios-notification"
        set action-type ios-notification
    next
    edit "Compromised Host Quarantine_quarantine"
        set action-type quarantine
    next
    edit "Compromised Host Quarantine_quarantine-forticlient"
        set action-type quarantine-forticlient
    next
    edit "Security Rating Notification_ios-notification"
        set action-type ios-notification
    next
end
config system automation-stitch
    edit "Network Down"
        set status disable
        set trigger "Network Down"
        set action "Network Down_email"
```

```
next
edit "HA Failover"
    set status disable
    set trigger "HA Failover"
    set action "HA Failover_email"
next
edit "Reboot"
    set status disable
    set trigger "Reboot"
    set action "Reboot_email"
next
edit "FortiAnalyzer Connection Down"
    set trigger "FortiAnalyzer Connection Down"
    set action "FortiAnalyzer Connection Down_ios-notification"
next
edit "License Expired Notification"
    set trigger "License Expired Notification"
    set action "License Expired Notification_ios-notification"
next
edit "Compromised Host Quarantine"
    set status disable
    set trigger "Compromised Host Quarantine"
    set action "Compromised Host Quarantine_quarantine" "Compromised Host Quarantine_quarantine-forticlient"
next
edit "Incoming Webhook Quarantine"
    set status disable
    set trigger "Incoming Webhook Call"
    set action "Compromised Host Quarantine_quarantine" "Compromised Host Quarantine_quarantine-forticlient"
next
edit "Security Rating Notification"
    set trigger "Security Rating Notification"
    set action "Security Rating Notification_ios-notification"
next
end
config system object-tagging
    edit "default"
    next
end
config switch-controller traffic-policy
    edit "quarantine"
        set description "Rate control for quarantined traffic"
        set guaranteed-bandwidth 163840
        set guaranteed-burst 8192
        set maximum-burst 163840
        set cos-queue 0
        set id 1
next
```

```
edit "sniffer"
    set description "Rate control for sniffer mirrored traffic"
    set guaranteed-bandwidth 50000
    set guaranteed-burst 8192
    set maximum-burst 163840
    set cos-queue 0
    set id 2
    next
end
config system settings
    set gui-dos-policy enable
end
config system dhcp server
    edit 2
        set ntp-service local
        set default-gateway 169.254.1.1
        set netmask 255.255.255.0
        set interface "fortilink"
        config ip-range
            edit 1
                set start-ip 169.254.1.2
                set end-ip 169.254.1.254
            next
        end
        set vci-match enable
        set vci-string "FortiSwitch" "FortiExtender"
    next
end
config firewall address
    edit "none"
        set uuid 17a39fd6-b6a1-51ed-32fb-05eb8a5f4f95
        set subnet 0.0.0.0 255.255.255.255
    next
    edit "login.microsoftonline.com"
        set uuid 17a3bdf4-b6a1-51ed-0602-8d03a868bf57
        set type fqdn
        set fqdn "login.microsoftonline.com"
    next
    edit "login.microsoft.com"
        set uuid 17a3d852-b6a1-51ed-fa87-ec13c4ae9516
        set type fqdn
        set fqdn "login.microsoft.com"
    next
    edit "login.windows.net"
        set uuid 17a3f04e-b6a1-51ed-31e9-17fa92f000b2
        set type fqdn
        set fqdn "login.windows.net"
    next
    edit "gmail.com"
```

```
set uuid 17a40818-b6a1-51ed-b80c-83d3a4de1a80
set type fqdn
set fqdn "gmail.com"
next
edit "wildcard.google.com"
    set uuid 17a41fec-b6a1-51ed-6c47-54fec3894f13
    set type fqdn
    set fqdn "*.google.com"
next
edit "wildcard.dropbox.com"
    set uuid 17a437d4-b6a1-51ed-cd3b-f68ff7c6c1c7
    set type fqdn
    set fqdn "*.dropbox.com"
next
edit "all"
    set uuid 17b5119e-b6a1-51ed-cf26-9ab4694f3527
next
edit "FIREWALL_AUTH_PORTAL_ADDRESS"
    set uuid 17b51c7a-b6a1-51ed-adbd-66787cbe827c
next
edit "FABRIC_DEVICE"
    set uuid 17b5262a-b6a1-51ed-1b72-5e500577cbdb
    set comment "IPv4 addresses of Fabric Devices."
next
edit "SSLVPN_TUNNEL_ADDR1"
    set uuid 17b73d3e-b6a1-51ed-d242-1ed8b111203b
    set type iprange
    set associated-interface "ssl.root"
    set start-ip 10.212.134.200
    set end-ip 10.212.134.210
next
edit "lan"
    set uuid 1da5d1f6-b6a1-51ed-23d0-53b4dac70327
    set type interface-subnet
    set subnet 192.168.2.99 255.255.255.0
    set interface "lan"
next
edit "FCTEMS_ALL_FORTICLOUD_SERVERS"
    set uuid c15f9458-b6a6-51ed-8a9e-59df4a2bc3de
    set type dynamic
    set sub-type ems-tag
next
edit "botnet address"
    set uuid 02b8c75a-b8f3-51ed-da52-7b3c3694b6c5
    set type interface-subnet
    set subnet 192.168.1.199 255.255.255.0
    set interface "botnet"
next
end
```

```
config firewall multicast-address
    edit "all"
        set start-ip 224.0.0.0
        set end-ip 239.255.255.255
    next
    edit "all_hosts"
        set start-ip 224.0.0.1
        set end-ip 224.0.0.1
    next
    edit "all_routers"
        set start-ip 224.0.0.2
        set end-ip 224.0.0.2
    next
    edit "Bonjour"
        set start-ip 224.0.0.251
        set end-ip 224.0.0.251
    next
    edit "EIGRP"
        set start-ip 224.0.0.10
        set end-ip 224.0.0.10
    next
    edit "OSPF"
        set start-ip 224.0.0.5
        set end-ip 224.0.0.6
    next
end
config firewall address6
    edit "SSLVPN_TUNNEL_IPv6_ADDR1"
        set uuid 17b74e32-b6a1-51ed-429d-fc56ea33c0d3
        set ip6 fdff:ffff::/120
    next
    edit "all"
        set uuid 17a4c988-b6a1-51ed-8ee7-95944be82db6
    next
    edit "none"
        set uuid 17a4dec8-b6a1-51ed-13d1-8203463aa93a
        set ip6 ::/128
    next
end
config firewall multicast-address6
    edit "all"
        set ip6 ff00::/8
    next
end
config firewall addrgrp
    edit "G Suite"
        set uuid 17a453cc-b6a1-51ed-f631-42970279fe87
        set member "gmail.com" "wildcard.google.com"
    next
```

```
edit "Microsoft Office 365"
    set uuid 17a4870c-b6a1-51ed-0c64-9f68ef3f54c1
    set member "login.microsoftonline.com" "login.microsoft.com" "login.windows.net"
next
end
config firewall wildcard-fqdn custom
edit "adobe"
    set uuid 1974dfbe-b6a1-51ed-3870-5f6d5c98ebde
    set wildcard-fqdn "*.adobe.com"
next
edit "Adobe Login"
    set uuid 1974e70c-b6a1-51ed-4495-0737b4da6779
    set wildcard-fqdn "*.adobelogin.com"
next
edit "android"
    set uuid 1974ee00-b6a1-51ed-0bfe-906d314d9f63
    set wildcard-fqdn "*.android.com"
next
edit "apple"
    set uuid 1974f4ea-b6a1-51ed-f3bc-233d5b6485d8
    set wildcard-fqdn "*.apple.com"
next
edit "appstore"
    set uuid 1974fb4-b6a1-51ed-23bc-bcb829c1920d
    set wildcard-fqdn "*.appstore.com"
next
edit "auth.gfx.ms"
    set uuid 197502d2-b6a1-51ed-9025-c17d99534fe4
    set wildcard-fqdn "*.auth.gfx.ms"
next
edit "citrix"
    set uuid 197509d0-b6a1-51ed-32d8-3a953fbcf305
    set wildcard-fqdn "*.citrixonline.com"
next
edit "dropbox.com"
    set uuid 197510ce-b6a1-51ed-b211-17120da0b112
    set wildcard-fqdn "*.dropbox.com"
next
edit "eease"
    set uuid 197517e0-b6a1-51ed-c2d7-8e32b84dce37
    set wildcard-fqdn "*.eease.com"
next
edit "firefox update server"
    set uuid 19751ee8-b6a1-51ed-316d-e3daedaeb26b
    set wildcard-fqdn "aus*.mozilla.org"
next
edit "fortinet"
    set uuid 19752604-b6a1-51ed-8542-a1d5d81b577b
    set wildcard-fqdn "*.fortinet.com"
```

```
next
edit "googleapis.com"
    set uuid 19752d16-b6a1-51ed-dbc7-ba439cb63b73
    set wildcard-fqdn "*.googleapis.com"
next
edit "google-drive"
    set uuid 19753428-b6a1-51ed-75d8-4888f62d5c1f
    set wildcard-fqdn "*drive.google.com"
next
edit "google-play2"
    set uuid 19753b4e-b6a1-51ed-2b4e-a672dbbd8144
    set wildcard-fqdn "*.ggpht.com"
next
edit "google-play3"
    set uuid 19754274-b6a1-51ed-ae4c-e1811dfb55fe
    set wildcard-fqdn "*.books.google.com"
next
edit "Gotomeeting"
    set uuid 19754990-b6a1-51ed-7636-410afbe6d2d5
    set wildcard-fqdn "*.gotomeeting.com"
next
edit "icloud"
    set uuid 197552a0-b6a1-51ed-a459-4fdecfc8d85
    set wildcard-fqdn "*.icloud.com"
next
edit "itunes"
    set uuid 19755a0c-b6a1-51ed-3e77-b879e36564d9
    set wildcard-fqdn "*itunes.apple.com"
next
edit "microsoft"
    set uuid 19756132-b6a1-51ed-f048-3c1864b3fedb
    set wildcard-fqdn "*.microsoft.com"
next
edit "skype"
    set uuid 1975684e-b6a1-51ed-f42f-4af3ce14da62
    set wildcard-fqdn "*.messenger.live.com"
next
edit "softwareupdate.vmware.com"
    set uuid 19756f74-b6a1-51ed-dcfa-bdd1be84fb2
    set wildcard-fqdn "*.softwareupdate.vmware.com"
next
edit "verisign"
    set uuid 1975769a-b6a1-51ed-800d-c7ddc6e8eeaf
    set wildcard-fqdn "*.verisign.com"
next
edit "Windows update 2"
    set uuid 19757dc0-b6a1-51ed-ed57-b723ecde90bf
    set wildcard-fqdn "*.windowsupdate.com"
next
```

```
edit "live.com"
    set uuid 19758536-b6a1-51ed-7b3d-1958eb5c1022
    set wildcard-fqdn "*live.com"
next
edit "google-play"
    set uuid 19758c70-b6a1-51ed-b10f-92d0bd309649
    set wildcard-fqdn "*play.google.com"
next
edit "update.microsoft.com"
    set uuid 197593a0-b6a1-51ed-44ec-7fb2834f4dc4
    set wildcard-fqdn "*update.microsoft.com"
next
edit "swscan.apple.com"
    set uuid 19759ada-b6a1-51ed-8a5e-c7e2238a095a
    set wildcard-fqdn "*swscan.apple.com"
next
edit "autoupdate.opera.com"
    set uuid 1975a25a-b6a1-51ed-95cb-e440130b05ec
    set wildcard-fqdn "*autoupdate.opera.com"
next
end
config firewall service category
edit "General"
    set comment "General services."
next
edit "Web Access"
    set comment "Web access."
next
edit "File Access"
    set comment "File access."
next
edit "Email"
    set comment "Email services."
next
edit "Network Services"
    set comment "Network services."
next
edit "Authentication"
    set comment "Authentication service."
next
edit "Remote Access"
    set comment "Remote access."
next
edit "Tunneling"
    set comment "Tunneling service."
next
edit "VoIP, Messaging & Other Applications"
    set comment "VoIP, messaging, and other applications."
next
```

```
edit "Web Proxy"
    set comment "Explicit web proxy."
next
end
config firewall service custom
    edit "DNS"
        set category "Network Services"
        set tcp-portrange 53
        set udp-portrange 53
next
edit "HTTP"
    set category "Web Access"
    set tcp-portrange 80
next
edit "HTTPS"
    set category "Web Access"
    set tcp-portrange 443
next
edit "IMAP"
    set category "Email"
    set tcp-portrange 143
next
edit "IMAPS"
    set category "Email"
    set tcp-portrange 993
next
edit "LDAP"
    set category "Authentication"
    set tcp-portrange 389
next
edit "DCE-RPC"
    set category "Remote Access"
    set tcp-portrange 135
    set udp-portrange 135
next
edit "POP3"
    set category "Email"
    set tcp-portrange 110
next
edit "POP3S"
    set category "Email"
    set tcp-portrange 995
next
edit "SAMBA"
    set category "File Access"
    set tcp-portrange 139
next
edit "SMTP"
    set category "Email"
```

```
    set tcp-portrange 25
next
edit "SMTPS"
    set category "Email"
    set tcp-portrange 465
next
edit "KERBEROS"
    set category "Authentication"
    set tcp-portrange 88 464
    set udp-portrange 88 464
next
edit "LDAP_UDP"
    set category "Authentication"
    set udp-portrange 389
next
edit "SMB"
    set category "File Access"
    set tcp-portrange 445
next
edit "ALL"
    set category "General"
    set protocol IP
next
edit "ALL_TCP"
    set category "General"
    set tcp-portrange 1-65535
next
edit "ALL_UDP"
    set category "General"
    set udp-portrange 1-65535
next
edit "ALL_ICMP"
    set category "General"
    set protocol ICMP
    unset icmptype
next
edit "ALL_ICMP6"
    set category "General"
    set protocol ICMP6
    unset icmptype
next
edit "GRE"
    set category "Tunneling"
    set protocol IP
    set protocol-number 47
next
edit "AH"
    set category "Tunneling"
    set protocol IP
```

```
    set protocol-number 51
next
edit "ESP"
    set category "Tunneling"
    set protocol IP
    set protocol-number 50
next
edit "AOL"
    set visibility disable
    set tcp-portrange 5190-5194
next
edit "BGP"
    set category "Network Services"
    set tcp-portrange 179
next
edit "DHCP"
    set category "Network Services"
    set udp-portrange 67-68
next
edit "FINGER"
    set visibility disable
    set tcp-portrange 79
next
edit "FTP"
    set category "File Access"
    set tcp-portrange 21
next
edit "FTP_GET"
    set category "File Access"
    set tcp-portrange 21
next
edit "FTP_PUT"
    set category "File Access"
    set tcp-portrange 21
next
edit "GOPHER"
    set visibility disable
    set tcp-portrange 70
next
edit "H323"
    set category "VoIP, Messaging & Other Applications"
    set tcp-portrange 1720 1503
    set udp-portrange 1719
next
edit "IKE"
    set category "Tunneling"
    set udp-portrange 500 4500
next
edit "Internet-Locator-Service"
```

```
    set visibility disable
    set tcp-portrange 389
next
edit "IRC"
    set category "VoIP, Messaging & Other Applications"
    set tcp-portrange 6660-6669
next
edit "L2TP"
    set category "Tunneling"
    set tcp-portrange 1701
    set udp-portrange 1701
next
edit "NetMeeting"
    set visibility disable
    set tcp-portrange 1720
next
edit "NFS"
    set category "File Access"
    set tcp-portrange 111 2049
    set udp-portrange 111 2049
next
edit "NNTP"
    set visibility disable
    set tcp-portrange 119
next
edit "NTP"
    set category "Network Services"
    set tcp-portrange 123
    set udp-portrange 123
next
edit "OSPF"
    set category "Network Services"
    set protocol IP
    set protocol-number 89
next
edit "PC-Anywhere"
    set category "Remote Access"
    set tcp-portrange 5631
    set udp-portrange 5632
next
edit "PING"
    set category "Network Services"
    set protocol ICMP
    set icmptype 8
    unset icmpcode
next
edit "TIMESTAMP"
    set protocol ICMP
    set visibility disable
```

```
    set icmptype 13
    unset icmpcode
next
edit "INFO_REQUEST"
    set protocol ICMP
    set visibility disable
    set icmptype 15
    unset icmpcode
next
edit "INFO_ADDRESS"
    set protocol ICMP
    set visibility disable
    set icmptype 17
    unset icmpcode
next
edit "ONC-RPC"
    set category "Remote Access"
    set tcp-portrange 111
    set udp-portrange 111
next
edit "PPTP"
    set category "Tunneling"
    set tcp-portrange 1723
next
edit "QUAKE"
    set visibility disable
    set udp-portrange 26000 27000 27910 27960
next
edit "RAUDIO"
    set visibility disable
    set udp-portrange 7070
next
edit "REXEC"
    set visibility disable
    set tcp-portrange 512
next
edit "RIP"
    set category "Network Services"
    set udp-portrange 520
next
edit "RLOGIN"
    set visibility disable
    set tcp-portrange 513:512-1023
next
edit "RSH"
    set visibility disable
    set tcp-portrange 514:512-1023
next
edit "SCCP"
```

```
    set category "VoIP, Messaging & Other Applications"
    set tcp-portrange 2000
next
edit "SIP"
    set category "VoIP, Messaging & Other Applications"
    set tcp-portrange 5060
    set udp-portrange 5060
next
edit "SIP-MSNmessenger"
    set category "VoIP, Messaging & Other Applications"
    set tcp-portrange 1863
next
edit "SNMP"
    set category "Network Services"
    set tcp-portrange 161-162
    set udp-portrange 161-162
next
edit "SSH"
    set category "Remote Access"
    set tcp-portrange 22
next
edit "SYSLOG"
    set category "Network Services"
    set udp-portrange 514
next
edit "TALK"
    set visibility disable
    set udp-portrange 517-518
next
edit "TELNET"
    set category "Remote Access"
    set tcp-portrange 23
next
edit "TFTP"
    set category "File Access"
    set udp-portrange 69
next
edit "MGCP"
    set visibility disable
    set udp-portrange 2427 2727
next
edit "UUCP"
    set visibility disable
    set tcp-portrange 540
next
edit "VDOLIVE"
    set visibility disable
    set tcp-portrange 7000-7010
next
```

```
edit "WAIS"
    set visibility disable
    set tcp-portrange 21
next
edit "WINFRAME"
    set visibility disable
    set tcp-portrange 1494 2598
next
edit "X-WINDOWS"
    set category "Remote Access"
    set tcp-portrange 6000-6063
next
edit "PING6"
    set protocol ICMP6
    set visibility disable
    set icmptype 128
    unset icmpcode
next
edit "MS-SQL"
    set category "VoIP, Messaging & Other Applications"
    set tcp-portrange 1433 1434
next
edit "MYSQL"
    set category "VoIP, Messaging & Other Applications"
    set tcp-portrange 3306
next
edit "RDP"
    set category "Remote Access"
    set tcp-portrange 3389
next
edit "VNC"
    set category "Remote Access"
    set tcp-portrange 5900
next
edit "DHCP6"
    set category "Network Services"
    set udp-portrange 546 547
next
edit "SQUID"
    set category "Tunneling"
    set tcp-portrange 3128
next
edit "SOCKS"
    set category "Tunneling"
    set tcp-portrange 1080
    set udp-portrange 1080
next
edit "WINS"
    set category "Remote Access"
```

```
        set tcp-portrange 1512
        set udp-portrange 1512
    next
    edit "RADIUS"
        set category "Authentication"
        set udp-portrange 1812 1813
    next
    edit "RADIUS-OLD"
        set visibility disable
        set udp-portrange 1645 1646
    next
    edit "CVSPSERVER"
        set visibility disable
        set tcp-portrange 2401
        set udp-portrange 2401
    next
    edit "AFS3"
        set category "File Access"
        set tcp-portrange 7000-7009
        set udp-portrange 7000-7009
    next
    edit "TRACEROUTE"
        set category "Network Services"
        set udp-portrange 33434-33535
    next
    edit "RTSP"
        set category "VoIP, Messaging & Other Applications"
        set tcp-portrange 554 7070 8554
        set udp-portrange 554
    next
    edit "MMS"
        set visibility disable
        set tcp-portrange 1755
        set udp-portrange 1024-5000
    next
    edit "NONE"
        set visibility disable
        set tcp-portrange 0
    next
    edit "webproxy"
        set proxy enable
        set category "Web Proxy"
        set protocol ALL
        set tcp-portrange 0-65535:0-65535
    next
end
config firewall service group
    edit "Email Access"
        set member "DNS" "IMAP" "IMAPS" "POP3" "POP3S" "SMTP" "SMTPTS"
```

```

next
edit "Web Access"
    set member "DNS" "HTTP" "HTTPS"
next
edit "Windows AD"
    set member "DCE-RPC" "DNS" "KERBEROS" "LDAP" "LDAP_UDP" "SAMBA"
"SMB"
next
edit "Exchange Server"
    set member "DCE-RPC" "DNS" "HTTPS"
next
end
config vpn certificate ca
end
config vpn certificate local
    edit "Fortinet_CA_SSL"
        set password ENC qvWdI8kTTWQ6+UvP2p9Uf7wGIPXOYAVGk71bEZ-
NcNDW3bwaaJ1he/v9Tkvv51nPyxKKQgVp33PxFU-
jJnLl3Tm71HC9s5wEdPm2tYitOifnsaMGWQKXby9szSKX-
HaPoaO5gsr8RWTea4J8HH26+U+r7BjgDr8rMcXpXdZTbA26LkmVm2oh6mMhLLf7to
mEatS7Tikhg==

