FortiGate-AWS
Deployment Guide

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Table of Contents

Change History

Version	Date	Author.	Changes
1.0	8-1-2014	Justin L. Wireman	Initial Document creation

Overview

This document is design to be a quick start walk-though in setting up a virtual Fortinet device utilizing the AWS services. We will start out reviewing some of the AWS concepts.

Amazon Virtual Private Cloud (Amazon VPC)

Amazon VPC lets you provision a logically isolated section of the Amazon Web Services (AWS) Cloud where you can launch AWS resources in a virtual network that you define. You have complete control over your virtual networking environment, including selection of your own IP address range, creation of subnets, and configuration of route tables and network gateways. You can also create a Hardware Virtual Private Network (VPN) connection between your corporate datacenter and your VPC and leverage the AWS cloud as an extension of your corporate datacenter.

You can easily customize the network configuration for your Amazon VPC. For example, you can create a public-facing subnet for your web servers that have access to the Internet, and place your backend systems such as databases or application servers in a private-facing subnet with no Internet access. You can leverage multiple layers of security, including security groups and network access control lists, to help control access to Amazon EC2 instances in each subnet.

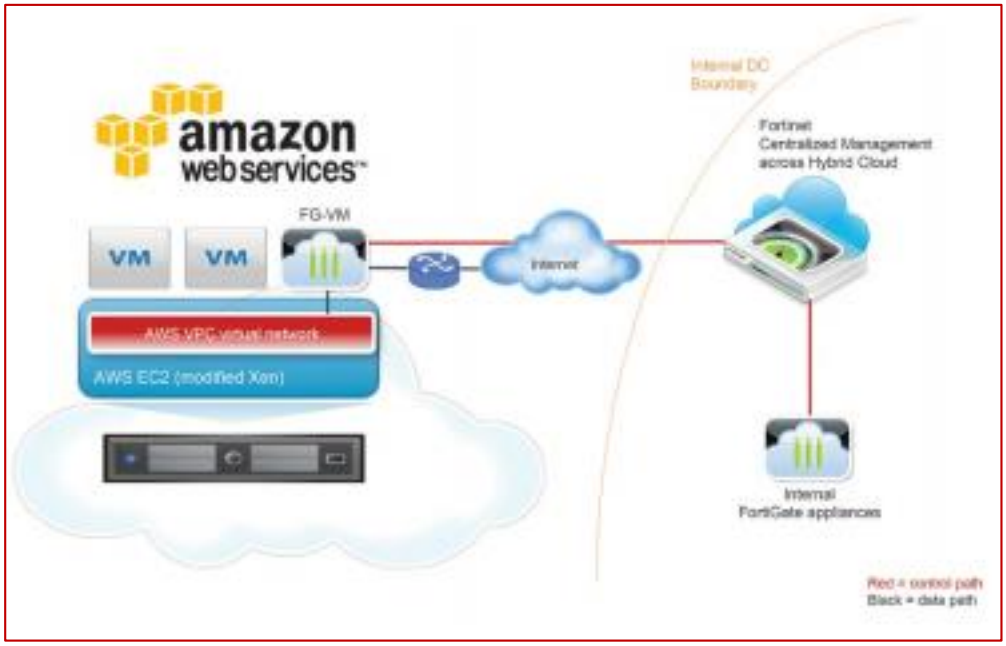


Figure 1

Components of Amazon VPC

Amazon VPC is comprised of a variety of objects that will be familiar to customers with existing networks:

- **A Virtual Private Cloud (VPC):** a logically isolated virtual network in the AWS cloud. You define a VPC's IP address space from a range you select.
- **Subnet:** a segment of a VPC's IP address range where you can place groups of isolated resources.
- **Internet Gateway:** the Amazon VPC side of a connection to the public Internet.
- **NAT Instance:** An EC2 instance that provides Port Address Translation for non-EIP instances to access the Internet via the Internet Gateway.
- **Hardware VPN Connection:** a hardware-based VPN connection between your Amazon VPC and your datacenter, home network, or co-location facility.
- **Virtual Private Gateway:** the Amazon VPC side of a VPN Connection.
- **Customer Gateway:** Your side of a VPN Connection.
- **Router:** Routers interconnect Subnets and direct traffic between Internet Gateways, Virtual Private Gateways, NAT instances and Subnets.
- **Peering Connection:** A peering connection enables you to route traffic via private IP addresses between two peered VPCs.

How do instances in a VPC access the Internet?

Elastic IP addresses (EIPs) give instances in the VPC the ability to both directly communicate outbound to the Internet and to receive unsolicited inbound traffic from the Internet (e.g., web servers)

How do instances without EIPs access the Internet?

Instances without EIPs can access the Internet in one of two ways:

Instances without EIPs can route their traffic through a NAT instance to access the Internet. These instances use the EIP of the NAT instance to traverse the Internet. The NAT instance allows outbound communication but doesn't enable machines on the Internet to initiate a connection to the privately addressed machines using NAT, and

For VPCs with a Hardware VPN connection, instances can route their Internet traffic down the Virtual Private Gateway to your existing datacenter. From there, it can access the Internet via your existing egress points and network security/monitoring devices.

Network Information

Figure #2 the default network design for a Public and Private VPC. We will be replacing much of the Router functionality with the FortiGate as pictured in figure 1.

- VPC Subnet – 10.0.0.0/16
- Public Subnet - 10.0.0.0/24
- Private Subnet – 10.0.1.0/24

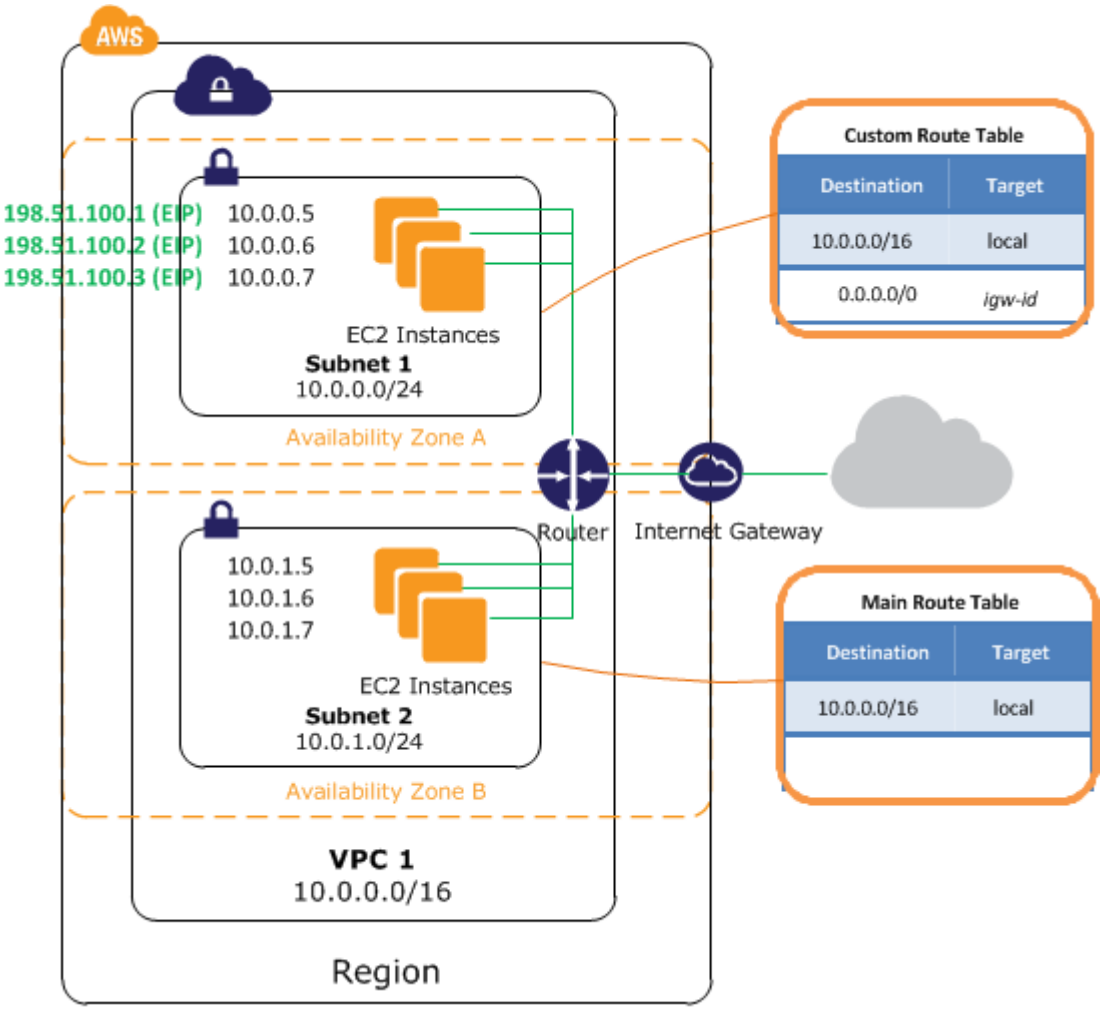


Figure 2 – Default Public / Private VPC design

Basic AWS Network Setup

For more information on AWS check out the getting started guide. Click here

Step 1 – Setting up your AWS account

You will need to provide billing information to setup an AWS account. Once you have completed the basic account setup you will be presented with the AWS console.

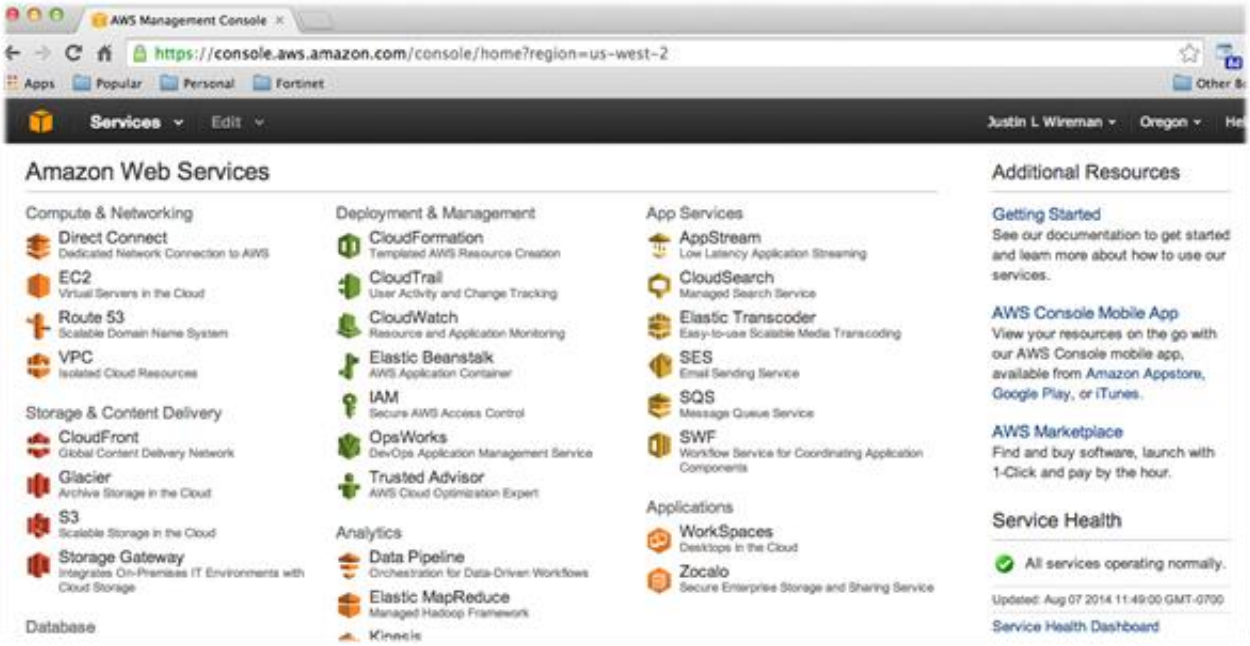


Figure 3

Step 2 – Create a Virtual Private Cloud (VPC)

To allow VM instances access to more than one interface you need to create a VPC (virtual private cloud). You need to change dashboards to VPC and for our purpose start the VPC wizard.

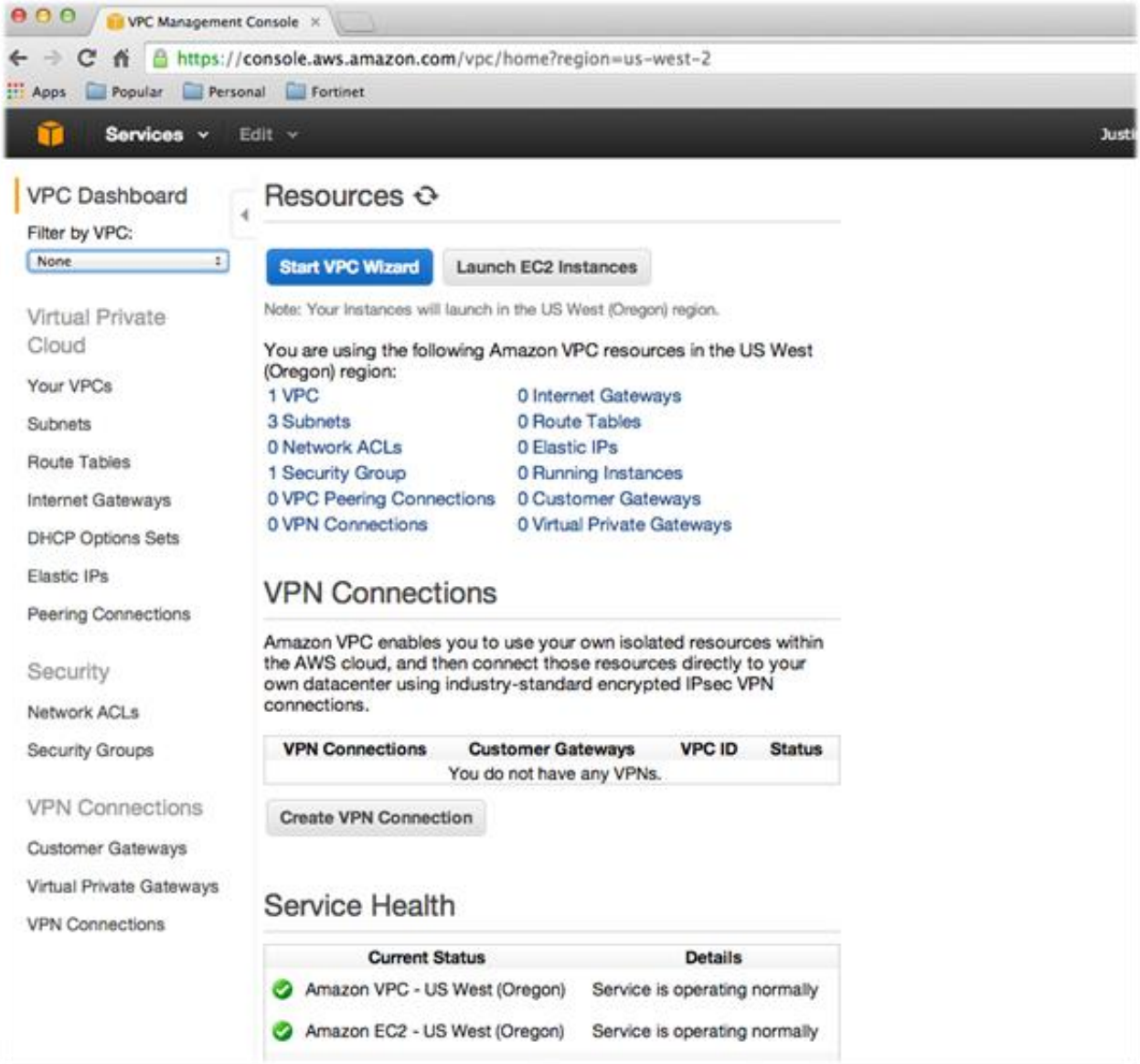


Figure 4 - VPC Dashboard

It is important to note that like most multi-tenant environments AWS reserves the first 5 IP address of each network that is created for its own router / firewall and DHCP / DNS servers.

