網路設定虛擬環境模擬

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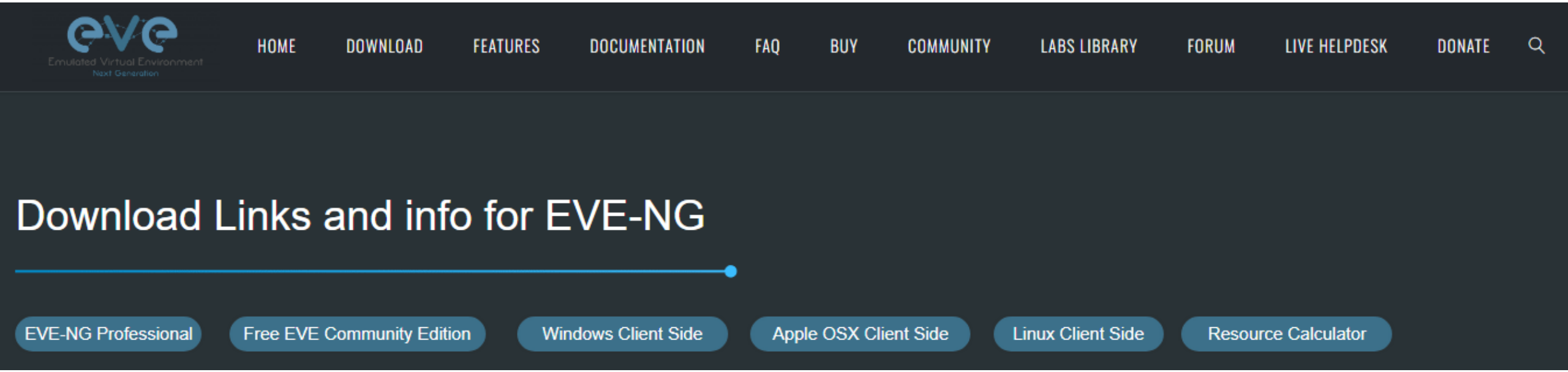
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- EVE-NG OVF – Google Mirror
- EVE-NG OVF – MEGA mirror
- EVE-NG OVF- Sync Mirror

ZIP	Algorithm	Checksum
	SHA1	E0EFB2EA75CA7B6CC9B02461A0242BCD0DE53F2D
	SHA256	194A592EBF2FCABB6DB42711593634C64F2AB6D77F5D8D08D5F52B7F787E0740

Installation ISO:

- EVE-NG ISO – Google Mirror
- EVE-NG ISO – MEGA Mirror
- EVE-NG ISO- Sync Mirror

ISO	Algorithm	Checksum
	SHA1	B996765057EF3E02905832AFFF16898407D06487
	SHA256	FB042903033623A6D00A6C99C49709B362921D06840148F4F0F9B5AF42EE97BE

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產品 › VMware Workstation Player

本機虛擬機

VMware Workstation Player

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EVE-NG

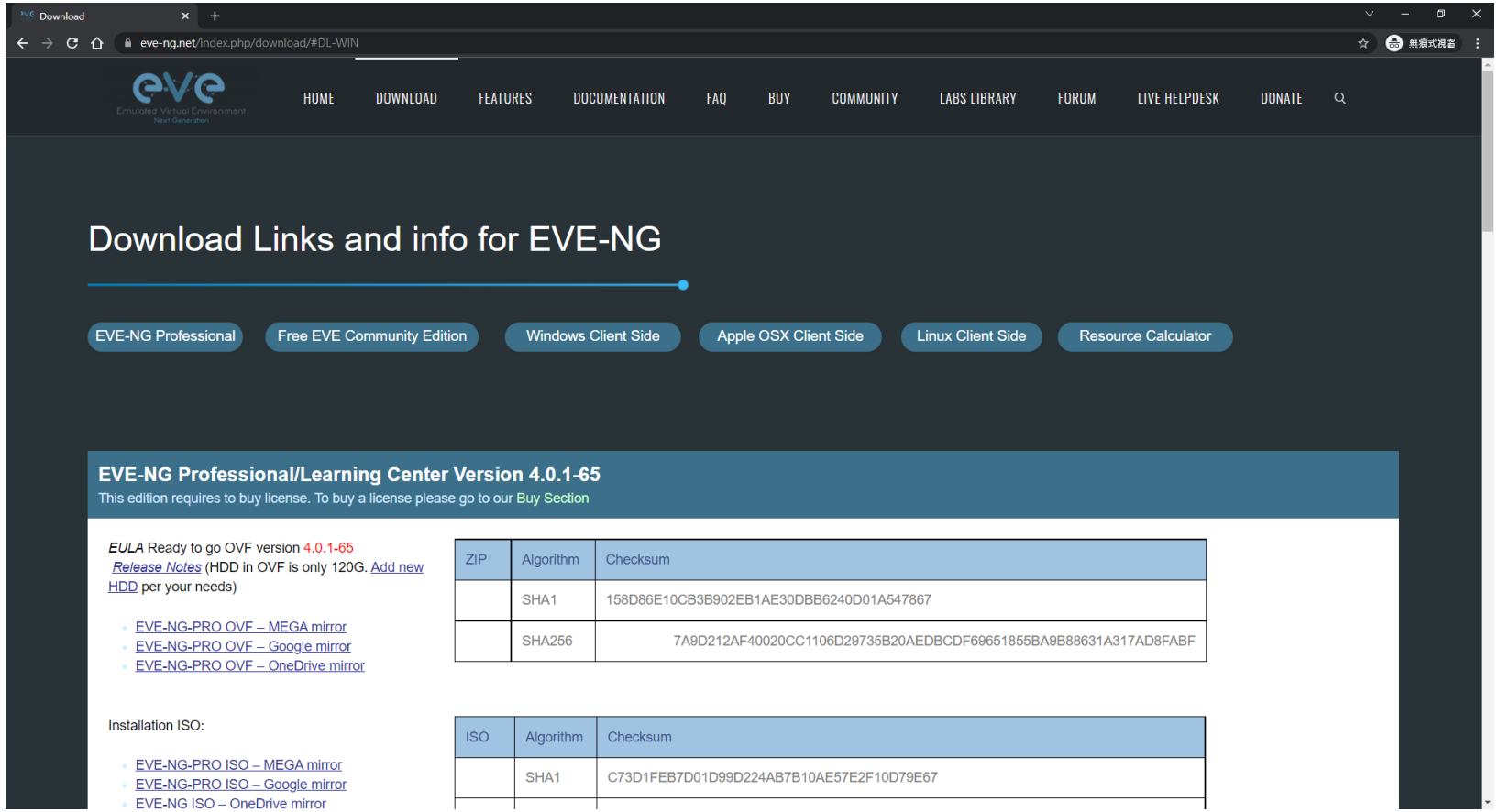
https://www.eve-ng.net/

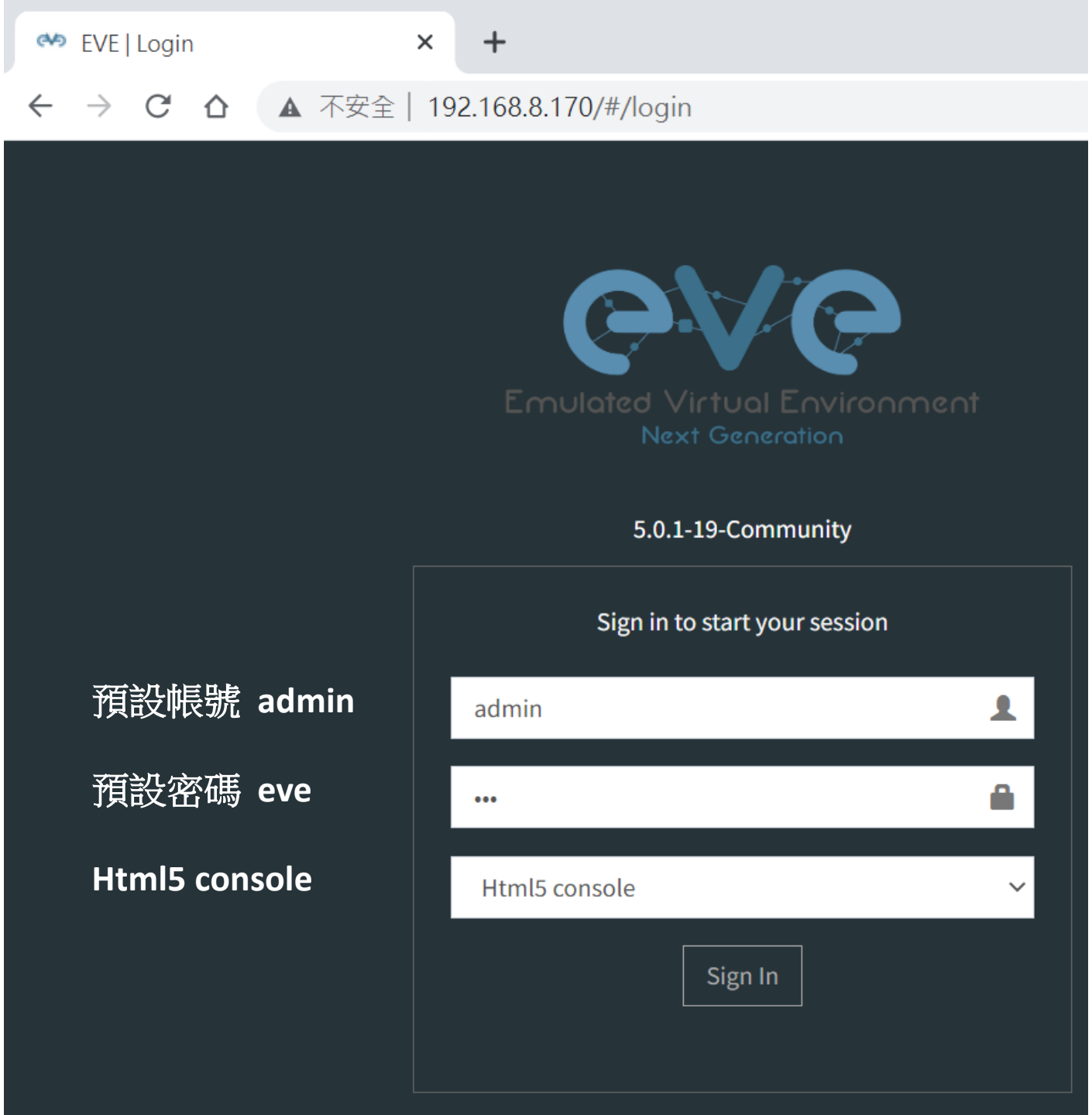
Router

- vMX-VCP (Control Plan)
- vMX-VFP (Date Plan)

Switch

- vQFX-RE (Control Plan)
- vQFX-PFE (Date Plan)

