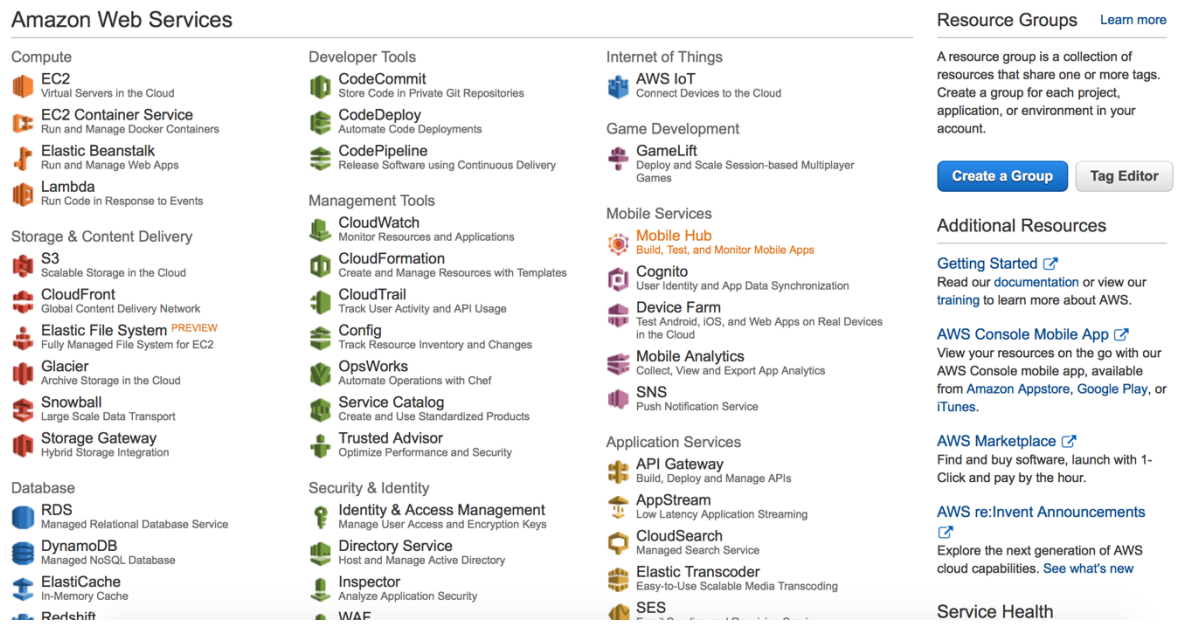
FortiGate HA Setup in a VPC_CFT Steps

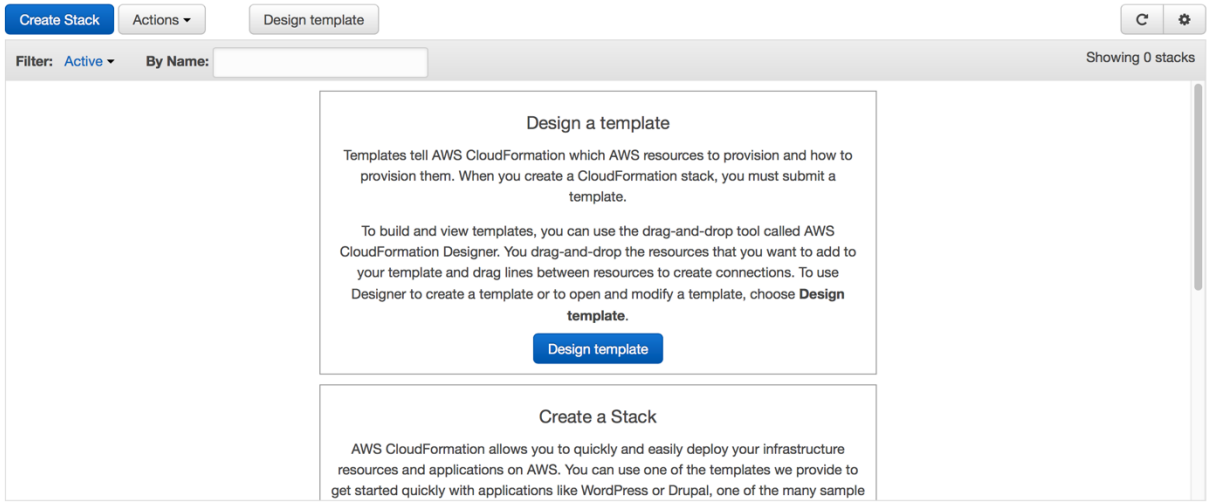
Step 1) Download the CloudFormation template here at https://s3.amazonaws.com/fortigatetemplates/FortiGate-HAtemplate5.4.1.template