Step 2.1 – VPC Wizard

This next section is a visual walk-through of the VPC wizard. Select the Public and Private subnet option.

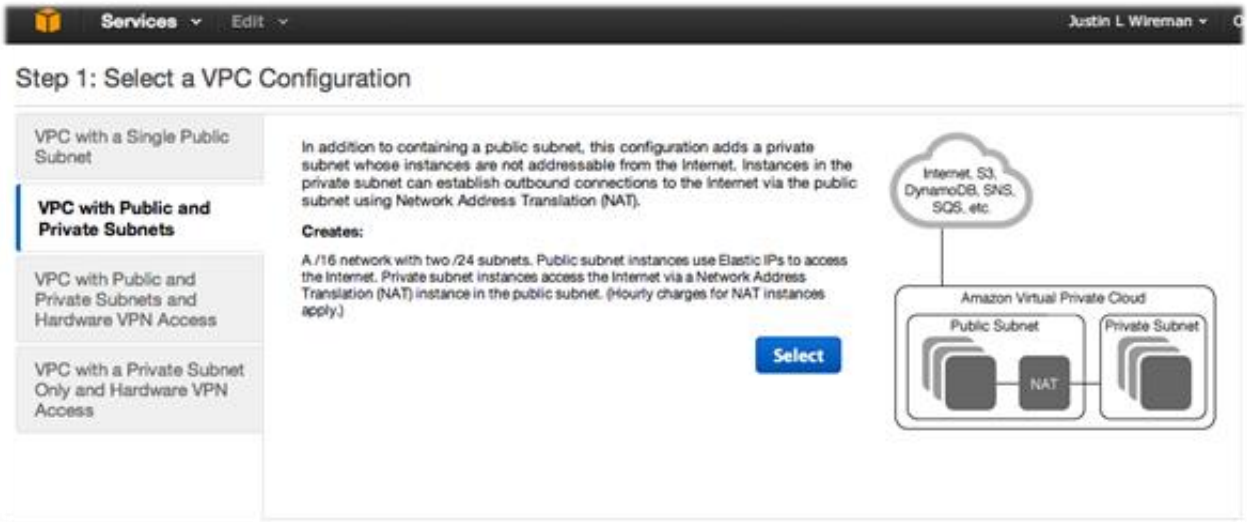


Figure 5 - VPC Wizard

One item to double check on step 2 of the VPC wizard is to make sure that both subnets are in the ***same availability zone***. Please see the Appendix for more information on availability zones.

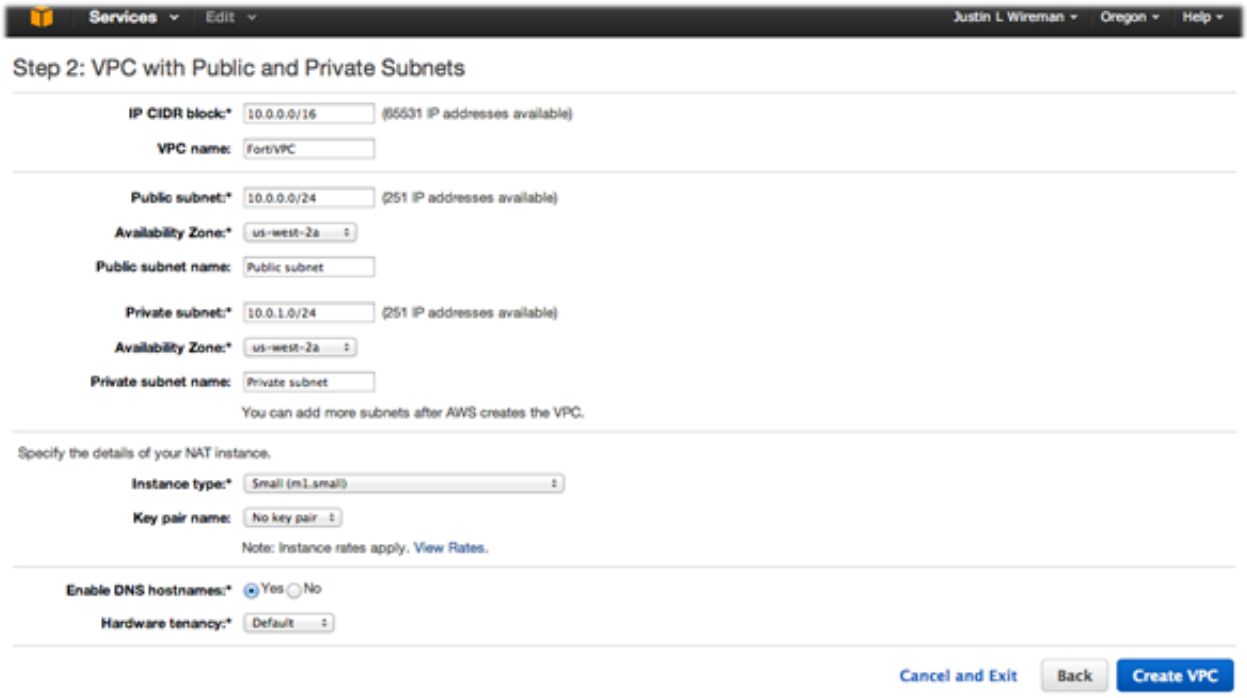


Figure 6 - VPC Wizard Subnets

Once you have verified the network setting, click create VPC and you will see the screen below.

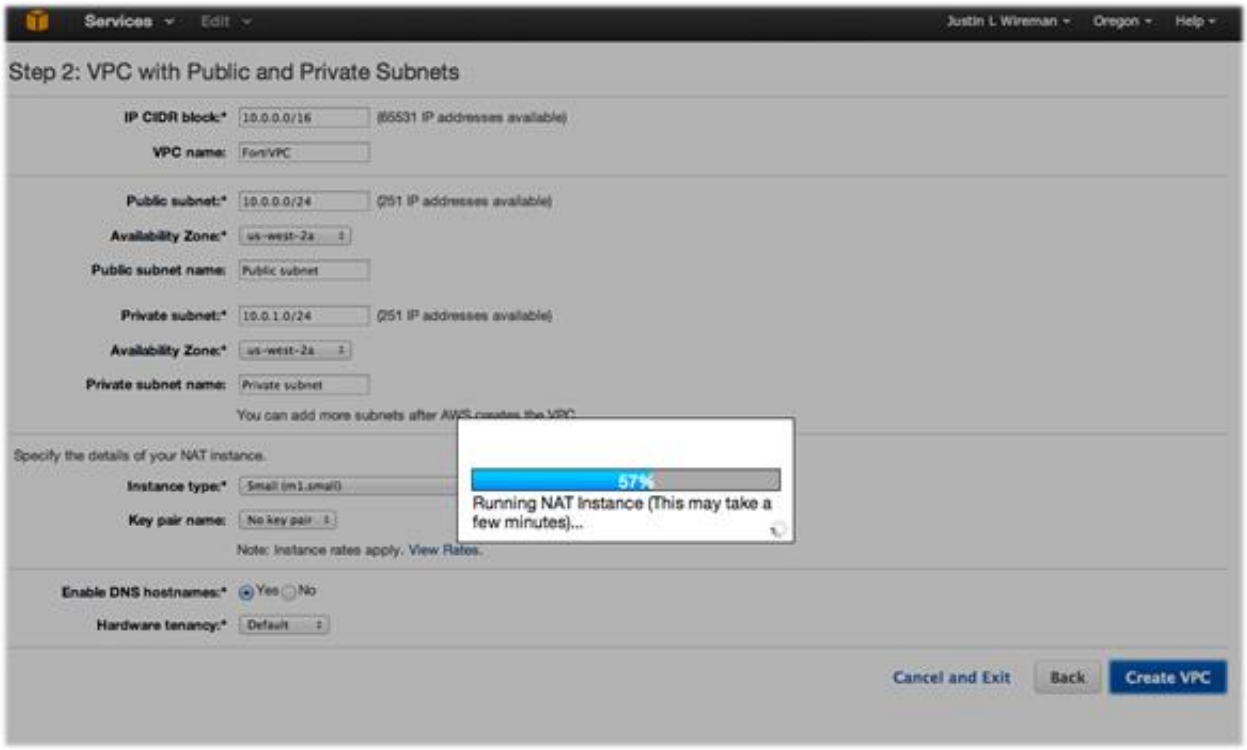


Figure 7 - VPC Wizard

When the VPC setup has been completed you can review subnet and routing information on the VPC Dashboard. More on this later in the guide, as you will need to alter settings to route traffic through the FortiGate.

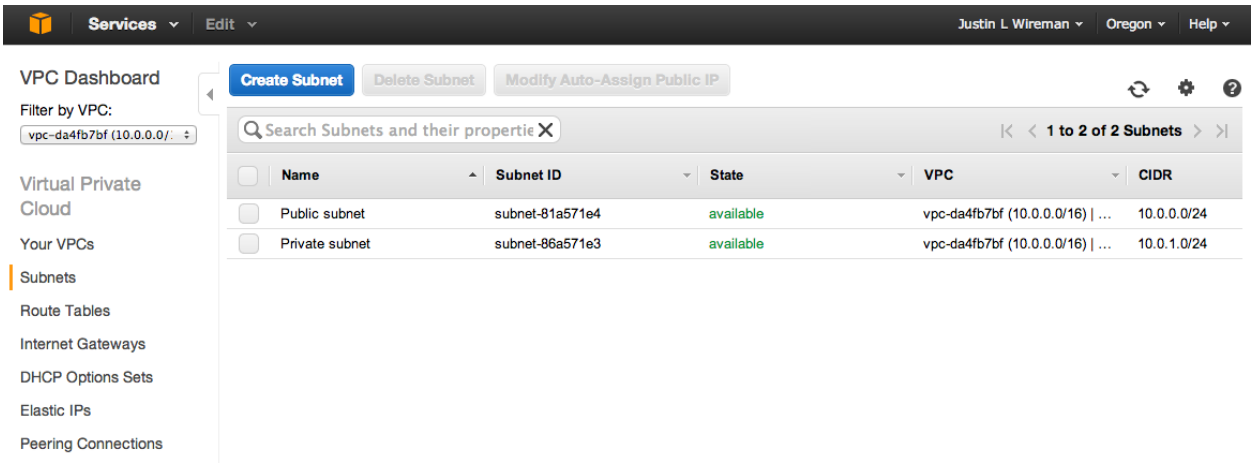


Figure 8

Step 3 – EC2 Launching virtual machines

Change dashboards to the EC2 dashboard. For time sake it is normally faster to get the VM provisioning started while setting up the network. Click Launch Instance on this screen.

