

Assignment 3: SDN, Network Security and Routing.

Table 1: drop packets from the organization's network to the internet with source address different from the organization's IP address space.

Field	Match	Action
Source IP	Not in (198.180.151.0/24)	Drop
Destination IP	Any	

Table 2: block TCP connections from the internet to the destinations on the organization's network:

Field	Match	Action
Source IP	Any	Drop
Destination IP	(198.180.151.10/24)	
Destination IP	(198.180.151.251/24)	
Destination IP	(198.180.151.252/24)	
Destination IP	(198.180.151.5/24)	
Source IP	Any	Drop
Destination IP	(198.120.1.1/24)	
Destination IP	(180.120.1.2/24)	
Protocol	TCP	

Table 3: allow outbound traffic from SDN controller to the internet.

Field	Match	Action
Source IP	(198.120.2.1/24)	
Destination IP	180.120.2.128	Forward

Table 4: allow the email server to send and receive email messages to the internet.

Field	Match	Action
Source IP	(198.180.151.252/24)	
Destination IP	Any	Forward
Source IP	Any	
Destination IP	(198.180.151.252/24)	Forward
Protocol	SMTP	

Table 5: allow Client 1 and Client 2 to communicate with the email server.

Field	Match	Action
Source IP	(198.180.150.120/25)	
Destination IP	(198.180.151.0/24)	Forward
Source IP	(198.180.150.150/25)	
Destination IP	(198.180.151.0/24)	Forward
Protocol	POP3	

Table 6: allow DNS traffic.

Field	Match	Action
Protocol	UDP	
Destination IP	(224.0.0.251/32)	Drop
Protocol	UDP	
Destination IP	(8.8.8.8/32)	
Destination IP	(8.8.8.4/32)	
Protocol	TCP	
Destination IP	(8.8.8.8/32)	Forward
Destination IP	(8.8.4.4/32)	Forward

Table 7: allow HTTP and HTTPS traffic to and from the Web server.

Field	Match	Action
Protocol	TCP	
Source IP	Any	
Destination IP	(198.180.151.251/24)	Forward

Table 8: allow configuration of Packet switch with the OpenFlow protocol from the SDN controller.

Field	Match	Action
Source IP	(198.180.151.15/24)	
Destination IP	Any	Forward
Protocol	OpenFlow	
Intranet Interface	eth0	

Table 9: allow remote control of the SDN controller from the IP address 180.120.2.128.

Field	Match	Action
Source IP	180.120.2.128	
Destination IP	(198.120.2.1/24)	Forward
Protocol	TCP	
Destination Port	8	

Table 10: handle eth0 down.

Field	Match	Action
Destination IP	internet	Forward
Forward to Switch B	Yes	

Table 11: routing

Field	Match	Action
Destination IP	(198.180.151.10/24)	Forward
Forward to eth0	Yes	
Destination IP	(198.180.151.251/24)	
Forward to eth0	Yes	
Destination IP	(198.180.151.252/24)	
Forward to eth0	Yes	