Step 2) Login to AWS Management Console at https://aws.amazon.com using your AWS login credentials

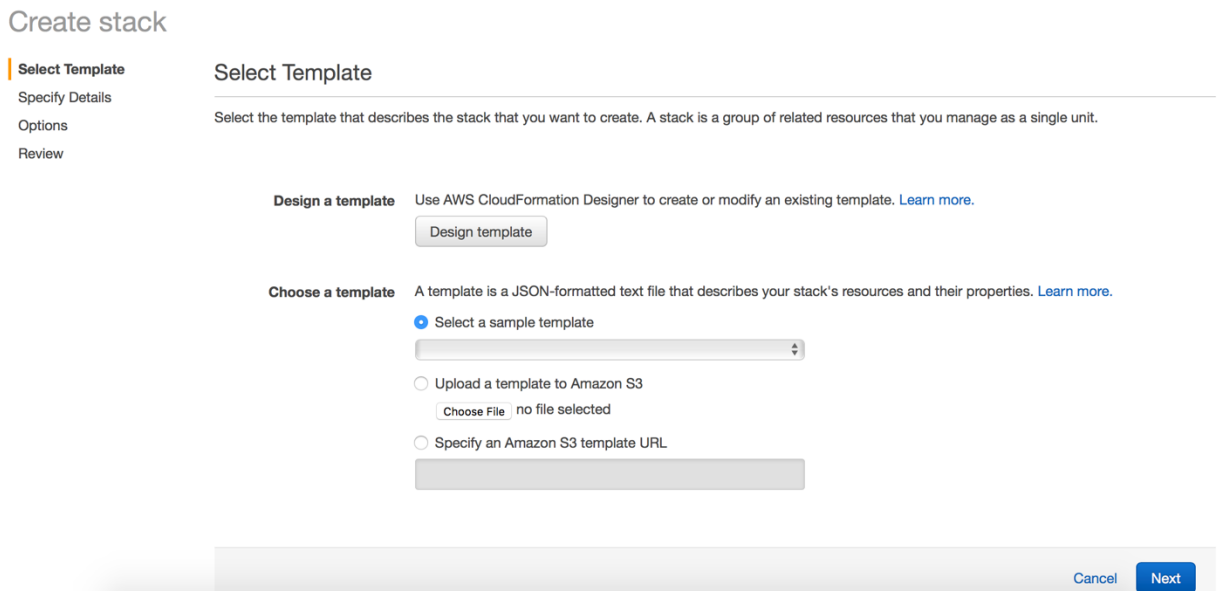
Step 3) Navigate to CloudFormation service in the Management Tools Section of the Management Console.