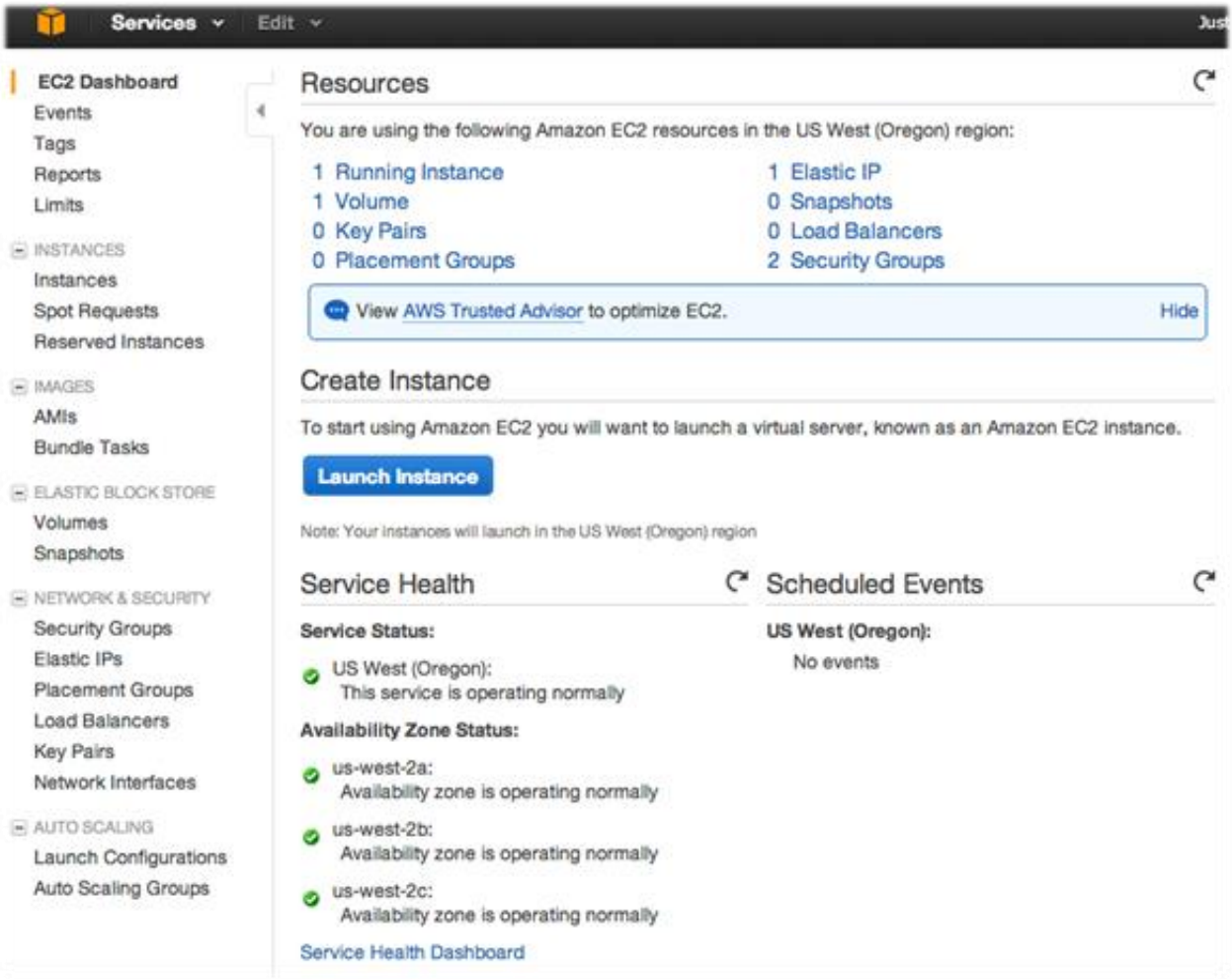


Figure 9 - EC2 Dashboard

Step 3. 1 – Choosing an AMI

Services Edit Justin L Wireman Oregon Help

1. Choose AMI | 2. Choose Instance Type | 3. Configure Instance | 4. Add Storage | 5. Tag Instance | 6. Configure Security Group | 7. Review

Step 1: Choose an Amazon Machine Image (AMI) Cancel and Exit

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Quick Start
My AMIs
AWS Marketplace
Community AMIs

Categories
All Categories
Software Infrastructure (5)

Operating System
Clear Filter
All Linux/Unix
Other Linux (5)

Software Pricing Plans
Hourly (1)
Annual (1)
Bring Your Own License (4)

Region
Current Region (5)
All Regions (5)

Fortinet

1 to 5 of 5 Products

FORTINET. FortiGate-VM Select
(2) | v5.0.5 | Sold by Fortinet Inc.
Bring Your Own License + AWS usage fees
Linux/Unix, Other v5.0.5 | 64-bit Amazon Machine Image (AMI) | Updated: 3/3/14
FortiGate virtual appliances allow you to mitigate blind spots and improve policy compliance by implementing critical security controls within your virtual infrastructure ...
More info

FORTINET. Fortinet FortiAnalyzer-VM Select
(0) | v5.0.4 | Sold by Fortinet Inc.
Bring Your Own License + AWS usage fees
Linux/Unix, Other v5.0.4 | 64-bit Amazon Machine Image (AMI) | Updated: 11/10/13
FortiAnalyzer Network Security Logging, Analysis, and Reporting Appliances securely aggregate log data from Fortinet Security Appliances. A comprehensive suite of easily ...
More info

FORTINET. Fortinet FortiManager-VM Select
(0) | v5.0.4 | Sold by Fortinet Inc.
Bring Your Own License + AWS usage fees
Linux/Unix, Other v5.0.4 | 64-bit Amazon Machine Image (AMI) | Updated: 11/10/13
FortiManager Security Management appliances allow you to centrally manage any number of Fortinet Network Security devices, from several to thousands, including FortiGate, ...
More info

Figure 10 - AMI Wizard

For this guide we have chosen the Bring your Own License version of the FortiGate VM.

FortiGate-VM

FORTINET. FortiGate-VM

FortiGate virtual appliances allow you to mitigate blind spots and improve policy compliance by implementing critical security controls within your virtual infrastructure. FortiGate virtual appliances include all of the security and networking services common to FortiGate physical appliances, giving you the freedom to deploy a centrally managed ...
More info

Learn more on AWS Marketplace

Product Details

Sold by	Fortinet Inc.
Customer Rating	(2)
Latest Version	v5.0.5
Base Operating System	Linux/Unix, Other v5.0.5
Delivery Method	64-bit Amazon Machine Image (AMI)
License Agreement	End User License Agreement

Pricing Details

Bring Your Own License (BYOL)

Hourly Fees

Instance Type	Software	EC2	Total
C3 Large	$0.00	$0.105	$0.105/hr
C3 Extra Large	$0.00	$0.21	$0.21/hr
C3 Double Extra Large	$0.00	$0.42	$0.42/hr
M3 Double Extra Large	$0.00	$0.56	$0.56/hr
M3 Large	$0.00	$0.14	$0.14/hr
M3 Extra Large	$0.00	$0.28	$0.28/hr
M3 Medium	$0.00	$0.07	$0.07/hr

EBS Storage Fees
$0.10 / GB / Month for Standard EBS Storage

You will not be charged until you launch this instance.

Cancel Continue

Figure 11

Step 3.2 – Instance type

Choose the instance type that matches the license. For this example I have a 1 vCPU license file.

Services Edit Justin L Wireman Oregon Help

1. Choose AMI | 2. Choose Instance Type | 3. Configure Instance | 4. Add Storage | 5. Tag Instance | 6. Configure Security Group | 7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. Learn more about instance types and how they can meet your computing needs.

Filter by: All instance types | Current generation | Show/Hide Columns

Currently selected: m3.medium (3 ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon E5-2670v2, 3.75 GiB memory, 1 x 4 GiB Storage Capacity)

Note: The vendor recommends using a **m3.xlarge** instance (or larger) for the best experience with this product.

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate
	General purpose	t2.small	1	2	EBS only	-	Low to Moderate
	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate
	General purpose	m3.medium	1	3.75	1 x 4 (SSD)	-	Moderate
	General purpose	m3.large	2	7.5	1 x 32 (SSD)	-	Moderate
	General purpose	m3.xlarge	4	15	2 x 40 (SSD)	Yes	High
	General purpose	m3.2xlarge	8	30	2 x 80 (SSD)	Yes	High
	Compute optimized	c3.large	2	3.75	2 x 16 (SSD)	-	Moderate
	Compute optimized	c3.xlarge	4	7.5	2 x 40 (SSD)	Yes	Moderate
	Compute optimized	c3.2xlarge	8	15	2 x 80 (SSD)	Yes	High

Cancel | Previous | Review and Launch | Next: Configure Instance Details

Step 3.3 – Instance Details

In this step you will choose the public subnet, assign IP addresses, and add the eth1 interface (private subnet).

1. Choose AMI | 2. Choose Instance Type | 3. Configure Instance | 4. Add Storage | 5. Tag Instance | 6. Configure Security Group | 7. Review

Step 3: Configure Instance Details

Number of instances	1
Purchasing option	Request Spot Instances
Network	vpc-da4fb7bf (10.0.0.0/16) | FortiVPC — Create new VPC
Subnet	subnet-81a571e4(10.0.0.0/24) | Public subnet | us-west-2 — Create new subnet 250 IP Addresses available
Auto-assign Public IP	Disable
IAM role	None
Shutdown behavior	Stop
Enable termination protection	Protect against accidental termination
Monitoring	Enable CloudWatch detailed monitoring Additional charges apply.
Tenancy	Shared tenancy (multi-tenant hardware) Additional charges will apply for dedicated tenancy.

Network interfaces

Device	Network Interface	Subnet	Primary IP	Secondary IP addresses
eth0	New network interface	subnet-81a571e4	10.0.0.5	Add IP
eth1	New network interface	subnet-86a571e3	10.0.1.5	Add IP

Cancel | Previous | Review and Launch

Step 3.4 – Instance Storage

If you are configuring this for demonstration purposes, you can change the highlighted storage size to create a larger disk size for logging / reporting.

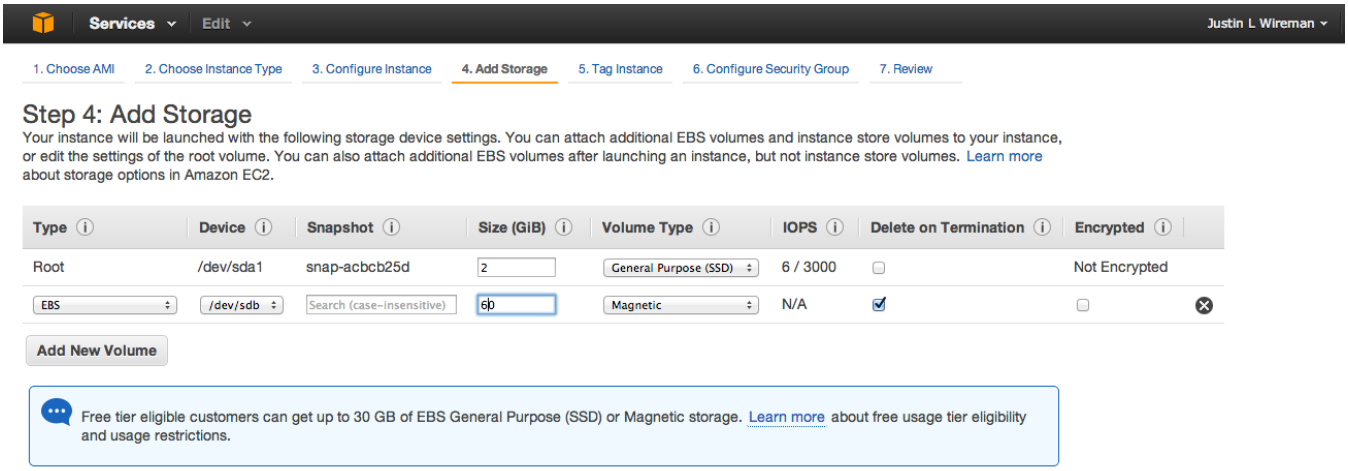


Figure 12

Step 3.5 – Instance Tags

It is valuable to create tags to quickly reference instance items in your AWS deployment. I have tagged a few items below as an example.

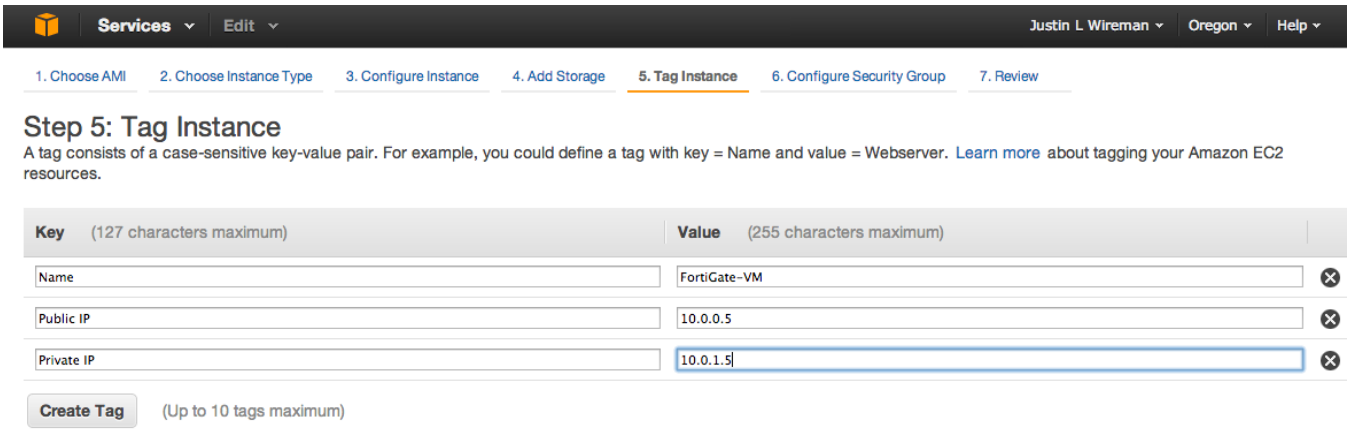


Figure 13 - Instance Tags

Step 3.6 – Security groups

Amazon by default has your VPC behind a basic firewall. Since we are going to be utilizing the FortiGate, I have created a Permit All security group and applied it to this instance.

Services Edit Justin L Wireman Oregon Help

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. Learn more about Amazon EC2 security groups.

Assign a security group: Create a new security group
Select an existing security group

Security group name: PermitAll

Description: This security group was generated by AWS Marketplace and is based on recommended setting

Type	Protocol	Port Range	Source	
All traffic	All	0 - 65535	Anywhere 0.0.0.0/0	

Add Rule

Warning

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Figure 14 - Security Groups

Step 3.7 – Key Pair and Launch Instance

- Choose proceed without a keypair and use the default FortiGate username / password.
- Click Launch Instance to begin the provisioning.

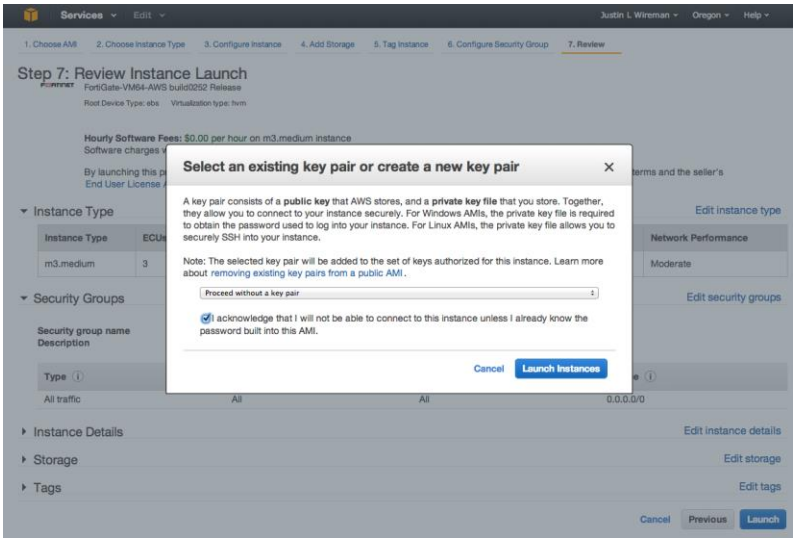


Figure 15

Network Configuration

Step 4 – Configure AWS network settings

In this section you will be locating items such as the Network interface ENI on the EC2 dashboard and making IP and routing updates on the VPC dashboard.

