# SANGFOR vWANO Guide

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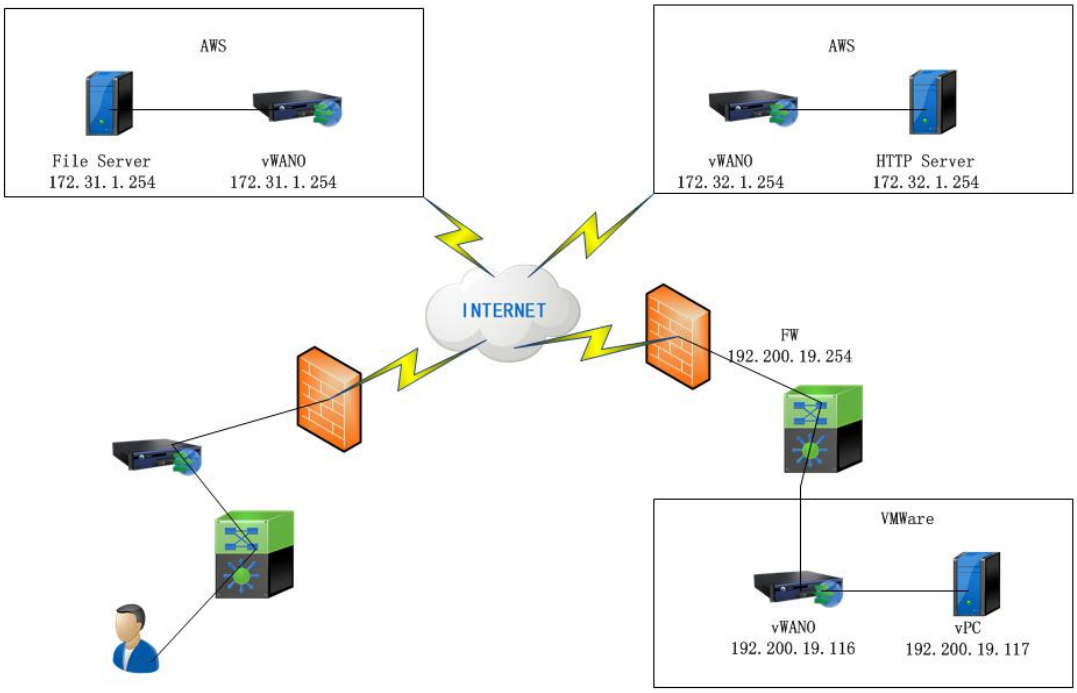
# vWANO Guide

# Concept：

EC2: Virtual Servers in the Cloud
VPC: Isolated Cloud Resources

# Scenarios：

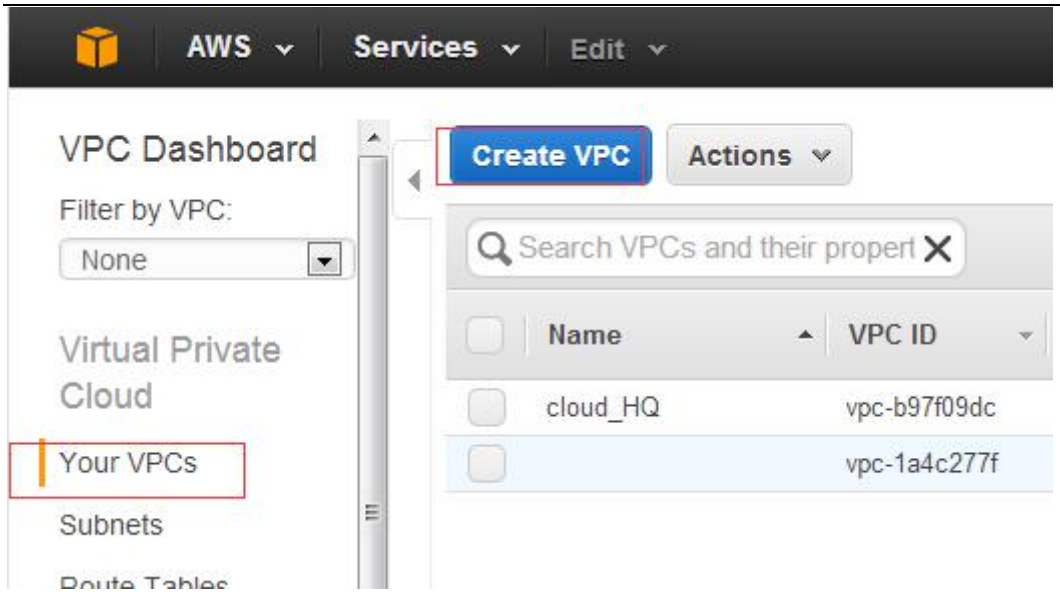


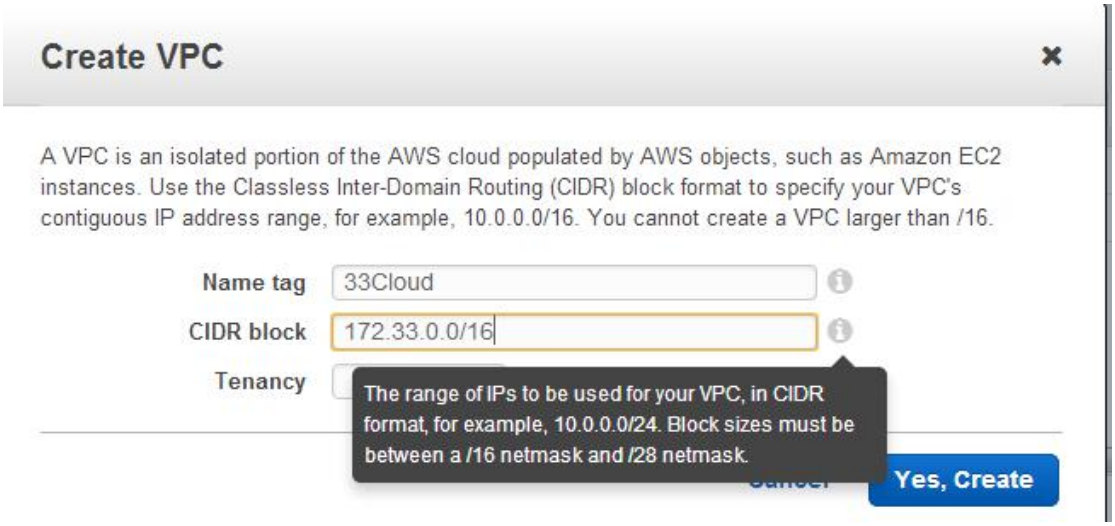

1、vWANO and vWANO build acceleration tunnel in AWS Cloud
2、vWANO in AWS build acceleration tunnel with local WANO or vWANO in VMware or vWANO in Hyper-V
3、vWANO in VMware or Hyper-V build acceleration tunnel with other side WANO or vWANO

# Configuration：

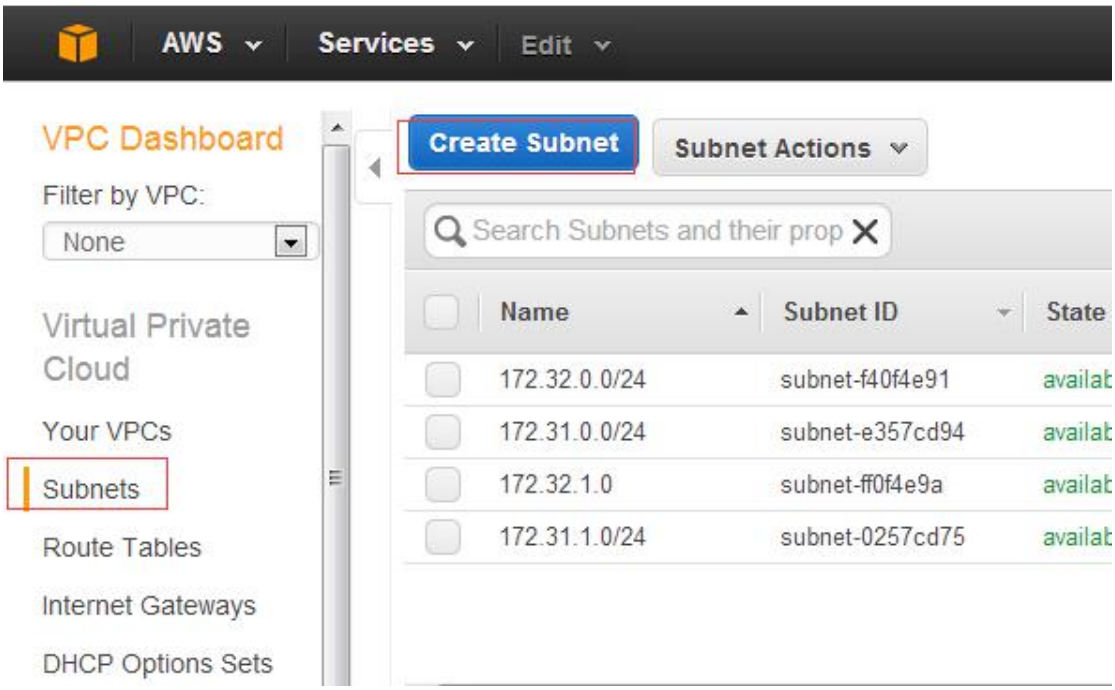
## vWANO in AWS

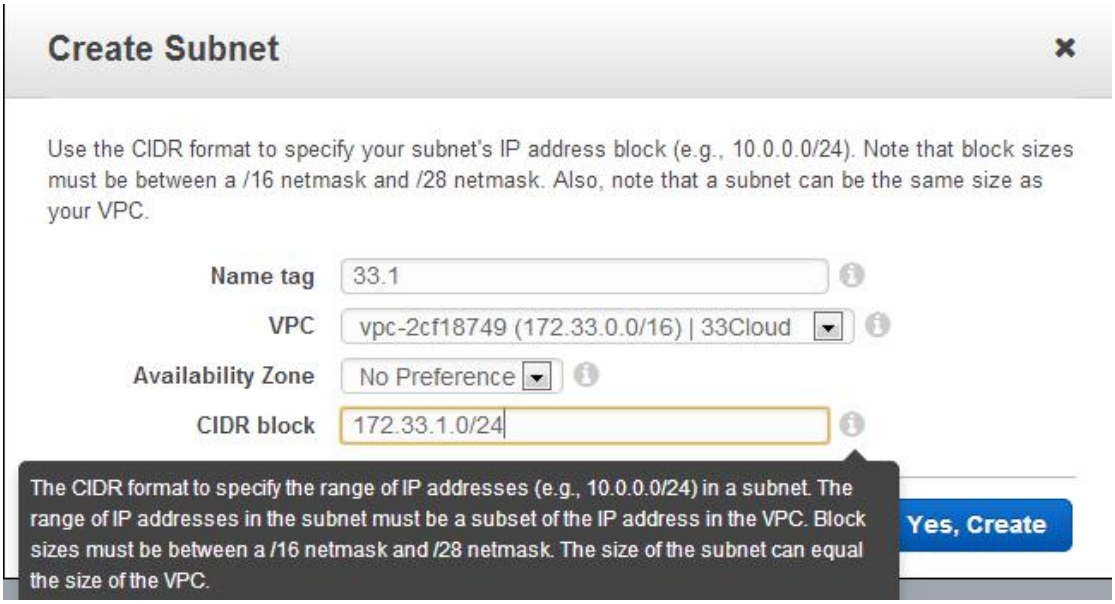
1、Create VPC

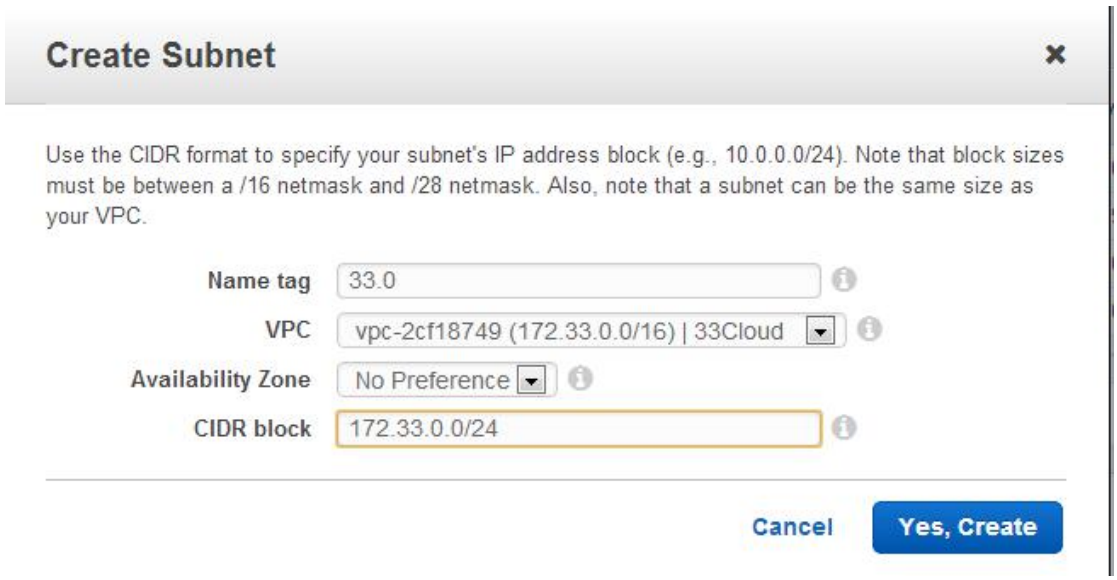



2、Create subnets


AWS
Services
Edit
VPC Dashboard
Filter by VPC:
None
Virtual Private Cloud
Your VPCs
Subnets
Route Tables
Internet Gateways
DHCP Options Sets
Create Subnet
Subnet Actions
Search Subnets and their prop
Name
Subnet ID
State
172.32.0.0/24
subnet-f40f4e91
172.31.0.0/24
subnet-e357cd94
172.32.1.0
subnet-ff0f4e9a
172.31.1.0/24
subnet-0257cd75

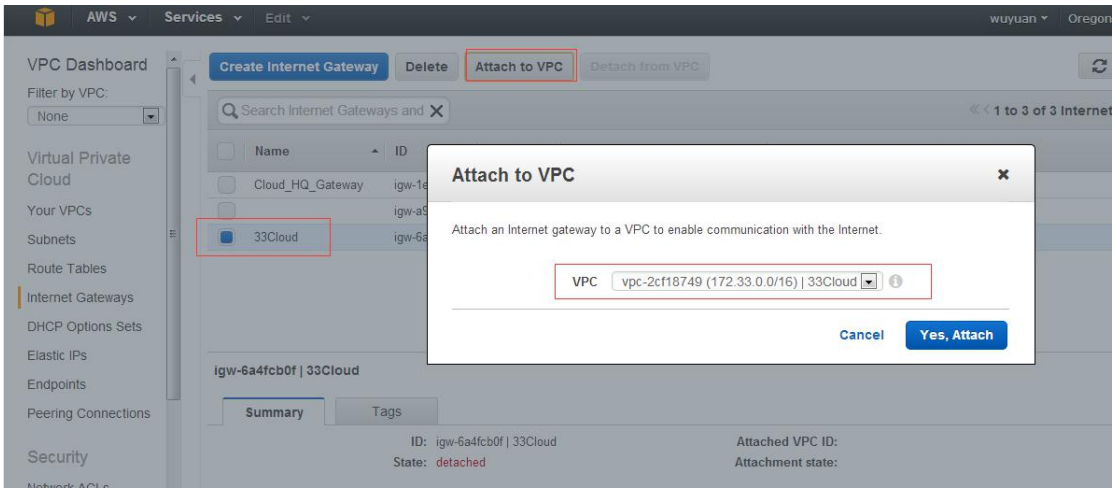

Create Subnet
Use the CIDR format to specify your subnet's IP address block (e.g., 10.0.0.0/24). Note that block sizes must be between a /16 netmask and /28 netmask. Also, note that a subnet can be the same size as your VPC.
Name tag
33.1
VPC
vpc-2cf18749 (172.33.0.0/16) | 33Cloud
Availability Zone
No Preference
CIDR block
172.33.1.0/24
The CIDR format to specify the range of IP addresses (e.g., 10.0.0.0/24) in a subnet. The range of IP addresses in the subnet must be a subset of the IP address in the VPC. Block sizes must be between a /16 netmask and /28 netmask. The size of the subnet can equal the size of the VPC.
Yes, Create

