



ORACLE



Deploying Oracle SBC in Amazon Web Services (AWS) Public Cloud

Technical Application Note

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COMMUNICATIONS



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1 Intended Audience

This document is intended for use by Oracle Systems Engineers, third party Systems Integrators, and end users of the Oracle Session Border Controller. It assumes that the reader is familiar with basic operations of the Oracle Session Border Controller and Amazon Web Services (AWS) Cloud Deployments.

2 Document Overview

You can deploy the Oracle Session Border Controller on Amazon's Elastic Computing (EC2) infrastructure in either standalone or High Availability (HA) mode. AWS provides multiple ways of managing your environment(s). This document focuses on the web console. The console provides navigation via a web-page pane with links to specified functions on the left side of console pages. These procedures also assume you have reviewed AWS documentation, and can access console pages and navigation

3 Related Documentation

3.1 Oracle SBC

- [Oracle® Communications Session Border Controller Platform Preparation and Installation Guide](#)
- [Oracle® Enterprise Session Border Controller Web GUI User Guide](#)
- [Oracle® Enterprise Session Border Controller ACLI Configuration Guide](#)
- [Oracle® Enterprise Session Border Controller Release Notes](#)

3.2 AWS

- [Introduction to AWS](#)
- [Getting started with AWS](#)

3.3 Software Used

Software version
SBC 8.5

3.4 Revision History

Version	Date Revised	Description of Changes
1.0	01/13/2020	Initial publication
1.1	02/06/2020	Added lot more Screenshots, revision history table

4 Requirements

- 1) A subscription for AWS
- 2) Access to Oracle Enterprise SBC kvm image.

The KVM release package can be downloaded through the My Oracle Support portal, under the Patches and Upgrades tab, or can be obtained by reaching out to your Oracle Account representatives.

5 Create and deploy on AWS

5.1 Prerequisites to Deploying an EC2 instance

- You have identified and are deploying to the correct AWS Region. This is typically a default component of your EC2 Account
- You have identified and are deploying to the correct AWS Availability Zone. By deploying 2 (HA) instances during deployment at the same time, you are ensuring that both instances reside in the same Availability Zone.
- An Amazon Virtual Private Cloud (VPC) is configured.
- A security policy is configured.
- You have determined the number of management and media interfaces you want for each instance.
- All subnets are configured. Each Oracle SBC management and media interface requires its own unique subnet.

Note: Your EC2 workspace may present dialogs and fields that differ from this procedure. For full information on deploying EC2 instances, see the Amazon EC2 documentation.

5.2 Generate an EC2 AMI from the Oracle SBC Image

You need to perform this procedure to convert the Oracle SBC image into an AMI, from which you can create Oracle SBC machines.

This procedure requires that you, from the EC2 system, create an Oracle linux machine, attach a new disk to it, and put the ORACLE SBC image on your machine. Next, use the linux command line to convert the image from qemu to raw format, then perform a data definition (dd) procedure to write the disk image. Finally, you create a snapshot of the disk and convert the snapshot to an AMI image. You can create Oracle SBCs from this AMI.

5.2.1 Installing Oracle Linux Machine

Oracle Linux AMI's are available in AWS as public images. Please find the link to download here (<https://www.oracle.com/linux/>) Here we go through the steps to locate the Oracle-provided Oracle Linux AMIs in AWS and launch an Oracle Linux instance using Amazon EC2 console.

1. Login to the console. Scroll down to Images ->AMI.
It displays the images "Owned by me".

Name	AMI ID	AMI name	Source
shruthi-TCZ175	ami-01e102789a7b9dbee	shruthi-TCZ175	272824159043/shruthi-TCZ175
nnSCZ910-FP	ami-013d6df501b8ccd7c	nnSCZ910-FP	272824159043/nnSCZ910-FP
nnSCZ910	ami-01335150449a700d3	nnSCZ910	272824159043/nnSCZ910
nnTCZ154	ami-00c21bf4ded277b6e	nnTCZ154	272824159043/nnTCZ154
raushan-182	ami-0dea8e56cfc6b58c	raushan-182	272824159043/raushan-182
nnTCZ156	ami-004156fe859431536	nnTCZ156	272824159043/nnTCZ156
SCZ900p2	ami-05f994bd63cef1db8	nnSCz900p2	272824159043/nnSCz900p2
perftest_ami_...	ami-096fea0e9709f8267	perftest_sipp	272824159043/perftest_sipp
raushan-184	ami-01048c10db0a16bd5	raushan-184	272824159043/raushan-184
FTP-Server	ami-0c72ac1daf707c6fb	ftp-ami	272824159043/ftp-ami

2. Now change the option to Public Images

Name	AMI ID	AMI name	Source
-	ami-024fc608af8f886bc	Zytlmg010422	925975727637/Zytlmg010422
-	ami-0fc9e52ba2aedb00d	zx-test-0.0.2	643962689773/zx-test-0.0.2
-	ami-00b3e95ade0a05b9b	ztna_ubuntu2004	704109570831/ztna_ubuntu2004
-	ami-08ff823a0926a300a	ztna-connector-ami-2.9.0.1035...	aws-marketplace/ztna-connector-ami-
-	ami-02616e1dbc5c12615	ztna-connector-ami-2.10.0.101...	aws-marketplace/ztna-connector-ami-
-	ami-055a268b8002dd191	zstdadi470-f04c514f-c37f-4a22...	aws-marketplace/zstdadi470-f04c514f
-	ami-04da9fc04d6148f89	zrm3.9-source-image-tmp-for-r...	aws-marketplace/zrm3.9-source-image
-	ami-0541de989ab930091	zpa-service-edge-2022.08-8ba4...	aws-marketplace/zpa-service-edge-20:
-	ami-0c404a000c15a0328	zpa-connector-2022.08-3d809...	aws-marketplace/zpa-connector-2022.
-	ami-0b03ea364303b0eae	zonexos-tableau-v1	246901049426/zonexos-tableau-v1

3. The Oracle provided Oracle Linux AMI's are present if we search using the Owner Id filter where the value is owner ID =131827586825 .

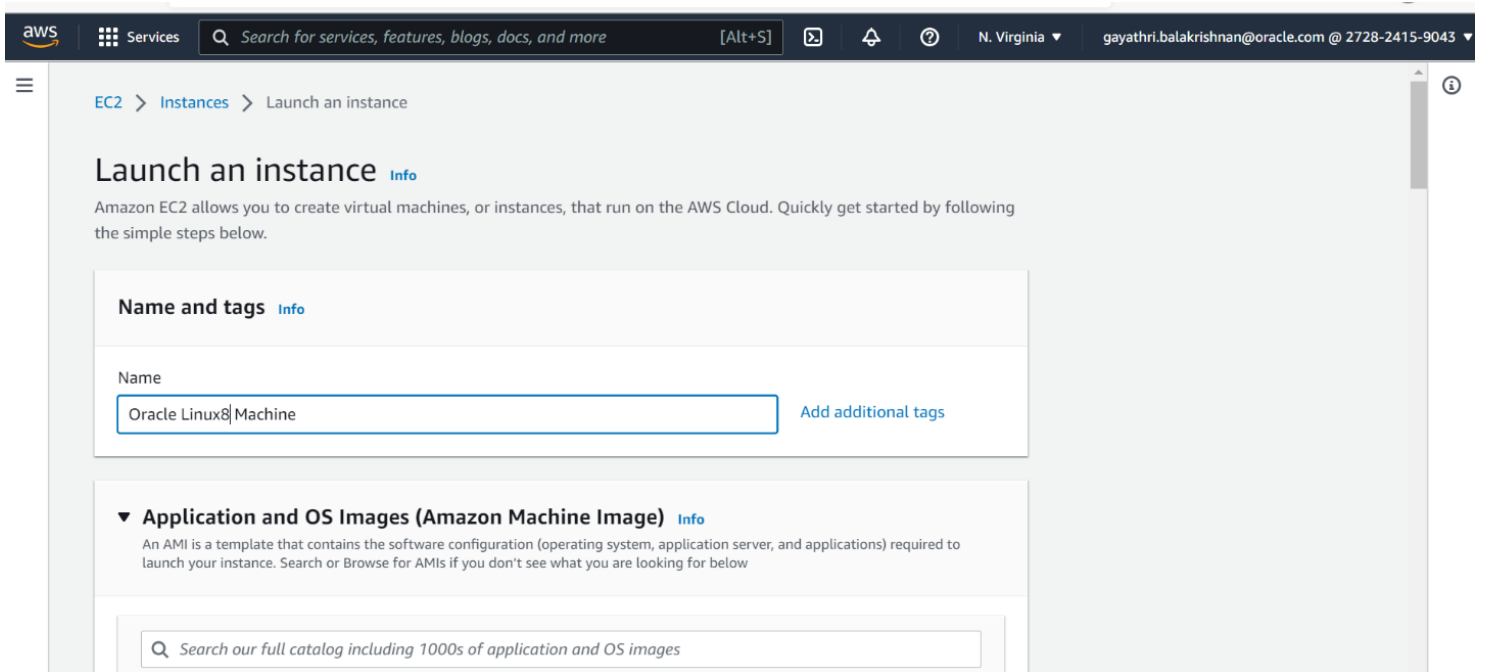
Name	AMI ID	AMI name	Source
-	ami-01dcd83c7e846ec	OL7.9-x86_64-HVM-2020-12-07	131827586825/OL7.9-x86_64-HVM-20..
-	ami-0982e92692864ea84	OL8.2-x86_64-HVM-2020-12-09	131827586825/OL8.2-x86_64-HVM-20..
-	ami-070cc0228205fa99c	OL8.3-x86_64-HVM-2020-12-10	131827586825/OL8.3-x86_64-HVM-20..
-	ami-0eace0bf55b70bc9	OL8.4-x86_64-HVM-2021-05-28	131827586825/OL8.4-x86_64-HVM-20..
-	ami-047627086234fbbe7	OL8.5-x86_64-HVM-2021-11-24	131827586825/OL8.5-x86_64-HVM-20..
-	ami-0c13f3910c11238bb	OL8.6-x86_64-HVM-2022-05-19	131827586825/OL8.6-x86_64-HVM-20..
-	ami-0853e82c22613a7e4	OL9.0-x86_64-HVM-2022-07-28	131827586825/OL9.0-x86_64-HVM-20..

Oracle Linux AMI starting from 6.9 to the latest patches in various releases are available..We have used OL 8.2 in our setup.