Step 4.1 - Associate a public "elastic" IP to the FG-VM public interface

- On the EC2 Dashboard under the Network interface menu.
  - Locate the public interface ENI.
    - See step 4.3 figure 18 for a screenshot of this menu.
- On the VPC Dashboard under the Elastic IPs menu.
  - If the Public IP is associated with a default instance you will need to disassociate the Public IP before you can proceed.
  - Use the ENI of the public FortiGate interface as the object to associate the public IP.

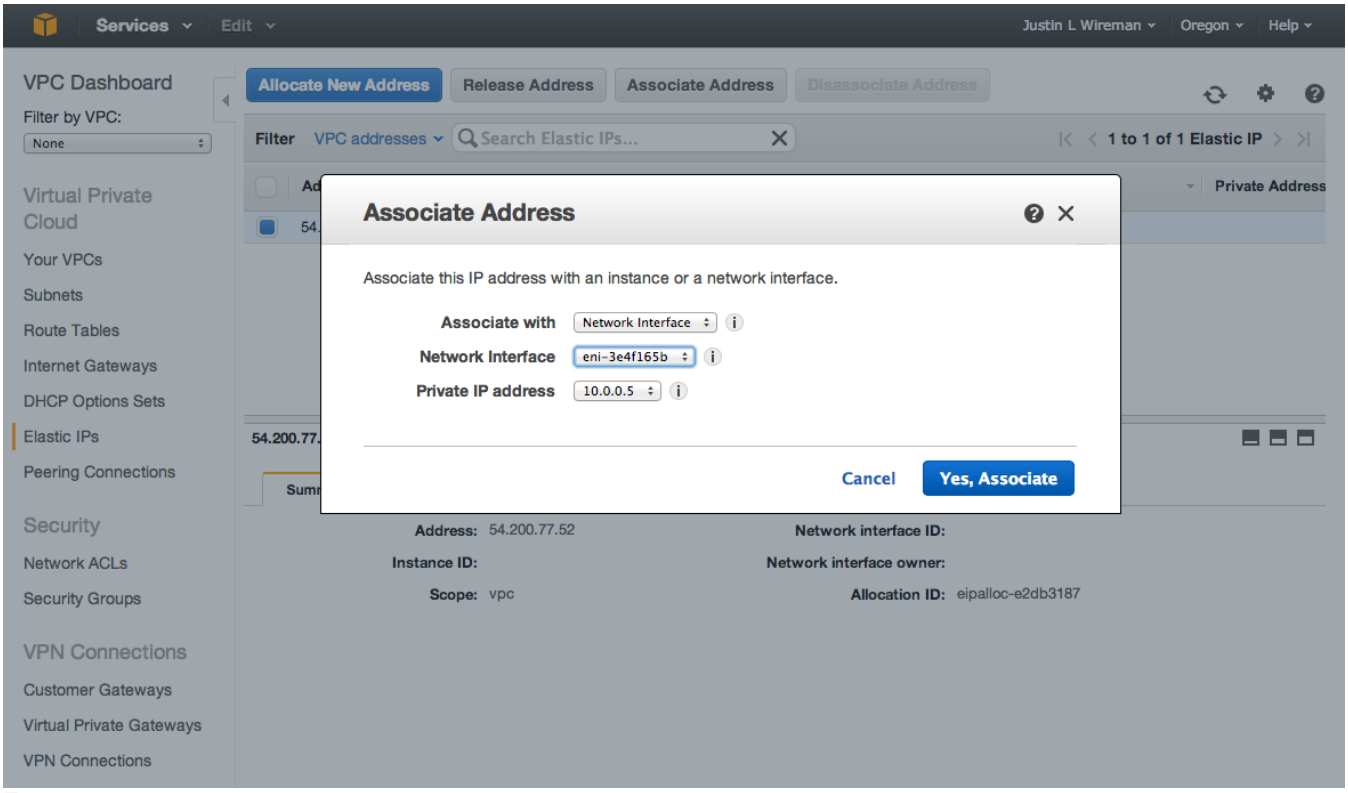


Figure 16

Step 4.2 – Confirm the assigned Public address

- Take note of the public IP address and DNS assigned. You will use these items in later steps.

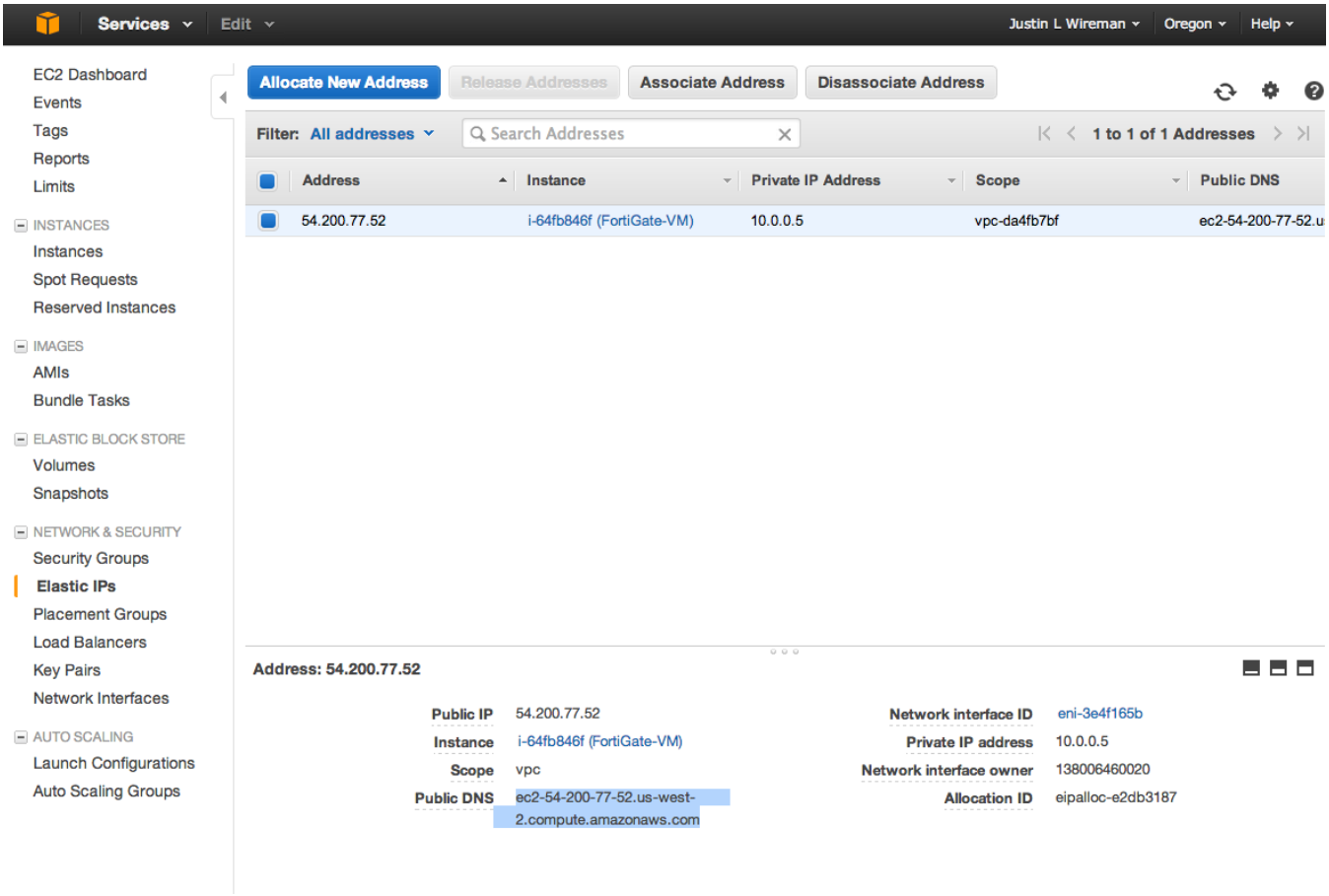


Figure 17

Step 4.3 – Setting up the default route for the private network.

- On the EC2 Dashboard under the Network interface menu.
  - Locate the network interface ID (ENI-) of the private network and Copy the ID.
- Change dashboards back to the VPC>Route Tables
  - Edit the default route (for the private subnet) to point to the FortiGate private network interface ID.
  - Demonstrated in figures 19-20

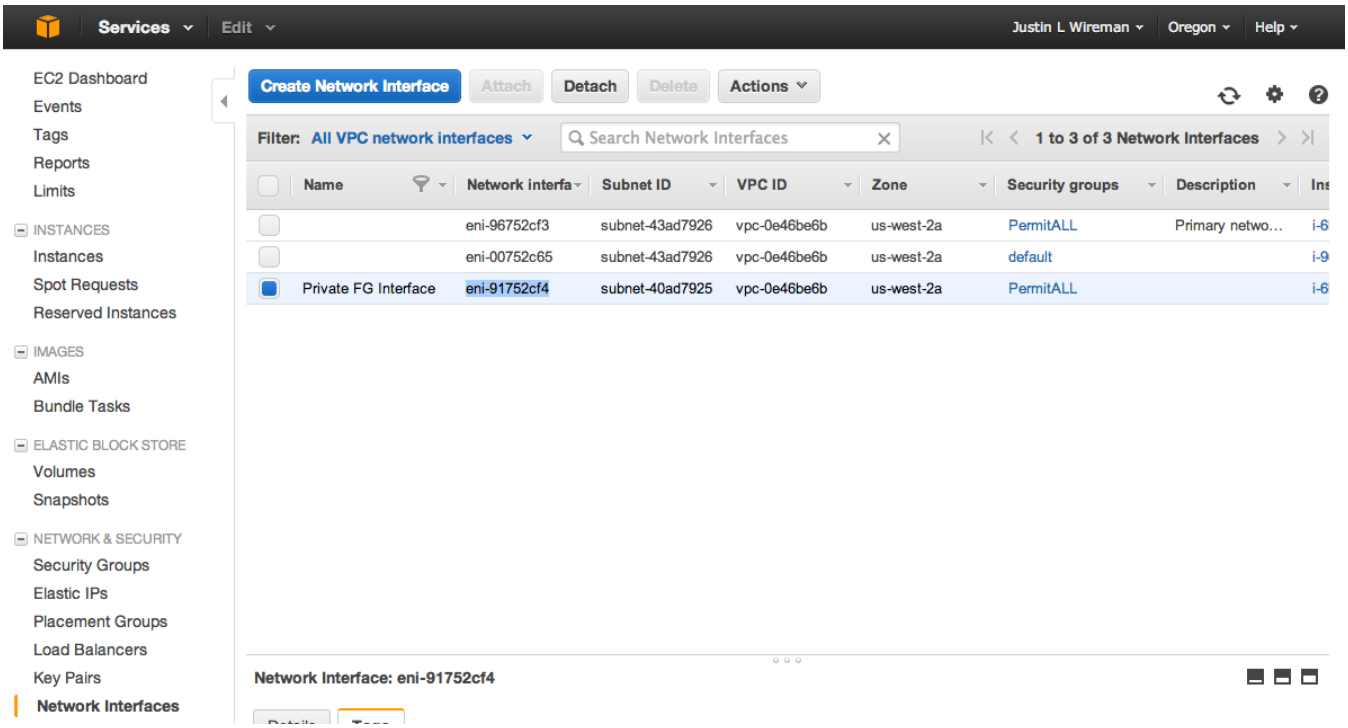


Figure 18

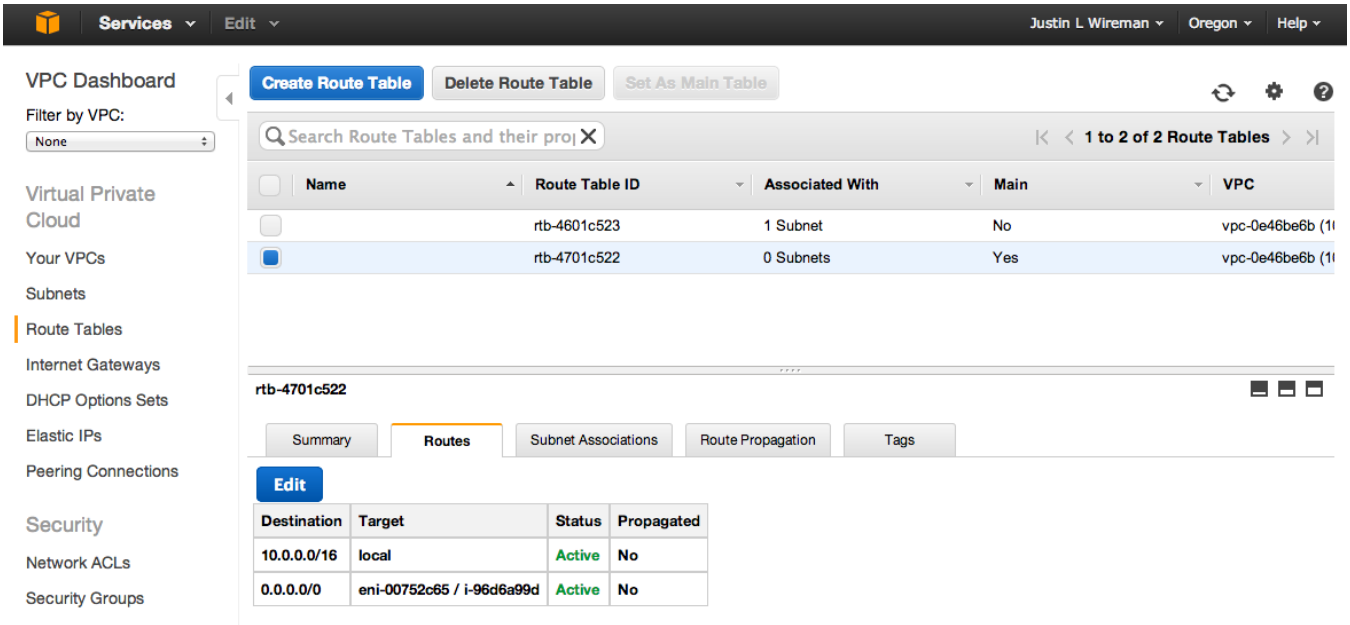


Figure 19

rtb-4701c522

Summary | Routes | Subnet Associations | Route Propagation | Tags

Cancel | Save

Destination	Target	Status	Propagated	Remove
10.0.0.0/16	local	Active	No	
0.0.0.0/0	eni-91752cf4	Active	No	✕
	eni-91752cf4 | Private FG Interface No results			✕