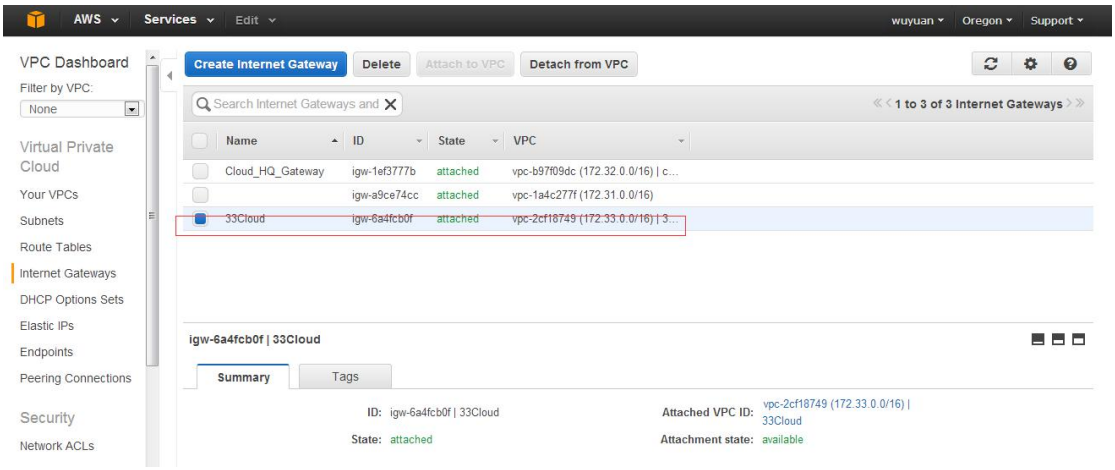



3、Create internet Gateway

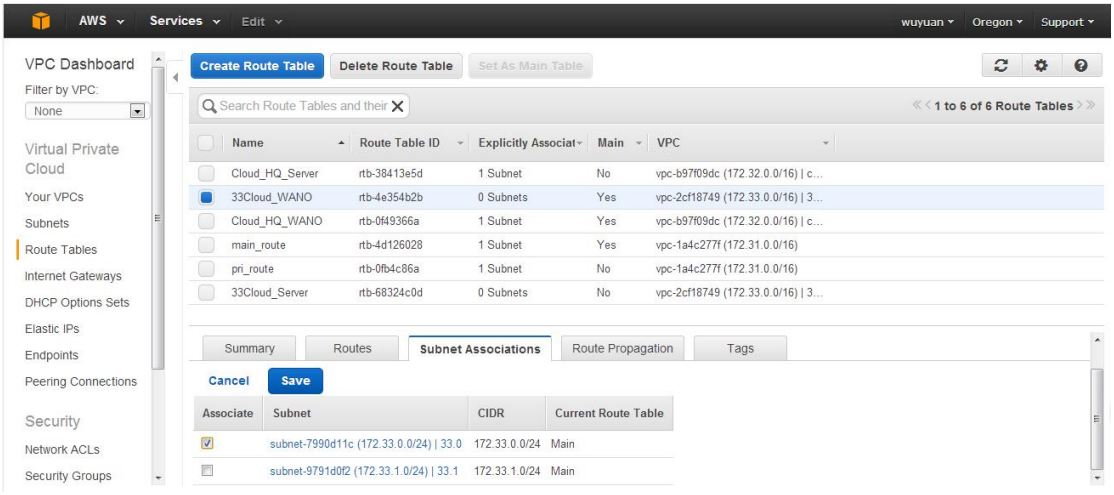


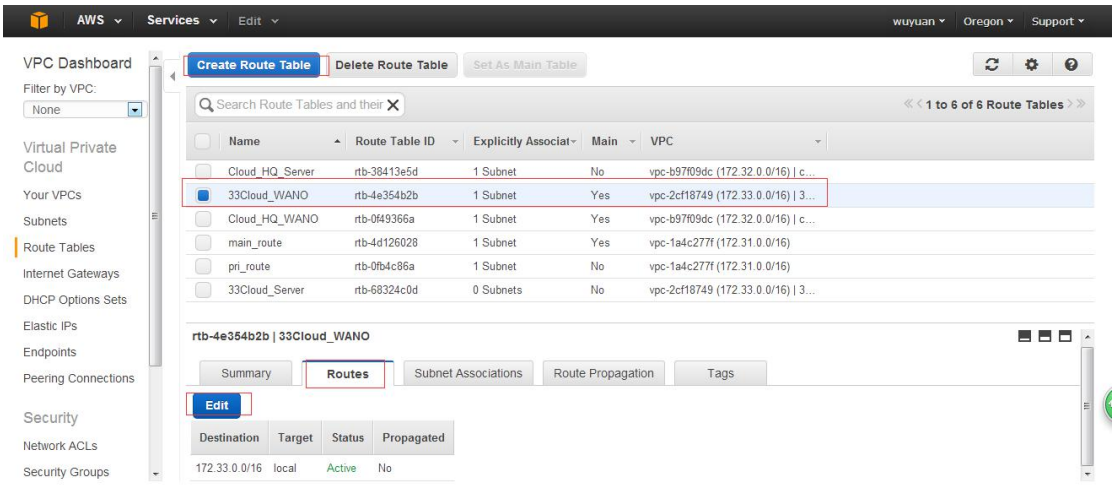
attach to VPC

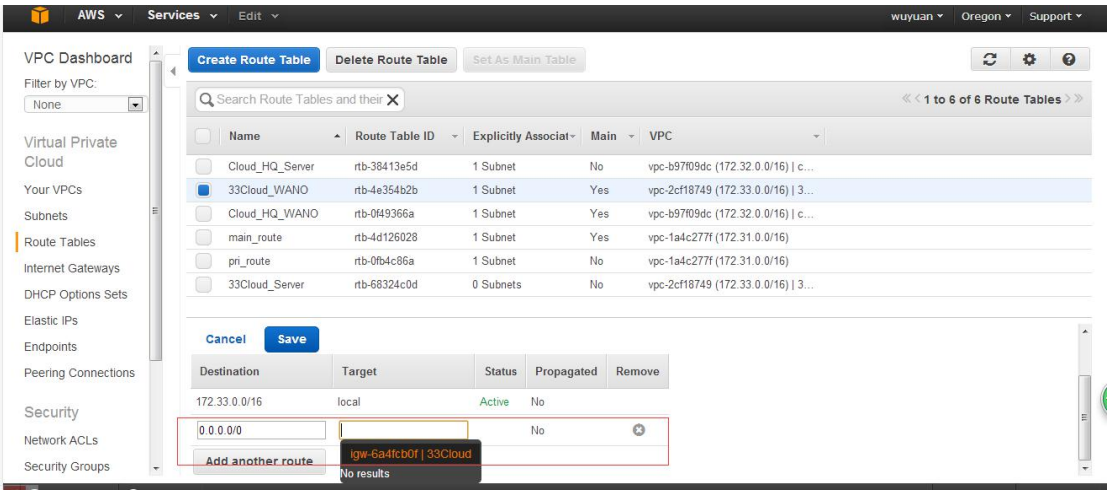


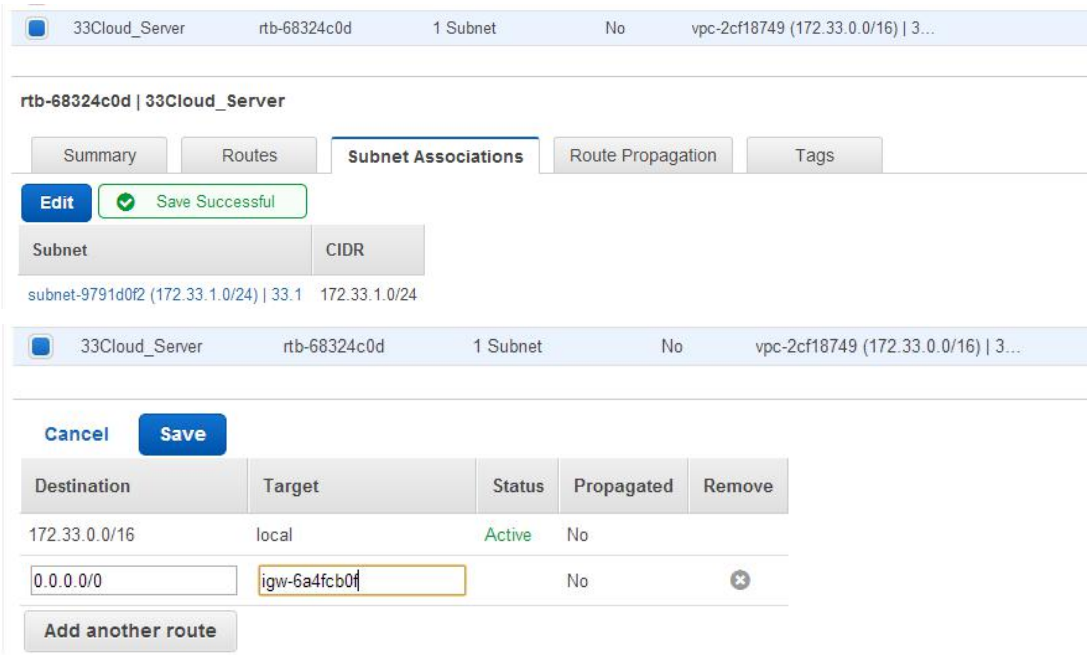




4、Create route tables and bind subnet and add default route

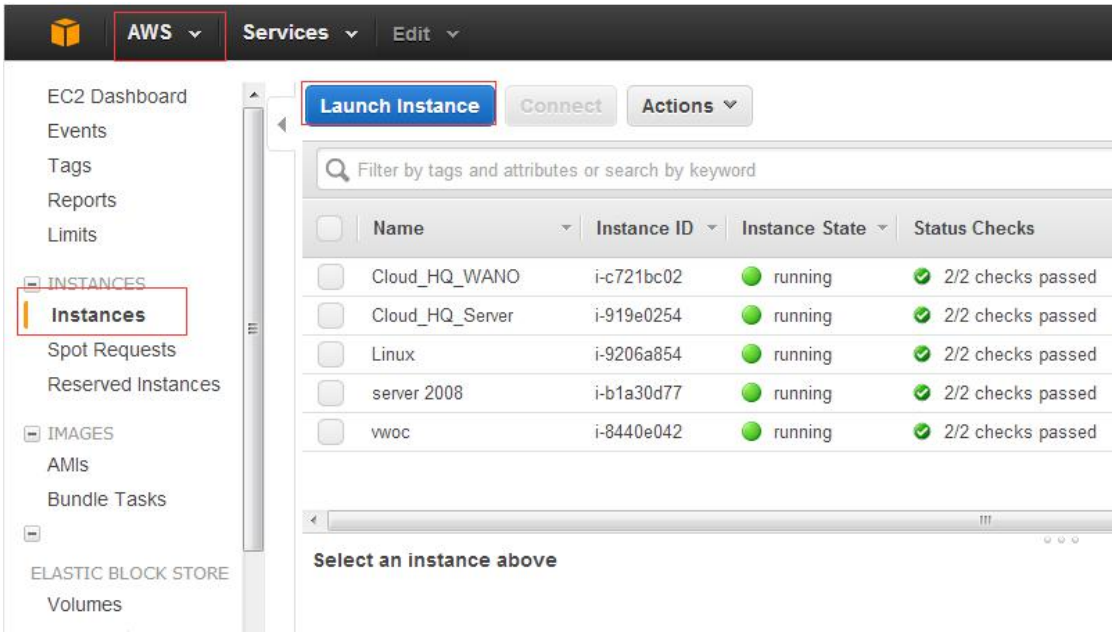


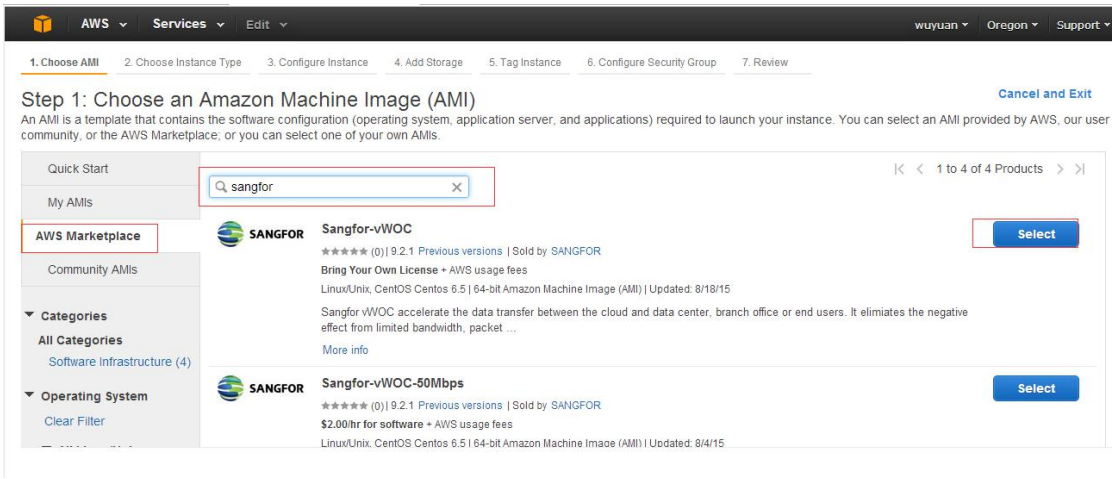


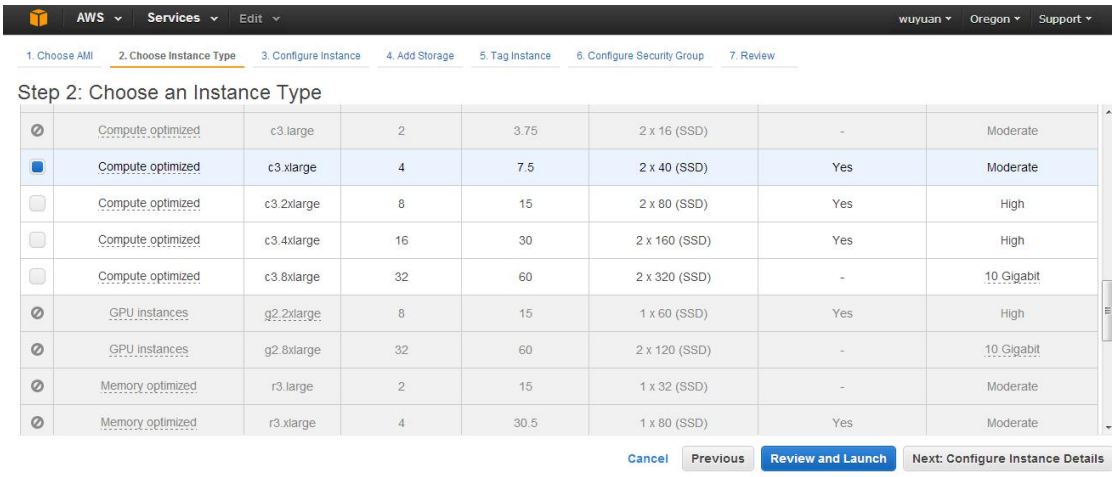




5、Create instance

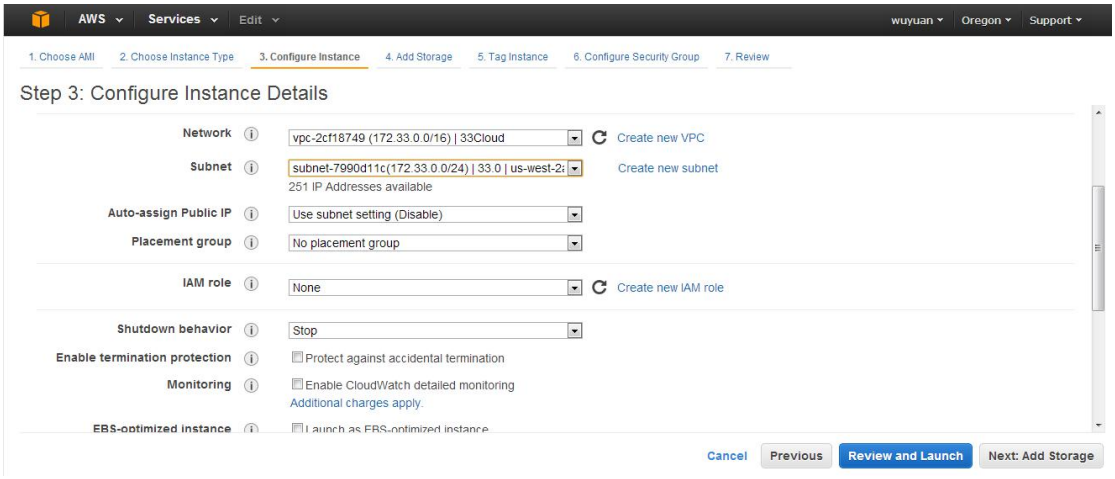


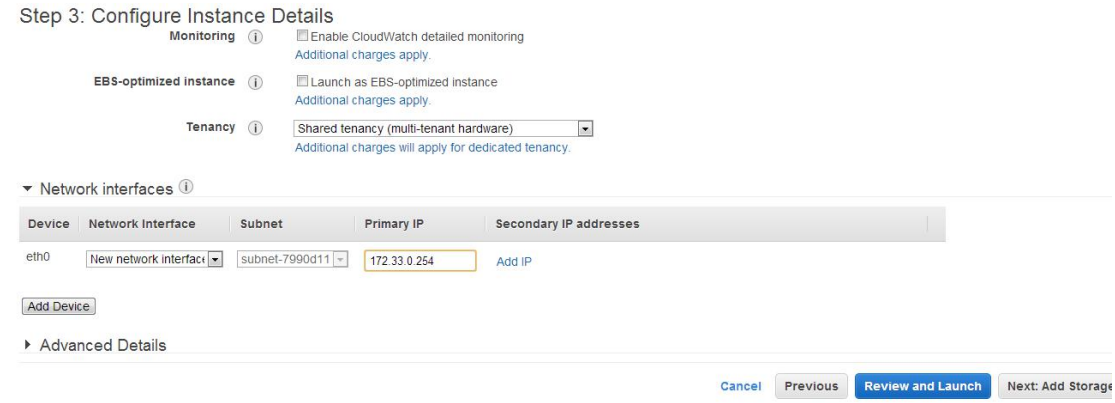




Choose type according to customer's requirement.

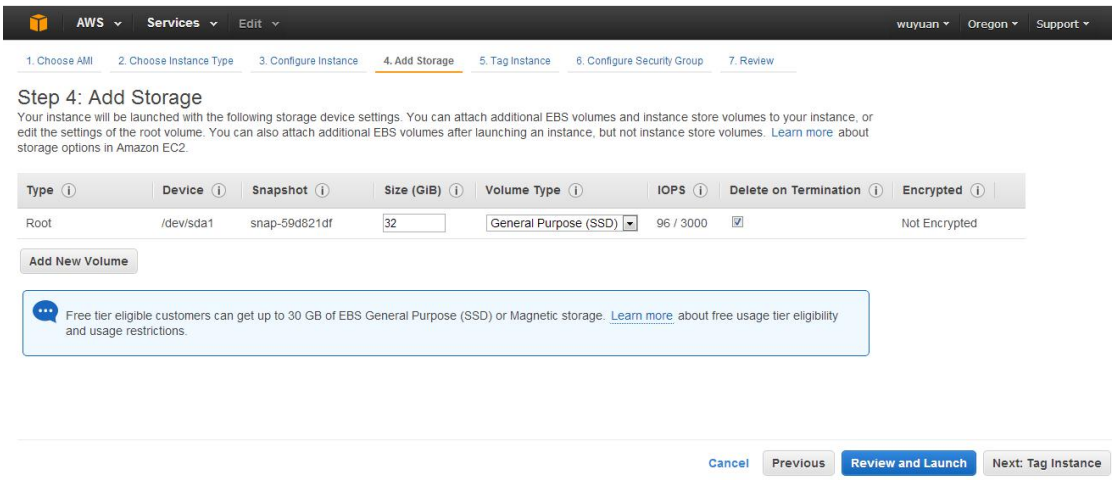



Configure Instance details

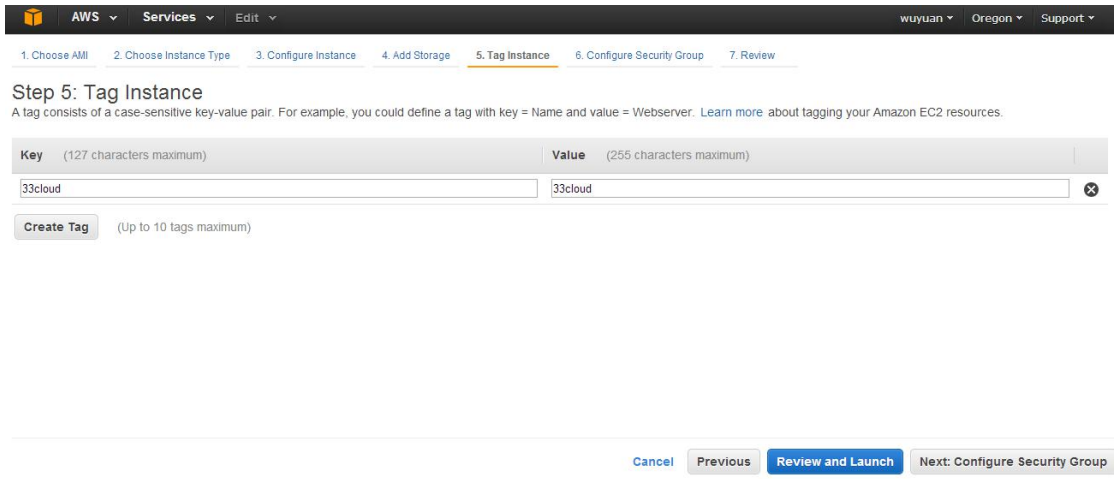


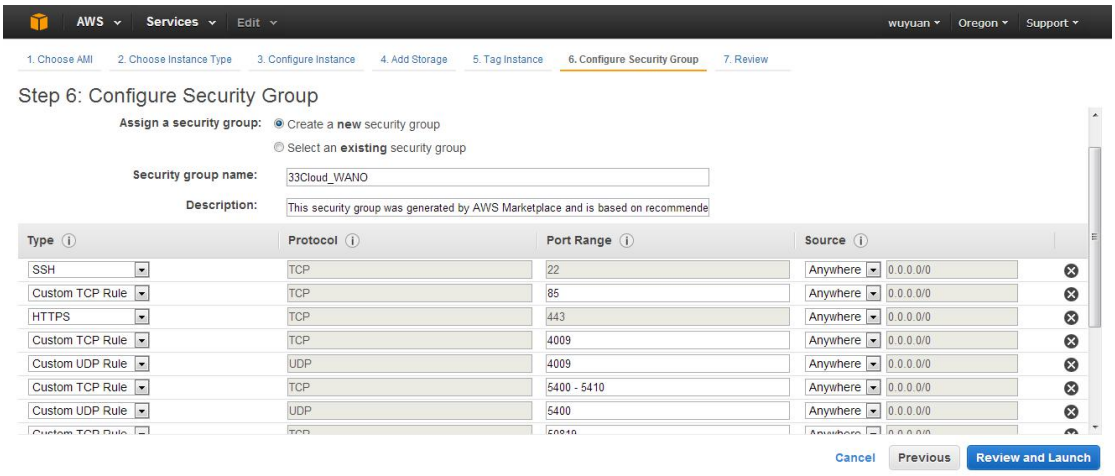

Choose storage



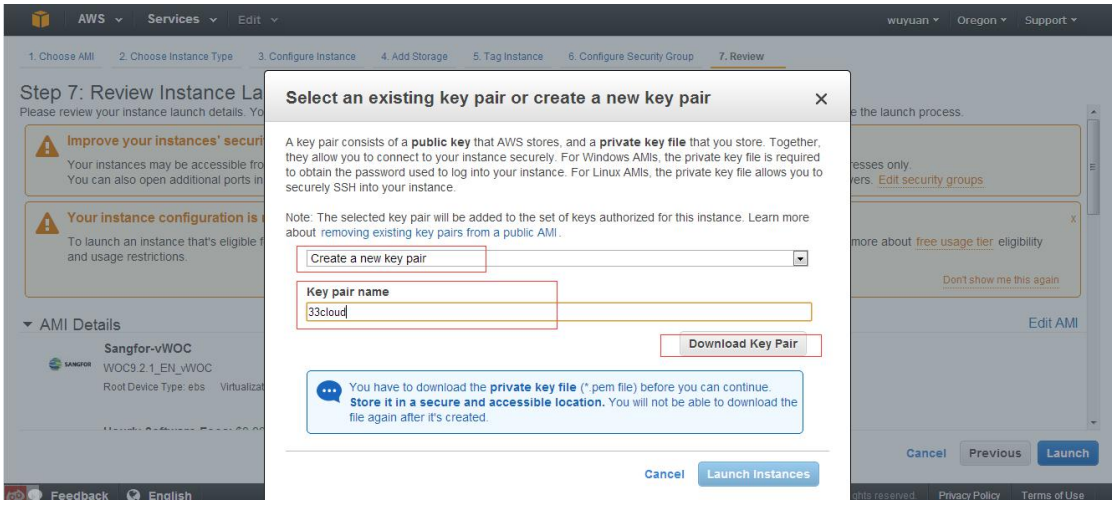

Tag instance



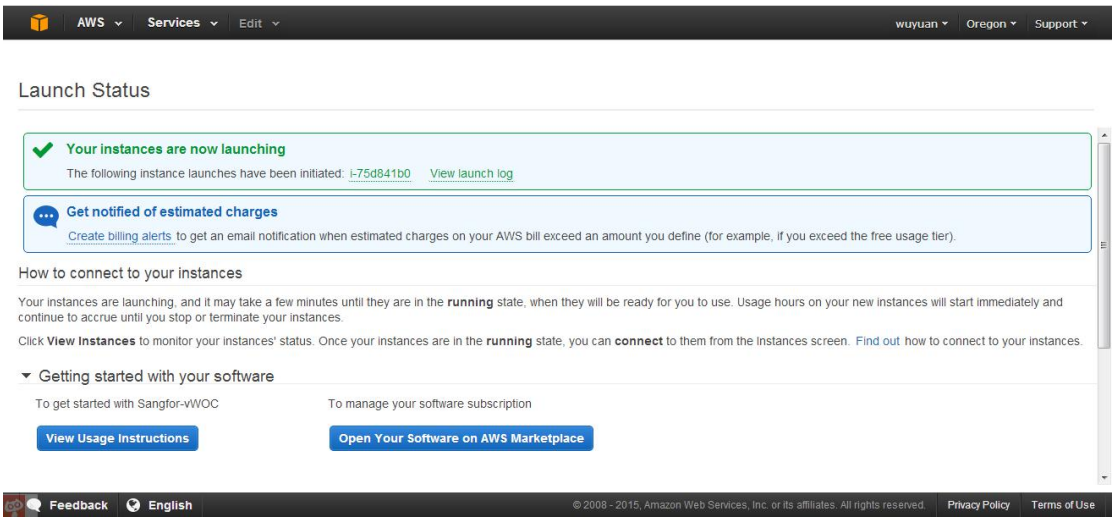

Configure Security Group



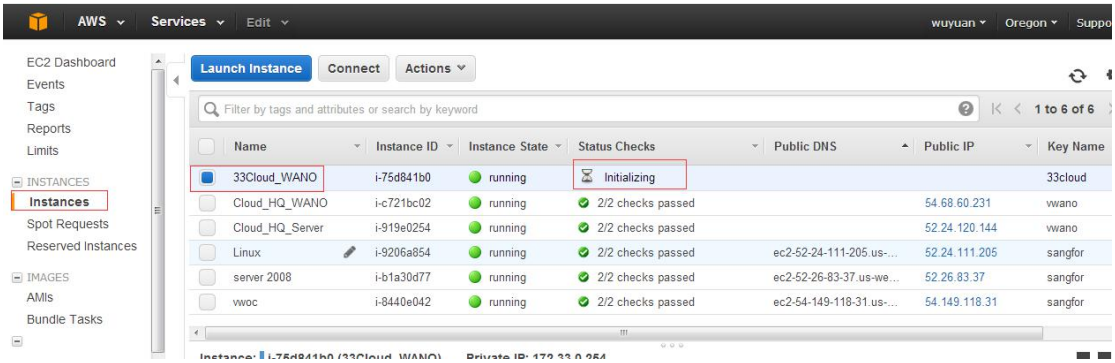

Instance has created, but run instance need a key pair, if this is the first time create instance, you can create a new pair or you can use the key pair created before.