4. Click on the chosen AMI and Launch Instance from AMI as shown

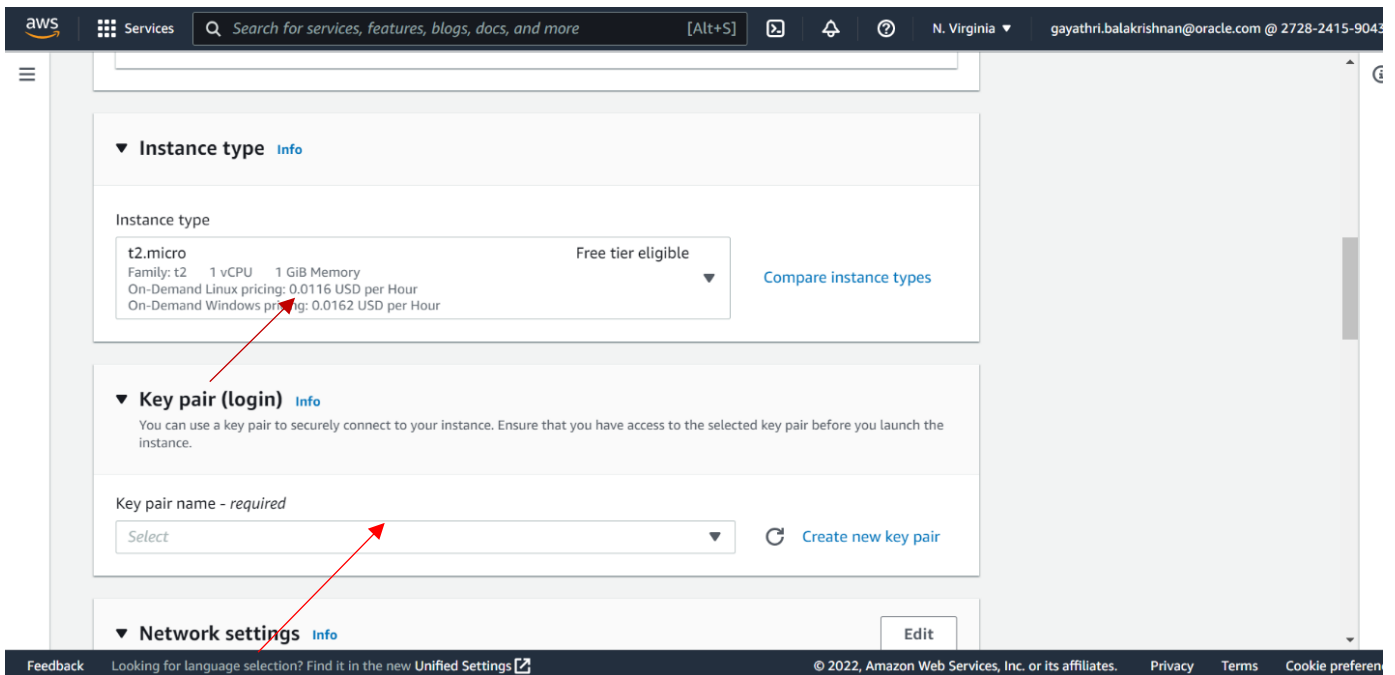
The screenshot displays the AWS Management Console interface for an Amazon Machine Image (AMI). The breadcrumb navigation shows 'EC2 > AMIs > ami-0982e92692864ea84'. The main content area is titled 'Image summary for ami-0982e92692864ea84' and features a table of metadata. A red arrow points to the 'Launch instance from AMI' button, which is highlighted in orange. The table contains the following information:

AMI ID	Image type	Platform details	Root device type
ami-0982e92692864ea84	machine	Linux/UNIX	EBS
AMI name	Owner account ID	Architecture	Usage operation
OL8.2-x86_64-HVM-2020-12-09	131827586825	x86_64	RunInstances
Root device name	Status	Source	Virtualization type
/dev/sda1	Available	131827586825/OL8.2-x86_64-HVM-2020-12-09	hvm
Boot mode	State reason	Creation date	Kernel ID
-	-	Thu Dec 10 2020 16:50:28 GMT+0530 (India Standard Time)	-
Block devices	Description	Product codes	RAM disk ID
/dev/sda1=snap-028739ab3cec92fd1:2:true:gp2	Oracle Linux 7 update 9 for x86_64 HVM	-	-



Launch the instance with type as t2.micro.

The instance requires a keypair. You can enter a key if you already have one or choose to



Create a new key pair

▼ Key pair (login) [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - *required*

OL9



[Create new key pair](#)

Click on the Network Settings and click Edit. Enable the Auto -assign public IP .

subnet-0ab42eb5cc1511ue FLIGHT [Create new subnet](#)
VPC: vpc-0229f91ff2571ccf1 Owner: 272824159043 Availability Zone: us-east-1f
IP addresses available: 244 CIDR: 10.1.4.0/24

Auto-assign public IP [Info](#)

Enable

Firewall (security groups) [Info](#)

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

Create security group

Select existing security group

Security group name - *required*

launch-wizard-20

This security group will be added to all network interfaces. The name can't be edited after the security group is created. Max length is 255 characters. Valid characters: a-z, A-Z, 0-9, spaces, and _-:/()#,@[]+=&:{}!\$*

Description - *required* [Info](#)

launch-wizard-20 created 2022-10-13T11:08:55.414Z

Inbound security groups rules

Scroll Down to Configure Storage and configure the volumes as shown below

▼ **Configure storage** [Info](#) Advanced

1x GiB ▼ Root volume (Not encrypted)

1x GiB ▼ EBS volume (Not encrypted) Remove

0 x File systems [Edit](#)

Now review the summary and launch the instance

▼ **Summary**

Number of instances [Info](#)

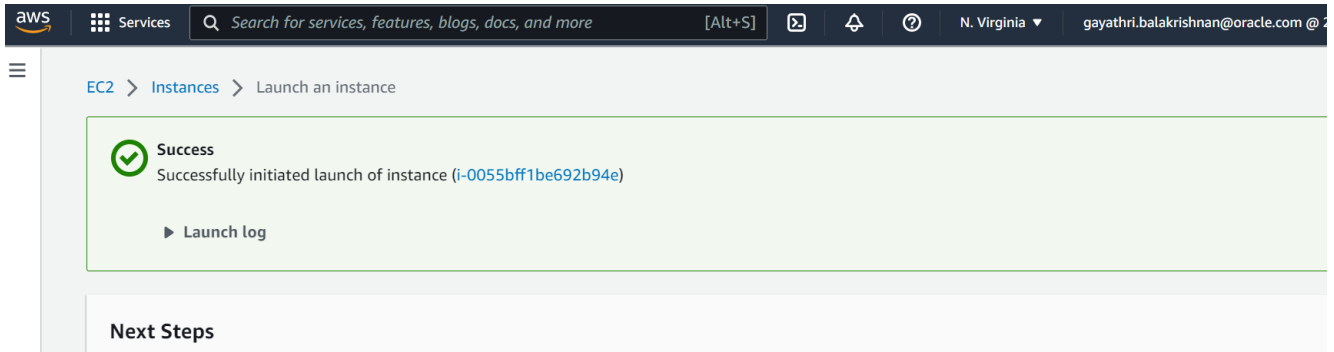
[Software Image \(AMI\)](#)
Oracle Linux 7 update 9 for x86_64...[read more](#)
ami-0982e92692864ea84

[Virtual server type \(instance type\)](#)
t2.micro

[Firewall \(security group\)](#)
New security group

[Storage \(volumes\)](#)
2 volume(s) - 30 GiB

The instance is launched successfully as shown.



For more information on how to launch and Oracle Linux image in AWS please refer <https://community.oracle.com/tech/apps-infra/discussion/4417739/launch-an-oracle-linux-instance-in-aws>

- Download your ORACLE SBC image via Oracle support. The correct image name is appended with -img-vm_kvm.tgz.
- Copy the KVM release image to the target VM using Winscp.
- ssh into the target VM. `ssh -i "vSBC.pem" ec2-user@public_ip_addr`
- Install the following packages on the Oracle Linux machine.
- KVM image conversion utility.-`sudo yum install qemu-img`
- Unzip
- Tar

```

login as: ec2-user
Authenticating with public key "imported-openssh-key"
[ec2-user@ip-10-1-4-188 ~]$ sudo su
[root@ip-10-1-4-188 ec2-user]#
[root@ip-10-1-4-188 ec2-user]#
[root@ip-10-1-4-188 ec2-user]#
[root@ip-10-1-4-188 ec2-user]#
[root@ip-10-1-4-188 ec2-user]#
[root@ip-10-1-4-188 ec2-user]# sudo yum install qemu-img
Last metadata expiration check: 0:18:39 ago on Tue 11 Oct 2022 03:49:25 PM GMT.
Dependencies resolved.

```

Package	Architecture	Version	Repository	Size
Installing:				
qemu-img	x86_64	15:6.2.0-11.module+el8.6.0+20743+999ad699.5	ol8_appstream	2.2 M
Installing dependencies:				
libaio	x86_64	0.3.112-1.el8	ol8_baseos_latest	33 k

```

Transaction Summary
-----
Install 2 Packages

Total download size: 2.2 M
Installed size: 8.3 M
Is this ok [y/N]: y
Downloading Packages:
(1/2): libaio-0.3.112-1.el8.x86_64.rpm                208 kB/s | 33 kB    00:00
(2/2): qemu-img-6.2.0-11.module+el8.6.0+20743+999ad699.5.x86_64.rpm  9.2 MB/s | 2.2 MB  00:00
-----
Total
-----
Oracle Linux 8 BaseOS Latest (x86_64)                9.2 MB/s | 2.2 MB  00:00
Importing GPG key 0xAD986DA3:
  Userid   : "Oracle OSS group (Open Source Software group) <build@oss.oracle.com>"
  Fingerprint: 76FD 30B1 3AB6 7410 B89D B10E 8256 2EA9 AD98 6DA3
  From     : /etc/pki/rpm-gpg/RPM-GPG-KEY-oracle
Is this ok [y/N]: y
Key imported successfully
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.

```

```

[root@ip-10-1-4-188 ec2-user]# sudo yum install unzip
Last metadata expiration check: 0:19:02 ago on Tue 11 Oct 2022 03:49:25 PM GMT.
Dependencies resolved.

```

Package	Architecture	Version	Repository
Installing:			
unzip	x86_64	6.0-46.0.1.el8	ol8_b

```

Transaction Summary
-----
Install 1 Package

Total download size: 196 k
Installed size: 414 k
Is this ok [y/N]: y
Downloading Packages:
unzip-6.0-46.0.1.el8.x86_64.rpm
-----
Total
-----
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing      :
  Installing    : unzip-6.0-46.0.1.el8.x86_64
  Running scriptlet: unzip-6.0-46.0.1.el8.x86_64
  Verifying     : unzip-6.0-46.0.1.el8.x86_64

Installed:
  unzip-6.0-46.0.1.el8.x86_64

Complete!