Add another route

Figure 20

- Associate the private subnet to the private routing entry you have been editing in the previous steps.

rtb-4701c522

Summary | Routes | Subnet Associations | Route Propagation | Tags

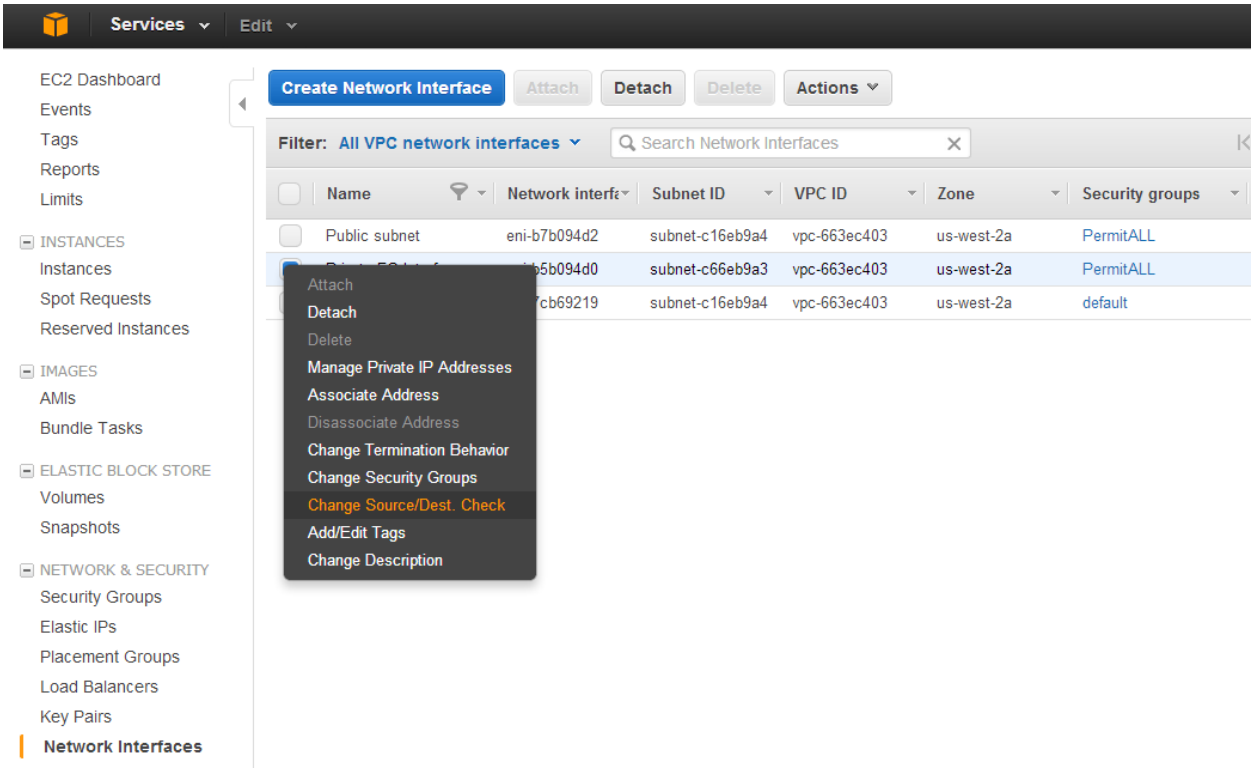
Cancel | Save

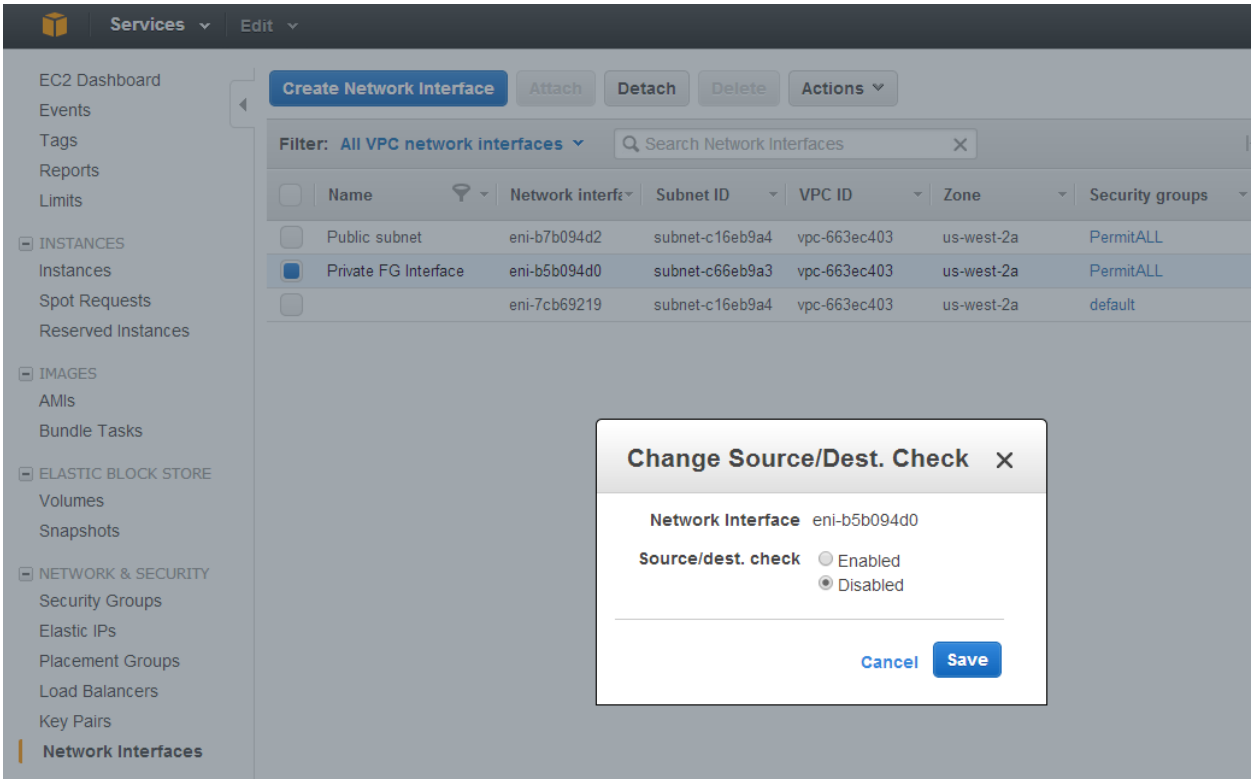
Associate	Subnet	CIDR	Current Route Table
☐	subnet-43ad7926 (10.0.0.0/24) | Public subnet	10.0.0.0/24	rtb-4601c523
☑	subnet-40ad7925 (10.0.1.0/24) | Private subnet	10.0.1.0/24	Main

Figure 21

Step 4.4 – Disable Source / Destination check on the Private FG interface.

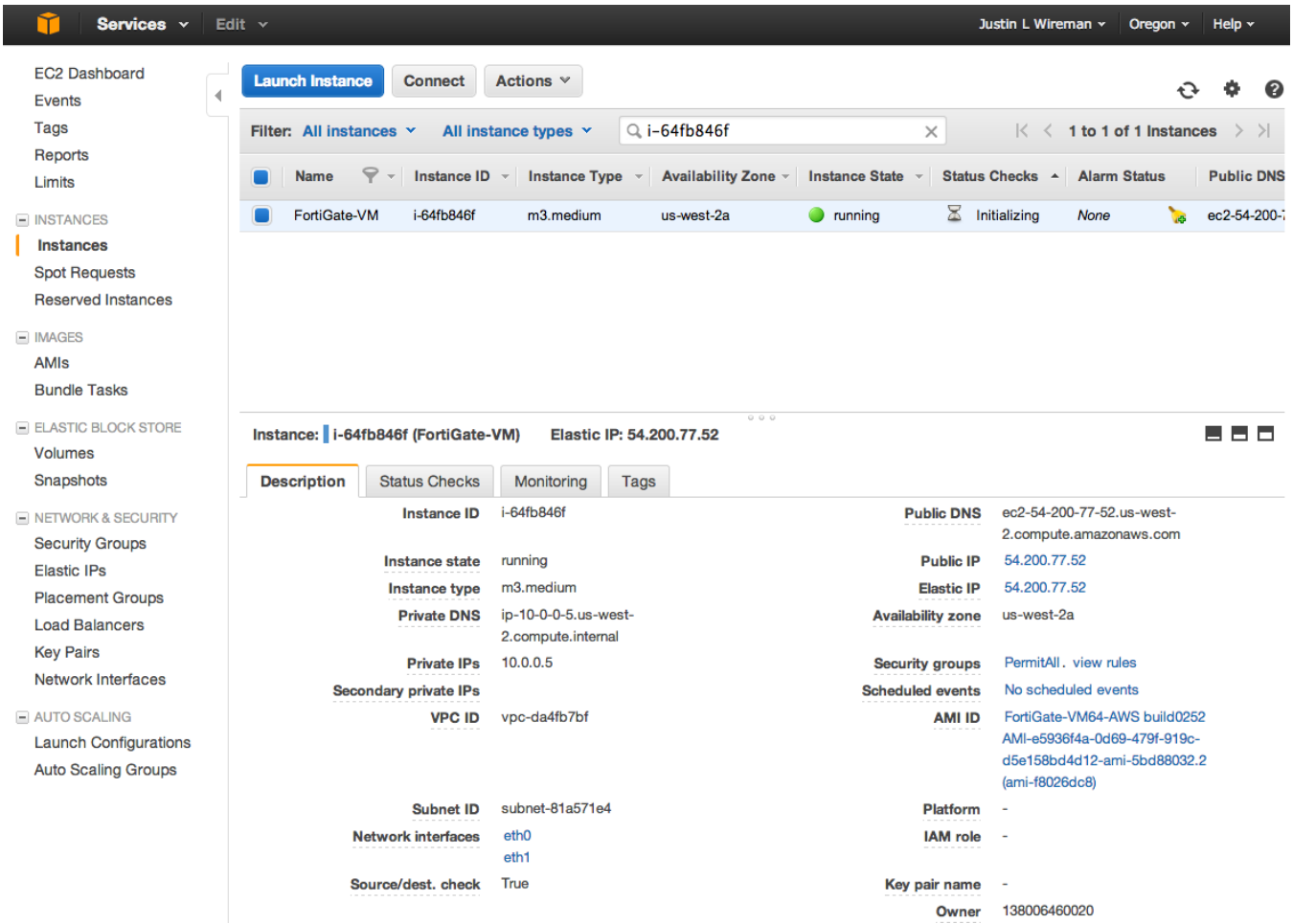
- On the EC2 Dashboard under the Network interface menu.
  - Right click and select Change Source/Dest Check
  - Select Disable and Save





Step 4.5 - Navigate to EC2 dash to review the Instance state

- Once confirming that the instance has finished provisioning and powering up check the following items.
    - Public IP/DNS assigned
    - Confirm the correct security group is assigned.



Step 4.6 - Access the Virtual FortiGate

- Open a HTTPS session to the public IP or DNS entry provided and login with the default username / password.
- Upload license file for BYOL. (See figure 22)
- The FortiGate will reboot after license install.

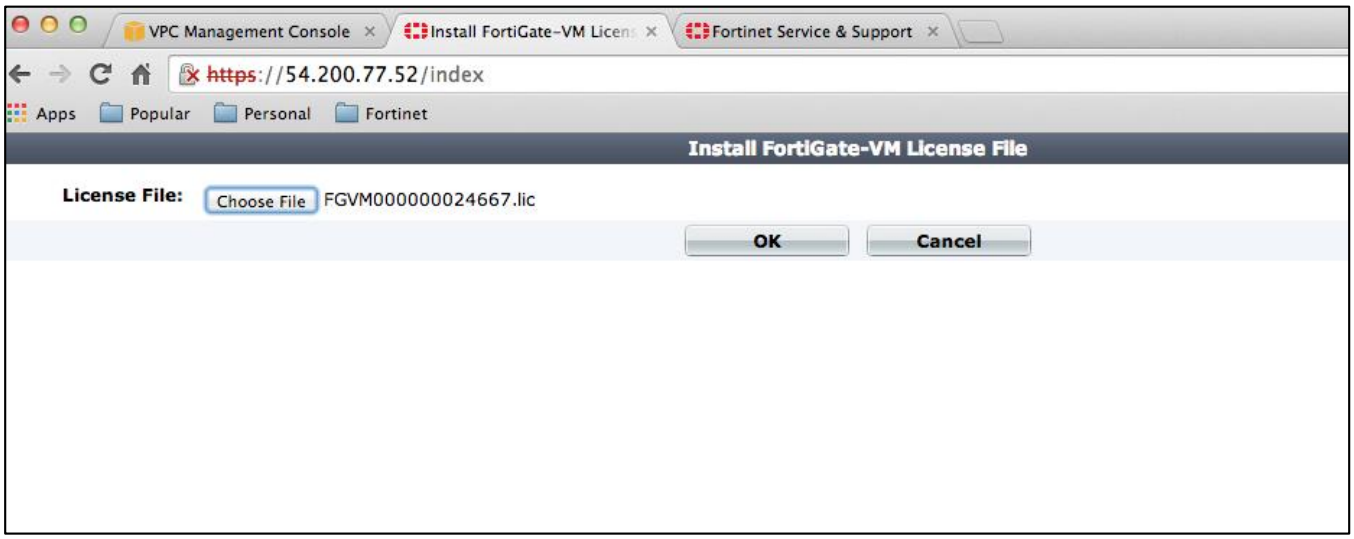


Figure 22

Step 4.7 – SSH to the FortiGate

- SSH to the device using the DNS hostname
- Issue the following commands to test access
    - Ping 8.8.8.8 to test connectivity
    - Execute update-now
    - Execute formatlogdisk and reboot (Option step if you need disk logging)

```
FortiGate-VM64-AWS# Execute ping 8.8.8.8
FortiGate-VM64-AWS# Execute update-now
FortiGate-VM64-AWS# Execute formatlogdisk
```

Step 5.0 – Setup a Test VM

In this step we will setup a test windows VM on the private network and configure it to use the FortiGate for all access in and out of the private network. In this example we are going to setup remote access to the test VM as well.

