

PA-VM

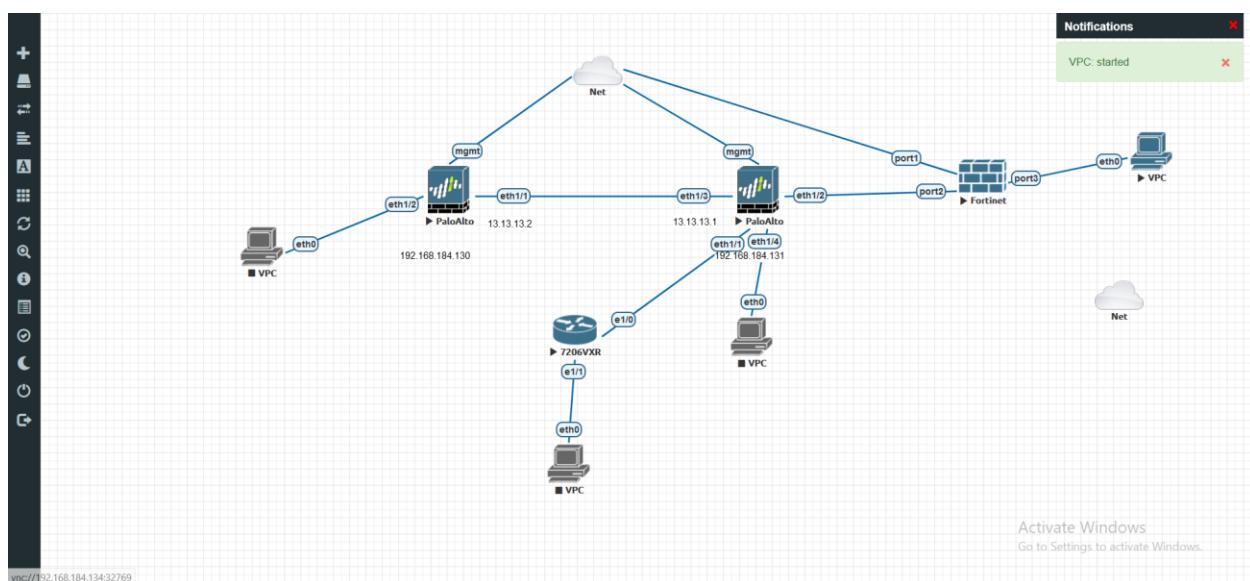
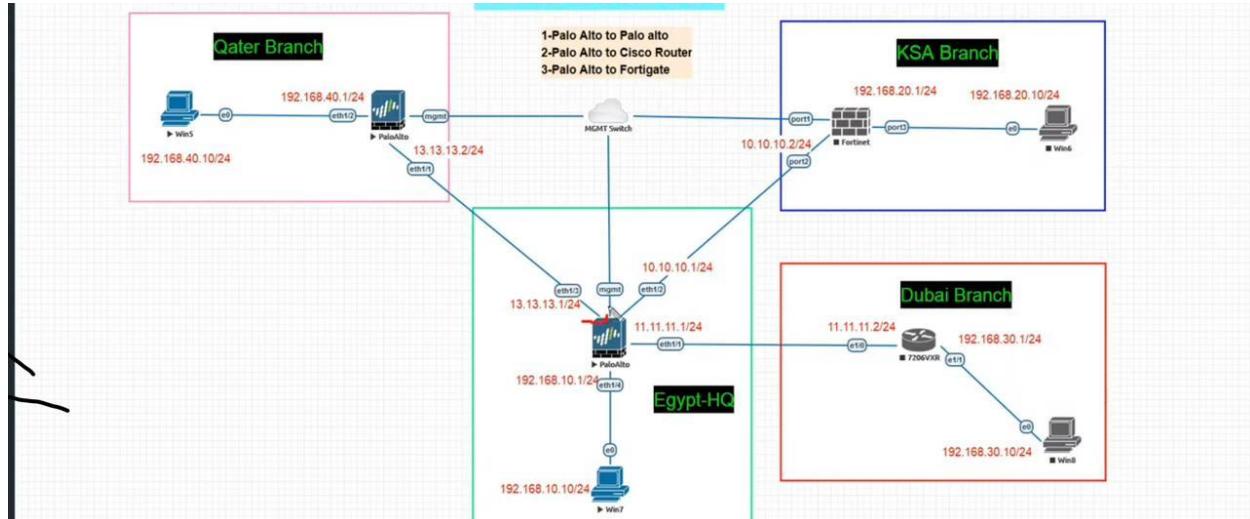
DASHBOARD ACC MONITOR POLICIES OBJECTS NETWORK DEVICE

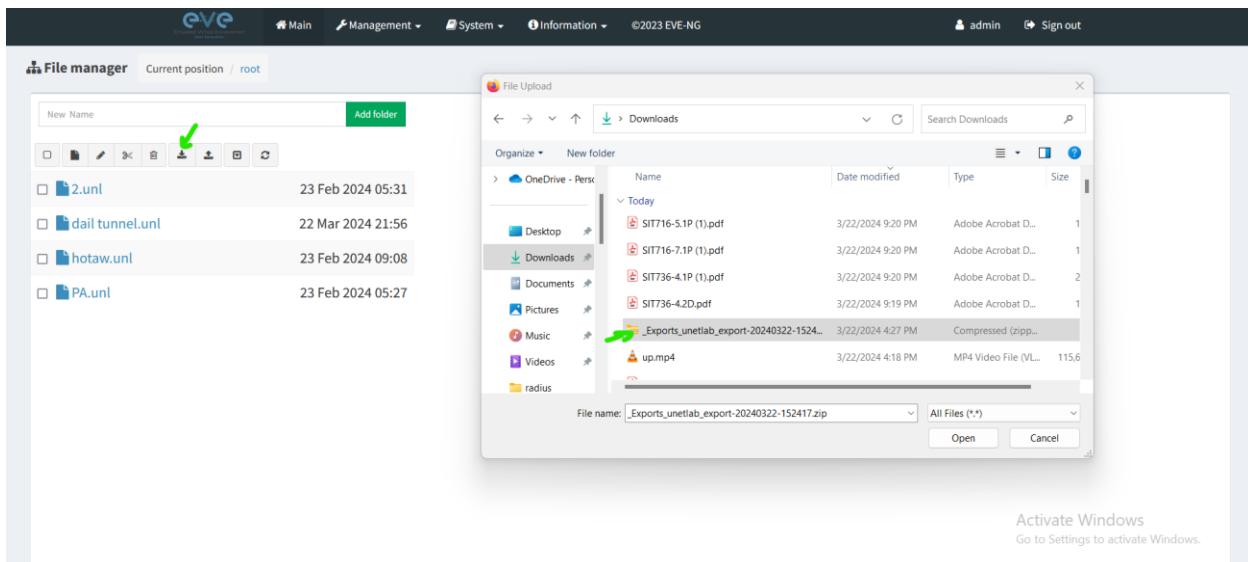
Commit ▾ | 🔍 | 🌐 | 🌐 | 🔍 | ?