```

```

tar-1.30-5.el8.x86_64.rpm                                     16 MB/s | 838 kB
-----
Total                                                       15 MB/s | 838 kB
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing      :
  Installing     : tar-2:1.30-5.el8.x86_64
  Running scriptlet: tar-2:1.30-5.el8.x86_64
  Verifying      : tar-2:1.30-5.el8.x86_64

Installed:
  tar-2:1.30-5.el8.x86_64

Complete!
[root@ip-10-1-4-188 ec2-user]#
[root@ip-10-1-4-188 ec2-user]#
[root@ip-10-1-4-188 ec2-user]#
[root@ip-10-1-4-188 ec2-user]#
[root@ip-10-1-4-188 ec2-user]# tar -xvf nnSCZ900pl-img-vm_kvm.tgz
nnSCZ900pl-img-vm_kvm.ovf
nnSCZ900pl-img-vm_kvm.qcow2
legal.txt
[root@ip-10-1-4-188 ec2-user]# qemu-img convert -p nnSCZ900pl-img-vm_kvm.qcow2 nnSCZ830-img-vm_kvm.raw
(100.00/100%)
[root@ip-10-1-4-188 ec2-user]# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
xvda        202:0    0   10G  0 disk
└─xvda1     202:1    0   10G  0 part /
xvdb        202:16   0   20G  0 disk
[root@ip-10-1-4-188 ec2-user]# sudo dd if=nnSCZ830-img-vm_kvm.raw of=/dev/xvdb
39062500+0 records in
39062500+0 records out

```

- Untar the image and extract the .qcow2 file.
- Convert the image to raw format.
`qemu-img convert -p nnSCZ830-img-vm_kvm.qcow2 nnSCZ830-img-vm_kvm.raw`

```

legal.txt
[root@ip-10-1-4-188 ec2-user]# qemu-img convert -p nnSCZ900pl-img-vm_kvm.qcow2 nnSCZ830-img-vm_kvm.raw
(100.00/100%)

```

- Verify the attachment using the linux list block devices command, lsblk. Example output is shown below.

```

(100.00/100%)
[root@ip-10-1-4-188 ec2-user]# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
xvda        202:0    0   10G  0 disk
└─xvda1     202:1    0   10G  0 part /
xvdb        202:16   0   20G  0 disk

```

- Write the raw image into the 20GB volume.
`sudo dd if=nnSCZ830-img-vm_kvm.raw of=/dev/xvdb`

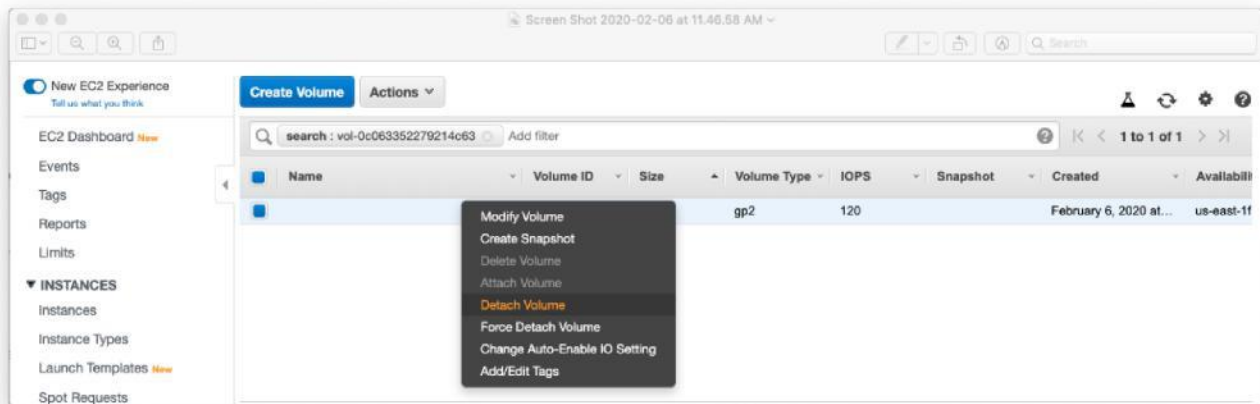
You may or may not be able to use the status=progress flag within this command. This is dependent on the version of the dd command. In addition, note that using the status=progress flag causes the process to take longer.

```

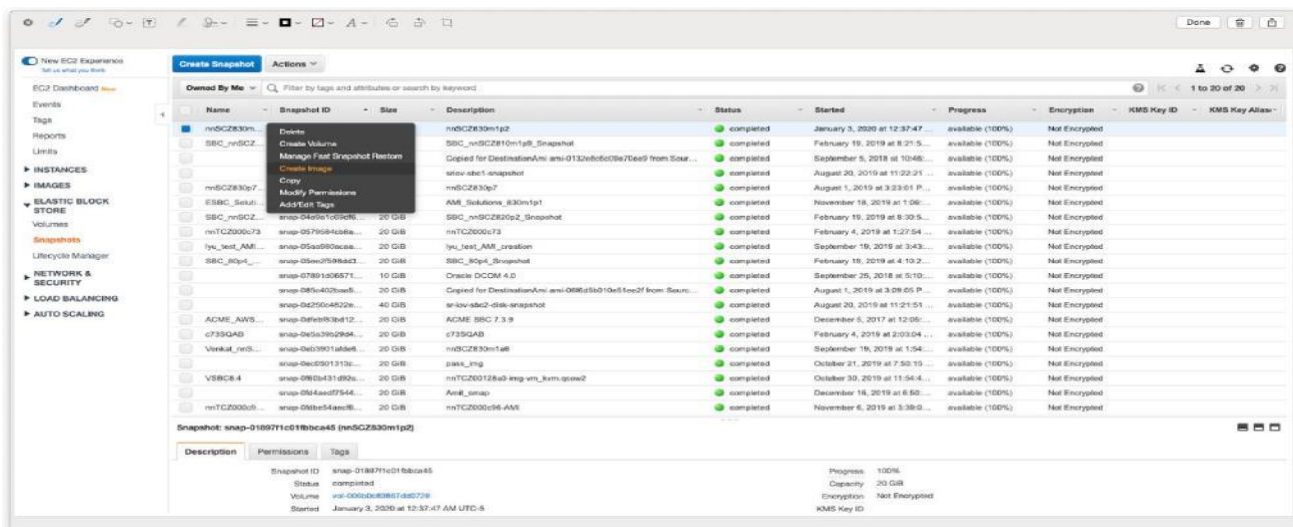
[ec2-user@ip-10-1-1-161 ~]$ sudo dd if=nnSCZ830m1p1-img-vm_kv.m raw of=/dev/xvdp status=progress
19996566016 bytes (20 GB, 19 GiB) copied, 1620 s, 12.3 MB/s
39062500+0 records in
39062500+0 records out
20000000000 bytes (20 GB, 19 GiB) copied, 1620.31 s, 12.3 MB/s
[ec2-user@ip-10-1-1-161 ~]$

```

- From the EC2/Elastic Block Store/Volumes tab, right-click the 20GB volume and click Detach Volume from the VM.

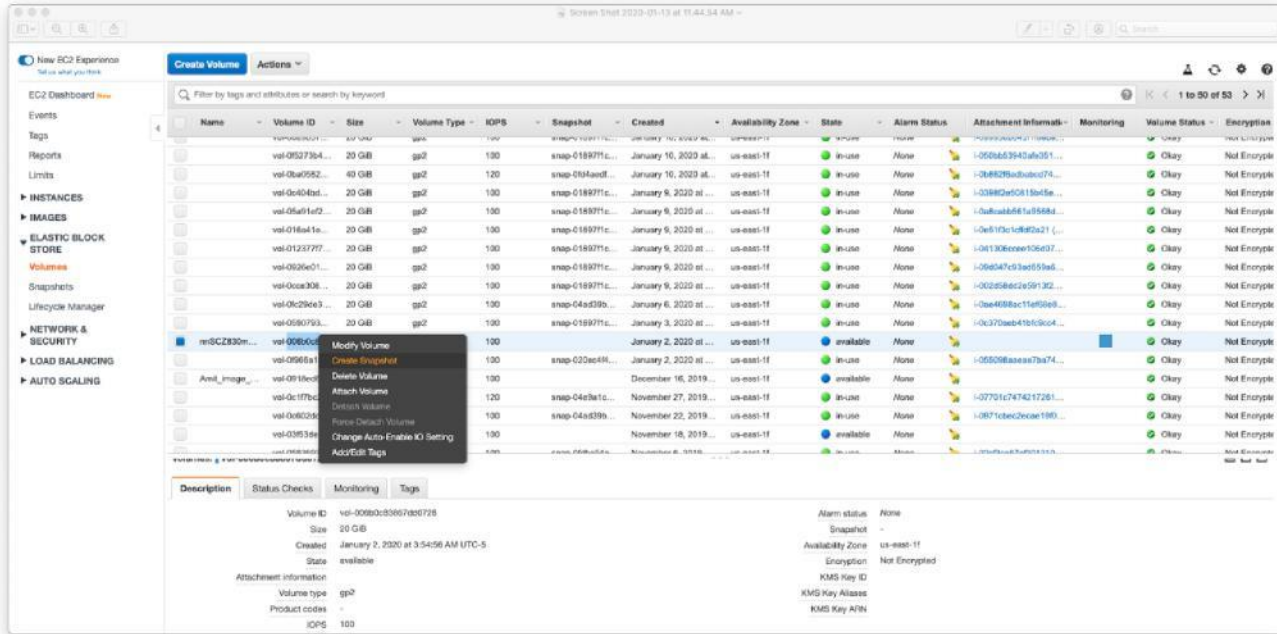


From the same tab, right click the 20GB volume again, click Create Snapshot and wait for the snapshot to complete.

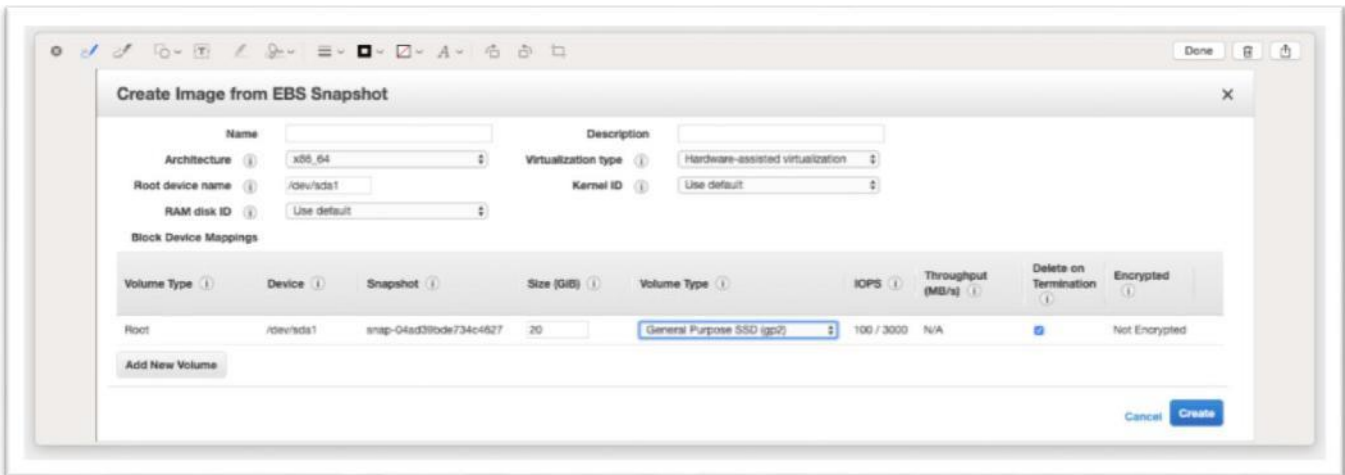


C2/Elastic Block Store/Snapshots tab, right-click the snapshot, and click Create Image to generate an AMI.

The “Create Image” from EBS Snapshot Dialog provides for multiple configurations, Use below parameters



- Name your Image
- Select “x86_64” from the Architecture drop-down.
- Select “Use default” from the RAM disk ID drop-down.
- Select “Hardware-assisted virtualization” from the Virtualization type drop-down.
- Select “Use default” from the Kernel ID drop-down.
- Select “General Purpose SSD” (gp2) from the Volume Type drop-down.