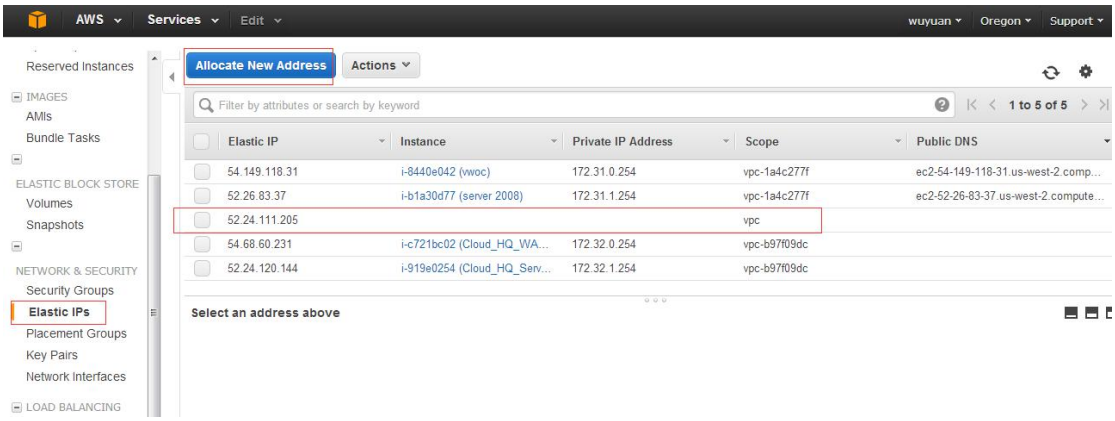

Run instance success



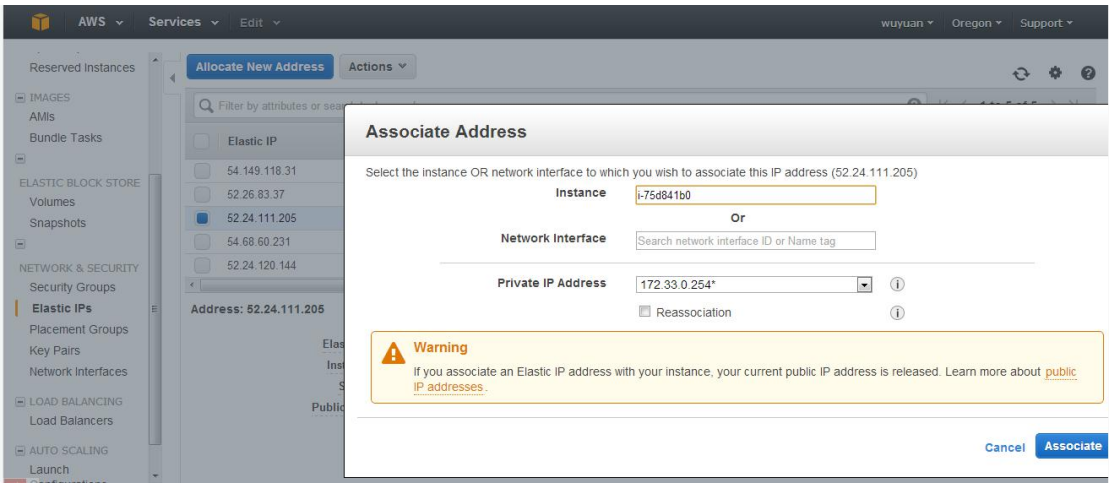

6、view instance status, after initializing we can go on next step.

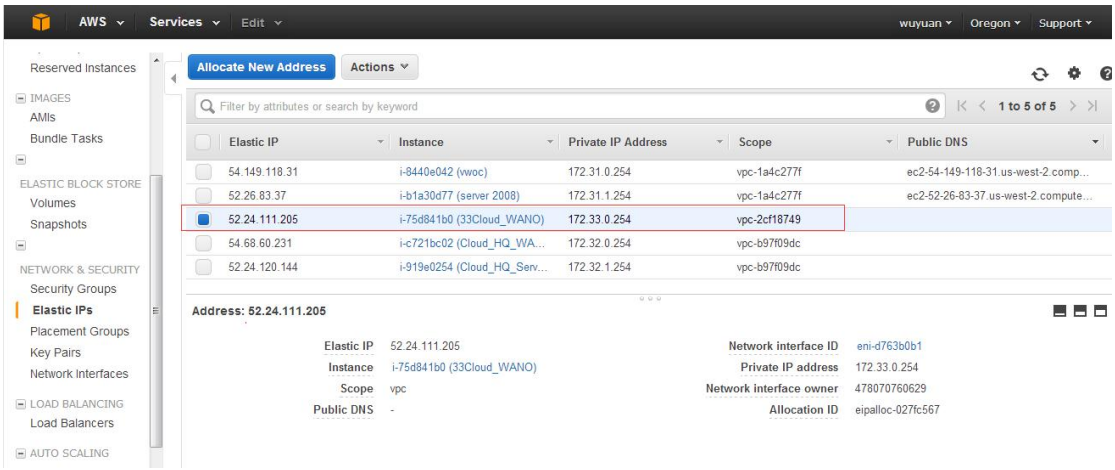



7、Allocate elastic IPs(this step just as DNAT, allocate a public IP and NAT to private IP)

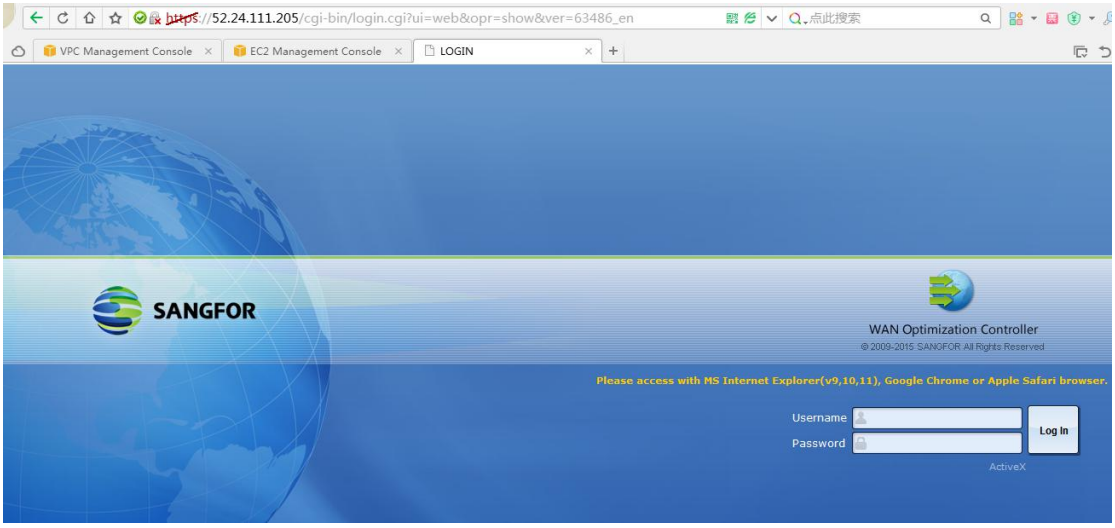



associate address



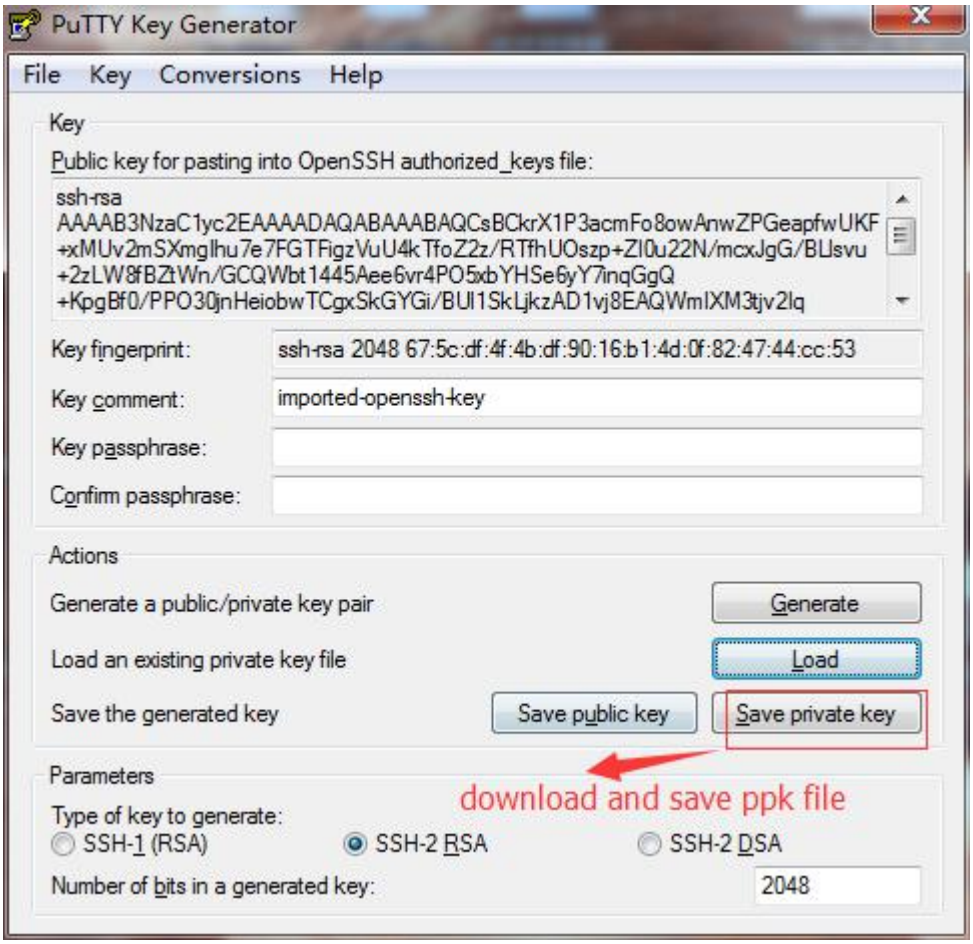




8、after associate address, we can use elastic IP visit WANO, but can't use admin/admin login.

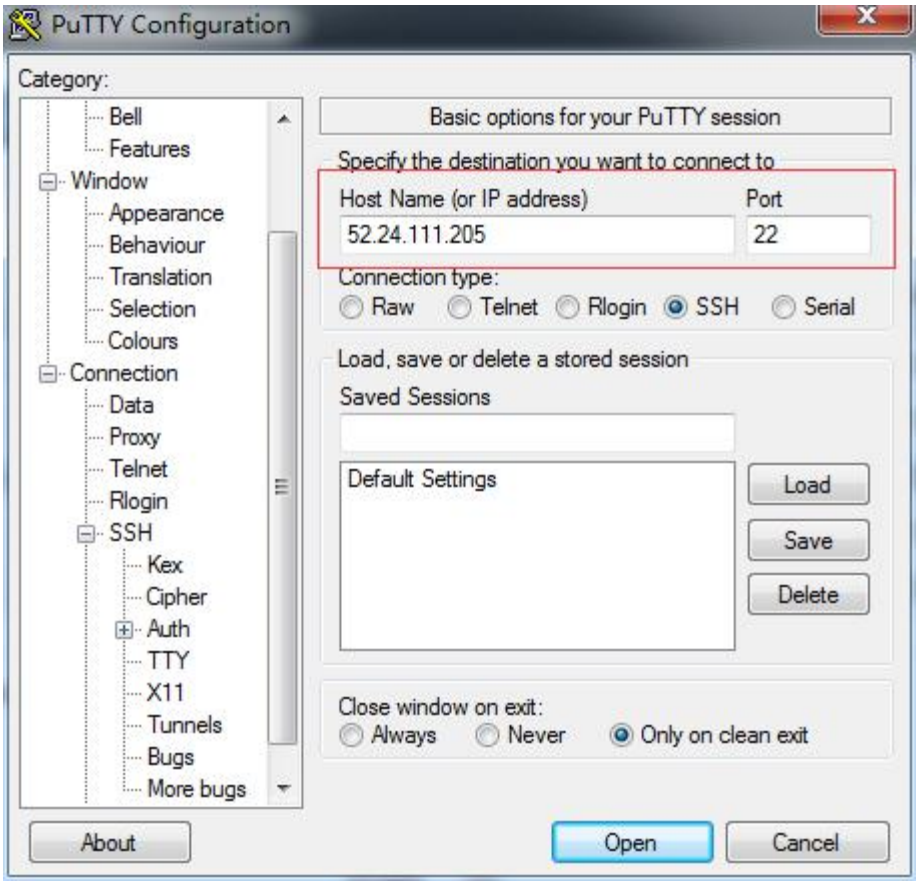


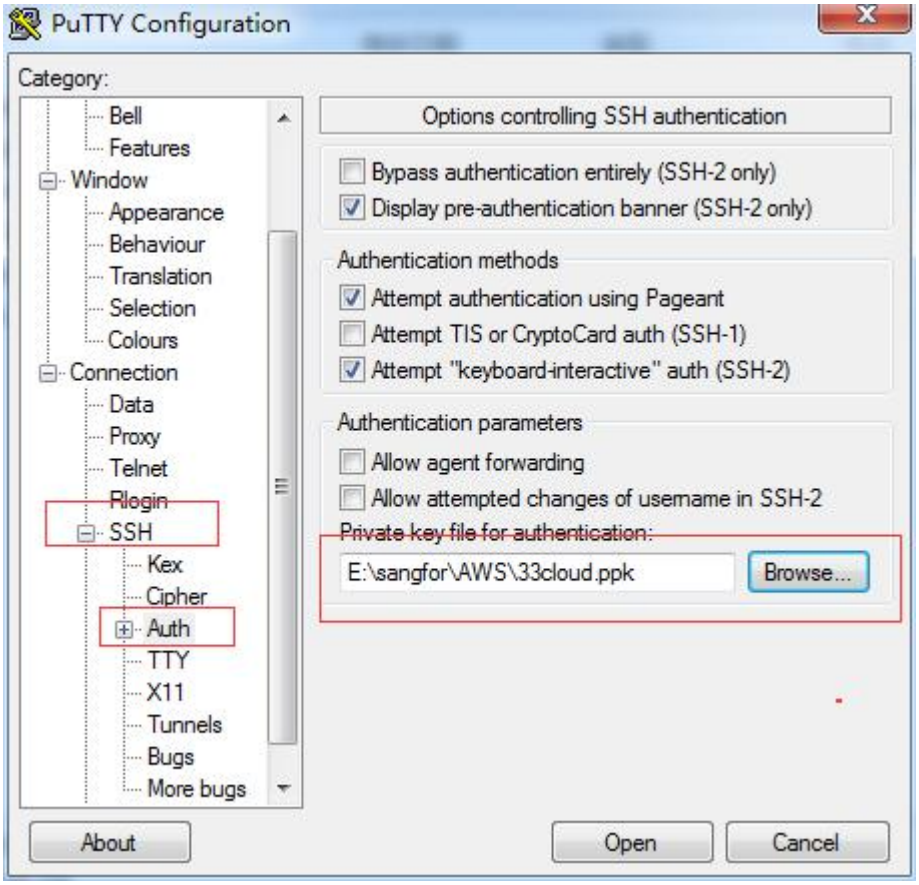

9、Use puttygen.exe format key pair


PuTTY Key Generator
File Key Conversions Help
Key
No key.
choose key pair
Actions
Generate a public/private key pair
Generate
Load an existing private key file
Load
Save the generated key
Save public key
Save private key
Parameters
Type of key to generate:
SSH-1 (RSA)
SSH-2 RSA
SSH-2 DSA
Number of bits in a generated key:
2048

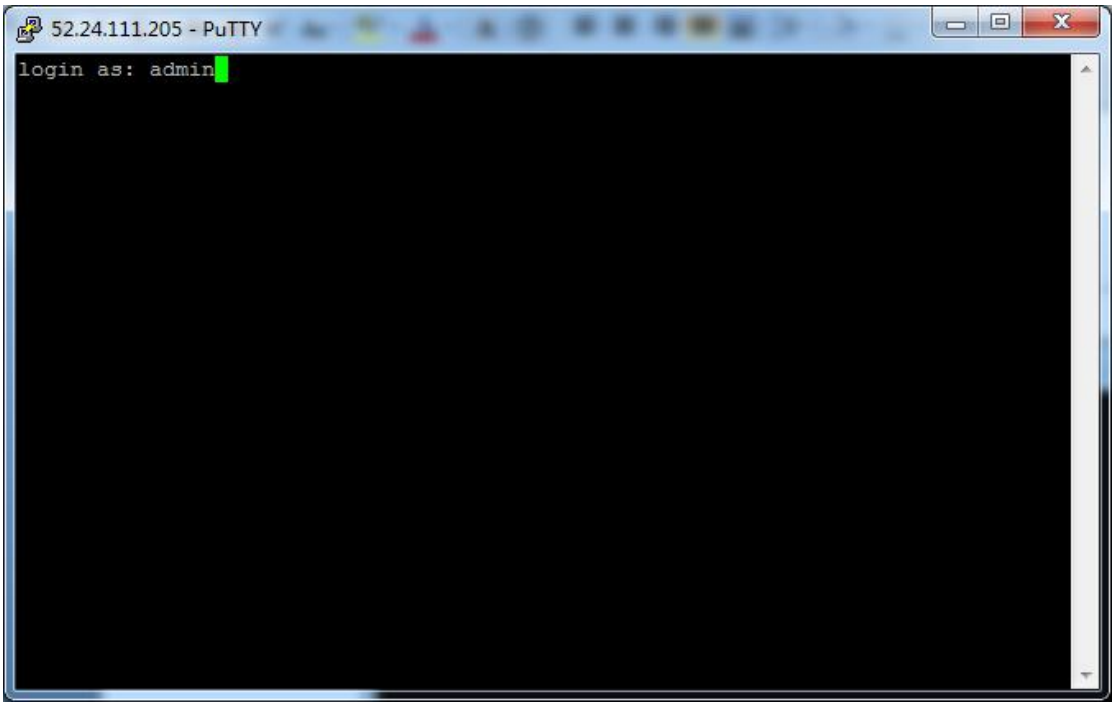


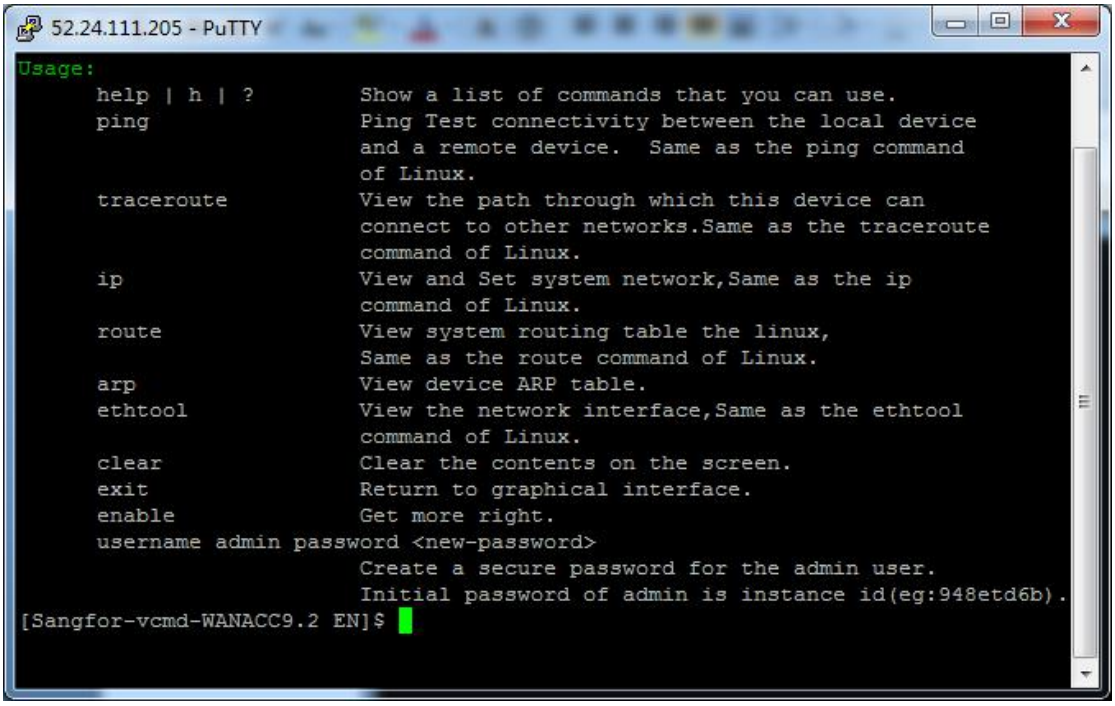

9、Use ppk key pair connect instance.