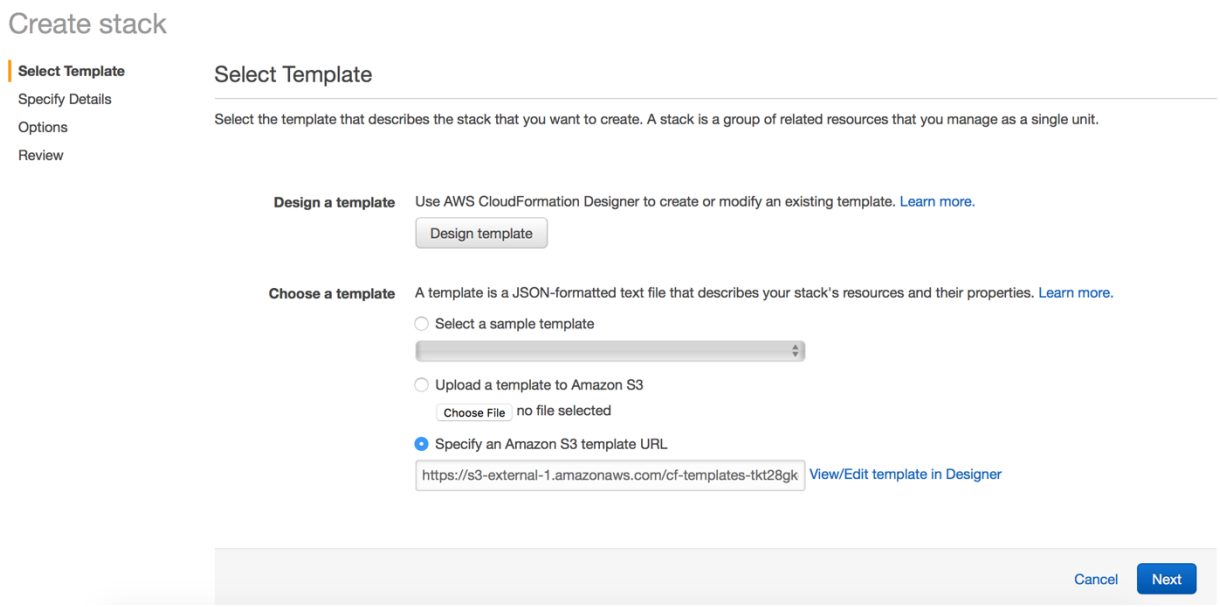


Step 4) Click on Create Stack



Step 5) Choose the option "Upload a template to Amazon S3", Click on "Choose File" and browse to the downloaded template from step 1). click Next





Step 6) Here provide a stack name that to identify the CloudFormation stack

Step 7) Choose the appropriate values for all the parameters that is listed under the parameter section. There are some default values but can be changed according to the deployment needed. A short description for each parameter is provided to give some information on what the parameter is used for and what values to choose;/.;]. The parameters are split into different sections for convenience. Make sure to provide information for all the parameters. The VPC CIDR cannot be greater than /16 and cannot be less than /28. For an AWS recommended fault tolerance, the AZ for each firewall1 and firewall2 should be different. The keypair would be the same keypair that would be used to create the firewalls and the worker node.

Stack name

Parameters

VPC Configuration

Please enter the VPC specific details here	10.0.0.0/16	Enter the VPC CIDR that you want to use

FortiGate Instance Configuration

FortiGateInstanceType	m3.large	Enter the instance type and size that you want for the FortiGates
CIDRForFortiGateAccess	0.0.0.0/0	Enter the CIDR from which FortiGate instances needs to be accessed

Primary FortiGate Instance Interface Configuration

Public1Subnet	10.0.0.0/24	Enter the value of the Public1 subnet
Private1Subnet	10.0.1.0/24	Enter the value of the Private1 subnet
Public1IP		Enter the IP address for the external interface of the FortiGate1(IP from Public1Subnet)
Private1InternalIP		Enter the IP address for the internal interface of the FortiGate1(IP from Private1Subnet)

Backup FortiGate Instance Interface Configuration

Public2Subnet	10.0.2.0/24	Enter the value of the Public2 subnet
Private2Subnet	10.0.3.0/24	Enter the value of the Public1 subnet
Public2IP		Enter the IP address for the external interface of the FortiGate1(IP from Public1Subnet)
Private2InternalIP		Enter the IP address for the internal interface of the FortiGate2(IP from Private2Subnet)

Worker Node Instance Configuration

CIDRForASAccess		Enter the CIDR from which AS instance needs to be accessed

Route53 Configuration

DomainName		Enter the Domain Name in which the DNS Record Sets would be created
DNSPrefix		Enter the Prefix for the DNS Record Set that would be created for the two instances

Other parameters

AZForFirewall1	Search	Enter the AZ for the primary firewal
AZForFirewall2	Search	Enter the AZ for the backup firewal
KeyPair	Search	Enter the keypair that you want to associate with the launch of the test instances and worker node

Step 8) Click Next and provide a key name(optional)

Create stack

- Select Template
- Specify Details
- **Options**
- Review

Options

Tags

You can specify tags (key-value pairs) for resources in your stack. You can add up to 10 unique key-value pairs for each stack. Learn more.