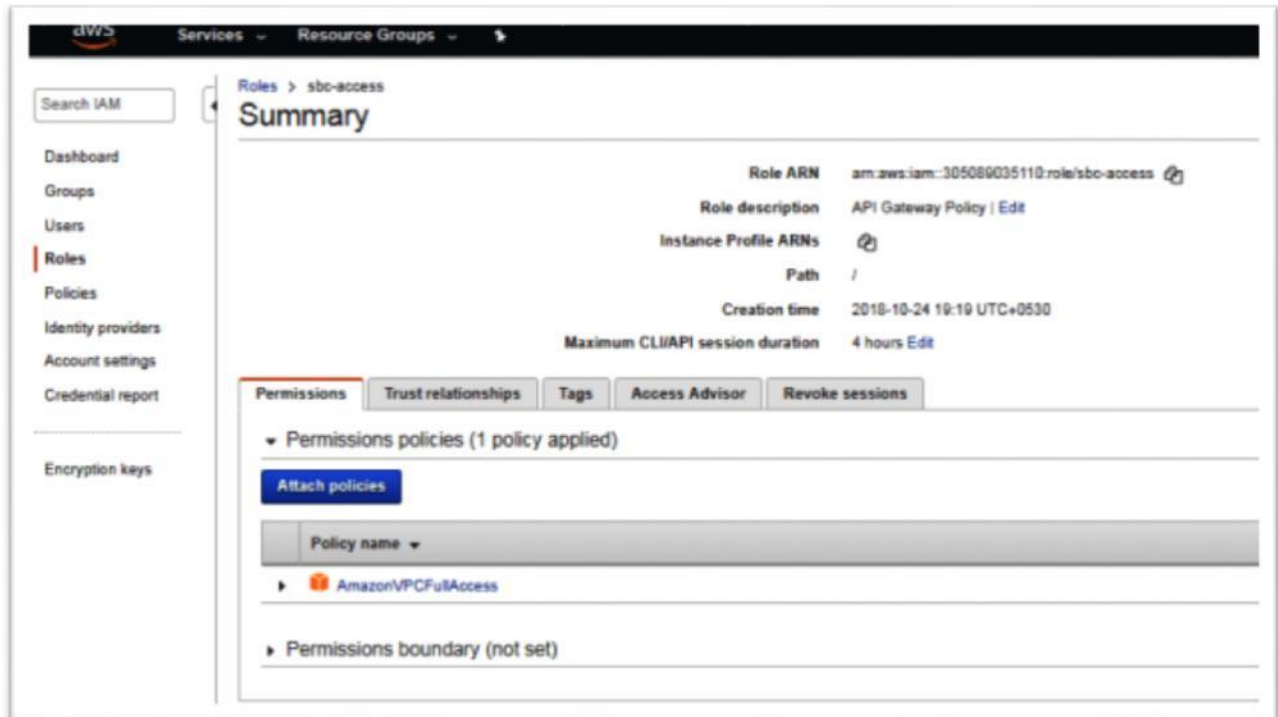


Note: You can use this created AMI to launch any number of new VM instances.

5.3 EC2 Deployment Procedure

5.3.1 Configure an IAM Role (Only Needed if deploying ORACLE SBC in HA)

Create an IAM role to use by HA ORACLE SBC instances deployed for High Availability. Attach the

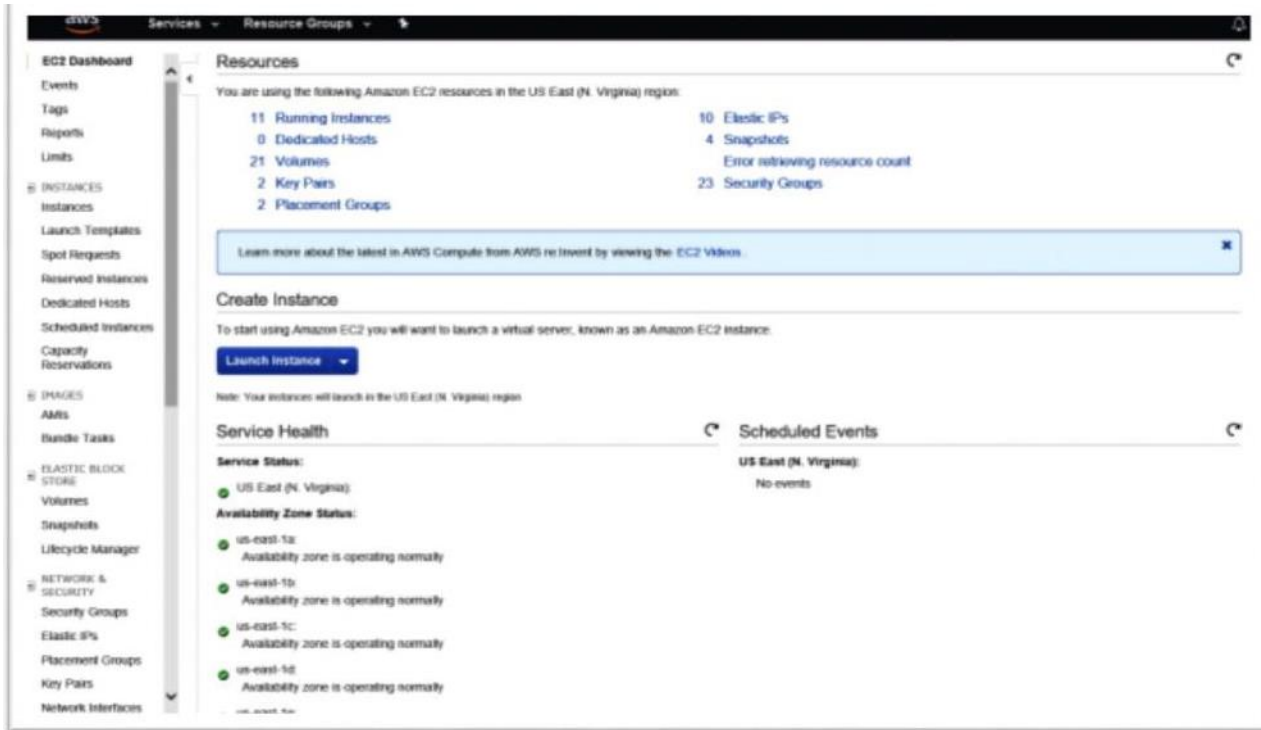


policy “AmazonVPCFullAccess” to this IAM role.

5.3.2 Launch your EC2 Instance

This is the main instance configuration procedure. It includes a multi-dialog wizard that presents configuration options in the preferred sequence. The result of this is an installed, operational standalone ORACLE SBC or HA ORACLE SBC instances with no networking.

- Login to the AWS management console and click the EC2 link to open the EC2 Dashboard.
- Review and confirm your deployment's Region and Availability Zone.
- On the EC2 Dashboard, click Launch Instance.

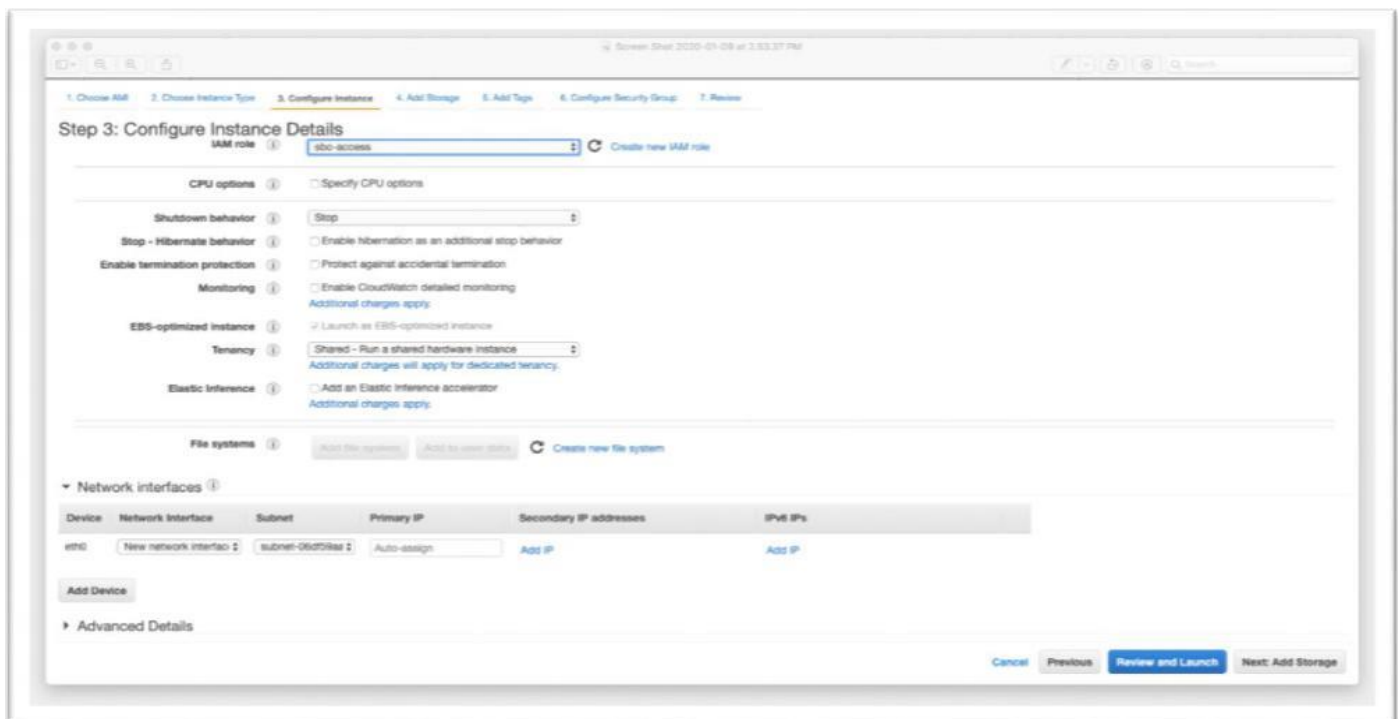


- Navigate to the “My AMIs” link to choose the image for your instance and click Select.
- Choose the desired instance type. The c4.2xlarge is an example instance type that includes 8 vCPU. Validated instance types include:

Instance Type	vCPU
c4.xlarge	4
c4.2xlarge	8
c4.4xlarge	16
c4.8xlarge	36
m4. xlarge	4
m4.2xlarge	8
m4.4xlarge	16