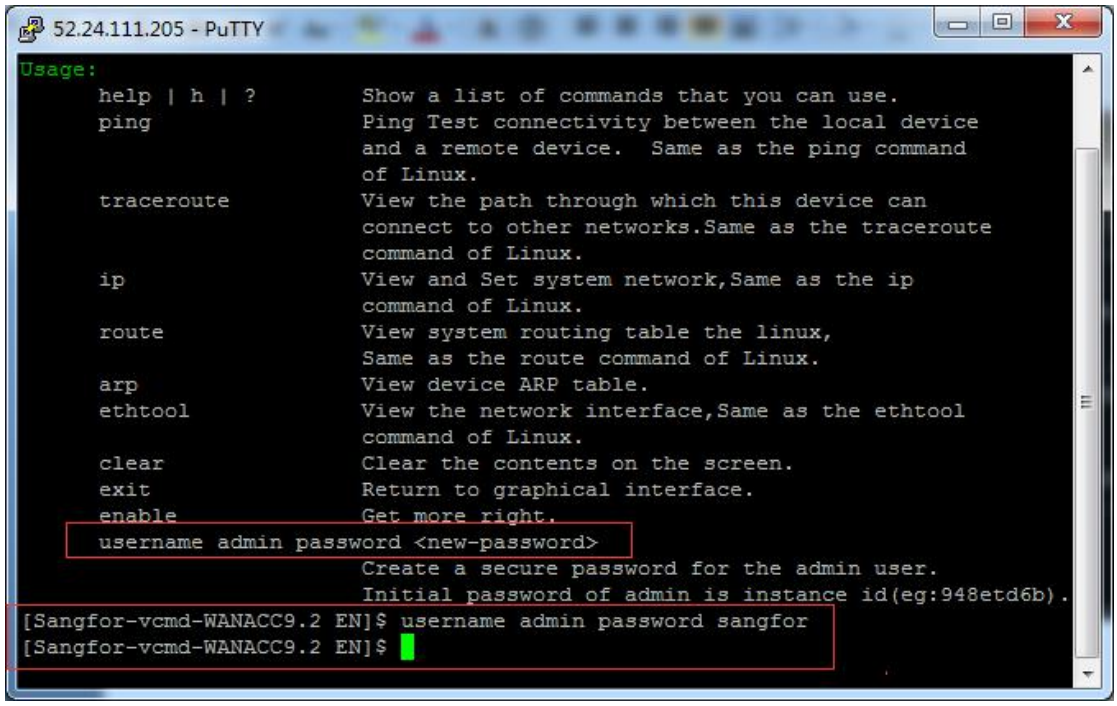

PuTTY Configuration
Category:
Bell
Features
Window
Appearance
Behaviour
Translation
Selection
Colours
Connection
Data
Proxy
Telnet
Rlogin
SSH
Kex
Cipher
Auth
TTY
X11
Tunnels
Bugs
More bugs
Basic options for your PuTTY session
Specify the destination you want to connect to
Host Name (or IP address)
Port
52.24.111.205
22
Connection type:
Raw
Telnet
Rlogin
SSH
Serial
Load, save or delete a stored session
Saved Sessions
Default Settings
Load
Save
Delete
Close window on exit:
Always
Never
Only on clean exit
About
Open
Cancel


PuTTY Configuration
Category:
Bell
Features
Window
Appearance
Behaviour
Translation
Selection
Colours
Connection
Data
Proxy
Telnet
Rlogin
SSH
Kex
Cipher
Auth
TTY
X11
Tunnels
Bugs
More bugs
Options controlling SSH authentication
Bypass authentication entirely (SSH-2 only)
Display pre-authentication banner (SSH-2 only)
Authentication methods
Attempt authentication using Pageant
Attempt TIS or CryptoCard auth (SSH-1)
Attempt "keyboard-interactive" auth (SSH-2)
Authentication parameters
Allow agent forwarding
Allow attempted changes of username in SSH-2
Private key file for authentication:
E:\sangfor\AWS\33cloud.ppk
Browse...
About
Open
Cancel

login as admin, and then click enter

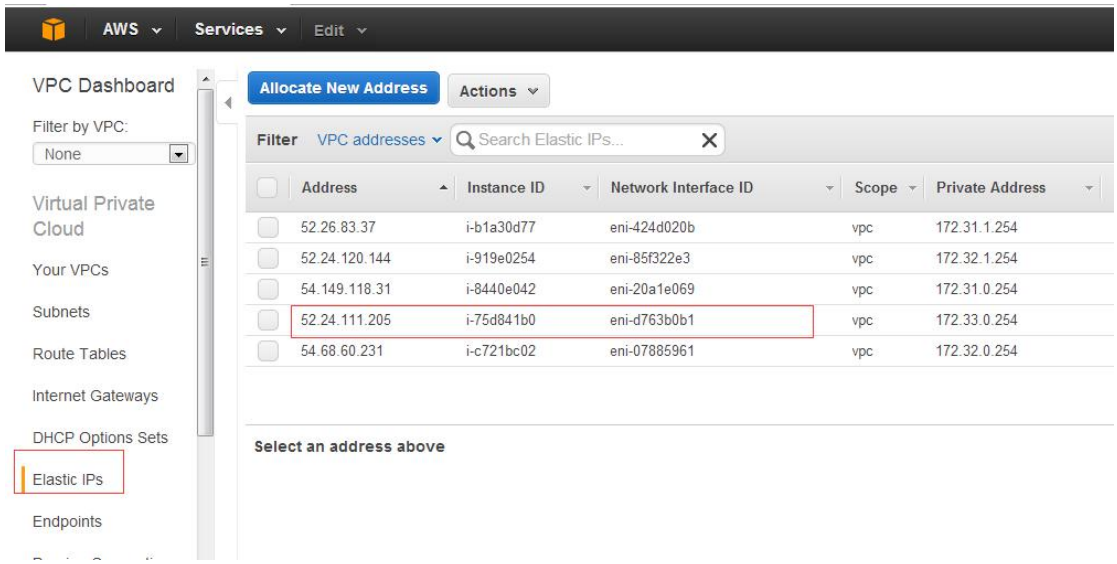


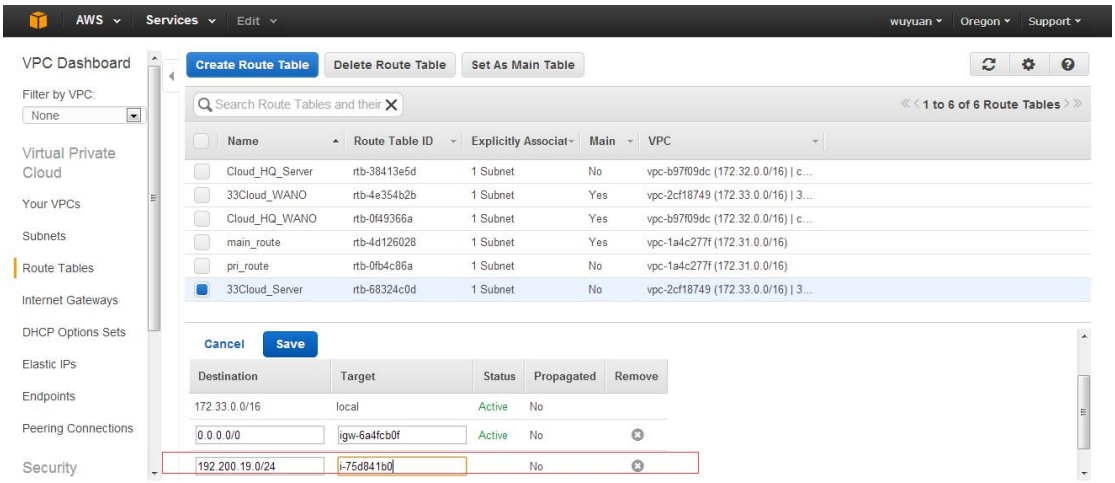



we can use 'username admin password xxx' change admin password , and use this account login webui

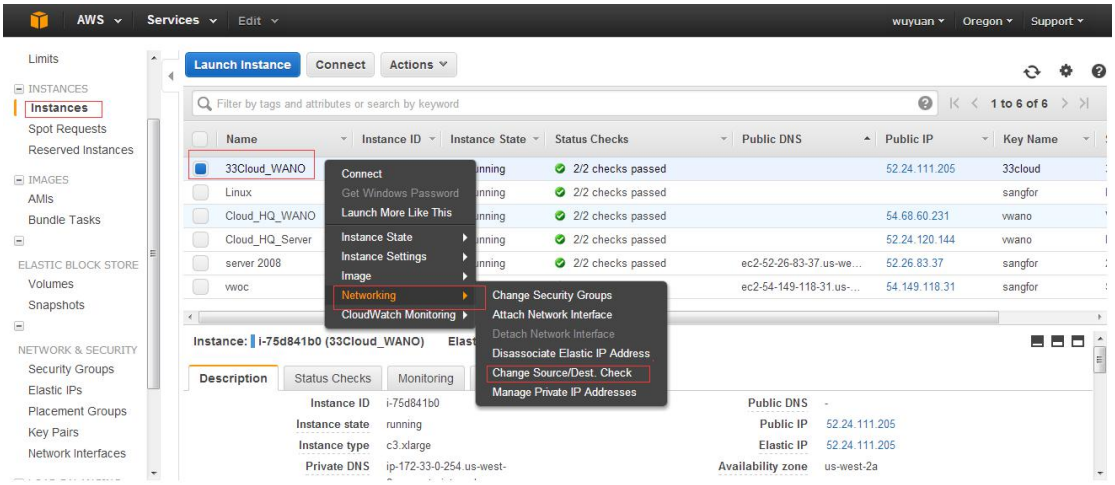
10、After vWANO created , we need to add route to other side subnet next gateway is vWANO. We can find this vWANO instance ID is i-75d841b0




add route in server subnet route table



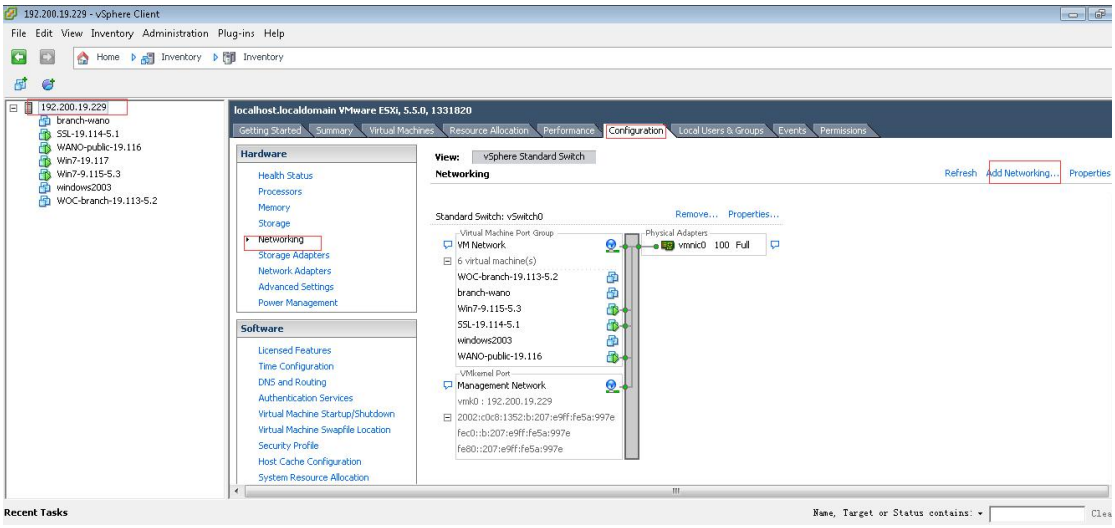

11、disable change Source/Dest check

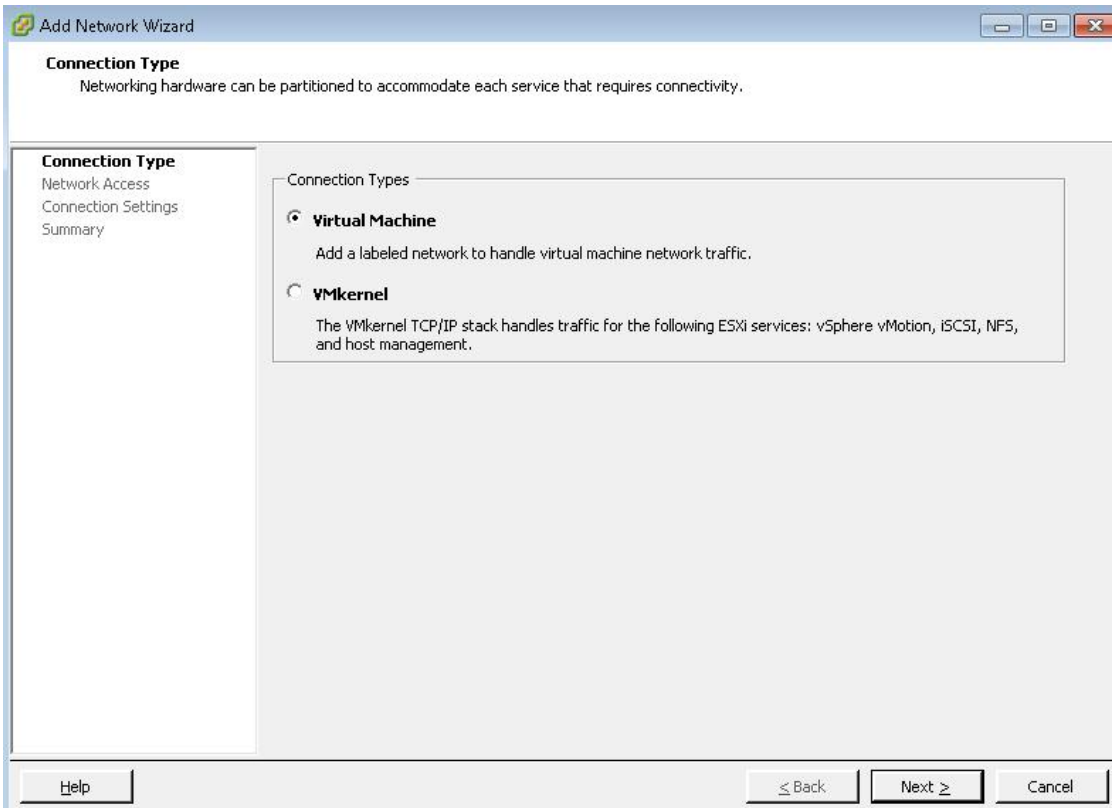


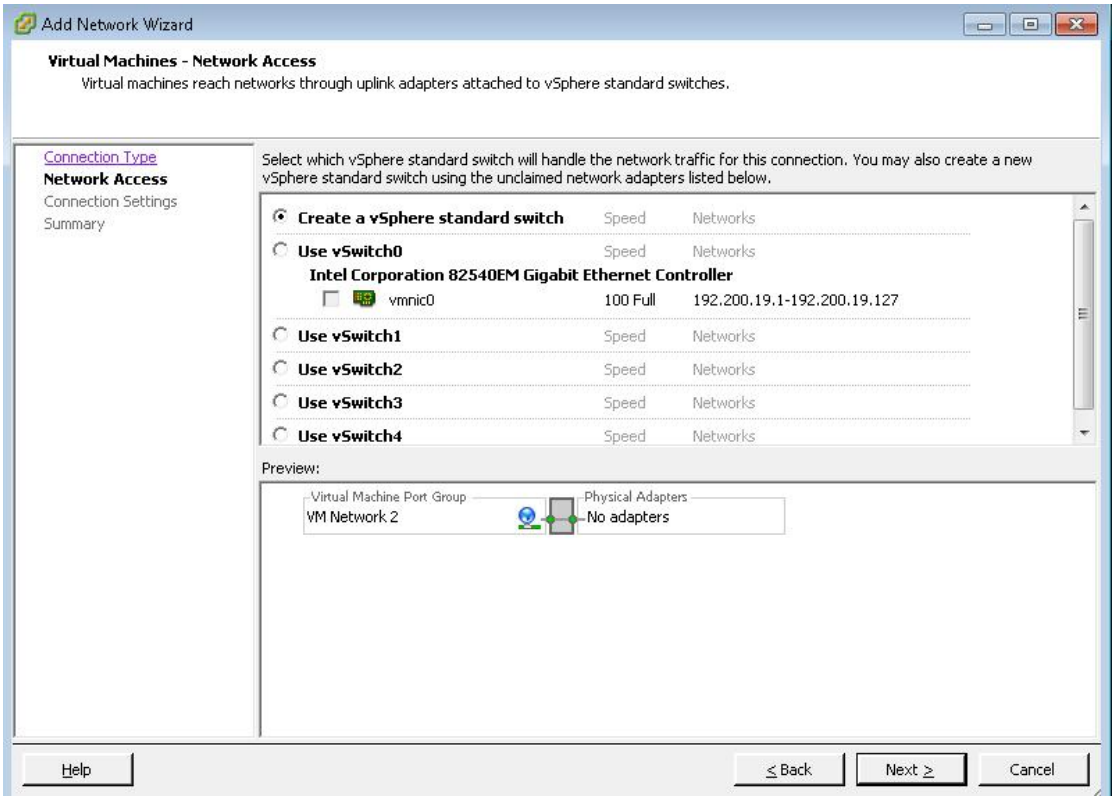

This is a security policy ,if enable this function, instance will drop packets after check source/dest ip

