

Deployment Guide for Cisco Cloud Services Router 1000V in Amazon

Steps to deploy the CSR in Amazon

1

**Create Virtual
Private Cloud (VPC)**

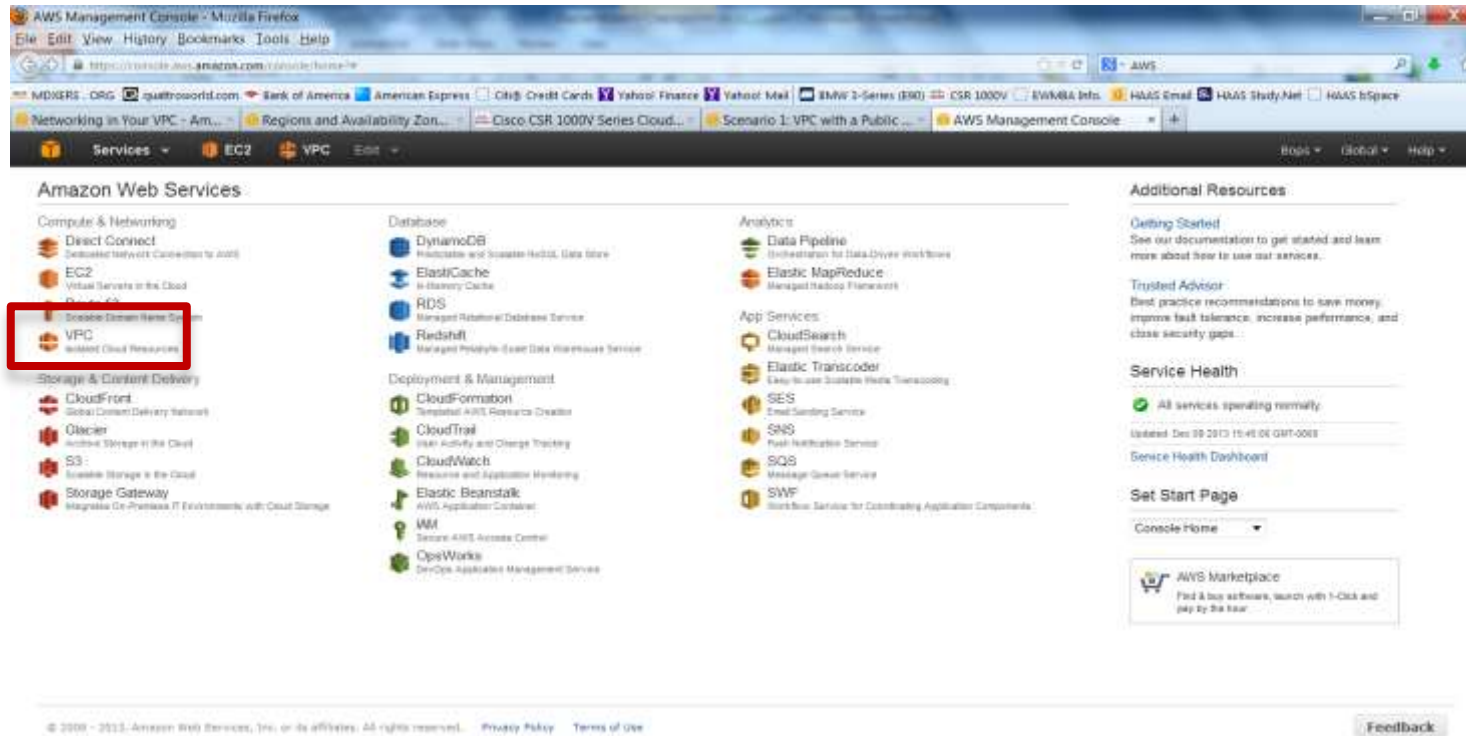
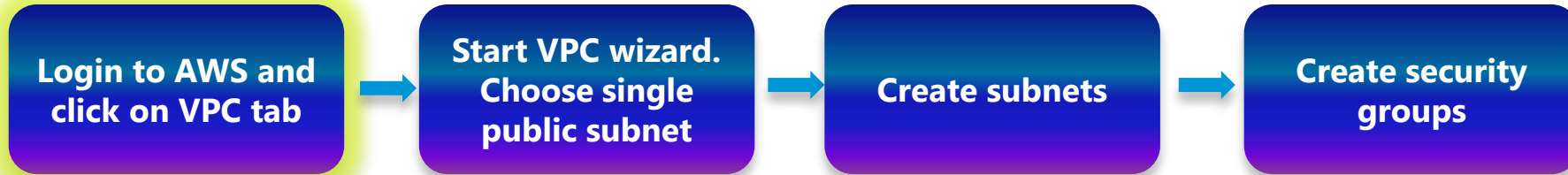
2