	Key (127 characters maximum)	Value (255 characters maximum)	
1			+

Advanced

You can set additional options for your stack, like notification options and a stack policy. Learn more.

Cancel Previous Next

Step 9) Click Create

Create stack

Select Template
Specify Details
Options
Review

Review

Template

Template URL	https://s3-external-1.amazonaws.com/cf-templates-tkt28gkesmp-us-east-1/2016175v5h-FortiGate-template5.4.1.template
Description	AWS CloudFormation Template to launch VPC with a FortiGate protecting the resources in the private subnet
Estimate cost	Cost

Details

Stack name	FortiDemo

VPC and Subnets Information

VPCCIDR	10.0.0.0/16
PublicSubnet	10.0.0.0/24
PrivateSubnet	10.0.1.0/24

FortiGate Instance Configuration

FortiGateInstanceType	m3.large
CIDRForFortiGateAccess	0.0.0.0/0
AZForFirewall	us-east-1a
KeyPair	AS_Virginia

IP Configuration for the FortiGate Interfaces

PublicIP	10.0.0.254
PrivateInternalIP	10.0.1.254
Create IAM resources	No

Options

Tags

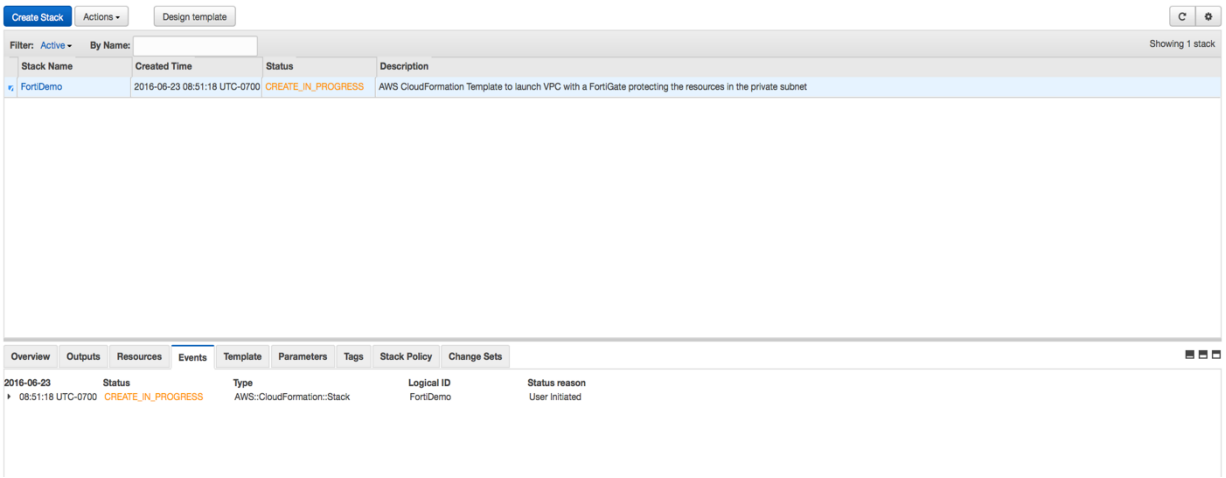
No tags provided

Advanced