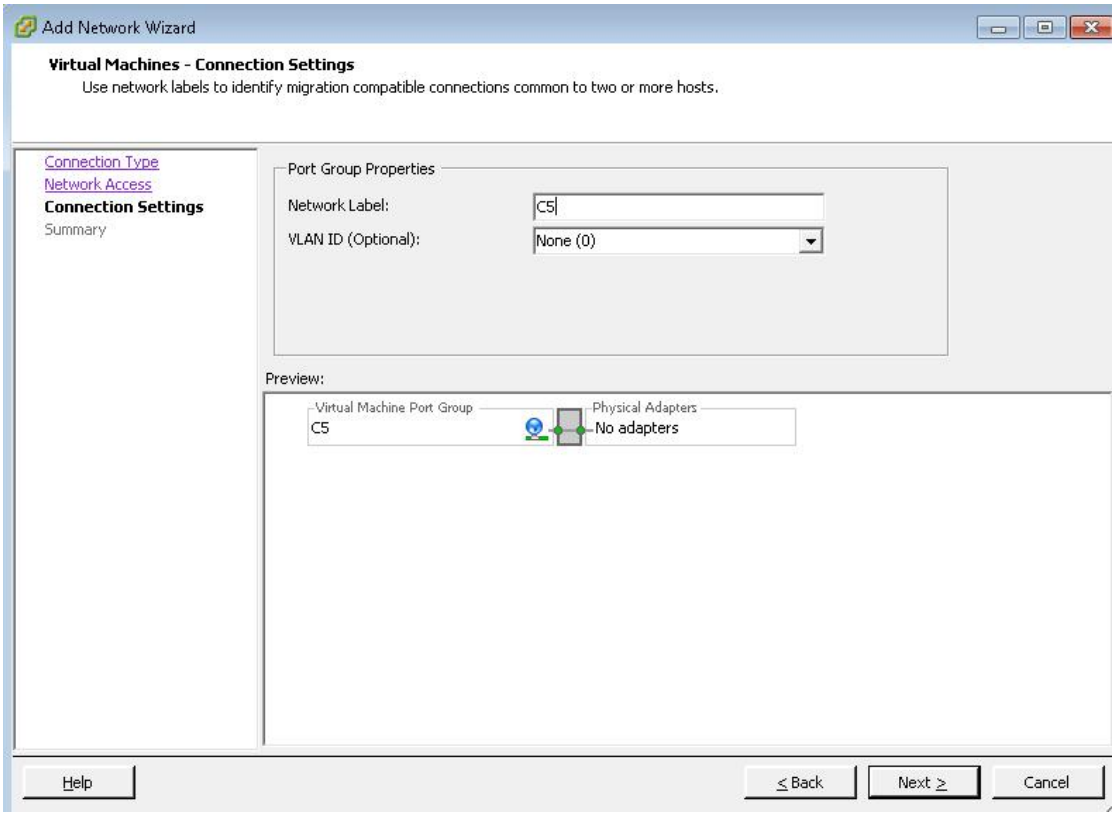
# vWANO in VMware

1、Add virtual switch

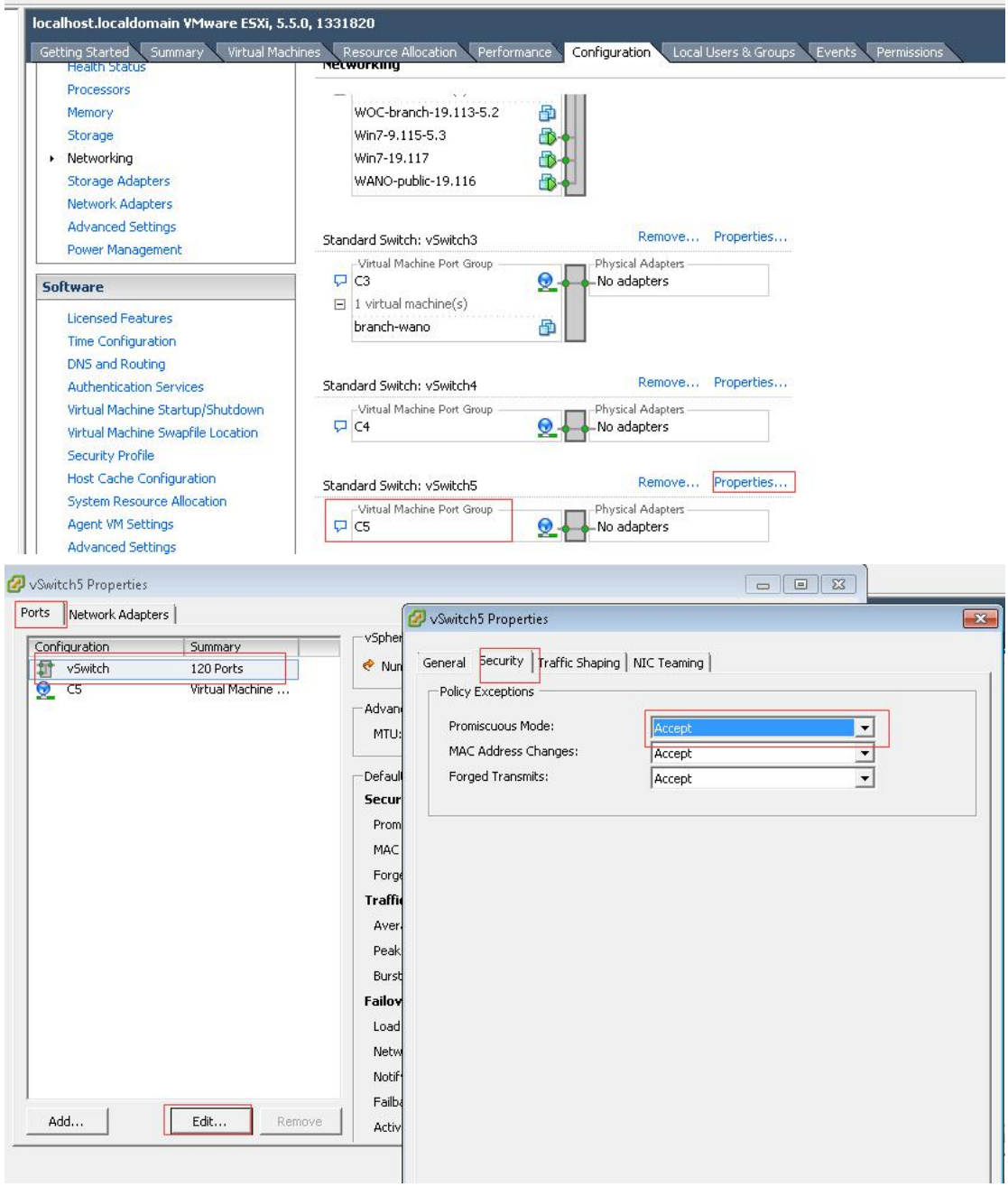

192.200.19.229 - vSphere Client
File Edit View Inventory Administration Plug-ins Help
Home Inventory Inventory
192.200.19.229
branch-wano
SSL-19.114-5.1
WANO-public-19.116
Win7-19.117
Win7-9.115-5.3
windows2003
WOC-branch-19.113-5.2
localhost.localdomain VMware ESXi, 5.5.0, 1331820
Getting Started Summary Virtual Machines Resource Allocation Performance Configuration Local Users & Groups Events Permissions
Hardware
Health Status
Processors
Memory
Storage
Networking
Storage Adapters
Network Adapters
Advanced Settings
Power Management
Software
Licensed Features
Time Configuration
DNS and Routing
Authentication Services
Virtual Machine Startup/Shutdown
Virtual Machine Swapfile Location
Security Profile
Host Cache Configuration
System Resource Allocation
View: vSphere Standard Switch
Networking
Refresh Add Networking... Properties
Standard Switch: vSwitch0
Remove... Properties...
Virtual Machine Port Group
VM Network
6 virtual machine(s)
WOC-branch-19.113-5.2
branch-wano
Win7-9.115-5.3
SSL-19.114-5.1
windows2003
WANO-public-19.116
Physical Adapters
vmnic0 100 Full
VMkernel Port
Management Network
vmk0 : 192.200.19.229
2002:c0c8:1352:b:207:e9ff:fe5a:997e
fec0::b:207:e9ff:fe5a:997e
fe80::207:e9ff:fe5a:997e
Recent Tasks
Name, Target or Status contains:


Add Network Wizard
Connection Type
Networking hardware can be partitioned to accommodate each service that requires connectivity.
Connection Type
Network Access
Connection Settings
Summary
Connection Types
Virtual Machine
Add a labeled network to handle virtual machine network traffic.
VMkernel
The VMkernel TCP/IP stack handles traffic for the following ESXi services: vSphere vMotion, iSCSI, NFS, and host management.
Help
< Back
Next >
Cancel

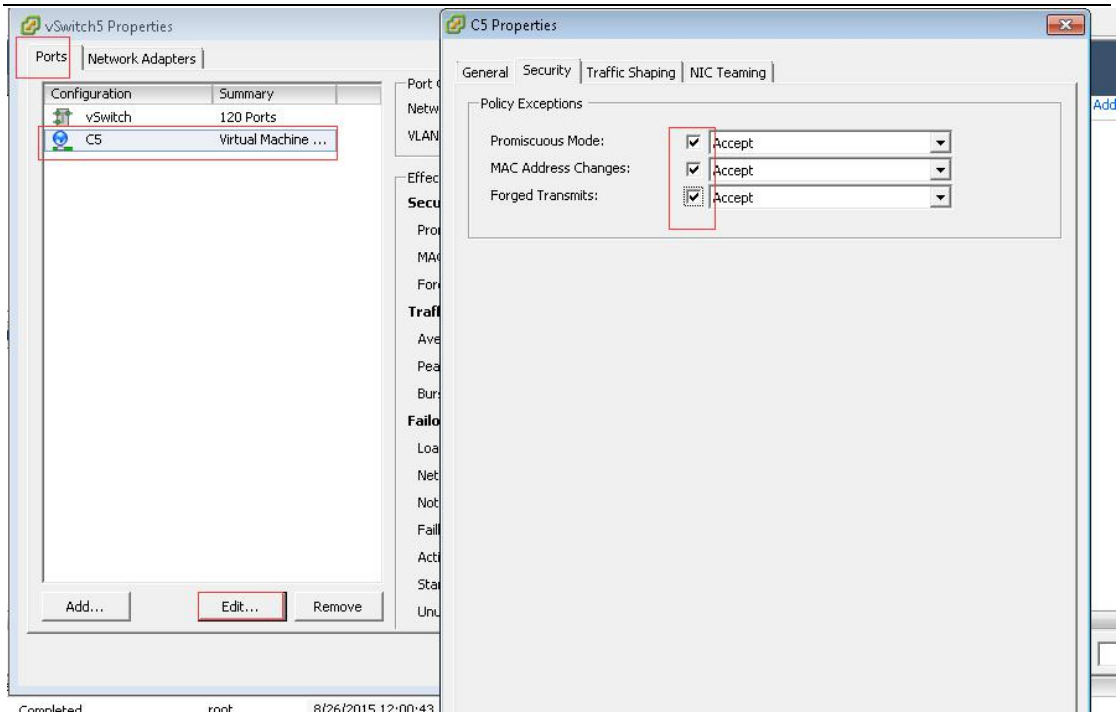


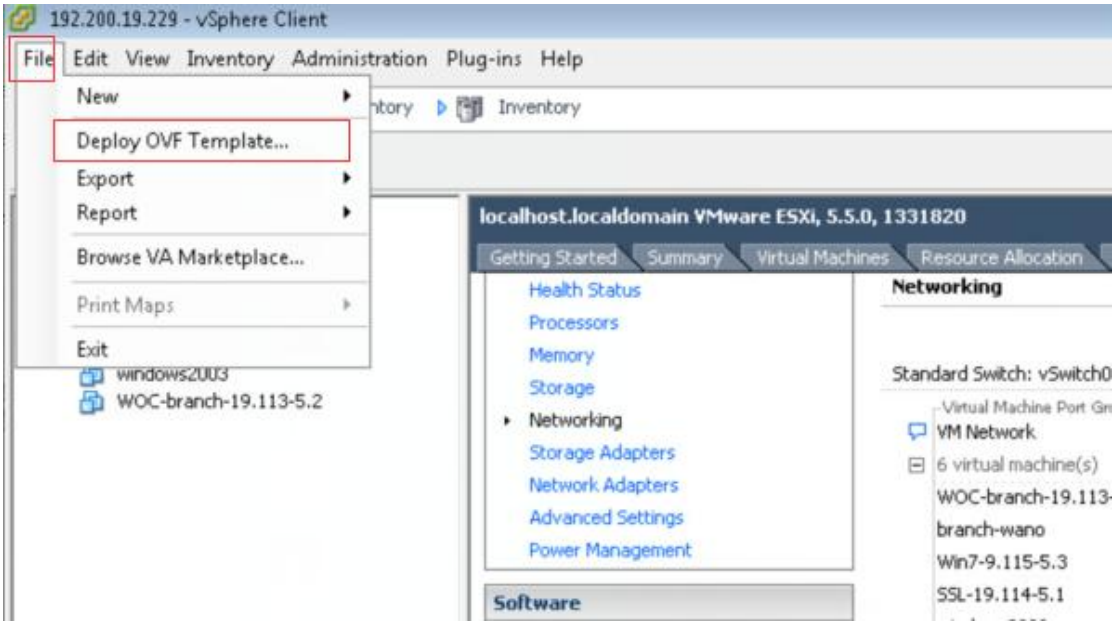

modify switch properties，enable promiscuous mode

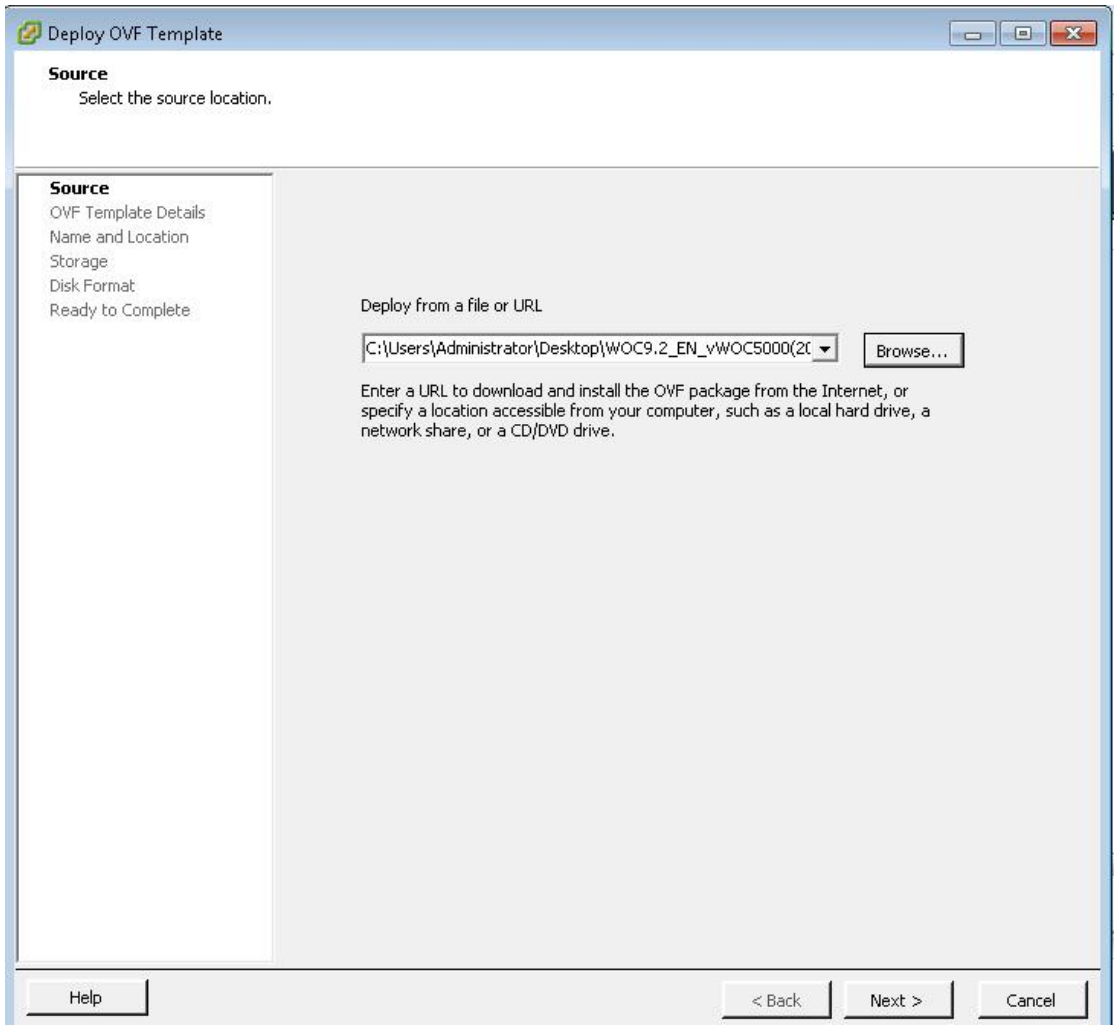

localhost.localdomain VMware ESXi, 5.5.0, 1331820
Getting Started
Summary
Virtual Machines
Resource Allocation
Performance
Configuration
Local Users & Groups
Events
Permissions
Health Status
Processors
Memory
Storage
Networking
Storage Adapters
Network Adapters
Advanced Settings
Power Management
Software
Licensed Features
Time Configuration
DNS and Routing
Authentication Services
Virtual Machine Startup/Shutdown
Virtual Machine Swapfile Location
Security Profile
Host Cache Configuration
System Resource Allocation
Agent VM Settings
Advanced Settings
Networking
WOC-branch-19.113-5.2
Win7-9.115-5.3
Win7-19.117
WANO-public-19.116
Standard Switch: vSwitch3
Remove...
Properties...
Virtual Machine Port Group
C3
1 virtual machine(s)
branch-wano
Physical Adapters
No adapters
Standard Switch: vSwitch4
Remove...
Properties...
Virtual Machine Port Group
C4
Physical Adapters
No adapters
Standard Switch: vSwitch5
Remove...
Properties...
Virtual Machine Port Group
C5
Physical Adapters
No adapters

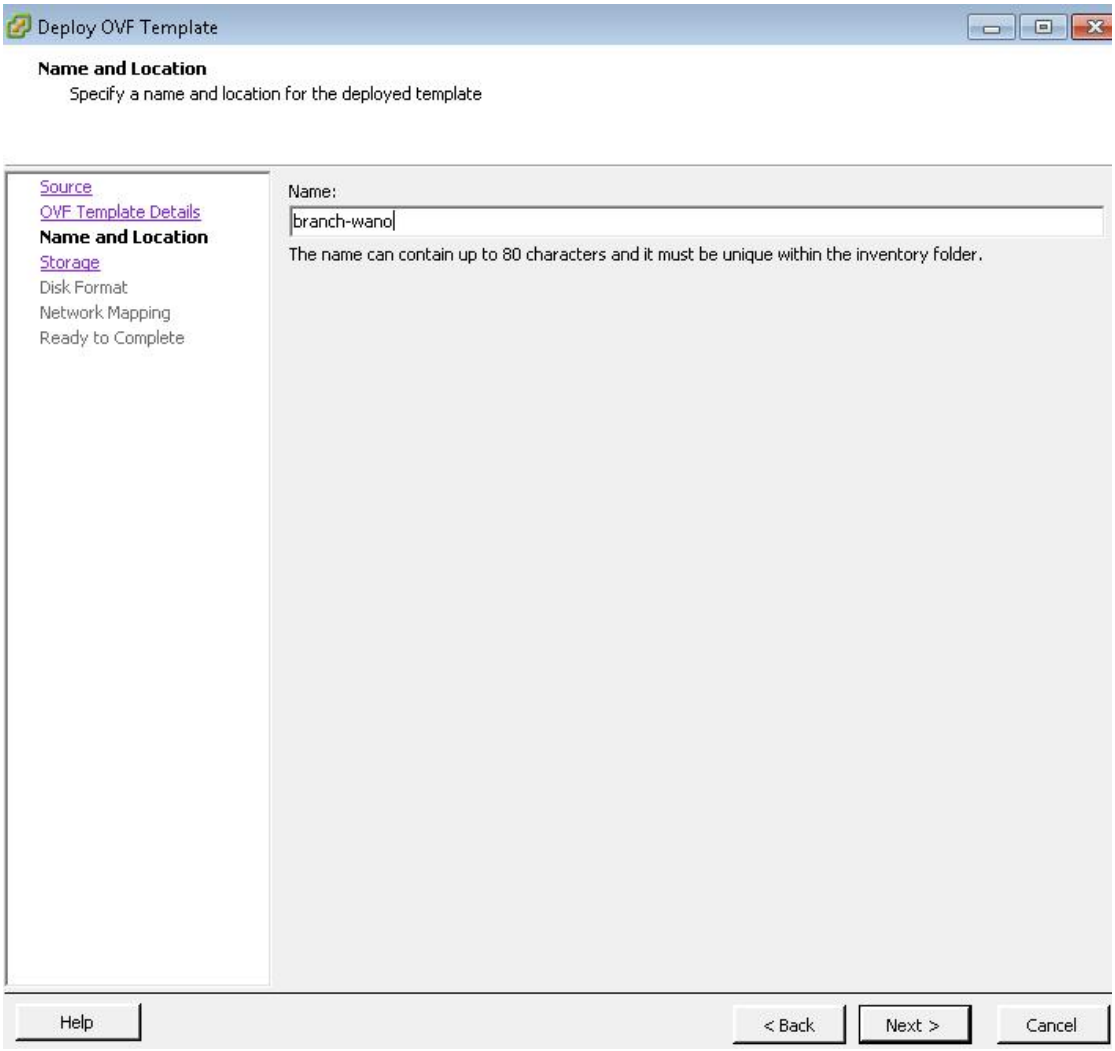

vSwitch5 Properties
Ports
Network Adapters
Configuration
Summary
vSwitch
120 Ports
C5
Virtual Machine ...
Add...
Edit...
Remove
vSwitch5 Properties
General
Security
Traffic Shaping
NIC Teaming
Policy Exceptions
Promiscuous Mode:
Accept
MAC Address Changes:
Accept
Forged Transmits:
Accept