        set comments "This is the default CA certificate the SSL Inspection will use when
generating new server certificates."
        set private-key "----BEGIN ENCRYPTED PRIVATE KEY-----
MIIFHDBOBgkqhkiG9w0BBQ0wQTApBgkqhkiG9w0BBQwwHAQIWnKbYsxYPG-
sCaggA
MAwGCCqGSIB3DQIJBQAwFAYIKoZIhvcNAwcECOEeS4KNxH8qBIIEyDMfcxT-
bSq7a
8AI8votqPgKj+vdKYMMXDyFa9z64hkDwzWDREvf0fhOUMDBU4jqrtsf2XGuy15e
wYcRfwImisUjHXwATR3DDFUfFjrn1RFSOIgupR4sL3pI2JKA2kjHbg1NXn3S2Mjy
5d2Xp+gqLrRjhDXt6xnVVw58/EL/upk34hBSFuI6rlB8wZz/WTQ69k17ebg6tZyB
dUgABo1/BMJQBkinNwl+KbjWicrr40WrYa3bv1rW/EyrHNdUyiidDuk+iPIIzwCa
NVDIDgL0vOiPXT1flqQv7jwmKiyD0WleXpIyMUhnVZb2KrTBrBP4FUXtLuoMdfDg
EdU8xqIR2XkMh+3d/xRjU+qCfLginzknsejLmZBLnDIHyWxCVPuPesIEzyMqUpET
omo6CTn+dalnFccuPDcjAdgF7s0viq75O2RHjde95CG/DoDq7wQoteLNN3iZ86A
cVTyX5/IfnFirs4lqngPP85FL9MXueJvZX6yiM2Vu24fUaazcOaDMjF7eumum+oB
WTZMmX0ICCI7iGqIH4v8aS01X8U5BPHL+5Wkbc2ihPP1WGtoXuPXRaO1g2BXuh
2
TMVidIL9P8htrT+fYztU1cUiseZ43rtOTMzy5AfeNvzlmURqAuD4q2m7LeZeUQt
MFnIiHerrMheML3QpXi1/N46WN6HFn6A55aVoY/gKbgq3gUArL5BwIL4PSLsGYWz
LtgE6APcRvlS9xe+KbBhGperBBysbOaYrt+8SIUYXzimPBFQF8yHevsbhX8nrVEe
QptQlSqE1bm9BqHqfWoC+pz1E824Yvk3wWFWrbrAiz2i28WPaj1ZXFwQ4LNXY5L8
VHpQJ4gs0UuqGtNao6Gd5OTYfwIW93YbJ5ZsowQISS92WilVzkcJ9LJaBtV7RNBs
q2dEpGCWeg+4OV3qTJQzMpf89VKPjDdmYn+F8r1d8AibmUS-
wffgF+tWFP1sQYvG3
aUvH9wjSl2fr4GqTg7yAeP72kYSooOe02nTeTAO7XqIx04l9ZCRJ20Ad+LP4QYcyg
bnyNknHCkTNaoZz14WNCF4uql6OmCuEc4706fS/tRTKFr6cKjyW52yxBdSsKcLZt
Sd1s+lSFxEtqWTTOp/yiQNEINWqJXnffbJcuSzILClGLC6+BRIfmPDgaBEkka/5L

```

SfkC2w06FcNWWH9wAXYkcXtelnBn2MyCMYncO08E6O1UN-
omxNax53JXlfpa2PGOb
p1AhzE///oprHzJkuH0KELtuQLX8dd341ByczmAzhJEEjMms7bcUMAYYyaBCrSMo
gh8bUHZKT1a6PJt5yBOs/qxP6YOGcx4DCbN/6DkxXmvRwYUjal3UWsXiSlj63U7G
pn0E19ze2va3FwNc8fI+n+4IvVrtkxT011IePGtwrpJwwJVxvYtVte9YjZ7jsyed
AFI44X/hQ4i2SRS7oKG8x3Xy5UxoxnMbPBkdhD5+iXBE/ekAOWwaPqfZgif2IprQ
x+pfap7H3QICF2NipVSnoD7HWmf1KhkO1z5GjOb-
wKKLW/prsyQZnw9hdBCPxOXUd
ZeEmVuyvMKTagliCymTQgnMNwx1vNp-
MOv1t4x2J6DpEXz2GzMdm+woDhf+P/YwD1
02YwVF9MvO6tWQ4oFafl/w==
-----END ENCRYPTED PRIVATE KEY-----"
set certificate "-----BEGIN CERTIFICATE-----
MIID5jCCAs6gAwIBAgIIKnYic1TdlrwDQYJKoZIhvcNAQELBQAwgakxCzAJBgNV
BAYTAIVTMRMwEQYDVQQIDApDYWxpZm9ybmlhMRI-
wEAYDVQQHDAITdW5ueXZhbGUx
ETAPBgNVBAoMCEZvcnRpbmV0MR4wHAY-
DVQLDBVDZXJ0aWZpY2F0ZSBdXRob3Jp
dHkxGTAXBgNVBAMMEZHVDQwRlRLMjIwMjQzMjQxIzAhBgkqh-
kiG9w0BCQEWFHN1
cHBvcnRAZm9ydGluZXQuY29tMB4XDThz-
MDIyNzEzMTcxNFoXDTMzMDIyNzEzMTcx
NFowgakxCzAJBgNVBAYTAIVTMRMwEQYDVQQIDApDYWxpZm9ybmlhMRI-
wEAYDVQQH
DAITdW5ueXZhbGUxETAPBgNVBAoMCEZvcnRpbmV0MR4wHAY-
DVQLDBVDZXJ0aWZp
Y2F0ZSBdXRob3JpdHkxGTAXBgNVBAMMEZHVDQwRlRL-
MjIwMjQzMjQxIzAhBgkqh
hkiG9w0BCQEWFHN1cHBvcnRAZm9ydGluZXQuY29tMIIBIjANBgkqh-
kiG9w0BAQEF
AAOCAQ8AMIIB-
CgKCAQEAvsho52mi/xDjxNewoWFJYFO5qlP7hsRn9xw4PVd65IFz
lvnMjYoTc9pTsN+6sDXFQYasLzQaDQBx+9z2n52hML7erMZRY9IkyFlo5jyLf5r
U4XjRueqOwOl+sqfZqd/gLrk1cF+tXMJDmyx1v8RwmWMvhs4hFG9tIJdNjAMIS/K
uwHfakRdn9StVLDjBiTFuQIICyC/u9HBirvtmt/n8tvjQZAvPd+QejVZ9pk04ZmK
LIkDgmLEZ7RsosqlZR2m30lDT7uIHHQbQa5Hc6tRloLEEMEPAGgaxPHxtZ4S6bTUg
wqymRjsemhu7MmerVRjMGn7cb2uwNu7iKaY5xSbxeQIDAQA-
BoxAwDjAMBgNVHRME
BTADAQH/MA0GCSqG-
SIb3DQEBCwUA4IBAQBJnTAH0H3o3mHL2Rlbm0neFYcbpHE
arakvhZaEdeiQ0qWEx43N4sZowz+Ct+HZxAcDawR8+cbeLFGWZjU/F+1rsMyoXYX
wqcu4JQqXXPN67zknad2OJNi3KU1UZ2hH5EFUXwawzd0O+aF9/g+AjJMMdh2uq+t
GKbrMS64dPujBC+U9pbdyb/fSddUBm1anwXBhxQ6NEpQMr6s2q833LkzhWpxttgi
PKMFDFQPMxi0ubkvfyL4FWV79YwTmzGS/T4ztg5G4yMVYQTo8mSwwlEVbtZY19a
8
idyKWGb6IpntF+fhnEsZ7YvwJvaieccbrFINH2drtgJlRhKSICVw527v
-----END CERTIFICATE-----"
set range global
set source factory

```

        set last-updated 1677503852
    next
    edit "Fortinet_CA_Untrusted"
        set password ENC S34cf6sLNWSrFUK1b+ugdK-
plh5fq019veJ3Mgj2XKVTBlaXLqZuiKt209VWqj4+orHwKPCPhK7rqnhBSjt-
WALTD3PZEjqjR52yBZ5C19S33dxERSOLz9p+Lg25NkcByZyMeqo3rqs4kYUoYKGw
ZBrsWR8VQVrqvpwCQdDFNpC5m6Y/oJafgF0zlmA2Odt6NNj/9w==
        set comments "This is the default CA certificate the SSL Inspection will use when
generating new server certificates."
        set private-key "-----BEGIN ENCRYPTED PRIVATE KEY-----
MIIFHDBOBgkqhkiG9w0BBQ0wQTApBgkqh-
kiG9w0BBQwwHAQI7VgZ8AqzxJUCAggA
MAwGCCqGSIB3DQIJBQAwFAYIKoZIhvcNAwcECGqIeAvxzXayBIIEyJAarW6si6Fi
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3B
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a
Zl1PJLUd+NIxqtKIC2dlP5gKg6q61IAGroEzdKi/TIG+cwX4o5MXlk4MukzAhymd
PbV5MKnczPBIPqd02n3t/TNRGJk6h5zdPWD052hvR9mTEQ+h7DLw1ejw+9QLSA+
H
2DNhCXOOD-
hEJXwH1JEuqxtBV1JN3uD7eLOk5y99GMmtd4fglHoNoUwomx0Ndzb3G
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rTM
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ds3QOqPvQA9NtBEUEf1uaJ8OjmMi485NLwZEGaSM39pIdftRdCsatCxy747bGyt
UJln6fiTGxHrVl2rUGQSUHNYj0KgEhzdso02M2+3naGhnymPTezav5SNwBxNCW9I
/kbJpd21fv07SDrJmtXq/w==
-----END ENCRYPTED PRIVATE KEY-----
        set certificate "-----BEGIN CERTIFICATE-----
MIID8DCCA0igAwIBAgIILEmTIJ8w8T0wDQYJKoZIhvc
NAQELBQAwga4xCzAJBgNV

```

```

BAYTAIVTMRMwEQYDVQQIDApDYWxpZm9ybmlhMRI-
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SIb3DQEJ
AR-
YUc3VwcG9ydEBmb3J0aW5ldC5jb20wHhcNMjMwMjI3MTMxNzE0WhcNMzMwMjI3
MTMxNzE0WjCBrjELMAkGA1UEBhMCVVMxEzARBgNVBAgMC-
kNhbgLmb3JuaWEExEjAQ
BgNVAcMCVN1bm55dmFsZTERMA8GA1UECgwIRm9ydGluZXQxH-
jAcBgNVBAsMFUNI
cnRpZmljYXRlIEF1dGhvcmloTeMBwGA1UEAwVRm9yd-
GluZXQgVW50cnVzdGVk
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SIwDQYJ
KoZIhvcNAQEBBQADggEPADCCAQoCggE-
BALOMHTqU1X1g6A7O1LL1RYAMBIieIBD
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kiG9w0BAQsFAAOCAQEAIG/iWG5vvYBn80d4
38wgx6EOCXqdAdyvQBrIVcFWoAQuz61L/B/iPRVBc5TOdPKq54sxp64vCNF6BVQ2
GXMYOwEDY9HNlITOPar-
hoomEQeIAB4sFKV3S+Dzy8GIhkXPTmP9OtsvHOo4vD8kx
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gKzrIVRdxIMXLIjWDtAKVbgPwYeSKP2SIUV2BN171Kl8ar7JEy5uzz6a6putz94P
W2jNYQ==

-----END CERTIFICATE-----
      set range global
      set source factory
      set last-updated 1677503852
      next
      edit "Fortinet_SSL"
          set password ENC vIH2vGR7P+h+P60iZf96Law1shp0lzTbmmn-
NEgt4qxu7Yx/SNFRjXcxuuJXkqQxmc1dsGG92QDsMs+zqfN+XSis-
Bjx0qrkq4E330Rl8rDKXOF7a+v0X73twC30aQyJq+p4JwJSmDqZGQ87KhIyJ28kYHa-
fuKZZiTz0zQbQPFl0JAFmFc2m/uFigw6aLtlB5eg9zlw==
          set comments "This certificate is embedded in the hardware at the factory and is
unique to this unit."
          set private-key "-----BEGIN ENCRYPTED PRIVATE KEY-----
MIIFHDBOBgkqhkiG9w0BBQ0wQTApBgkqh-
kiG9w0BBQwwHAQI36kJ750vYk8CAggA

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MAwGCCqGSIB3DQIJBQAwFAYIKoZIhvcNAwcECCR9EvvnoQSGBIIEyExkGjHX-aGVV
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W
5fUXNx4pMW81HAUATqXSxBWvShX7CvCAW7XOxsIZ-
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4toc/8Cbs4CXxh+mBINC6w==
-----END ENCRYPTED PRIVATE KEY-----"
set certificate "-----BEGIN CERTIFICATE-----
MIID4DCCAsigAwIBAgIIRICauu+5v18wDQYJKoZIhvc-
NAQELBQAwgZ0xCzAJBgNV
BAYTAIVTMRMwEQYDVQQIDApDYWxpZm9ybmlhMRI-
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BgNVBAMM
EEZHVVDQwR1RLMjIwMjQzMjQxIzAhBgkqhkiG9w0BCQEw-
FHN1cHBvcnRAZm9ydGlu
ZXQuY29tMB4XDTIzMDIyNzEzMTcxNVoXDTI1MDYwMTEzMTcxN-
VowgZ0xCzAJBgNV
BAYTAIVTMRMwEQYDVQQIDApDYWxpZm9ybmlhMRI-
wEAYDVQQHDAITdW5ueXZhbGUx
ETAPBgNVBAoMCEZvcnRpbmV0MRIwEAYDVQLDAIGb3J0aUdhdGUxGTAX-
BgNVBAMM

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EEZHVDQwRIRLMjIwMjQzMjQxIzAhBgkqhkiG9w0BCQEW-
FHN1cHBvcnRAZm9ydGlu
ZXQuY29tMIIBIjANBgkqhkiG9w0BAQEFAOCAQ8AMIIB-
CgKCAQEAvm64KCUp6Yke
6DHoQ7PyxNHMLZm1SxLOCt33T8v4PSY1yL212rSF/LMHNKj3iBD5zf17S3cchR8s
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GGZ
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ZfmYF7KY/KtG20E2BP+EMH/fD
ti7QVUbIKVpoG+1sMilFk/sYr/mB/LBE/SQ0Rupk/NjJSNR8ZXiq2jzXAF8cQZm2
mMu30fOo/kBsQXprcyZnjaSYq97LZufkCdaIOtR1zqNBTEzty13alssopj1rNWjK
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MEAjAAMBMGAIUdjQQMMAoGCCsGAQUFBwMB
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MGfSGqF
4fFZ0AWM15OebZi5pOKo86+WcxQyM9pDkqKpPDeFg4PaYbHZ
-----END CERTIFICATE-----
      set range global
      set source factory
      set last-updated 1677503852
next
edit "Fortinet_SSL_RSA1024"
      set password ENC XkRujYQX+uD2oWe4yH4CcBonwa3jbLdWIGTnb6ZOx-
VZXmdxEpHG1CYrqXt57P+oCKPkLyIAYCAeziZ7IC6SvKK7DPhsKp/61SZ5Ux-
XqGv6yeicrDoURLiQQz4o9sDrhpGvy/hnUQSi8pa-
JyKns4escbGiv7Rw0fkL4s96j59SLC6lJiUPb4caACfIy4ZdwW7zI9rQ==
      set comments "This certificate is embedded in the hardware at the factory and is
unique to this unit."
      set private-key "-----BEGIN ENCRYPTED PRIVATE KEY-----"
MIIC1DBOBgkqhkiG9w0BBQ0wQTApBgkqh-
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WBIIcGEWb7WtcTkSK
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1mI
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+WoQ/EerYFGryWKVUmJnSOHLT2sV1Fwu8ug2hgoKaUpVuciJ-
MHgCbicFE1ts5wpC
3qjKpJ9GN58/YGJa38xNep5H1flLii175w/T5ueHyUcafF3K1PeLUNrK79kVfL3t
aORXQLXS40NoJg75Tau7O0S6yDAwUk/Vx1trm5ebOdKSWeq0Fv0GepR9lXWI/ytGK
ZMnTld6RkSu8n9CHzQyNT16HNZIXn+QZxckfxiJSnUk06g7F40uEFEF4zHYFw9Ki
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tiUlbMu
9IgMK562OFiWuIUJRIC3khWVh/gCP7jN1VNtOdlFz2FMiiPpfoxALWAVW1hnVXiI
9GD3jTGpHq4=
-----END ENCRYPTED PRIVATE KEY-----
      set certificate "-----BEGIN CERTIFICATE-----
MIIC2zCCAkSgAwIBAgIIBsNMdQYZYSEwDQYJKoZIhvc-
NAQELBQAwgZ0xCzAJBgNV
BAYTAIVTMRMwEQYDVQQIDApDYWxpZm9ybmlhMRI-
wEAYDVQQHDAITdW5ueXZhbGUx
ETAPBgNVBAoMCEZvcnRpbmV0MRIwEAYDVQLDAIGb3J0aUdhdGUxGTAX-
BgNVBAMM
EEZHVDQwRlRLMjIwMjQzMjQxIzAhBgkqhkiG9w0BCQEW-
FHN1cHBvcnRAZm9ydGlu
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VowgZ0xCzAJBgNV
BAYTAIVTMRMwEQYDVQQIDApDYWxpZm9ybmlhMRI-
wEAYDVQQHDAITdW5ueXZhbGUx
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kASyx1qm3XsY4h94Ti9c/bDxta4jqbrV0ca+CIi/RaHvCj0mLUS/EYKgMBZH0qmg
Wy7W0w2XerjhBy1aXe9F
-----END CERTIFICATE-----
      set range global
      set source factory
      set last-updated 1677503852
next
edit "Fortinet_SSL_RSA2048"
      set password ENC TH5pHEDAallBXQ+XLM1/I02X9H9rauxSgWc03gOR-
dZvgHesH6+FqPcQ5SjcJ2ejxRNBrPID7YrKbcprPPzaPtt-
fYOKXbCup/5k9f4JvnQhuHR7a1oZXKoDevy6yQEOpUlA4yx3m0ux9YxO0ewHxt7X8
YT9Et9xqU5thNdSLI3gC+JyQGXy8GprfP5FNxbPTv/BLZeg==
      set comments "This certificate is embedded in the hardware at the factory and is
unique to this unit."
      set private-key "-----BEGIN ENCRYPTED PRIVATE KEY-----"

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MIIFHDBOBgkqhkiG9w0BBQ0wQTApBgkqhkiG9w0BBQwwHAQI9TQ7dHpAll-
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hapYURSuUWKCbypibJT/Xsl3TLtWHuUojzfYQCs6XK0YCgxgQNYr+UeLMrj3Sb9
Cdg0LgZperwBFYe0O3fLTpGklexEZKzC+Ip/jTpYcDAbFNaP5LyPDmr5vH7KEy37
TqpUlxhB5qswODyetWtEqHCwLL/k55eHmaMxx87tS3XseBw+MfpDy7YhVWf/dLOK
zEsk5Kb1AFmKpBO2wPTPGHEYbIkTaw78nlNHHunhEK-
EkMaYirX7gE+1WWp2Gw8a8W
L55xFkCYx+DIRmkd1cLRgG7E5vpYwxqLkB+HNSrtcLiQ+yMbG/Ft4oknpcRnNYSj
tfWM3sAT7wAuMVFF7vJ6tCUSNWvbHUFiWElik2BmM4K4qGX8LjqdvdxdxpPiWXf8
/vdsO55FYG-
MnRl+moUbqNMv+EeMzlfLrWpnf7XIA9LYvCLoFGX6owVQn867GuqiY
rLxBONog4d9mfksuKGlsCw==
-----END ENCRYPTED PRIVATE KEY-----
      set certificate "-----BEGIN CERTIFICATE-----"
MIID4DCCAsigAwIBAgIJKsXS5wSBYsUwDQYJKoZIhvc-
NAQELBQAwgZ0xCzAJBgNV
BAYTAIVTMRMwEQYDVQQIDApDYWxpZm9ybmlhMRI-
wEAYDVQQHDAITdW5ueXZhbgGUx
ETAPBgnVB AoMCEZvcnRpbmV0MRIwEAYDVQLDAIgb3J0aUhdGUxGTAX-
BgNVBAMM
EEZHVDQwRlRLMjIwMjQzMjQxIzAhBgkqhkiG9w0BCQEw-
FHN1cHBvcnRAZm9ydGlu
ZXQuY29tMB4XDTIzMDIyNzEzMTcxNVoXDTI1MDYwMTEzMTcxN-
VowgZ0xCzAJBgNV
BAYTAIVTMRMwEQYDVQQIDApDYWxpZm9ybmlhMRI-
wEAYDVQQHDAITdW5ueXZhbgGUx

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ETAPBgNVBAoMCEZvcnRpbmV0MRIwEAYDVQQLDAIGb3J0aUhdGUxGTAX-
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FHN1cHBvcnRAZm9ydGlu
ZXQuY29tMIIBIjANBgkqhkiG9w0BAQEFAOCAQ8AMIIBCgKCAQEAv-
htdj1wxxyq
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MA0GCSqG-
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6Iel3JIM5qVsrIKLAzZl9UCGVa55KshS9Hz3gCb9xIDSmlD5M4M7caHTVgde44o2
fBtAeLNNNNMEqG22JXhzAXkDPPnCP8CR7C3UgB5ueqgDUhBf
-----END CERTIFICATE-----
      set range global
      set source factory
      set last-updated 1677503852
next
edit "Fortinet_SSL_RSA4096"
      set password ENC yTdnkodsTopjv/+N+Ysjr4c8eI-
UAG8Pv8ojtMColPrMYwe//MtA2Yedx/7odhKUs9kt4NLyW2ElmbXBgS-
EyH8/D59v9VKGJM1pB0pAzQCQp3kV2M+9dLyd2ZXdh4xE66ulndslS-
MnBJ3MptZ2QnM74woyJZ2zHmvuF8XsjPKLZfOmxfJcez1RQIIqeokisQt32aBw==

      set comments "This certificate is embedded in the hardware at the factory and is
unique to this unit."
      set private-key "-----BEGIN ENCRYPTED PRIVATE KEY-----
MIIJnDBOBgkqhkiG9w0BBQ0wQTApBgkqh-
kiG9w0BBQwwHAQIBL32rTiyHC8CAGgA
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ig/s00UQeF1l/kAPusC27GT965VEYIQYNUJSdzMGiRdCHA9wJAxHeoJQtF0ahLi
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H/DuZwn/H+N0fhKn0jEBE7QGpu4kFH60SuVa+JCdgafucoH83Gj8+DVGi2mnzNt
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NvAyZ
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kz37tVbxkBj+MufjG2YkZ/RQn0Xhh8+zXhdGq6ZNBWZP4U4RqAz3X2OmvbMSFF5
b
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yJmgzm
Zeat4huGmRNI1ws9ia842LkC8sww+lfPK1wszL5Pxs6puaupw0U8DALjYbtOnkuu
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tPLWp82sTvXs5DlflgkgxeXmYJHL2RnVGNS5TE6C8WyGNGux5D0CL
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WBrUsF+04PCvxqdQiLLAXCoGFvT1grgkVaTye9hmWMAwKMKGz4Tz1im-
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n+9p0t5LxP0RV8KQq2usM/pIpPBsdKJRzwjfJyJxqZRxF8xrSMsJ37bf0woRImt
47spuNPZc4/yu1sMoe+rzw==

-----END ENCRYPTED PRIVATE KEY-----"
      set certificate "-----BEGIN CERTIFICATE-----"

```

MIIF4DCCA8igAwIBAgIIDroemIF5RYEwDQYJKoZIhvc-
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 wEAYDVQQHDAITdW5ueXZhbGUx
 ETAPBgNVBAoMCEZvcnRpbmV0MRIwEAYDVQLDAIGb3J0aUdhdGUxGTAX-
 BgNvbAMM
 EEZHVQwRIRLMjIwMjQzMjQxIzAhBgkqhkiG9w0BCQEW-
 FHN1cHBvcnRAZm9ydGlu
 ZXQuY29tMB4XTIzMDIyNzEzMTcyMloXTI1MDYwMTEzMTcyM-
 lowgZ0xCzAJBgNV
 BAYTAIVTMRMwEQYDVQQIDApDYWxpZm9ybmlhMRI-
 wEAYDVQQHDAITdW5ueXZhbGUx
 ETAPBgNVBAoMCEZvcnRpbmV0MRIwEAYDVQLDAIGb3J0aUdhdGUxGTAX-
 BgNvbAMM
 EEZHVQwRIRLMjIwMjQzMjQxIzAhBgkqhkiG9w0BCQEW-
 FHN1cHBvcnRAZm9ydGlu
 ZXQuY29tMIICljANBgkqhkiG9w0BAQEFAOCAg8AMIICCgKCAgEAubU0ueaV-
 KTNT
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 ImXe//oN
 LUvwPyUWuv7aflkwvyPiG3pZG4No3bUiD7ovBKDnDuBPyyFmSJ0EDXND-
 NDoDRkqB
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 TFL
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 mEObtwC0L2Dwzj8DKq/ARMlGScnlqsBrvyhpos40qaIa+iIj8A4AYEsS4XJvDnR
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 QSzhe4BxBWQvuXFdHXiQNBn8hfqDxUCAwEAAaMiMCAwCQYDVR0TBAI-
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 Tk+q7zAm-
 wrOcDOcFGQNyF6BDC63H6mOEWga8+mFawrp+NXiT7FnPXJLwMin5KR
 e6id3iEbBDla4ywcl2T1JA93Lsc=

```

-----END CERTIFICATE----"
    set range global
    set source factory
    set last-updated 1677503852
    next
    edit "Fortinet_SSL_DSA1024"
        set password ENC
Z8IQgcwZ6jfLbOssYHxdD6QdGRQDHzwtwmo+xrJd/KO3/F/JtmKs-
bEPI7uW+ZHCPKZ9xrt5gAqq38ASNTyKN8RMD0ok+/Zh/KJfJrHD1c5GHCsQpvA
0kRBqaSxVWDGuKdzmsYnZeQMd1ijIVFdzG2VjoY-
BkyDv6s5+vWy87jAmA86xLa17CRf2ByEFA7kyM1/bOug==
        set comments "This certificate is embedded in the hardware at the factory and is
unique to this unit."
        set private-key "-----BEGIN ENCRYPTED PRIVATE KEY-----"
MIIBpDBOBgkqhkiG9w0BBQ0wQTApBgkqh-
kiG9w0BBQwwHAQIxvj5KQio6QCAggA
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cECEY5OChTfO7zBIIBUAqBwZkNhlnn
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Nsc1hFtOsA5BFHI21kzHLkuTUZQE7zdBetUCsVBKkTjJy4gsrzOww==
-----END ENCRYPTED PRIVATE KEY----"
    set certificate "-----BEGIN CERTIFICATE-----"
MIIDnDCCA1qgAwIBAgIIIdCZnXtctEG8wCwYJYIZIAWUD-
BAMCMIGdMQswCQYDVQQG
EwJVUzETMBEGA1UECAwKQ2FsaWZvcm5pYTEsMBAGA1UEB-
wwJU3Vubnl2YWxlMREw
DwYDVQQKDAhGb3J0aW5ldDEsMBAGA1UECwwJRm9ydGlHYXRlMRk-
wFwYDVQQDDBBG
R1Q0MEZUSzIyMDI0MzI0MSMwIQYJKoZIhvcNAQkBFhR-
zdXBwb3J0QGZvcnRpbmV0
LmNvbTAeFw0yMzAyMjcxMzE3MjNaFw0yNTA2MDEzMzE3MjNaMI-
GdMQswCQYDVQQG
EwJVUzETMBEGA1UECAwKQ2FsaWZvcm5pYTEsMBAGA1UEB-
wwJU3Vubnl2YWxlMREw
DwYDVQQKDAhGb3J0aW5ldDEsMBAGA1UECwwJRm9ydGlHYXRlMRk-
wFwYDVQQDDBBG
R1Q0MEZUSzIyMDI0MzI0MSMwIQYJKoZIhvcNAQkBFhR-
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SYfA87NWMXZN6KcIfKW3nAff-
CcMKWjxdJHHM7T01FECf0P28WpXsKE0H08dW+WyE
SQOVt2GpK7LmRq5mWkmjIjAgMAkGA1UdEwQCMAAwEwYDVR0lBAw-
wCgYIKwYBBQUH
AwEwCwYJYIZIAWUDBAMCAy8AMCwCFAMgMxvAmcxUItNs/rYyIw-
BOS/DAAhQlRrTC
d0VXiZtXkDaYHtSoNMIX4w==
-----END CERTIFICATE-----
      set range global
      set source factory
      set last-updated 1677503852
next
edit "Fortinet_SSL_DSA2048"
      set password ENC UbF0ALNqIp-
nvI8g5E/Vd6HeJDj/M7A+EK1Gm/3WJ2DxBT/8ztwr91uKqn36JmFOimtmtCfBHjkD
/WwG-
skRaF3gFYd3hlisns5E/Is5V5PnR7o4YxLhmokY1VVi6r4c++o55+oh/CBT97xI5yPV7w
YhQD2wxflGi0kI+30bTDsI2gItaBofxbxD5m+Dh75C3bhWDUg==
      set comments "This certificate is embedded in the hardware at the factory and is
unique to this unit."
      set private-key "-----BEGIN ENCRYPTED PRIVATE KEY-----
MIICxDBOBgkqhkiG9w0BBQ0wQTApBgkqhkiG9w0BBQwwHAQIA-
QYXU/bR/0sCAggA
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LVb7fZXz65rwBEq4X9BLDHZhpVshKcroUoMBQEwD5dY3geg4vwFD-
bRPQW/vTZeRj
dqnt/G1mrdd9aROvkE2sJGgwbOKV4t9sR0BkHQo/Hrfm5D5P7jPoXJkgEDtxO5ns
dQ+TE8hrQzx5zJ3okQhvf9UktqErR3K8m4Miy8j1/noThZEHhhM1+16DmgLxI+IY
sj1wY7S3/wzlhJpZ9q4ntYnCo/xr5RK/QukVRZjnUKhGTajJSNiXNCxvAaBptr9sk
2s4X3ubeBC9eQGTsAGTUww8lz/KovBtMtbQ15nNpt221mfR+b6IW0StukcFOoMqI
hysq9hJgLXQY+jKmkZeUiqoQAD5Nrpk5F8oQcbf9ohmel/LrNx6dY0Ycj4fiPfkv
y/tzBpmJNLvjOP6W9o5r71AGKzAYJYtBwE2u/Tjswg+L3KPIEbVLD0aGeSNB2SyI
KixTZ+PnL5pX4weGWRvCXHG41u+L06p+JrFX4Xy2JuPUQVFtH-
LLG6cN2Z/+XfCh3
WX2XsXNimbgnC/BDWO9bJ2/exi+KWa068SKeZkf02hgkoQUCUApZ0HbIV3J+AB
M2
WiZmATrisJOyKbGfwqiLb3u4rVZsrjhDVz05G3ku28NiCcv7mmYszMF5cMjPvlDU
SXHJHYZvCWJgyS6hmL3iLh6zvivOP2ujj1sznRsehNcFBNt/NW71CMhis/snHbNb
uwINrAGMiAXInPx3icjvfB9cdsYct4e7ex14bcshlwTfl3WeNRLszA==
-----END ENCRYPTED PRIVATE KEY-----
      set certificate "-----BEGIN CERTIFICATE-----
MIIFRjCCBOygAwIBAgIIGWVCVCrlAcgwCwYJYIZIAWUD-
BAMCMIGdMQswCQYDVQQG
EwJVUzETMBEGA1UECAwKQ2FsaWZvcm5pYTESMBAGA1UEB-
wwJU3Vubnl2YWxlMREw