3 items → X

Interfaces Zones VLANs Virtual Wires Virtual Routers IPsec Tunnels GRE Tunnels DHCP DNS Proxy GlobalProtect Portals Gateways MDM Clientless Apps Clientless App Groups QoS LLDP Network Profiles GlobalProtect IPsec Crypto IKE Gateways IPsec Crypto IKE Crypto Monitor Interface Mgmt Zone Protection QoS Profile LLDP Profile

NAME	STATUS	TYPE	IKE Gateway/Satellite				Tunnel Interface				COMMENT
			INTERFACE	LOCAL IP	PEER ADDRESS	STATUS	INTERFACE	VIRTUAL ROUTER	VIRTUAL SYSTEM	SECURITY ZONE	
myTunnel	Tunnel Info	Auto Key	ethernet1/3	13.13.13.1	13.13.13.2	IKE Info	tunnel1	default (Show Routes)	vsys1	vpn	green
PA-to-FGT	Tunnel Info	Auto Key	ethernet1/2	10.10.10.2	10.10.10.1	IKE Info	tunnel10	default (Show Routes)	vsys1	Forti	green
cisco-pa	Tunnel Info	Auto Key	ethernet1/1	11.11.11.1	11.11.11.2	IKE Info	tunnel2	default (Show Routes)	vsys1	cisco	green





PA-to-PA

PA1

INTERFACE	INTERFACE TYPE	MANAGEMENT PROFILE	LINK STATE	IP ADDRESS	VIRTUAL ROUTER	TAG	VLAN / VIRTUAL-WIRE	SECURITY ZONE	SD-WAN INTERFACE PROFILE	UPSTREAM NAT	FEATURES	COMI
ethernet1/1	Layer3	ping	Up	11.11.1.1	default	Untagged	none	cisco		Disabled		
ethernet1/2	Layer3	ping	Up	10.10.10.1	default	Untagged	none	Forti		Disabled		
ethernet1/3	Layer3	ping	Up	13.13.13.1	default	Untagged	none	vpn		Disabled		
ethernet1/4	Layer3	ping	Up	192.168.10.1	default	Untagged	none	trust		Disabled		
ethernet1/5			Up	none	none	Untagged	none	none		Disabled		
ethernet1/6			Up	none	none	Untagged	none	none		Disabled		
ethernet1/7			Up	none	none	Untagged	none	none		Disabled		
ethernet1/8			Up	none	none	Untagged	none	none		Disabled		

IKE Crypto Profile

Name: default

DH GROUP

- DH Group: group2
- DH Group: 3des

AUTHENTICATION

- Authentication: sha1

Timers

Key Lifetime:	Hours
8	
Minimum lifetime = 3 mins	

IKEv2 Authentication: 0

OK Cancel

IPSec Crypto Profile

Name: default

IPSec Protocol: ESP

ENCRYPTION

- Encryption: aes-128-cbc
- Encryption: 3des

AUTHENTICATION

- Authentication: sha1

LIFETIME

hours
hours
hours
4 hours
days

ENABLE

Lifesize: MB (1 - 65535)

OK Cancel

IKE Gateway

General

Name: MyGateway

Version: IKEv1 only mode

Address Type: IPv4

Interface: ethernet1/3

Local IP Address: 13.13.13.1

Peer IP Address Type: IP

Peer Address: 13.13.13.2

Authentication: Pre-Shared Key

Pre-shared Key: *********

Confirm Pre-shared Key: *********

Local Identification: None

Peer Identification: None

Comment:

IKE Advanced Options

MODE	PASSIVE MODE	NAT TRAVERSAL	CRYPTO PROFILE
main	<input type="checkbox"/>	<input type="checkbox"/>	default
auto	<input type="checkbox"/>	<input type="checkbox"/>	testing-pw1
main	<input type="checkbox"/>	<input type="checkbox"/>	cisco-ph

OK Cancel

IKE Gateway

General | Advanced Options

Common Options

- Enable Passive Mode
- Enable NAT Traversal

IKEV1

Exchange Mode: main

IKE Crypto Profile: default

Dead Peer Detection

Interval:	5
Retry:	5

Buttons: OK, Cancel

Tunnel Interface

Config | IPV4 | IPV6 | Advanced

Assign Interface To

Virtual Router: default

Security Zone: vpn

Buttons: OK, Cancel

Tunnel Interface

Config | IPV4 | IPV6 | Advanced

IP

Add, Delete, ↑ Move Up, ↓ Move Down

IP address/netmask, Ex. 192.168.2.254/24

Buttons: OK, Cancel

IPSec Tunnel

General

Name	myTunnel
Tunnel Interface	tunnel1
Type	Auto Key
Address Type	IPv4
IKE Gateway	MyGateway
IPSec Crypto Profile	default
<input type="checkbox"/> Show Advanced Options	
Comment:	

Tunnel Interface

VIRTUAL SYSTEM	SECURITY ZONE	STATUS	COMMENT
vsys1	vpn	green	
vsys1	Forti	green	
vsys1	cisco	green	

IPSec Tunnel

General | Proxy IDs

IPv4 | IPv6

PROXY ID	LOCAL	REMOTE	PROTOCOL
----------	-------	--------	----------

Tunnel Interface

VIRTUAL SYSTEM	SECURITY ZONE	STATUS	COMMENT
vsys1	vpn	green	
vsys1	Forti	green	
vsys1	cisco	green	

Virtual Router - Static Route - IPv4

Virtual Router

Name	vpn traffic												
Destination	192.168.40.0												
Interface	tunnel1												
Next Hop	None												
Admin Distance	10 - 240												
Metric	10												
Route Table	Unicast												
BFD Profile	Disable BFD												
<input type="checkbox"/> Path Monitoring													
Failure Condition <input type="radio"/> Any <input type="radio"/> All													
Preemptive Hold Time (min): 2													
<table border="1"> <thead> <tr> <th>NAME</th> <th>ENABLE</th> <th>SOURCE IP</th> <th>DESTINATION IP</th> <th>PING INTERVAL(SEC)</th> <th>PING COUNT</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		NAME	ENABLE	SOURCE IP	DESTINATION IP	PING INTERVAL(SEC)	PING COUNT						
NAME	ENABLE	SOURCE IP	DESTINATION IP	PING INTERVAL(SEC)	PING COUNT								

ROUTE TABLE

unicast
unicast
unicast

PA-VM

DASHBOARD ACC MONITOR POLICIES OBJECTS NETWORK DEVICE

Commit ▾ | 🔍 | 🌐 | 🌐 | 🔍 | X

8 items → X

Security

NAME	TAGS	TYPE	Source				Destination				APPLICATION	SERVICE	ACTION
			ZONE	ADDRESS	USER	DEVICE	ZONE	ADDRESS	DEVICE				
1 vpn_policy	none	universal	trust	any	any	any	vpn	any	any	any	application...	Allow	
2 vpn_policy2	none	universal	vpn	any	any	any	trust	any	any	any	application...	Allow	
3 pa-fgt	none	universal	Forti	any	any	any	trust	any	any	any	application...	Allow	
4 pgt-pa	none	universal	trust	any	any	any	Forti	any	any	any	application...	Allow	
5 cisco	none	universal	Cisco	any	any	any	trust	any	any	any	application...	Allow	
6 cisco2	none	universal	trust	any	any	any	cisco	any	any	any	application...	Allow	
7 intrazone-default	none	intrazone	any	any	any	any	(Intrazone)	any	any	any	any	Allow	
8 interzone-default	none	interzone	any	any	any	any	any	any	any	any	any	Deny	