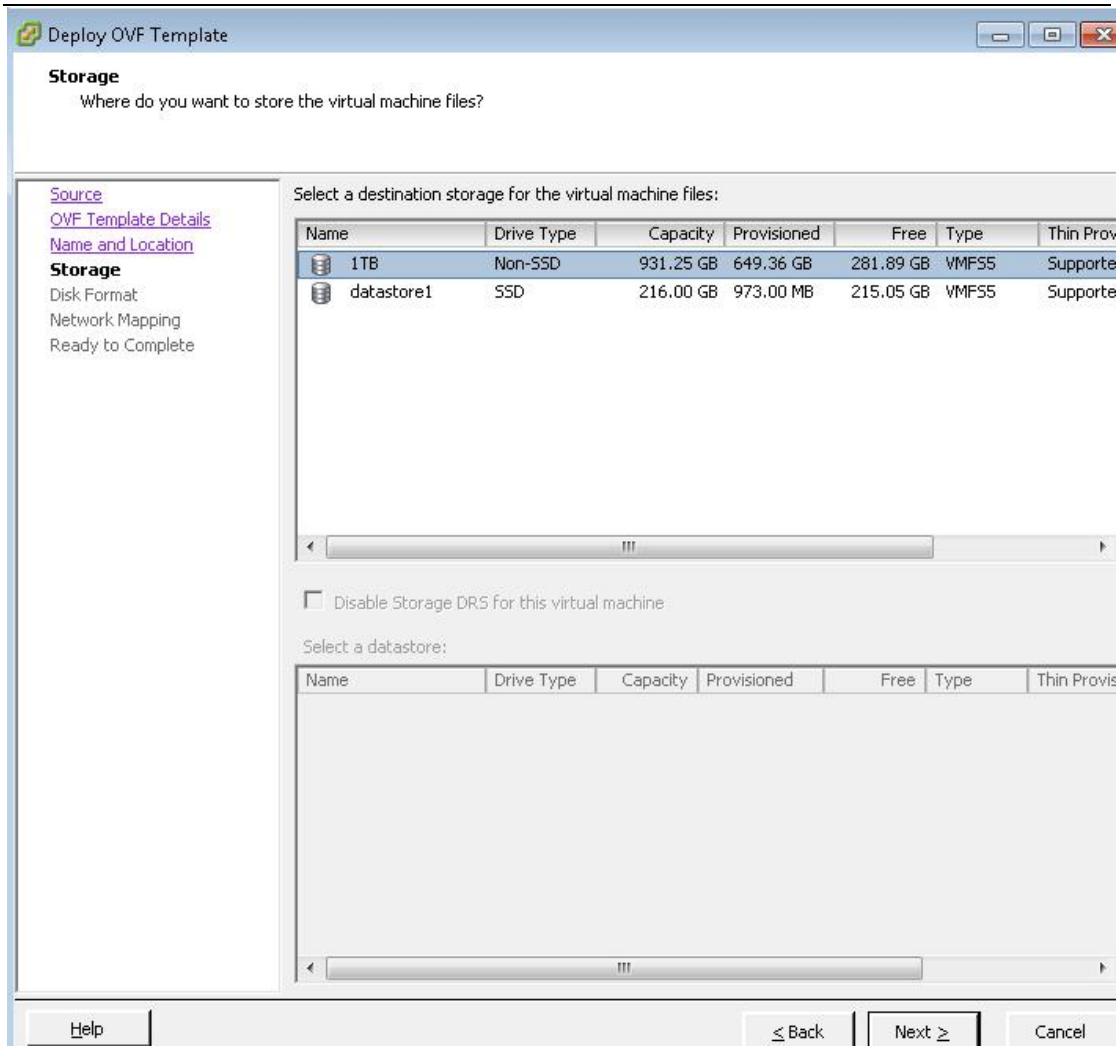


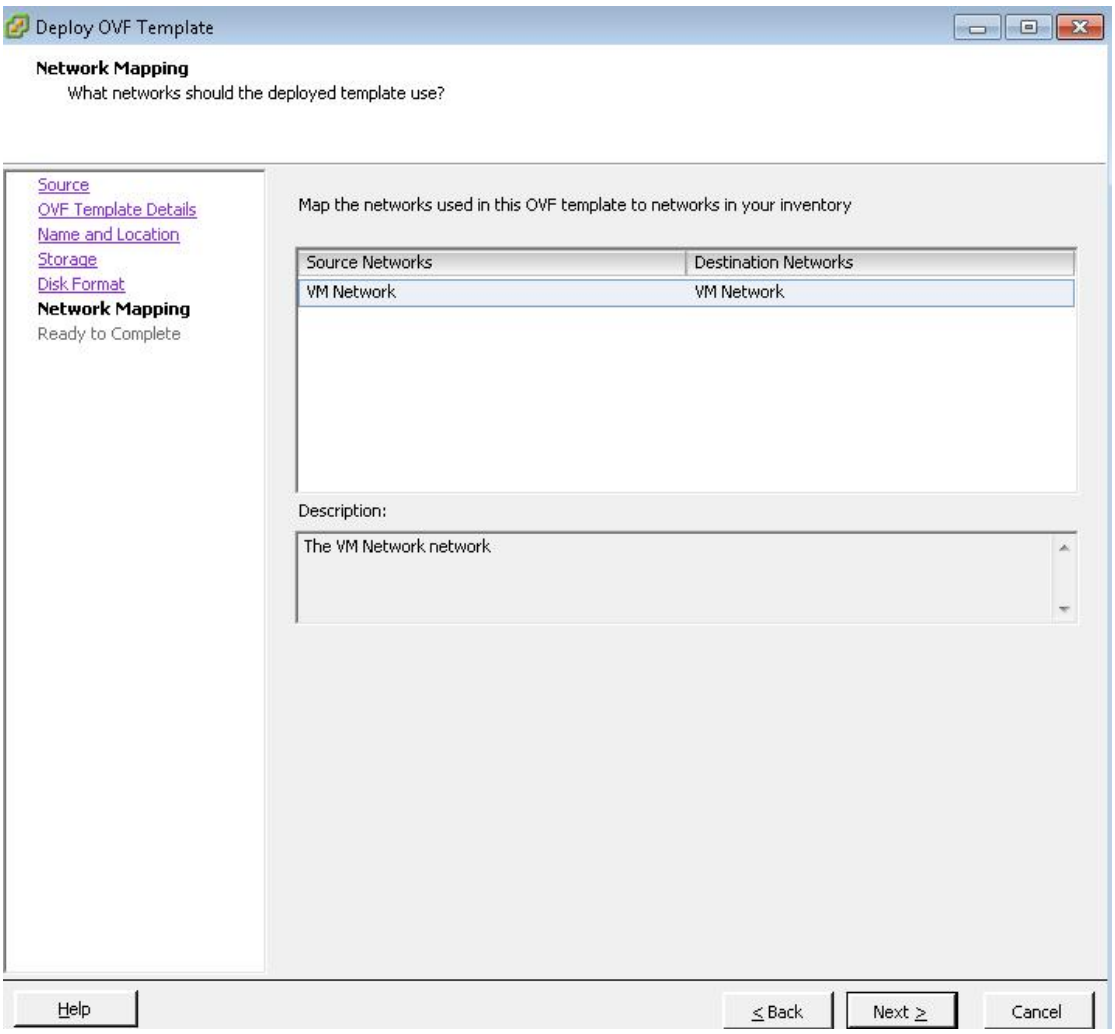

2、【File】>【Deploy OVF Template】>【upload vWANO ova file】>【Set virtual machine name】>【choose storage】>【choose network】>【finish】

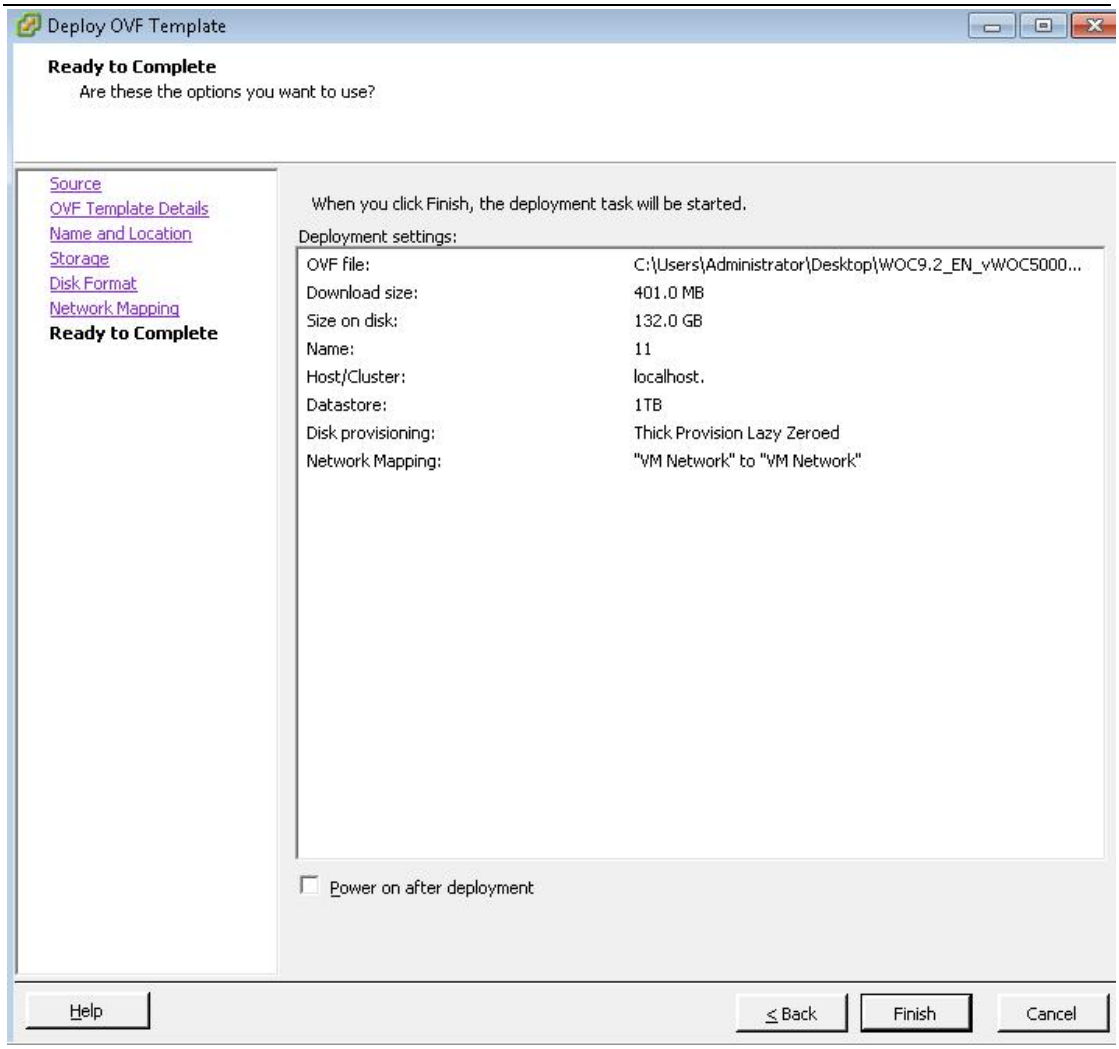



Deploy OVF Template
Source
Select the source location.
Source
OVF Template Details
Name and Location
Storage
Disk Format
Ready to Complete
Deploy from a file or URL
C:\Users\Administrator\Desktop\WOC9.2_EN_vWOC5000(2(
Browse...
Enter a URL to download and install the OVF package from the Internet, or specify a location accessible from your computer, such as a local hard drive, a network share, or a CD/DVD drive.
Help
< Back
Next >
Cancel

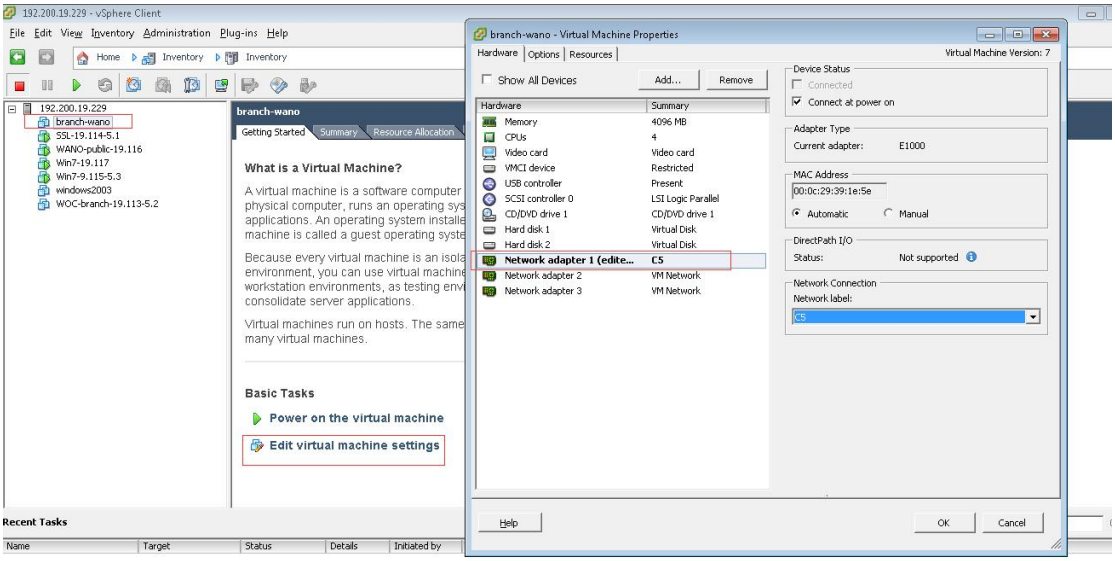

Deploy OVF Template
Name and Location
Specify a name and location for the deployed template
Source
OVF Template Details
Name and Location
Storage
Disk Format
Network Mapping
Ready to Complete
Name:
branch-wano
The name can contain up to 80 characters and it must be unique within the inventory folder.
Help
< Back
Next >
Cancel


Deploy OVF Template
Storage
Where do you want to store the virtual machine files?
Source
OVF Template Details
Name and Location
Storage
Disk Format
Network Mapping
Ready to Complete
Select a destination storage for the virtual machine files:
Name
Drive Type
Capacity
Provisioned
Free
Type
Thin Prov
1TB
Non-SSD
931.25 GB
649.36 GB
281.89 GB
VMFS5
Supporte
datastore1
SSD
216.00 GB
973.00 MB
215.05 GB
VMFS5
Supporte
Disable Storage DRS for this virtual machine
Select a datastore:
Name
Drive Type
Capacity
Provisioned
Free
Type
Thin Provis
Help
≤ Back
Next ≥
Cancel

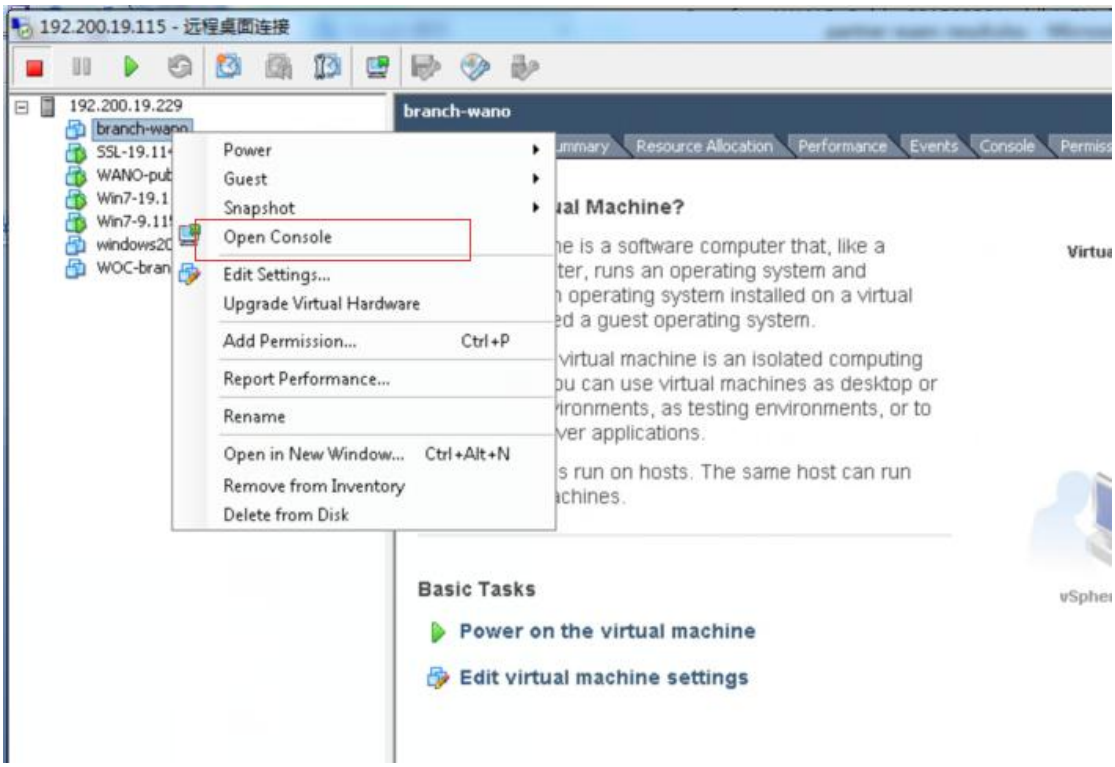

Deploy OVF Template
Network Mapping
What networks should the deployed template use?
Source
OVF Template Details
Name and Location
Storage
Disk Format
Network Mapping
Ready to Complete
Map the networks used in this OVF template to networks in your inventory
Source Networks
Destination Networks
VM Network
VM Network
Description:
The VM Network network
Help
≤ Back
Next ≥
Cancel



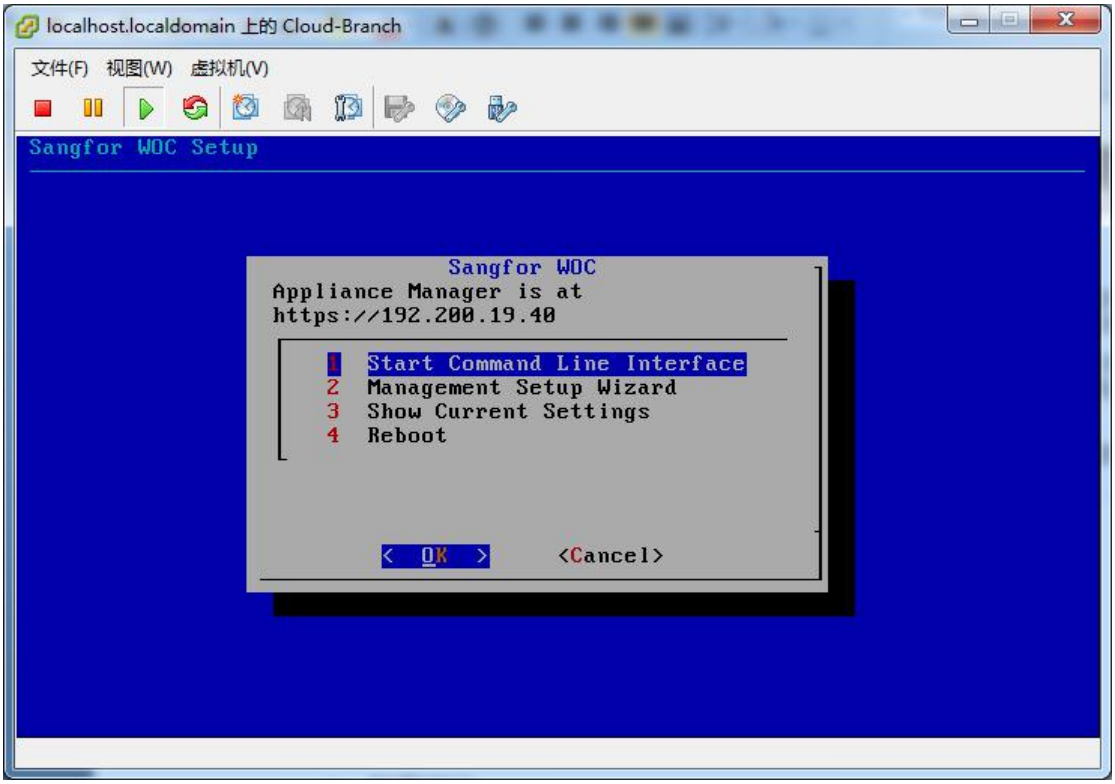

3、Edit network adapter location, adapter 1 is LAN interface , adapter 2 is DMZ interface, adapter 3 is WAN interface