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DwYDVQQKDAhGb3J0aW5ldDESMBAGA1UECwwJRm9ydGlHYXRlMRk-
wFwYDVQQDBBG
R1Q0MEZUSzIyMDI0MzI0MSMwIQYJKoZIhvcNAQkBFhR-
zdXBwb3J0QGZvcnRpbmV0
LmNvbTAeFw0yMzAyMjcxMzE3MjhaFw0yNTA2MDExMzE3MjhaMI-
GdMQswCQYDVQQG
EwJVUzETMBEGA1UECAwKQ2FsaWZvcm5pYTESMBAGA1UEB-
wwJU3Vubnl2YWxlMREw
DwYDVQQKDAhGb3J0aW5ldDESMBAGA1UECwwJRm9ydGlHYXRlMRk-
wFwYDVQQDBBG
R1Q0MEZUSzIyMDI0MzI0MSMwIQYJKoZIhvcNAQkBFhR-
zdXBwb3J0QGZvcnRpbmV0
LmNvbTCCA0gwggI6BgcqhkjOOAQBMICLQKCAQEA8OuLCevTlJOxkx-
OPQQtUsNWz
FUS7ls685IP0lc+BYIVm2b5Olxe1lCoxYK5McTh8vqFPKDixaVat1Xuz2Giuf7L
maMiPPs/+VqDnj5b/Zbj6n7Wpw9aYHeomL2hNWNPKtjl7BGITIKBqpxDkAixC8a
HYnSY4cxTyWbVsXyWgq1SArY7OMBxuQHPTiR8QF9gEG3gFFAD-
NuZmRfv5UkDYI
pXTSERQQc/6H1h/fgM2q8YK9enANFoE4BSJ3c5dgQxgMMbrd-
wCCN5BYBttJZzRH8
zfNN+rAx34vpvTgNg5WoveOHn482qjdEV0Z359UFYXPvAQPowokSoVyB4hnjQIh
AM1nIS5O2gvuGjZdIBqa//GrRUqZlndC9nY73tWeM0/AoIBAQCYcSTc3FoFGJPL
uDIqLAxkP688A6hLFcXqNgkXFjgFTtGU6WUiNSvTn22JgYZJWNi3cJ0JwvtJyGA9
+H3FK0zNz8xRh2wcpnJ1uEeSJO3CraSVkxR0qe/XXbm95qUXPftCG1Oai+cWUl3
9u2ffFUuCabvDLVAvqeFdaFf6s4KZry2BvQOdGmD8EZ-
VbBHgFERwh+SiWLcfwmCy
etRrxJALNpxsdAsyEH1vAEjIF0QQUoeu/LEvDbsVOBfBSKJ7+4tO8yFh0pih7fpA
+jUFlyFihUV2EFcAfKoheCcj+Hsae9btwpPr/gZSEGvuKAX8jPRcWOl2Olj34hR
loOZ1o7tA4IBBgACggEBAK8AAM8M/3wk9iiF96FqSB+EoM+u7a5Uxdjw8mVBkhM/
EXiGXZU0LGy7ictGu/j/SsSjDmZB+9o+vb0LgTat5gd9BPqmqdcDrGlUPTJCwxjw
jZg5BGKDBQegVtWK+G5VQrqOZWZ+iUkcsCbTx7LNrqvAQQXBox1JNrGIT-
sTs0UI
0R/KJX6sqdZRuR4jFNN4BUNONYv+geQJVnKLePtZ3md3tbA6cObCfVIhJv69ENrP
cv+kFxnxcsOUpXY6anfS/gQytEAVKcv0H3wlnIMEJuueWRvQ7KiaVxRVRrDhOfT
VMHwN7jDjoljwEsiFZQtNP9JpOl4rFzGClr0sxy/26ajIjAgMAkGA1UdEwQCMAAw
EwYDVR0lBAwwCgYIKwYBBQUHAwEwCwYJYIZIAWUDBAMCA0cAME-
QCIECkrSpGa5ib
miY1PpyVLGjH0NlzFd4N3 zamC6527cl0AiA1pjwdKLLBPSq3TgxDmkojanxQhKiX
O0IKWp8fKEyPjg==

-----END CERTIFICATE-----
      set range global
      set source factory
      set last-updated 1677503852
next
edit "Fortinet_SSL_ECDSA256"
      set password ENC sIh-
TURFF8FPUM+z8/WmIgn2RAYfA+k/Ouq0iXvhEuQiWzjkS+/uTIyFGRS1eET4JCgC
DWbc8ytKtg1gcS2XZPf7eeuz2jtrnW1ViZAf95TYDZqDWgNA7I05yJiTv60ynyNi7DhS
U4YZ2IcrDlESBht+HisSxW71Q07pwM8tcTyR2k6y8diTqvppksQSiXVXMbTzGLg==
```

```
    set comments "This certificate is embedded in the hardware at the factory and is
unique to this unit."
    set private-key "----BEGIN ENCRYPTED PRIVATE KEY----
MIHjME4GCSqGSIB3DQEFDTBMCkGCSqGSIB3DQEFDACBAj1rjyA0qkHW-
gICCAAw
DAYIKoZIhvcNAgkFADAUBggqhkiG9w0DBwQIdLRGRrkXR7MEgZCOYlb3nrOK-
jbfe
FsqXMRobLjXNAzjvPEZ0BiL2BVD8gnw4VwVl3SqZBYaXWSm9NAlI4Anlt0Ze8W1a
c57TFDzmSxptHTBlGF/Y6XHLzJBXRynWrORbzN6f+DVKpL33teN1lR0Hk4bxklqk
u1LVIrj58MyCRM1plhrD9dIIgtZtZMpk3t1b3+rlUeu0xgSkKVE=
----END ENCRYPTED PRIVATE KEY----"
    set certificate "----BEGIN CERTIFICATE----
MIICUzCCAfqqAwIBAgIIGL2N25uu9PAwCgYIKoZIzj0EAwIwgZ0xCzAJBgNVBAYT
AIVTMRMwEQYDVQQIDApDYWxpZm9ybmlhMRI-
wEAYDVQQHDAITdW5ueXZhGUxETAP
BgNVBAoMCEZvcnRpbmV0MRIwEAYDVQLDAIGb3J0aUdhdGUxGTAX-
BgNVBAMMEEZH
VDQwRIRLMjIwMjQzMjQxIzAhBggqhkiG9w0BCQEWFH1cHBvcnRAZm9yd-
GluZXQu
Y29tMB4XDTIzMDIyNzEzMTcyOFoXDTI1MDYwMTEzMT-
cyOFowgZ0xCzAJBgNVBAYT
AIVTMRMwEQYDVQQIDApDYWxpZm9ybmlhMRI-
wEAYDVQQHDAITdW5ueXZhGUxETAP
BgNVBAoMCEZvcnRpbmV0MRIwEAYDVQLDAIGb3J0aUdhdGUxGTAX-
BgNVBAMMEEZH
VDQwRIRLMjIwMjQzMjQxIzAhBggqhkiG9w0BCQEWFH1cHBvcnRAZm9yd-
GluZXQu
Y29tMFkwEwYHKoZIzj0CAQYIKoZIzj0DAQcDQgAErWN1zGgXIj-
MTwx1ZcMApeTb
NFZnYtaIb6hdBGuEHFdeNoGoyUCmBHA69Gq3wyh-
SOKHMFq8w1rBYuYxmQhL0CKMi
MCAwCQYDVROTBAlwADATBggNVHSUEDDAKBgggrBgfEFBQcDATAKBggqhkjOP-
QQDAgNH
ADBEAiBjFKDfy10kL7hoD+cR8IwFphTBLnWX+Hh52Z3Rc39g7gIgRQVZUSA1q9le
F1qaXmsvGJ2Own+LvQz8y16sbbgXI6o=
----END CERTIFICATE----"
    set range global
    set source factory
    set last-updated 1677503852
next
edit "Fortinet_SSL_ECDSA384"
    set password ENC
Y8KKWC4mSJG9Gm9lJa09vaBegjosDDvlflJM6aLHswo27+9vJJ6RrU/stz1qyDJqHaJa9a
XtaX+IptBIcFxP61dtoJr2F7G5NtwXV7iAnfzudtx5Ujp+MLff-
SHF5OmaFraz8yBlKlst/PuzSYWEEx0PNdPFlgHV1WRqFhAteta-
Bri8Lz4TelAPBR5fd5aL3KqWSoq8Q==
    set comments "This certificate is embedded in the hardware at the factory and is
unique to this unit."
    set private-key "----BEGIN ENCRYPTED PRIVATE KEY----
```

```

MIIBEZBOBgzkhkiG9w0BBQ0wQTApBgzkhkiG9w0BBQwwHAQIQyr-
nqG3XmZ4CAggA
MAwGCCqGSIB3DQIJBQAwFAYIKoZIhvcNAwcECNuVbSA1neAK-
BIHA5DsyQTAavSrU
jA1zK8ym6/oSFlzsPRePpcGakK02AyRZzG6v0u1ojwVYqvnqk2cAtGT61qoyTmmF
kJsdF2Sh3ZqcAnuDpTZd3rsfOX0m+FHWlIvrMQZMVuPwil3IJCTAtEZ8LjHRA7S
awLj9CWqLTnVkWN/l9GfpIIpaejyOt+ToenJPQzT2GobnWo/9KOniZKArB4yThvy
/ZDi+rv4V9X9nvfr7FYWw7mooC6RFVx0MAqGXgiB6C4MfKBcaiO2
-----END ENCRYPTED PRIVATE KEY-----
      set certificate "-----BEGIN CERTIFICATE-----
MIICKTCCAhegAwIBAgIIaCXmJsVdcUkwCgYIKoZIzj0EAwIwgZ0xCzAJBgNVBAYT
AlVTMRMwEQYDVQQIDApDYWxpZm9ybmlhMRI-
wEAYDVQQHDAITdW5ueXZhGUxETAP
BgNVBAoMCEZvcnRpbmV0MRIwEAYDVQQLDA1Gb3J0aUdhdGUxGTAX-
BgNVBAMMEEZH
VDQwRIRLMjIwMjQzMjQxIzAhBgzkhkiG9w0BCQEWFH1cHBvcnRAZm9yd-
GluZXQu
Y29tMB4XD'TIzMDIyNzEzMTcyOFoXDTI1MDYwMTEzMT-
cyOFowgZ0xCzAJBgNVBAYT
AlVTMRMwEQYDVQQIDApDYWxpZm9ybmlhMRI-
wEAYDVQQHDAITdW5ueXZhGUxETAP
BgNVBAoMCEZvcnRpbmV0MRIwEAYDVQQLDA1Gb3J0aUdhdGUxGTAX-
BgNVBAMMEEZH
VDQwRIRLMjIwMjQzMjQxIzAhBgzkhkiG9w0BCQEWFH1cHBvcnRAZm9yd-
GluZXQu
Y29tMHYwEAYHKoZIzj0CAQYFK4EEA-
CIDYgAEuT1UWrkxJXbvqRI04ovWAiIwnDAg
Wn4MQq8JOWg1wX7i2mEINzw2Zf6upGUA6YYBibxb1Os443b8xKMxAAbCwR-
gogLF0N
e8fxQTSwx5b3pS1RFHtvwo80C4Vh8XJakxx3oyIwIDAjBgNVHR-
MEAjAAMBGA1Ud
JQQMMAoGCCsGAQUFBwMBMAoGCCqGSM49BAMCA2gAMGUCMQCpu-
OnC+LjyTye1+jm
pEkWbQ+ZVDarcxbg+y8h5MN6E2ORvxu4w1yKr0WG0QYzC0CMDMQTWGWxxl0
0SXu
zbSE8zDpjLIh3OGvW/I5r17S8Lk2FYObmkR56XJTcGPie1xUew==
-----END CERTIFICATE-----
      set range global
      set source factory
      set last-updated 1677503852
next
edit "Fortinet_SSL_ECDSA521"
      set password ENC Qf6xeeF6HWy0dkUX24ILvpi15Ochxyd06mdbAU-
HdDwmC3HssWV7iU-
ztYGg0y3CwOFAtpRKfE0UpUWSv0X05GFHCN9Y3hXNaCN/Mq251OJrN97eTcu-
VaXyz/c+N2hPY-
jHs9D9AhxpflwVa9n23wY97B/NQ5IgUZ3z6XNTqdW6iIrROYQngq+CtRp2kqwT4T
mN82CUyA==
```

```

    set comments "This certificate is embedded in the hardware at the factory and is
unique to this unit. "
    set private-key "----BEGIN ENCRYPTED PRIVATE KEY----
MIIBSzBOBqkqhkiG9w0BBQ0wQTApBqkqh-
kiG9w0BBQwwHAQINdD/lfvFKCkCAggA
MAwGCCqGSIB3DQIJBQAwFAYIKoZIhvcNAw-
cECO7eNGE2UI6SBIH4v2Atr294I7ZX
OL2M4daRzOKQmX5g2Jmh-
paNuLmRLTy3Kd8nGDWsExdY2hAj/u95DIBRP2AQl4H68
2SDPajLDpNJSimruf1WAN1tPVrfjgrJ7nqcG/P7yGiNQA6z93UgeLnNrN06M6bKF7
xprgFvMlefrXKX+lZmcU4uyM88mDVOEq/k0rqxM7cxnUrz13+oS2njZKBYCXg043
/QJfxb6wworNC5ylrp+J7EmAF7DmA8eLUNmkrH2ot7hYrnk2q5eodJvWSDpc8eh
SPsMTOjk3E5vyVQg5OvfTg0dXjA/Rfe37362x/3w2p1cTzjMZGkfU9CjYqFR/nM=
-----END ENCRYPTED PRIVATE KEY-----
    set certificate "----BEGIN CERTIFICATE----
MIIC3DCCAj2gAwIBAgIIZTxBW1m5TBIwCgYIKoZIzj0EA-
wIwgZ0xCzAJBgNVBAYT
AIVTMRMwEQYDVQQIDApDYWxpZm9ybmlhMRI-
wEAYDVQQHDAITdW5ueXZhbGUxETAP
BgNVBAoMCEZvcnRpbmV0MRIwEAYDVQQLDAIGb3J0aUdhdGUxGTAX-
BgNVBAMMEEZH
VDQwRIRLMjIwMjQzMjQxIzAhBqkqhkiG9w0BCQEWFHN1cHBvcnRAZm9yd-
GluZXQu
Y29tMB4XDTIzMDIyNzEzMTcyOFoXDTI1MDYwMTEzMT-
cyOFowgZ0xCzAJBgNVBAYT
AIVTMRMwEQYDVQQIDApDYWxpZm9ybmlhMRI-
wEAYDVQQHDAITdW5ueXZhbGUxETAP
BgNVBAoMCEZvcnRpbmV0MRIwEAYDVQQLDAIGb3J0aUdhdGUxGTAX-
BgNVBAMMEEZH
VDQwRIRLMjIwMjQzMjQxIzAhBqkqhkiG9w0BCQEWFHN1cHBvcnRAZm9yd-
GluZXQu
Y29tMIGbMBAGByqGSM49AgEGBSuB-
BAAjA4GGAAQAAQvC/3QnQqXs7lrHdbYev0Ggz
wpFHuvMOenpwA7EkjuTi-
hiZ8Cs4VdGPCR38+51HBJ4RzWhg7bz7LHmC+sG86MVQB
tbvlGaR60dV64o1BMtu3wbIdHktfrghTJpGWJD7dTlN1m2XC40gKiDS64CZVxvuA5
e8jzvsOtUOCNf8tg5LyJNwCjIjAgMAkGA1UdEwQCMAAwEwYDVR0lBAw-
wCgYIKwYB
BQUHAWewCgYIKoZIzj0EAwIDgYwAMIGIAkIBOjGaRX3HwtD59Dg1TvSS-
Fqsv1qY1
eLwpjx4WVgbdsrv7HE9I9FJgwEXoi4qtzw1iLQppJo3cCbxXVlaHpNDvt1wCQgEw
d3L3d/VUZPSZKkLQKJu2wr75r2c3X3gaozAqZ2AXV7f0wpwtHK56x3bFKeqTs5D0
Y+DDRJ+Q21y1m1LLRT3SLQ==
-----END CERTIFICATE-----
    set range global
    set source factory
    set last-updated 1677503852
next
edit "Fortinet_SSL_ED25519"

```

```

        set password ENC +x0xYbyxTjBmo7ttA3fDah-
fLn9jwbhAuk6l67O7qW5vi/xi/J4ybX5wmogpaC-
NqI2QHNPaj5GZEwNCNGcbXhGjG7QH1PvMGU9dJcWyuDOLY-
akhm+5a3Mv/VGSi6lwAAvGa6NiW6F5ORbM/RqJovr5gd4fRN0+H0tEeoA3PsQTRN
4In8G0+IejAkWxpEkp3ZITHW0mw==

        set comments "This certificate is embedded in the hardware at the factory and is
unique to this unit. "

        set private-key "-----BEGIN ENCRYPTED PRIVATE KEY-----
MIGKME4GCSqGSIB3DQEFDTBMCkGCSqGSIB3DQEFDAAcBA-
jyvEUw/r5wpwICCAAw
DAYIKoZIhvcNAgkFADAUbggqh-
kiG9w0DBwQIfq+aAdCTGB4EOPXRTZq9qRL/duwV
n+Ww/6aGy9BsanH6M/nO0jX5Q5DuSZMHrent7u9S21Z9aJBfcy97/hCjUK
-----END ENCRYPTED PRIVATE KEY-----"

        set certificate "-----BEGIN CERTIFICATE-----
MIICFDCCAcagAwIBAgIL-
ILRhtl1CACwBQYDK2VwMIGdMQswCQYDVQQGEwJVUzET
MBEGA1UECAwKQ2FsaWZvcm5pYTEsMBAGA1UEB-
wwJU3Vubnl2YWxlMREwDwYDVQQK
DAhGb3J0aW5ldDEsMBAGA1UECwwJRm9ydGIHYXRlMRk-
wFwYDVQQDDBGR1Q0MEZU
SzIyMDI0MzI0MSMwiQYJKoZIhvcNAQkBfHr-
zdXBwb3J0QGZvcnRpbmV0LmNvbTAe
Fw0yMzAyMjcxMzE3MjlaFw0yNTA2MDExMzE3MjlaMI-
GdMQswCQYDVQQGEwJVUzET
MBEGA1UECAwKQ2FsaWZvcm5pYTEsMBAGA1UEB-
wwJU3Vubnl2YWxlMREwDwYDVQQK
DAhGb3J0aW5ldDEsMBAGA1UECwwJRm9ydGIHYXRlMRk-
wFwYDVQQDDBGR1Q0MEZU
SzIyMDI0MzI0MSMwiQYJKoZIhvcNAQkBfHr-
zdXBwb3J0QGZvcnRpbmV0LmNvbTAq
MAUGAytlcAMhAAQzkSdSXPyZHUYOCt4QQuzgei-
hDDBux+hKEqDOJbGIloyIwIDAj
BgNVHRMEAjAAMBAGA1UdJQQMMAoGCCsGAQUFBwMBMAUGAy-
tlcANBAC8ftOjn97ph
sqZNOG5YXteS79pjNR52mz1ENA5ZeV8K2Q6uTUh6sXmnMgoOda9ZOABsCKZaX-
YGn
gbl7/BD/4gY=
-----END CERTIFICATE-----"

        set range global
        set source factory
        set last-updated 1677503852

next
edit "Fortinet_SSL_ED448"
        set password ENC
/IqHZ8vSyBb+TTBYdpNYQ7rBs65cKMBDpRG+9tafw1/Wxn5Jo05Hvo29kh4wjcZj/
UzL067cO+72lyzjzRy21L4y0oFTsnr0wgJopq1xPVhbN+pu+5Y1ncPMPPg3OMCw6XL
PUE53wtZlfj3chB-
PhtbOdZhWwwvt9eqw1pmd5l3Bjj7hWUvadbO/h1MyQnDgo3SHWA==
```

```

        set comments "This certificate is embedded in the hardware at the factory and is
unique to this unit. "
        set private-key "-----BEGIN ENCRYPTED PRIVATE KEY-----
MIGiME4GCSqGSIb3DQEFDTBMCkGCSqGSIb3DQEFDACBAi8isv2W0g8KwIC-
CAAw
DAYIKoZIhvcNAgkFADAUBggqhkiG9w0DBwQId651IhrNrdgEUMKxNJs-
WGbtS7vvw
n+bctcvnRYtjhQjmJLYIZHC5sbJLkzJfwibj7BFmZx5hlCBlgujc/m3qf+HdrMWk
ToEGUNtcGxmIzc14AEp6KRwnocNu
-----END ENCRYPTED PRIVATE KEY-----"
        set certificate "-----BEGIN CERTIFICATE-----
MIICXzCCAd+gAwIBAgIISAf-
YIEfitiUwBQYDK2VxMIGdMQswCQYDVQQGEwJVUzET
MBEGA1UECAwKQ2FsaWZvcm5pYTESBAGA1UEB-
wwJU3Vubnl2YWxlMREwDwYDVQQK
DAhGb3J0aW5ldDESBAGA1UECwwJRm9ydGIHYXRlMRk-
wFwYDVQQDDBGR1Q0MEZU
SzIyMDI0MzI0MSMwIQYJKoZIhvcNAQkBFhR-
zdXBwb3J0QGZvcnRpbmV0LmNvbTAe
Fw0yMzAyMjcxMzE3MjlaFw0yNTA2MDExMzE3MjlaMI-
GdMQswCQYDVQQGEwJVUzET
MBEGA1UECAwKQ2FsaWZvcm5pYTESBAGA1UEB-
wwJU3Vubnl2YWxlMREwDwYDVQQK
DAhGb3J0aW5ldDESBAGA1UECwwJRm9ydGIHYXRlMRk-
wFwYDVQQDDBGR1Q0MEZU
SzIyMDI0MzI0MSMwIQYJKoZIhvcNAQkBFhR-
zdXBwb3J0QGZvcnRpbmV0LmNvbTBD
MAUGAytlcQM6AGAs9SQ6FC+agMsWyd8D+//NZpPttKfh8jZy5wRjMT9a60HzAuys
VOM/BTkdbtzHMNsBw+6O0xegKMiMCAwCQYDVR0TBAIwADAT-
BgNVHSUEDDAKBgr
BgEFBQcDA-
TAFBgMrZXEDcwD3mKzsOpzwtE+EhCS1aLQd5ZWqJXmTOUEhqQFHNrTR
cnDLTBtNw3obN6o5sI37e6mYtvkUlzGL9gDgU/ubiyR4prh5J3jykWx5W4PiKpFN
wMvmIBRc781GRek8rmJ/L7Kv5ke+2YzbfdxTzjkPSetKGgA=
-----END CERTIFICATE-----"
        set range global
        set source factory
        set last-updated 1677503852
    next
end
config webfilter ftgd-local-cat
    edit "custom1"
        set id 140
    next
    edit "custom2"
        set id 141
    next
end
config ips sensor

```