Step 5.1 – Provision a new AMI

For this example we are using Windows Server 2012. Note that any OS version could be used for testing / demonstration purposes.

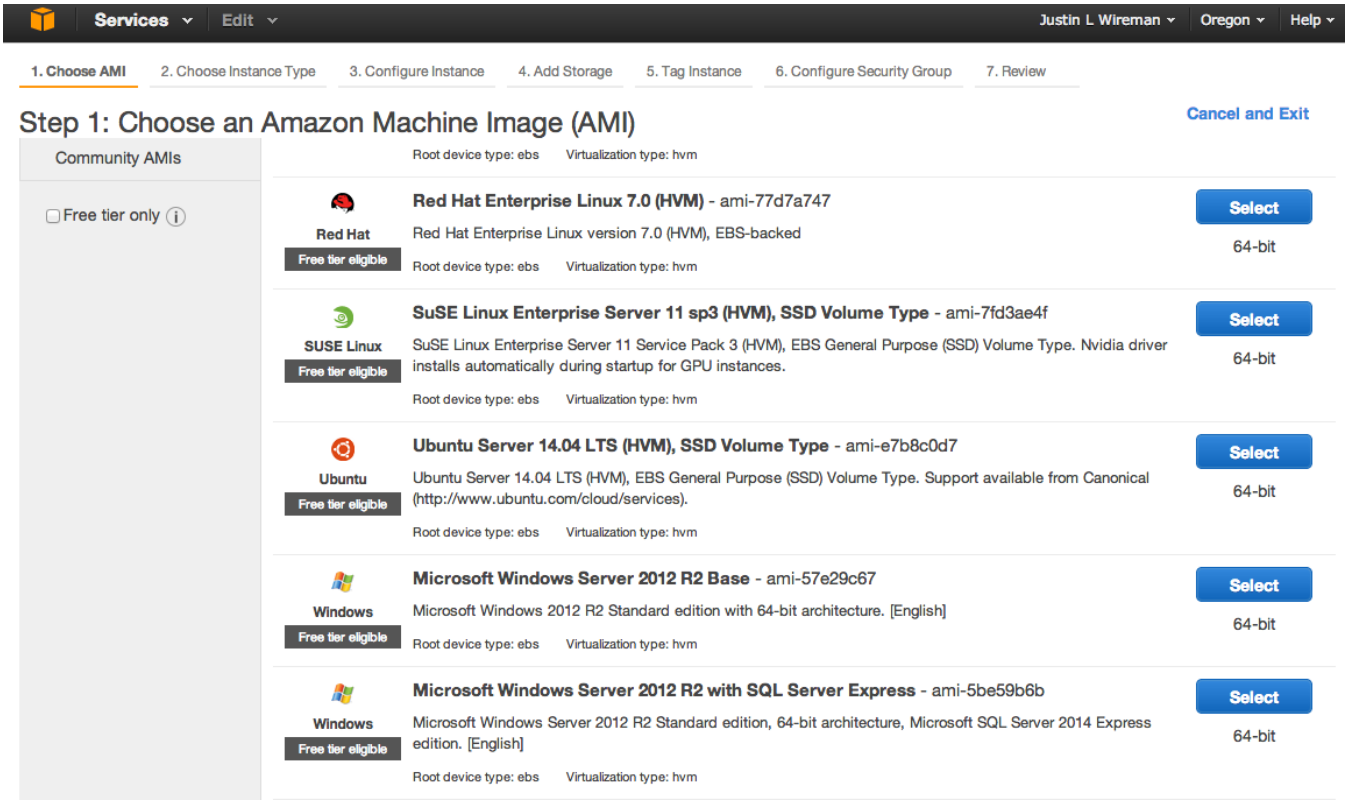


Figure 23

Step 5.2 – Select a VM Instance type

The default is the free tier general purpose type. This instance type is fine for basic testing.

Services | Edit | Justin L Wireman | Oregon | Help

1. Choose AMI | 2. Choose Instance Type | 3. Configure Instance | 4. Add Storage | 5. Tag Instance | 6. Configure Security Group | 7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. Learn more about instance types and how they can meet your computing needs.

Filter by: All instance types | Current generation | Show/Hide Columns

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
☑	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate
☐	General purpose	t2.small	1	2	EBS only	-	Low to Moderate
☐	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate
☐	General purpose	m3.medium	1	3.75	1 x 4 (SSD)	-	Moderate
☐	General purpose	m3.large	2	7.5	1 x 32 (SSD)	-	Moderate
☐	General purpose	m3.xlarge	4	15	2 x 40 (SSD)	Yes	High
☐	General purpose	m3.2xlarge	8	30	2 x 80 (SSD)	Yes	High
☐	Compute optimized	c3.large	2	3.75	2 x 16 (SSD)	-	Moderate
☐	Compute optimized	c3.xlarge	4	7.5	2 x 40 (SSD)	Yes	Moderate
☐	Compute optimized	c3.2xlarge	8	15	2 x 80 (SSD)	Yes	High
☐	Compute optimized	c3.4xlarge	16	30	2 x 160 (SSD)	Yes	High

Cancel | Previous | Review and Launch | Next: Configure Instance Details

Figure 24

Step 5.3 – Choose Instance settings

- It is important to select the private subnet to place this VM behind the FortiGate.
- I have also chosen to assign the IP address of 10.0.1.25. I have done this so I can setup port forwarding on the FortiGate while this VM is provisioned.

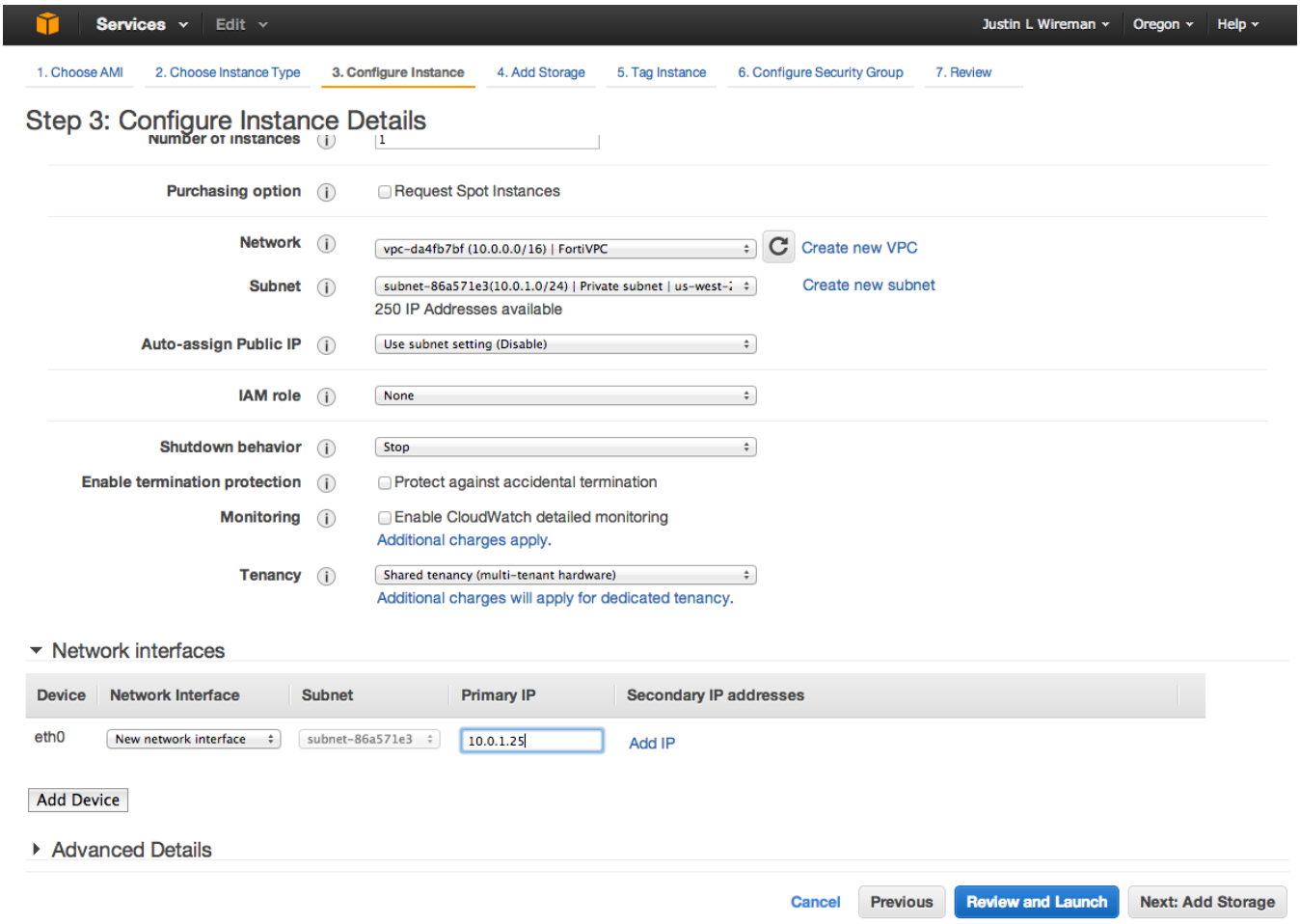


Figure 25

Step 5.4 – VM Storage settings

Adjust the default storage setting as appropriate for our virtual machine. If you are deploying this machine for basic testing the default should suffice.

Services Edit Justin L Wireman

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. Learn more about storage options in Amazon EC2.

Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Delete on Termination	Encrypted
Root	/dev/sda1	snap-435fe5b7	60	General Purpose (SSD)	90 / 3000	☑	Not Encrypted

Add New Volume

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. Learn more about free usage tier eligibility and usage restrictions.

Figure 26

Step 5.5 – Assign any tags needed to the VM Instance

This is an optional step.

Step 5.6 – VM Security Group Settings

Assign the same "Permit All" security group you created during the step 3.6.

Services Edit Justin L Wireman Oregon Help

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. Learn more about Amazon EC2 security groups.

Assign a security group: ○ Create a **new** security group
◉ Select an **existing** security group

	Security Group ID	Name	Description	Actions
☐	sg-636feb06	default	default VPC security group	Copy to new
☑	sg-4d69ed28	PermitAll	This security group was generated by AWS M…	Copy to new

Warning
Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Figure 27

Step 5.7 – Review Instance Settings and Launch Instance

Services Edit Justin L Wireman Oregon Help

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

Your instance configuration is not eligible for the free usage tier

To launch an instance that's eligible for the free usage tier, check your AMI selection, instance type, configuration options, or storage devices. Learn more about free usage tier eligibility and usage restrictions.

Don't show me this again

Improve your instance's security. Your security group, PermitAll, is open to the world.

Your instance may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only. You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. Edit security groups

AMI Details — Edit AMI

Microsoft Windows Server 2012 R2 Base - ami-57e29c67

Microsoft Windows 2012 R2 Standard edition with 64-bit architecture. [English]

Free tier eligible

Root Device Type: ebs Virtualization type: hvm

Instance Type — Edit instance type

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	Variable	1	1	EBS only	-	Low to Moderate

Security Groups — Edit security groups

Security	Name	Description
sg-4d69ed28	PermitAll	This security group was generated by AWS Marketplace and is based on recommended settings for FortiGate-VM version v5.0.5 provided by Fortine

All selected security groups inbound rules

Cancel Previous Launch

Figure 28

Step 5.8 – Create key pair

If you already have a key pair you can use an existing one. If not choose to create a new key pair and download it. You will need this file to login to the VM.

Important - If you lose the key pair, you cannot connect to your Amazon EC2 instances.

For more information on Key Pairs see the Appendix

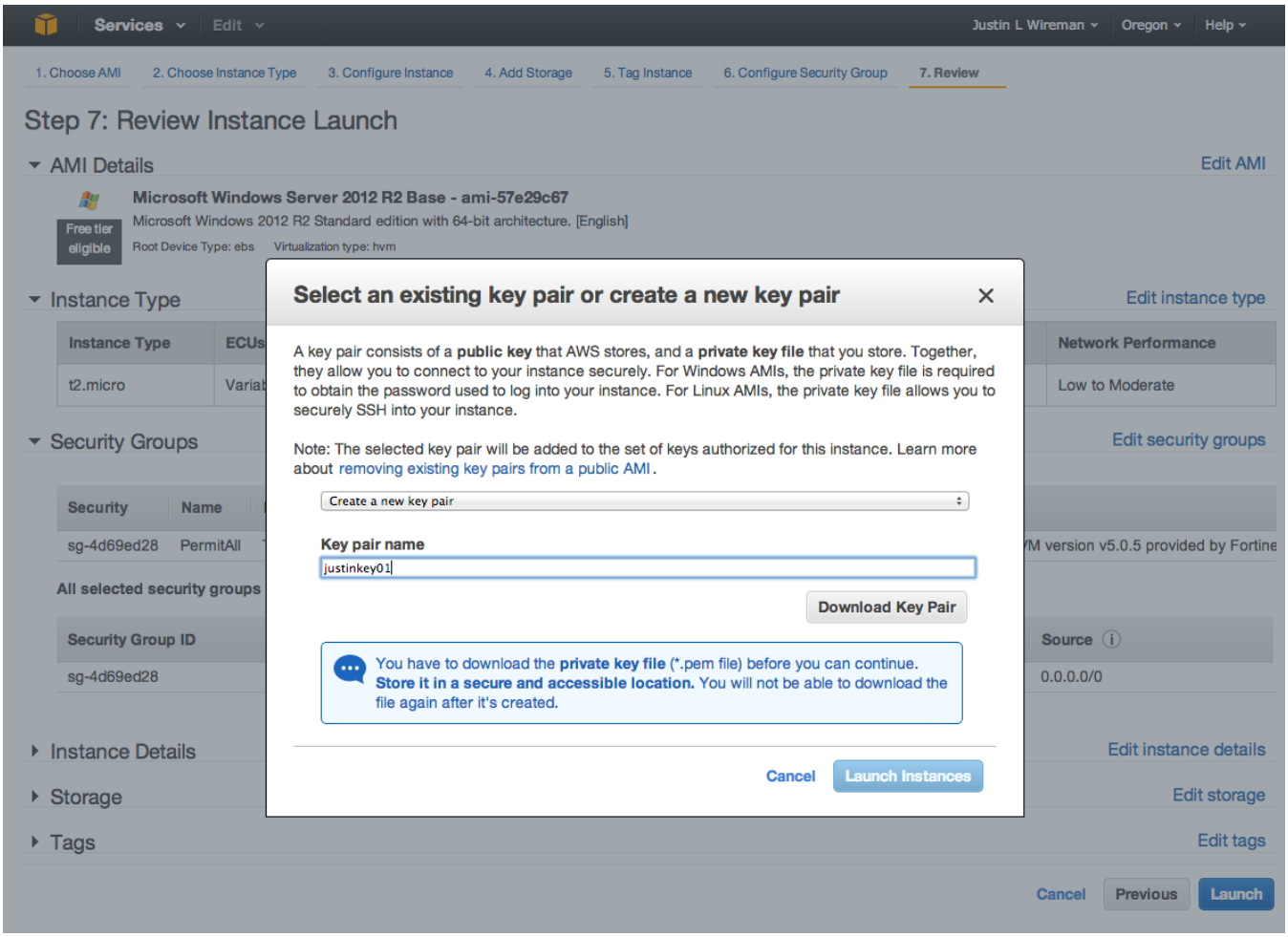


Figure 29 - Key Pair

Step 6.0 – FortiGate Configuration

While the Windows VM is being provisioned you can finish the FortiGate configuration.