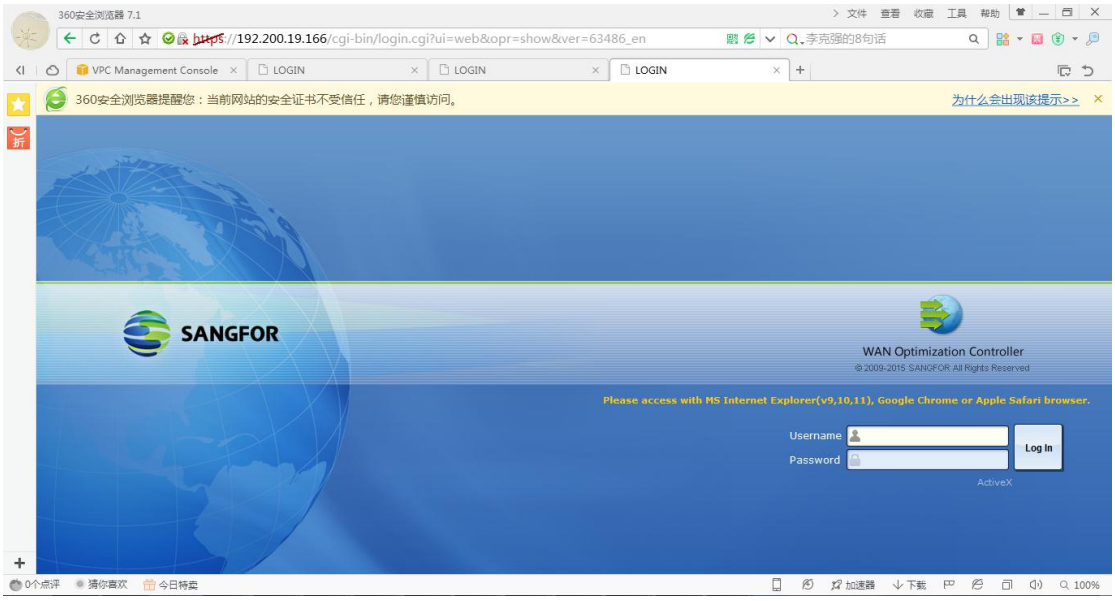

4、power on vWANO，and open console



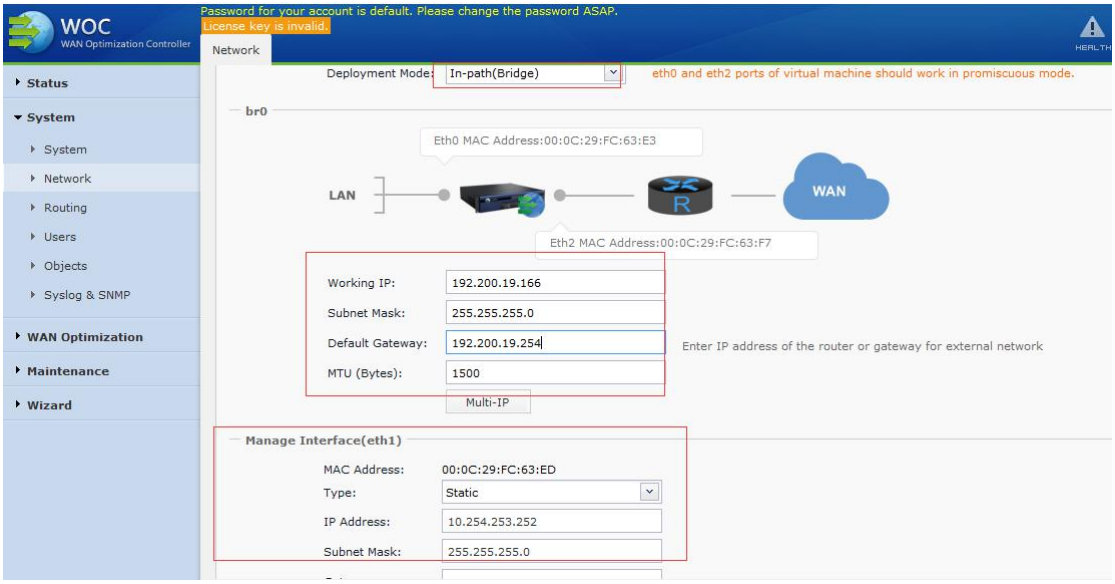

5、DMZ interface will auto get IP from DHCP server, if get IP fail, we can set a static IP by choose 2



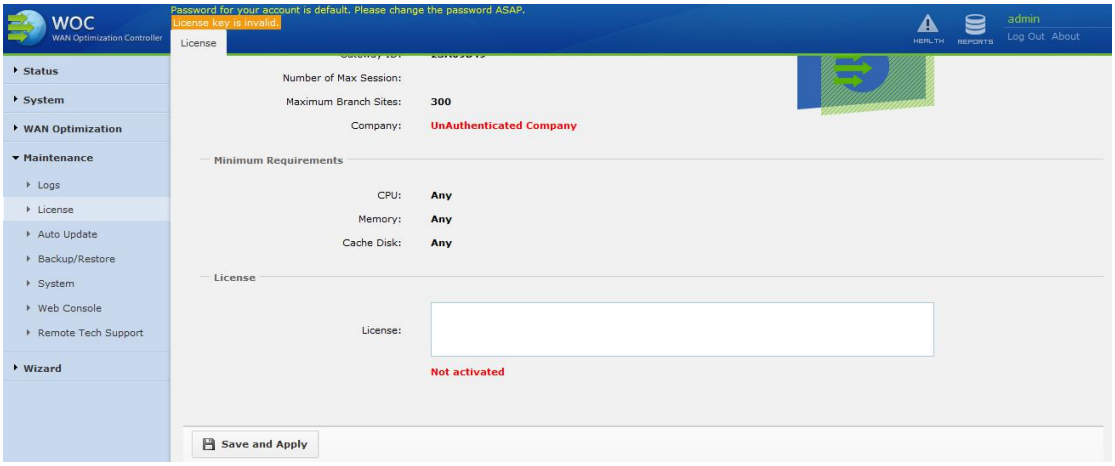

6、 Use https://192.200.19.166 admin/admin access into WEBUI




7、Modify network ,choose bridge mode, and change work IP to 192.200.19.166, and DMZ IP to other



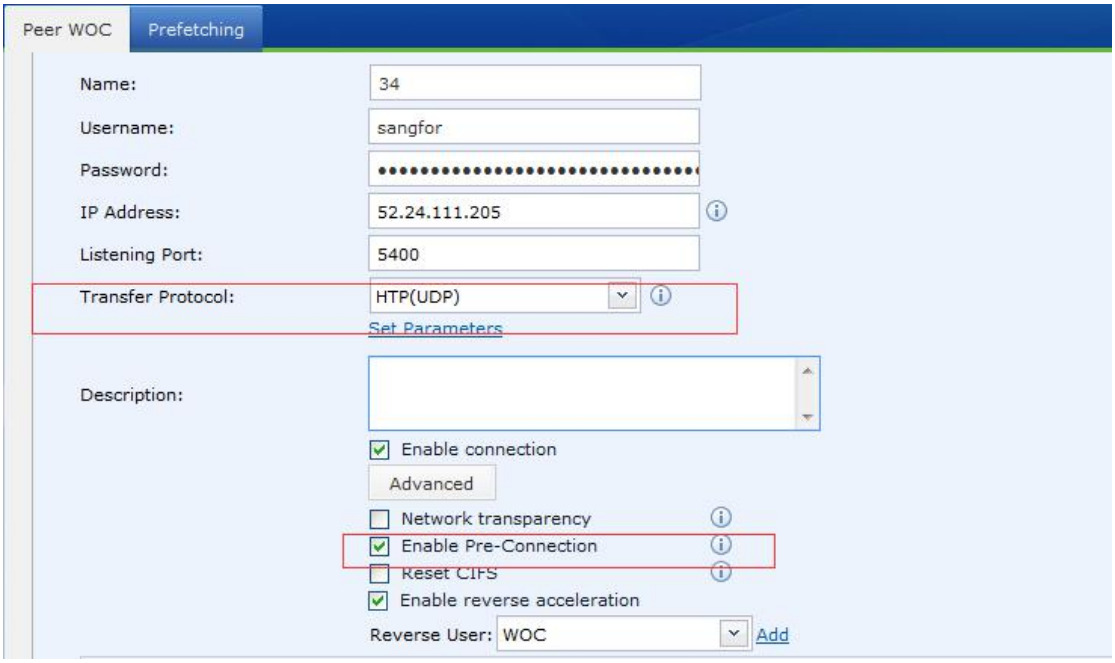

8、Get test license for a month，All southeast Asian customer send contacts, phone number, email, company name to vincent@sangfor.com（apply earlier）




9、other acceleration configuration

such as local subnet / WAN optimization client and so on

Note: build acceleration tunnel with cloud vWANO must use HTP(UDP) and enable Pre-Connection

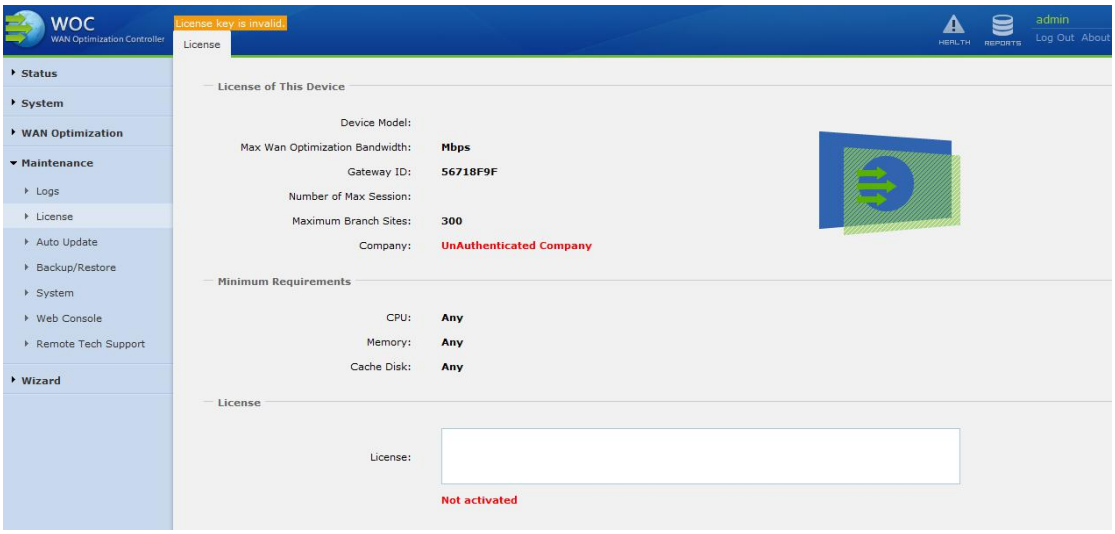



10、Modify other virtual server network , change server adapter to vWANO LAN interface switch.

# Configure vWANO

1、Use https://public IP access into vWANO webui

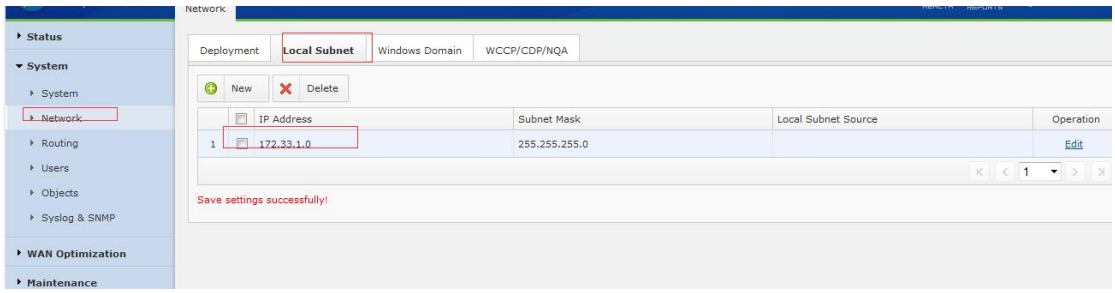
2、 Get license, All south east Asia customer send Contacts name/Phone number/Company name/Email address to vincent@sangfor.com (early apply)




3、Configure local subnet

In this Case server sbunet is 172.33.1.0/24 and not in WANO subnet, so need to add to local subnet.

Branch PC in WANO subnet, so no need to add to local subnet.

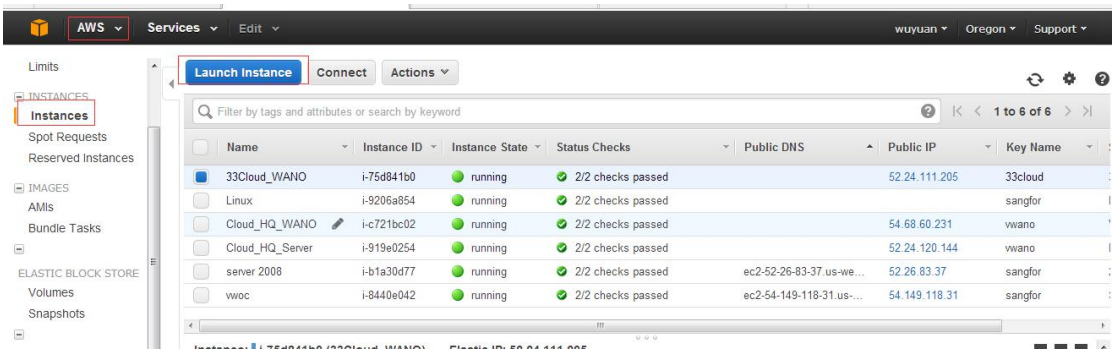


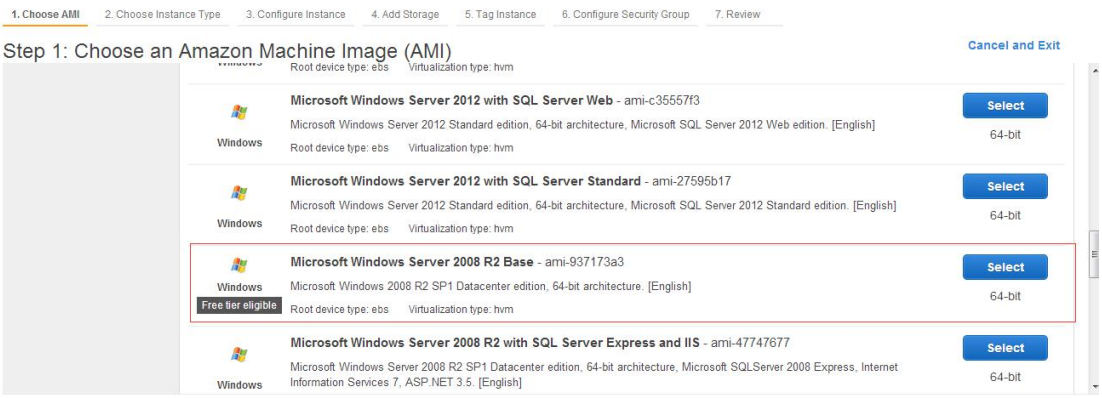

4、Other acceleration configuration

Such as acceleration account ,acceleration policy and so on.

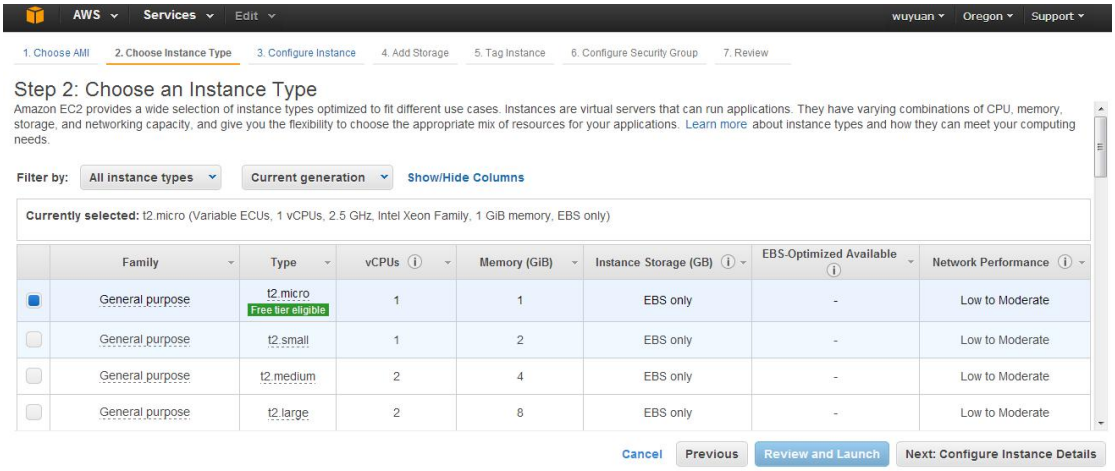
# Server in AWS

1、Launch instance

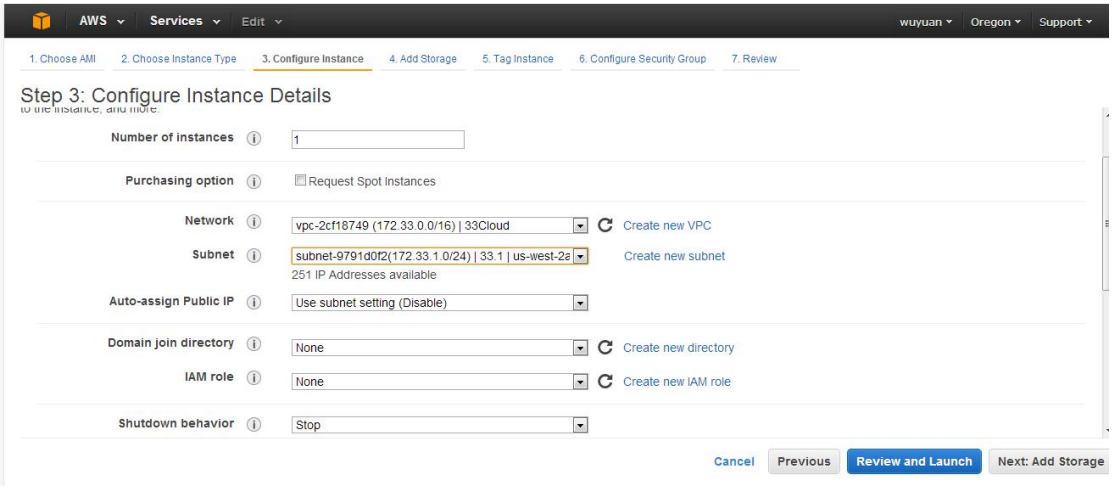


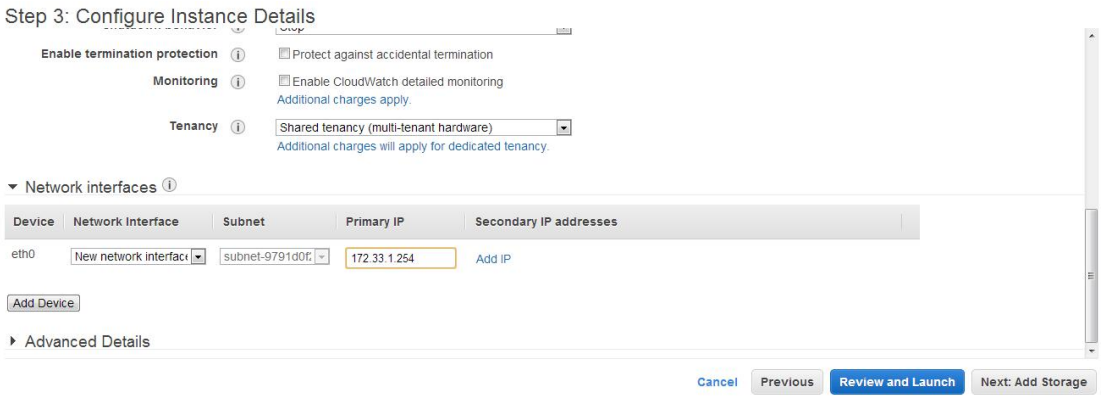



2、choose



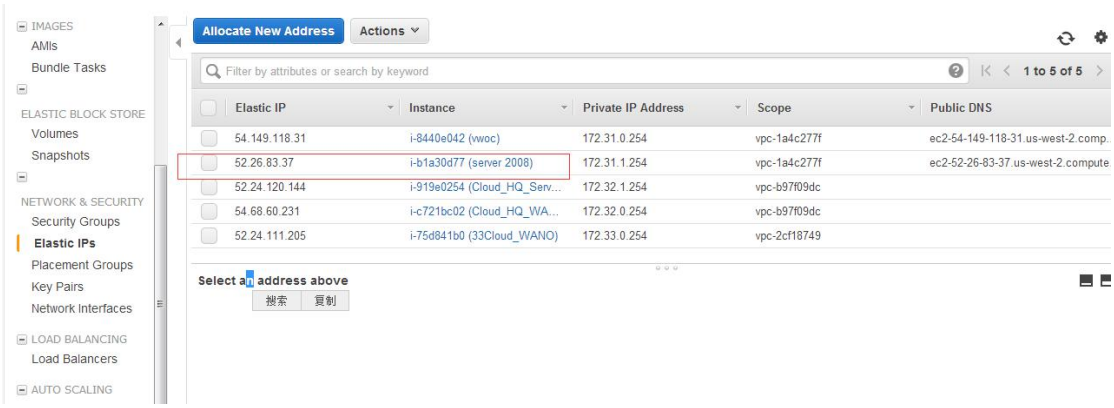

3、Configure instance details



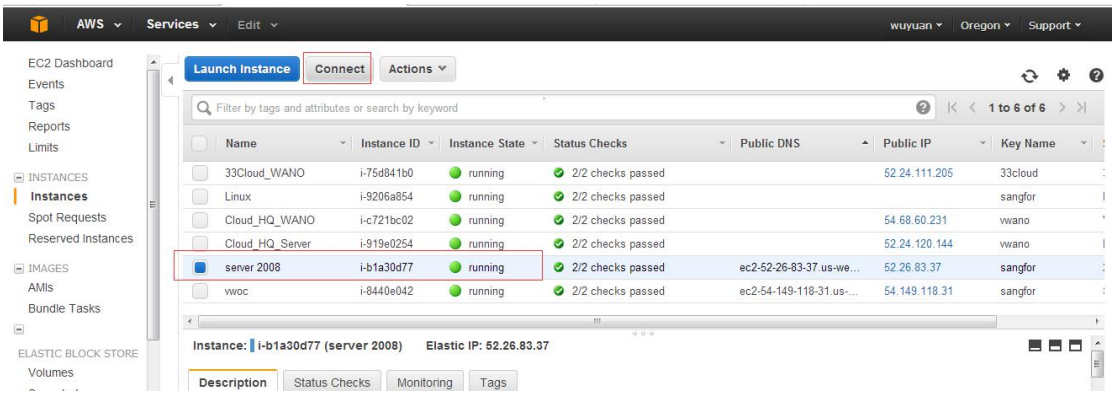


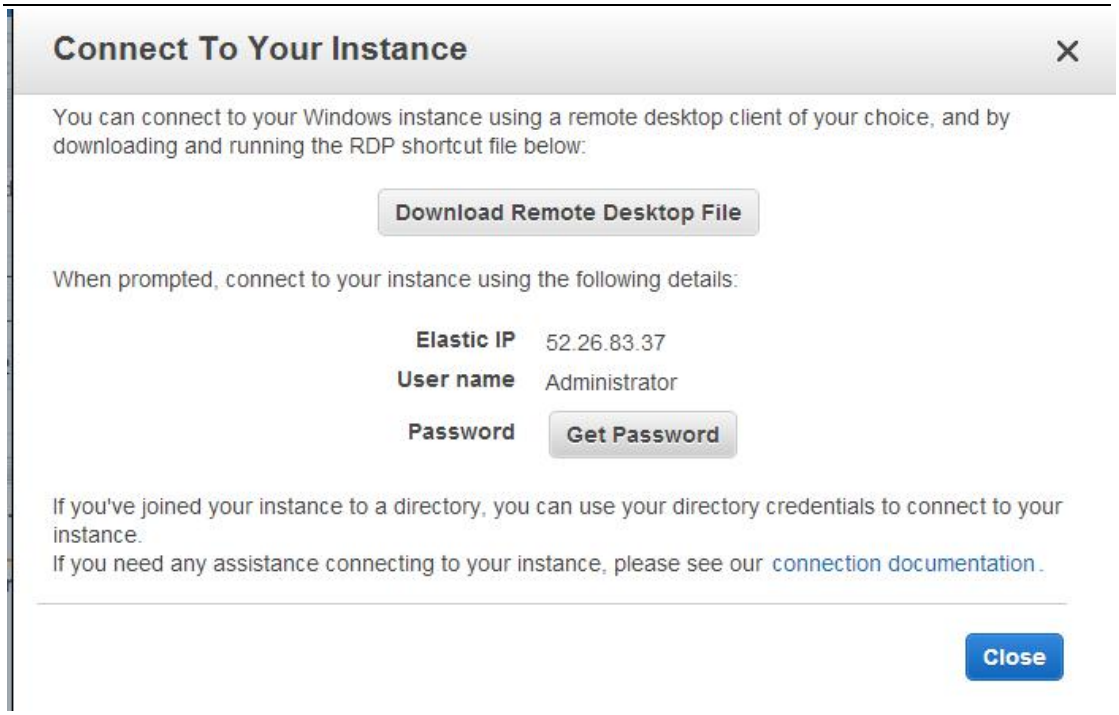

4、Other configuration can keep default and run instance.