Policy Optimizer

- New App Viewer
- Rules Without App Controls
- Unused Apps
- Rule Usage
 - Unused in 30 days
 - Unused in 90 days
 - Unused

PA-VM

DASHBOARD ACC MONITOR POLICIES OBJECTS NETWORK DEVICE

Commit ▾ | 🔍 | 🌐 | 🌐 | 🔍 | X

3 items → X

IPSec Tunnels

NAME	STATUS	TYPE	IKE Gateway/Satellite				Tunnel Interface					COMMENT
			INTERFACE	LOCAL IP	PEER ADDRESS	STATUS	INTERFACE	VIRTUAL ROUTER	VIRTUAL SYSTEM	SECURITY ZONE	STATUS	
myTunnel	Tunnel Info	Auto Key	ethernet1/3	13.13.13.1	13.13.13.2	IKE Info	tunnel.1	default	vsys1	vpn		
PA-to-FGT	Tunnel Info	Auto Key	ethernet1/2	10.10.10.1	10.10.10.2	IKE Info	tunnel.10	default	vsys1	Forti		
cisco-pa	Tunnel Info	Auto Key	ethernet1/1	11.11.11.1	11.11.11.2	IKE Info	tunnel.2	default	vsys1	cisco		

PA2

PA-VM

DASHBOARD ACC MONITOR POLICIES OBJECTS NETWORK DEVICE

Commit ▾ | 🔍 | 🌐 | 🌐 | 🔍 | X

Ethernet | VLAN | Loopback | Tunnel | SD-WAN

INTERFACE	INTERFACE TYPE	MANAGEMENT PROFILE	LINK STATE	IP ADDRESS	VIRTUAL ROUTER	TAG	VLAN / VIRTUAL-WIRE	SECURITY ZONE	SD-WAN INTERFACE PROFILE	UPSTREAM NAT	FEATURES	COM
ethernet1/1	Layer3	ping	Up	13.13.13.2...	default	Untagged	none	vpn		Disabled	HTTP	
ethernet1/2	Layer3	ping	Up	192.168.40.1	default	Untagged	none	trust		Disabled		
ethernet1/3	Tap		Up	none	none		none	none		Disabled		
ethernet1/4			Up	none	none	Untagged	none	none		Disabled		
ethernet1/5			Up	none	none	Untagged	none	none		Disabled		
ethernet1/6			Up	none	none	Untagged	none	none		Disabled		
ethernet1/7			Up	none	none	Untagged	none	none		Disabled		
ethernet1/8			Up	none	none	Untagged	none	none		Disabled		

IKE Crypto Profile

NAME	ENCRYPTION	AUTHENTICATION	DH GROUP	KEY LIFETIME
default	aes-128-cbc 3des	sha1	group2	8 hours 8 hours 8 hours

Timers

- Key Lifetime: Hours (8)
- Minimum lifetime = 3 mins
- IKEv2 Authentication: Multiple

Buttons: Add, Delete, Move Up, Move Down, OK, Cancel

IPSec Crypto Profile

NAME	ESP/AH	ENCRYPTION	AUTHENTICATION	DH GROUP	LIFETIME	LIFESIZE
default	ESP	aes-128-cbc 3des	sha1	group2	hours hours hours	hours

IPSec Protocol: ESP

Encryption: aes-128-cbc
3des

Authentication: sha1

DH Group: group2

Lifetime: Hours (1)

Enable: Lifesize: MB (1 - 65535)

Buttons: Add, Delete, Move Up, Move Down, OK, Cancel

IKE Gateway

NAME	PEER ADDRESS	INTERFACE
MyGateway	13.13.13.1	ethernet1/1

General | Advanced Options

General:

- Name: MyGateway
- Version: IKEv1 only mode
- Address Type: IPv4
- Interface: ethernet1/1
- Local IP Address: 13.13.13.2
- Peer IP Address Type: IP
- Peer Address: 13.13.13.1
- Authentication: Pre-Shared Key
- Pre-shared Key: *********
- Confirm Pre-shared Key: *********
- Local Identification: None
- Peer Identification: None
- Comment:

Advanced Options:

- MODE: main
- PASSIVE MODE:
- NAT TRAVERSAL:
- CRYPTO PROFILE: default

Buttons: OK, Cancel

IKE Gateway

NAME	PEER ADDRESS	INTERFACE
MyGateway	13.13.13.1	ethernet

General | Advanced Options

Common Options

- Enable Passive Mode
- Enable NAT Traversal

IKEv1

Exchange Mode: main

IKE Crypto Profile: default

Enable Fragmentation

Dead Peer Detection

Interval: 5

Retry: 5

OK **Cancel**

Tunnel Interface

INTERFACE	MANAGEMENT PROFILE	IP ADDRESS	VIRTUAL ROUTER	SECURITY ZONE	FEATURES	COMMENT
tunnel						
tunnel.1						
tunnel.2						

Tunnel Interface

Interface Name: tunnel

Comment:

Netflow Profile: None

Config | IPv4 | IPv6 | Advanced

Assign Interface To

Virtual Router: default

Security Zone: vpn

OK **Cancel**

Tunnel Interface

INTERFACE	MANAGEMENT PROFILE	IP ADDRESS	VIRTUAL ROUTER	SECURITY ZONE	FEATURES	COMMENT
tunnel						
tunnel.1						
tunnel.2						

Tunnel Interface

Interface Name: tunnel

Comment:

Netflow Profile: None

Config | IPv4 | IPv6 | Advanced

IP

Add **Delete** **↑ Move Up** **↓ Move Down**

IP address/netmask. Ex. 192.168.2.254/24

OK **Cancel**

PA-VM

DASHBOARD ACC MONITOR POLICIES OBJECTS NETWORK DEVICE

Commit | ? X

1 item → X

Interfaces Zones VLANs Virtual Wires Virtual Routers **IPSec Tunnels** GRE Tunnels DHCP DNS Proxy GlobalProtect Portals Gateways MDM Clientless Apps Clientless App Groups QoS LLDP Network Profiles GlobalProtect IPSec Crypto IKE Gateways IPSec Crypto IKE Crypto Monitor **Introduction**

QEMU (PaloAlto)

PA-VM login: admin
Password:
Last login: Fri Mar 22 13:12:26 on ttym1

Number of failed attempts since last successful login: 0

admin@PA-VM>
admin@PA-VM> DHCP: new ip 192.168.184.130 : mask 255.255.255.0

admin@PA-VM>
admin@PA-VM> show vpn ike-sa gateway MyGateway

IKE SA for gateway ID 1 not found.

admin@PA-VM> test vpn ike-sa gateway MyGateway

Start time: Mar 22 13:28:20
Initiate 1 IKE SA.

admin@PA-VM>

IKE Gateway/Satellite							Tunnel Interface					
NAME	STATUS	TYPE	INTERFACE	LOCAL IP	PEER ADDRESS	STATUS	INTERFACE	VIRTUAL ROUTER	VIRTUAL SYSTEM	SECURITY ZONE	STATUS	COMMENT
myTunnel	Tunnel Info	Auto Key	ethernet1/1	13.13.13.2...	13.13.13.1	IKE Info	tunnel.1	default (Show Routes)	vsys1	vpn	green icon	

