# Amazon EC2

#### Most Important Infrastructure

- Processing Power
- Storage Space
- System memory
- Network bandwith

### Amazon Elastic Compute Cloud

- Provision V Servers Virtual computing environments
- Instance VS with preconfigured software
- Secure login information for your instances using key pairs
- Instance type (T2, M4, M3, C4, C3, X1 etc ..)- vCPU, RAM, Storage(EBS)
- Selection and Change later possible
- Instance code- t2.micro
- Size- nano to 32xlarge
- Interaction via secure shell SSH connection

#### **AMI**

- Information to launch EC2 instance
- To launch instances in multiple Regions, you'll need to create a key pair in each Region
- Template- root volume of the instance (OS+web /app server files)
- Launch permissions given to AWS account
- One AMI- many instances of different types
- Instances scoped at region level
- Paid (hrly cost) vs free AMIs
- Amazon linux based AMI no hrly cost

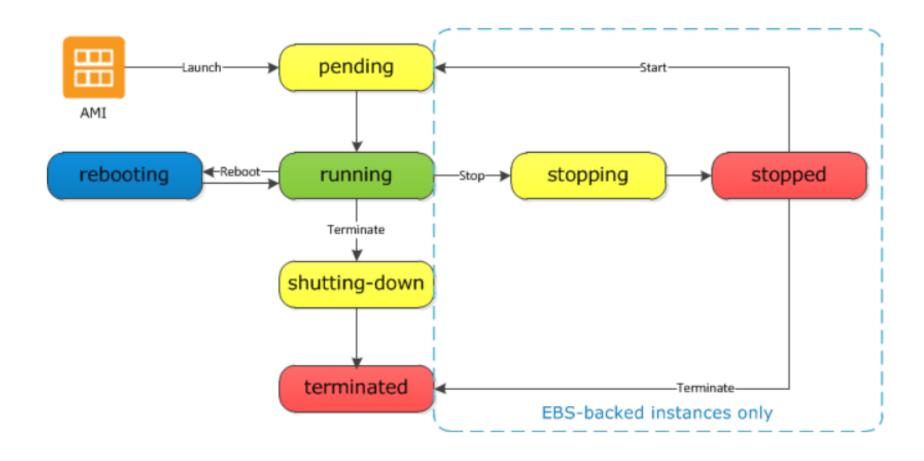
### Security Group

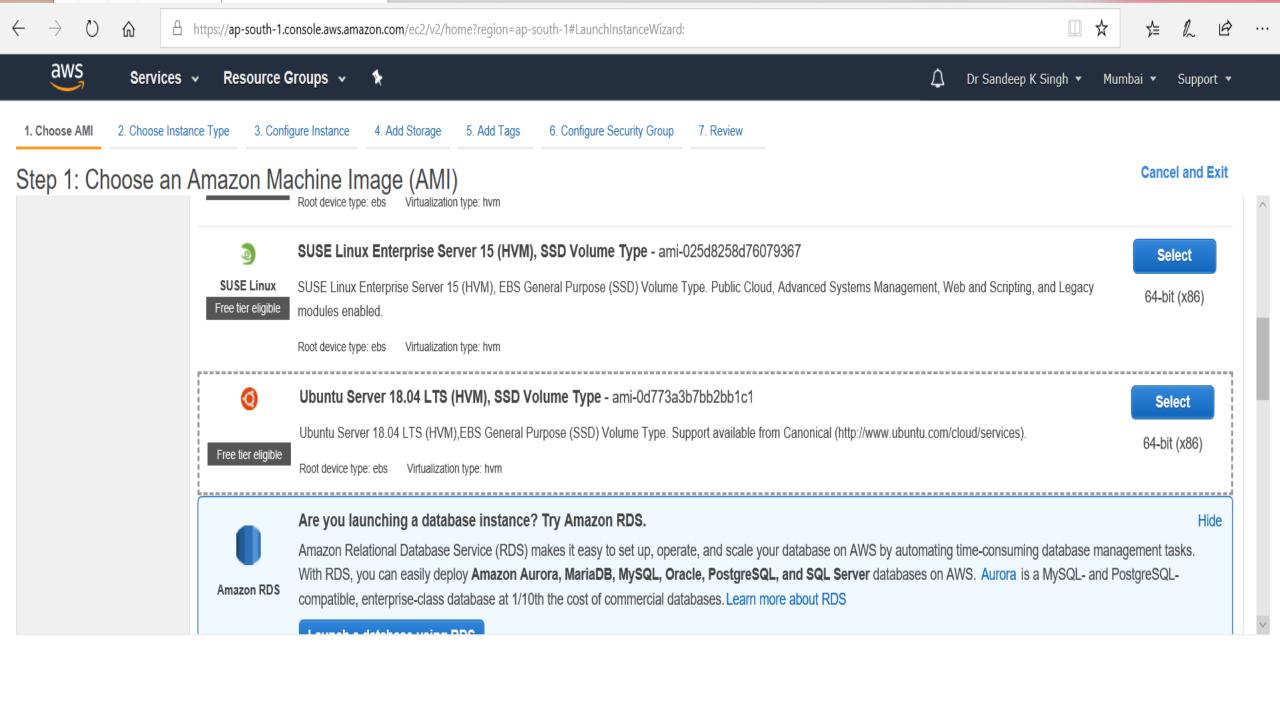
- Firewall around EC2-A firewall that enables you to specify the protocols, ports, and source IP ranges
- Configure –Ports, protocols, IP addresses
- Associated with instance not AMI
- Its like a rule and a role in IAM