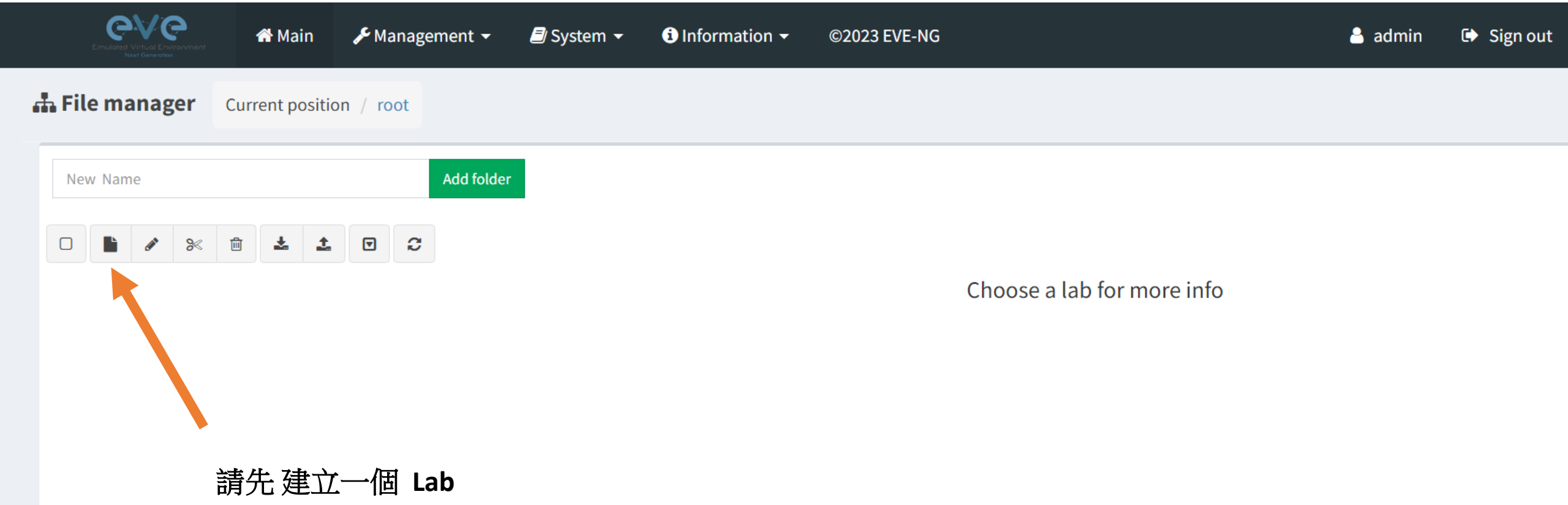




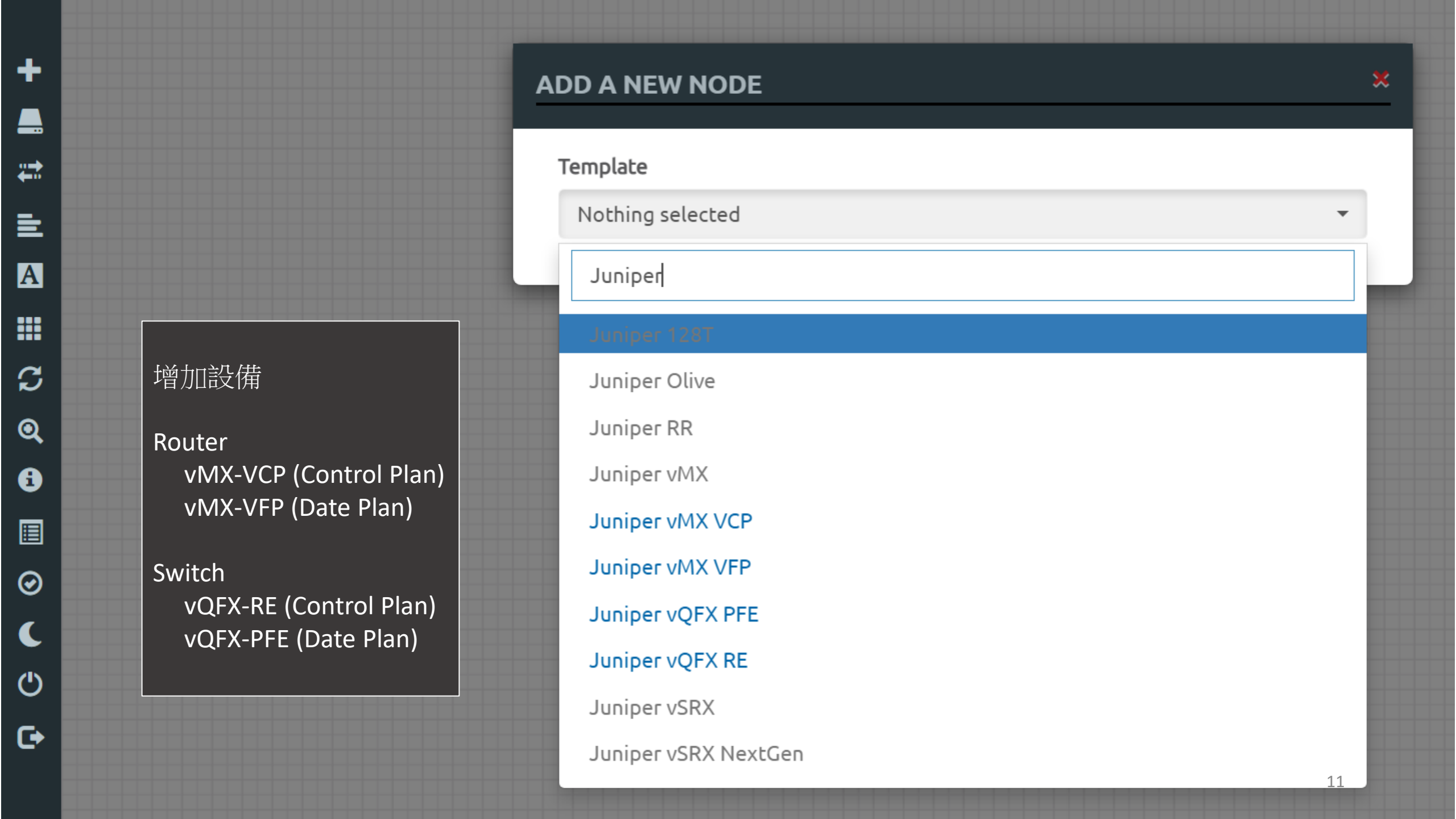
預設帳號 **admin**

預設密碼 **eve**

Html5 console


Main
Management
System
Information
©2023 EVE-NG
admin
Sign out
File manager
Current position / root
New Name
Add folder
Choose a lab for more info

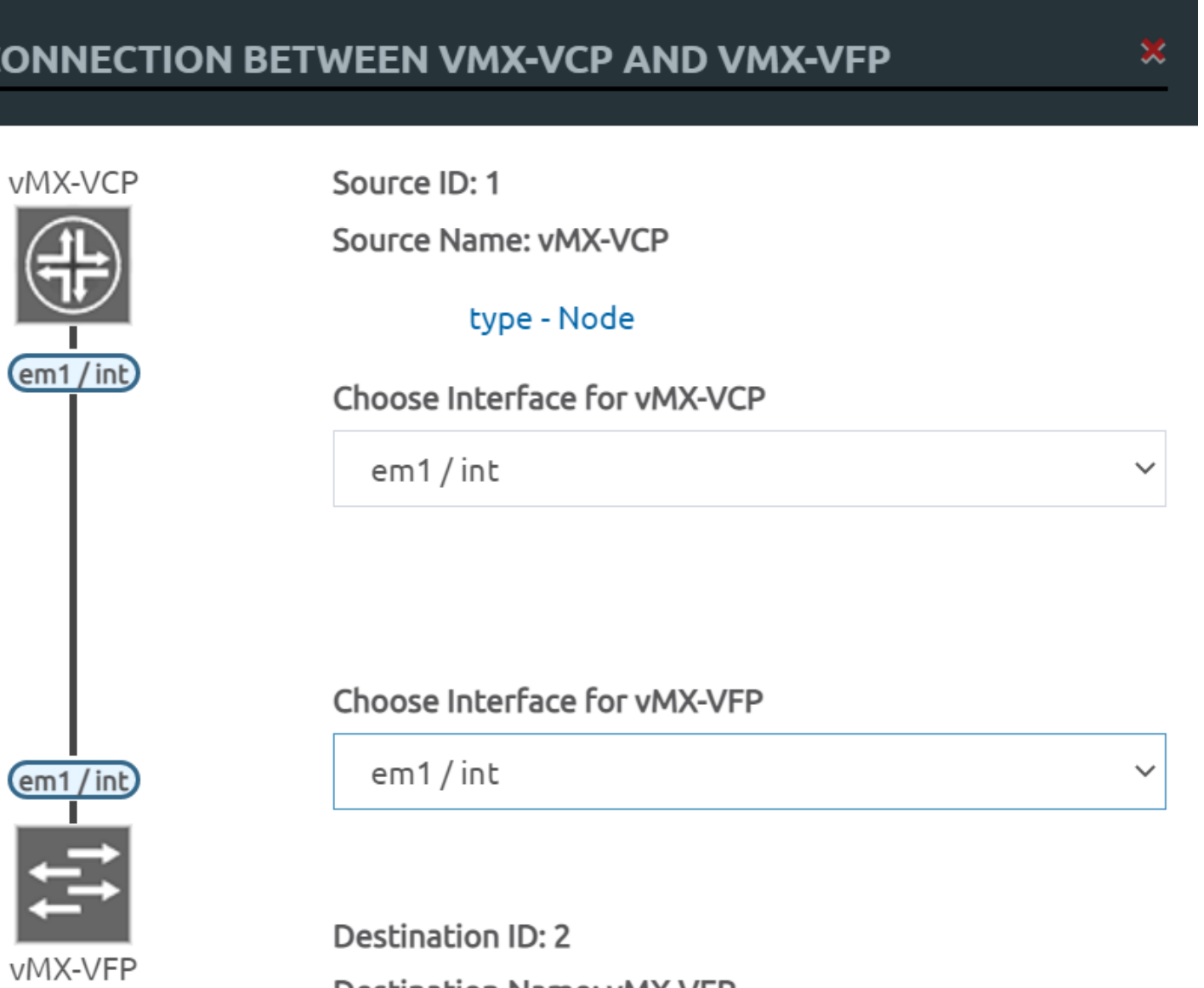
請先 建立一個 **Lab**


ADD A NEW NODE
Template
Nothing selected
Juniper
Juniper 128T
Juniper Olive
Juniper RR
Juniper vMX
Juniper vMX VCP
Juniper vMX VFP
Juniper vQFX PFE
Juniper vQFX RE
Juniper vSRX
Juniper vSRX NextGen
增加設備
Router
vMX-VCP (Control Plan)
vMX-VFP (Date Plan)
Switch
vQFX-RE (Control Plan)
vQFX-PFE (Date Plan)