```
edit "default"
    set comment "Prevent critical attacks."
    config entries
        edit 1
            set severity medium high critical
        next
    end
next
edit "sniffer-profile"
    set comment "Monitor IPS attacks."
    config entries
        edit 1
            set severity medium high critical
        next
    end
next
edit "wifi-default"
    set comment "Default configuration for offloading WiFi traffic."
    config entries
        edit 1
            set severity medium high critical
        next
    end
next
edit "all_default"
    set comment "All predefined signatures with default setting."
    config entries
        edit 1
        next
    end
next
edit "all_default_pass"
    set comment "All predefined signatures with PASS action."
    config entries
        edit 1
            set action pass
        next
    end
next
edit "protect_http_server"
    set comment "Protect against HTTP server-side vulnerabilities."
    config entries
        edit 1
            set location server
            set protocol HTTP
        next
    end
next
edit "protect_email_server"
```

```
set comment "Protect against email server-side vulnerabilities."
config entries
    edit 1
        set location server
        set protocol SMTP POP3 IMAP
    next
end
next
edit "protect_client"
    set comment "Protect against client-side vulnerabilities."
config entries
    edit 1
        set location client
    next
end
next
edit "high_security"
    set comment "Blocks all Critical/High/Medium and some Low severity vulnerabilities"
    set block-malicious-url enable
config entries
    edit 1
        set severity medium high critical
        set status enable
        set action block
    next
    edit 2
        set severity low
    next
end
next
end
config firewall shaper traffic-shaper
    edit "high-priority"
        set maximum-bandwidth 1048576
        set per-policy enable
    next
    edit "medium-priority"
        set maximum-bandwidth 1048576
        set priority medium
        set per-policy enable
    next
    edit "low-priority"
        set maximum-bandwidth 1048576
        set priority low
        set per-policy enable
    next
    edit "guarantee-100kbps"
        set guaranteed-bandwidth 100
```

```
set maximum-bandwidth 1048576
    set per-policy enable
next
edit "shared-1M-pipe"
    set maximum-bandwidth 1024
next
end
config web-proxy global
    set proxy-fqdn "default.fqdn"
end
config application list
    edit "default"
        set comment "Monitor all applications."
        config entries
            edit 1
                set action pass
            next
        end
next
edit "sniffer-profile"
    set comment "Monitor all applications."
    unset options
    config entries
        edit 1
            set action pass
        next
    end
next
edit "wifi-default"
    set comment "Default configuration for offloading WiFi traffic."
    set deep-app-inspection disable
    config entries
        edit 1
            set action pass
            set log disable
        next
    end
next
edit "block-high-risk"
    config entries
        edit 1
            set category 2 6
        next
        edit 2
            set action pass
        next
    end
next
end
```

```
config dlp filepattern
edit 1
    set name "builtin-patterns"
    config entries
        edit "*.bat"
        next
        edit "*.com"
        next
        edit "*.dll"
        next
        edit "*.doc"
        next
        edit "*.exe"
        next
        edit "*.gz"
        next
        edit "*.hta"
        next
        edit "*.ppt"
        next
        edit "*.rar"
        next
        edit "*.scr"
        next
        edit "*.tar"
        next
        edit "*.tgz"
        next
        edit "*.vb?"
        next
        edit "*.wps"
        next
        edit "*.xl?"
        next
        edit "*.zip"
        next
        edit "*.pif"
        next
        edit "*.cpl"
        next
    end
next
edit 2
    set name "all_executables"
    config entries
        edit "bat"
            set filter-type type
            set file-type bat
        next
```

```
edit "exe"
    set filter-type type
    set file-type exe
next
edit "elf"
    set filter-type type
    set file-type elf
next
edit "hta"
    set filter-type type
    set file-type hta
next
end
next
end
config dlp sensitivity
edit "Private"
next
edit "Critical"
next
edit "Warning"
next
end
config dlp sensor
edit "default"
    set comment "Default sensor."
next
edit "sniffer-profile"
    set comment "Log a summary of email and web traffic."
    set summary-proto smtp pop3 imap http-get http-post
next
edit "Content_Summary"
    set summary-proto smtp pop3 imap http-get http-post ftp nntp
next
edit "Content_Archive"
    set full-archive-proto smtp pop3 imap http-get http-post ftp nntp
    set summary-proto smtp pop3 imap http-get http-post ftp nntp
next
edit "Large-File"
    config filter
        edit 1
            set name "Large-File-Filter"
            set proto smtp pop3 imap http-get http-post
            set filter-by file-size
            set file-size 5120
            set action log-only
        next
    end
next
```

```
edit "Credit-Card"
    config filter
        edit 1
            set name "Credit-Card-Filter"
            set severity high
            set proto smtp pop3 imap http-get http-post
            set action log-only
        next
        edit 2
            set name "Credit-Card-Filter"
            set severity high
            set type message
            set proto smtp pop3 imap http-post
            set action log-only
        next
    end
next
edit "SSN-Sensor"
    set comment "Match SSN numbers but NOT WebEx invite emails."
    config filter
        edit 1
            set name "SSN-Sensor-Filter"
            set severity high
            set type message
            set proto smtp pop3 imap
            set filter-by regexp
            set regexp "WebEx"
        next
        edit 2
            set name "SSN-Sensor-Filter"
            set severity high
            set type message
            set proto smtp pop3 imap
            set filter-by ssn
            set action log-only
        next
        edit 3
            set name "SSN-Sensor-Filter"
            set severity high
            set proto smtp pop3 imap http-get http-post ftp
            set filter-by ssn
            set action log-only
        next
    end
next
end
config webfilter ips-urlfilter-setting
end
config webfilter ips-urlfilter-setting6
```

```
end
config log threat-weight
    config web
        edit 1
            set category 26
            set level high
    next
    edit 2
        set category 61
        set level high
    next
    edit 3
        set category 86
        set level high
    next
    edit 4
        set category 1
        set level medium
    next
    edit 5
        set category 3
        set level medium
    next
    edit 6
        set category 4
        set level medium
    next
    edit 7
        set category 5
        set level medium
    next
    edit 8
        set category 6
        set level medium
    next
    edit 9
        set category 12
        set level medium
    next
    edit 10
        set category 59
        set level medium
    next
    edit 11
        set category 62
        set level medium
    next
    edit 12
        set category 83
```

```
    set level medium
next
edit 13
    set category 72
next
edit 14
    set category 14
next
end
config application
edit 1
    set category 2
next
edit 2
    set category 6
    set level medium
next
end
end
config icap profile
edit "default"
    config icap-headers
edit 1
    set name "X-Authenticated-User"
    set content "$user"
next
edit 2
    set name "X-Authenticated-Groups"
    set content "$local_grp"
next
end
next
end
config user local
edit "guest"
    set type password
    set passwd ENC Lqq5oJe/nGL2L9XN3hKyf2Ef4tyeyiUg0Ol-
gsqDc6CssKyfmsiWIXaPA-
CAWViw1hodbY9vSvrpA6F8ajzRG+qJjHStMpu/SCcCqh10W/CHGwuft-
WBnUkpO1w0QiZ4wUebEJ5EexxoOEijrTku-
TEoYT6hsciypnUm6f0FYjglN0g/Goq+nypUN3/BfoxLUKip1uIVrA==
next
end
config user setting
    set auth-cert "Fortinet_Factory"
end
config user group
edit "SSO_Guest_Users"
next
```

```
edit "Guest-group"
    set member "guest"
next
end
config vpn ssl web host-check-software
    edit "FortiClient-AV"
        set guid "1A0271D5-3D4F-46DB-0C2C-AB37BA90D9F7"
next
edit "FortiClient-FW"
    set type fw
    set guid "528CB157-D384-4593-AAAA-E42DFF111CED"
next
edit "FortiClient-AV-Vista"
    set guid "385618A6-2256-708E-3FB9-7E98B93F91F9"
next
edit "FortiClient-FW-Vista"
    set type fw
    set guid "006D9983-6839-71D6-14E6-D7AD47ECD682"
next
edit "FortiClient5-AV"
    set guid "5EEDDB8C-C27A-6714-3657-DBD811D1F1B7"
next
edit "AVG-Internet-Security-AV"
    set guid "17DDD097-36FF-435F-9E1B-52D74245D6BF"
next
edit "AVG-Internet-Security-FW"
    set type fw
    set guid "8DECF618-9569-4340-B34A-D78D28969B66"
next
edit "AVG-Internet-Security-AV-Vista-Win7"
    set guid "0C939084-9E57-CBDB-EA61-0B0C7F62AF82"
next
edit "AVG-Internet-Security-FW-Vista-Win7"
    set type fw
    set guid "34A811A1-D438-CA83-C13E-A23981B1E8F9"
next
edit "CA-Anti-Virus"
    set guid "17CFD1EA-56CF-40B5-A06B-BD3A27397C93"
next
edit "CA-Internet-Security-AV"
    set guid "6B98D35F-BB76-41C0-876B-A50645ED099A"
next
edit "CA-Internet-Security-FW"
    set type fw
    set guid "38102F93-1B6E-4922-90E1-A35D8DC6DAA3"
next
edit "CA-Internet-Security-AV-Vista-Win7"
    set guid "3EED0195-0A4B-4EF3-CC4F-4F401BDC245F"
next
```

```
edit "CA-Internet-Security-FW-Vista-Win7"
    set type fw
    set guid "06D680B0-4024-4FAB-E710-E675E50F6324"
next
edit "CA-Personal-Firewall"
    set type fw
    set guid "14CB4B80-8E52-45EA-905E-67C1267B4160"
next
edit "F-Secure-Internet-Security-AV"
    set guid "E7512ED5-4245-4B4D-AF3A-382D3F313F15"
next
edit "F-Secure-Internet-Security-FW"
    set type fw
    set guid "D4747503-0346-49EB-9262-997542F79BF4"
next
edit "F-Secure-Internet-Security-AV-Vista-Win7"
    set guid "15414183-282E-D62C-CA37-EF24860A2F17"
next
edit "F-Secure-Internet-Security-FW-Vista-Win7"
    set type fw
    set guid "2D7AC0A6-6241-D774-E168-461178D9686C"
next
edit "Kaspersky-AV"
    set guid "2C4D4BC6-0793-4956-A9F9-E252435469C0"
next
edit "Kaspersky-FW"
    set type fw
    set guid "2C4D4BC6-0793-4956-A9F9-E252435469C0"
next
edit "Kaspersky-AV-Vista-Win7"
    set guid "AE1D740B-8F0F-D137-211D-873D44B3F4AE"
next
edit "Kaspersky-FW-Vista-Win7"
    set type fw
    set guid "9626F52E-C560-D06F-0A42-2E08BA60B3D5"
next
edit "McAfee-Internet-Security-Suite-AV"
    set guid "84B5EE75-6421-4CDE-A33A-DD43BA9FAD83"
next
edit "McAfee-Internet-Security-Suite-FW"
    set type fw
    set guid "94894B63-8C7F-4050-BDA4-813CA00DA3E8"
next
edit "McAfee-Internet-Security-Suite-AV-Vista-Win7"
    set guid "86355677-4064-3EA7-ABB3-1B136EB04637"
next
edit "McAfee-Internet-Security-Suite-FW-Vista-Win7"
    set type fw
    set guid "BE0ED752-0A0B-3FFF-80EC-B2269063014C"
```

```
next
edit "McAfee-Virus-Scan-Enterprise"
    set guid "918A2B0B-2C60-4016-A4AB-E868DEABF7F0"
next
edit "Norton-360-2.0-AV"
    set guid "A5F1BC7C-EA33-4247-961C-0217208396C4"
next
edit "Norton-360-2.0-FW"
    set type fw
    set guid "371C0A40-5A0C-4AD2-A6E5-69C02037FBF3"
next
edit "Norton-360-3.0-AV"
    set guid "E10A9785-9598-4754-B552-92431C1C35F8"
next
edit "Norton-360-3.0-FW"
    set type fw
    set guid "7C21A4C9-F61F-4AC4-B722-A6E19C16F220"
next
edit "Norton-Internet-Security-AV"
    set guid "E10A9785-9598-4754-B552-92431C1C35F8"
next
edit "Norton-Internet-Security-FW"
    set type fw
    set guid "7C21A4C9-F61F-4AC4-B722-A6E19C16F220"
next
edit "Norton-Internet-Security-AV-Vista-Win7"
    set guid "88C95A36-8C3B-2F2C-1B8B-30FCCFDC4855"
next
edit "Norton-Internet-Security-FW-Vista-Win7"
    set type fw
    set guid "B0F2DB13-C654-2E74-30D4-99C9310F0F2E"
next
edit "Symantec-Endpoint-Protection-AV"
    set guid "FB06448E-52B8-493A-90F3-E43226D3305C"
next
edit "Symantec-Endpoint-Protection-FW"
    set type fw
    set guid "BE898FE3-CD0B-4014-85A9-03DB9923DDB6"
next
edit "Symantec-Endpoint-Protection-AV-Vista-Win7"
    set guid "88C95A36-8C3B-2F2C-1B8B-30FCCFDC4855"
next
edit "Symantec-Endpoint-Protection-FW-Vista-Win7"
    set type fw
    set guid "B0F2DB13-C654-2E74-30D4-99C9310F0F2E"
next
edit "Panda-Antivirus+Firewall-2008-AV"
    set guid "EEE2D94A-D4C1-421A-AB2C-2CE8FE51747A"
next
```

```
edit "Panda-Antivirus+Firewall-2008-FW"
    set type fw
    set guid "7B090DC0-8905-4BAF-8040-FD98A41C8FB8"
next
edit "Panda-Internet-Security-AV"
    set guid "4570FB70-5C9E-47E9-B16C-A3A6A06C4BF0"
next
edit "Panda-Internet-Security-2006~2007-FW"
    set type fw
    set guid "4570FB70-5C9E-47E9-B16C-A3A6A06C4BF0"
next
edit "Panda-Internet-Security-2008~2009-FW"
    set type fw
    set guid "7B090DC0-8905-4BAF-8040-FD98A41C8FB8"
next
edit "Sophos-Anti-Virus"
    set guid "3F13C776-3CBE-4DE9-8BF6-09E5183CA2BD"
next
edit "Sophos-Enpoint-Secuirty-and-Control-FW"
    set type fw
    set guid "0786E95E-326A-4524-9691-41EF88FB52EA"
next
edit "Sophos-Enpoint-Secuirty-and-Control-AV-Vista-Win7"
    set guid "479CCF92-4960-B3E0-7373-BF453B467D2C"
next
edit "Sophos-Enpoint-Secuirty-and-Control-FW-Vista-Win7"
    set type fw
    set guid "7FA74EB7-030F-B2B8-582C-1670C5953A57"
next
edit "Trend-Micro-AV"
    set guid "7D2296BC-32CC-4519-917E-52E652474AF5"
next
edit "Trend-Micro-FW"
    set type fw
    set guid "3E790E9E-6A5D-4303-A7F9-185EC20F3EB6"
next
edit "Trend-Micro-AV-Vista-Win7"
    set guid "48929DFC-7A52-A34F-8351-C4DBEDBD9C50"
next
edit "Trend-Micro-FW-Vista-Win7"
    set type fw
    set guid "70A91CD9-303D-A217-A80E-6DEE136EDB2B"
next
edit "ZoneAlarm-AV"
    set guid "5D467B10-818C-4CAB-9FF7-6893B5B8F3CF"
next
edit "ZoneAlarm-FW"
    set type fw
    set guid "829BDA32-94B3-44F4-8446-F8FCFF809F8B"
```

```
next
edit "ZoneAlarm-AV-Vista-Win7"
    set guid "D61596DF-D219-341C-49B3-AD30538CBC5B"
next
edit "ZoneAlarm-FW-Vista-Win7"
    set type fw
    set guid "EE2E17FA-9876-3544-62EC-0405AD5FFB20"
next
edit "ESET-Smart-Security-AV"
    set guid "19259FAE-8396-A113-46DB-15B0E7DFA289"
next
edit "ESET-Smart-Security-FW"
    set type fw
    set guid "211E1E8B-C9F9-A04B-6D84-BC85190CE5F2"
next
end
config vpn ssl web portal
    edit "full-access"
        set tunnel-mode enable
        set ipv6-tunnel-mode enable
        set web-mode enable
        set ip-pools "SSLVPN_TUNNEL_ADDR1"
        set ipv6-pools "SSLVPN_TUNNEL_IPv6_ADDR1"
next
edit "web-access"
    set web-mode enable
next
edit "tunnel-access"
    set tunnel-mode enable
    set ipv6-tunnel-mode enable
    set ip-pools "SSLVPN_TUNNEL_ADDR1"
    set ipv6-pools "SSLVPN_TUNNEL_IPv6_ADDR1"
next
end
config vpn ssl settings
    set servercert "Fortinet_Factory"
    set port 443
end
config voip profile
    edit "default"
        set comment "Default VoIP profile."
next
edit "strict"
    config sip
        set malformed-request-line discard
        set malformed-header-via discard
        set malformed-header-from discard
        set malformed-header-to discard
        set malformed-header-call-id discard
```

```
set malformed-header-cseq discard
set malformed-header-rack discard
set malformed-header-rseq discard
set malformed-header-contact discard
set malformed-header-record-route discard
set malformed-header-route discard
set malformed-header-expires discard
set malformed-header-content-type discard
set malformed-header-content-length discard
set malformed-header-max-forwards discard
set malformed-header-allow discard
set malformed-header-p-asserted-identity discard
set malformed-header-sdp-v discard
set malformed-header-sdp-o discard
set malformed-header-sdp-s discard
set malformed-header-sdp-i discard
set malformed-header-sdp-c discard
set malformed-header-sdp-b discard
set malformed-header-sdp-z discard
set malformed-header-sdp-k discard
set malformed-header-sdp-a discard
set malformed-header-sdp-t discard
set malformed-header-sdp-r discard
set malformed-header-sdp-m discard
end
next
end
config vpn ocvpn
end
config dnsfilter profile
edit "default"
    set comment "Default dns filtering."
    config ftgd-dns
        config filters
            edit 1
                set category 2
            next
            edit 2
                set category 7
            next
            edit 3
                set category 8
            next
            edit 4
                set category 9
            next
            edit 5
                set category 11
            next
```

```
edit 6
    set category 12
next
edit 7
    set category 13
next
edit 8
    set category 14
next
edit 9
    set category 15
next
edit 10
    set category 16
next
edit 11
next
edit 12
    set category 57
next
edit 13
    set category 63
next
edit 14
    set category 64
next
edit 15
    set category 65
next
edit 16
    set category 66
next
edit 17
    set category 67
next
edit 18
    set category 26
    set action block
next
edit 19
    set category 61
    set action block
next
edit 20
    set category 86
    set action block
next
edit 21
    set category 88
```

```
    set action block
next
edit 22
    set category 90
    set action block
next
edit 23
    set category 91
    set action block
next
end
set block-botnet enable
next
end
config antivirus settings
    set grayware enable
end
config antivirus profile
edit "default"
    set comment "Scan files and block viruses."
    config http
        set options scan
    end
    config ftp
        set options scan
    end
    config imap
        set options scan
        set executables virus
    end
    config pop3
        set options scan
        set executables virus
    end
    config smtp
        set options scan
        set executables virus
    end
next
edit "sniffer-profile"
    set comment "Scan files and monitor viruses."
    config http
        set options scan
    end
    config ftp
        set options scan
    end
    config imap
```

```
    set options scan
    set executables virus
end
config pop3
    set options scan
    set executables virus
end
config smtp
    set options scan
    set executables virus
end
next
edit "wifi-default"
    set comment "Default configuration for offloading WiFi traffic."
    config http
        set options scan
    end
    config ftp
        set options scan
    end
    config imap
        set options scan
        set executables virus
    end
    config pop3
        set options scan
        set executables virus
    end
    config smtp
        set options scan
        set executables virus
    end
next
end
config webfilter profile
edit "default"
    set comment "Default web filtering."
    config ftgd-wf
        unset options
        config filters
            edit 1
                set action block
            next
            edit 2
                set category 2
                set action block
            next
            edit 3
                set category 7
```

```
    set action block
next
edit 4
    set category 8
    set action block
next
edit 5
    set category 9
    set action block
next
edit 6
    set category 11
    set action block
next
edit 7
    set category 12
    set action block
next
edit 8
    set category 13
    set action block
next
edit 9
    set category 14
    set action block
next
edit 10
    set category 15
    set action block
next
edit 11
    set category 16
    set action block
next
edit 12
    set category 26
    set action block
next
edit 13
    set category 57
    set action block
next
edit 14
    set category 61
    set action block
next
edit 15
    set category 63
    set action block
```

```
next
edit 16
    set category 64
    set action block
next
edit 17
    set category 65
    set action block
next
edit 18
    set category 66
    set action block
next
edit 19
    set category 67
    set action block
next
edit 20
    set category 86
    set action block
next
edit 21
    set category 88
    set action block
next
edit 22
    set category 90
    set action block
next
edit 23
    set category 91
    set action block
next
end
end
next
edit "sniffer-profile"
    set comment "Monitor web traffic."
    config ftgd-wf
        config filters
            edit 1
            next
            edit 2
                set category 1
            next
            edit 3
                set category 2
            next
            edit 4
```

```
    set category 3
next
edit 5
    set category 4
next
edit 6
    set category 5
next
edit 7
    set category 6
next
edit 8
    set category 7
next
edit 9
    set category 8
next
edit 10
    set category 9
next
edit 11
    set category 11
next
edit 12
    set category 12
next
edit 13
    set category 13
next
edit 14
    set category 14
next
edit 15
    set category 15
next
edit 16
    set category 16
next
edit 17
    set category 17
next
edit 18
    set category 18
next
edit 19
    set category 19
next
edit 20
    set category 20
```

```
next
edit 21
    set category 23
next
edit 22
    set category 24
next
edit 23
    set category 25
next
edit 24
    set category 26
next
edit 25
    set category 28
next
edit 26
    set category 29
next
edit 27
    set category 30
next
edit 28
    set category 31
next
edit 29
    set category 33
next
edit 30
    set category 34
next
edit 31
    set category 35
next
edit 32
    set category 36
next
edit 33
    set category 37
next
edit 34
    set category 38
next
edit 35
    set category 39
next
edit 36
    set category 40
next
```

```
edit 37
    set category 41
next
edit 38
    set category 42
next
edit 39
    set category 43
next
edit 40
    set category 44
next
edit 41
    set category 46
next
edit 42
    set category 47
next
edit 43
    set category 48
next
edit 44
    set category 49
next
edit 45
    set category 50
next
edit 46
    set category 51
next
edit 47
    set category 52
next
edit 48
    set category 53
next
edit 49
    set category 54
next
edit 50
    set category 55
next
edit 51
    set category 56
next
edit 52
    set category 57
next
edit 53
```

```
    set category 58
next
edit 54
    set category 59
next
edit 55
    set category 61
next
edit 56
    set category 62
next
edit 57
    set category 63
next
edit 58
    set category 64
next
edit 59
    set category 65
next
edit 60
    set category 66
next
edit 61
    set category 67
next
edit 62
    set category 68
next
edit 63
    set category 69
next
edit 64
    set category 70
next
edit 65
    set category 71
next
edit 66
    set category 72
next
edit 67
    set category 75
next
edit 68
    set category 76
next
edit 69
    set category 77
```

```
next
edit 70
    set category 78
next
edit 71
    set category 79
next
edit 72
    set category 80
next
edit 73
    set category 81
next
edit 74
    set category 82
next
edit 75
    set category 83
next
edit 76
    set category 84
next
edit 77
    set category 85
next
edit 78
    set category 86
next
edit 79
    set category 87
next
edit 80
    set category 88
next
edit 81
    set category 89
next
edit 82
    set category 90
next
edit 83
    set category 91
next
edit 84
    set category 92
next
edit 85
    set category 93
next
```

```
edit 86
    set category 94
next
edit 87
    set category 95
next
end
end
next
edit "wifi-default"
    set comment "Default configuration for offloading WiFi traffic."
    set options block-invalid-url
    config ftgd-wf
        unset options
        config filters
            edit 1
        next
            edit 2
                set category 2
                set action block
            next
            edit 3
                set category 7
                set action block
            next
            edit 4
                set category 8
                set action block
            next
            edit 5
                set category 9
                set action block
            next
            edit 6
                set category 11
                set action block
            next
            edit 7
                set category 12
                set action block
            next
            edit 8
                set category 13
                set action block
            next
            edit 9
                set category 14
                set action block
            next
```