Step 6.1 - Update FortiGate Password

Update the FortiGate password as there are many bots that attempt to log in to newly provisioned devices on AWS subnets.

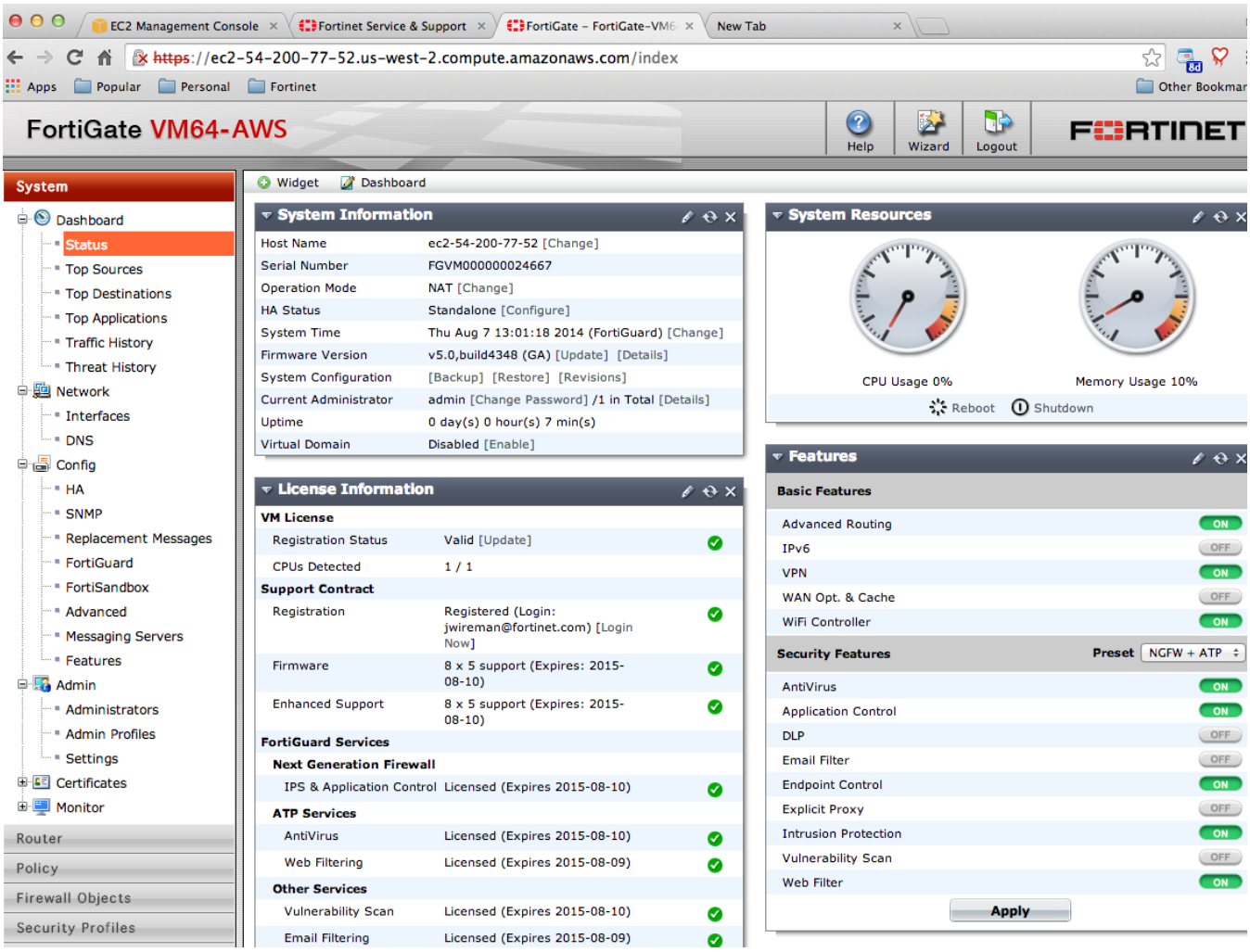
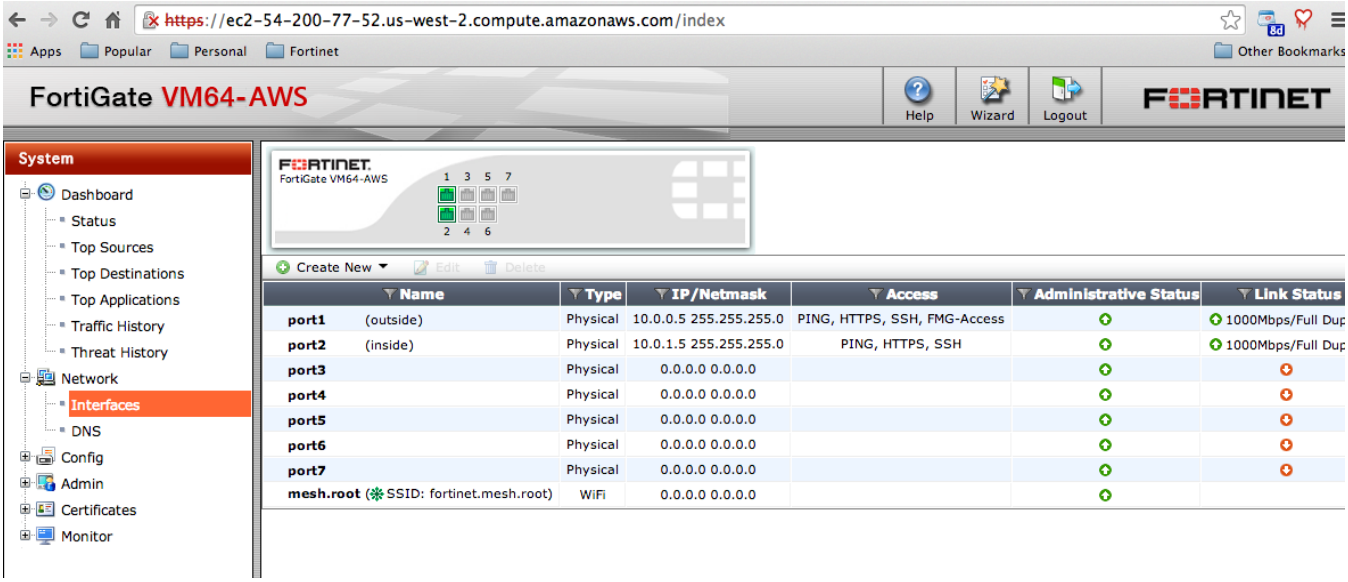


Figure 30

Step 6.2 – Confirm network settings

Set the port2 interface IP address settings (private subnet)



Step 6.3 – Setup basic policies

For this example we are going to create the following policies. (Samples below)

- NAT & allow outbound access
  - (Optional) You can apply any additional policies if you want to demonstrate features such as Web-filtering, DLP, etc.
- Port forwarding port 3389 to the Windows server
- Any required logging for troubleshooting

```
config firewall policy
    edit 1
        set srcintf "port2"
        set dstintf "port1"
        set srcaddr "all"
        set dstaddr "all"
        set action accept
        set schedule "always"
        set service "ALL"
        set utm-status enable
        set logtraffic all
        set av-profile "default"
        set ips-sensor "default"
        set profile-protocol-options "default"
        set nat enable
    next
```

```
    edit 2
        set srcintf "port1"
        set dstintf "port2"
        set srcaddr "all"
        set dstaddr "Windows-RDP"
        set action accept
        set schedule "always"
        set service "ALL"
        set utm-status enable
        set logtraffic all
        set av-profile "AV-flow"
        set ips-sensor "default"
        set profile-protocol-options "default"
    next
end

config firewall vip
    edit "Windows-RDP"
        set extintf "port1"
        set portforward enable
        set mappedip 10.0.1.25
        set extport 3389
        set mappedport 3389
    next
end
```

Step 7 – Testing

Step 7.1 – Launch a RDP session to test

Figure 31

Step 7.2 – Retrieve your VM's password

On the EC2 Dashboard, Right click your test VM instance and select Get Windows Password

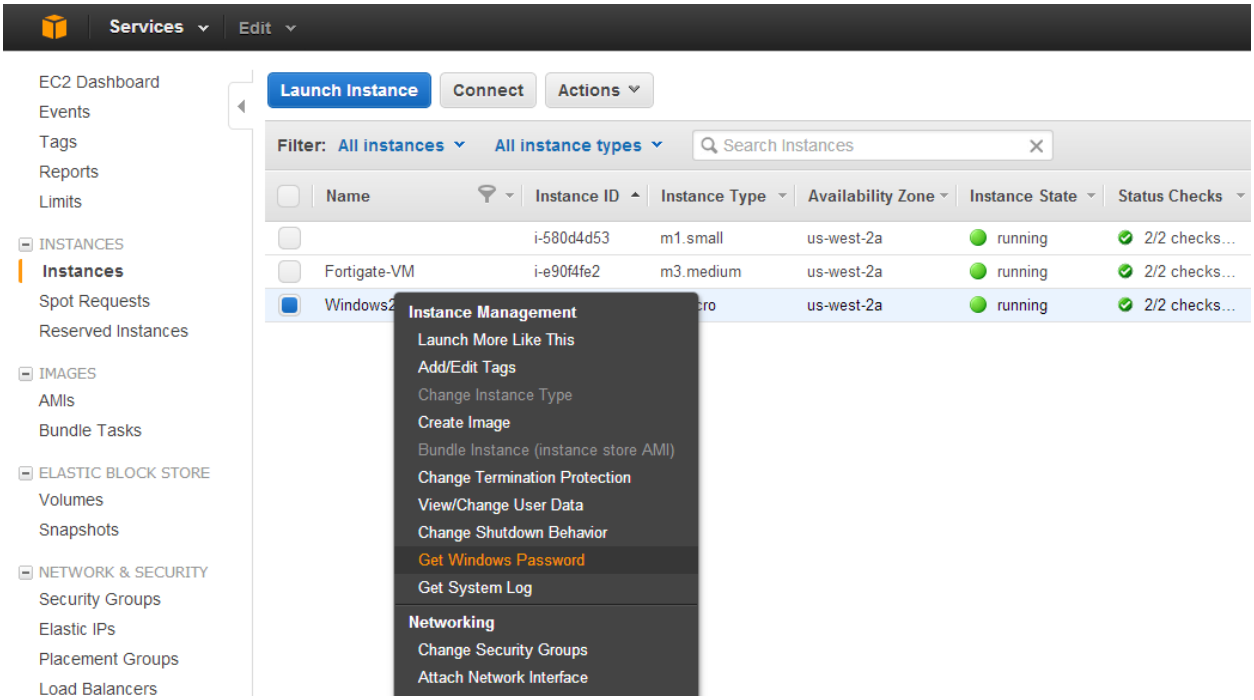


Figure 32

- You will be asked for the key pair you created to decypt the administrotr password.

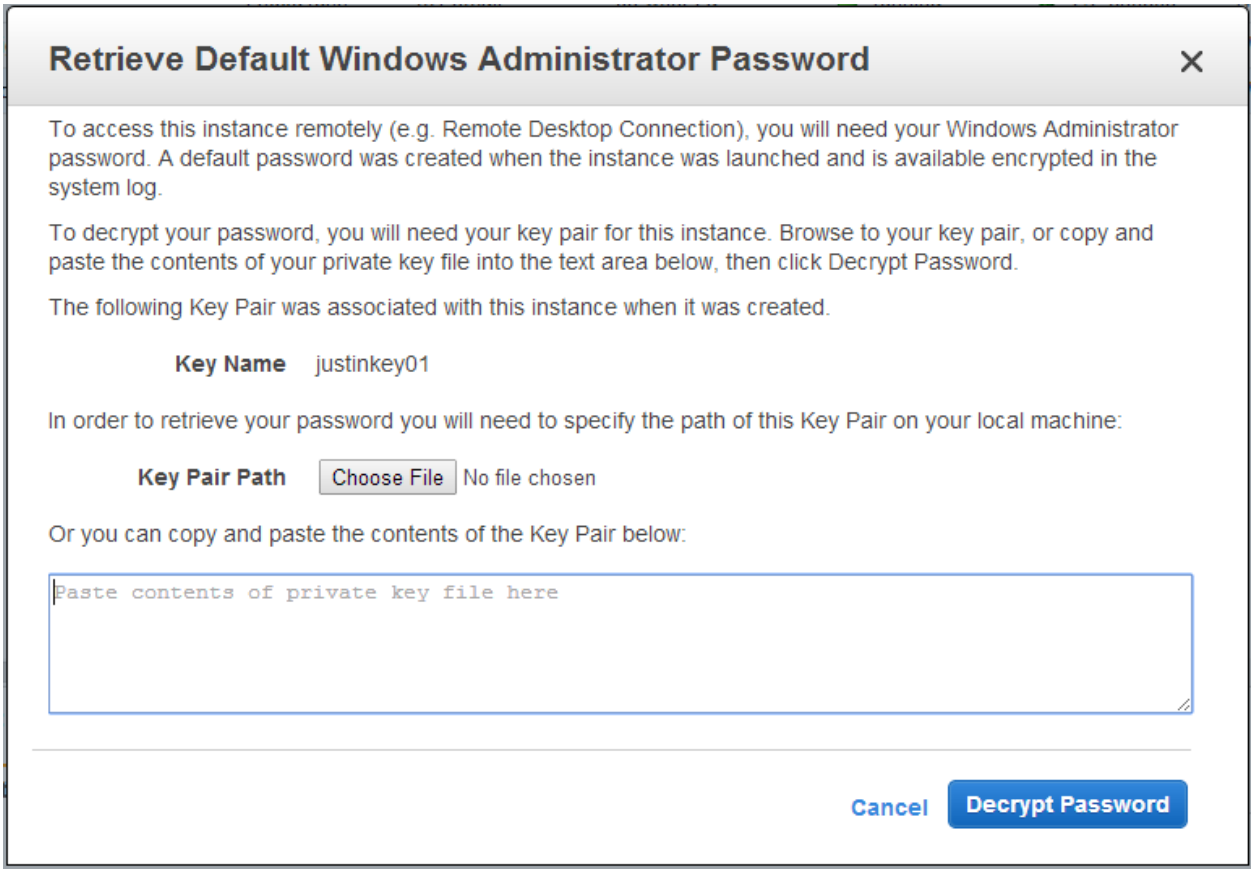


Figure 33

Step 7.3 – Test Outbound access

For testing purposes I have attempted to download a file from eicar.org to show that the FortiGate is inline for outbound traffic. See Figures 34-35.