**Launch CSR from
AWS marketplace
into the VPC**

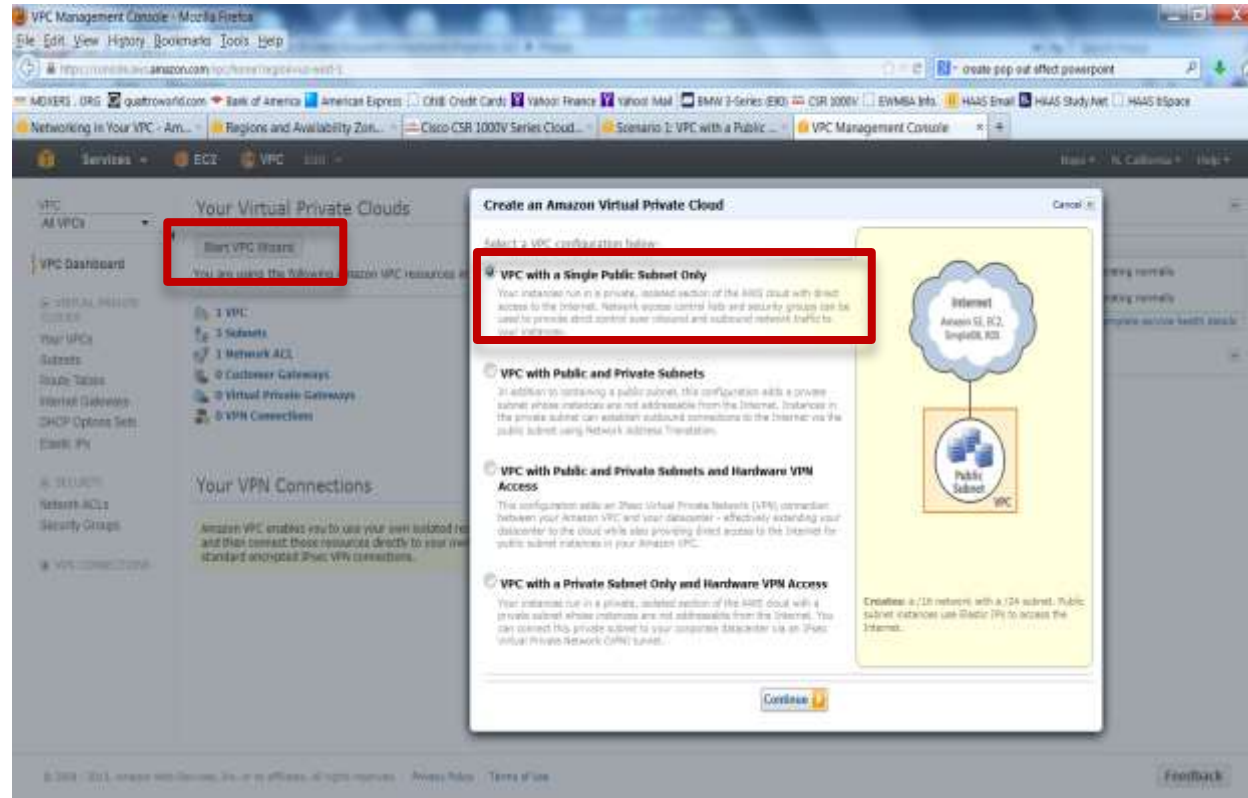
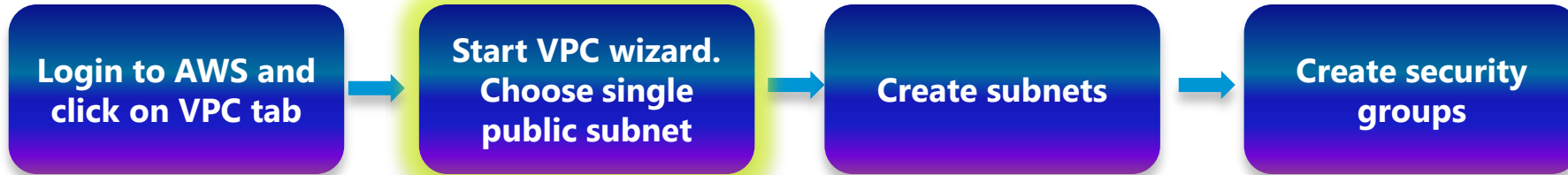
3