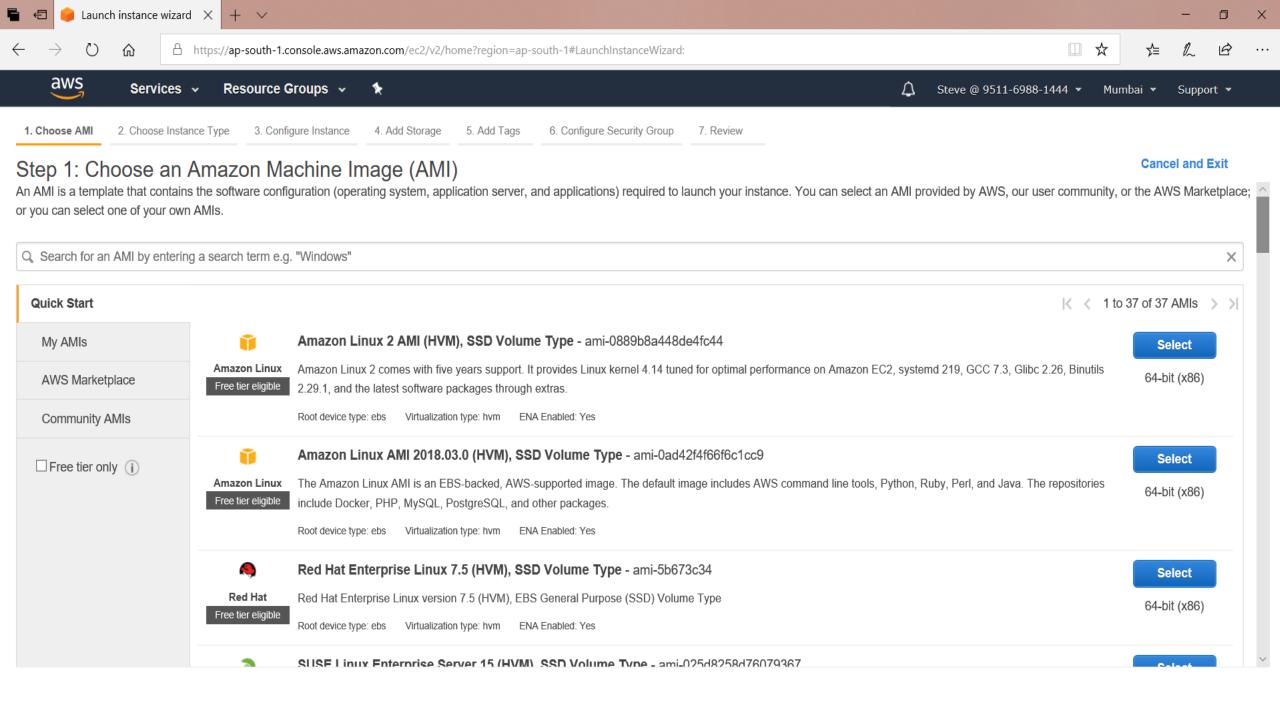
## Pricing Models and Data Storage

- On demand (no upfront) for development and test servers or temp servers
- Reserved (upfront for reservation for a x term)
- Spot-bidding
- Instance Storage- volatile wrt instance life
- Backed by Instance store
- Elastic Block Storage persistent an mountable to EC2 instance
- Backed by EBS –AMI
- Instance life dependent