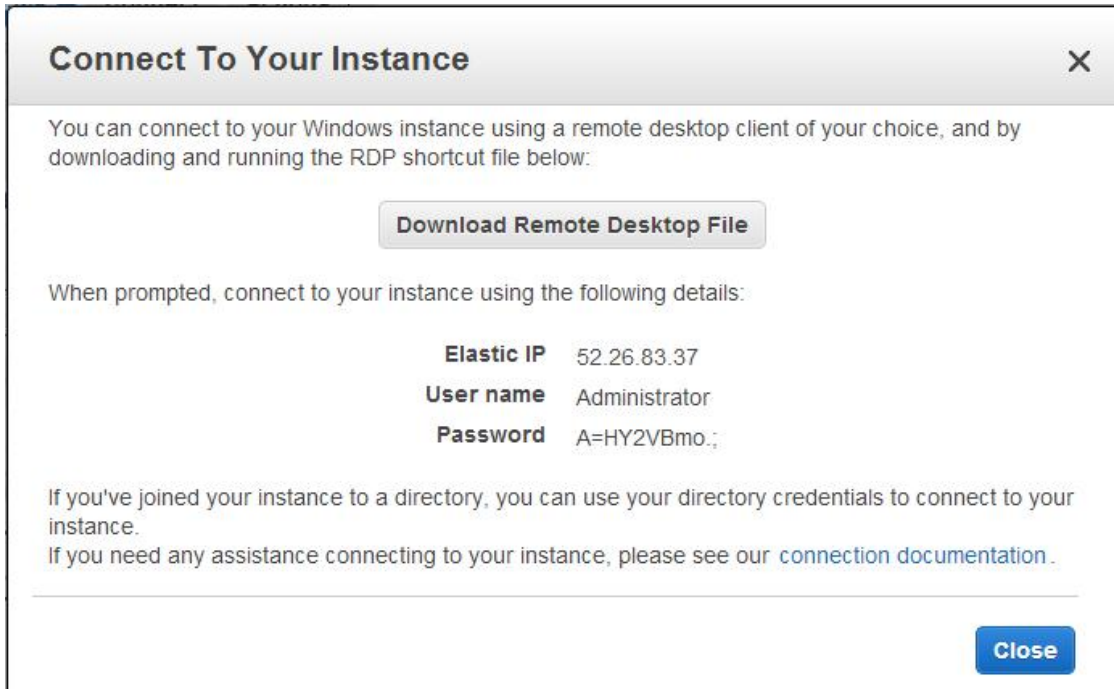
5、Allocate elastic IPS




6、Back to instance and connect to server, Use key pair to get administrator and then remote desktop to server



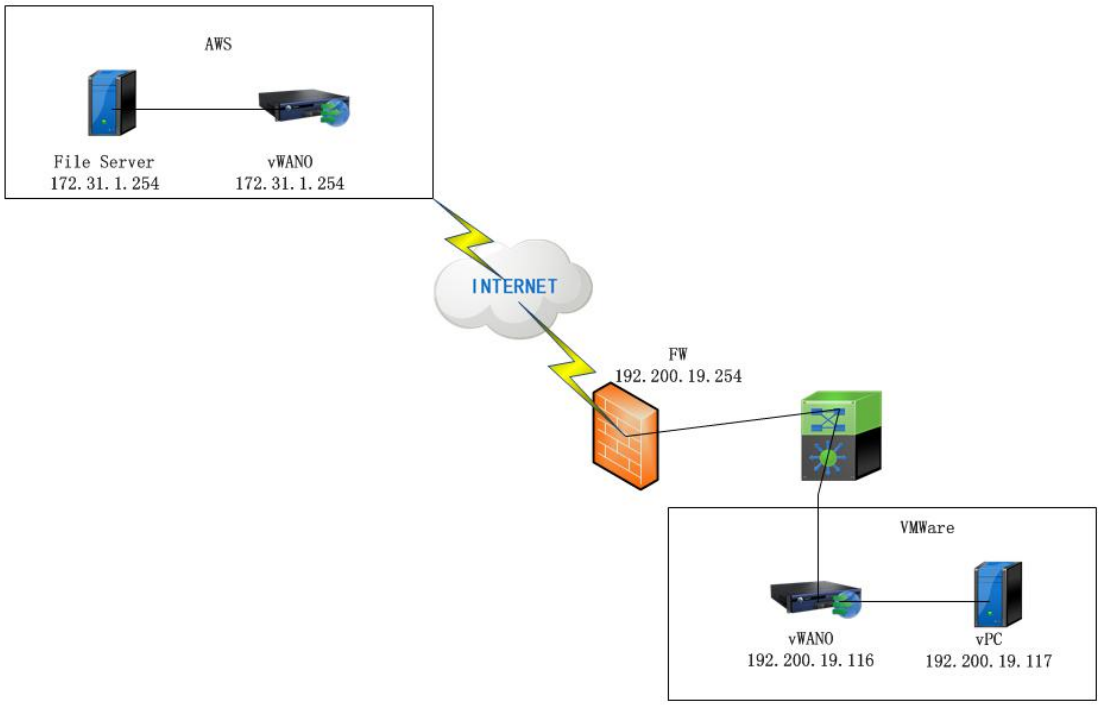



7、After get the password ,customer can deploy their server as normal.

# Actually test：

## Local vWANO/WANO build acceleration tunnel with AWS cloud vWANO by elastic IP

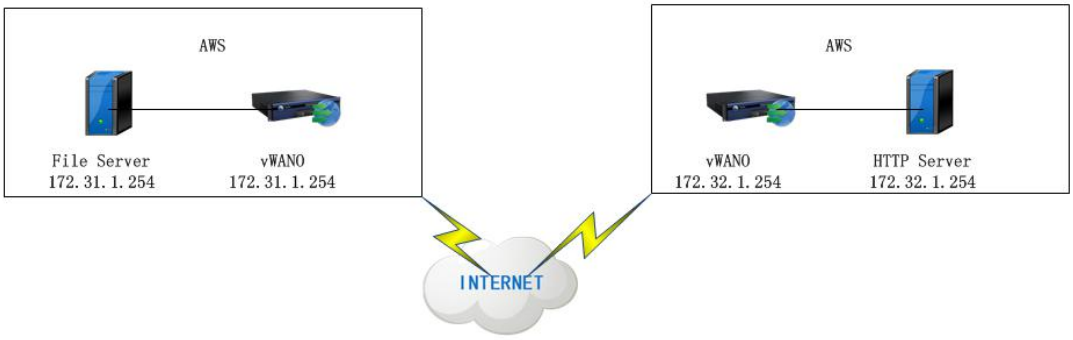



In this solution, Server deployed in AWS and AWS vWANO as HQ, branch vWANO deployed as bridge mode.

HQ ：create a acceleration account, acceleration policy, local subnet, server route table add route destination to branch next gateway to HQ vWANO

Branch: Use HTP(udp) transfer to build acceleration tunnel with HQ and enable Pre-connection and add local subnet

# AWS cloud vWANO build acceleration tunnel with AWS cloud vWANO by elastic IP

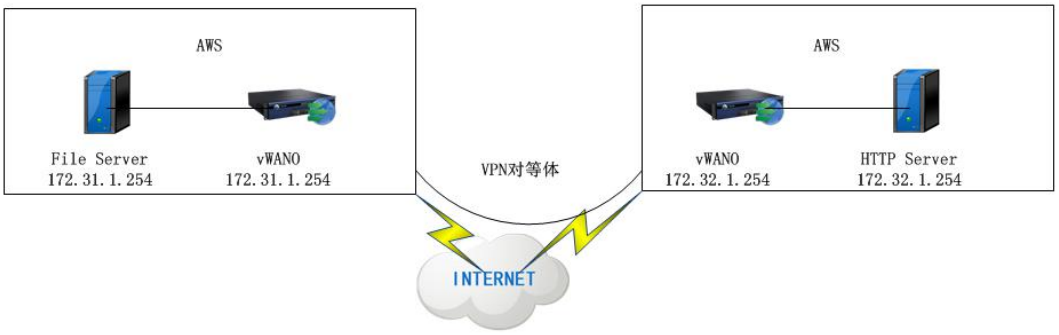



In this solution we can define one side is HQ and other side is branch

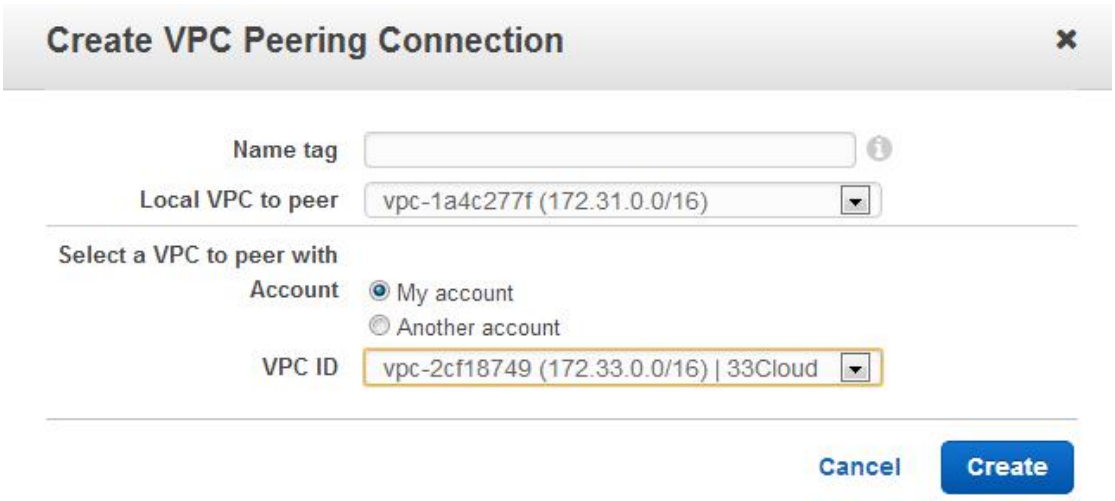
HQ ：create a acceleration account, acceleration policy, local subnet, server route table add route destination to branch next gateway to HQ vWANO

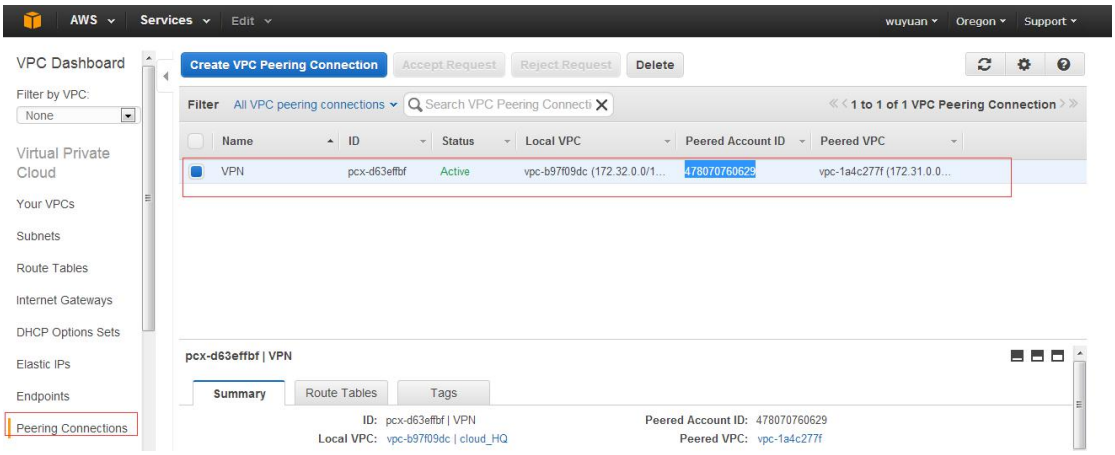
Branch: Use HTP(udp) transfer to build acceleration tunnel with HQ and enable Pre-connection and add local subnet

# AWS cloud vWANO build acceleration tunnel with AWS cloud vWANO use private IP by peering connections

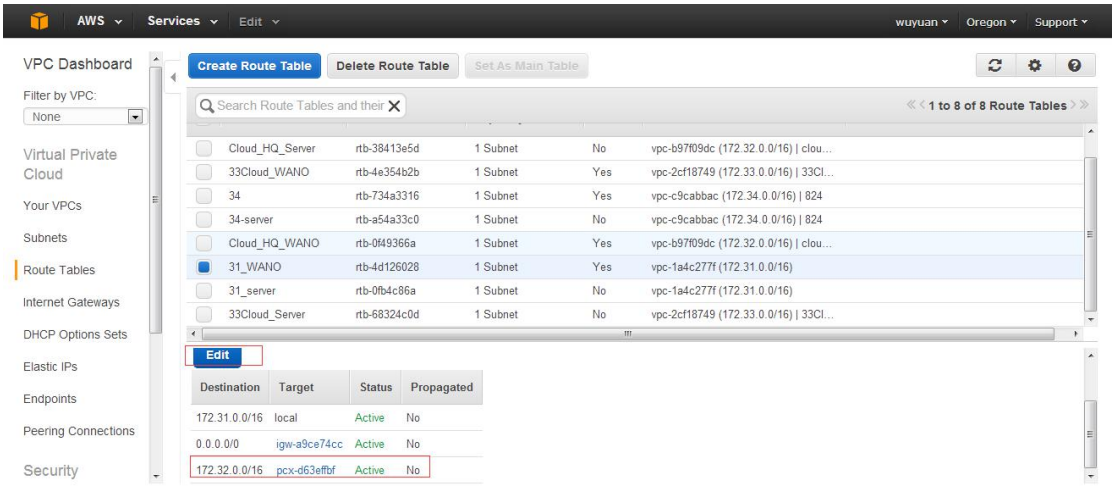


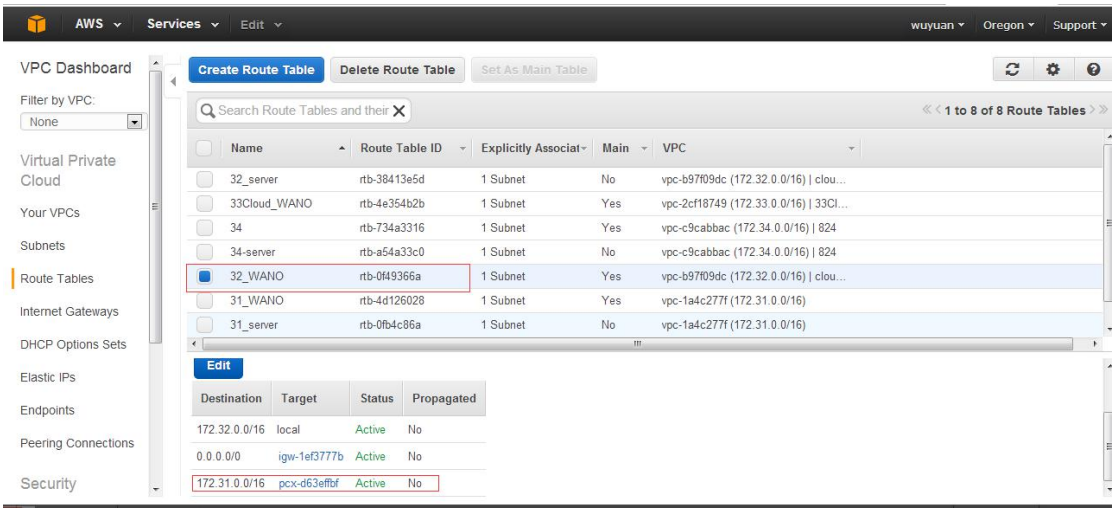

1、Add peering connections


Create VPC Peering Connection
Name tag
Local VPC to peer
vpc-1a4c277f (172.31.0.0/16)
Select a VPC to peer with
Account
My account
Another account
VPC ID
vpc-2cf18749 (172.33.0.0/16) | 33Cloud
Cancel
Create


AWS
Services
Edit
wuyuan
Oregon
Support
VPC Dashboard
Filter by VPC:
None
Virtual Private Cloud
Your VPCs
Subnets
Route Tables
Internet Gateways
DHCP Options Sets
Elastic IPs
Endpoints
Peering Connections
Create VPC Peering Connection
Accept Request
Reject Request
Delete
Filter
All VPC peering connections
Search VPC Peering Connecti
1 to 1 of 1 VPC Peering Connection
Name
ID
Status
Local VPC
Peered Account ID
Peered VPC
VPN
pcx-d63effbf
Active
vpc-b97f09dc (172.32.0.0/1...
478070760629
vpc-1a4c277f (172.31.0.0...
pcx-d63effbf | VPN
Summary
Route Tables
Tags
ID: pcx-d63effbf | VPN
Local VPC: vpc-b97f09dc | cloud_HQ
Peered Account ID: 478070760629
Peered VPC: vpc-1a4c277f

2、Add route


AWS
Services
Edit
wuyuan
Oregon
Support
VPC Dashboard
Filter by VPC:
None
Virtual Private Cloud
Your VPCs
Subnets
Route Tables
Internet Gateways
DHCP Options Sets
Elastic IPs
Endpoints
Peering Connections
Security
Create Route Table
Delete Route Table
Set As Main Table
Search Route Tables and their
1 to 8 of 8 Route Tables
Cloud_HQ_Server rtb-38413e5d 1 Subnet No vpc-b97f09dc (172.32.0.0/16) | clou...
33Cloud_WANO rtb-4e354b2b 1 Subnet Yes vpc-2cf18749 (172.33.0.0/16) | 33Cl...
34 rtb-734a3316 1 Subnet Yes vpc-c9cabbac (172.34.0.0/16) | 824
34-server rtb-a54a33c0 1 Subnet No vpc-c9cabbac (172.34.0.0/16) | 824
Cloud_HQ_WANO rtb-0f49366a 1 Subnet Yes vpc-b97f09dc (172.32.0.0/16) | clou...
31_WANO rtb-4d126028 1 Subnet Yes vpc-1a4c277f (172.31.0.0/16)
31_server rtb-0fb4c86a 1 Subnet No vpc-1a4c277f (172.31.0.0/16)
33Cloud_Server rtb-68324c0d 1 Subnet No vpc-2cf18749 (172.33.0.0/16) | 33Cl...
Edit
Destination
Target
Status
Propagated
172.31.0.0/16 local Active No
0.0.0.0/0 igw-a9ce74cc Active No
172.32.0.0/16 pcx-d63effbf Active No




3、Use private IP，HTP（UDP）, enable pre-connection build acceleration tunnel.

# Notes：

1 、 Build acceleration tunnel with AWS vWANO must use HTP(UDP) transfer and enable pre-connection

2、Must be careful network ACLS in AWS, must allow necessary traffic.

3、Must add route to other side next gateway to vWANO in AWS

4、All instances must disable Source/Dest Check avoid instances drop packets in AWS.

5、vWANO in AWS only has single-arm mode, no VPN model.

6、Virtual switch in VMware enable promiscuous mode

7、vWANO in VMware only has single-arm and bridge mode, no VPN model

8、vWANO only support 64-bit VMware system