PA-VM

DASHBOARD ACC MONITOR POLICIES OBJECTS NETWORK DEVICE

Commit ▾ | ↻ 🔍

1 item →

Interfaces Zones VLANs Virtual Wires Virtual Routers IPSec Tunnels GRE Tunnels DHCP DNS Proxy GlobalProtect Portals Gateways MDM Clientless Apps Clientless App Groups QoS LLDP Network Profiles

myTunnel

IKE Gateway/Satellite			Tunnel Interface									
NAME	STATUS	TYPE	INTERFACE	LOCAL IP	PEER ADDRESS	STATUS	INTERFACE	VIRTUAL ROUTER	VIRTUAL SYSTEM	SECURITY ZONE	STATUS	COMMENT
myTunnel	Tunnel Info	Auto Key	ethernet1/1	13.13.13.2.	13.13.13.1	IKE Info	tunnel1	default (Show Routes)	vsys1	vpn	green	

PA-VM

DASHBOARD ACC MONITOR POLICIES OBJECTS NETWORK DEVICE

Commit ▾ | ↻ 🔍

3 items → X

Interfaces Zones VLANs Virtual Wires Virtual Routers IPSec Tunnels GRE Tunnels DHCP DNS Proxy GlobalProtect Portals Gateways MDM Clientless Apps Clientless App Groups QoS LLDP Network Profiles

myTunnel PA-to-FGT cisco-pa

IKE Gateway/Satellite			Tunnel Interface									
NAME	STATUS	TYPE	INTERFACE	LOCAL IP	PEER ADDRESS	STATUS	INTERFACE	VIRTUAL ROUTER	VIRTUAL SYSTEM	SECURITY ZONE	STATUS	COMMENT
myTunnel	Tunnel Info	Auto Key	ethernet1/3	13.13.13.1	13.13.13.2	IKE Info	tunnel1	default (Show Routes)	vsys1	vpn	green	
PA-to-FGT	Tunnel Info	Auto Key	ethernet1/2	10.10.10.1	10.10.10.2	IKE Info	tunnel10	default (Show Routes)	vsys1	Forti	green	
cisco-pa	Tunnel Info	Auto Key	ethernet1/1	11.11.11.1	11.11.11.2	IKE Info	tunnel2	default (Show Routes)	vsys1	cisco	green	

GlobalProtect IPsec Crypto IKE Gateways IPsec Crypto IKE Crypto Monitor Interface Mgmt Zone Protection QoS Profile Non Default

QEMU (PaloAlto)

PA-VM login: admin
 Password:
 Last login: Fri Mar 22 13:12:26 on ttym1

Number of failed attempts since last successful login: 0

```
admin@PA-VM>
admin@PA-VM> DHCP: new ip 192.168.184.130 : mask 255.255.255.0
admin@PA-VM> show vpn ike-sa gateway MyGateway
IKE SA for gateway ID 1 not found.
admin@PA-VM> test vpn ike-sa gateway MyGateway
Start time: Mar.22 13:28:20
Initiate 1 IKE SA.

admin@PA-VM> test vpn ipsec-sa tunnel myTunnel
Start time: Mar.22 13:29:18
Initiate 1 IPSec SA for tunnel myTunnel.

admin@PA-VM>
```

PA-VM

DASHBOARD ACC MONITOR POLICIES OBJECTS NETWORK DEVICE

Commit ▾ | ↻ 🔍 ↺ ↻ 🔍

1 item → X

NAME	STATUS	TYPE	IKE Gateway/Satellite				Tunnel Interface				COMMENT
			INTERFACE	LOCAL IP	PEER ADDRESS	STATUS	INTERFACE	VIRTUAL ROUTER	VIRTUAL SYSTEM	SECURITY ZONE	
myTunnel	Tunnel Info	Auto Key	ethernet1/1	13.13.132.-	13.13.131	IKE Info	tunnel1	default (Show Routes)	vsys1	vpn	

Interfaces Zones VLANs Virtual Wires Virtual Routers IPSec Tunnels GRE Tunnels DHCP DNS Proxy GlobalProtect Portals Gateways MDM Clientless Apps Clientless App Groups QoS LLDP Network Profiles GlobalProtect IPSec Crypto IKE Gateways

PA-VM Network - IKE Gateways/Satellite

NAME	STATUS	TYPE	IKE Gateway/Satellite				Tunnel Interface				COMMENT
			INTERFACE	LOCAL IP	PEER ADDRESS	STATUS	INTERFACE	VIRTUAL ROUTER	VIRTUAL SYSTEM	SECURITY ZONE	
myTunnel	Tunnel Info	Auto Key	ethernet1/3	13.13.13.1	13.13.13.2	IKE Info	tunnel.1	default [Show Router]	vsys1	vpn	
PA-to-FGT	Tunnel Info	Auto Key	ethernet1/2	10.10.10.1	10.10.10.2	IKE Info	tunnel.10	default [Show Router]	vsys1	Forti	
cisco-pa	Tunnel Info	Auto Key	ethernet1/1	11.11.11.1	11.11.11.2	IKE Info	tunnel.2	default [Show Router]	vsys1	cisco	

PA-cisco Tunnel

PA

PA-VM Network - IKE Crypto Profile

IKE Crypto Profile

Name: cisco-ph

DH GROUP: group5

Encryption: aes-128-cbc

Authentication: md5

Timers: Key Lifetime: 8 hours

OK Cancel

PA-VM Network - IPSec Crypto Profile

IPSec Crypto Profile

Name: cisco-ph2

IPsec Protocol: ESP

DH Group: group5

Lifetime: Days: 1

Lifesize: MB: 1000

OK Cancel

IKE Gateway

General | Advanced Options

Name	cisco
Version	IKEv1 only mode
Address Type	<input checked="" type="radio"/> IPv4 <input type="radio"/> IPv6
Interface	ethernet1/1
Local IP Address	11.11.11.1
Peer IP Address Type	<input checked="" type="radio"/> IP <input type="radio"/> FQDN <input type="radio"/> Dynamic
Peer Address	11.11.11.2
Authentication	<input checked="" type="radio"/> Pre-Shared Key <input type="radio"/> Certificate
Pre-shared Key	*****
Confirm Pre-shared Key	*****
Local Identification	None
Peer Identification	None
Comment	

IKE Advanced Options

MODE	PASSIVE MODE	NAT TRAVERSAL	CRYPTO PROFILE
main	<input type="checkbox"/>	<input type="checkbox"/>	default
auto	<input type="checkbox"/>	<input type="checkbox"/>	testing-pw1
main	<input type="checkbox"/>	<input type="checkbox"/>	cisco-ph

OK **Cancel**

IKE Gateway

General | Advanced Options

Common Options

<input type="checkbox"/> Enable Passive Mode
<input type="checkbox"/> Enable NAT Traversal

IKEv1

Exchange Mode	main
IKE Crypto Profile	cisco-ph
<input type="checkbox"/> Enable Fragmentation	
<input checked="" type="checkbox"/> Dead Peer Detection	
Interval	5
Retry	5