## EC2 Instance Life Cycle

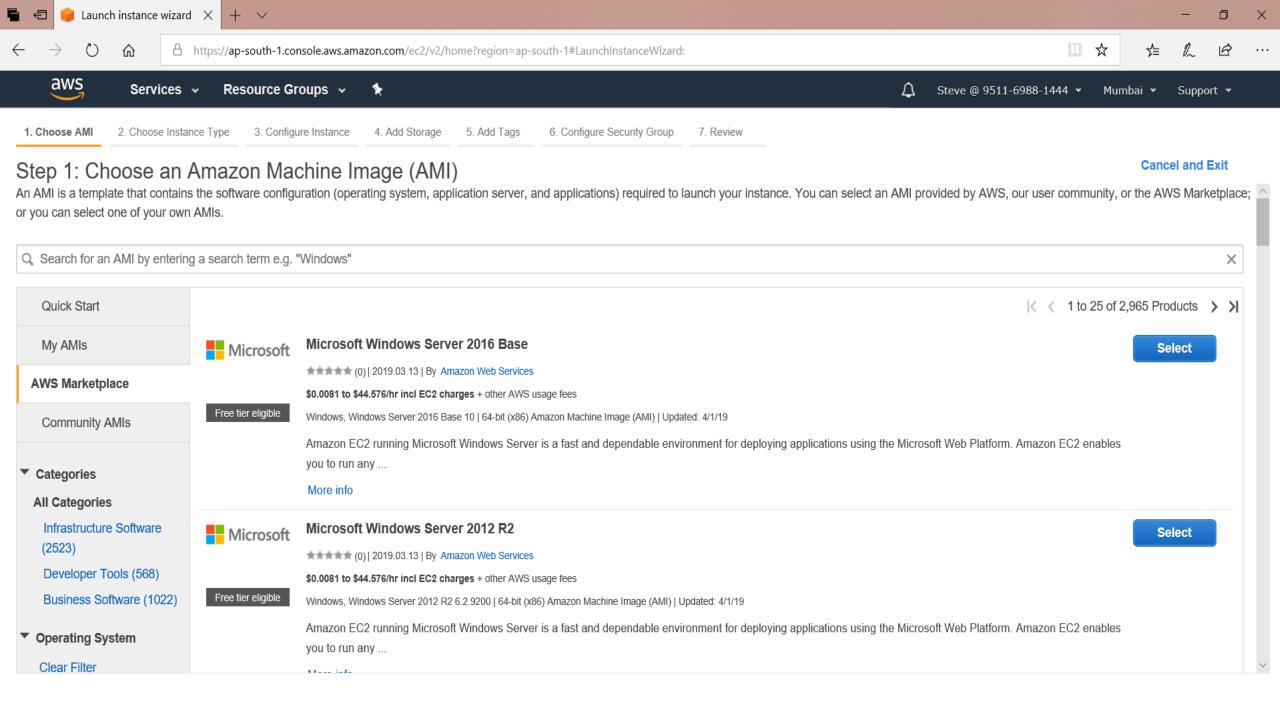


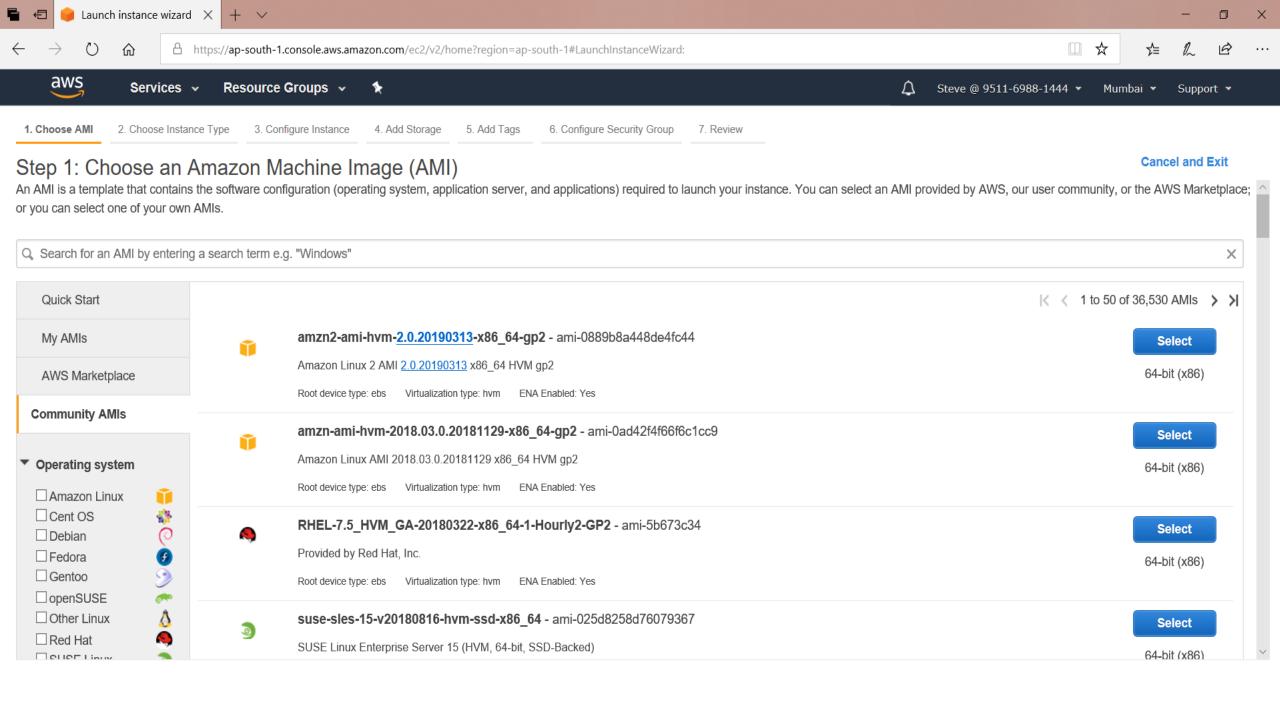


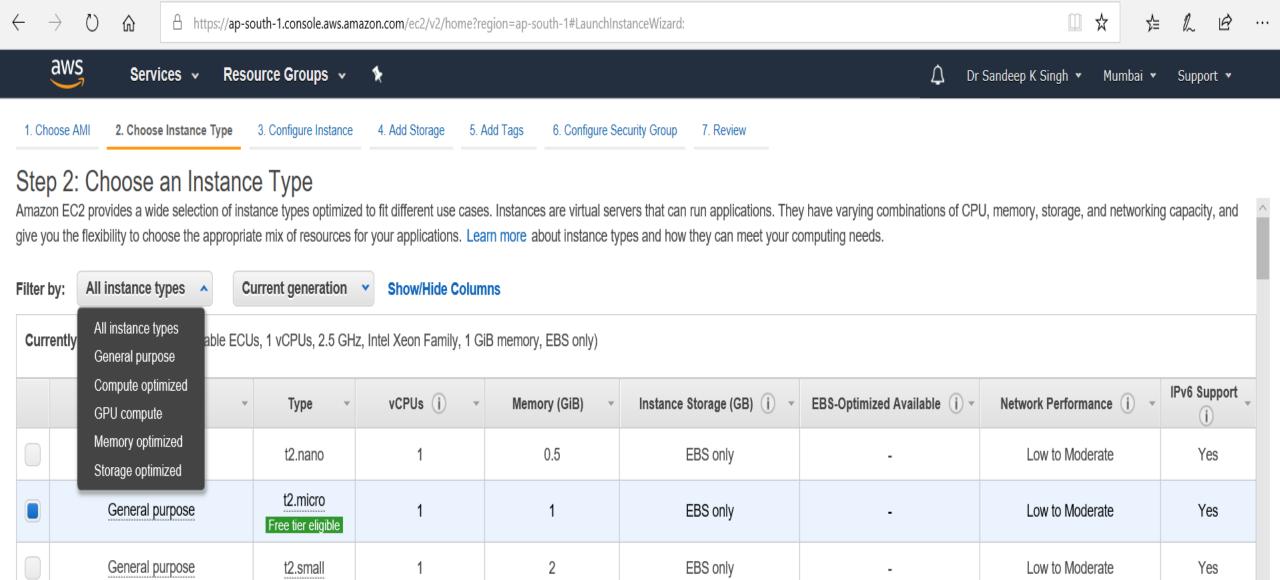


#### AMI categories

- Quick Start
- My AMI
- Aws Marketplace
- Community AMI







General purpose

2

t2.medium