```
edit 10
    set category 15
    set action block
next
edit 11
    set category 16
    set action block
next
edit 12
    set category 26
    set action block
next
edit 13
    set category 57
    set action block
next
edit 14
    set category 61
    set action block
next
edit 15
    set category 63
    set action block
next
edit 16
    set category 64
    set action block
next
edit 17
    set category 65
    set action block
next
edit 18
    set category 66
    set action block
next
edit 19
    set category 67
    set action block
next
edit 20
    set category 86
    set action block
next
edit 21
    set category 88
    set action block
next
edit 22
```

```
    set category 90
        set action block
    next
    edit 23
        set category 91
        set action block
    next
    end
end

next
edit "monitor-all"
    set comment "Monitor and log all visited URLs, flow-based."
    config ftgd-wf
        unset options
        config filters
        edit 1
            set category 1
        next
        edit 2
            set category 3
        next
        edit 3
            set category 4
        next
        edit 4
            set category 5
        next
        edit 5
            set category 6
        next
        edit 6
            set category 12
        next
        edit 7
            set category 59
        next
        edit 8
            set category 62
        next
        edit 9
            set category 83
        next
        edit 10
            set category 2
        next
        edit 11
            set category 7
        next
        edit 12
```

```
    set category 8
next
edit 13
    set category 9
next
edit 14
    set category 11
next
edit 15
    set category 13
next
edit 16
    set category 14
next
edit 17
    set category 15
next
edit 18
    set category 16
next
edit 19
    set category 57
next
edit 20
    set category 63
next
edit 21
    set category 64
next
edit 22
    set category 65
next
edit 23
    set category 66
next
edit 24
    set category 67
next
edit 25
    set category 19
next
edit 26
    set category 24
next
edit 27
    set category 25
next
edit 28
    set category 72
```

```
next
edit 29
    set category 75
next
edit 30
    set category 76
next
edit 31
    set category 26
next
edit 32
    set category 61
next
edit 33
    set category 86
next
edit 34
    set category 17
next
edit 35
    set category 18
next
edit 36
    set category 20
next
edit 37
    set category 23
next
edit 38
    set category 28
next
edit 39
    set category 29
next
edit 40
    set category 30
next
edit 41
    set category 33
next
edit 42
    set category 34
next
edit 43
    set category 35
next
edit 44
    set category 36
next
```

```
edit 45
    set category 37
next
edit 46
    set category 38
next
edit 47
    set category 39
next
edit 48
    set category 40
next
edit 49
    set category 42
next
edit 50
    set category 44
next
edit 51
    set category 46
next
edit 52
    set category 47
next
edit 53
    set category 48
next
edit 54
    set category 54
next
edit 55
    set category 55
next
edit 56
    set category 58
next
edit 57
    set category 68
next
edit 58
    set category 69
next
edit 59
    set category 70
next
edit 60
    set category 71
next
edit 61
```

```
    set category 77
next
edit 62
    set category 78
next
edit 63
    set category 79
next
edit 64
    set category 80
next
edit 65
    set category 82
next
edit 66
    set category 85
next
edit 67
    set category 87
next
edit 68
    set category 31
next
edit 69
    set category 41
next
edit 70
    set category 43
next
edit 71
    set category 49
next
edit 72
    set category 50
next
edit 73
    set category 51
next
edit 74
    set category 52
next
edit 75
    set category 53
next
edit 76
    set category 56
next
edit 77
    set category 81
```

```
next
edit 78
    set category 84
next
edit 79
next
edit 80
    set category 88
next
edit 81
    set category 89
next
edit 82
    set category 90
next
edit 83
    set category 91
next
edit 84
    set category 92
next
edit 85
    set category 93
next
edit 86
    set category 94
next
edit 87
    set category 95
next
end
end
set log-all-url enable
set web-content-log disable
set web-filter-command-block-log disable
set web-filter-cookie-log disable
set web-url-log disable
set web-invalid-domain-log disable
set web-ftgd-err-log disable
next
end
config webfilter search-engine
edit "google"
    set hostname ".*\\\.google\\..*"
    set url "^\\//((custom|search|images|videosearch|webhp)\\\\?)"
    set query "q="
    set safesearch url
    set safesearch-str "&safe=active"
next
```

```
edit "yahoo"
    set hostname ".*\\\.yahoo\\..*"
    set url "^\\//search(\\//video|\\//images){0,1}(\\?|;)"
    set query "p="
    set safesearch url
    set safesearch-str "&vm=r"
next
edit "bing"
    set hostname ".*\\\.bing\\..*"
    set url "^\\//(\\//images|\\//videos)?(\\//search|\\//async|\\//asyncv2)\\?"
    set query "q="
    set safesearch header
next
edit "yandex"
    set hostname "yandex\\..*"
    set url "^(\\//((yand|images\\//|video\\//)(search|search\\//))\\?|"
    set query "text="
    set safesearch url
    set safesearch-str "&family=yes"
next
edit "youtube"
    set hostname ".*youtube.*"
    set safesearch header
next
edit "baidu"
    set hostname ".*\\\.baidu\\\.com"
    set url "^\\//s?\\?"
    set query "wd="
next
edit "baidu2"
    set hostname ".*\\\.baidu\\\.com"
    set url "^(\\//(ns|q|m|i|v))\\?|"
    set query "word="
next
edit "baidu3"
    set hostname "tieba\\\.baidu\\\.com"
    set url "^(\\//f)\\?|"
    set query "kw="
next
end
config emailfilter profile
    edit "sniffer-profile"
        set comment "Malware and phishing URL monitoring."
        config imap
        end
        config pop3
        end
        config smtp
        end
```

```
next
edit "default"
    set comment "Malware and phishing URL filtering."
    config imap
    end
    config pop3
    end
    config smtp
    end
next
end
config system sdwan
    config zone
        edit "virtual-wan-link"
        next
    end
config health-check
    edit "Default_DNS"
        set system-dns enable
        set interval 1000
        set probe-timeout 1000
        set recoverytime 10
        config sla
            edit 1
                set latency-threshold 250
                set jitter-threshold 50
                set packetloss-threshold 5
            next
        end
    next
    edit "Default_Office_365"
        set server "www.office.com"
        set protocol http
        set interval 1000
        set probe-timeout 1000
        set recoverytime 10
        config sla
            edit 1
                set latency-threshold 250
                set jitter-threshold 50
                set packetloss-threshold 5
            next
        end
    next
    edit "Default_Gmail"
        set server "gmail.com"
        set interval 1000
        set probe-timeout 1000
        set recoverytime 10
```

```
config sla
    edit 1
        set latency-threshold 250
        set jitter-threshold 50
        set packetloss-threshold 2
    next
end
next
edit "Default_AWS"
    set server "aws.amazon.com"
    set protocol http
    set interval 1000
    set probe-timeout 1000
    set recoverytime 10
    config sla
        edit 1
            set latency-threshold 250
            set jitter-threshold 50
            set packetloss-threshold 5
        next
    end
next
edit "Default_Google Search"
    set server "www.google.com"
    set protocol http
    set interval 1000
    set probe-timeout 1000
    set recoverytime 10
    config sla
        edit 1
            set latency-threshold 250
            set jitter-threshold 50
            set packetloss-threshold 5
        next
    end
next
edit "Default_FortiGuard"
    set server "fortiguard.com"
    set protocol http
    set interval 1000
    set probe-timeout 1000
    set recoverytime 10
    config sla
        edit 1
            set latency-threshold 250
            set jitter-threshold 50
            set packetloss-threshold 5
        next
    end
```

```
next
end
end
config firewall schedule recurring
edit "always"
    set day sunday monday tuesday wednesday thursday friday saturday
next
edit "none"
next
edit "default-darrp-optimize"
    set start 01:00
    set end 01:30
    set day sunday monday tuesday wednesday thursday friday saturday
next
end
config firewall profile-protocol-options
edit "default"
    set comment "All default services."
    config http
        set ports 80
        unset options
        unset post-lang
    end
    config ftp
        set ports 21
        set options splice
    end
    config imap
        set ports 143
        set options fragmail
    end
    config mapi
        set ports 135
        set options fragmail
    end
    config pop3
        set ports 110
        set options fragmail
    end
    config smtp
        set ports 25
        set options fragmail splice
    end
    config nntp
        set ports 119
        set options splice
    end
    config ssh
        unset options
```

```
end
config dns
    set ports 53
end
config cifs
    set ports 445
    unset options
end
next
end
config firewall ssl-ssh-profile
    edit "deep-inspection"
        set comment "Read-only deep inspection profile."
        config https
            set ports 443
            set status deep-inspection
        end
        config ftps
            set ports 990
            set status deep-inspection
        end
        config imaps
            set ports 993
            set status deep-inspection
        end
        config pop3s
            set ports 995
            set status deep-inspection
        end
        config smtps
            set ports 465
            set status deep-inspection
        end
        config ssh
            set ports 22
            set status disable
        end
config ssl-exempt
    edit 1
        set fortiguard-category 31
    next
    edit 2
        set fortiguard-category 33
    next
    edit 3
        set type wildcard-fqdn
        set wildcard-fqdn "adobe"
    next
    edit 4
```

```
    set type wildcard-fqdn
    set wildcard-fqdn "Adobe Login"
next
edit 5
    set type wildcard-fqdn
    set wildcard-fqdn "android"
next
edit 6
    set type wildcard-fqdn
    set wildcard-fqdn "apple"
next
edit 7
    set type wildcard-fqdn
    set wildcard-fqdn "appstore"
next
edit 8
    set type wildcard-fqdn
    set wildcard-fqdn "auth.gfx.ms"
next
edit 9
    set type wildcard-fqdn
    set wildcard-fqdn "citrix"
next
edit 10
    set type wildcard-fqdn
    set wildcard-fqdn "dropbox.com"
next
edit 11
    set type wildcard-fqdn
    set wildcard-fqdn "eease"
next
edit 12
    set type wildcard-fqdn
    set wildcard-fqdn "firefox update server"
next
edit 13
    set type wildcard-fqdn
    set wildcard-fqdn "fortinet"
next
edit 14
    set type wildcard-fqdn
    set wildcard-fqdn "googleapis.com"
next
edit 15
    set type wildcard-fqdn
    set wildcard-fqdn "google-drive"
next
edit 16
    set type wildcard-fqdn
```

```
        set wildcard-fqdn "google-play2"
next
edit 17
    set type wildcard-fqdn
    set wildcard-fqdn "google-play3"
next
edit 18
    set type wildcard-fqdn
    set wildcard-fqdn "Gotomeeting"
next
edit 19
    set type wildcard-fqdn
    set wildcard-fqdn "icloud"
next
edit 20
    set type wildcard-fqdn
    set wildcard-fqdn "itunes"
next
edit 21
    set type wildcard-fqdn
    set wildcard-fqdn "microsoft"
next
edit 22
    set type wildcard-fqdn
    set wildcard-fqdn "skype"
next
edit 23
    set type wildcard-fqdn
    set wildcard-fqdn "softwareupdate.vmware.com"
next
edit 24
    set type wildcard-fqdn
    set wildcard-fqdn "verisign"
next
edit 25
    set type wildcard-fqdn
    set wildcard-fqdn "Windows update 2"
next
edit 26
    set type wildcard-fqdn
    set wildcard-fqdn "live.com"
next
edit 27
    set type wildcard-fqdn
    set wildcard-fqdn "google-play"
next
edit 28
    set type wildcard-fqdn
    set wildcard-fqdn "update.microsoft.com"
```

```
next
edit 29
    set type wildcard-fqdn
    set wildcard-fqdn "swscan.apple.com"
next
edit 30
    set type wildcard-fqdn
    set wildcard-fqdn "autoupdate.opera.com"
next
end
next
edit "custom-deep-inspection"
    set comment "Customizable deep inspection profile."
config https
    set ports 443
    set status deep-inspection
end
config ftps
    set ports 990
    set status deep-inspection
end
config imaps
    set ports 993
    set status deep-inspection
end
config pop3s
    set ports 995
    set status deep-inspection
end
config smtps
    set ports 465
    set status deep-inspection
end
config ssh
    set ports 22
    set status disable
end
config ssl-exempt
    edit 1
        set fortiguard-category 31
    next
    edit 2
        set fortiguard-category 33
    next
    edit 3
        set type wildcard-fqdn
        set wildcard-fqdn "adobe"
    next
    edit 4
```

```
    set type wildcard-fqdn
    set wildcard-fqdn "Adobe Login"
next
edit 5
    set type wildcard-fqdn
    set wildcard-fqdn "android"
next
edit 6
    set type wildcard-fqdn
    set wildcard-fqdn "apple"
next
edit 7
    set type wildcard-fqdn
    set wildcard-fqdn "appstore"
next
edit 8
    set type wildcard-fqdn
    set wildcard-fqdn "auth.gfx.ms"
next
edit 9
    set type wildcard-fqdn
    set wildcard-fqdn "citrix"
next
edit 10
    set type wildcard-fqdn
    set wildcard-fqdn "dropbox.com"
next
edit 11
    set type wildcard-fqdn
    set wildcard-fqdn "eease"
next
edit 12
    set type wildcard-fqdn
    set wildcard-fqdn "firefox update server"
next
edit 13
    set type wildcard-fqdn
    set wildcard-fqdn "fortinet"
next
edit 14
    set type wildcard-fqdn
    set wildcard-fqdn "googleapis.com"
next
edit 15
    set type wildcard-fqdn
    set wildcard-fqdn "google-drive"
next
edit 16
    set type wildcard-fqdn
```

```
        set wildcard-fqdn "google-play2"
next
edit 17
    set type wildcard-fqdn
    set wildcard-fqdn "google-play3"
next
edit 18
    set type wildcard-fqdn
    set wildcard-fqdn "Gotomeeting"
next
edit 19
    set type wildcard-fqdn
    set wildcard-fqdn "icloud"
next
edit 20
    set type wildcard-fqdn
    set wildcard-fqdn "itunes"
next
edit 21
    set type wildcard-fqdn
    set wildcard-fqdn "microsoft"
next
edit 22
    set type wildcard-fqdn
    set wildcard-fqdn "skype"
next
edit 23
    set type wildcard-fqdn
    set wildcard-fqdn "softwareupdate.vmware.com"
next
edit 24
    set type wildcard-fqdn
    set wildcard-fqdn "verisign"
next
edit 25
    set type wildcard-fqdn
    set wildcard-fqdn "Windows update 2"
next
edit 26
    set type wildcard-fqdn
    set wildcard-fqdn "live.com"
next
edit 27
    set type wildcard-fqdn
    set wildcard-fqdn "google-play"
next
edit 28
    set type wildcard-fqdn
    set wildcard-fqdn "update.microsoft.com"
```

```
next
edit 29
    set type wildcard-fqdn
    set wildcard-fqdn "swscan.apple.com"
next
edit 30
    set type wildcard-fqdn
    set wildcard-fqdn "autoupdate.opera.com"
next
end
next
edit "no-inspection"
    set comment "Read-only profile that does no inspection."
    config https
        set status disable
    end
    config ftps
        set status disable
    end
    config imaps
        set status disable
    end
    config pop3s
        set status disable
    end
    config smtps
        set status disable
    end
    config ssh
        set ports 22
        set status disable
    end
next
edit "certificate-inspection"
    set comment "Read-only SSL handshake inspection profile."
    config https
        set ports 443
        set status certificate-inspection
    end
    config ftps
        set status disable
    end
    config imaps
        set status disable
    end
    config pop3s
        set status disable
    end
    config smtps
```

```
    set status disable
end
config ssh
    set ports 22
    set status disable
end
next
end
config waf profile
edit "default"
    config signature
        config main-class 100000000
            set action block
            set severity high
        end
        config main-class 20000000
        end
        config main-class 30000000
            set status enable
            set action block
            set severity high
        end
        config main-class 40000000
        end
        config main-class 50000000
            set status enable
            set action block
            set severity high
        end
        config main-class 60000000
        end
        config main-class 70000000
            set status enable
            set action block
            set severity high
        end
        config main-class 80000000
            set status enable
            set severity low
        end
        config main-class 110000000
            set status enable
            set severity high
        end
        config main-class 90000000
            set status enable
            set action block
            set severity high
        end
```

```
    set disabled-signature 80080005 80200001 60030001 60120001 80080003 90410001
90410002
end
config constraint
    config header-length
        set status enable
        set log enable
        set severity low
    end
    config content-length
        set status enable
        set log enable
        set severity low
    end
    config param-length
        set status enable
        set log enable
        set severity low
    end
    config line-length
        set status enable
        set log enable
        set severity low
    end
    config url-param-length
        set status enable
        set log enable
        set severity low
    end
    config version
        set log enable
    end
    config method
        set action block
        set log enable
    end
    config hostname
        set action block
        set log enable
    end
    config malformed
        set log enable
    end
    config max-cookie
        set status enable
        set log enable
        set severity low
    end
    config max-header-line
```

```

        set status enable
        set log enable
        set severity low
    end
    config max-url-param
        set status enable
        set log enable
        set severity low
    end
    config max-range-segment
        set status enable
        set log enable
        set severity high
    end
end
next
end
config firewall policy
edit 1
    set uuid 1dc9c76e-b6a1-51ed-c135-a1321a614bde
    set srcintf "lan"
    set dstintf "wan"
    set srcaddr "all"
    set dstaddr "all"
    set action accept
    set schedule "always"
    set service "ALL"
    set nat enable
next
end
config firewall ssh local-key
edit "Fortinet_SSH_RSA2048"
    set password ENC
AAAAA4NXOb1cttI7CwdmInlGB/DfhFM6kz2f7L5+TBDC2dtYZfNU6D+Mwr0Sra-
VYLxYbBxGf15hbWVZ6WT9bNGW6foxlGM8Uvc4aro-
dAqo7czXnc4E+sOHgDogAA0qihe066nm57e7sfMgGbM5N77ZTOkluntdCrinnpJT8d5
TPEPlrce0SUdPJs9gtk9FmRoyeqrAQ==
    set private-key "----BEGIN OPENSSH PRIVATE KEY----"
b3BlbnNzaC1rZXktdjEAAAAACmFlczI1Ni1jdHIAAAAGYmNyeXB0AAAAA-
GAAAABDbtSopPk
/TSm2I2i8L4eB1AAAAEAAAAAEAAEXAAAAB3NzaC1yc2EAAAADAQABAAA-
BAQDFMgkLAxhZ
H4UboenAsFMqttdpYmmftCmAlQtUczajOYyn2QxZe3S8ocPK3IHCLrRN+LKG6ys-
SHyxnaY
VODThXgrAFVZAq6DqbNhKvpIHa7ceqK0B2iNMcl-
cOTFCwxqFpQzn2mGa/Nlqd3n/sRofyj
ocymfGkvQ79UzrF1/c1z3JDF30GmO2yTjNW1o4Z1SJV+aEpQ2pR876WVUzjx89fXd
RfN3X

```

```

O1oPDM0fv2bgCGaZZIIth43/j3WE3sF3X00pZBVGFlXPKJ8+XMAidXw9ds4E0TdCa8
DqFY
PJ7Gp0ru6evcooreD-
McoEO9wBUMmvJn2ukhBjqRJGOLNzvrgy0cDAAADwIRkR6icc+bCaM
gEUhvV5+8YEJN69Dho2TVLrBhxMWUhiZrYAq8okZNd-
NfNKLtRfgofSQ990qoOtB1r6dF5O
UH3Zqvbbuqydy9zjvbcVzb+x62hV7u8OUbKswN8Vw7KepJMSdenSkU8E2noT-
KTmzGqrcN
7q+Dg1OO5zMBo2SWtUAwrqaEMNxdihZM4nGfFR1IX+rmfdUx3bx6VnY-
HOF9w28Re3I9km
pOBu0YMBRNy8XOG0Rvl+2a6f8Pl7VbU6YqfuwpYMaI0Vq0i2c12tNh0MzjEXmS2Du
TCQto
t1ayWNr7HqWnzOk/K2viQyva79BfCwQajMUfQo-
LURRKmWLnzMSBLRb28FRW/psdN01Tex/
SyBj84k1prW8VQsLYKbvSDVu9DsvOL9UvYWN/RJA2/2D68nE/goyutaUrU/gAHQF
sYP42b
lG74O/7Iat1bNly6cuVxMMNKWZxbwXX3ijRP4+73nCJ3mkrPmTnR+MENye2+UT-
vxfgxO2
myxei1ZAfvccq7vvcc4Z+Bc1SapRmYpKytaKUa2PITVibVHFRRdIEpuY6CKnFpt-
BQTZdZd0
DskH3yKIWqXzDCab1vk3q+B54gZANCeaYCzYeR-
SOhQGQf5+fYks6Cy11CBTkTsc7+wAIq7
/aqG77/j3mx1878ly-
wlQ6jRWRXZ4TF/tdsrJdvbw5aAalmIHvLuzfGgkv8FJDmaV96wh
TrEwYIjV0Y+R6OD8hPdLqlqcSMGVYJhNp4AQFbgXKUuF-
njilUyXYI4Tg6yVOgPJv2pV03n
ugM4g4aungY/if/HcT+/lqtu6+D/bqYtkmpJirGmusXlfwNz5iCj5a6ngt0xodJsXd0gDM
eWwGK+/G458XkkIqZtJuSRzTpKHVeH5gvrnPPRMnC/rV8ix-
Izd2H9T4Po/hMUEa6UsuRd4
kEzcysm0jQoQyJg1Zlyty-
Tdk0NNMoc+YHM8FRp+q/CLW738hWq1n/MTap0JMIVyYqObBU
D88rqZW2zp6po8z/gvrpN22eB/EStZk8BzEHUfBD56zj00Q93iVqPc8ok7ErSZSyagx7sz
wv6cK8IH-
bpAtQ5OUSYZ8/wBz+fEO1mKxF49y8Yh6DEd96Sw3KO9RBFk/X38eZSa02gQj6C
ngqvhTjekmlgk7rLhSJMr7sQqbQfbxReMNZPqOSaKzHEkETmEZNy7deoyMESJu-
jheAVohD
ah-
FxZkXP976GL2tL4H5xREqQ0HYW1Hn5x6Jzp9ebi9FvXvyRxJcVQ65QEkuZ6ygfu3LU
Sn
Wv8wiLaw==

-----END OPENSSH PRIVATE KEY-----
"
      set public-key "ssh-rsa AAAAB3NzaC1yc2EAAAQABAAA-
BAQDFMgkLAxhZH4UBoenAsFMqtdpYmmftCmAlQtUczajOYyn2QxZe3S8ocPK3IH-
CLrRN+LKG6ysSHyxnaYVODThXgrAFVZAq6DqbNhKvpIHa7ceqK0B2iNMcl-
cOTFCwxqFpQzn2mGa/Nlqd3n/sRofyjocymfGkvQ79UzrF1/c1z3JDF30GmO2yTjNW
1o4Z1SV+aEpQ2pR876WVUzjx89fXdRfN3XOl0pDm0fv2bgCGaZZIIth43/j3WE3sF3
X00pZBVGFlXPKJ8+XMAidXw9ds4E0TdCa8DqFYPJ7Gp0ru6evcooreD-
McoEO9wBUMmvJn2ukhBjqRJGOLNzvrgy0cD"
```

```

        set source built-in
next
edit "Fortinet_SSH_DSA1024"
    set password ENC
AAAAA4Pk7+KiccVGeBT6IGiA+F6Ae5j5uOyqlP1hCusmXP42Hx445CwWBQQ7mwwa
uXL/sMIQ5OLI/GLV8oGb+fTR+0csV6Gqaw18S6UZUWf0E2vuwhez-
SpKg2ixbstVQgPNEYp+xf/RjasbJ8falbHHh5Lg2/Lj096YM7benb6KVzA8DSvaqqRHIN
W5WJTIxaesn0w==
    set private-key "----BEGIN OPENSSH PRIVATE KEY----"
b3BlbnNzaC1rZXktdjEAAAACmFlczI1Ni1jdHIAAAAGYmNyeXB0AAAAGAAAA-
BAO3EJxRV
3F34lF7zlBSyfnAAAAEAAAAAEEAAAGyAAAAB3NzaC1kc3MAAAC-
BAPEeLR4m/gr8WonCBZQD
tCddoHGx3X+7z0hwCC6xexN07E8t3T6WsC+VCvVAxEWtoQUuhAx-
pMJ8NDqdZql5Uau6oB7
RDGS1Htl1IPIKyS6oa0TLUXiXl0BucYh3Y03PG1NJ1h5TJ2ur/rimq7m9/R2qOJRWCFS
SCS
OmqE45TcCzt5AAAQFDW05FPlffs5BUYmZ5DxdH/viE9AQAAIAVZkQWJr6lZU
aQYIM+ai
5JOsDMWWO3Rf1owAnx6p5Yu7/pyq5ZgVdSnn0ut0KKZ3Xdy+sqZYxr2BZY-
dMAkY96OP+32
aN3v4B+2bDQiydtcq+At-
BJBlegYeWZaNo/RgFVHEFNN5AiBe1IcSb24zgf18l+qeZ+5d8D
IdNpt1KMAN0AAAAIEAtoN47fKunsUZp-
pYM/heWM2C+/F2EbqUv8Gn5XBQsSuxzdo4GeKyp
UQJMZ2w8phbwTPr4IyPztCM7zn4/OyDu+EQA8seiFwVntdzB-
bUrrwAM7M4KG6prq0cPoes
X4qslgGUTopzLqx2b6uR0ba-
zKBNj6wEaH+RQfEjyPjECL5DSsAAAHPgAw1Wa9H7IWZOlti
DEJ8ygN3a1AHgfSgm+fqbz2A/dHV7KF4O/IGJ90aQkYLQfCpxUjTSuYIv3hlPdajo-
hySTT
pATfei2BrytmjC3BCQIJRUipE-
DomxbX5g3KA1qx3z4eWROZK8rr4Ih3rb/NKgS8Q+YsQH6
orexk25QMeXZUhG2773x8P2phWpbBh3Cj7UO07ut3q/+i3xF6fd90JI-
YDGP8f3jeVKv39
PgMNWWGygDWee0O116pa8DfYOczMoF9/7/bHap-
lXC1qV+TnWcmmhPdV1KdngdW9slfCjtX
IsJD1OWvjWkzbXDGX04Z7L6c3Hlpa39Q1991d2iQxb6nQ3dJCoJl7EK3pdxrRNsmrl
p3P
seH+VTAdvGTnMqKAY5VKFVcqUSnP4dAijFPNg-
ZwyemXe2UFB74hX2KXqlqjJwLLZ2+yPQ
1tQPw8cjZE9A9LhgJmiVt0yErX88h50tNZaIsqT2F1WAP-
wcRps4Q0woV+B/rMr0+6sSX4d
KHNmABCkrp/Izp30jd6IggnMYivbySsAN+Qmoi04Y8gg'TUXji-
wEPqFUqK6M1b7+RpxxA/
IDM9132cwqQqELP1yza7G9dH7XCD+0nmzE/oXd63vE9pEEDtt-
fUUAXHLAZwDUhrY
-----END OPENSSH PRIVATE KEY-----
"
```