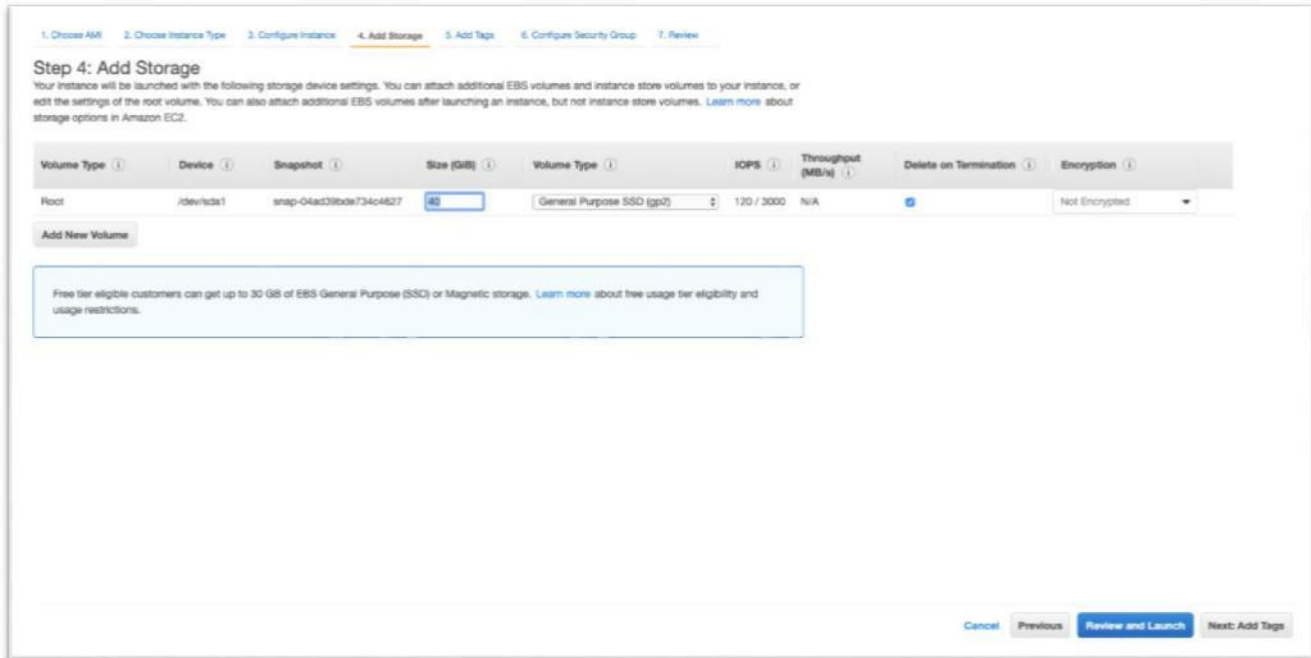
- Click “Next: Configure Instance Details”. The AWS instance deployment sequence displays the Configure Instance Details dialog.
- Configure the following instance details; leave the others at their defaults:

- a. Specify the number of Instances. (Specify 1 for standalone and Specify 2 for an HA setup)
- b. Select the correct Network for wancom0
- c. Select the correct Subnet for wancom0
- d. Establish a public IP for wancom0, either by using the Auto assign Public IP control or by configuring an elastic IP after deployment
- e. HA specific: Select the appropriate IAM role. (Choose the IAM role you configured above.)
- f. Scroll down to the “Network interfaces” configuration fields.
- g. Ensure you are configuring the Device named eth0.
- h. Select “New network interface” from the Network Interfaces dropdown list for wancom0 (eth0).

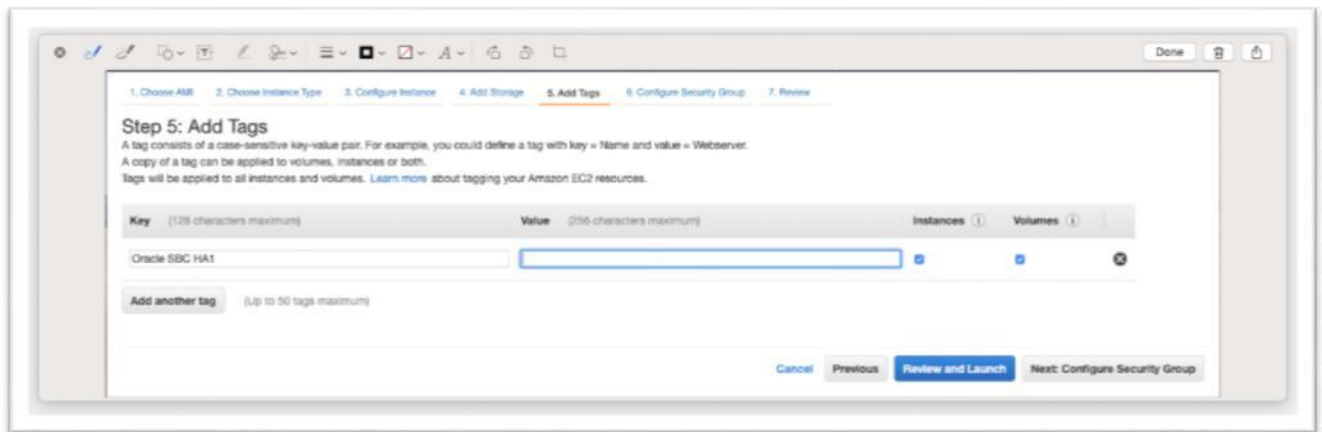


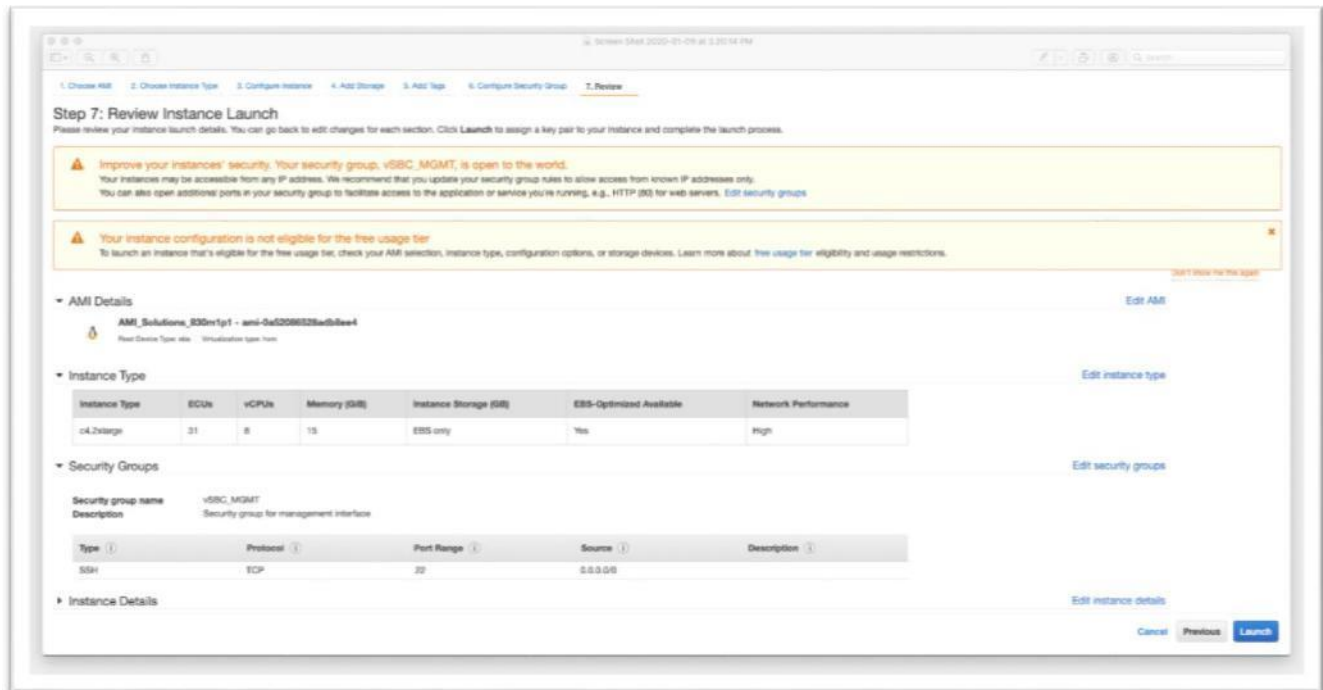
- i. Select the correct Subnet from the dropdown list for wancom0 (eth0).
 - j. Ensure the “Primary IP” field is set to “Auto-assign”.
 - k. Click the “Add Device” button to add wancom0 (eth0) to your instance.
- Scroll to the bottom of the Configure Instance Details dialog and click “Next: Add Storage”.

- Choose your desired ORACLE SBC storage size in GiB. The default storage size is 40 GiB.



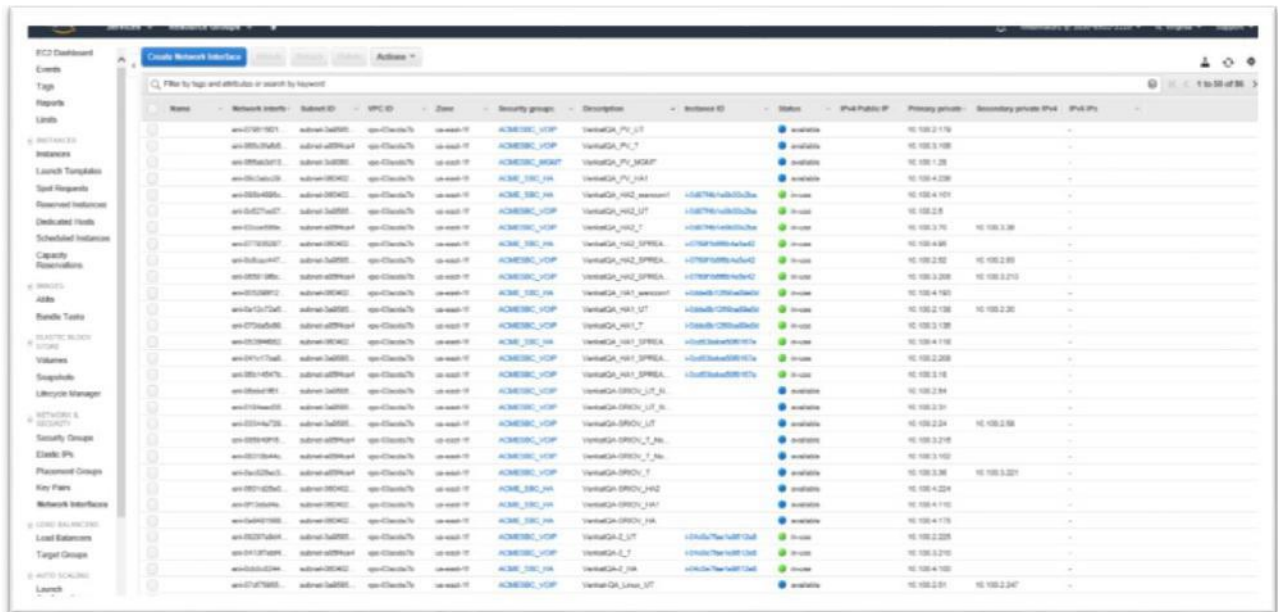
- Click “Next: Add Tags”.
- Enter any desired name to identify the instance. Ensure the name allows you to uniquely identify this instance during later deployment procedures and operation.
- Click “Next: Configure Security Group”.
- You can either create a new security group or select an existing security group to set appropriate firewall rules. Refer to [EC2 security group](#) documentation for configuration instructions.
- Click the Review and Launch button. EC2 displays a summary of your instance.





- Click Launch. EC2 creates your instances.
- Return to the EC2 Dashboard and click the Running instances link.