**Previous** Cancel

**Review and Launch** 

Low to Moderate

**Next: Configure Instance Details** 

Yes

EBS only











Services ▼ Resource Groups ▼ 1

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Support \*

1. Choose AMI 2. Choose Instance Type

3. Configure Instance

4. Add Storage

5. Add Tags 6. Configure Security Group

p 7. R

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

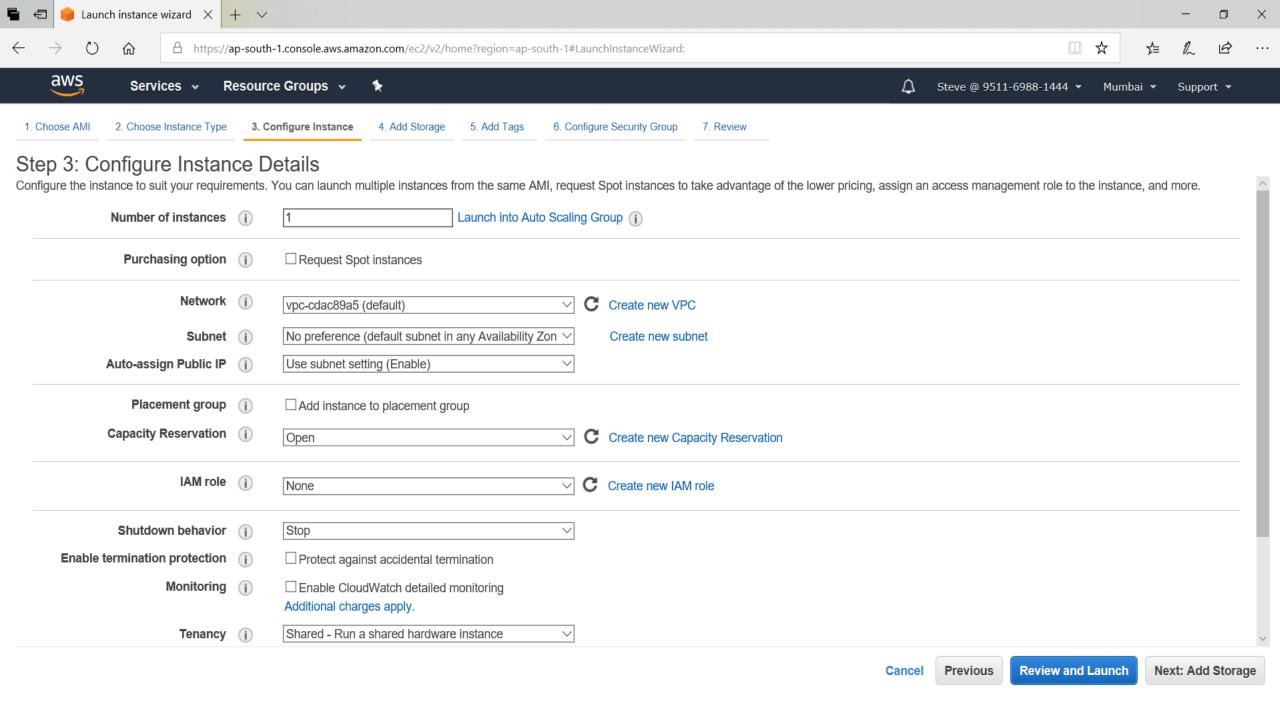
**Show/Hide Columns** 

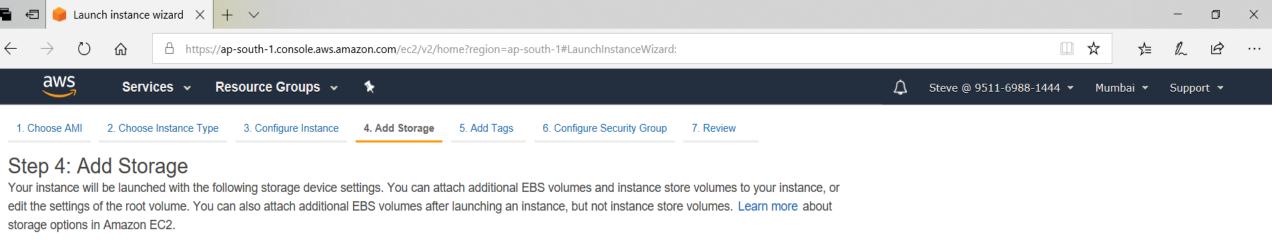
Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