**Configure and
manage the CSR**

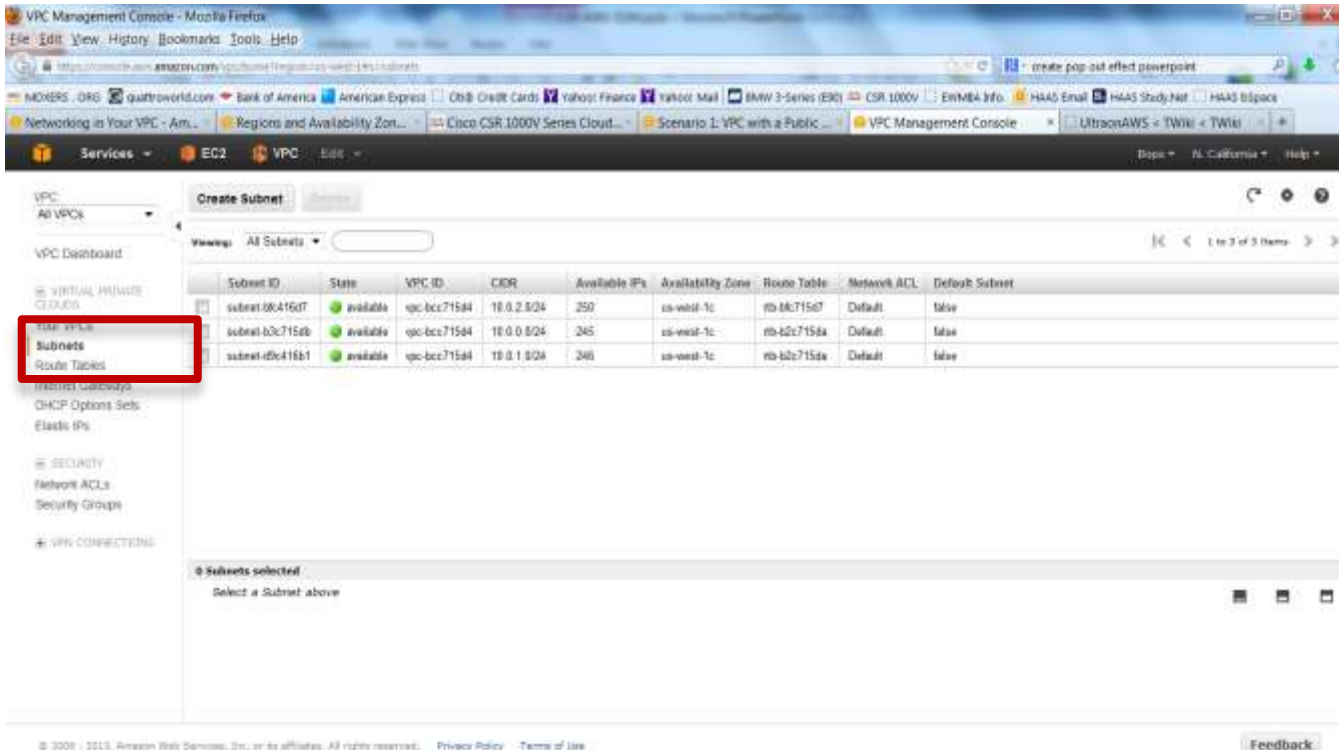
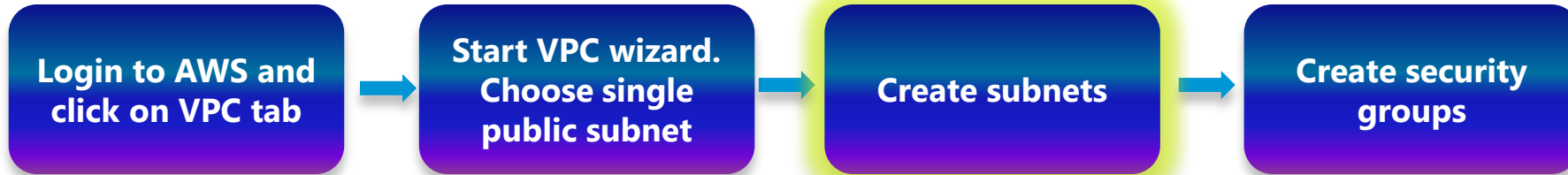
Create Virtual Private Cloud (VPC)



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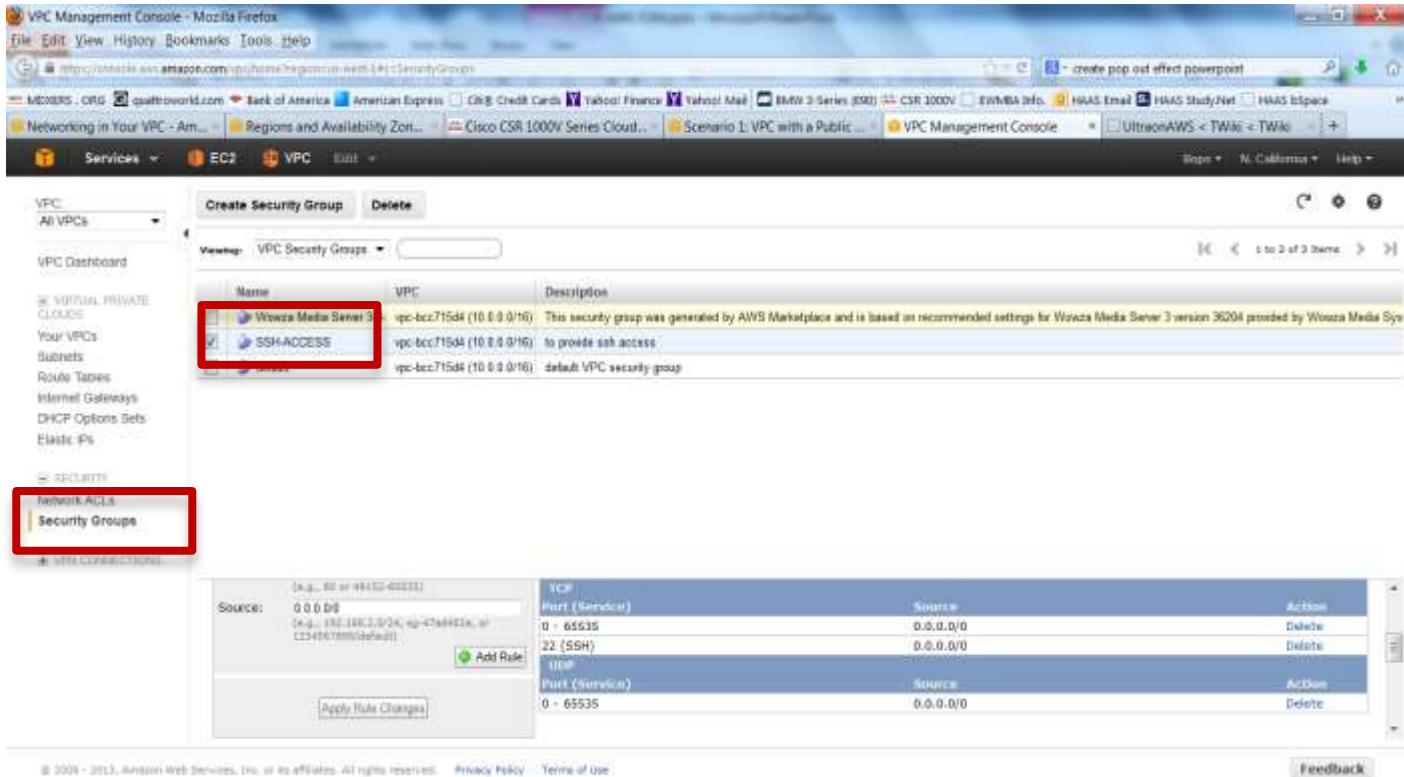
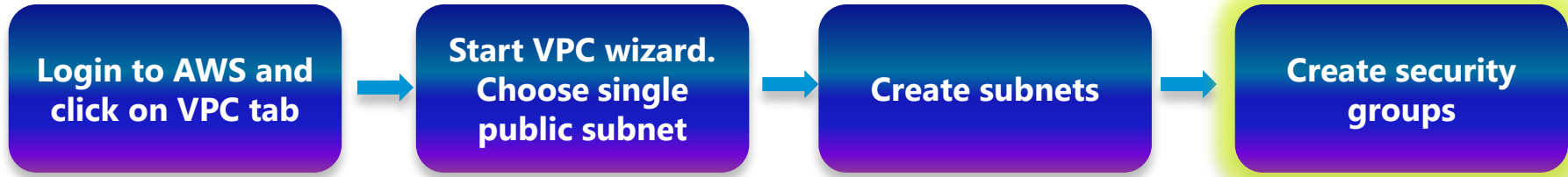