5.3.3 Create Network Interfaces for ORACLE SBC Instances

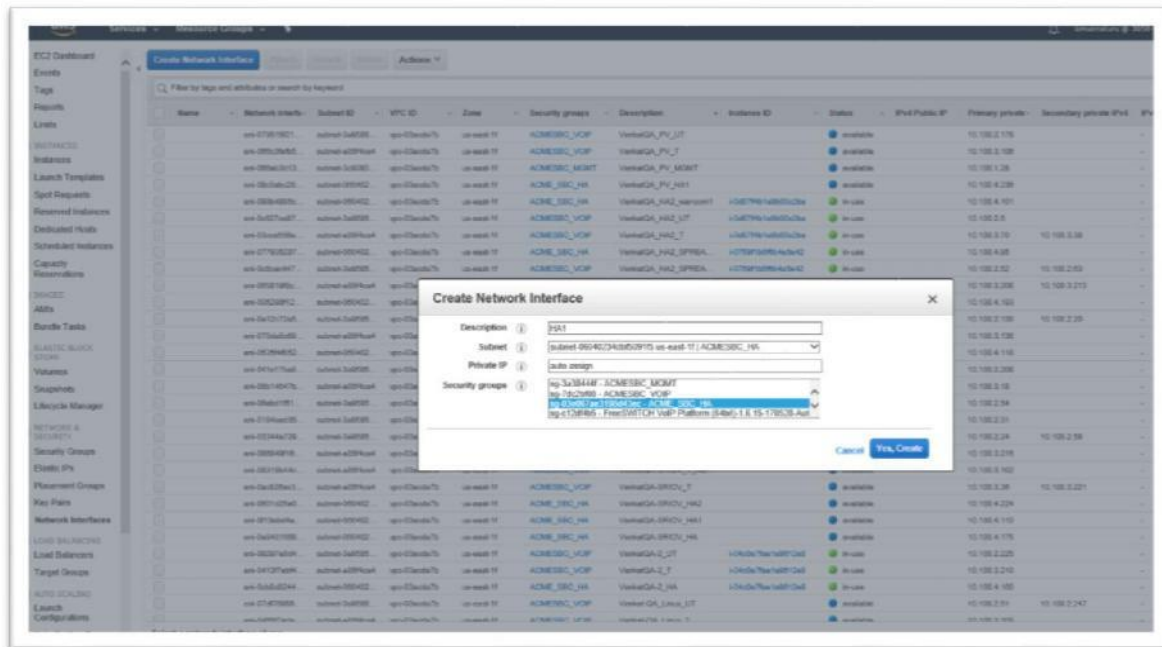


- From the EC2 Dashboard, click Network Interfaces under Network & Security on the left panel.
- Click Create Network Interfaces button.
- Create HA and/or Media interfaces by selecting the appropriate subnet and security group popup.

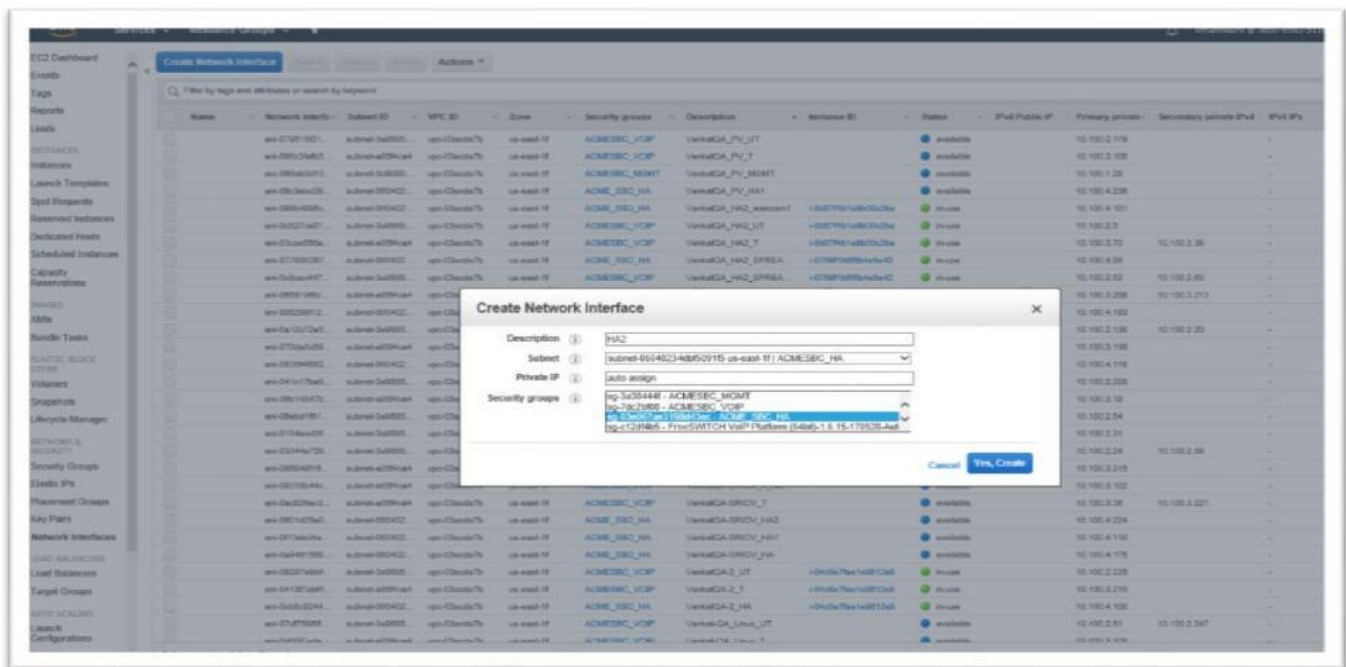
Example configurations on an instance named HA1 include: a.

Wancom1 interface for instance-1 HA1 (Only if you have HA pair)

- For Description, type in name that you can clearly recognize later.
- For Subnet, choose the subnet you created for HA management from the drop-down.
- For Private IP, retain the auto assign setting, based on the following criteria. If you use auto assign, EC2 applies the first available IP from the subnet to that interface. If you need more precise IP management, the custom option is recommended.
- For Security groups, choose the Security group you created for this management from the drop-down.



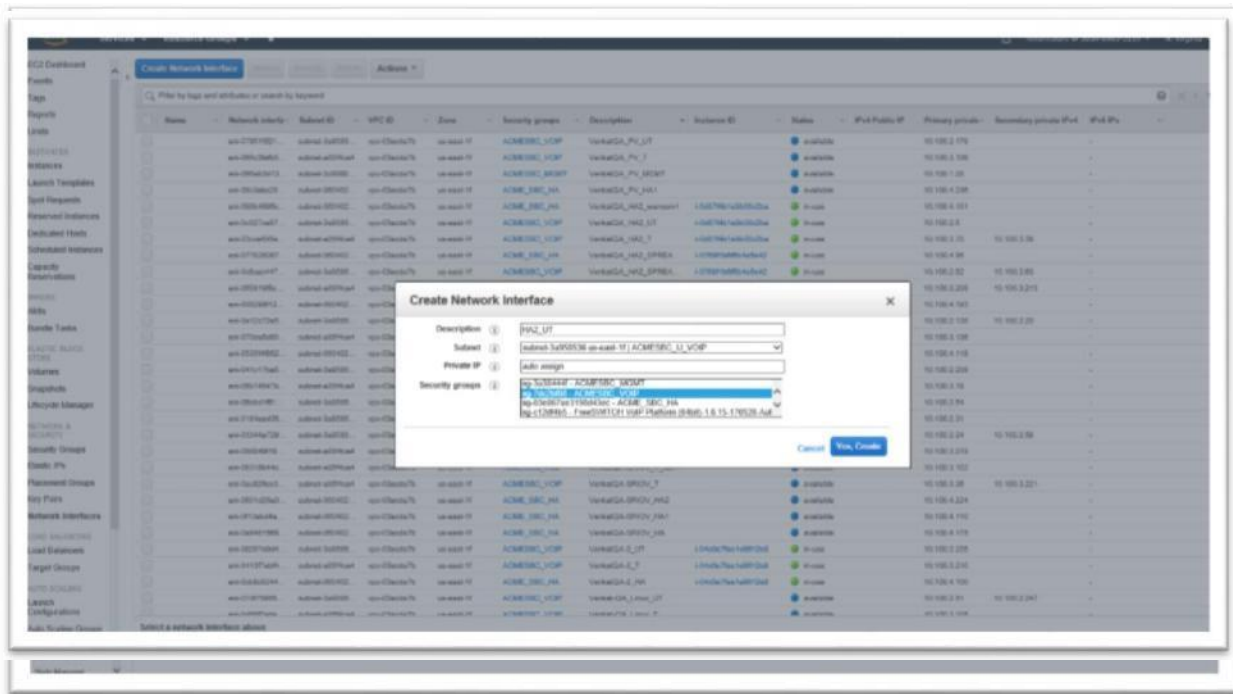
- b. Wancom1 interface for instance-2 HA2 (Only if you have HA pair): repeat above steps
- l. s0p0 media interface for instance-1 (HA1)



- For Description, type in name that you can clearly recognize later.
- For Subnet, choose the subnet you created for HA management from the dropdown.
- For Private IP, retain the auto assign setting, based on the following criteria. If you use auto assign, EC2 applies the first available IP from the subnet to that interface. If you need more precise IP management, the custom option is recommended.

- For Security groups, choose the Security group you created for the media from the drop-down.

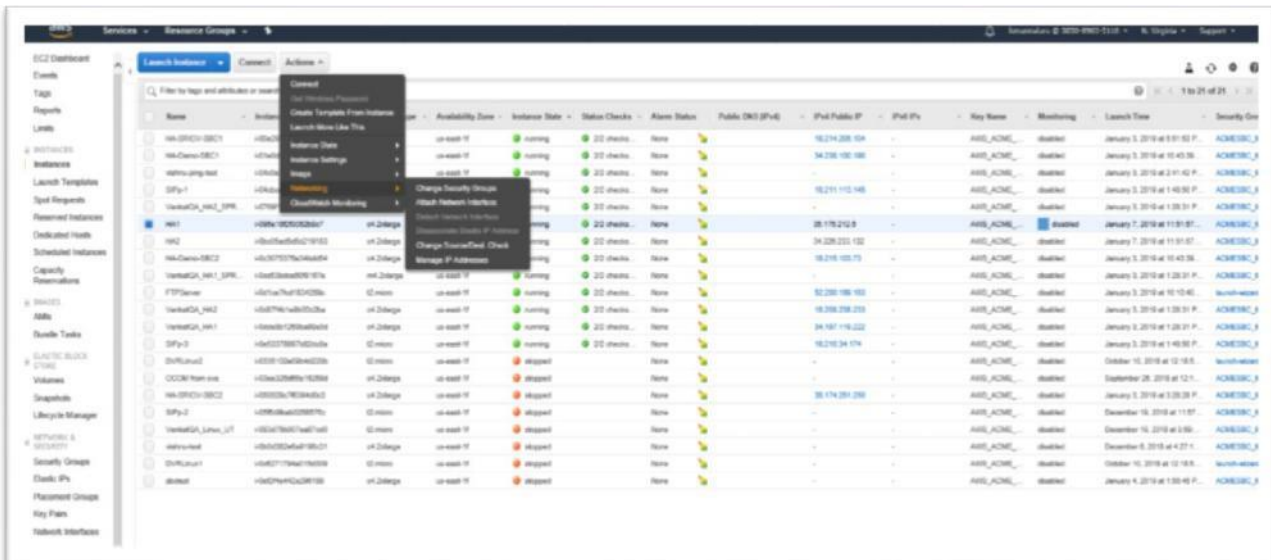
d. s0p0 media interface for instance-2 (HA2): Only if you have HA repeat above steps for second instance



Perform these steps for each management and media interfaces on your instance.