Family	Туре 🔻	vCPUs (i) •	Memory (GiB)	Instance Storage (GB) (i) 🔻	EBS-Optimized Available (i) +	Network Performance (i)	IPv6 Support
General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes

#### IP Address of Instances

- Private IP-dynamically allocated
- Public IP- global
- Domain name → current IP
- Default VPC

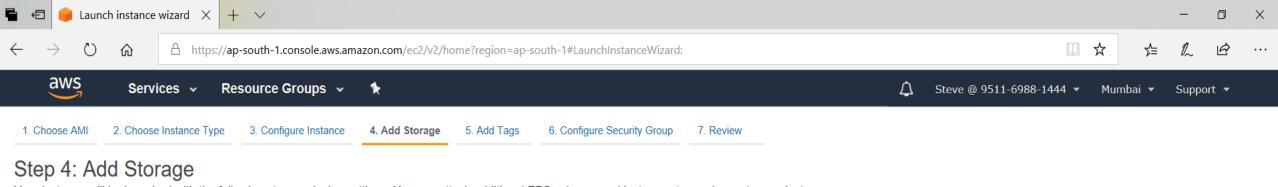




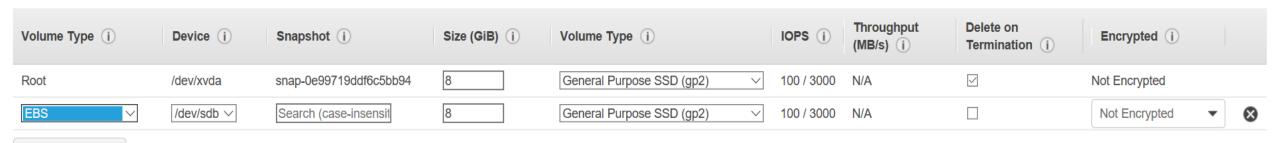


Add New Volume

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.

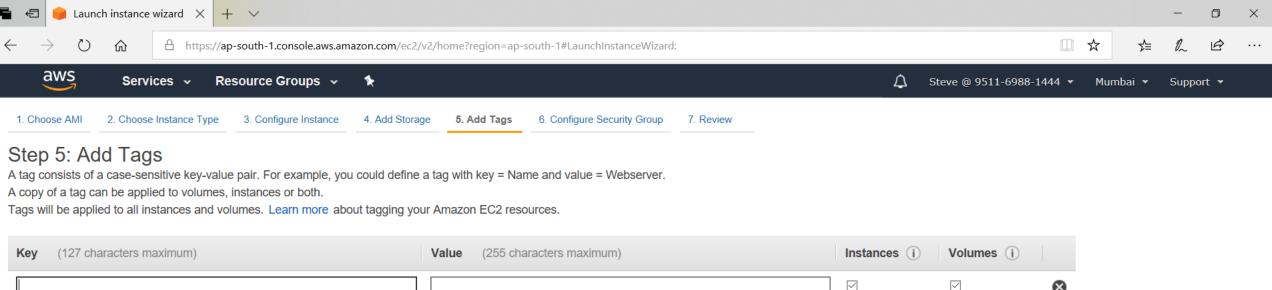


Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes.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