連接 Control Plan 和 Date Plan

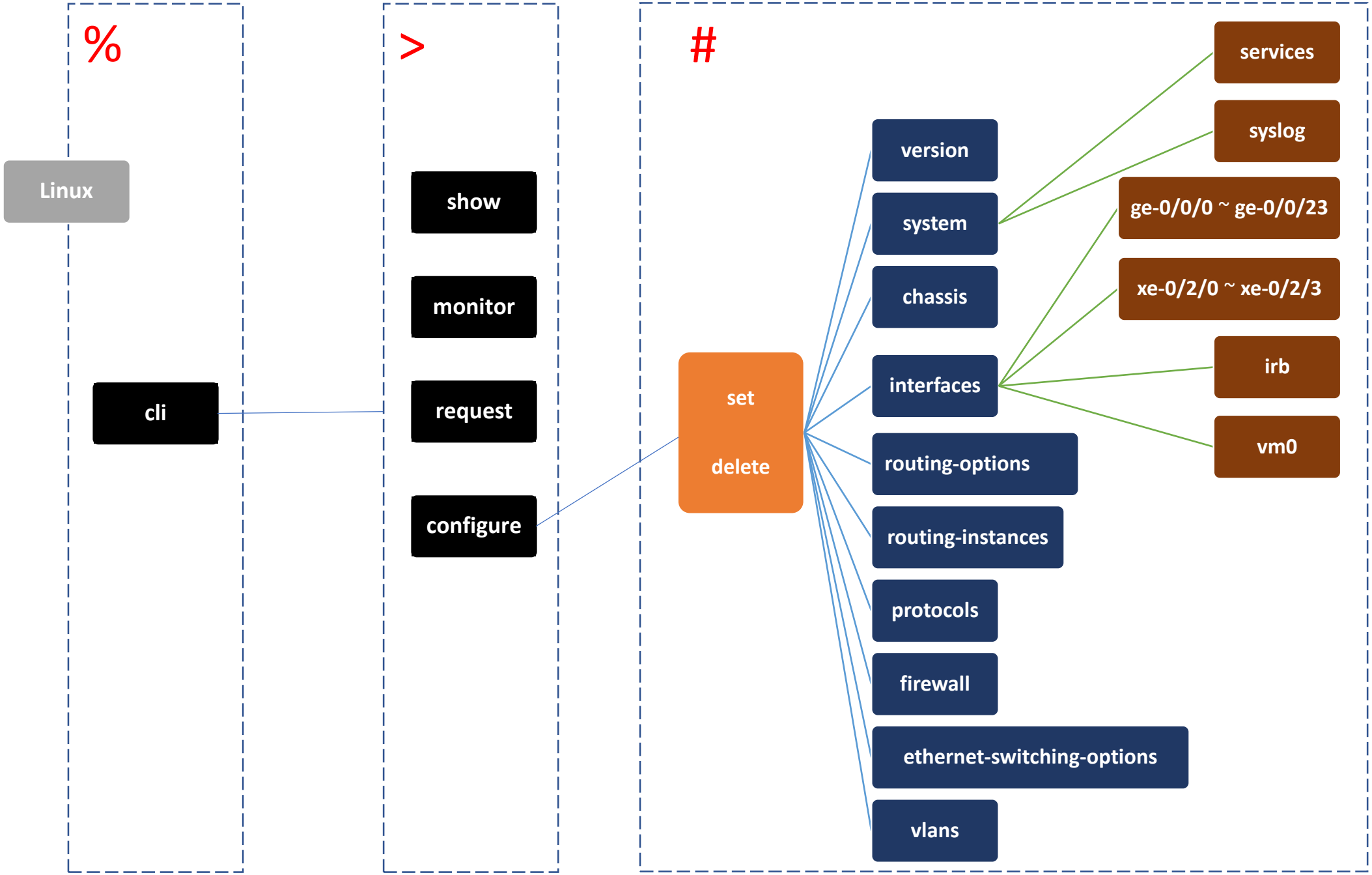
請選擇 em1/int

連接之後請記得開機



Basic Configuration

```
FreeBSD/amd64 (Amnesiac) (ttyu0)

login: root
Last login: Mon Mar 13 13:03:06 on ttyu0

--- JUNOS 18.1R3.3 Kernel 64-bit  JNPR-11.0-20180816.8630ec5_buil
root@:~ # cli
root> configure
Entering configuration mode

[edit]
root#
```


%
Linux
cli
>
show
monitor
request
configure
#
set
delete
version
system
chassis
interfaces
routing-options
routing-instances
protocols
firewall
ethernet-switching-options
vlans
services
syslog
ge-0/0/0 ~ ge-0/0/23
xe-0/2/0 ~ xe-0/2/3
irb
vm0

Basic Configuration Using the CLI

1. Connect the console port on the Juniper Switch to a laptop or desktop PC using the Ethernet cable and the RJ-45 to DB-9 serial port adapter that came in the box with the switch. If your laptop or desktop PC doesn't have a serial port, use a serial-to-USB adapter.

2. At the Junos OS login prompt, type root to log in. You don't need to enter a password. If the software boots before you connect your laptop or desktop PC to the console port, you might need to press the Enter key for the prompt to appear.

```
FreeBSD/arm (w) (ttyu0):
login: root
```

Start the CLI.

```
root@:RE:0% cli
{master:0}
root>
```

Enter configuration mode.

```
{master:0} root> configure
{master:0}[edit]
root#
```

Delete the ZTP configuration. Factory default configurations can vary over different releases. You may see a message that the statement does not exist. Don’t worry, it’s safe to proceed.

```
{master:0}[edit]
root# delete chassis auto-image-upgrade
```

Add a password to the root administration user account.

```
{master:0}[edit] root# set system root-authentication plain-text-password
New password: <Password>
Retype new password: <Password>
```

重要的執行指令

Commit the configuration to activate it on the switch.

```
{master:0}[edit]
root# commit
configuration check succeeds
commit complete
```

Optional: commit

1. root# commit check
2. root# commit and-quit
3. root# commit confirmed

開啟 ssh 連線功能

Configure the SSH service. By default the root user cannot login remotely. In this step you enable the SSH service and also enable root login via SSH.

```
{master:0}[edit]
root# set system services ssh root-login allow
```

建立使用者帳號

Add a password to the user account.

```
{master:0}[edit]
root# set system login user <User_Name> class super-user
root# set system login user <User_Name> authentication plain-text-password
New password: <Password>
Retype new password: <Password>
```

Enable auto-snapshot when boots from alternate slice

```
{master:0}[edit]
root# set system auto-snapshot
```

Configure the Hostname.

```
{master:0}[edit]
root# set system host-name <NAME>
```

Optional: Configure an SNMP read community.

```
{master:0}[edit]
root# set snmp community <Community> authorization read-only
```

Optional: Configure an SNMP read and write community.

```
{master:0}[edit]
root# set snmp community <Community> authorization read-write
```

Optional: Setting Syslog Server.

```
{master:0}[edit]
root# set system syslog host <IP_address> any notice
```

Optional: Setting Time Zone.

```
{master:0}[edit]
root# set system time-zone Asia/Taipei
```

Optional: Setting NTP Server

```
{master:0}[edit]
root# set system ntp server <IP_address>
```

Optional: Setting Name Server

```
{master:0}[edit]
root# set system name-server <IP_address>
```

常用的 show 指令

Optional: show

```
root> show chassis routing-engine
root> show chassis fpc
root> show version
root> show arp
root> show ipv6 neighbors
root> show ethernet-switching table
root> show log messages | last 100
root> show configuration interfaces | display set | match ge-0/0/0
```

如何比較設定前後

Compare configuration changes with prior version

```
{master:1}[edit]
ncnu@NCNU-EX4300# delete system host-name

{master:1}[edit]
ncnu@NCNU-EX4300# set system host-name Juniper-EX4300

ncnu@NCNU-EX4300# show | compare
[edit system]
-  host-name NCNU-EX4300;
+  host-name Juniper-EX4300;
```

不同於 show 的 指令

Optional: monitor

```
root> monitor interface traffic

root> monitor traffic interface ge-0/0/0

root> monitor traffic interface ge-0/0/0 layer2-headers
```

還原預設config

Optional: load

```
{linecard:1}[edit]
root@vqfx-re# load factory-default
```

The load factory-default command in Config mode will erase only the existing configuration and load the factory-default configuration.

清除設定和紀錄的方式

Optional: request

```
root@vqfx-re> request system zeroize
warning: System will be rebooted and may not boot without configuration
Erase all data, including configuration and log files? [yes,no] (no)
```

忘記 root 密碼的解決方式

Optional: Recover a Root Password

Power on the router by pressing the power button on the front panel.
When the following prompt appears, press the Spacebar to access the router's bootstrap loader command prompt.

Hit [Enter] to boot immediately, or space bar for command prompt. Booting [kernel] in 9 seconds...

At the following prompt, type boot -s to start the system in single-user mode.
ok boot -s

user@host# set system root-authentication plain-text-password

Basic Configuration

delete chassis auto-image-upgrade

set system root-authentication plain-text-password

set system host-name *<Host_Name>*

set system auto-snapshot

set system time-zone Asia/Taipei

set system services ssh root-login <allow/deny>

set system syslog host *<IP_address>* any notice

set system ntp server *<IP_address>*

set system name-server *<IP_address>*

set snmp community *<Community_name>* authorization read-only

Basic Switch Setting

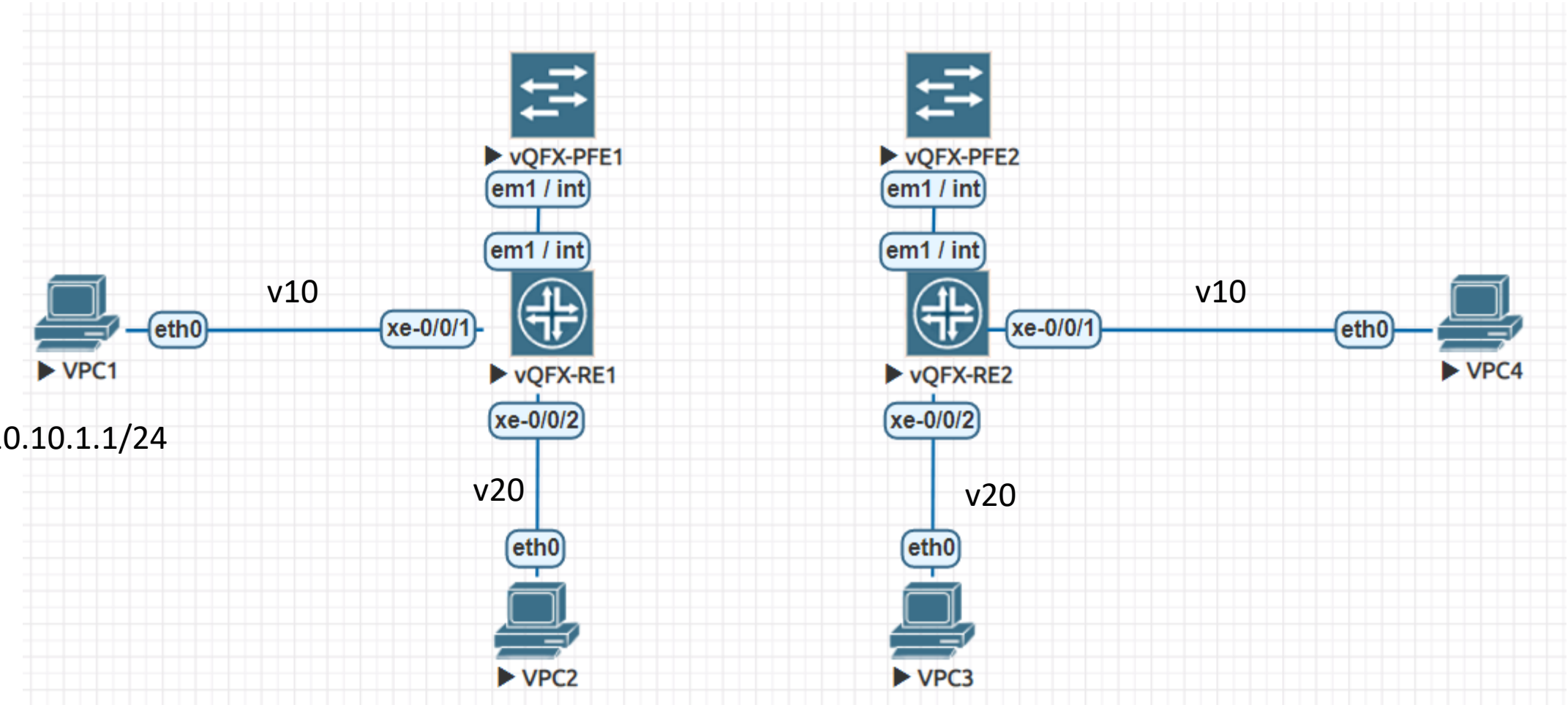
System

Vlans

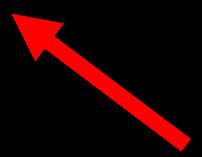
Interface

Interface-range

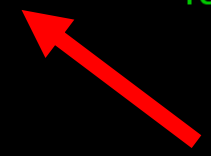
LACP / Trunk


vQFX-PFE1
em1 / int
em1 / int
vQFX-PFE2
em1 / int
em1 / int
v10
v10
VPC1
eth0
xe-0/0/1
vQFX-RE1
vQFX-RE2
xe-0/0/1
eth0
VPC4
10.10.1.1/24
xe-0/0/2
xe-0/0/2
v20
v20
eth0
eth0
VPC2
VPC3

```
root> show chassis fpc
                     Temp  CPU Utilization (%)   CPU Utilization (%)  Memory    Utilization (%)
Slot State            (C)  Total  Interrupt      1min   5min   15min  DRAM (MB) Heap     Buffer
  0  Empty
  1  Empty
  2  Empty
  3  Empty
  4  Empty
  5  Empty
  6  Empty
  7  Empty
  8  Empty
  9  Empty
 10  Empty
 11  Empty
```



```
root> show chassis fpc
                     Temp  CPU Utilization (%)   CPU Utilization (%)  Memory    Utilization (%)
Slot State            (C)  Total  Interrupt      1min   5min   15min  DRAM (MB) Heap     Buffer
  0  Online           Testing  45         0       33     21      9    511        31          0
  1  Empty
  2  Empty
  3  Empty
  4  Empty
  5  Empty
  6  Empty
  7  Empty
  8  Empty
  9  Empty
 10  Empty
 11  Empty
```



vQFX

root@vqfx-re:LC:1% cli

warning: This chassis is operating in a non-master role as part of a virtual-chassis (VC) system.

warning: Use of interactive commands should be limited to debugging and VC Port operations.

warning: Full CLI access is provided by the Virtual Chassis Master (VC-M) chassis.

warning: The VC-M can be identified through the show virtual-chassis status command executed at this console.

warning: Please logout and log into the VC-M to use CLI.

vQFX

root@vqfx-re> request virtual-chassis reactivate

This member split from a virtual chassis. Please make sure that no active switch belonging to this virtual chassis has conflicting configuration.