5.3.4 Attach Network Interfaces for ORACLE SBC Instances

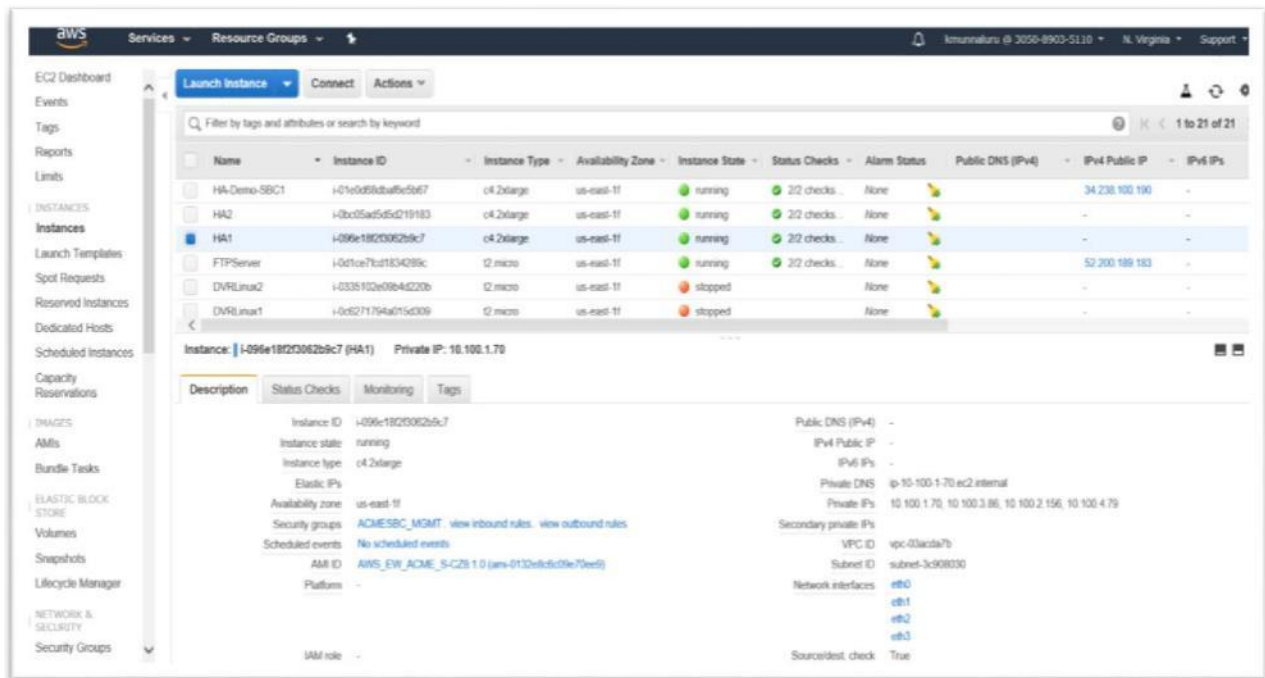
- Go to EC2 Dashboard, click Running Instances.
- Select your first instance. Ensure that it is highlighted.
- Open the Actions drop down and select Networking, Attach Network Interface.
- From the Attach Network Interface pop-up, select your first network interface name.
- Repeat these steps for all the created network interfaces.
- Repeat these steps for all your instances.



5.3.5 Configure secondary private IPs (Virtual IPs) for all media interfaces

This procedure, which creates virtual addressing, applies only to HA deployments. Perform these steps only on the Primary instance of the HA pair.

- Go to EC2 Dashboard, click Running Instances.
- Select the newly created instance (eg: HA1).
- From the bottom panel, select Description -> Network Interfaces
- Click one of the media interfaces i.e eth2/eth3 which then shows up network interface details in a pop-up.
- Click "Interface ID" from the pop-up window. This takes you to the network interface that is mapped to this media interface.
- Go to "Actions" tab and then click on "Manage IP Addresses" option, which will open "Manage IP Addresses" pop-up
- Click on "Assign new IP" option, which assigns new secondary private IP address to the network-interface selected
- Click on "Yes, Update" button.

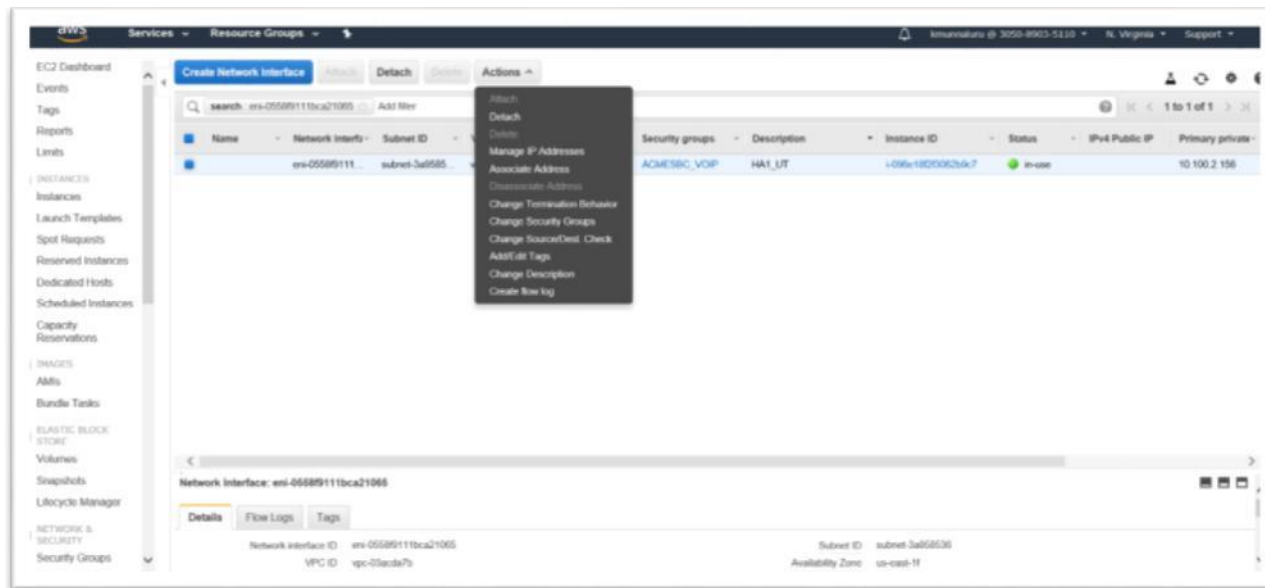


The screenshot shows the AWS EC2 console interface. The main content area displays a table of instances. The instance 'HA1' is selected, and its details are shown below. The 'Network Interfaces' section is expanded, showing a list of network interfaces. The 'Secondary private IPs' section is visible, showing a list of private IP addresses assigned to the instance.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs
HA-Demo-SBC1	i-1c0d95d8a5f5b67	c4.2large	us-east-1f	running	2/2 checks...	None		34.238.100.190	-
HA2	i-0bc05ae5d5d219183	c4.2large	us-east-1f	running	2/2 checks...	None			-
HA1	i-096e1820062b9c7	c4.2large	us-east-1f	running	2/2 checks...	None			-
FTPSever	i-0d1ce7bd1834089c	t2.micro	us-east-1f	running	2/2 checks...	None		52.200.189.153	-
DVRLinux2	i-0338102e09b4d220b	t2.micro	us-east-1f	stopped		None			-
DVRLinux1	i-0d5271794a015d309	t2.micro	us-east-1f	stopped		None			-

Instance: i-096e1820062b9c7 (HA1) Private IP: 10.100.1.70

Description	Status Checks	Monitoring	Tags
Instance ID	i-096e1820062b9c7		
Instance state	running		
Instance type	c4.2large		
Elastic IPs			
Availability zone	us-east-1f		
Security groups	ACMESBC_MGMT	view inbound rules	view outbound rules
Scheduled events	No scheduled events		
AMI ID	AWS_EW_ACME_S_GZS 1.0 (aws-0132d6c1d1e70ed)		
Platform			
WMI role			
Public DNS (IPv4)			
IPv4 Public IP			
IPv6 IPs			
Private DNS	ip-10-100-1-70.ec2.internal		
Private IPs	10.100.1.70, 10.100.3.86, 10.100.2.156, 10.100.4.79		
Secondary private IPs			
VPC ID	vpc-03acda7b		
Subnet ID	subnet-3c908030		
Network interfaces	eni-03acda7b		
	eni-03acda7b		
	eni-03acda7b		
	eni-03acda7b		
SourceDest check	True		



The screenshot shows the AWS EC2 console interface. The main content area displays a table of network interfaces. The network interface 'eni-05589111bca21065' is selected, and its details are shown below. The 'Actions' menu is open, showing the 'Manage IP Addresses' option.

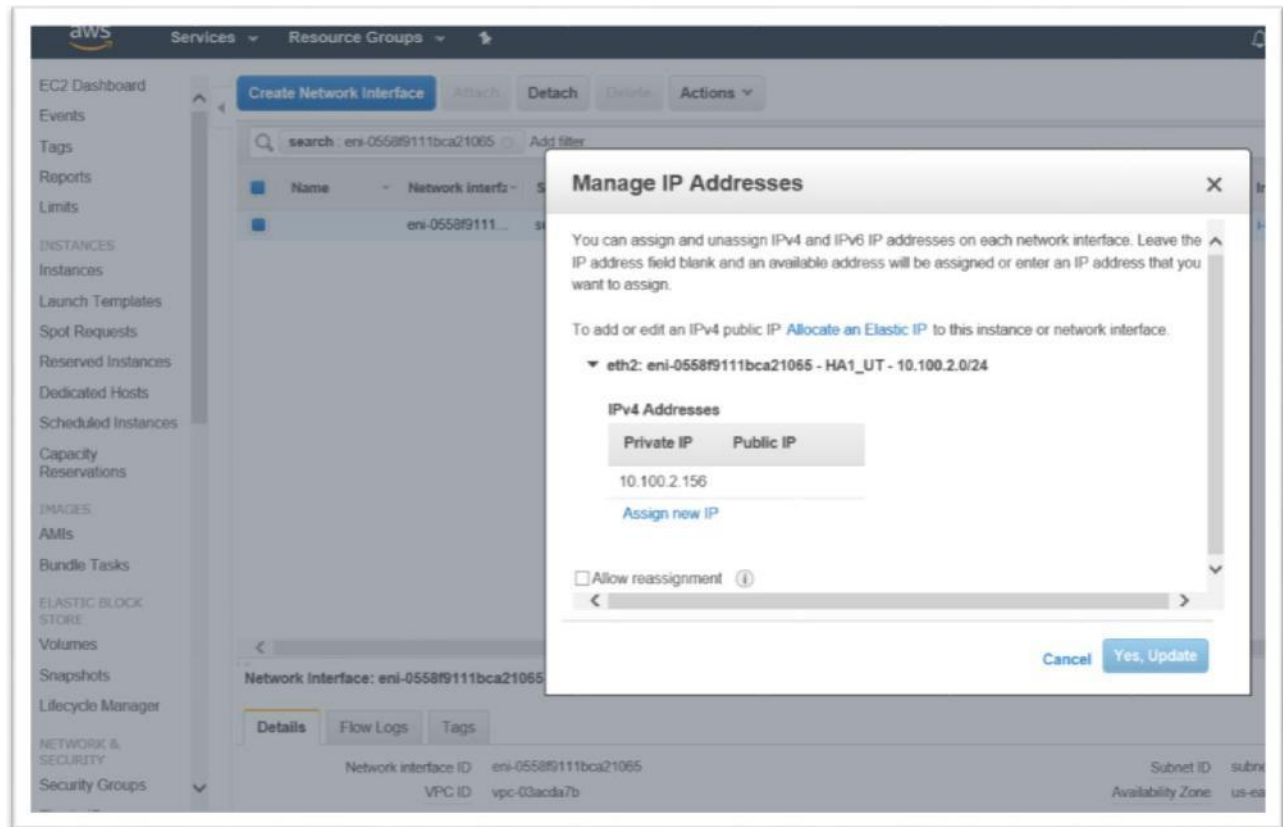
Name	Network Interface	Subnet ID
	eni-05589111bca21065	subnet-3a05825