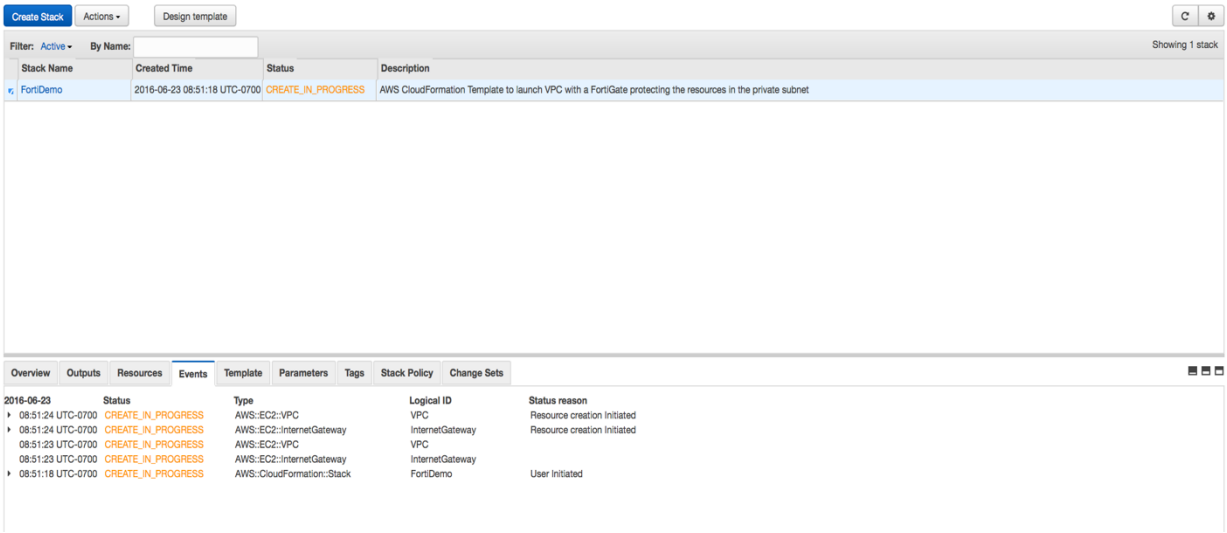
Notification	
Timeout	none
Rollback on failure	Yes

Cancel Previous Create

Step 10) Wait for the CloudFormation service to finish creating all the resources. The events tab should the information on what the template is creating. The resources tab should have the information on what resources are created.



Step 11) Once the stack is created, the Output section would have the login information for the Firewall and also to the Worker Node.



Create Stack | Actions | Design template

Filter: Active By Name: Showing 1 stack

Stack Name	Created Time	Status	Description
FortiDemo	2016-06-23 08:51:18 UTC-0700	CREATE_IN_PROGRESS	AWS CloudFormation Template to launch VPC with a FortiGate protecting the resources in the private subnet

Overview | Outputs | Resources | Events | Template | Parameters | Tags | Stack Policy | Change Sets

Logical ID	Physical ID	Type	Status	Status Reason
InternetGateway	igw-884b1bec	AWS::EC2::InternetGateway	CREATE_COMPLETE	
VPC	vpc-c00dbaa7	AWS::EC2::VPC	CREATE_COMPLETE	