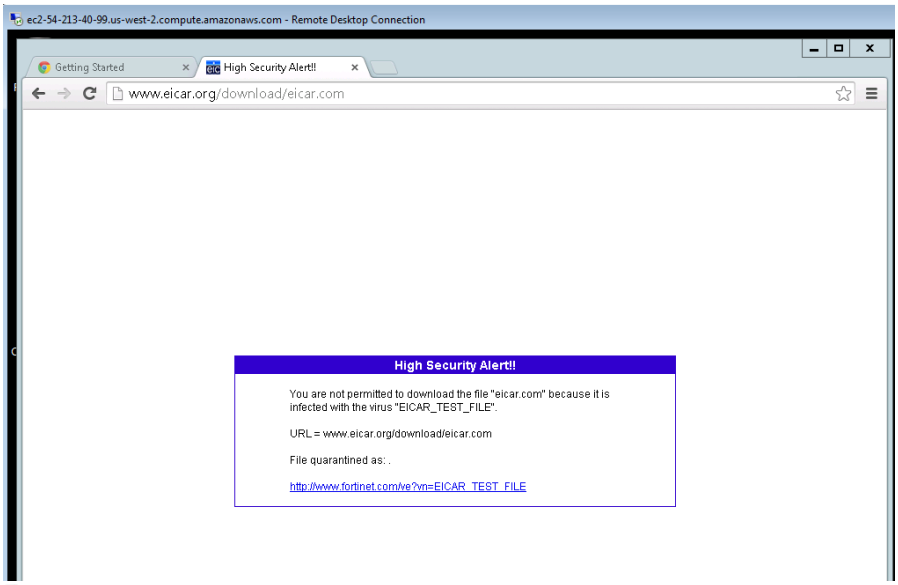


Figure 34

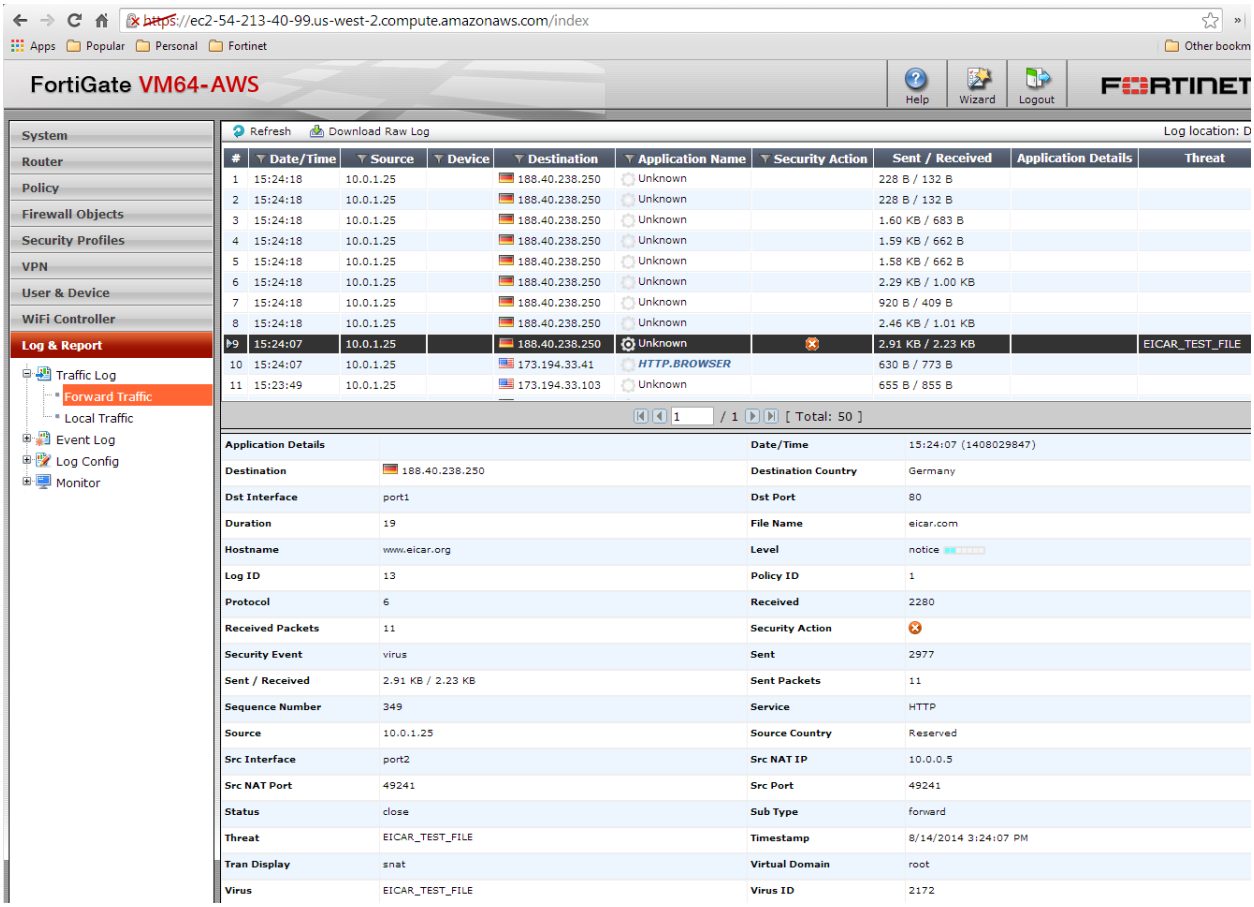


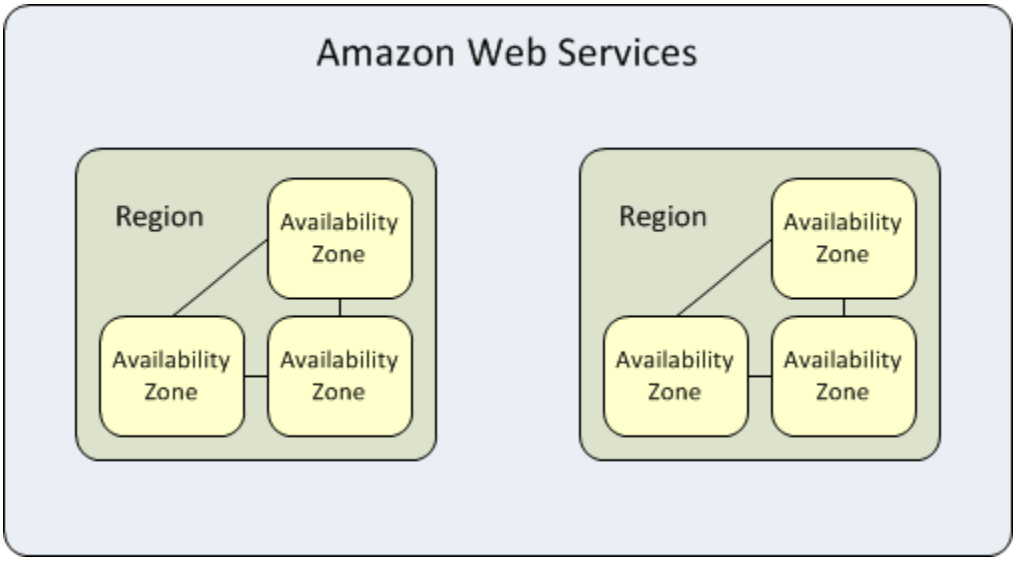
Figure 35

Appendix

Regions and Availability Zones

Region and Availability Zone Concepts

Each region is completely independent. Each Availability Zone is isolated, but the Availability Zones in a region are connected through low-latency links. The following diagram illustrates the relationship between regions and Availability Zones.



You can list the Availability Zones that are available to your account. For more information, see Describing Your Regions and Availability Zones. When you launch an instance, you can select an Availability Zone or let us choose one for you. If you distribute your instances across multiple Availability Zones and one instance fails, you can design your application so that an instance in another Availability Zone can handle requests.

Amazon EC2 resources are either global, tied to a region, or tied to an Availability Zone. For more information, see AWS documentation for the complete article.

Amazon EC2 Key Pairs

Amazon EC2 uses public–key cryptography to encrypt and decrypt login information. Public–key cryptography uses a public key to encrypt a piece of data, such as a password, then the recipient uses the private key to decrypt the data. The public and private keys are known as a *key pair*.

To log in to your instance, you must create a key pair, specify the name of the key pair when you launch the instance, and provide the private key when you connect to the instance. Linux/Unix instances have no password, and you use a key pair to log in using SSH. With Windows instances, you use a key pair to obtain the administrator password and then log in using RDP.

Creating a Key Pair

You can use Amazon EC2 to create your key pair. For more information, see Creating Your Key Pair Using Amazon EC2. Alternatively, you could use a third-party tool and then import the public key to Amazon EC2. For more information, see Importing Your Own Key Pair to Amazon EC2.

Each key pair requires a name. Be sure to choose a name that is easy to remember. Amazon EC2 associates the public key with the name that you specify as the key name. Amazon EC2 stores the public key only, and you store the private key. Anyone who possesses your private key can decrypt your login information, so it's important that you store your private keys in a secure place.

The keys that Amazon EC2 uses are 1024-bit SSH-2 RSA keys. You can have up to five thousand key pairs per region.

Launching and Connecting to Your Instance

When you launch an instance, you should specify the name of the key pair you plan to use to connect to the instance. If you don't specify the name of an existing key pair when you launch an instance, you won't be able to connect to the instance. When you connect to the instance, you must specify the private key that corresponds to the key pair you specified when you launched the instance. Amazon EC2 doesn't keep a copy of your private key; therefore, if you lose your private key, there is no way to recover it. If you lose the private key for an instance store-backed instance, you can't access the instance; you should terminate the instance and launch another instance using a new key pair. If you lose the private key for an EBS-backed instance, you can regain access to your instance. For more information, see Connecting to Your Instance if You Lose Your Private Key.

Detailed VPC Diagram

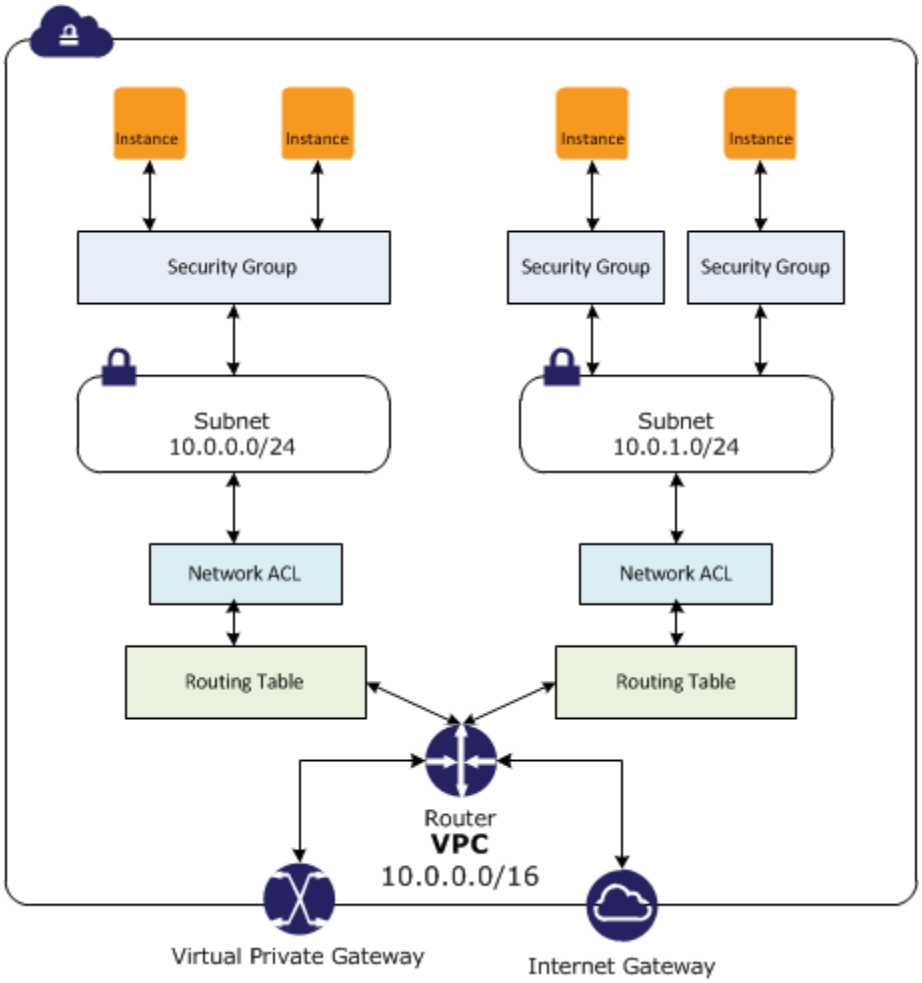


Figure 36

Additional info and links

http://aws.amazon.com/documentation/vpc/

http://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/VPC_Introduction.html