Network Interface: eni-05589111bca21065

Security groups	Description	Instance ID	Status	IPv4 Public IP	Primary private
ACMESBC_VOIP	HA1_UT	i-096e1820062b9c7	running		10.100.2.156

Network interface ID: eni-05589111bca21065
VPC ID: vpc-03acda7b
Subnet ID: subnet-3a05825
Availability Zone: us-east-1f

Repeat the above steps for all the other media interfaces of HA1 instance.

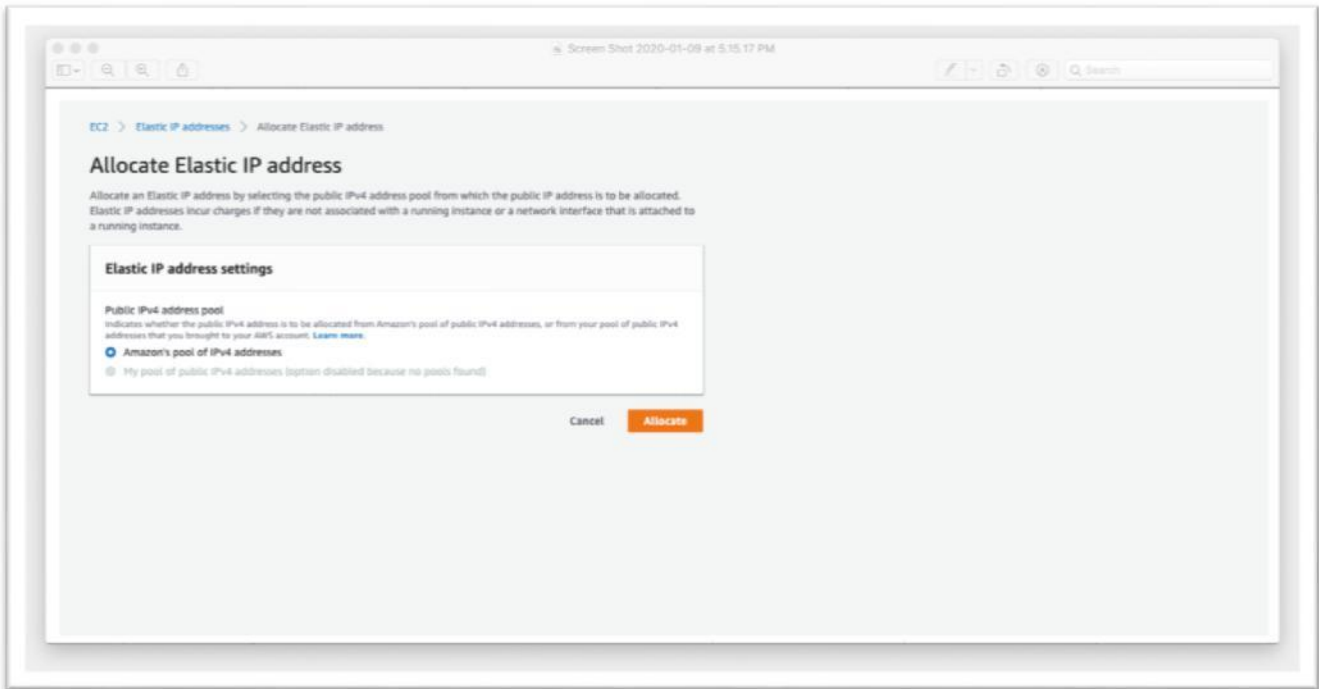


5.3.6 Configure Elastic IP Addressing

This procedure, makes virtual addresses persistent through HA switchovers and needs to be followed when deploying ORACLE SBC instance in HA pair.

This procedure can also be followed in the case where you need public ip addresses for your media interfaces.

- a) Under Network and Security in the left column, click Elastic IPs.
- b) Click Allocate New Address -> Yes, Allocate -> Close.
- c) Select the newly allocated IP address and click Actions -> Associate Address.
- d) Click on the test box next to instance11bca21065 and select your instance from the drop-down menu.
- e) Click "Associate".



6 Initial Access To SBC

6.1 Set the User and Administrative Passwords on AWS deployed ORACLE SBC

Once the Oracle SBC is deployed on AWS perform the password procedures which are required before any further ORACLE SBC operations. For HA deployments, perform these procedures on both ORACLE SBCs.

- b) Under Instances in the left column, click Instances and click the newly created ORACLE SBC.
- c) Under the Description tab, note the Public DNS address.
- d) When the EC2 instance has finished initializing, SSH to the public DNS address.
The username is "user" and the initial SSH password is "acme".
- e) Set the user password by logging in for the first time.

```
$ ssh user@somewhere.compute-1.amazonaws.com  
user@somewhere.compute-1.amazonaws.com's password:  
*ALERT*
```

```
*****  
user password has not been set. Please set password now.  
*****  
** Only alphabetic (upper or lower case), numeric and punctuation  
** characters are allowed in the password.  
** Password must be 8 - 64 characters,  
** and have 3 of the 4 following character classes :  
** - lower case alpha  
** - upper case alpha  
** - numerals  
** - punctuation  
*****  
Enter New Password:  
Confirm New Password:
```

>

- f) Set the administrative password by typing enable at the command prompt. (the initial enable password is "packet".)

```
> enable  
Password:  
*ALERT*  
*****  
admin password has not been set. Please set password now.  
*****  
** Only alphabetic (upper or lower case), numeric and punctuation  
** characters are allowed in the password.  
  
** Password must be 8 - 64 characters,  
** and have 3 of the 4 following character classes :
```

```

** - lower case alpha
** - upper case alpha
** - numerals
** - punctuation
*****
Enter New Password:
Confirm New Password:

```

- f. Reboot the virtual machine.
 - # reboot

6.2 Interface Mapping

After a reboot, SSH to the EC2 instance, verify the network interfaces have expected MAC addresses.

```
- $ ssh user@somewhere.compute-1.amazonaws.com
```

- Switch to the administrative user.
 - > enable

- Use the “show interfaces mapping” command to verify the network interfaces have expected MAC addresses.

```

-----
# show interfaces mapping
Interface Mapping Info

Eth-IF MAC-Addr                               Label
wancom0 06:DF:71:BA:D8:77                     #generic
wancom1 06:A6:08:58:92:C9                     #generic
s0p0    06:D4:E6:E8:B8:FB                     #generic
s1p0    06:EA:08:51:4D:DF                     #generic
wancom2 FF:FF:FF:FF:FF:FF                     #dummy
spare   FF:FF:FF:FF:FF:FF                     #dummy
s0p1    FF:FF:FF:FF:FF:FF                     #dummy
s1p1    FF:FF:FF:FF:FF:FF                     #dummy
s0p2    FF:FF:FF:FF:FF:FF                     #dummy
s1p2    FF:FF:FF:FF:FF:FF                     #dummy
s0p3    FF:FF:FF:FF:FF:FF                     #dummy
s1p3    FF:FF:FF:FF:FF:FF                     #dummy

```

- Execute the “interfaces-mapping swap” command, if necessary, in order to correct any issues with your interface to MAC address mapping. See below for example command
 - # interface-mapping swap s0p0 wancom1

Refer to [Oracle Communications Sessions Border Controller Configuration Guide](#) after you have completed this deployment for administrative and service configuration, including product setup, entitlement setup and HA configuration.

7 Appendix A

7.1 Deploying SBC behind the NAT

The SPL configuration is a must for ORACLE SBC deployed in Cloud Environments.

The Oracle Communication once deployed in AWS public cloud environment, you need to configure SPL NAT plugin in order for proper signaling and voice path between deployed ORACLE SBC and PSTN.

The plug-in modifies the information in SIP messages to hide the end point located inside the private network of AWS deployed ORACLE SBC. Configure the Support for SBC behind the NAT SPL plugin for each SIP interface on the SBC. Here there are two interfaces, one on the side facing AWS and the other on the PSTN side. One public-private address pair required for each SIP interface that uses the SPL plug-in as follows.

- The private IP address must be the same as the SIP interface IP address.
- The public IP address must be the elastic ip address configured in AWS for particular network interface

Here is an example configuration with SBC behind NAT SPL config. The SPL is applied to M00 interface.

To configure SBC behind NAT SPL plug-in using the GUI, Go to session-router -> sip-interface -> spl-options and input the following value, save and activate>

HeaderNatPublicSipIfIp=<Reserved Public IP of the M00 interface>,HeaderNatPrivate IfIp=<Private IP of the M00 interface>

eg: HeaderNatPublicSipIfIp=1.1.1.1,HeaderNatPrivateSipIfIp=2.2.2.2

Here the HeaderNatPublicSipIfIp is the reserved public interface ip and HeaderNatPrivateSipIfIp is the private ip.

```

nat-traversal none
nat-interval 60
tcp-nat-interval 90
registration-caching enabled
min-reg-expire 300
registration-interval 3600
route-to-registrar enabled
secured-network disabled
teluri-scheme disabled
uri-fqdn-domain
options
• spl-options HeaderNatPublicSipIfIp=1.1.1.1,HeaderNatPrivateSipIfI
• trust-mode all
max-nat-interval 3600
nat-int-increment 10
nat-test-increment 30
sip-dynamic-hnt disabled
stop-recurse 401,407
port-map-start 0
port-map-end 0
in-manipulationid
out-manipulationid
sip-ims-feature disabled
sip-atcf-feature disabled

```

SPL option HeaderNatPublicSipIfIp=<Public IP of the M00 interface>,HeaderNatPrivateSipIfIp=<Private IP of the M00 interface>

Click on “Done”. Save and activate the config.



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Integrated Cloud Applications & Platform Services

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