Default subnet: 10.0.0.0/24 – mapped to public IP

2 additional subnets created
10.0.1.0/24
10.0.2.0/24

These 2 are private IPs and could be the “inside facing” interfaces for the CSR

Create Virtual Private Cloud (VPC)



Security group "SSH-ACCESS" created

TCP port 22 traffic is permitted inbound

Enables SSH access to CSR for mgmt.

Additional SGs can be created based on use-case

Launch CSR into VPC



The screenshot shows the AWS Marketplace product page for the Cisco Cloud Services Router (CSR) 1000V - Bring Your Own License (BYOL). The page includes a search bar, product title, description, customer rating, latest version, base operating system, delivery method, support, AWS services required, highlights, pricing details, and a table of hourly fees. A red box highlights the 'Continue' button.

EC2 Instance Type	Software	EC2	Total
Standard Medium (m4.medium)	\$0.00/hr	\$0.12/hr	\$0.12/hr
Standard Large (m4.large)	\$0.00/hr	\$0.24/hr	\$0.24/hr



Click Continue

Launch CSR into VPC



2. On the CSR-1000V product page, click the "Continue" button

3. Use either the "Launch with EC2 Console" tab to complete the deployment of a CSR 1000V. [Show more](#)

Launching Options

- You can click the "Launch with EC2 Console" buttons below and following the instructions to launch an instance of this software
- You can also find and launch these AMIs by searching for the AMI IDs (shown below) in the "Community AMIs" tab of the EC2 Console [Launch Wizard](#)
- You can view this information at a later time by visiting the Your Software page. For help, see [step-by-step instructions](#) for launching Marketplace AMIs from the AWS

Select a Version

03.11.00.0, released 12/08/2013

Region	ID	Launch with EC2 Console
US East (Virginia)	ami-Td9Q314	Launch with EC2 Console
US West (Oregon)	ami-42d2f72	Launch with EC2 Console
US West (Northern California)	ami-R2477727	Launch with EC2 Console
EU West (Ireland)	ami-3c658b4b	Launch with EC2 Console
Asia Pacific (Singapore)	ami-5ab8e408	Launch with EC2 Console
Asia Pacific (Sydney)	ami-53b12e69	Launch with EC2 Console
Asia Pacific (Tokyo)	ami-t5c7441a	Launch with EC2 Console
South America (Sao Paulo)	ami-0982014	Launch with EC2 Console

Hourly Fees

Total hourly fees will vary by instance type and EC2 region.

EC2 Instance type	Software	EC2	Total
Standard Medium (m1.medium)	\$0.03/hr	\$0.12/hr	\$0.15/hr
Standard Large (m1.large)	\$0.03/hr	\$0.24/hr	\$0.27/hr
Standard XL (m1.xlarge)	\$0.03/hr	\$0.48/hr	\$0.51/hr
M3 Extra Large (m3.xlarge)	\$0.03/hr	\$0.45/hr	\$0.48/hr

EBS Storage Fees

\$0.10 / GB / Month for Standard EBS Storage

Awsarea On-Demand EC2 pricing, prices for Reserved and Spot instances will be lower. [See pricing details.](#)

Data transfer fees not included. [Learn about instance types.](#)

Security Group

The vendor recommends using the following security group policies. You will be able to select these settings or configure your own when launching this software.