IKE Advanced Options

MODE	PASSIVE MODE	NAT TRAVERSAL	CRYPTO PROFILE
main	<input type="checkbox"/>	<input type="checkbox"/>	default
auto	<input type="checkbox"/>	<input type="checkbox"/>	testing-pw1
main	<input type="checkbox"/>	<input type="checkbox"/>	cisco-ph

OK **Cancel**

Tunnel Interface

Config | IPv4 | IPv6 | Advanced

Assign Interface To

Virtual Router	default
Security Zone	cisco

OK **Cancel**

PA-VM

DASHBOARD ACC MONITOR POLICIES OBJECTS NETWORK DEVICE

Interfaces Ethernet VLAN Loopback Tunnel SD-WAN

Tunnel Interface

INTERFACE	MANAGEMENT PROFILE	IP ADDRESS	VIRTUAL ROUTER	SECURITY ZONE	FEATURES	COMMENT
tunnel	ping					
tunnel.1	ping					
tunnel.2	ping					
tunnel.10	ping					

Other Info

Management Profile: ping
MTU: [576 - 1500]

OK Cancel

PA-VM

DASHBOARD ACC MONITOR POLICIES OBJECTS NETWORK DEVICE

Ethernet VLAN Loopback Tunnel SD-WAN

INTERFACE	INTERFACE TYPE	MANAGEMENT PROFILE	LINK STATE	IP ADDRESS	VIRTUAL ROUTER	TAG	VLAN / VIRTUAL-WIRE	SECURITY ZONE	SD-WAN INTERFACE PROFILE	UPSTREAM NAT	FEATURES	COM
ethernet1/1	Layer3	ping	green	11.11.11.1	default	Untagged	none	cisco		Disabled	XX	
ethernet1/2	Layer3	ping	green	10.10.10.1	default	Untagged	none	Forti		Disabled	XX	
ethernet1/3	Layer3	ping	green	13.13.13.1	default	Untagged	none	vpn		Disabled	XX	
ethernet1/4	Layer3	ping	green	192.168.10.1	default	Untagged	none	trust		Disabled		
ethernet1/5			grey	none		Untagged	none	none		Disabled		
ethernet1/6			grey	none		Untagged	none	none		Disabled		
ethernet1/7			grey	none		Untagged	none	none		Disabled		
ethernet1/8			grey	none		Untagged	none	none		Disabled		

PA-VM

DASHBOARD ACC MONITOR POLICIES OBJECTS NETWORK DEVICE

Virtual Router - Static Route - IPv4

NAME	ENABLE	SOURCE IP	DESTINATION IP	PING INTERVAL(SEC)	PING COUNT
disco	Any		192.168.30.10		

Failure Condition: Any All Preemptive Hold Time (min): 2

Add Delete OK Cancel

The screenshot shows the Network tab in the PA-VM interface. On the left, a sidebar lists various network components like Interfaces, Zones, VLANs, Virtual Wires, Virtual Routers, and IPsec Tunnels (which is currently selected). The main pane displays a table for IKE Gateway/Satellite tunnels. The columns are: NAME, STATUS, TYPE, INTERFACE, LOCAL IP, PEER ADDRESS, STATUS, INTERFACE, VIRTUAL ROUTER, VIRTUAL SYSTEM, SECURITY ZONE, STATUS, and COMMENT. There are three entries in the table:

IKE Gateway/Satellite							Tunnel Interface					
NAME	STATUS	TYPE	INTERFACE	LOCAL IP	PEER ADDRESS	STATUS	INTERFACE	VIRTUAL ROUTER	VIRTUAL SYSTEM	SECURITY ZONE	STATUS	COMMENT
myTunnel	Tunnel Info	Auto Key	ethernet1/3	13.13.13.1	13.13.13.2	IKE Info	tunnel.1	default (Show Routes)	vsys1	vpn		
PA-to-FGT	Tunnel Info	Auto Key	ethernet1/2	10.10.10.1	10.10.10.2	IKE Info	tunnel.10	default (Show Routes)	vsys1	Forti		
cisco-pa	Tunnel Info	Auto Key	ethernet1/1	11.11.11.1	11.11.11.2	IKE Info	tunnel.2	default (Show Routes)	vsys1	cisco		

```
!
!
crypto isakmp policy 16
  encr aes
  hash md5
  authentication pre-share
  group 5
!
crypto isakmp policy 20
  encr aes
  hash md5
  authentication pre-share
  group 5
  lifetime 3600
crypto isakmp key comp123 address 11.11.11.1
crypto isakmp key comp123 address 0.0.0.0
!
!
crypto ipsec transform-set PA-TS esp-aes 256 esp-sha-hmac
  mode transport
crypto ipsec transform-set Test esp-aes esp-sha-hmac
  mode transport
crypto ipsec transform-set TEST esp-aes esp-sha-hmac
  mode tunnel
!
!
!
crypto map CMAP 10 ipsec-isakmp
  set peer 11.11.11.1
  set transform-set TEST
  match address crypto_acl
!
```

```
!
crypto map PA 20 ipsec-isakmp
  ! Incomplete
  match address crypto-cisco
!
crypto map pa 20 ipsec-isakmp
  set peer 11.11.11.1
  set transform-set Test
  set pfs group5
  match address 101
!
!
!
!
!
interface FastEthernet0/0
  no ip address
  shutdown
  duplex full
!
interface Ethernet1/0
  ip address 11.11.11.2 255.255.255.0
  duplex full
  crypto map CMAP
!
interface Ethernet1/1
  ip address 192.168.30.1 255.255.255.0
  duplex full
!
interface Ethernet1/2
  no ip address
  shutdown
  duplex full
!
interface Ethernet1/3
  no ip address
  shutdown
  duplex full
!
interface FastEthernet2/0
  no ip address
  shutdown
  duplex full
!
ip forward-protocol nd
!
```

```

! ip forward-protocol nd
!
no ip http server
no ip http secure-server
!
ip access-list extended crypto-cisco
 permit ip 192.168.30.0 0.0.0.255 192.168.10.0 0.0.0.255
ip access-list extended crypto_acl
 permit ip 192.168.30.0 0.0.0.255 192.168.10.0 0.0.0.255
!
access-list 101 permit ip host 192.168.30.10 any
!
!
control-plane
!
!
line con 0
 stopbits 1
line aux 0
 stopbits 1
line vty 0 4
 login
!
```

QEMU (PaloAlto)

```

PA-UM login: admin
Password:
Last login: Fri Mar 22 13:12:04 on tty1

Number of failed attempts since last successful login: 0

admin@PA-UM> DHCP: new ip 192.168.184.141 : mask 255.255.255.0
admin@PA-UM>
admin@PA-UM> DHCP: new ip 192.168.184.141 : mask 255.255.255.0

admin@PA-UM>
admin@PA-UM>
admin@PA-UM> test vpn ike-sa gateway
    FGT-ph1      FGT-ph1
    MyGateway    MyGateway
    cisco        cisco
    <value>      test for given IKE gateway

admin@PA-UM> test vpn ike-sa gateway cisco

Start time: Mar.22 13:34:51
Initiate 1 IKE SA.
```