Do you want to continue ? [yes,no] (no) yes

vqfx-re (ttyd0)

login:

```
root@vqfx-re> show chassis fpc
                     Temp  CPU Utilization (%)   CPU Utilization (%)  Memory    Utilization (%)
Slot State           (C)  Total  Interrupt     1min   5min   15min  DRAM (MB) Heap     Buffer
  0  Empty
  1  Online          Testing  98       9       0      0      0    1920       0        48
  2  Empty
  3  Empty
  4  Empty
  5  Empty
  6  Empty
  7  Empty
  8  Empty
  9  Empty
```

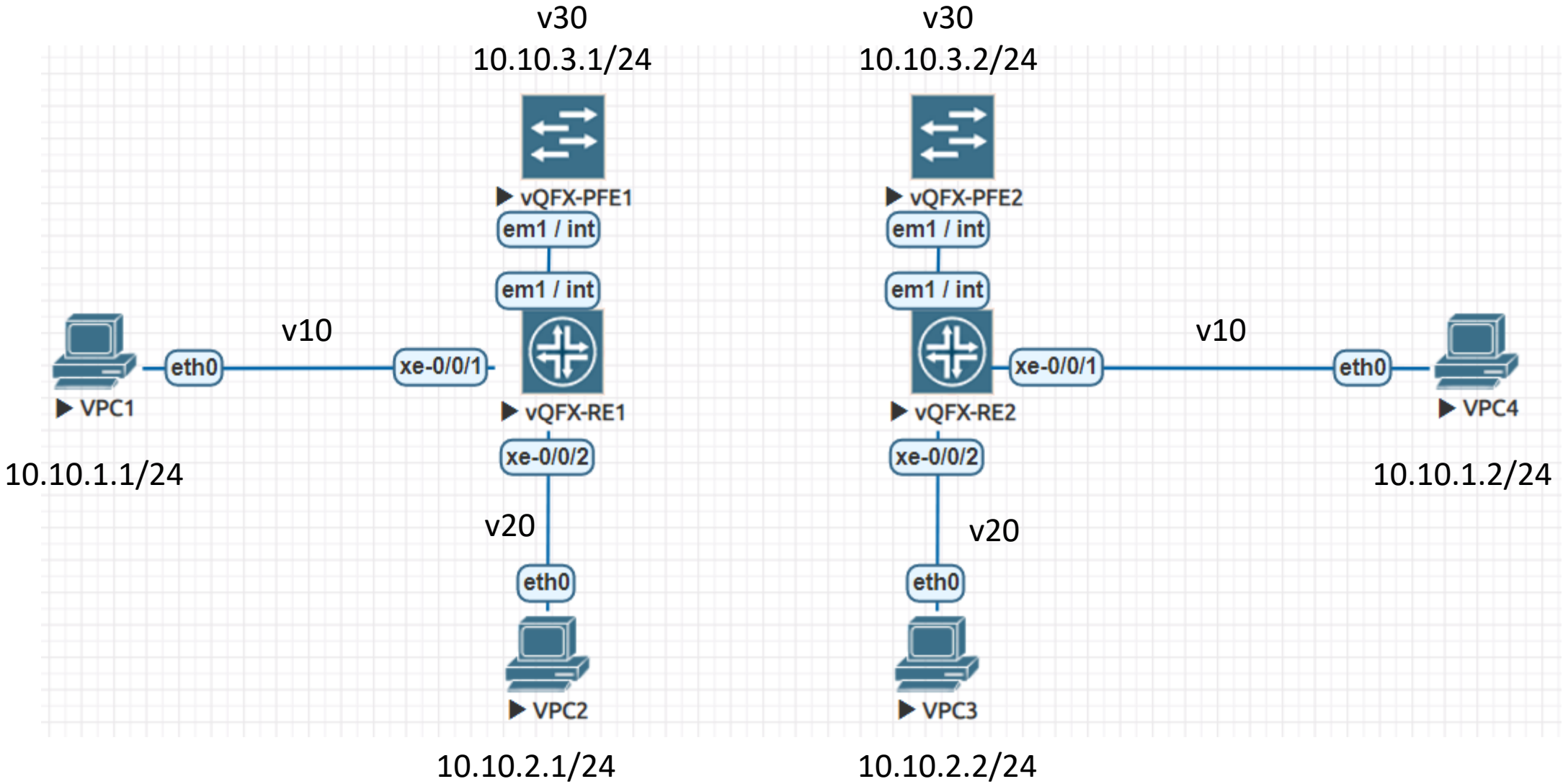
root@vqfx-re> request virtual-chassis renumber member-id 1 new-member-id 0

To move configuration specific to member ID 1 to member ID 0, please
use the replace command. e.g. replace pattern ge-1/ with ge-0/
If member-specific configuration groups are present, perform a
"commit full" to synchronize inheritance with the new member number.
Do you want to continue ? [yes,no] (no) yes

vqfx-re (ttyd0)
login:

```
root@vqfx-re> show chassis fpc
                     Temp  CPU Utilization (%)   CPU Utilization (%)  Memory    Utilization (%)
Slot State           (C)  Total  Interrupt     1min   5min   15min  DRAM (MB) Heap     Buffer
  0  Empty
  1  Empty
  2  Empty
  3  Empty
  4  Empty
  5  Empty
  6  Empty
  7  Empty
  8  Empty
  9  Empty
```

```
root@vqfx-re> show chassis fpc
                     Temp  CPU Utilization (%)   CPU Utilization (%)  Memory    Utilization (%)
Slot State           (C)  Total  Interrupt     1min   5min   15min  DRAM (MB) Heap     Buffer
  0  Online          Testing  25       3       0      0      0    1920       0        50
  1  Empty
  2  Empty
  3  Empty
  4  Empty
  5  Empty
  6  Empty
  7  Empty
  8  Empty
  9  Empty
```


v30
10.10.3.1/24
v30
10.10.3.2/24
vQFX-PFE1
vQFX-PFE2
em1 / int
em1 / int
em1 / int
em1 / int
v10
v10
eth0
xe-0/0/1
xe-0/0/1
eth0
VPC1
vQFX-RE1
vQFX-RE2
VPC4
10.10.1.1/24
xe-0/0/2
xe-0/0/2
10.10.1.2/24
v20
v20
eth0
eth0
VPC2
VPC3
10.10.2.1/24
10.10.2.2/24

VPC

IP

```
VPC1    ip 10.10.1.1/24 10.10.1.254

VPC2    ip 10.10.2.1/24 10.10.2.254

VPC3    ip 10.10.2.2/24 10.10.2.254

VPC4    ip 10.10.1.2/24 10.10.1.254

show
```

System

vQFX-RE1 & vQFX-RE2

delete chassis auto-image-upgrade

set system root-authentication plain-text-password
set system login user <*User_Name*> authentication plain-text-password
set system login user <*User_Name*> class super-user

set system host-name <*Host_Name*>
set system auto-snapshot
set system time-zone Asia/Taipei
set system services ssh root-login allow

commit check

Vlans

vQFX-RE1

```
set vlans v10 vlan-id 10
set vlans v20 vlan-id 20
set vlans v30 vlan-id 30
set vlans v30 l3-interface irb.30

set interfaces irb unit 30 family inet address 10.10.30.1/24
set interfaces irb unit 30 family inet6 address 2001:e10:6840:30::1/64
```

Interface

vQFX-RE1

```
del interfaces xe-0/0/1
set interfaces xe-0/0/1 description to_VPC1
set interfaces xe-0/0/1 unit 0 family ethernet-switching interface-mode access
set interfaces xe-0/0/1 unit 0 family ethernet-switching vlan members v10

del interfaces xe-0/0/2
set interfaces xe-0/0/2 description to_VPC2
set interfaces xe-0/0/2 unit 0 family ethernet-switching interface-mode access
set interfaces xe-0/0/2 unit 0 family ethernet-switching vlan members v20

show | compare
commit and-quit
```

Vlans

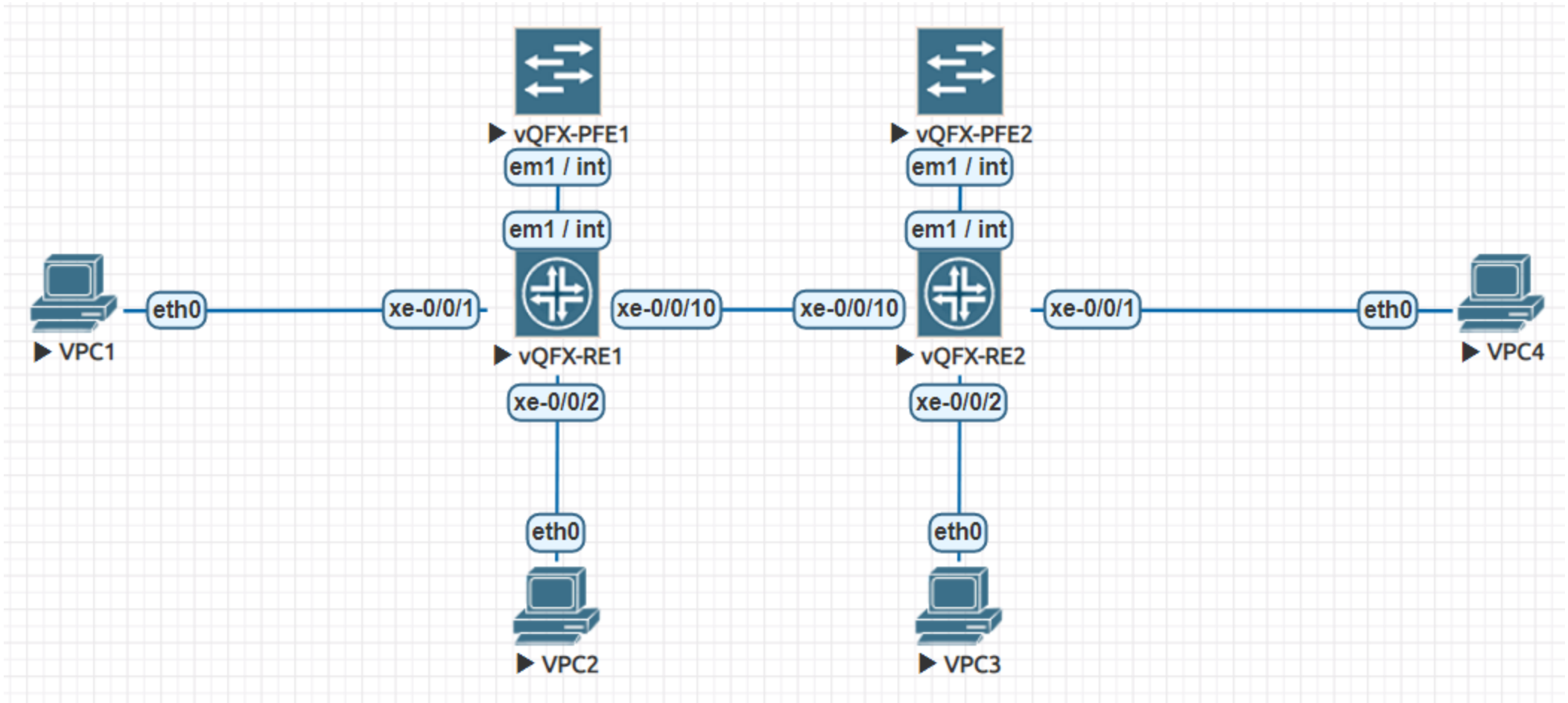
vQFX-RE2

```
set vlans v10 vlan-id 10
set vlans v20 vlan-id 20
set vlans v30 vlan-id 30
set vlans v30 l3-interface irb.30

set interfaces irb unit 30 family inet address 10.10.30.2/24
set interfaces irb unit 30 family inet6 address 2001:e10:6840:30::2/64
```