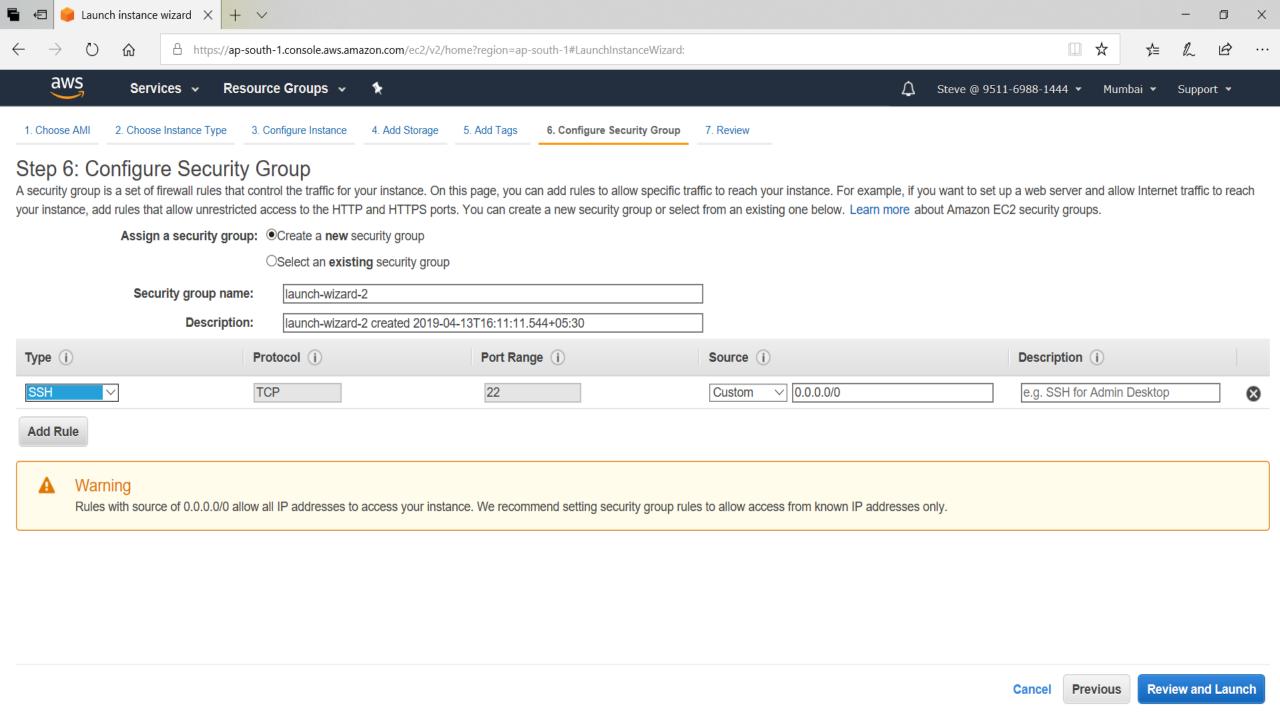


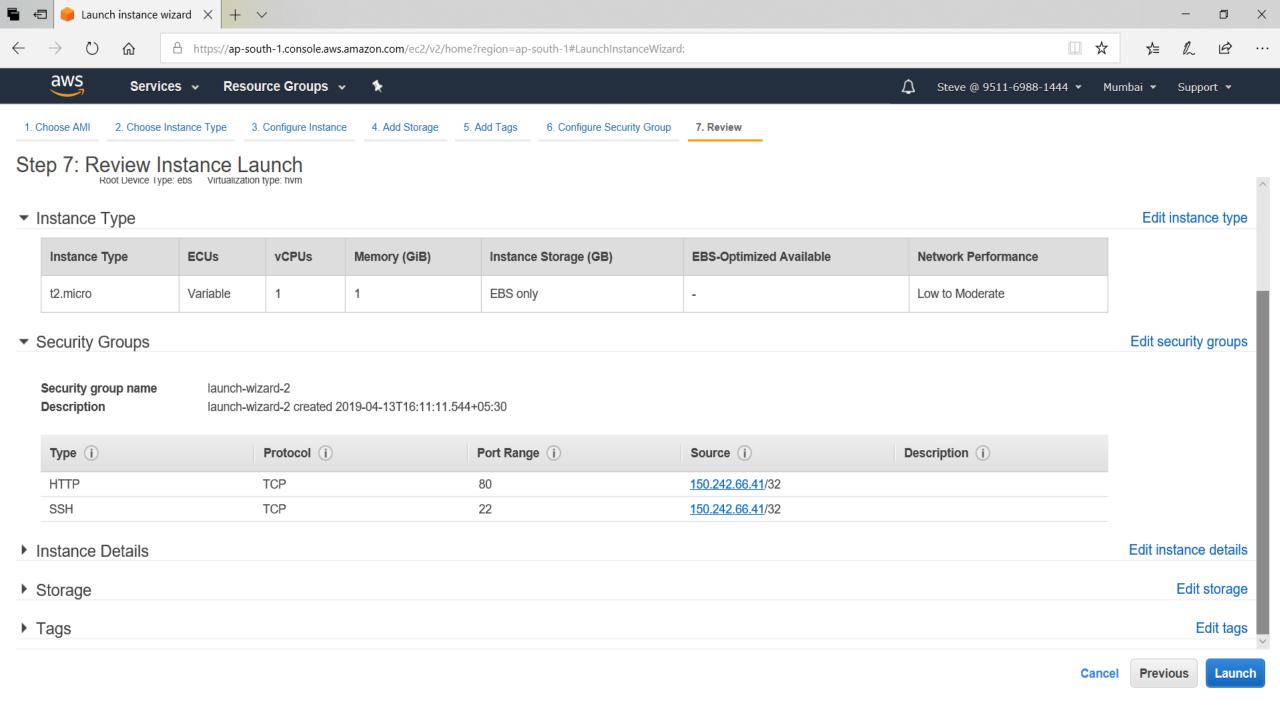
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