Choose Version, Region and Launch the instance

Launch CSR into VPC



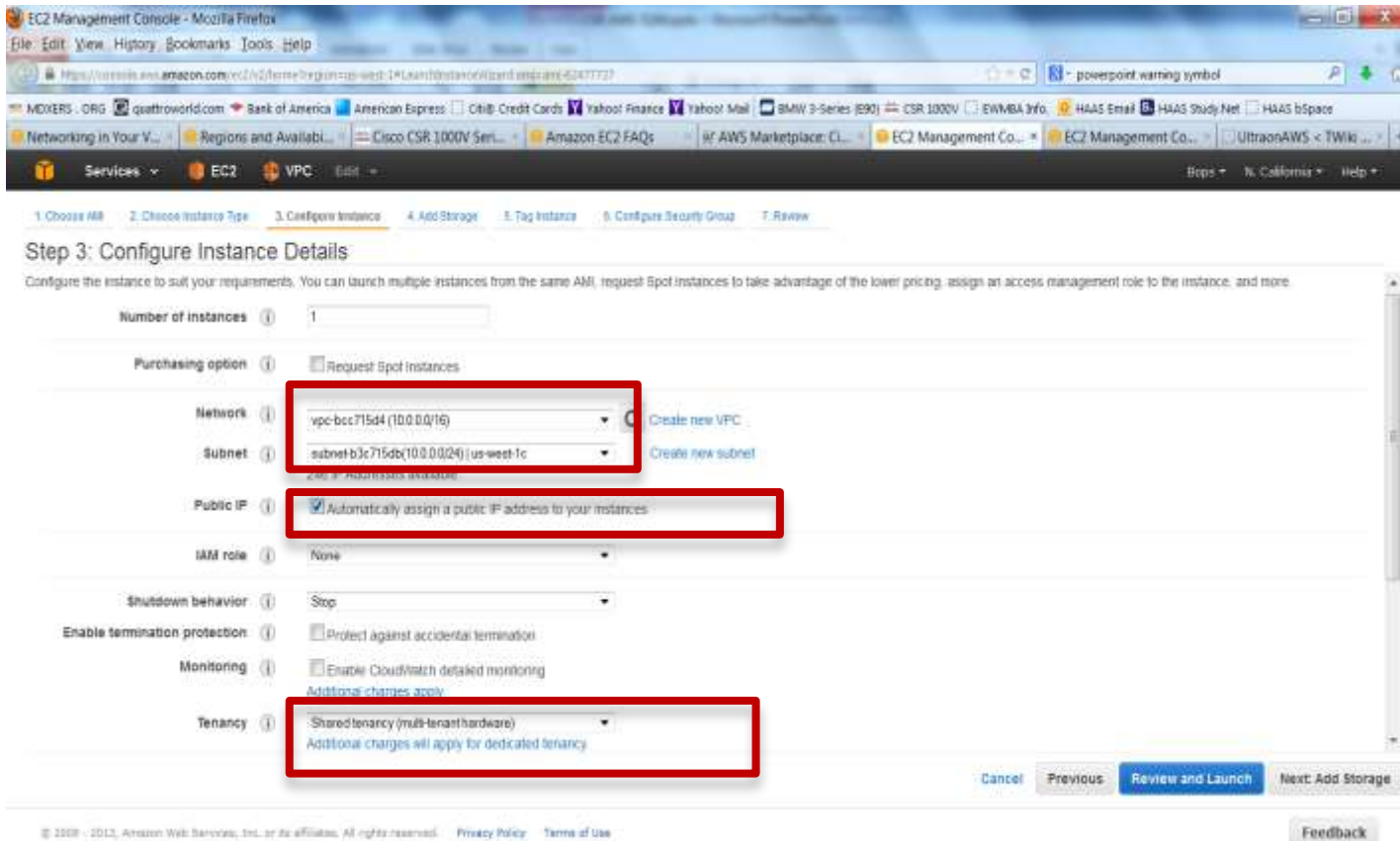
Instance Family	Instance Type	Processor Arch	vCPU	ECU	Memory (GiB)	Network Performance
General purpose	m3.xlarge	64-bit	4	13	15	Moderate
General purpose	m1.medium	32-bit or 64-bit	1	2	3.75	Moderate
General purpose	m1.large	64-bit	2	4	7.5	Moderate
General purpose	m1.xlarge	64-bit	4	8	15	High



Choose one of the 4 supported instance types

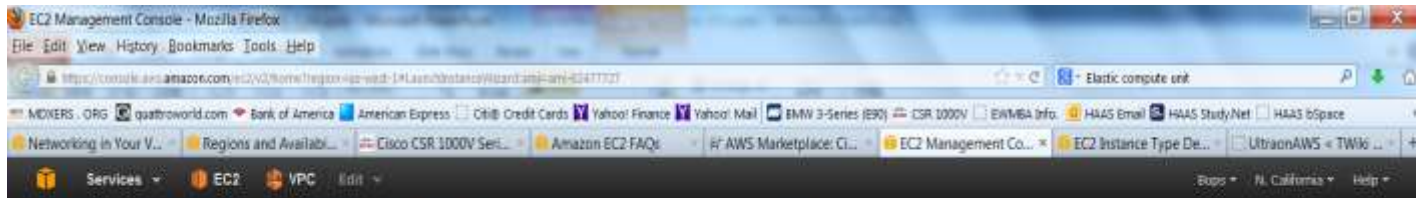
- ECU is **Elastic Compute Unit** – Amazon’s way of measuring CPU capacity predictably
- Almost all EC2 instances are Hyperthreaded

Launch CSR into VPC



- ▶ Launch into previously created VPC
- ▶ Automatically assign public IP
- ▶ Shared tenancy is default
- ▶ Dedicated tenancy (dedicated HW) offers predictable performance at a price