Interface

vQFX-RE2

```
del interfaces xe-0/0/2
set interfaces xe-0/0/2 description to_VPC3
set interfaces xe-0/0/2 unit 0 family ethernet-switching interface-mode access
set interfaces xe-0/0/2 unit 0 family ethernet-switching vlan members v20

del interfaces xe-0/0/1
set interfaces xe-0/0/1 description to_VPC4
set interfaces xe-0/0/1 unit 0 family ethernet-switching interface-mode access
set interfaces xe-0/0/1 unit 0 family ethernet-switching vlan members v10

show | compare
commit and-quit
```


vQFX-PFE1
vQFX-PFE2
em1 / int
em1 / int
em1 / int
em1 / int
VPC1
eth0
xe-0/0/1
vQFX-RE1
xe-0/0/10
xe-0/0/10
vQFX-RE2
xe-0/0/1
eth0
VPC4
xe-0/0/2
xe-0/0/2
eth0
eth0
VPC2
VPC3

大量指令輸入方式

Optional: load

{linecard:1}[edit]
root@vqfx-re# load set terminal
[Type ^D at a new line to end input]

Executes configuration mode commands
such as set, edit, exit, and from the text you type at the terminal.
Press Ctrl+D to end terminal input.

Interface

vQFX-RE1

```
set vlans v10 vlan-id 10
set vlans v20 vlan-id 20
set vlans v30 vlan-id 30
set vlans v30 l3-interface irb.30

set interfaces irb unit 30 family inet address 10.10.30.1/24

del interfaces xe-0/0/10
set interfaces xe-0/0/10 unit 0 family ethernet-switching interface-mode trunk
set interfaces xe-0/0/10 unit 0 family ethernet-switching vlan members v10
set interfaces xe-0/0/10 unit 0 family ethernet-switching vlan members v20
set interfaces xe-0/0/10 unit 0 family ethernet-switching vlan members v30
```

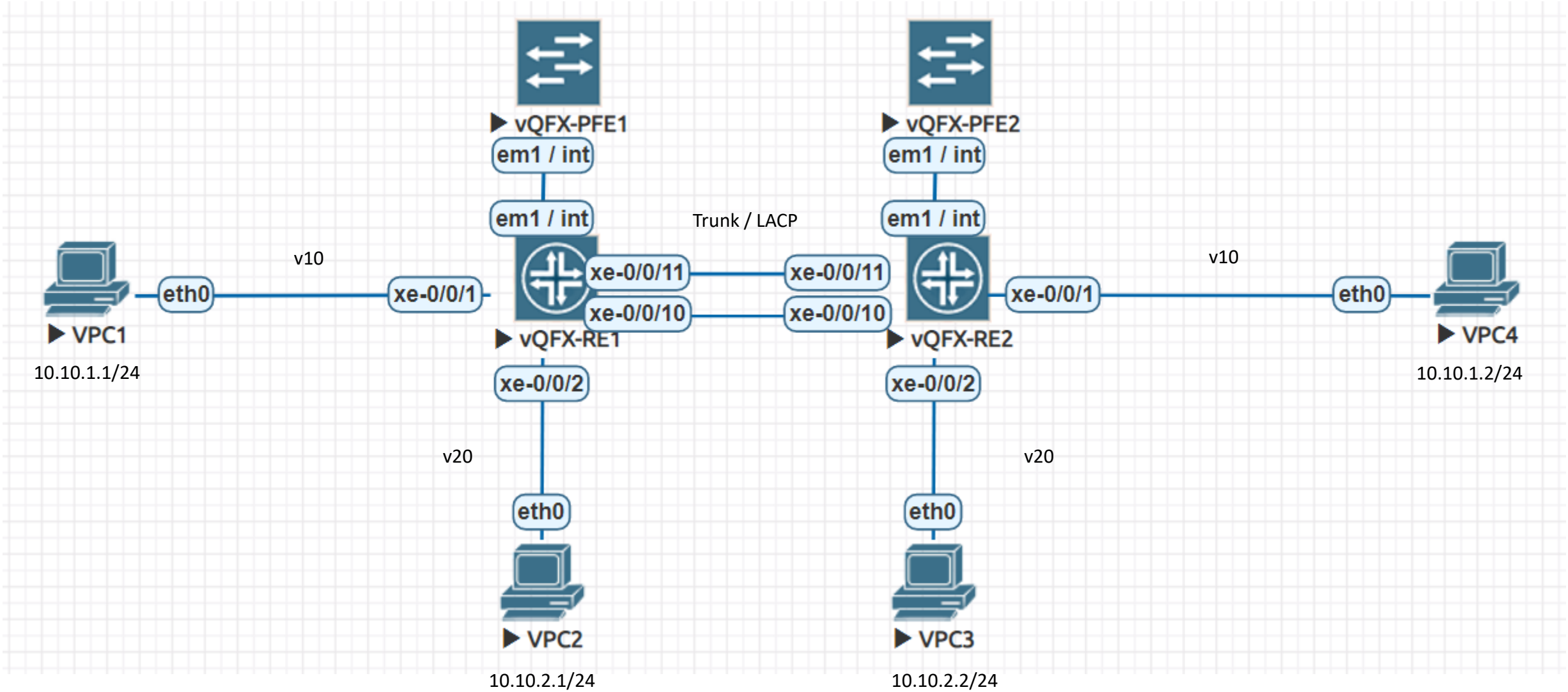
```
root@vqfx-re# commit
[edit interfaces xe-0/0/10 unit 0 family]
  'ethernet-switching'
    Family ethernet-switching and rest of the families are mutually exclusive
error: commit failed: (statements constraint check failed)

{master:0}[edit]
root@vqfx-re# show interfaces xe-0/0/10
unit 0 {
    family inet {
        dhcp {
            vendor-id Juniper-qfx10002-72q;
        }
    }
    ##
    ## Warning: Family ethernet-switching and rest of the families are mutually exclusive
    ##
    family ethernet-switching {
        interface-mode trunk;
        vlan {
            members [ v10 v20 v30 ];
        }
    }
}
```

del interfaces xe-0/0/10 unit 0 family inet

Interface

vQFX-RE2

```
set vlans v10 vlan-id 10
set vlans v20 vlan-id 20
set vlans v30 vlan-id 30
set vlans v30 l3-interface irb.30

set interfaces irb unit 30 family inet address 10.10.30.2/24

del interfaces xe-0/0/10
set interfaces xe-0/0/10 unit 0 family ethernet-switching interface-mode trunk
set interfaces xe-0/0/10 unit 0 family ethernet-switching vlan members v10
set interfaces xe-0/0/10 unit 0 family ethernet-switching vlan members v20
set interfaces xe-0/0/10 unit 0 family ethernet-switching vlan members v30
```


vQFX-PFE1
vQFX-PFE2
em1 / int
em1 / int
em1 / int
em1 / int
Trunk / LACP
v10
v10
VPC1
10.10.1.1/24
eth0
xe-0/0/1
xe-0/0/11
xe-0/0/10
xe-0/0/11
xe-0/0/10
xe-0/0/1
eth0
VPC4
10.10.1.2/24
vQFX-RE1
vQFX-RE2
xe-0/0/2
xe-0/0/2
v20
v20
eth0
eth0
VPC2
10.10.2.1/24
VPC3
10.10.2.2/24

LACP / Trunk

vQFX-RE1 & vQFX-RE2

```
set chassis aggregated-devices ethernet device-count 10

set interfaces ae0 unit 0 family ethernet-switching interface-mode trunk
set interfaces ae0 unit 0 family ethernet-switching vlan members v10
set interfaces ae0 unit 0 family ethernet-switching vlan members v20
set interfaces ae0 unit 0 family ethernet-switching vlan members v30
set interfaces ae0 aggregated-ether-options lacp active

del interfaces xe-0/0/10
del interfaces xe-0/0/11
set interfaces xe-0/0/10 ether-options 802.3ad ae0
set interfaces xe-0/0/11 ether-options 802.3ad ae0
commit and-quit
```

VPC1 ping VPC4

VPC2 ping VPC3

vQFX-RE1 ping vQFX-RE2

常用的查詢指令

> show interface terse

> monitor traffic interface ge-0/0/0

> monitor interface traffic

> show ethernet-switching table

> show arp

> show ipv6 neighbors

> show ethernet-switching interfaces

> show lacp interfaces

run show interface ge-0/0/0

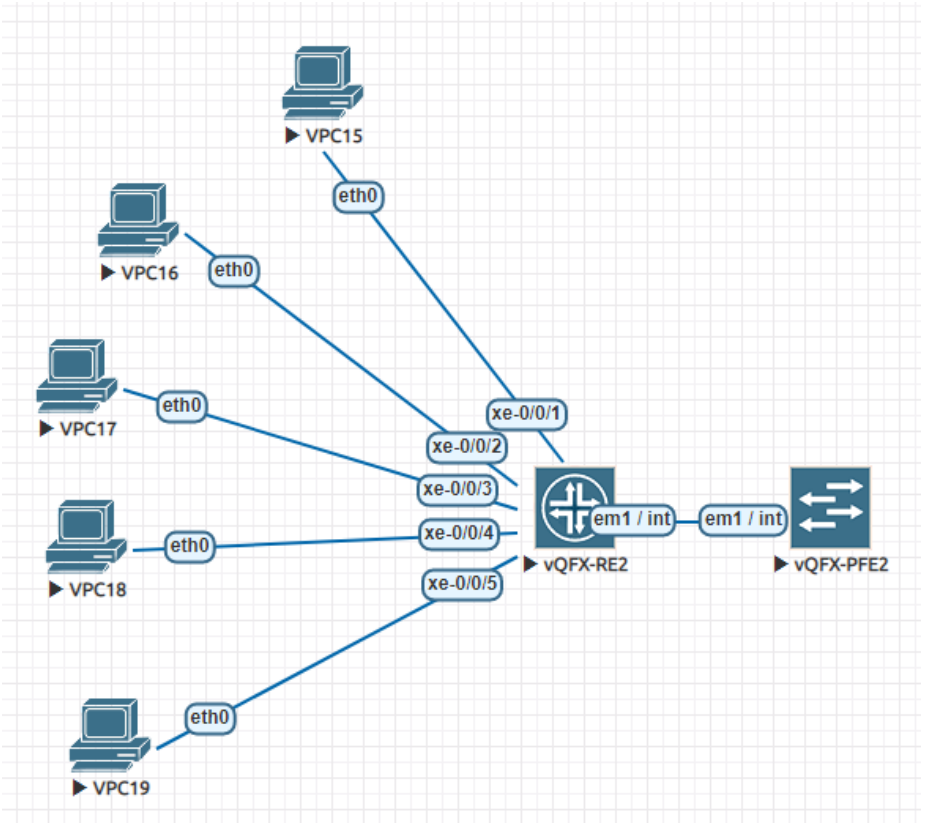
Interface-range

delete interfaces xe-0/0/1 unit 0

delete interfaces xe-0/0/2 unit 0

set interfaces xe-0/0/1 description <description>

set interfaces xe-0/0/2 description <description>



set vlans <*vlan-name*> vlan-id <*vlan-id*>

set interfaces interface-range <*name*> member-range xe-0/0/1 to xe-0/0/2

set interfaces interface-range <*name*> unit 0 family ethernet-switching vlan members <*vlan-name*>