PA-VM

NAME	STATUS	TYPE	IKE Gateway/Satellite				Tunnel Interface				COMMENT
			INTERFACE	LOCAL IP	PEER ADDRESS	STATUS	INTERFACE	VIRTUAL ROUTER	VIRTUAL SYSTEM	SECURITY ZONE	
myTunnel	IKE Info	Auto Key	ethernet1/3	13.13.13.1	13.13.13.2	IKE Info	tunnel1	default	vsys1	vpn	OK
PA-to-FGT	IKE Info	Auto Key	ethernet1/2	10.10.10.1	10.10.10.2	IKE Info	tunnel10	default	vsys1	Forti	OK
cisco-pa	IKE Info	Auto Key	ethernet1/1	11.11.11.1	11.11.11.2	IKE Info	tunnel2	default	vsys1	cisco	OK

PA-VM

DASHBOARD ACC MONITOR POLICIES OBJECTS NETWORK DEVICE

Commit ▾ | 🔍 | 🗑️ | ⌂ | ? | X

3 items → X

Interfaces Zones VLANs Virtual Wires Virtual Routers IPsec Tunnels GRE Tunnels DHCP DNS Proxy GlobalProtect Portals Gateways MDM Clientless Apps Clientless App Groups QoS LLDP Network Profiles GlobalProtect IPsec Crypto IKE Gateways IPsec Crypto IKE Crypto Monitor

NAME	STATUS	TYPE	IKE Gateway/Satellite				Tunnel Interface					COMMENT
			INTERFACE	LOCAL IP	PEER ADDRESS	STATUS	INTERFACE	VIRTUAL ROUTER	VIRTUAL SYSTEM	SECURITY ZONE	STATUS	
myTunnel	Tunnel Info	Auto Key	ethernet1/3	13.13.13.1	13.13.13.2	IKE Info	tunnel.1	default (Show Router)	vsys1	vpn	green	
PA-to-FGT	Tunnel Info	Auto Key	ethernet1/2	10.10.10.1	10.10.10.2	red	tunnel.10	default (Show Router)	vsys1	Forti	green	
cisco-pa	Tunnel Info	Auto Key	ethernet1/1	11.11.11.1	11.11.11.2	IKE Info	tunnel.2	default (Show Router)	vsys1	cisco	green	

QEMU (PaloAlto)

PA-VM login: admin
Password:
Last login: Fri Mar 22 13:12:04 on ttym1

Number of failed attempts since last successful login: 0

```
admin@PA-UM> DHCP: new ip 192.168.184.141 : mask 255.255.255.0
admin@PA-UM>
admin@PA-UM> DHCP: new ip 192.168.184.141 : mask 255.255.255.0
admin@PA-UM>
admin@PA-UM> test vpn ike-sa gateway
    FGT-ph1      FGT-ph1
    MyGateway    MyGateway
    cisco        cisco
    <value>      test for given IKE gateway
admin@PA-UM> test vpn ike-sa gateway cisco
Start time: Mar 22 13:34:51
Initiate 1 IKE SA.

admin@PA-UM> test vpn ipsec-sa tunnel
    PA-to-FGT:testing  PA-to-FGT:testing
    cisco-pa:traffic  cisco-pa:traffic
    myTunnel          myTunnel
    <value>           test for given VPN tunnel

admin@PA-UM> test vpn ipsec-sa tunnel cisco-pa:traffic
Start time: Mar 22 13:35:56
Initiate 1 IPSec SA for tunnel cisco-pa:traffic.

admin@PA-UM>
```

Configuring Cisco

```
ip access-list extended Crypto_Acl
permit ip 192.168.30.0 0.0.0.255 192.168.10.0 0.0.0.255
```

```

crypto isakmp policy 16
encr aes
hash md5
authentication pre-share
group 5

crypto isakmp key cisco123 address 0.0.0.0 0.0.0.0

crypto ipsec transform-set TSET esp-aes esp-sha-hmac

crypto map CMAP 10 ipsec-isakmp
set peer 11.11.11.1

set transform-set TSET
match address Crypto_Acl

interface FastEthernet1/0
crypto map CMAP

```

PA-FGT

The screenshot shows the PA-VM interface configuration page under the NETWORK tab. The left sidebar contains a tree view of network objects including Zones, VLANs, Virtual Wires, Virtual Routers, IPsec Tunnels, GRE Tunnels, DHCP, DNS Proxy, GlobalProtect, Portals, Gateways, MDM, Clientless Apps, Clientless App Groups, QoS, LLDP, and Network Profiles. The main pane displays a table of Ethernet interfaces:

INTERFACE	INTERFACE TYPE	MANAGEMENT PROFILE	LINK STATE	IP ADDRESS	VIRTUAL ROUTER	TAG	VLAN / VIRTUAL-WIRE	SECURITY ZONE	SD-WAN INTERFACE PROFILE	UPSTREAM NAT	FEATURES	COM
ethernet1/1	Layer3	ping	default	11.11.11.1		Untagged	none	cisco		Disabled		
ethernet1/2	Layer3	ping	default	10.10.10.2		Untagged	none	Forti		Disabled		
ethernet1/3	Layer3	ping	default	13.13.13.1		Untagged	none	vpn		Disabled		
ethernet1/4	Layer3	ping	default	192.168.10.1		Untagged	none	trust		Disabled		
ethernet1/5			none	none		Untagged	none	none		Disabled		
ethernet1/6			none	none		Untagged	none	none		Disabled		
ethernet1/7			none	none		Untagged	none	none		Disabled		
ethernet1/8			none	none		Untagged	none	none		Disabled		

IKE Crypto Profile

Name: testing-pw1

DH GROUP: group5

ENCRYPTION: des

AUTHENTICATION: md5, sha1

Timers:

- Key Lifetime: Seconds (43200)
- Minimum Lifetime: 3 mins
- IKEv2 Authentication: Multiple

OK Cancel

IPSec Crypto Profile

Name: testingph2

IPSec Protocol: ESP

DH Group: group5

Lifetime: Seconds (43200)

Enable: Lifesize: MB (1 - 65535)

Recommended lifesize is 100MB or greater

OK Cancel

IKE Gateway

General

Name: FGT-ph1

Version: IKEv1 only mode

Address Type: IPv4

Interface: ethernet1/2

Local IP Address: 10.10.10.2

Peer IP Address Type: IP

Peer Address: 10.10.10.1

Authentication: Pre-Shared Key

Pre-shared Key: *********

Confirm Pre-shared Key: *********

Local Identification: None

Peer Identification: None

Comment:

IKE Advanced Options

MODE	PASSIVE MODE	NAT TRAVERSAL	CRYPTO PROFILE
main	<input type="checkbox"/>	<input type="checkbox"/>	default
main	<input type="checkbox"/>	<input type="checkbox"/>	testing-pw1
main	<input type="checkbox"/>	<input type="checkbox"/>	cisco-ph

OK Cancel

The screenshot shows the PA-VM web interface with the 'NETWORK' tab selected. On the left, a sidebar lists various network components like Interfaces, Zones, and GlobalProtect. The main area displays a table of IKE Gateways, with one row selected for configuration. A modal dialog titled 'IKE Gateway' is open, showing the 'Advanced Options' tab. It contains sections for 'Common Options' (checkboxes for 'Enable Passive Mode' and 'Enable NAT Traversal'), 'IKEv1' settings (Exchange Mode set to 'main', IKE Crypto Profile set to 'testing-pw1', and a checkbox for 'Enable Fragmentation'), and 'Dead Peer Detection' parameters (Interval set to 5, Retry set to 5). At the bottom of the dialog are 'OK' and 'Cancel' buttons.