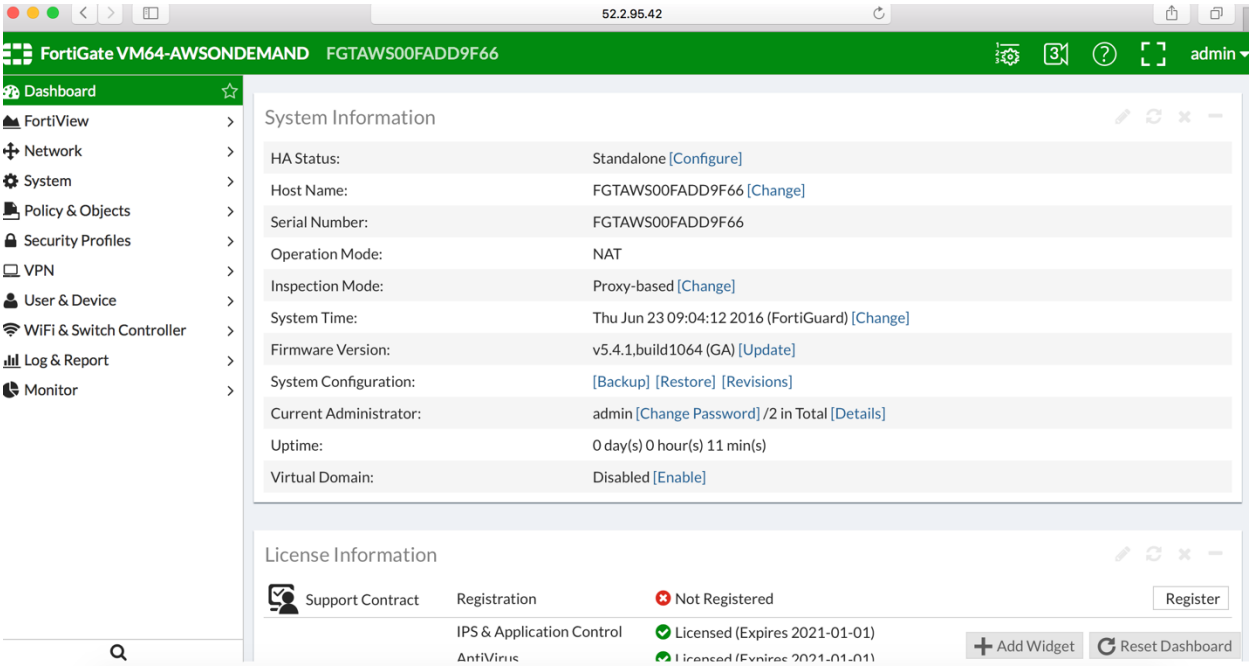
Filter: Active By Name: Showing 1 stack

Stack Name	Created Time	Status	Description
Fortinet1	2016-07-22 14:21:48 UTC-0700	CREATE_COMPLETE	AWS CloudFormation Template to launch VPC with Two Subnets and Two instance in a VPC.

Overview | Outputs | Resources | Events | Template | Parameters | Tags | Stack Policy | Change Sets

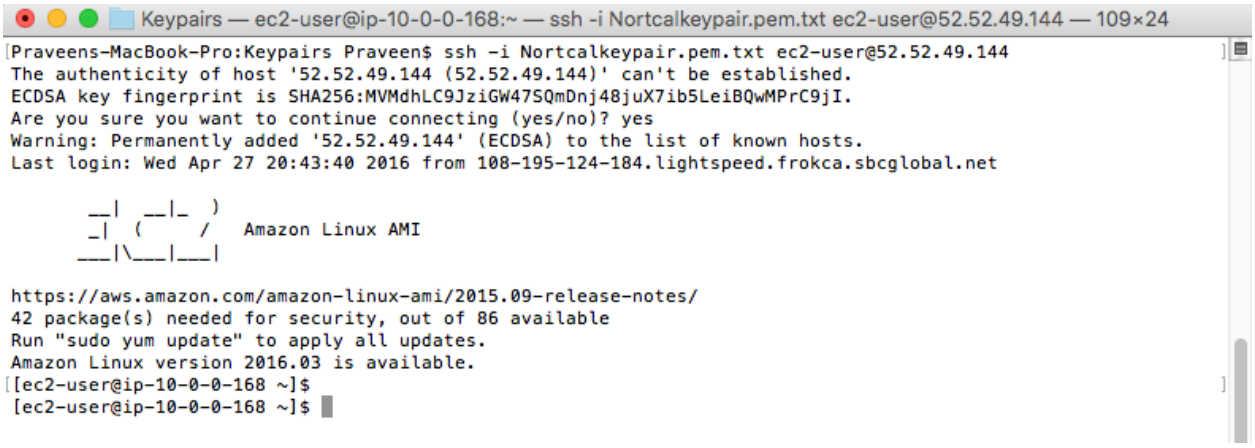
Key	Value	Description
Fortigate	https://52.52.49.137	Connecting to the Active Fortigate
ASInstance	52.52.49.144	Connect to Amazon Linux Worker Node instance using ssh to this IP
Username	admin	Username to Access Fortigate
Password	i-2d301798	Password to login Fortigate is the primary instance id

Step 12) Login to the firewall through ssh/https and the firewall can be configured from there.