Firewall

firewall family ethernet-switching

firewall family inet

firewall family inet6

policy-options prefix-list

Firewall

firewall family ethernet-switching

```
set firewall family ethernet-switching filter <FILTER> term 1 from source-mac-address <MAC>
set firewall family ethernet-switching filter <FILTER> term 1 then log
set firewall family ethernet-switching filter <FILTER> term 1 then count <count name>
set firewall family ethernet-switching filter <FILTER> term 1 then discard
```

```
set interfaces xe-0/0/1 unit 0 family ethernet-switching filter input <FILTER>
```

Firewall

firewall family inet

```
set firewall family inet filter <FILTER> term 1 from protocol icmp
set firewall family inet filter <FILTER> term 1 then log
set firewall family inet filter <FILTER> term 1 then count <count name>
set firewall family inet filter <FILTER> term 1 then reject
```

```
set interfaces irb unit 30 family inet filter input <FILTER>
```

Firewall

firewall family inet6

```
set firewall family inet6 filter <FILTER>  term 1 from destination-address 2001:e10:6840:30::1/128
set firewall family inet6 filter <FILTER>  term 1 then count <count name>
set firewall family inet6 filter <FILTER>  term 1 then log
set firewall family inet6 filter <FILTER>  term 1 then reject
```

```
set interfaces irb unit 30 family inet6 filter input <FILTER>
```

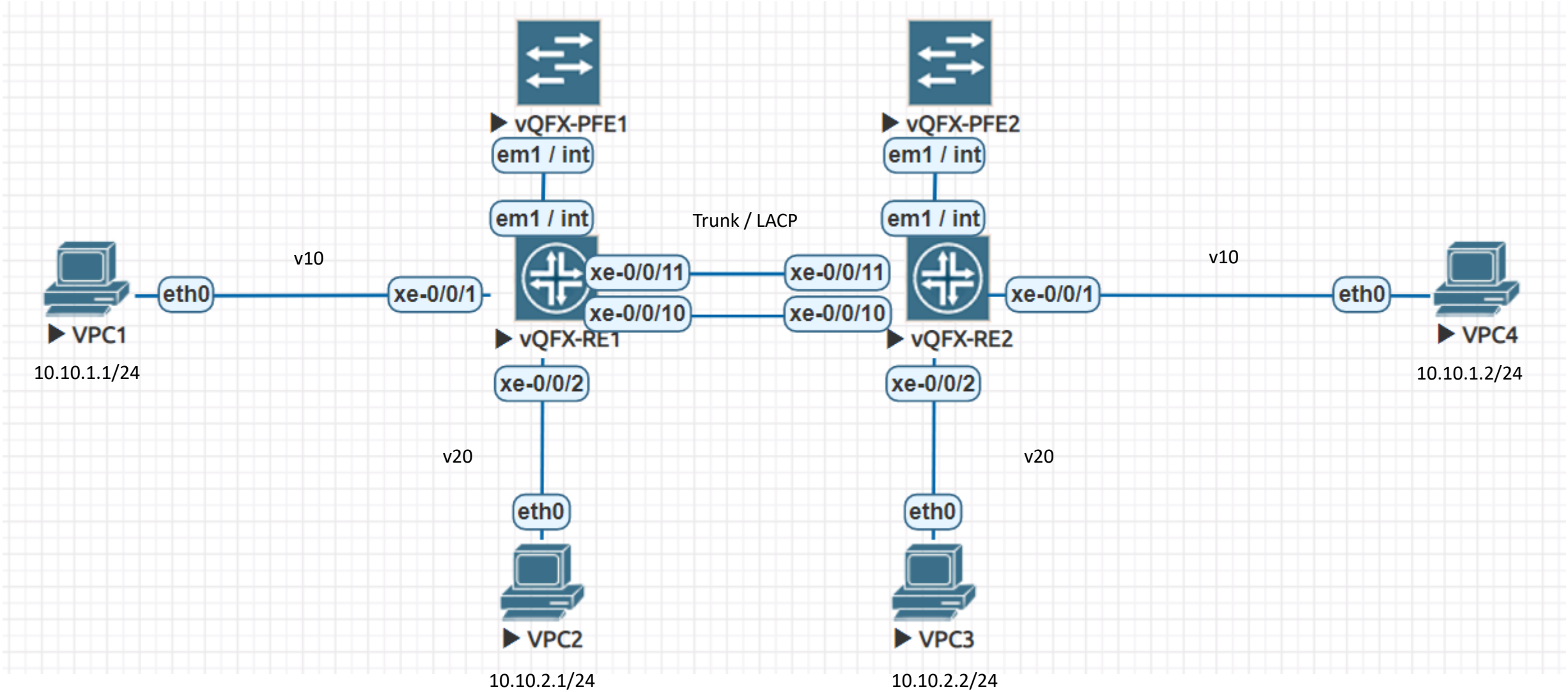
Firewall

policy-options prefix-list

set policy-options prefix-list <*name*> <*IP_address/32*>
set policy-options prefix-list <*name*> <*IP_address/32*>
set policy-options prefix-list <*name*> <*IP_address/32*>

set firewall family inet filter <*FILTER*> term <TERM> from source-prefix-list <*name*>

set interfaces lo0 unit 0 family inet filter input <*FILTER*>


vQFX-PFE1
em1 / int
em1 / int
vQFX-PFE2
em1 / int
em1 / int
Trunk / LACP
v10
v10
VPC1
10.10.1.1/24
eth0
xe-0/0/1
xe-0/0/11
xe-0/0/10
xe-0/0/11
xe-0/0/10
xe-0/0/1
eth0
VPC4
10.10.1.2/24
vQFX-RE1
vQFX-RE2
xe-0/0/2
xe-0/0/2
v20
v20
eth0
eth0
VPC2
10.10.2.1/24
VPC3
10.10.2.2/24

vQFX-RE1

Search VPC1 MAC address

```
>show ethernet-switching table interface xe-0/0/1
```

firewall family ethernet-switching

```
set firewall family ethernet-switching filter deny_mac term 1 from source-mac-address <MAC>
set firewall family ethernet-switching filter deny_mac term 1 then log
set firewall family ethernet-switching filter deny_mac term 1 then count deny_mac_count
set firewall family ethernet-switching filter deny_mac term 1 then discard

set interfaces xe-0/0/1 unit 0 family ethernet-switching filter input deny_mac
```

vQFX-RE2

firewall family inet

```
set firewall family inet filter deny_icmp term 1 from protocol icmp
set firewall family inet filter deny_icmp term 1 then log
set firewall family inet filter deny_icmp term 1 then count deny_icmp_count
set firewall family inet filter deny_icmp term 1 then reject
```

```
set interfaces irb unit 30 family inet filter input deny_icmp
```

VPC1 ping VPC4

vQFX-RE1 ping vQFX-RE2

> show firewall

> show firewall filter <*filtername*>

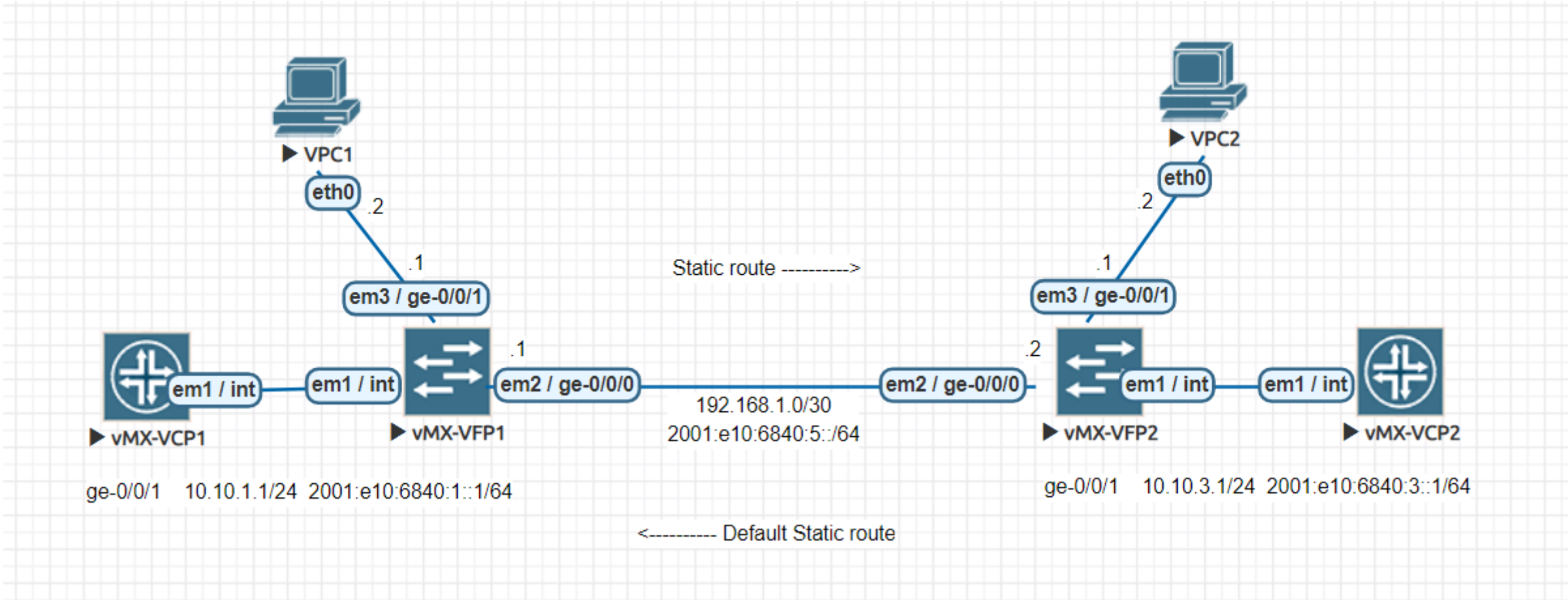
> show firewall log

Router
Default Static Route

Interfaces

routing-options

router-advertisement


VPC1
eth0
.2
.1
em3 / ge-0/0/1
Static route ---------->
VPC2
eth0
.2
.1
em3 / ge-0/0/1
em1 / int
em1 / int
.1
em2 / ge-0/0/0
192.168.1.0/30
2001:e10:6840:5::/64
em2 / ge-0/0/0
.2
em1 / int
em1 / int
vMX-VCP1
vMX-VFP1
vMX-VFP2
vMX-VCP2
ge-0/0/1 10.10.1.1/24 2001:e10:6840:1::1/64
ge-0/0/1 10.10.3.1/24 2001:e10:6840:3::1/64
<---------- Default Static route