Launch CSR into VPC



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
<input type="checkbox"/> sg-1d9736a2	Wootra Media Server 3-3-6-2-04-AutogenByAWSMP-	This security group was generated by AWS Marketplace and is basic...	Copy to new
<input checked="" type="checkbox"/> sg-3a372d56	SSH-ACCESS	to provide ssh access	Copy to new
<input type="checkbox"/> sg-99999999	default VPC security group	default VPC security group	Copy to new



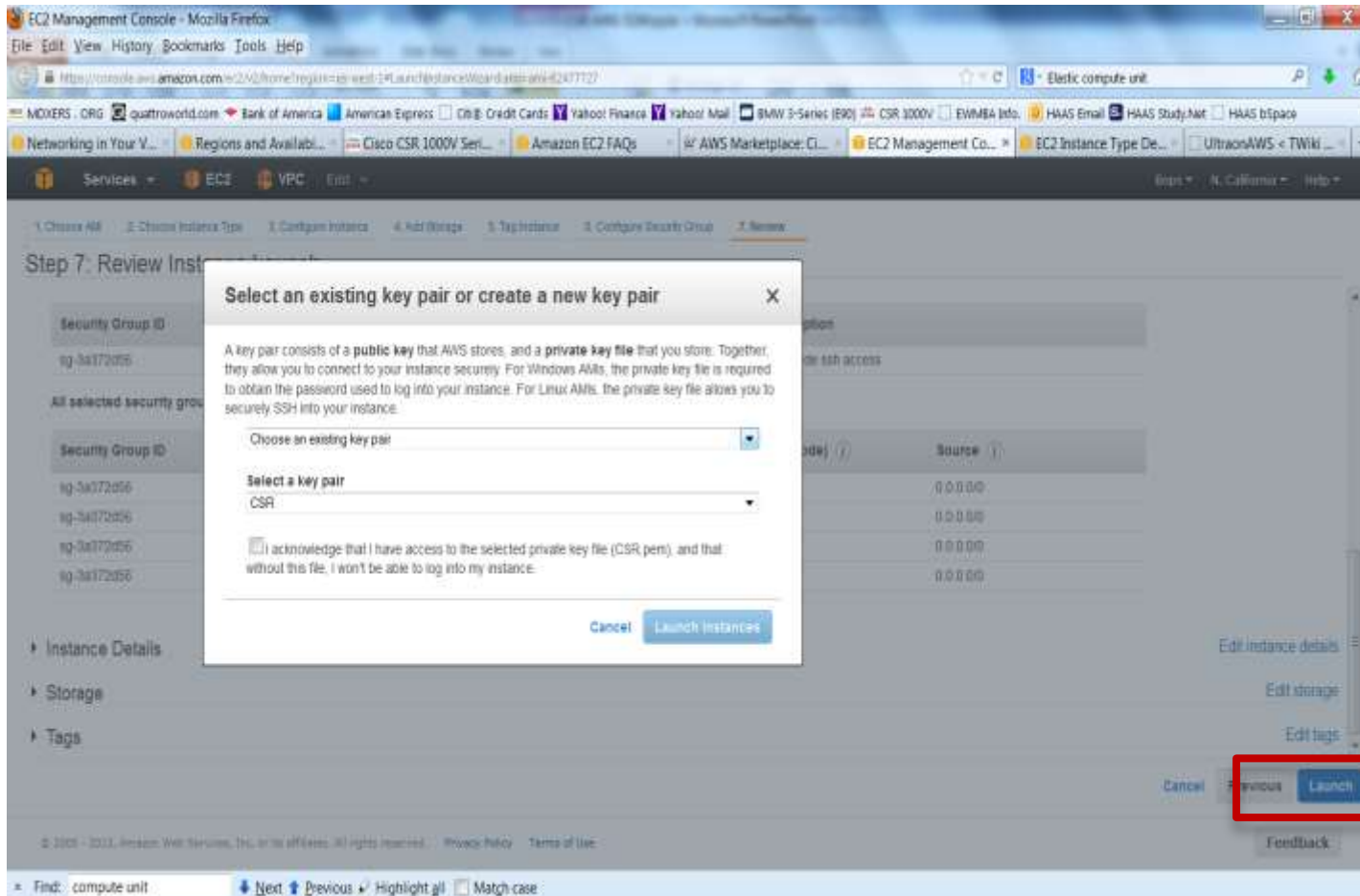
Associate with security groups (SSH-ACCESS)

Inbound rules for sg-3a372d56

Protocol	Type	Port Range (Code)	Source
All ICMP	All	N/A	0.0.0.0
All TCP	TCP	0 - 65535	0.0.0.0
SSH	TCP	22	0.0.0.0