```

        set public-key "ssh-dss AAAAB3NzaC1kc3MAAAC-
BAPEeLR4m/gr8WonCBZQDtCddoHGx3X+7z0hwCC6xexN07E8t3T6WsC+VCvVAx
EWtoQUuhAx-
pMJ8NDqdZql5Uau6oB7RDGS1Htl1IPIKyS6oa0TLUXiXI0BucYh3Y03PG1NJ1h5TJ2ur
/rimq7m9/R2qOJRWCf-
SCSOmqE45TcCzt5AAAAFQDW05FPlffs5BUYmZ5DxdH/viE9AQAAIAVZkQWJr6
IZUa-
QYIM+ai5JOsDMWWO3Rf1owAnx6p5Yu7/pyq5ZgVdSnn0ut0KKZ3Xdy+sqZYxr2BZ
YdMAkY96OP+32aN3v4B+2bDQiycq+At-
BJBlegYeWZaNo/RgFVHEFNN5AiBe1IcSb24zgf18l+qeZ+5d8DId-
Npt1KMAN0AAAAIEAtoN47fKunsUZp-
pYM/heWM2C+/F2EbqUv8Gn5XBQsSuxzdo4GeKypUQJMZ2w8phbwTPr4IyPztCM7
zn4/OyDu+EQA8seiFwVntdzB-
bUrrwAM7M4KG6prq0cPoesX4qlgGUTopzLqx2b6uR0ba-
zKBNj6wEaH+RQfEjyPjECL5DSs="

        set source built-in
next
edit "Fortinet_SSH_ECDSA256"
        set password ENC AAAA4GpV5IN-
tUT2Ybjnl4tob9Ti1E43AkWXp63qoaCb7drWD3lN2w2qAyGyRap-
nrL8/vujEF3RqPDHGM4hJFXF2sgjRMRtPFp4nO1XjEJxz63mIyAFwiKW3z5NZnUN-
BrbMlv5TV4crby4qo+pdrf-
Pqdk1yU92O4Eb1Zae/G9FO9Yx/dX5ebQG2rR9N6KNk60MXqSnQ==

        set private-key "----BEGIN OPENSSH PRIVATE KEY----
b3BlbnNzaC1rZXktdjEAAAACmFlczI1Ni1jdHIAAAAGYmNyeXB0AAAA-
GAAAABA6DcyJ0s
6etXYZkKJCqUaAAAAEAAAAEAABoAAAAE2VjZHNhLXNoYTIt-
bmlzdHAyNTYAAAAbmlz
dHAyNTYAAABBBHhmQ8bxccvPxlpS87Fb8K0MD8ANLlmk-
eYFOpFW6UpaqGsNZclxF36Sa/
PlI3dYmsH24StEEngbgOa-
hcJnFWlkAACGj5c38uGItXhm8L/ZRp5nvGTvSWdnq7snorfD
10XG2lUvqody1CAupI/AfoMPWavtwuJDm+9lxWhcr26DM6uRKukYtNGot-
zxe1eIkzb/HLZ
blVrelaMrGn5Dtsi-
eecU5Czs6n78vYHwyK0HTtG/vKdgHLLzHWSeZ2ImNqHM6csJ6XPe92
Zc/yCj7JTkJOisKt40jC+PNmTLdLrxFYNCXxgw==

----END OPENSSH PRIVATE KEY----
"
        set public-key "ecdsa-sha2-nistp256 AAAAE2VjZHNhLXNoYTIt-
bmlzdHAyNTYAAAAbmlz
bmlzdHAyNTYAAABBBHhmQ8bxccvPxlpS87Fb8K0MD8ANLlmk-
eYFOpFW6UpaqGsNZclxF36Sa/PlI3dYmsH24StEEngbgOahcJnFWlk="
        set source built-in
next
edit "Fortinet_SSH_ECDSA384"
        set password ENC AAAA4M1ng0hjMwQEZL9oG-
bpLGxm7iXujW09uartPb7uQAPNsBeDHtVpLP0OFBKmXdtZ-
LMQr1SCTiQZN5eroQc65XXKIX5vGyE21cOqlnDz8N0tstpLhFK/dc0DYNsLNffYZI

```

```

7WRDhWv2fTZH6qGvVG7R4qNOygMaLnV5QuiYfr5BazH0j6BX1ib9y+o6tKRDA-
JyOnw==
    set private-key "-----BEGIN OPENSSH PRIVATE KEY-----
b3BlbnNzaC1rZXktdjEAAAAACmFlczI1Ni1jdHIAAAAGYmNyeXB0AAAAA-
GAAAABCU6nYV+O
8Z7mqbX/NEzHSvAAAAEAAAAAEAAACIAAAAEE2VjZHNhLXNoYTIIt-
bmlzdHAzODQAAAIBmlz
dHAzODQAAABhBHbPFmfPnPnZPsNN-
MFz9l6C+eyQCp97gWo4yX+11wFIIEl7qbpBrP+rrczOg
9eBfsMhQzKlG6tQix2edDO1iKi6oF-
BoL+Dp0Wg8prVYFHko/mXqUQiQ4l6ObA60SYFw+q
3gAAANDarQ+jSqILGA6RLzWqgr2cegnJ5PzG9EwXfTcYBirDEp2V0Txm7pvdy-
GyLY8
jLfHTBxQND/sePh/8YTyPL1oEg6AqEcJpLPY+q9NlT50oEUPtsI-
eEl4ak+qxHQeuQWQKhF
o4LZDwGVHwXovyU9TU/bZpUoesggol2Ek5B8Il-
weunIDA6ZWPC4betKj37psVlcqu8p945
/53p2fRPH2n1wV98aktz-
fBxIKNwXzE7g6neEYJVWl4JGPDU6tX/52Lr0JLvWk0D7xyvM6
Iq4G
-----END OPENSSH PRIVATE KEY-----
"
    set public-key "ecdsa-sha2-nistp384 AAAAE2VjZHNhLXNoYTIItbmlzdHAzO-
DQAAAIBmlzdHAzODQAAABhBHbPFmfPnPnZPsNN-
MFz9l6C+eyQCp97gWo4yX+11wFIIEl7qbpBrP+rrczOg9eB-
fsMhQzKlG6tQix2edDO1iKi6oF-
BoL+Dp0Wg8prVYFHko/mXqUQiQ4l6ObA60SYFw+q3g=="
```

set source built-in

next

edit "Fortinet_SSH_ECDSA521"

set password ENC

```

AAAA4BGVzx+B+TzQGtcMGef5+E7JcGnEsAGL/aXzZ9tKTH-
FGE0SiUU+K2rptUYPbf2AfHPZCfEjXOfgQ7PH+2QxiR8cdAioTftZiQa+jV3DfZn-
AcqXrHB+U7abXF5U7tvvzXb1tSOgNhsXpXE-
gNk1IE5M2oQznBnZ6KhkQwGlkkIxTqgw3AyMOD15xe+InyawTJYa6w==
```

set private-key "-----BEGIN OPENSSH PRIVATE KEY-----

```

b3BlbnNzaC1rZXktdjEAAAAACmFlczI1Ni1jdHIAAAAGYmNyeXB0AAAAGAAAA-
BAgVeWSHR
6m+F8UtZ9XIY3fAAAAEAAAAAEAAACsAAAAE2VjZHNhLXNoYTIIt-
bmlzdHA1MjEAAAIBmlz
dHA1MjEAAACFBAlP6e/GP8OeWb4nwTBMAcmu5AmglRBZ5oa8+FoWBzFyE-
hyZpeyhmCa8K
bdyVghw1ggBpMXSgOkzem84XCHjn36gDJsghzymgXsdbOv-
KFc5oYWg6XsiOq70LT'TLD+2
sDKtGGCJlOhhWwxQ1/ODxheIx1HvO5/kIzca3hQV5zPcfW736wAAAQDldtZRy-
WPNTZOMCQ
3QGK6fljAG9IuD+3ni/o6OQ5lbReoEuT0Ct442nY9AVkmO4ug-
bPubQvYSEegh94xbfX0j9
```

```

NTj6mew+JswrnnyO509eY1SRyYm4ivJq69gkxyq9uM+LMwyTtp2WRRVxCoJzJPEW-
pKkRp6
/K5aDuEdGsv8F/mnOwtyax/LHQ+0BYEWh8y9LBw1o1O0NWMn-
jipO2vk/PPYRNT7oY/3pEj
XM8cSNNLFpKoWEcMTRabFJVSAw1uyJI-
YwTm3hKjGWhKW0fcGIzUERD0Wj8j9ay+pYza6d5
w8/NUiNIVtk5/7BA0XhwoON4hokmCaG7JPw3mQBDOb0eo1RG
-----END OPENSSH PRIVATE KEY-----
"
      set public-key "ecdsa-sha2-nistp521 AAAAE2VjZHNhLXNoYTIt-
bmlzdHA1MjEAAAIBmlzdHA1MjEAAACFBAEfP6e/GP8OeWb4nwTB-
MAcmu5AmglRBZ5oa8+FoWBzFyEhyZpeyhmCa8KbdyVghw1ggBpMXS-
gOkzem84XCHjn36gDJsghzymgXsdbOv-
KFc5oYWg6XsiOq70LTTLD+2sDKtGGCJlOh-
hWwxQl/ODxheIx1HvO5/kIzca3hQV5zPcfW736w=="
      set source built-in
next
edit "Fortinet_SSH_ED25519"
      set password ENC COnREHtXoY1Y37EvH5NS/sDbUWRujx-
IbwdqXsc+BC+4glDvYZv1ox2yjYOb2NXZY8sZjF-
fuhAe/CuNC8B2spyAHrhKI9MlbHa589ifcxQD9YQmhjKvQJur4IgwQnpqK-
moU9cv7+bpgj3QKLgNKKtPDqZ7Z7jev-
TRdh8j8iMaSDsHFFUOp1mle+aDXG27o12l+dyYxA==
      set private-key "-----BEGIN OPENSSH PRIVATE KEY-----
b3BlbnNzaC1rZXktdjEAAAAACmFlczI1Ni1jdHIAAAAGYmNyeXB0AAAA-
GAAAABDz5I/V9Z
GE9mhbCW5YXCJ5AAAAEAAAAE-
AAAAzAAAAC3NzaC1lZDI1NTE5AAAAIEBHhbjdnQVc28p1
Ik+q1UyMgt7xf5l2iHC2xnBWzFcgAAAAkJAKTEJ8OvpwBiSdwJaga3WAiv-
IiM52AodAmaU
Hq4zuVnKiLh3YEO4NKFrSll2xDemT2F4GSwlHxon0kOfPaynGu7D6+lOPQC33hZbl
gSZly
aIaa3yVGcTi01UgQvKfMv1Sxz8ZDhVrLT1bLf xuSDCgyeNv0TMgSPpAFWlx-
Iwz4z8W22jS
7I71tFJF9XcNg++g==
-----END OPENSSH PRIVATE KEY-----
"
      set public-key "ssh-ed25519
AAAAC3NzaC1lZDI1NTE5AAAAIEBHhbjdnQVc28p1Ik+q1UyMgt7xf5l2iHC2xnBWz
Fcg"
      set source built-in
next
end
config firewall ssh local-ca
edit "Fortinet_SSH_CA"
      set password ENC
AAAA4CjUCkkh9hEHVxZpP2gDO92fhQ7cbosVFoHDhypsg6Hia-

```

F1KIfjnJsZLO26n42VLuyid9M8OswwDLrcZ/j6on3DpZTyR14cgNcN519CXqVdxY-aTHFk4CQ6IF0Jju1udeKH6++WRmP8ByWg/WIdLnwK0SfSly2kLS9z9Bk27wgdH/9wRMms/TK1Cfk8nNBH3BA==
set private-key "-----BEGIN OPENSSH PRIVATE KEY-----
b3BlbnNzaC1rZXktkjEAAAAACmFlczI1Ni1jdHIAAAAGYmNyeXB0AAAA-GAAAABDeMw0umq
/ZkGDtkv/aD/0fAAAAEAAAAAEAAAEXAAAAB3NzaC1yc2EAAAADAQABAAA-
BAQC9ODfggoJc
5hzVHcN55GcNyBIeeqLyK3hAGU73nTzMEQiQsedNKMPMmOGgRuXYyF10mwYa-
QYS3xMDUN7
QYuf8KZ1N516jNZeuuoSu+7us31xarD-
lDqe/mUndHVGqlNWuoGgfBqOvpHZODbVPmCrRLM
n3+RJVvQuaC5IRZlCi2WUscaMQ5H9gQqqKjyXi-
OZytQ61ZI+Tdp2via5iv0hhhC+UgxXA4
SCKIZYrgeaiCxIu9gamLf3f12WBzTeWCbrF0bs01O3dDLp+qHonLt-
wjXxS1mbGKYLcfc2
cAdT6jmZdNjI2Re6D+ARf9x/2Xg/rT6f4stnGcnCD77+tghe84s/AAADwLsoZe+SxBF
8sZ
LE9XdYinJvCcSYbICaX17b95bubShfKwFNa19AFx-
sTphx95b4HuBsbNhtu2C6dQPbFZd0S
JG8zUANjbx-
ODL6xn0BmFepHp8mWfnL/YXDfxtK2ItJ'6eylzy8khP6oDu6XlTvyy09wHSnz
+DItn9NOlpt+QfhGiFbErswGh0omPOTUJ6aUA5xcgcsvZg3eWH-
Spietb983ZVhymNttb8m
QQ8NAseo5bOK/on3IBUTbTKwV7AZ8jwu2Paz8pnIhWvn+A2UeqnN5dvMWjfj2X3
dW35z7
PuEWoRG/LkyoaNY6gN8fk0MRKDLIhnZoFv9HvVcwKHi1NOY-
HlIoF2zJiuC6MVBDdUG8TFz
4LJn+Swmj/AOaE-
Jxwqwiq2L59D+Tja4iad9X5+i5n98IrgrjWoV5vnrEYmibqcUW1cyw9Z
eL0Tle6H0rJ9NZio2fl2gBK7xyKJbhEE05XBb-
BuqA5OMLs4tn0YxGG1MdUq1F3xHDEDSsM
7xM+7wLn7MdzslwLmufPxNUWmYPDO0Vhyv6CQSoK1AW1-
RjwdtwWHkfGFYe3zqP10TxOsAx
jPXoxk+Q3Qsfv6p8AUcq3G30CVBIdoRKQSCIbu4pRwqdIZtRexWYbNG8EQAB-
ZUCsR4tu3
r60jKn1oBFw4KPumRmwhTZnfSDRLCPXyr7LJXAzu6F/qwXrWFCx7tQ1pZn-
lyebUPGAVIjR
iVinMm4GICws4yhQSeN9LOrsFF6H6E5Nfog52PLnNQeXtGjY/HWtYAxU2/ZCNh
4y8dGa^q
KhepytzkTwq1hbgR8g1vFSnjxDsO9gGuB92zPZ+1tuEifA3QL+bctXqo4cHi0i61ch6eTU
RMqXGiyF3WyylmlITbWNxlHEzqRxO2olVyOl-
Giwf5ViqHtF4qyyD9xm96uG7UMy1JkyAUC
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x9AK
CbuXHk5tUMCcM0nZlsZYj4xLxZwArwDBGmzay+N564pT3bbLRAwfa7v+LSjft-
MnMDEXXpx
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tATsBl2Ukg96Aqaay+x0Cd7Iq6wh

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Tqn4c7IMytkte/25BQtO3GtpI7/G6vMLXcilygovau+rQtp/qBrOt+kz1QQ6KcnrrEJYgv
S8nb+p8rzxnOqR/2saRhDoSpaXy4fjh10x1RzzJ2ORw6EQGon+y13DfI+Cfu65m9cq2k
CZ
NEvh6YjQ==
-----END OPENSSH PRIVATE KEY-----
"
      set public-key "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQC9OD-
fggoJc5hzVHcN55GcNyBleeqLyK3hAGU73nTzMEQiQsedNKMPMmOG-
gRuXYyF10mwYaQYS3xMDUN7QYuf8KZ1N516jNZeuuoSu+7us31xarD-
IDqe/mUndHVGqlNWuoGgfBqOvpHZODbVPmCrRLMn3+RJVvQuaC5IR-
ZlCi2WUscaMQ5H9gQqqKjyXiOZytQ61ZI+Tdp2via5iv0hhHC+UgxXA4SCKIZYr-
geaiCxIu9gamLf3fj12WBzTeWCbrF0bs01O3dDLp+qHonLt-
wjJxs1mbGKYLcf2cAdT6jmZdNji2Re6D+ARf9x/2Xg/rT6f4stnGcnCD77+tghe84s/
"
      set source built-in
next
edit "Fortinet_SSH_CA_Untrusted"
      set password ENC AAAA4B8zHY+OS+/OIzZ9eDUR-
inQOAz1Rh5t9538FHVR0iqI-
Ridm/H/eSbVr/GcfQPB0zRAKDE2ZB22bjAZg6UROl3Sou0qAczdFVzlFyI9vOp-
BLkoc9I+7uwZzqPQwgfTOcZTrTRy3zSgrIr2J5TQvSPYkw3jkf7fngx5rS/vjG2YKVVbP
YfkPFwh+lwKQftiUBHgA==
      set private-key "-----BEGIN OPENSSH PRIVATE KEY-----
b3BlbnNzaC1rZXktdjEAAAAACmFlczI1Ni1jdHIAAAAGYmNyeXB0AAAA-
GAAAABBZmrJSG0
FSLSwNYo18r3MgAAAAEAAAAAEAAAEXAAAAB3NzaC1yc2EAAAADAQA-
BAAABAQDO3r4+yrbY
gU8hhDddqbFBXpea+XsoQAhRYIAcYunt7kpt5es1ZRQewAaIC/83BUX-
oWe4EuZmH0908QV
gsyv+mrYHT4SkED4svCV9BrDn9wZF-
sKAYxvhuM37mIp0A4dfSN/m0eeYiaWjXDYdLodW7m
6tiGWbE3MiNEYnEHdL1+PJijqMA6br5SZDoj8EITaIMsGhPrS5a4bAldxicAhNK-
TiaYbuI
gyuLFbK9jji5ct0YrcPFFMLvaT-
eDXx3WIJCJuhdjKY9ahjT*TRIKCeHFt78bRkvYmfh7jh
Ix/4+VH5H5f8uiDc6+hSbGjD+PC+S1aDSzP-
CASVDXQ1oEh1GGxkLAAADwB1DfG8bhwxish
Y6t9/I6Q0R1QWjSBLaJPMtBbJQaI8q2NK6tGr/o1CDj2s5P/x+xtE8vxCzGGzzRz-
tjbmfU
zwCLNpjZFvLr4dffC14ghGkNQ+lfRL0Z6YPjO81nWoc7/GWy3EY-
IGUVNSb5c2CXnA+V0Io
H+F1XGkbjZLeYzuQb9rl++I0kvN0537VOX+GgnQH2Ct8wSTVIL7INRq67Ze/ejKlvI
6TwI
QK3oYjk73itVQGqUyNWIZGLuF-
NMPS0kVQqRjbVf4pNuqJxTDePu7ZUg6Hx3o3BzXjOXf2o
WoYMumI2+jYb-
MUX4qLpW2DzDS6Prs8VnJuoy1yCDMvBzm5+iW8wkt0RkA2ESVxXIa34fpU
smmv2YL697UYBknd9GtFTKLw3UuR04QyXibZAPoAYVZn71TFniSl7psxs8yX-
eFpMnclDEG

```

```

N8H44kf1fM7RO9ncfawh0s0Hh451Vp2RORgV4CQkeWUjON-
benj+Zy70WHRm9q1MCFHnpzQ
G09oOkTu13qoS1PqCnYYWLPV/E4+YkMxSR/dyN6sahtCg1FvyOoVT0oqHt+q+33m
iEqUSU
ymcoOBkePSnTPAzngBX98e8tkSF4f8sIW0n4w34Y17zhIlIjhS6/umUsfIM478BaL2x6m
EVb/0T4fJRJf5greRS7BiZc/KbKenxE/fjMr8xkmigleSwHo+BnROj2l/+gnZsIv0Zm4qv
qqItl+zckNltb11TfRU0Jd6DtefU0lDrh2fgUB1T99a5YbPLichi7b+Az3r/jvYo2BazUZ
tj1XltuoYr5ZpFl68xwQSRkkCV+YmEn9aOb-
drh2sv7UQn6Llud+l/keCMLBkClfYmR1ew
Zx7c+CUGzNgbZQYtLh/sUfYMWLQb8knCKcbDic-
MQSBkdJb9H64RFhKPfpL9P3k358JV3u+
fhp25JveLu4irD6bJZkCM1Gmb2UacXCMSCjomAP-
KHZ07/cVu9NNCJEZgeMU1SfcUrbF9iA
7zmU6MKg/PLPgpbKhW6ZxJbwZ2WW2cob7oQDlIQnvGFIImWZvrTUCT5tDL-
spjz6XptPJfg6
gz0mCrzrzEp2fUY5U8hhAvHxe9aOD/ScMjFbDzGRaY1nYdWDHax-
PDe65TNAddqLeiNB06P
m89ro6paoJ7nVry1ZZFAPt5r0LUXVEU5TgET5NARvo-
vaRHKc5JsAHw3R8aDxqovC3a3zES
AaUJzgkO9Ty88tdaHHRUSRfPasX29SU99a5GZFWUFk98e/EwxNfAZEa-
WOsBrTWL3DQW2OZ
VetVcGwA==

-----END OPENSSH PRIVATE KEY-----
"
      set public-key "ssh-rsa AAAAB3NzaC1yc2EAAAQABAAA-
BAQDO3r4+yrbYgU8hhDddqbFBXpea+XsoQAhRYIA-
cYunt7kpt5es1ZRQewAaIC/83BUX-
oWe4EuZmH0908QVgsyy+mrYHT4SkED4svCV9BrDn9wZF-
sKAYxvhM37mIp0A4dfSN/m0eeYiaWjXDYdLodW7m6tiG-
WbE3MiNEYnEHdL1+PjijqMA6br5SZDoj8EITaIMsGhPrS5a4bAldxieAhNKTiaY-
buIgyuLFbK9jJi5ct0YrcPFFMLvaT-
eDXx3WIICJUhdyJKY9ahjTTRIKCeHFt78bRkvYmfh7jhIx/4+VH5H5f8uiDc6+hSbGj
D+PC+S1aDSzPCASVDXQ1oEh1GGxkL"
      set source built-in
      next
end
config firewall ssh setting
  set caname "Fortinet_SSH_CA"
  set untrusted-caname "Fortinet_SSH_CA_Untrusted"
  set hostkey-rsa2048 "Fortinet_SSH_RSA2048"
  set hostkey-dsa1024 "Fortinet_SSH_DSA1024"
  set hostkey-ecdsa256 "Fortinet_SSH_ECDSA256"
  set hostkey-ecdsa384 "Fortinet_SSH_ECDSA384"
  set hostkey-ecdsa521 "Fortinet_SSH_ECDSA521"
  set hostkey-ed25519 "Fortinet_SSH_ED25519"
end
config switch-controller security-policy 802-1X
  edit "802-1X-policy-default"
    set user-group "SSO_Guest_Users"