vMX-VCP1 / vMX-VCP2

system

```
delete chassis auto-image-upgrade

set system host-name <HOST_NAME>

set system services ssh root-login allow
set system root-authentication plain-text-password

set system login user <User_Name> class super-user
set system login user <User_Name> authentication plain-text-password
```

interfaces

vMX-VCP1

```
set interfaces ge-0/0/0 unit 0 family inet address 192.168.1.1/30

set interfaces ge-0/0/0 unit 0 family inet6 address 2001:e10:6840:5::1/64

set interfaces ge-0/0/1 unit 0 family inet address 10.10.1.1/24

set interfaces ge-0/0/1 unit 0 family inet6 address 2001:e10:6840:1::1/64
```

interface

vMX-VCP2

```
set interfaces ge-0/0/0 unit 0 family inet address 192.168.1.2/30

set interfaces ge-0/0/0 unit 0 family inet6 address 2001:e10:6840:5::2/64

set interfaces ge-0/0/1 unit 0 family inet address 10.10.3.1/24

set interfaces ge-0/0/1 unit 0 family inet6 address 2001:e10:6840:3::1/64
```

routing-options

vMX-VCP1

```
set routing-options static route 10.10.3.0/24 next-hop 192.168.1.2

set routing-options rib inet6.0 static route 2001:e10:6840:3::/64 next-hop 2001:e10:6840:5::2
```

vMX-VCP2

```
set routing-options static route 0.0.0.0/0 next-hop 192.168.1.1

set routing-options rib inet6.0 static route ::/0 next-hop 2001:e10:6840:5::1
```

router-advertisement

vMX-VCP1

```
set protocols router-advertisement interface ge-0/0/1.0 prefix 2001:e10:6840:1::/64
```

vMX-VCP2

```
set protocols router-advertisement interface ge-0/0/1.0 prefix 2001:e10:6840:3::/64
```

VPC

VPC1

```
ip 10.10.1.2/24 10.10.1.1

show
```

VPC2

```
ip 10.10.3.2/24 10.10.3.1

show
```

show route protocol local

show route protocol direct

ping

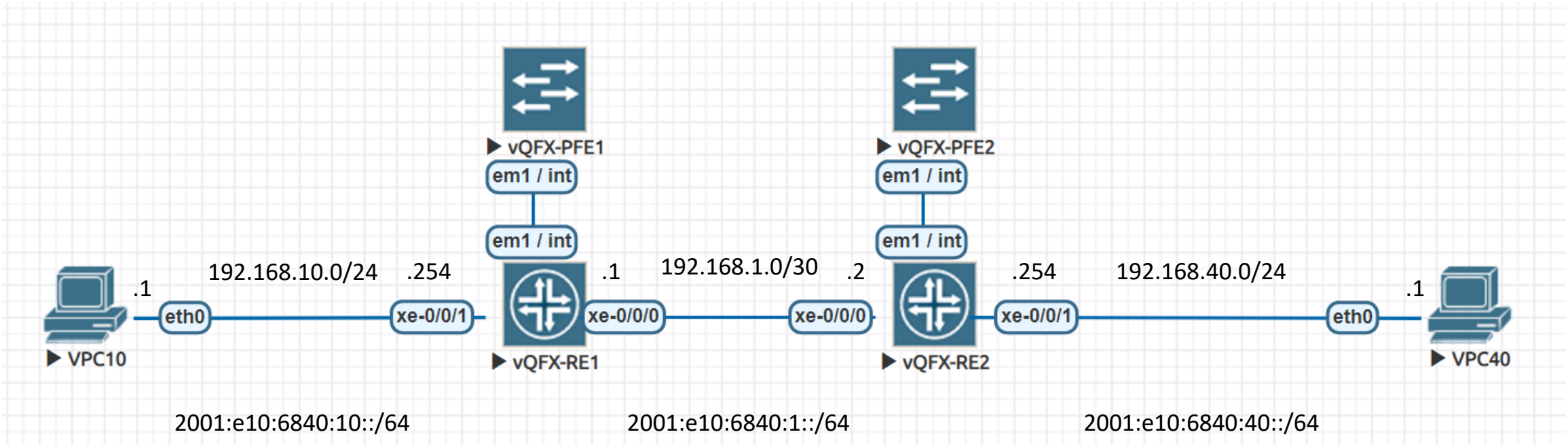
traceroute

Layer 3 Switch
Default Static Route

Interfaces

routing-options

router-advertisement


vQFX-PFE1
em1 / int
em1 / int
vQFX-PFE2
em1 / int
em1 / int
.1
192.168.10.0/24
.254
.1
192.168.1.0/30
.2
.254
192.168.40.0/24
.1
eth0
xe-0/0/1
xe-0/0/0
xe-0/0/0
xe-0/0/1
eth0
VPC10
vQFX-RE1
vQFX-RE2
VPC40
2001:e10:6840:10::/64
2001:e10:6840:1::/64
2001:e10:6840:40::/64

vQFX1-RE

```
set vlans v10 vlan-id 10
set vlans v10 l3-interface irb.10

set interfaces xe-0/0/0 unit 0 family inet address 192.168.1.1/30
set interfaces xe-0/0/0 unit 0 family inet6 address 2001:e10:6840:1:192:168:1:1/64

set interfaces irb unit 10 family inet address 192.168.10.254/24
set interfaces irb unit 10 family inet6 address 2001:e10:6840:10:192:168:10:1/64
set interfaces xe-0/0/1 unit 0 family ethernet-switching vlan members v10

set routing-options static route 0.0.0.0/0 next-hop 192.168.1.2
set routing-options rib inet6.0 static route ::/0 next-hop 2001:e10:6840:1:192:168:1:2

set protocols router-advertisement interface irb.10 prefix 2001:e10:6840:10::/64
```

vQFX2-RE

```
set vlans v40 vlan-id 40
set vlans v40 l3-interface irb.40

set interfaces xe-0/0/0 unit 0 family inet address 192.168.1.2/30
set interfaces xe-0/0/0 unit 0 family inet6 address 2001:e10:6840:1:192:168:1:2/64

set interfaces irb unit 40 family inet address 192.168.40.254/24
set interfaces irb unit 40 family inet6 address 2001:e10:6840:40:192:168:40:1/64
set interfaces xe-0/0/1 unit 0 family ethernet-switching vlan members v40

set routing-options static route 0.0.0.0/0 next-hop 192.168.1.1
set routing-options rib inet6.0 static route ::/0 next-hop 2001:e10:6840:1:192:168:1:1

set protocols router-advertisement interface irb.40 prefix 2001:e10:6840:40::/64
```

VPC

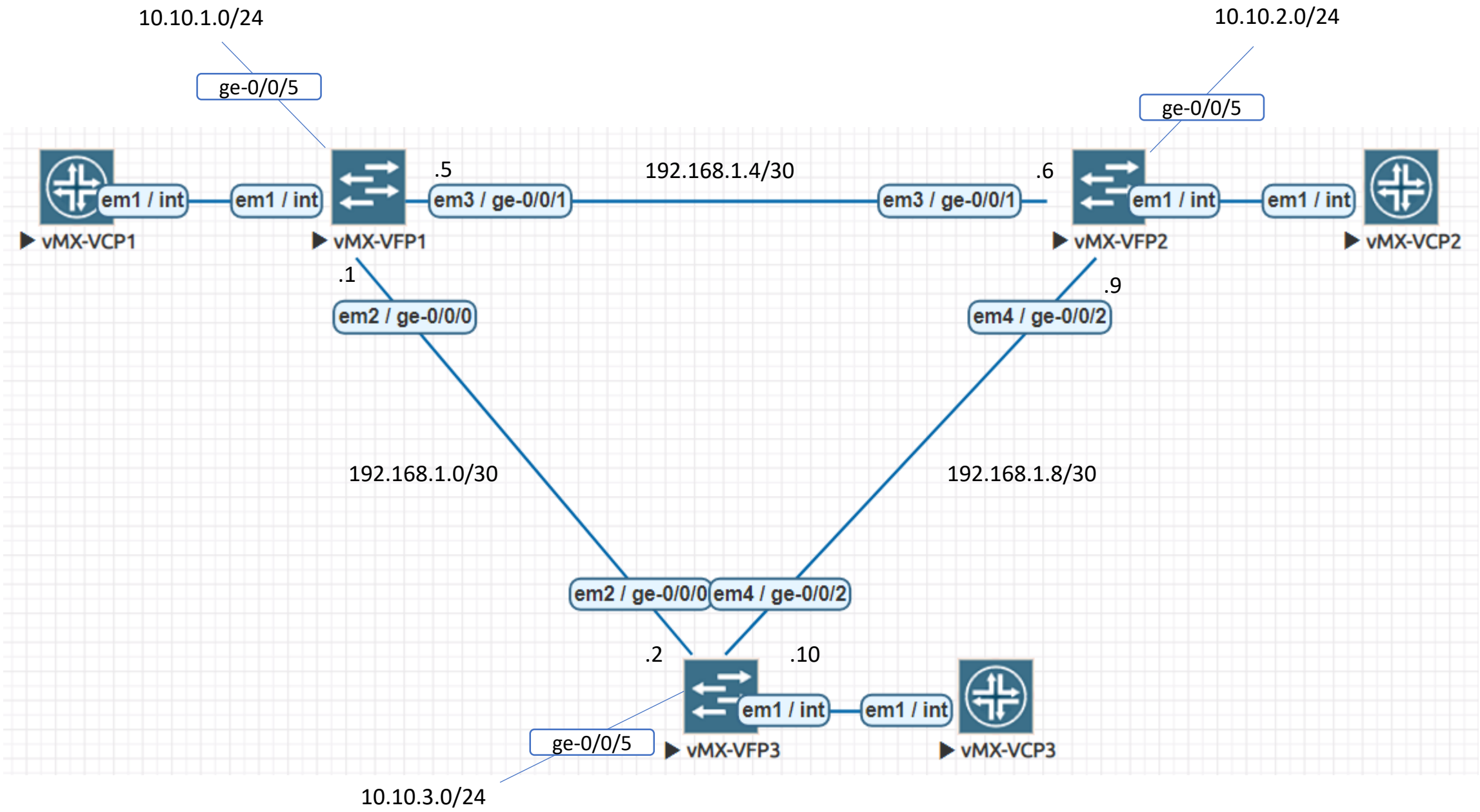
VPC10

```
ip 192.168.10.1 255.255.255.0 192.168.10.254

show ip
show ipv6
```