Buttons: Cancel, Previous, Review and Launch

Launch CSR into VPC



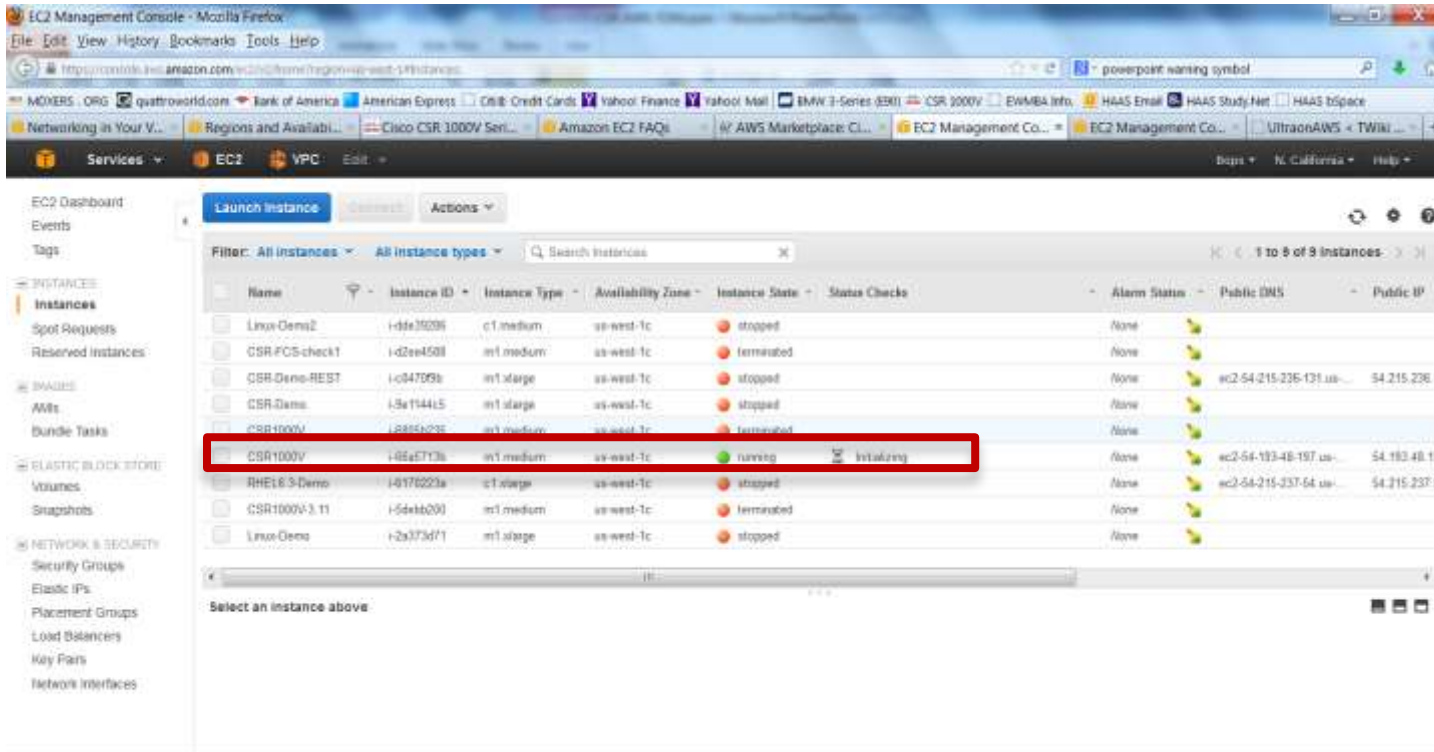
A new key pair can be created if desired

Key pair is a private key and public key

The private key must be provided to authenticate and connect to the instance. The public key is stored on AWS

Click Launch

Launch CSR into VPC



AWS System log for the CSR instance will be incomplete and **does not imply unsuccessful boot**



Typically takes 10 min to deploy the instance

Status will change to **“2/2 checks passed”**

Verify CSR in VPC

The screenshot shows the AWS Management Console interface. At the top, there's a navigation bar with 'Services', 'EC2', and 'VPC' tabs. Below that, there's a 'Launch Instance' button and a 'Connect' button. The main area displays a table of EC2 instances. The instance 'CSR1000V' is selected, and its details are shown in a red box. The public IP address is 'ec2-54-193-48-197.us-west-1.compute.amazonaws.com'. A blue arrow points to this IP address in the detailed view below.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS	Public IP	Key Name
Linux-Demo2	i-dde39286	c1.medium	us-west-1c	stopped		None			CSR-Demo
CSR-FCS-check1	i-d2ee4588	m1.medium	us-west-1c	terminated		None			CSR-Demo
CSR-Demo-REST	i-c04709b	m1.xlarge	us-west-1c	stopped		None	ec2-54-216-236-131.us-...	54.216.236.131	CSR-Demo
CSR-Demo	i-9e1144c5	m1.xlarge	us-west-1c	stopped		None			CSR-Demo
CSR1000V	i-66a5713b	m1.medium	us-west-1c	running	2/2 checks passed	None	ec2-54-193-48-197.us-...	54.193.48.197	CSR-Demo
RHEL6.3-Demo	i-6170223a	c1.xlarge	us-west-1c	stopped		None			CSR-Demo
CSR1000V-3.11	i-5dabb200	m1.medium	us-west-1c	terminated		None			CSR-Demo
Linux-Demo	i-2a373d71	m1.xlarge	us-west-1c	stopped		None			CSR-Demo

Instance: i-66a5713b (CSR1000V) Public DNS: ec2-54-193-48-197.us-west-1.compute.amazonaws.com

- SSH into the CSR instance using this IP. Login as “ec2-user”. No password is required.
- If you are using Windows Putty SSH client, follow instructions here: <http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/putty.html>

Verify CSR in VPC

```
ip-10-0-0-24#show ip int brief
```

Interface	IP-Address	OK?	Method	Status	Protocol
GigabitEthernet1	10.0.0.24	YES	DHCP	up	up
VirtualPortGroup0	10.0.0.24	YES	unset	down	down