```

```
set mac-auth-bypass disable
set open-auth disable
set eap-passthru enable
set eap-auto-untagged-vlans enable
set guest-vlan disable
set auth-fail-vlan disable
set framevid-apply enable
set radius-timeout-overwrite disable
set authserver-timeout-vlan disable
next
end
config switch-controller security-policy local-access
edit "default"
    set mgmt-allowaccess https ping ssh
    set internal-allowaccess https ping ssh
next
end
config switch-controller lldp-profile
edit "default"
    set med-tlvs inventory-management network-policy location-identification
    set auto-isl disable
    config med-network-policy
        edit "voice"
        next
        edit "voice-signaling"
        next
        edit "guest-voice"
        next
        edit "guest-voice-signaling"
        next
        edit "softphone-voice"
        next
        edit "video-conferencing"
        next
        edit "streaming-video"
        next
        edit "video-signaling"
        next
    end
config med-location-service
edit "coordinates"
next
edit "address-civic"
next
edit "elin-number"
next
end
next
edit "default-auto-isl"
```

```
next
edit "default-auto-mclag-icl"
    set auto-mclag-icl enable
next
end
config switch-controller qos dot1p-map
edit "voice-dot1p"
    set priority-0 queue-4
    set priority-1 queue-4
    set priority-2 queue-3
    set priority-3 queue-2
    set priority-4 queue-3
    set priority-5 queue-1
    set priority-6 queue-2
    set priority-7 queue-2
next
end
config switch-controller qos ip-dscp-map
edit "voice-dscp"
    config map
        edit "1"
            set cos-queue 1
            set value 46
        next
        edit "2"
            set cos-queue 2
            set value 24,26,48,56
        next
        edit "5"
            set cos-queue 3
            set value 34
        next
    end
next
end
config switch-controller qos queue-policy
edit "default"
    set schedule round-robin
    set rate-by kbps
    config cos-queue
        edit "queue-0"
        next
        edit "queue-1"
        next
        edit "queue-2"
        next
        edit "queue-3"
        next
        edit "queue-4"
```

```
next
edit "queue-5"
next
edit "queue-6"
next
edit "queue-7"
next
end
next
edit "voice-egress"
    set schedule weighted
    set rate-by kbps
    config cos-queue
        edit "queue-0"
        next
        edit "queue-1"
            set weight 0
        next
        edit "queue-2"
            set weight 6
        next
        edit "queue-3"
            set weight 37
        next
        edit "queue-4"
            set weight 12
        next
        edit "queue-5"
        next
        edit "queue-6"
        next
        edit "queue-7"
        next
    end
next
end
config switch-controller qos qos-policy
    edit "default"
    next
    edit "voice-qos"
        set trust-dot1p-map "voice-dot1p"
        set trust-ip-dscp-map "voice-dscp"
        set queue-policy "voice-egress"
    next
end
config switch-controller storm-control-policy
    edit "default"
        set description "default storm control on all port"
    next
```

```
edit "auto-config"
    set description "storm control policy for fortilink-isl-icl port"
    set storm-control-mode disabled
    next
end
config switch-controller auto-config policy
    edit "default"
    next
    edit "default-icl"
        set poe-status disable
        set igmp-flood-report enable
        set igmp-flood-traffic enable
    next
end
config switch-controller initial-config template
    edit "default"
        set vlanid 1
    next
    edit "quarantine"
        set vlanid 4093
        set dhcp-server enable
    next
    edit "rspan"
        set vlanid 4092
        set dhcp-server enable
    next
    edit "voice"
        set vlanid 4091
        set dhcp-server enable
    next
    edit "video"
        set vlanid 4090
        set dhcp-server enable
    next
    edit "onboarding"
        set vlanid 4089
        set dhcp-server enable
    next
end
config switch-controller switch-profile
    edit "default"
    next
end
config switch-controller ptp settings
    set mode disable
end
config switch-controller ptp policy
    edit "default"
        set status enable
```

```
next
end
config switch-controller remote-log
edit "syslogd"
next
edit "syslogd2"
next
end
config wireless-controller setting
set darrp-optimize-schedules "default-darrp-optimize"
end
config wireless-controller arrp-profile
edit "arrp-default"
next
end
config wireless-controller wids-profile
edit "default"
set comment "Default WIDS profile."
set ap-scan enable
set wireless-bridge enable
set deauth-broadcast enable
set null-ssid-probe-resp enable
set long-duration-attack enable
set invalid-mac-oui enable
set weak-wep-iv enable
set auth-frame-flood enable
set assoc-frame-flood enable
set spoofed-deauth enable
set asleap-attack enable
set eapol-start-flood enable
set eapol-logoff-flood enable
set eapol-succ-flood enable
set eapol-fail-flood enable
set eapol-pre-succ-flood enable
set eapol-pre-fail-flood enable
next
edit "default-wids-apscan-enabled"
set ap-scan enable
next
end
config wireless-controller ble-profile
edit "fortiap-discovery"
set advertising ibeacon eddystone-uid eddystone-url
set ibeacon-uuid "wtp-uuid"
next
end
config wireless-controller utm-profile
edit "wifi-default"
set comment "Default configuration for offloading WiFi traffic."
```

```
set ips-sensor "wifi-default"
set application-list "wifi-default"
set antivirus-profile "wifi-default"
set webfilter-profile "wifi-default"
next
end
config log memory setting
    set status enable
end
config log null-device setting
    set status disable
end
config router rip
    config redistribute "connected"
    end
    config redistribute "static"
    end
    config redistribute "ospf"
    end
    config redistribute "bgp"
    end
    config redistribute "isis"
    end
end
config router ripng
    config redistribute "connected"
    end
    config redistribute "static"
    end
    config redistribute "ospf"
    end
    config redistribute "bgp"
    end
    config redistribute "isis"
    end
end
config router ospf
    config redistribute "connected"
    end
    config redistribute "static"
    end
    config redistribute "rip"
    end
    config redistribute "bgp"
    end
    config redistribute "isis"
    end
end
config router ospf6
```

```
config redistribute "connected"
end
config redistribute "static"
end
config redistribute "rip"
end
config redistribute "bgp"
end
config redistribute "isis"
end
end
config router bgp
    config redistribute "connected"
    end
    config redistribute "rip"
    end
    config redistribute "ospf"
    end
    config redistribute "static"
    end
    config redistribute "isis"
    end
    config redistribute6 "connected"
    end
    config redistribute6 "rip"
    end
    config redistribute6 "ospf"
    end
    config redistribute6 "static"
    end
    config redistribute6 "isis"
    end
end
config router isis
    config redistribute "connected"
    end
    config redistribute "rip"
    end
    config redistribute "ospf"
    end
    config redistribute "bgp"
    end
    config redistribute "static"
    end
    config redistribute6 "connected"
    end
    config redistribute6 "rip"
    end
    config redistribute6 "ospf"
```

```
end
config redistribute6 "bgp"
end
config redistribute6 "static"
end
end
config router multicast
end
```

E. IRCD-Hybrid Configuration

```
/*
 * This is an example configuration file for ircd-hybrid
 *
 * Copyright (c) 1997-2018 ircd-hybrid development team
 *
 * $Id: reference.conf 8313 2018-02-28 17:45:36Z michael $
 *
 * This version has been customized for Debian.
 */

/*
 *
#####
#####
* IMPORTANT NOTE:
*
* auth {} blocks MUST be specified in order of precedence. The first one
* that matches a user will be used. So place spoofs first, then specials,
* then general access.
*
#####
#####
* Shell style (#), C++ style (//) and C style comments are supported.
*
* Files may be included by either:
*   .include "filename"
*   .include <filename>
*
```

* Times/durations are written as:

* 12 hours 30 minutes 1 second

*

* Valid units of time:

* year, month, week, day, hour, minute, second

*

* Valid units of size:

* megabyte/mbyte(mb, kilobyte/kbyte(kb, byte

*

* Sizes and times may be singular or plural.

*/

/*

* serverinfo {}: contains information about the server

*/

serverinfo {

/*

* name: the name of this server. This cannot be changed at runtime.

*/

name = "Exjobb.local";

/*

* sid: a server's unique ID. This is three characters long and must

* be in the form [0-9][A-Z0-9][A-Z0-9]. The first character must be

* a digit, followed by 2 alpha-numerical letters.

*

* NOTE: The letters must be capitalized. This cannot be changed at runtime.

*

* A sid is automatically generated at runtime, if you want to configure

```
* a specific sid, uncomment the following line.  
*/  
#      sid = "0HY";  
  
/*  
 * description: the description of the server.  
 */  
description = "ircd-hybrid 8.1-debian";  
  
/*  
 * network_name, network_desc: the name and description of the network  
this  
 * server is on. Shown in the 005 reply and used with serverhiding.  
 */  
network_name = "debian";  
network_desc = "This is My Network";  
  
/*  
 * hub: allow this server to act as a hub and have multiple servers  
 * connected to it.  
 */  
hub = no;  
  
/*  
 * vhost: the IP address to bind to when connecting outward to IPv4 servers.  
 * This should be an IPv4 address, or "*" for INADDR_ANY.  
 */  
vhost = "192.168.1.20";  
  
/*
```

```
* vhost6: the IP address to bind to when connecting outward to IPv6 servers.  
* This should be an IPv6 address, or "*" for in6addr_any.  
*/  
# vhost6 = "2001:DB8::1";  
  
/*  
 * default_max_clients: the default maximum number of clients allowed  
 * to connect. This can be changed from within IRC via /QUOTE SET  
MAX.  
 */  
default_max_clients = 512;  
  
/*  
 * max_nick_length: only applies to local clients. Must be in the  
 * range of 9 to 30. Default is 9 if nothing else is specified.  
 */  
max_nick_length = 15;  
  
/*  
 * max_topic_length: only applies to topics set by local clients.  
 * Must be in the range of 80 to 300. Default is 80 if nothing  
 * else is specified.  
 */  
max_topic_length = 300;  
  
/*  
 * rsa_private_key_file: the path to the file containing the RSA key.  
 *  
 * Example commands to store a 2048 bit RSA key in rsa.key:  
 *
```

```
* OpenSSL/LibreSSL:  
*   openssl genrsa -out rsa.key 2048  
*  
* GnuTLS:  
*   certtool --generate-privkey --sec-param=medium --outfile rsa.key  
*  
* Once the RSA key is generated, it is highly recommended to lock down  
* its file permissions:  
*  
*   chown <ircd-user>.<ircd.group> rsa.key  
*   chmod 0600 rsa.key  
*  
* Note to Debian users: the postinst script created this  
* for you.  
*/  
rsa_private_key_file = "/etc/ircd-hybrid/key/ircd.key";  
  
/*  
* ssl_certificate_file: the path to the file containing our  
* SSL certificate for encrypted client connection.  
*  
* This assumes your private RSA key is stored in rsa.key. You  
* MUST have an RSA key in order to generate the certificate.  
*  
* Example command:  
*  
* OpenSSL/LibreSSL:  
*   openssl req -new -days 365 -x509 -key rsa.key -out cert.pem  
*  
* GnuTLS:
```

```
* certtool --generate-self-signed --load-privkey rsa.key --outfile cert.pem
*/
ssl_certificate_file = "/etc/ircd-hybrid/key/ircd.pem";

/*
 * ssl_dh_param_file: the path to the PEM encoded Diffie-Hellman
 * parameter file. DH parameters are required when using
 * ciphers with EDH (ephemeral Diffie-Hellman) key exchange.
 *
 * A DH parameter file can be created by running:
 *
 * OpenSSL/LibreSSL:
 * openssl dhparam -out dhparam.pem 2048
 *
 * GnuTLS:
 * certtool --generate-dh-params --sec-param=medium --outfile
dhparam.pem
*/
ssl_dh_param_file = "/etc/ircd-hybrid/key/dhparam.pem";

/*
 * ssl_dh_elliptic_curve: defines the curve to use for the
 * Elliptic Curve Diffie-Hellman (ECDH) algorithm.
 * Default is ANSI X9.62 prime256v1/secp256r1 if nothing else is specified.
 *
 * A list of curves supported by OpenSSL can be obtained by running:
 *
 * openssl ecparam -list_curves
 *
 * This directive currently doesn't do anything with GnuTLS support.
*/

```

```
#           ssl_dh_elliptic_curve = "secp521r1";  
  
/*  
 * ssl_cipher_list: list of ciphers to support on _this_ server.  
 * Can be used to enforce specific ciphers for incoming SSL/TLS  
 * connections. If a client (which also includes incoming server  
 * connections) is not capable of using any of the ciphers listed  
 * here, the connection will simply be rejected.  
 *  
 * A list of supported ciphers can be obtained by running:  
 *  
 * OpenSSL/LibreSSL:  
 *   openssl ciphers -tls1 -v  
 *  
 * GnuTLS:  
 *   gnutls-cli --list  
 *  
 * Multiple ciphers are separated by colons. The order of preference is  
 * from left to right.  
 */  
  
#           ssl_cipher_list = "ECDHE-RSA-AES256-GCM-SHA384:DHE-RSA-  
AES256-GCM-SHA384:DHE-RSA-AES256-SHA:AES256-SHA";  
  
/*  
 * ssl_message_digest_algorithm: defines which cryptographic hash function  
 * to use for generating fingerprint hashes of X.509 certificates.  
 * Default is SHA-256 if nothing else is specified.  
 *  
 * A list of supported message digest algorithms can be obtained by running:  
 *  
 * OpenSSL/LibreSSL:
```

```
* openssl list-message-digest-algorithms
*
* GnuTLS:
* gnutls-cli --list
*/
# ssl_message_digest_algorithm = "sha256";
};

/*
* admin {}: contains administrative information about the server
*/
admin {
    name = "Kiwi";
    description = "Main Server Administrator";
    email = "<root@localhost>";
};

/*
* class {}: contains information about classes for users
*/
class {
    /* name: the name of the class. */
    name = "users";

    /*
     * ping_time: how often a client must reply to a PING from the
     * server before they are dropped.
     */
    ping_time = 90 seconds;
```

```
/*
 * number_per_ip: how many local users are allowed to connect
 * from a single IP address (optional)
 */
number_per_ip = 200;

/*
 * max_local: how many local users are allowed to connect
 * from a single ident@host (optional)
 */
max_local = 1000;

/*
 * max_global: network-wide limit of users per ident@host (optional)
 */
max_global = 1000;

/*
 * max_number: the maximum number of users allowed in this class (optional)
 */
max_number = 100;

/*
 * The following lines are optional and allow you to define
 * how many users can connect from one /NN subnet.
 */
cidr_bitlen_ipv4 = 204;
cidr_bitlen_ipv6 = 120;
number_per_cidr = 16;
```

```
/*
 * sendq: the amount of data allowed in a client's send queue before
 * they are dropped.
 */
sendq = 100 kbytes;

/*
 * recvq: the amount of data allowed in a client's receive queue before
 * they are dropped for flooding. Defaults to 2560 if the chosen value
 * isn't within the range of 512 to 8000.
 */
recvq = 2560 bytes;
};

class {
    name = "opers";
    ping_time = 90 seconds;
    number_per_ip = 10;
    max_number = 100;
    sendq = 100 kbytes;

    /*
     * max_channels: maximum number of channels users in this class can join.
     */
    max_channels = 60;

    /*
     * min_idle: minimum idle time that is shown in WHOIS.
     */
    min_idle = 10 hours;
```

```
/*
 * max_idle: maximum idle time that is shown in WHOIS.
 */
max_idle = 8 hours;

/*
 * flags:
 *
 * random_idle      - a fake idle time is set randomly between
 *                      min_idle and max_idle
 * hide_idle_from_operators - the fake idle time will also be shown to operators
 */
flags = random_idle, hide_idle_from_operators;

};

class {
    name = "server";
    ping_time = 90 seconds;

    /*
     * connectfreq: only used in server classes. Specifies the delay
     * between autoconnecting to servers.
     */
    connectfreq = 5 minutes;

    /* max number: the number of servers to autoconnect to. */
    max_number = 1;

    /* sendq: servers need a higher sendq as they send more data. */
}
```

```
sendq = 2 megabytes;  
};  
  
/*  
 * motd {}: Allows the display of a different MOTD to a client  
 * depending on its origin. Applies to local users only.  
 */  
motd {  
    /*  
     * mask: multiple mask entries are permitted. Mask can either be  
     * a class name or a hostname. CIDR is supported.  
     */  
    mask = "*.at";  
    mask = "*.de";  
    mask = "*.ch";  
  
    /*  
     * file: path to the motd file.  
     */  
    file = "/etc/ircd-hybrid/german.motd";  
};  
  
/*  
 * listen {}: contains information about the ports ircd listens on  
 */  
listen {  
    /*  
     * port: the port to listen on. If no host is specified earlier in the  
     * listen {} block, it will listen on all available IP addresses.  
     *  
     */
```

```
* Ports are separated by commas; a range may be specified using ".."  
*/  
  
/* port: listen on all available IP addresses, ports 6665 to 6669. */  
port = 6665 .. 6669;  
  
/*  
 * Listen on 192.0.2.2/6697 with SSL enabled and hidden from STATS P  
 * unless you are an administrator.  
 *  
 * NOTE: The "flags" directive always has to come before "port".  
 *  
 * Currently available flags are:  
 *  
 * ssl - Port may only accept TLS/SSL connections  
 * server - Only server connections are permitted  
 * hidden - Port is hidden from /stats P, unless you're an admin  
 */  
flags = hidden, ssl;  
  
host = "192.168.1.20"; # change this!  
port = 6667;  
  
/*  
 * host: set a specific IP address to listen on using the  
 * subsequent port definitions. This may be IPv4 or IPv6.  
 */  
#host = "192.0.2.3";  
#port = 7000, 7001;  
  
#host = "2001:DB8::2";
```

```
#port = 7002;  
};  
  
/*  
 * auth {bot21 = "192.168.1.21"; }: allow users to connect to the ircd  
 */  
auth {  
    /*  
     * user: the user@host allowed to connect. Multiple user  
     * lines are permitted within each auth {} block.  
     */  
    user = "*@127.0.0.1";  
    bot1 = "192.168.1.1";  
    bot2 = "192.168.1.2";  
    bot3 = "192.168.1.3";  
    bot4 = "192.168.1.4";  
    bot5 = "192.168.1.5";  
    bot6 = "192.168.1.6";  
    bot7 = "192.168.1.7";  
    bot8 = "192.168.1.8"  
    bot10 = "192.168.1.10";  
    bot21 = "192.168.1.21";  
  
    #user = "*test@2001:DB8:*";  
    #  
    #      /* password: an optional password that is required to use this block. */  
    #      #password = "letmein";  
    #  
    #      /*  
    #      * encrypted: indicates whether the auth password above has been
```

```
#           * encrypted. Default is 'no' if nothing else is specified.  
#           */  
#           #encrypted = yes;  
#  
/*  
* spoof: fake the user's host to this. This is free-form; just do  
* everyone a favor and don't abuse it. ('=' prefix on /stats I)  
*/  
spoof = "i.love.debian.org";  
  
/* class: the class the user is placed in. */  
class = "opers";  
  
/*  
#           * need_password - don't allow users who haven't supplied the correct | (&'  
prefix on /stats I if disabled)  
#           *           password to connect using another auth {} block  
#           * need_ident  - require the user to have identd to connect      | ('+' pre-  
fix on /stats I)  
           * spoof_notice - enable spoofing notification to admins  
#           * exceed_limit - allow a user to exceed class limits          | ('>' prefix on  
/stats I)  
           * kline_exempt - exempt this user from k-lines                  | ('^' prefix on  
/stats I)  
           * xline_exempt - exempt this user from x-lines                  | ('!' prefix on  
/stats I)  
           * resv_exempt - exempt this user from resvs                   | ('$' prefix on  
/stats I)  
           * no_tilde   - remove ~ from a user with no ident            | ('-' prefix  
on /stats I)  
#           * can_flood   - allow this user to exceed flood limits     | ('|' prefix on  
/stats I)
```

```

        * webirc      - enables WEBIRC authentication for web-based      | ('<'
prefix on /stats I)
        *
        clients such as Mibbit
        */
flags = need_password, spoof_notice, exceed_limit, kline_exempt,
xline_exempt, resv_exempt, no_tilde, can_flood;
};

#auth {
#
#      /*
#      * redirserv, redirport: the server and port to redirect a user to.
#      * A user does not have to obey the redirection; the ircd just
#      * suggests an alternative server for them.
#      */
#      redirserv = "server2.example.net";
#      redirport = 6667;
#
#      user = "*@*.ch";
#
#      /* class: a class is required even though it is not used. */
#      class = "users";
#};

auth {
    user = "*@*";
    class = "users";
#
    flags = need_ident;
};

/*
* operator {}: defines ircd operators

```

```
/*
operator {

    /* name: the name of the operator */
    name = "Kiwi";

    /*
     * user: the user@host required for this operator. Multiple user
     * lines are permitted within each operator {} block.
     */

    user = "*Kiwi@192.168.1.21/24";
    user = "*Kiwi@192.168.1.0/24";
    /*
     * password: the password required to oper. By default this will need
     * to be encrypted using the provided mkpasswd tool.
     * The availability of various password hashing algorithms may vary
     * depending on the system's crypt(3) implementation.
     */

    password = "cisco";

    /*
     * encrypted: indicates whether the oper password above has been
     * encrypted. Default is 'yes' if nothing else is specified.
     */

    encrypted = no;

#
#        /*
#         * ssl_certificate_fingerprint: enhances security by additionally checking
#         * the oper's client certificate fingerprint against the specified
#         * fingerprint below.
#         *
#         *
```

```
#           * Hint: your users can use the following commands to obtain a SHA-256
hash

#           * of their ssl certificate:

#           *

#           * OpenSSL/LibreSSL:
#           *   openssl x509 -sha256 -noout -fingerprint -in cert.pem | sed -e
's/^.*=//;s/://g'
#           *

#           * GnuTLS:
#           *   certtool -i < cert.pem | egrep -A 1 'SHA256 fingerprint'
#           */

##       ssl_certificate_fingerprint =
"4C62287BA6776A89CD4F8FF10A62FFB35E79319F51AF6C62C674984974FCCB1D";

#
#           /*
#           * ssl_connection_required: client must be connected over SSL/TLS
#           * in order to be able to use this operator {} block.
#           * Default is 'no' if nothing else is specified.
#           */
#
#           ssl_connection_required = no;

#
#           /* class: the class the oper joins when they successfully OPER. */
#           class = "opers";
#
#           /*
#           * whois: allows overriding the default RPL_WHOISOPERATOR numeric
#           * string shown in /whois.
#           * This string is propagated to all servers on the network.
#           */
#
##       whois = "is a Smurf Target (IRC Operator)";

#           /*
```

```
#          * umodes: the default usermodes opers get when they /oper or /challenge.  
#          * If defined, it will override oper_umodes settings in general {}.  
#          * Available user modes:  
#          *  
#          * +b - bots      - See bot and drone flooding notices  
#          * +c - cconn     - Client connection/quit notices  
#          * +D - deaf      - Don't receive channel messages  
#          * +d - debug     - See debugging notices  
#          * +e - external    - See remote server connection and split notices  
#          * +F - farconnect   - Remote client connection/quit notices  
#          * +f - full       - See auth {} block full notices  
#          * +G - softcallerid - Server Side Ignore for users not on your channels  
#          * +g - callerid    - Server Side Ignore (for privmsgs etc)  
#          * +H - hidden      - Hides operator status to other users  
#          * +i - invisible    - Not shown in NAMES or WHO unless you share a chan-  
nel  
#          * +j - rej        - See rejected client notices  
#          * +k - skill      - See server generated KILL messages  
#          * +l - locops     - See LOCOPS messages  
#          * +n - nchange    - See client nick changes  
#          * +p - hidechans   - Hides channel list in WHOIS  
#          * +q - hideidle    - Hides idle and signon time in WHOIS  
#          * +R - nononreg    - Only receive private messages from registered clients  
#          * +s - servnotice   - See general server notices  
#          * +u - unauth      - See unauthorized client notices  
#          * +w - wallop      - See server generated WALLOPS  
#          * +y - spy         - See LINKS, STATS, TRACE notices etc.  
#          * +z - operwall    - See oper generated WALLOPS  
#          */  
#          umodes = locops, servnotice, wallop;  
#
```

```

#      /*
#
#      * flags: controls the activities and commands an oper is
#
#      * allowed to do on the server. All flags default to 'no'.
#
#      * Available flags:
#
#      *
#
#      * admin      - gives administrator privileges      | ('A' flag)
#
#      * close      - allows CLOSE                      | ('B' flag)
#
#      * connect    - allows local CONNECT              | ('C' flag)
#
#      * connect:remote - allows remote CONNECT        | ('D' flag)
#
#      * die        - allows DIE                       | ('E' flag)
#
#      * dline      - allows DLINE                     | ('F' flag)
#
#      * globops    - allows GLOBOPS                  | ('G' flag)
#
#      * join:resv  - allows to JOIN resv {} channels | ('H' flag)
#
#      * kill       - allows to KILL local clients     | ('I' flag)
#
#      * kill:remote - allows remote users to be /KILL'd | ('J' flag)
#
#      * kline      - allows KLINE                     | ('K' flag)
#
#      * locops     - allows LOCOPS                   | ('L' flag)
#
#      * module     - allows MODULE                  | ('M' flag)
#
#      * nick:resv  - allows to use NICK on resv {} nicks | ('N' flag)
#
#      * opme       - allows OPME                    | ('O' flag)
#
#      * rehash     - allows oper to REHASH config   | ('P' flag)
#
#      * rehash:remote - allows oper to remotely REHASH config | ('Q' flag)
#
#      * remoteban   - allows remote KLINE/UNKLINE     | ('R' flag)
#
#      * restart    - allows RESTART                 | ('S' flag)
#
#      * resv       - allows RESV                   | ('T' flag)
#
#      * set        - allows SET                     | ('U' flag)
#
#      * squit      - allows local SQUIT             | ('V' flag)
#
#      * squit:remote - allows remote SQUIT          | ('W' flag)
#
#      * undline    - allows UNDLINE                | ('X' flag)
#
#      * unkline    - allows UNKLINE               | ('Y' flag)