VPC40

```
ip 192.168.40.1 255.255.255.0 192.168.40.254

show ip
show ipv6
```

OSPF


10.10.1.0/24
ge-0/0/5
10.10.2.0/24
ge-0/0/5
em1 / int
em1 / int
vMX-VCP1
.5
em3 / ge-0/0/1
192.168.1.4/30
em3 / ge-0/0/1
.6
em1 / int
em1 / int
vMX-VFP1
vMX-VFP2
vMX-VCP2
.1
em2 / ge-0/0/0
.9
em4 / ge-0/0/2
192.168.1.0/30
192.168.1.8/30
em2 / ge-0/0/0
em4 / ge-0/0/2
.2
.10
em1 / int
em1 / int
ge-0/0/5
vMX-VFP3
vMX-VCP3
10.10.3.0/24

vMX-VCP1

system & interface

```
delete chassis auto-image-upgrade
set system root-authentication plain-text-password
set system host-name R1

set interfaces ge-0/0/0 unit 0 family inet address 192.168.1.1/30
set interfaces ge-0/0/1 unit 0 family inet address 192.168.1.5/30
set interfaces ge-0/0/5 unit 0 family inet address 10.10.1.254/24

set interfaces lo0 unit 0 family inet address 1.1.1.1/32
```

vMX-VCP2

system & interface

```
delete chassis auto-image-upgrade
set system root-authentication plain-text-password
set system host-name R2

set interfaces ge-0/0/1 unit 0 family inet address 192.168.1.6/30
set interfaces ge-0/0/2 unit 0 family inet address 192.168.1.9/30
set interfaces ge-0/0/5 unit 0 family inet address 10.10.2.254/24

set interfaces lo0 unit 0 family inet address 2.2.2.2/32
```

vMX-VCP3

system & interface

```
delete chassis auto-image-upgrade
set system root-authentication plain-text-password
set system host-name R3

set interfaces ge-0/0/0 unit 0 family inet address 192.168.1.2/30
set interfaces ge-0/0/2 unit 0 family inet address 192.168.1.10/30
set interfaces ge-0/0/5 unit 0 family inet address 10.10.3.254/24

set interfaces lo0 unit 0 family inet address 3.3.3.3/32
```

vMX-VCP1

OSPF

```
set routing-options router-id 1.1.1.1

set protocols ospf export R1-OSPF

set protocols ospf area 0.0.0.0 interface ge-0/0/0
set protocols ospf area 0.0.0.0 interface ge-0/0/1
set protocols ospf area 0.0.0.0 interface ge-0/0/2 passive
set protocols ospf area 0.0.0.0 interface lo0.0 passive
```

vMX-VCP1

OSPF Policy-options

```
set policy-options policy-statement R1-OSPF term 1 from protocol direct
set policy-options policy-statement R1-OSPF term 1 from route-filter 10.10.1.0/24 exact
set policy-options policy-statement R1-OSPF term 1 then external type 1
set policy-options policy-statement R1-OSPF term 1 then accept
set policy-options policy-statement R1-OSPF term 2 then reject
```

vMX-VCP2

OSPF

```
set routing-options router-id 2.2.2.2

set protocols ospf export R2-OSPF

set protocols ospf area 0.0.0.0 interface ge-0/0/1
set protocols ospf area 0.0.0.0 interface ge-0/0/2
set protocols ospf area 0.0.0.0 interface ge-0/0/5 passive
set protocols ospf area 0.0.0.0 interface lo0.0 passive
```

vMX-VCP2

OSPF Policy-options

```
set policy-options policy-statement R2-OSPF term 1 from protocol direct
set policy-options policy-statement R2-OSPF term 1 from route-filter 10.10.2.0/24 exact
set policy-options policy-statement R2-OSPF term 1 then external type 1
set policy-options policy-statement R2-OSPF term 1 then accept
set policy-options policy-statement R2-OSPF term 2 then reject
```

vMX-VCP3

OSPF

```
set routing-options router-id 3.3.3.3

set protocols ospf export R3-OSPF

set protocols ospf area 0.0.0.0 interface ge-0/0/0
set protocols ospf area 0.0.0.0 interface ge-0/0/2
set protocols ospf area 0.0.0.0 interface ge-0/0/5 passive
set protocols ospf area 0.0.0.0 interface lo0.0 passive
```

vMX-VCP3

OSPF Policy-options

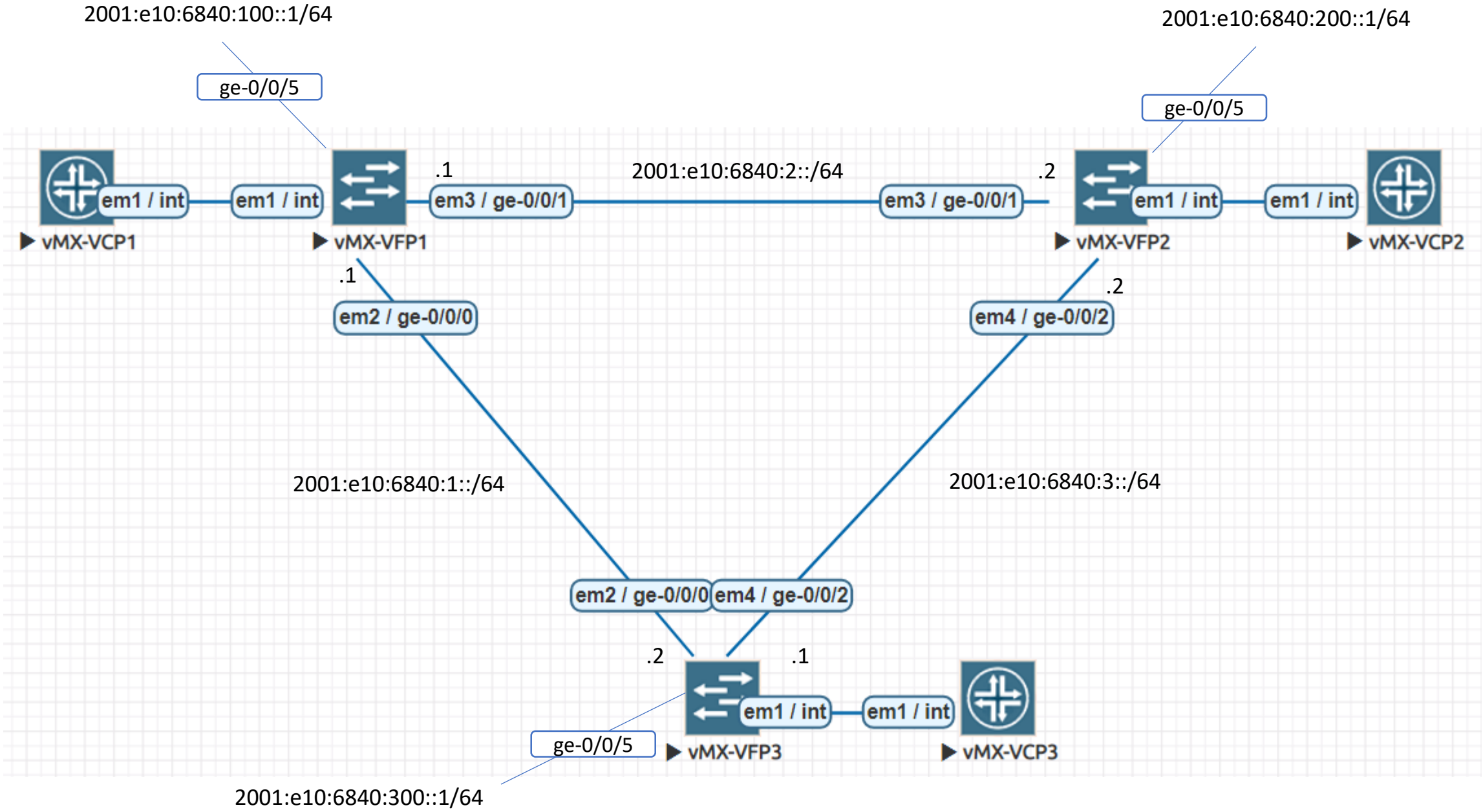
```
set policy-options policy-statement R3-OSPF term 1 from protocol direct
set policy-options policy-statement R3-OSPF term 1 from route-filter 10.10.3.0/24 exact
set policy-options policy-statement R3-OSPF term 1 then external type 1
set policy-options policy-statement R3-OSPF term 1 then accept
set policy-options policy-statement R3-OSPF term 2 then reject
```

常用查詢指令

show route

show route protocol ospf

OSPF3


2001:e10:6840:100::1/64
ge-0/0/5
2001:e10:6840:200::1/64
ge-0/0/5
em1 / int
em1 / int
.1
em3 / ge-0/0/1
2001:e10:6840:2::/64
em3 / ge-0/0/1
.2
em1 / int
em1 / int
vMX-VCP1
vMX-VFP1
vMX-VFP2
vMX-VCP2
.1
em2 / ge-0/0/0
.2
em4 / ge-0/0/2
2001:e10:6840:1::/64
2001:e10:6840:3::/64
em2 / ge-0/0/0
em4 / ge-0/0/2
.2
.1
em1 / int
em1 / int
ge-0/0/5
vMX-VFP3
vMX-VCP3
2001:e10:6840:300::1/64

vMX-VCP1

system & interface

```
delete chassis auto-image-upgrade
set system root-authentication plain-text-password
set system host-name R1

set interfaces ge-0/0/0 unit 0 family inet6 address 2001:e10:6840:1::1/64
set interfaces ge-0/0/1 unit 0 family inet6 address 2001:e10:6840:2::1/64
set interfaces ge-0/0/5 unit 0 family inet6 address 2001:e10:6840:100::1/64
```

vMX-VCP2

system & interface

```
delete chassis auto-image-upgrade
set system root-authentication plain-text-password
set system host-name R2

set interfaces ge-0/0/1 unit 0 family inet6 address 2001:e10:6840:2::2/64
set interfaces ge-0/0/2 unit 0 family inet6 address 2001:e10:6840:3::2/64
set interfaces ge-0/0/5 unit 0 family inet6 address 2001:e10:6840:200::1/64
```

vMX-VCP3

system & interface

```
delete chassis auto-image-upgrade
set system root-authentication plain-text-password
set system host-name R3

set interfaces ge-0/0/0 unit 0 family inet6 address 2001:e10:6840:1::2/64
set interfaces ge-0/0/2 unit 0 family inet6 address 2001:e10:6840:3::1/64
set interfaces ge-0/0/5 unit 0 family inet6 address 2001:e10:6840:300::1/64
```

vMX-VCP1

OSPF

```
set protocols ospf3 export R1-OSPF3

set protocols ospf3 area 0.0.0.0 interface ge-0/0/0
set protocols ospf3 area 0.0.0.0 interface ge-0/0/1
set protocols ospf3 area 0.0.0.0 interface ge-0/0/2 passive
set protocols ospf3 area 0.0.0.0 interface lo0.0 passive
```

vMX-VCP1

OSPF Policy-options

```
set policy-options policy-statement R1-OSPF3 term 1 from protocol direct
set policy-options policy-statement R1-OSPF3 term 1 from route-filter 2001:e10:6840:100::/64 exact
set policy-options policy-statement R1-OSPF3 term 1 then external type 1
set policy-options policy-statement R1-OSPF3 term 1 then accept
set policy-options policy-statement R1-OSPF3 term 2 then reject
```

vMX-VCP2

OSPF

```
set protocols ospf3 export R2-OSPF3

set protocols ospf3 area 0.0.0.0 interface ge-0/0/1
set protocols ospf3 area 0.0.0.0 interface ge-0/0/2
set protocols ospf3 area 0.0.0.0 interface ge-0/0/5 passive
set protocols ospf3 area 0.0.0.0 interface lo0.0 passive
```

vMX-VCP2

OSPF Policy-options

```
set policy-options policy-statement R2-OSPF3 term 1 from protocol direct
set policy-options policy-statement R2-OSPF3 term 1 from route-filter 2001:e10:6840:200::/64 exact
set policy-options policy-statement R2-OSPF3 term 1 then external type 1
set policy-options policy-statement R2-OSPF3 term 1 then accept
set policy-options policy-statement R2-OSPF3 term 2 then reject
```

vMX-VCP3

OSPF

```
set protocols ospf3 export R3-OSPF3

set protocols ospf3 area 0.0.0.0 interface ge-0/0/0
set protocols ospf3 area 0.0.0.0 interface ge-0/0/2
set protocols ospf3 area 0.0.0.0 interface ge-0/0/5 passive
set protocols ospf3 area 0.0.0.0 interface lo0.0 passive
```

vMX-VCP3

OSPF Policy-options

```
set policy-options policy-statement R3-OSPF3 term 1 from protocol direct
set policy-options policy-statement R3-OSPF3 term 1 from route-filter 2001:e10:6840:300::/64 exact
set policy-options policy-statement R3-OSPF3 term 1 then external type 1
set policy-options policy-statement R3-OSPF3 term 1 then accept
set policy-options policy-statement R3-OSPF3 term 2 then reject
```

常用查詢指令

```
show route

show route protocol ospf
```

Thank you

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