IKE Advanced Options			
MODE	PASSIVE MODE	NAT TRAVERSAL	CRYPTO PROFILE
main	<input type="checkbox"/>	<input type="checkbox"/>	default
main	<input type="checkbox"/>	<input type="checkbox"/>	testing-pw1
main	<input type="checkbox"/>	<input type="checkbox"/>	cisco-ph

PA-VM

DASHBOARD ACC MONITOR POLICIES OBJECTS NETWORK DEVICE

Commit ▾

Interfaces Zones VLANs Virtual Wires Virtual Routers IPSec Tunnels GRE Tunnels DHCP DNS Gateways GlobalProtect Portals Gateways MDM Clientless Apps Clientless App Groups QoS LLDP Network Profiles GlobalProtect IPSec Crypto IKE Gateways IKE Crypto Monitor Interface Mgmt Trace Routing

Ethernet | VLAN | Loopback | Tunnel | SD-WAN

Tunnel Interface

INTERFACE	MANAGEMENT PROFILE
tunnel	
tunnel.1	ping
tunnel.2	ping
tunnel.10	ping

Interface Name: tunnel

Comment:

Netflow Profile: None

Config | IPv4 | IPv6 | Advanced

Assign Interface To

Virtual Router: default

Security Zone: Forti

OK Cancel

PA-VM Dashboard

Virtual Router - Static Route - IPv4

Name:	FGT-ipsec
Destination:	192.168.20.0
Interface:	tunnel.10
Next Hop:	None
Admin Distance:	10 - 240
Metric:	10
Route Table:	Unicast
BFD Profile:	Disable BFD

Path Monitoring

Failure Condition: Any					
NAME	ENABLE	SOURCE IP	DESTINATION IP	PING INTERVAL(SEC)	PING COUNT

ROUTE TABLE

- unicast
- multicast

Items → X

More Runtime Stats

1 item → X

ROUTE TABLE

unicast

multicast

unicast

Cancel

OK

PA-VM Dashboard

NETWORK

IPSec Tunnels

NAME	STATUS	TYPE	IKE Gateway/Satellite				Tunnel Interface				COMMENT
			INTERFACE	LOCAL IP	PEER ADDRESS	STATUS	INTERFACE	VIRTUAL ROUTER	VIRTUAL SYSTEM	SECURITY ZONE	
myTunnel	Tunnel Info	Auto Key	ethernet1/3	13.13.13.1	13.13.13.2	IKE Info	tunnel.1	default	sys1	vpn	green
PA-to-FGT	Tunnel Info	Auto Key	ethernet1/2	10.10.10.2	10.10.10.1	IKE Info	tunnel.10	default	sys1	Forti	green
cisco-pa	Tunnel Info	Auto Key	ethernet1/1	11.11.11.1	11.11.11.2	IKE Info	tunnel.2	default	sys1	cisco	green

3 items → X

Commit

FGT

Fortinet

```

FortiGate-VM64-KVM login:
FortiGate-VM64-KVM login: admin
Password: *****
Welcome !

FortiGate-VM64-KVM # show system interface
config system interface
    edit "port1"
        set vdom "root"
        set ip 192.168.184.145 255.255.255.0
        set allowaccess ping https ssh http
        set type physical
        set snmp-index 1
    next
    edit "port2"
        set vdom "root"
        set ip 10.10.10.1 255.255.255.255
        set allowaccess ping
        set type physical
        set snmp-index 2
    next
    edit "port3"
        set vdom "root"
        set ip 192.168.20.1 255.255.255.0
        set allowaccess ping https
        set type physical
        set snmp-index 3
    next
    edit "port4"
        set vdom "root"
--More-- □

```

FortiGate VM64-KVM FortiGate-VM64-KVM

New VPN Tunnel

Name: PA-FGT

Comments: Comments 0255

Network

IP Version: IPv4

Remote Gateway: Static IP Address

IP Address: 10.10.10.2

Interface: port3

Mode Config: Enable

NAT Traversal: Enable

Keepalive Frequency: 10

Dead Peer Detection: On Demand

Forward Error Correction: Advanced...

Egress: Ingress:

Authentication

Method: Pre-shared Key

Pre-shared Key: *****

FortiGate

FortiGate-VM64-KVM

IPsec VPNs

Guides

- IPsec VPN Cookbook Recipes
- VPN Setup on FortiClient
- Configuring an IPsec VPN connection

Documentation

- Online Help
- Video Tutorials

FortiGate VM64-KVM FortiGate-VM64-KVM

The screenshot shows the FortiGate VM64-KVM interface with the 'IPsec Tunnels' section selected in the sidebar. The main window displays the 'New VPN Tunnel' configuration for Phase 1. Key settings include:

- IKE Version:** 1 [2]
- Mode:** Aggressive [Main (ID protection)]
- Phase 1 Proposal:**
 - Encryption: DES
 - Authentication: MD5
 - Encryption: DES
 - Authentication: SHA1
- Diffie-Hellman Groups:** 15, 14, 5, 2, 1 (checkboxes checked)
- Key Lifetime (seconds):** 43200
- Local ID:** (empty field)
- XAUTH:** Type: Disabled
- Phase 2 Selectors:** Name: PA-FGT
- New Phase 2:** Name: PA-FGT, Comments: Comments

Right sidebar: FortiGate, IPsec VPNs, Guides, Documentation, Online Help, Video Tutorials.