Step 13) Login to the Worker Node through ssh. The IP address of the Worker node is listed in the results section of the CloudFormation stack. The worker node is a Amazon Linux ami that has the scripts that are needed to monitor the FortiGates.
http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EC2_GetStarted.html#ec2-connect-to-instance-linux

Here is a screenshot of the command to login and how it looks like after login.



Step 14) Navigate to the folder fortigateha once you are logged into the worker node.
cd fortigateha

```
Keypairs — ec2-user@ip-10-0-0-168:~/fortigateha — ssh -i Nortcalkeypair.pem.txt ec2-user@52.52.49.144 — 109...
Praveens-MacBook-Pro:Keypairs Praveen$ ssh -i Nortcalkeypair.pem.txt ec2-user@52.52.49.144
The authenticity of host '52.52.49.144 (52.52.49.144)' can't be established.
ECDSA key fingerprint is SHA256:MVMdhLC9JziGW47SQmDnj48juX7ib5LeiBQwMPrC9jI.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '52.52.49.144' (ECDSA) to the list of known hosts.
Last login: Wed Apr 27 20:43:40 2016 from 108-195-124-184.lightspeed.frokca.sbcglobal.net

       __|  __|_  )
       _|  (     /   Amazon Linux AMI
      ___|\___|___|

https://aws.amazon.com/amazon-linux-ami/2015.09-release-notes/
42 package(s) needed for security, out of 86 available
Run "sudo yum update" to apply all updates.
Amazon Linux version 2016.03 is available.
[ec2-user@ip-10-0-0-168 ~]$
[ec2-user@ip-10-0-0-168 ~]$ cd fortigateha/
[ec2-user@ip-10-0-0-168 fortigateha]$
```

Step 15) Execute the python script fortigateha.py with the runtime variable of stack name.
python fortigateha.py stackname
Once this is done, FortiGate HA setup is complete.

```
Praveen — ec2-user@ip-10-0-0-168:~/fortigateha — ssh -i Desktop/Keypairs/Nortcalkeypair.pem.txt ec2-user@52.52.49...
[ec2-user@ip-10-0-0-168 fortigateha]$ python fortigateha.py Fortinet1
```

Step 16) Once the Script is started, the output will look like below.

Praveen — ec2-user@ip-10-0-0-168:~/fortigateha — ssh -i Desktop/Keypairs/Nortcalkeypair.pem.txt ec2-user@52.52.49...

```
[ec2-user@ip-10-0-0-168 fortigateha]$ python fortigateha.py Fortinet1
The Primary Instance is i-2d301798
The Backup Instance is i-e3117da6
The primary IP is 10.0.0.254
PING 10.0.0.254 (10.0.0.254) 56(84) bytes of data.
64 bytes from 10.0.0.254: icmp_seq=1 ttl=255 time=0.668 ms

--- 10.0.0.254 ping statistics ---
1 packets transmitted, 1 received, 0% packet loss, time 0ms
rtt min/avg/max/mdev = 0.668/0.668/0.668/0.000 ms
The primary IP is 10.0.0.254
PING 10.0.0.254 (10.0.0.254) 56(84) bytes of data.
64 bytes from 10.0.0.254: icmp_seq=1 ttl=255 time=0.482 ms

--- 10.0.0.254 ping statistics ---
1 packets transmitted, 1 received, 0% packet loss, time 0ms
rtt min/avg/max/mdev = 0.482/0.482/0.482/0.000 ms
The primary IP is 10.0.0.254
PING 10.0.0.254 (10.0.0.254) 56(84) bytes of data.
64 bytes from 10.0.0.254: icmp_seq=1 ttl=255 time=0.462 ms

--- 10.0.0.254 ping statistics ---
1 packets transmitted, 1 received, 0% packet loss, time 0ms
```