```

```

# * unresv      - allows UNRESV          | ('Z' flag)
# * unxline     - allows UNXLINE         | ('a' flag)
# * wallops     - allows WALLOPS        | ('b' flag)
# * xline       - allows XLINE          | ('c' flag)
#
# */
#
#           flags = admin, connect, connect:remote, die, globops, kill, kill:remote,
#           kline, module, rehash, restart, set, unkline, unxline, xline;
#};

/*
* connect {}: define a server to connect to
* IMPORTANT NOTE for Debian users: before you configure any links to
* other servers, change the sid earlier in this config file to a
* value which will be unique within the network.
*/
#defineconnect {
#
#           /* name: the name of the server. */
#           name = "uplink.example.net";
#
#           /*
#           * host: the host or IP address to connect to. If a hostname is used,
#           * it must match the reverse DNS of the server.
#           */
#           host = "192.0.2.4";
#
#           /*
#           * vhost: the IP address to bind to when making outgoing connections to
#           * servers. serverinfo::vhost and serverinfo::vhost6 will be overridden
#           * by this directive.
#           */

```

```
#           vhost = "192.0.2.5";
#
#           /*
#           * send_password, accept_password: the passwords to send and accept.
#           * The remote server will have these passwords swapped.
#           */
#           send_password = "password";
#           accept_password = "anotherpassword";
#
#           /*
#           * encrypted: indicates whether the accept_password above has been
#           * encrypted.
#           */
#           encrypted = no;
#
#           /* port: the port to connect to this server on. */
#           port = 6666;
#
#           /*
#           * hub_mask: the mask of servers that this server may hub. Multiple
#           * entries are permitted.
#           */
#           hub_mask = "*";
#
#           /*
#           * leaf_mask: the mask of servers this server may not hub. Multiple
#           * entries are permitted. Useful for forbidding EU -> US -> EU routes.
#           */
##           leaf_mask = "*.uk";
#
```

```
#      /* class: the class this server is in. */
#
#      class = "server";
#
#      /*
#          * ssl_cipher_list: list of ciphers that the server we are connecting to
#          * must support. If the server is not capable of using any of the ciphers
#          * listed below, the connection will simply be rejected.
#          * the connection will simply be rejected.
#          * Can be used to enforce stronger ciphers, even though this option
#          * is not necessarily required to establish a SSL/TLS connection.
#          *
#          * Multiple ciphers are separated by colons. The order of preference
#          * is from left to right.
#      */
#
##      ssl_cipher_list = "ECDHE-RSA-AES256-GCM-SHA384:DHE-RSA-
AES256-GCM-SHA384:DHE-RSA-AES256-SHA:AES256-SHA";
#
#      /*
#          * ssl_certificate_fingerprint: enhances security by additionally checking
#          * the server's client certificate fingerprint against the specified
#          * fingerprint below.
#      */
#
##      ssl_certificate_fingerprint =
"4C62287BA6776A89CD4F8FF10A62FFB35E79319F51AF6C62C674984974FCCB1D";
#
#      /*
#          * autoconn - controls whether we autoconnect to this server or not,
#          *           dependent on class limits. By default, this is disabled.
#          * ssl     - Initiates a TLS/SSL connection.
#      */
#
##      flags = autoconn, ssl;
```

```
#};

#connect {
#    name = "ipv6.example.net";
#    host = "2001:DB8::3";
#    send_password = "password";
#    accept_password = "password";
#    port = 6666;
#
#    /*
#     * aftype: controls whether the connection uses "ipv4" or "ipv6".
#     * Default is ipv4.
#     */
#    aftype = ipv6;
#    class = "server";
#};

/*
 * cluster {}: servers that share klines/unkline/xline/unxline/resv/unresv/locops
 * automatically
*/
#cluster {
#    /*
#     * name: the server to share with; this can take wildcards
#     *
#     * NOTE: only local actions will be clustered, meaning that if
#     *       the server receives a shared kline/unkline/etc, it
#     *       will not be propagated to clustered servers.
#     *
#     *       Remote servers are not necessarily required to accept

```

```
#           *      clustered lines, they need a shared {} block for *THIS*
#
#           *      server in order to accept them.
#
#           */
#
#           name = "*.example.net";
#
#
#           /*
#
#           * type: list of what to share; options are as follows:
#
#           *      dline - share dlines
#
#           *      undline - share undlines
#
#           *      kline - share klines
#
#           *      unkline - share unklines
#
#           *      xline - share xlines
#
#           *      unxline - share unxlines
#
#           *      resv - share resvs
#
#           *      unresv - share unresvs
#
#           *      locops - share locops
#
#           *      all - share all of the above (default)
#
#           */
#
#           type = kline, unkline, locops, xline, resv;
#
#};

/*
 *
 * shared {}: users that are allowed to remote kline
 *
 * NOTE: This can effectively be used for remote klines.
 *
 *      Please note that there is no password authentication
 *
 *      for users setting remote klines. You must also be
 *
 *      /oper'd in order to issue a remote kline.
 *
*/
shared {
```

```
/*
 * name: the server the user must be connected to in order to set klines.
 * If this is not specified, the user will be allowed to kline from all
 * servers.
 */
name = "hybrid8.debian.local";

/*
 * user: the user@host mask that is allowed to set klines. If this is
 * not specified, all users on the server above will be allowed to set
 * a remote kline.
*/
user = "root@localhost";

/*
 * type: list of what to share, options are as follows:
 *      dline - allow oper/server to dline
 *      undline - allow oper/server to undline
 *      kline - allow oper/server to kline
 *      unkline - allow oper/server to unkline
 *      xline - allow oper/server to xline
 *      unxline - allow oper/server to unxline
 *      rehash - allow oper/server to rehash
 *      resv - allow oper/server to resv
 *      unresv - allow oper/server to unresv
 *      locops - allow oper/server to locops - only used for servers that cluster
 *      all - allow oper/server to do all of the above (default)
 */
type = kline, unkline, resv;
};
```

```
/*
 * kill {}: users that are not allowed to connect
 * Oper issued klines will be added to the specified kline database
 */
#define kill {
#       user = "bad@*.example.net";
#       reason = "Obviously hacked account";
#};

/*
 * deny {}: IP addresses that are not allowed to connect
 * (before DNS/ident lookup)
 * Oper issued dlines will be added to the specified dline database
 */
#define deny {
#       ip = "192.0.2.0/28";
#       reason = "Reconnecting vhosted bots";
#};

/*
 * exempt {}: IP addresses that are exempt from deny {} and Dlines
 */
#define exempt {
#       ip = "192.0.2.240/28";
#
#       /* The 'ip' directives can be stacked */
#       ip = "10.0.0.0/8";
#       ip = "fc00::/7";
#};
```

```
/*
 * resv {}: nicks and channels users may not use/join
 */
resv { mask = "clone*"; reason = "Clone bots"; };
resv { mask = "Global"; reason = "Reserved for services"; };
resv { mask = "ChanServ"; reason = "Reserved for services"; };
resv { mask = "NickServ"; reason = "Reserved for services"; };
resv { mask = "OperServ"; reason = "Reserved for services"; };
resv { mask = "MemoServ"; reason = "Reserved for services"; };
resv { mask = "BotServ"; reason = "Reserved for services"; };
resv { mask = "HelpServ"; reason = "Reserved for services"; };
resv { mask = "HostServ"; reason = "Reserved for services"; };
resv { mask = "StatServ"; reason = "Reserved for services"; };
resv { mask = "#*services*"; reason = "Reserved for services"; };

#resv {
#    /*
#        * mask: masks starting with a '#' are automatically considered
#        * as channel name masks.
#    */
#    mask = "#helsinki";
#    reason = "Channel is reserved for Finnish inhabitants";
#
#    /*
#        * exempt: nick!user@host mask. CIDR is supported. Exempt
#        * entries can be stacked.
#    */
#    exempt = "*@*.sexy";
#};
```

```
/*
 * gecos {}: used for banning users based on their "realname".
 */
#gecos {
    #           name = "*sex*";
    #           reason = "Possible spambot";
};

#gecos {
    #           name = "sub7server";
    #           reason = "Trojan drone";
};

/*
 * service {}: specifies a server which may act as a network service
 *
 * NOTE: it is very important that every server on the network
 *       has the same service {} block.
 */
#service {
    #           /* name: the actual name of the service. Wildcards are not allowed. */
    #   name = "service.example.net";
    #
    #           /* The 'name' directives can be stacked. */
    #   name = "stats.example.net";
};

/*
 * pseudo {}: adds pseudo/custom commands also known as service aliases
```

```
/*
#pseudo {
#    /* command: the actual command/alias. */
#    command = "IDENTIFY";
#
#    /* prepend: optional text that can be prepended to the user's message. */
#    prepend = "IDENTIFY ";
#
#    /* name: the service name, used for error messages. */
#    name = "NickServ";
#
#    /* target: the actual target where this message should be sent to. */
#    target = "NickServ@service.example.net";
#};

#
#pseudo {
#    command = "CHANSERV";
#    name = "ChanServ";
#    target = "ChanServ@service.example.net";
#};

#
#pseudo {
#    command = "CS";
#    name = "ChanServ";
#    target = "ChanServ@service.example.net";
#};

#
#pseudo {
#    command = "NICKSERV";
#    name = "NickServ";
```

```
#           target = "NickServ@service.example.net";
#};

#
#pseudo {

#           command = "NS";
#           name = "NickServ";
#           target = "NickServ@service.example.net";
#};

#
#pseudo {

#           command = "MEMOSERV";
#           name = "MemoServ";
#           target = "MemoServ@service.example.net";
#};

#
#pseudo {

#           command = "MS";
#           name = "MemoServ";
#           target = "MemoServ@service.example.net";
#};

#
#pseudo {

#           command = "OPERSERV";
#           name = "OperServ";
#           target = "OperServ@service.example.net";
#};

#
#pseudo {

#           command = "OS";
#           name = "OperServ";
```

```
#           target = "OperServ@service.example.net";
#};

#
#pseudo {

#           command = "HOSTSERV";
#           name = "HostServ";
#           target = "HostServ@service.example.net";
#};

#
#pseudo {

#           command = "HS";
#           name = "HostServ";
#           target = "HostServ@service.example.net";
#};

#
#pseudo {

#           command = "BOTSERV";
#           name = "BotServ";
#           target = "BotServ@service.example.net";
#};

#
#pseudo {

#           command = "BS";
#           name = "BotServ";
#           target = "BotServ@service.example.net";
#};

/*
 * channel {}: the channel block contains options pertaining to channels
 */
```

```
channel {  
    /*  
     * disable_fake_channels: this option, if set to 'yes', will  
     * disallow clients from creating or joining channels that have one  
     * of the following ASCII characters in their name:  
     *  
     * 2 | bold  
     * 3 | mirc color  
     * 15 | plain text  
     * 22 | reverse  
     * 29 | italic  
     * 31 | underline  
     * 160 | non-breaking space  
    */  
    disable_fake_channels = yes;  
  
    /*  
     * invite_client_count, invite_client_time: how many INVITE commands  
     * are permitted per client per invite_client_time.  
    */  
    invite_client_count = 10;  
    invite_client_time = 5 minutes;  
  
    /*  
     * invite_delay_channel: how often an INVITE to any specific channel  
     * is permitted, regardless of the user sending the INVITE.  
    */  
    invite_delay_channel = 5 seconds;  
  
    /*
```

```
* invite_expire_time: specifies the amount of time an INVITE will be
* active until it expires. Set it to 0 if you don't want invites to
* expire. Default is 30 minutes if nothing else is specified.
*/
invite_expire_time = 1 hour;

/*
* knock_client_count, knock_client_time: how many KNOCK commands
* are permitted per client per knock_client_time.
*/
knock_client_count = 1;
knock_client_time = 5 minutes;

/*
* knock_delay_channel: how often a KNOCK to any specific channel
* is permitted, regardless of the user sending the KNOCK.
*/
knock_delay_channel = 1 minute;

/*
* max_channels: the maximum number of channels a user can join/be on.
* This is a default value which can be overridden with class {} blocks.
*/
max_channels = 25;

/* max_invites: the maximum number of channels a user can be invited to.
*/
max_invites = 20;

/* max_bans: maximum number of +b/e/I modes in a channel.*/
max_bans = 100;
```

```
/* max_bans_large: maximum number of +b/e/I modes in a +L channel.*/
max_bans_large = 500;

/*
 * default_join_flood_count, default_join_flood_time:
 * how many joins in how many seconds constitute a flood. Use 0 to disable.
 * +b opers will be notified. These are only default values which can be
 * changed via "/QUOTE SET JFLOODCOUNT" and "/QUOTE SET
JFLOODTIME".
*/
default_join_flood_count = 18;
default_join_flood_time = 6 seconds;
};

/*
* serverhide {}: the serverhide block contains the options regarding
* to server hiding. For more information regarding server hiding,
* please see doc/serverhide.txt
*/
serverhide {
    /*
     * disable_remote_commands: disable users issuing commands
     * on remote servers.
     */
    disable_remote_commands = no;

    /*
     * flatten_links: this option will show all servers in /links appear
     * as though they are linked to this current server.
     */
}
```

```
flatten_links = no;

/*
 * flatten_links_delay: how often to update the links file when it is
 * flattened.
 */
flatten_links_delay = 5 minutes;

/*
 * flatten_links_file: path to the flatten links cache file.
 */
flatten_links_file = "/var/cache/ircd-hybrid/links.txt";

/*
 * hidden: hide this server from a /links output on servers that
 * support it. This allows hub servers to be hidden etc.
 */
hidden = no;

/*
 * hide_servers: hide remote servernames everywhere and instead use
 * hidden_name and network_desc.
 */
hide_servers = no;

/*
 * hide_services: define this if you want to hide the location of
 * services servers that are specified in the service {} block.
 */
hide_services = no;
```

```
/*
 * hidden_name: use this as the servername users see if hide_servers = yes.
 */
hidden_name = "*example.net";

/*
 * hide_server_ips: if this is disabled, opers will be unable to see
 * servers' IP addresses and will be shown a masked IP address; admins
 * will be shown the real IP address.
 *
 * If this is enabled, nobody can see a server's IP address.
 * *This is a kludge*: it has the side effect of hiding the IP addresses
 * everywhere, including logfiles.
 *
 * We recommend you leave this disabled, and just take care with who you
 * give administrator privileges to.
 */
hide_server_ips = no;

};

/*
 * general {}: the general block contains many of the options that were once
 * compiled in options in config.h
 */
general {

/*
 * cycle_on_host_change: sends a fake QUIT/JOIN combination
 * when services change the hostname of a specific client.
 */
}
```

```
cycle_on_host_change = yes;

/* max_watch: maximum WATCH entries a client can have.*/
max_watch = 50;

/* max_accept: maximum allowed /accept's for +g user mode.*/
max_accept = 50;

/* whowas_history_length: maximum length of the WHOWAS nick name
history.*/
whowas_history_length = 15000;

/*
 * dline_min_cidr: the minimum required length of a CIDR bitmask
 * for IPv4 based D-lines.
*/
dline_min_cidr = 16;

/*
 * dline_min_cidr6: the minimum required length of a CIDR bitmask
 * for IPv6 based D-lines.
*/
dline_min_cidr6 = 48;

/*
 * kline_min_cidr: the minimum required length of a CIDR bitmask
 * for IPv4 based K-lines.
*/
kline_min_cidr = 16;

/*
```

```
* kline_min_cidr6: the minimum required length of a CIDR bitmask
* for IPv6 based K-lines.
*/
kline_min_cidr6 = 48;

/*
* invisible_on_connect: whether to automatically set user mode +i
* on connecting users.
*/
invisible_on_connect = yes;

/*
* kill_chase_time_limit: KILL chasing is a feature whereby a KILL
* issued for a user who has recently changed nickname will be applied
* automatically to the new nick. kill_chase_time_limit is the maximum
* time following a nickname change that this chasing will apply.
*/
kill_chase_time_limit = 30 seconds;

/*
* ignore_bogus_ts: ignore bogus timestamps from other servers.
* Yes, this will desync the network, but it will allow chanops
* to resync with a valid non TS 0.
*
* This should be enabled network wide, or not at all.
*/
ignore_bogus_ts = no;

/*
* disable_auth: completely disable ident lookups; if you enable this,

```

```
* be careful of what you set need_ident to in your auth {} blocks.  
*/  
disable_auth = no;  
  
/*  
 * tkline_expire_notices: enables or disables temporary kline/xline  
 * expire notices.  
 */  
tkline_expire_notices = no;  
  
/*  
 * default_floodcount: the default value of floodcount that is configurable  
 * via /quote set floodcount. This is the number of lines a user may send  
 * to any other user/channel per floodtime. Set to 0 to disable.  
 */  
default_floodcount = 10;  
  
/*  
 * default_floodtime: the default value of floodtime that is configurable  
 * via /quote set floodtime.  
 */  
default_floodtime = 1 second;  
  
/*  
 * failed_oper_notice: send a notice to all ops on the server when  
 * someone tries to OPER and uses the wrong password, host or ident.  
 */  
failed_oper_notice = yes;  
  
/*
```

```
* dots_in_ident: the number of '!' characters permitted in an ident
* reply before the user is rejected.
*/
dots_in_ident = 2;

/*
* min_nonwildcard: the minimum number of non-wildcard characters in
* k/d lines placed via the server. K-lines hand-placed are exempt from
* this limit.
* Wildcard characters: '!', ':', '*', '?'
*/
min_nonwildcard = 4;

/*
* min_nonwildcard_simple: the minimum number of non-wildcard charac-
ters
* in gecos bans. Wildcard characters: '*', '?'
*/
min_nonwildcard_simple = 3;

/* anti_nick_flood: enable the nickflood control code. */
anti_nick_flood = yes;

/*
* max_nick_changes, max_nick_time: the number of nick changes allowed
in
* the specified period.
*/
max_nick_changes = 5;
max_nick_time = 20 seconds;
```

```
/*
 * away_count, away_time: how many AWAY commands are permitted per
 * client per away_time.
 */
away_count = 2;
away_time = 10 seconds;

/*
 * anti_spam_exit_message_time: the minimum time a user must be connected
 * before custom PART/QUIT messages are allowed.
 */
anti_spam_exit_message_time = 5 minutes;

/*
 * ts_warn_delta, ts_max_delta: the time delta allowed between server
 * clocks before a warning is given, or before the link is dropped.
 * All servers should run ntpdate/rdate to keep clocks in sync.
 */
ts_warn_delta = 3 seconds;
ts_max_delta = 15 seconds;

/*
 * warn_no_connect_block: warn ops about servers that try to connect
 * but for which we don't have a connect {} block. Twits with
 * misconfigured servers can become really annoying with this enabled.
 */
warn_no_connect_block = yes;

/*
 * stats_e_disabled: set this to 'yes' to disable "STATS e" for both
```

```
* operators and administrators. Doing so is a good idea in case
* there are any exempted (exempt {}) server IP addresses you don't
* want to see leaked.

*/
stats_e_disabled = no;

/* stats_m_oper_only: make /stats m/M (messages) oper only. */
stats_m_oper_only = yes;

/* stats_o_oper_only: make stats o (opers) oper only. */
stats_o_oper_only = yes;

/* stats_P_oper_only: make stats P (ports) oper only. */
stats_P_oper_only = yes;

/* stats_u_oper_only: make stats u (uptime) oper only. */
stats_u_oper_only = no;

/*
 * stats_i_oper_only: make stats i (auth {}) oper only. Set to:
 *   yes - show users no auth {} blocks, made oper only
 *   masked - show users the first matching auth {} block
 *   no - show users all auth {} blocks
*/
stats_i_oper_only = yes;

/*
 * stats_k_oper_only: make stats k/K (klines) oper only. Set to:
 *   yes - show users no klines
 *   masked - show users the first matching kline
*/
```

```
*      no      - show users all klines
*/
stats_k_oper_only = yes;

/*
 * caller_id_wait: time between notifying a +g user that somebody
 * is messaging them.
*/
caller_id_wait = 1 minute;

/*
 * opers_bypass_callerid: allows operators to bypass +g and message
 * anyone who has it set.
*/
opers_bypass_callerid = yes;

/*
 * pace_wait_simple: minimum time required between use of less
 * intensive commands
 * (ADMIN, HELP, LUSERS, VERSION, remote WHOIS)
*/
pace_wait_simple = 1 second;

/*
 * pace_wait: minimum time required between use of more intensive com-
mands
 * (INFO, LINKS, MAP, MOTD, STATS, WHO, WHOWAS)
*/
pace_wait = 10 seconds;

/*
```

```
* short_motd: send clients a notice telling them to read the MOTD
* instead of forcing an MOTD to clients who may simply ignore it.
*/
short_motd = no;

/*
* ping_cookie: require clients to respond exactly to a PING command,
* can help block certain types of drones and FTP PASV mode spoofing.
*/
ping_cookie = no;

/* no_oper_flood: increase flood limits for opers. */
no_oper_flood = yes;

/*
* max_targets: the maximum number of targets in a single
* PRIVMSG/NOTICE. Set to 999 NOT 0 for unlimited.
*/
max_targets = 4;

/*
* user modes configurable: a list of user modes for the options below
*
* +b - bots      - See bot and drone flooding notices
* +c - cconn     - Client connection/quit notices
* +D - deaf      - Don't receive channel messages
* +d - debug     - See debugging notices
* +e - external   - See remote server connection and split notices
* +F - farconnect - Remote client connection/quit notices
* +f - full       - See auth {} block full notices
```

```
* +G - softcallerid - Server Side Ignore for users not on your channels
* +g - callerid    - Server Side Ignore (for privmsgs etc)
* +H - hidden      - Hides operator status to other users
* +i - invisible   - Not shown in NAMES or WHO unless you share a channel
* +j - rej         - See rejected client notices
* +k - skill       - See server generated KILL messages
* +l - locops      - See LOCOPS messages
* +n - nchange     - See client nick changes
* +p - hidechans   - Hides channel list in WHOIS
* +q - hideidle    - Hides idle and signon time in WHOIS
* +R - nononreg    - Only receive private messages from registered clients
* +s - servnotice  - See general server notices
* +u - unauth      - See unauthorized client notices
* +w - wallop      - See server generated WALLOPS
* +y - spy         - See LINKS, STATS, TRACE notices etc.
*/
```

```
/* oper_only_umodes: user modes only operators may set. */
```

```
oper_only_umodes = bots, cconn, debug, external, farconnect, full, hidden,
locops, nchange, rej, skill, spy, unauth;
```

```
/* oper_umodes: default user modes operators get when they successfully
```

```
OPER. */
```

```
oper_umodes = bots, locops, servnotice, wallop;
```

```
/*
```

```
* throttle_count: the maximum number of connections from the same
```

```
* IP address allowed in throttle_time duration.
```

```
*/
```

```
throttle_count = 1;
```

```
/*
 * throttle_time: the minimum amount of time required between
 * connections from the same IP address. exempt {} blocks are
 * excluded from this throttling.
 * Offers protection against flooders who reconnect quickly.
 * Set to 0 to disable.
 */
throttle_time = 2 seconds;
};

modules {
    /*
     * path: other paths to search for modules specified below
     * and in "/module load".
    */
    path = "/usr/lib/ircd-hybrid/modules";
#    path = "/usr/local/lib/ircd-hybrid/modules/extra";
    path = "/usr/lib/ircd-hybrid/modules/autoload";

    /* module: the name of a module to load on startup/rehash.*/
#    module = "some_module.la";
};

/*
 * log {}: contains information about logfiles.
*/
log {
    /* Do you want to enable logging to ircd.log? */
    use_logging = yes;
```

```
file {  
    type = oper;  
    name = "/var/log/ircd/ircd-hybrid-oper.log";  
    size = 10 megabytes;  
};  
  
file {  
    type = user;  
    name = "/var/log/ircd/ircd-hybrid-user.log";  
    size = 10 megabytes;  
};  
  
file {  
    type = kill;  
    name = "/var/log/ircd/ircd-hybrid-kill.log";  
    size = 10 megabytes;  
};  
  
file {  
    type = kline;  
    name = "/var/log/ircd/ircd-hybrid-kline.log";  
    size = 10 megabytes;  
};  
  
file {  
    type = dline;  
    name = "/var/log/ircd/ircd-hybrid-dline.log";  
    size = 10 megabytes;  
};
```

```
file {
    type = xline;
    name = "/var/log/ircd/ircd-hybrid-xline.log";
    size = 10 megabytes;
};

file {
    type = resv;
    name = "/var/log/ircd/ircd-hybrid-resv.log";
    size = 10 megabytes;
};

file {
    type = debug;
    name = "/var/log/ircd/ircd-hybrid-debug.log";
    size = 10 megabytes;
};

};
```