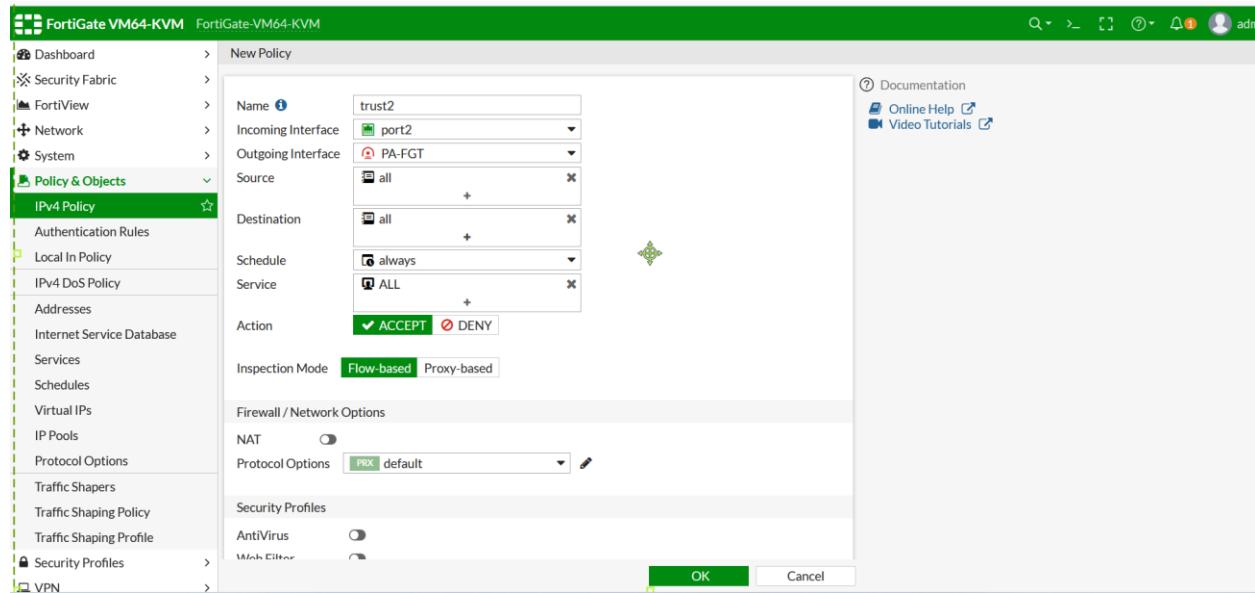
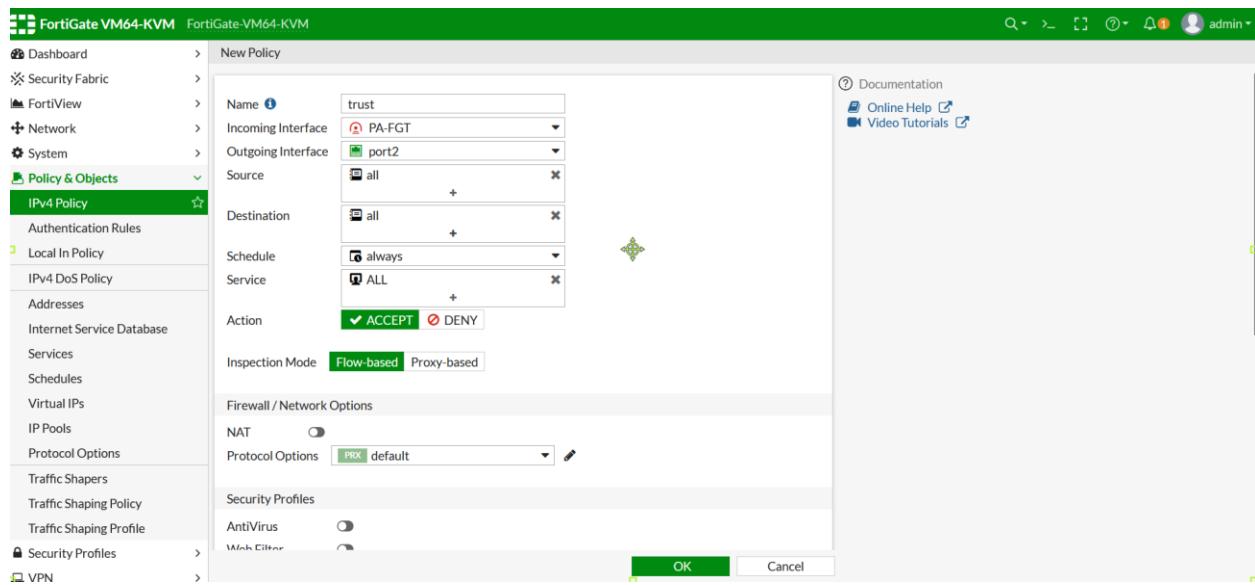
FortiGate VM64-KVM FortiGate-VM64-KVM

The screenshot shows the FortiGate VM64-KVM interface with the 'IPsec Tunnels' section selected in the sidebar. The main window displays the 'New VPN Tunnel' configuration for Phase 2. Key settings include:

- New Phase 2:**
 - Name: PA-FGT
 - Comments: Comments
 - Local Address: Subnet 192.168.20.0/24
 - Remote Address: Subnet 192.168.10.0/24
- Phase 2 Proposal:**
 - Advanced...
 - Encryption: DES
 - Authentication: MD5
 - Encryption: DES
 - Authentication: SHA1
- Enable Replay Detection:**
- Enable Perfect Forward Secrecy (PFS):**
- Diffie-Hellman Group:** 15, 14, 5, 2, 1 (checkboxes checked)
- Local Port:** All
- Remote Port:** All
- Protocol:** All

Bottom right: OK, Cancel.

Right sidebar: FortiGate, IPsec VPNs, Guides, Documentation, Online Help, Video Tutorials.



FortiGate VM64-KVM FortiGate-VM64-KVM admin

Dashboard > New Static Route

Network > Static Routes > Internet Service

Subnet: 192.168.10.0/24

Interface: PA-FGT

Administrative Distance: 10

Comments: Write a comment... 0/255

Status: Enabled

Advanced Options

OK Cancel

Static Routes

- Policy Routes
- RIP
- OSPF
- BGP
- Multicast

System

- Policy & Objects
- Security Profiles
- VPN
- User & Devices

QEMU (PaloAlto)

```
dmin@PA-VM> test vpn ike-sa gateway
  FGT-ph1      FGT-ph1
  MyGateway    MyGateway
  cisco        cisco
  <value>      test for given IKE gateway

dmin@PA-VM> test vpn ike-sa gateway
  FGT-ph1      FGT-ph1
  MyGateway    MyGateway
  cisco        cisco
  <value>      test for given IKE gateway

dmin@PA-VM> test vpn ike-sa gateway FGT-ph1
Start time: Mar.22 13:53:50
Initiate 1 IKE SA.

dmin@PA-VM>
dmin@PA-VM>

dmin@PA-VM>
dmin@PA-VM>
dmin@PA-VM>
dmin@PA-VM>
dmin@PA-VM>
dmin@PA-VM> test vpn ipsec-sa tunnel
  PA-to-FGT:testing  PA-to-FGT:testing
  cisco-pa:traffic   cisco-pa:traffic
  myTunnel          myTunnel
  <value>            test for given VPN tunnel

dmin@PA-VM> test vpn ipsec-sa tunnel PA-to-FGT:testing
Start time: Mar.22 13:54:22
Initiate 1 IPSec SA for tunnel PA-to-FGT:testing.
```

Fortinet

```

        set allowaccess ping https
        set type physical
        set snmp-index 3
    next
    edit "port4"
        set vdom "root"
        set type physical

FortiGate-VM64-KVM # Timeout

FortiGate-VM64-KVM login:
FortiGate-VM64-KVM login:
FortiGate-VM64-KVM login:
FortiGate-VM64-KVM login: admin
Password: *****
Welcome !

FortiGate-VM64-KVM # execute ping 10.10.10.1
PING 10.10.10.1 (10.10.10.1): 56 data bytes
64 bytes from 10.10.10.1: icmp_seq=0 ttl=255 time=0.1 ms
64 bytes from 10.10.10.1: icmp_seq=1 ttl=255 time=0.0 ms
64 bytes from 10.10.10.1: icmp_seq=2 ttl=255 time=0.0 ms
64 bytes from 10.10.10.1: icmp_seq=3 ttl=255 time=0.0 ms
64 bytes from 10.10.10.1: icmp_seq=4 ttl=255 time=0.0 ms

--- 10.10.10.1 ping statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
round-trip min/avg/max = 0.0/0.0/0.1 ms

FortiGate-VM64-KVM #

```