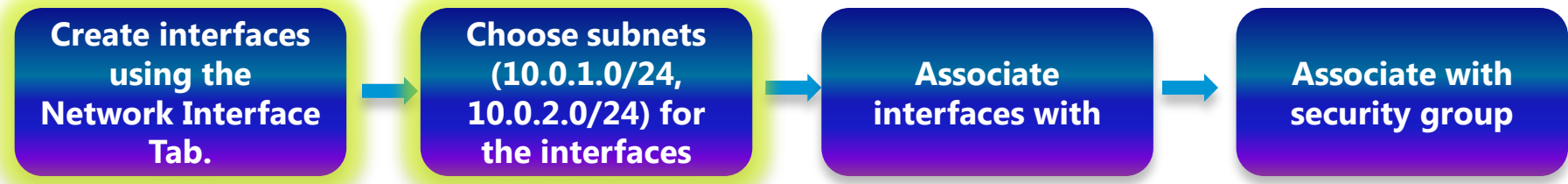
```
ip-10-0-0-24#
```

This private IP is 1:1 NAT to the public IP by the **Internet Gateway** for the VPC. Transparent to user.



- Automatic public IP assignment is only available during launch. Rebooting CSR will disassociate the public IP and instance will become inaccessible
- Associate CSR instance with an Elastic IP to ensure that IP is persistent across reboots

Configure and manage CSR



Name	Network Interface	Subnet ID	Zone	Security Groups	Description	Instance ID	Status	Public IP	Primary Private IP
empty	eni-e04e882	subnet-d9c416b1	us-west-1c	SSH-ACCESS	CSR1000V-G2		available		10.0.1.103
empty	eni-ef4e88c	subnet-bfc416d7	us-west-1c	SSH-ACCESS	CSR1000V-G3		available		10.0.2.196

Configure and manage CSR

Create interfaces using the Network Interface Tab.

Choose previously created subnets for the interfaces

Attach interfaces to the CSR instance

Configure CSR interface with the IP address

The screenshot displays the AWS Management Console interface. At the top, there are navigation tabs for 'Create Network Interface', 'Attach', 'Detach', 'Delete', and 'Actions'. Below these, a table lists 'Detached VPC Network Interfaces' with columns for Name, Network Interface, Subnet ID, Zone, Security Groups, Description, Instance ID, Status, Public IP, and Primary Private IP. Two interfaces are listed: 'eni-e0f4e882' (attached to CSR1000V-Q2) and 'eni-eef4e88c' (attached to CSR1000V-G3). A modal dialog titled 'Attach Network Interface' is open, showing 'Network Interface: eni-e0f4e882' and 'Instance: i-66a5713b - CSR1000V (running)'. Below the dialog, the details for the selected network interface 'eni-e0f4e882' are shown, including its ID, VPC, MAC Address, Subnet, Zone, and Description.

Name	Network Interface	Subnet ID	Zone	Security Groups	Description	Instance ID	Status	Public IP	Primary Private IP
empty	eni-e0f4e882	subnet-d9c416b1	us-west-1c	SSH-ACCESS	CSR1000V-Q2		available		10.0.1.103
empty	eni-eef4e88c	subnet-bfc416d7	us-west-1c	SSH-ACCESS	CSR1000V-G3		available		10.0.2.196

Attach Network Interface

Network Interface: eni-e0f4e882
Instance: i-66a5713b - CSR1000V (running)

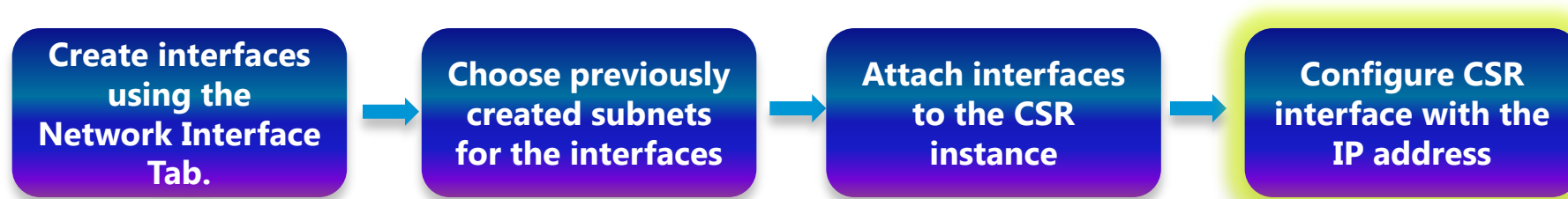
1 Network Interface selected

Network Interface: eni-e0f4e882

Details | Tags

Network Interface ID:	eni-e0f4e882	Subnet:	subnet-d9c416b1
VPC:	vpc-bcc715d4	Zone:	us-west-1c
MAC Address:	02:7a:15:2:41:b0:f6	Description:	CSR1000V-G2

Configure and manage CSR



```
ip-10-0-0-24#show ip int brief
```

Interface	IP-Address	OK?	Method	Status	Protocol
GigabitEthernet1	10.0.0.24	YES	DHCP	up	up
GigabitEthernet2	unassigned	YES	unset	administratively down	down

```
ip-10-0-0-24(config)#int g2
```

```
ip-10-0-0-24(config-if)#ip address 10.0.1.103 255.255.255.0
```

```
ip-10-0-0-24(config-if)#no shut
```

```
ip-10-0-0-24(config-if)#end
```

IP address defined during interface creation

```
ip-10-0-0-24#show ip int brief
```

Interface	IP-Address	OK?	Method	Status	Protocol
GigabitEthernet1	10.0.0.24	YES	DHCP	up	up
GigabitEthernet2	10.0.1.103	YES	manual	up	up

Thank you.