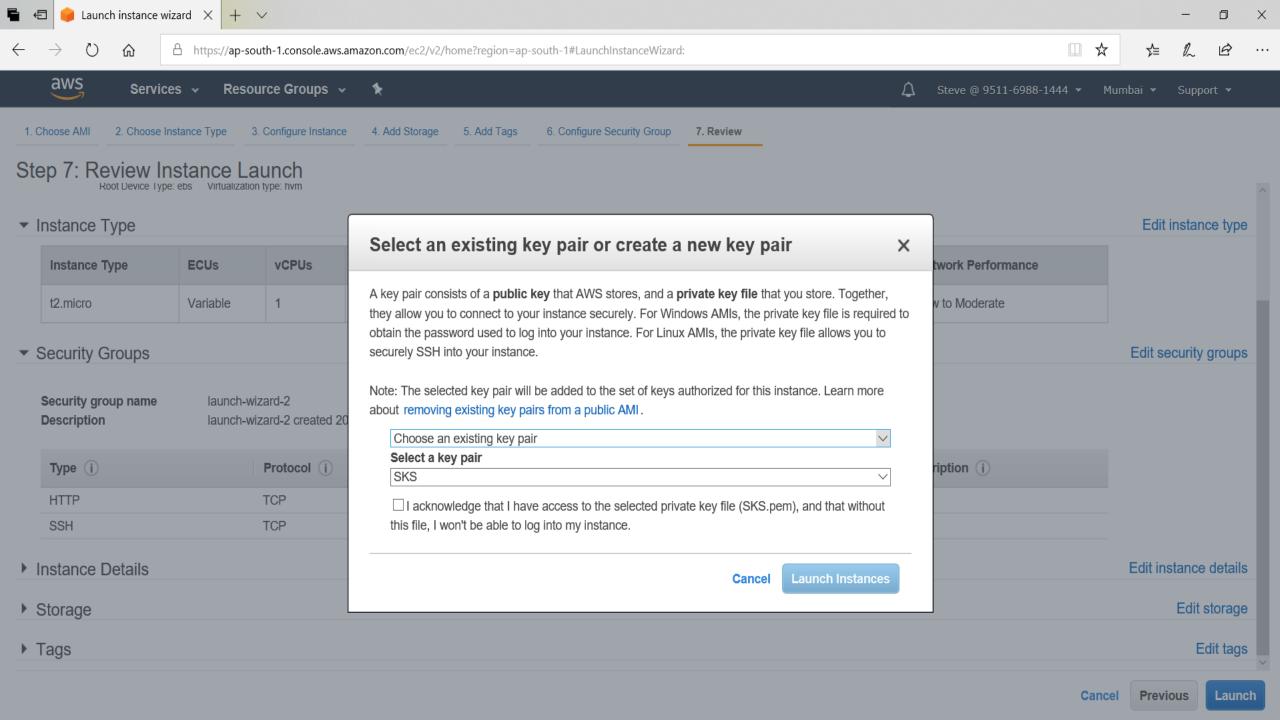
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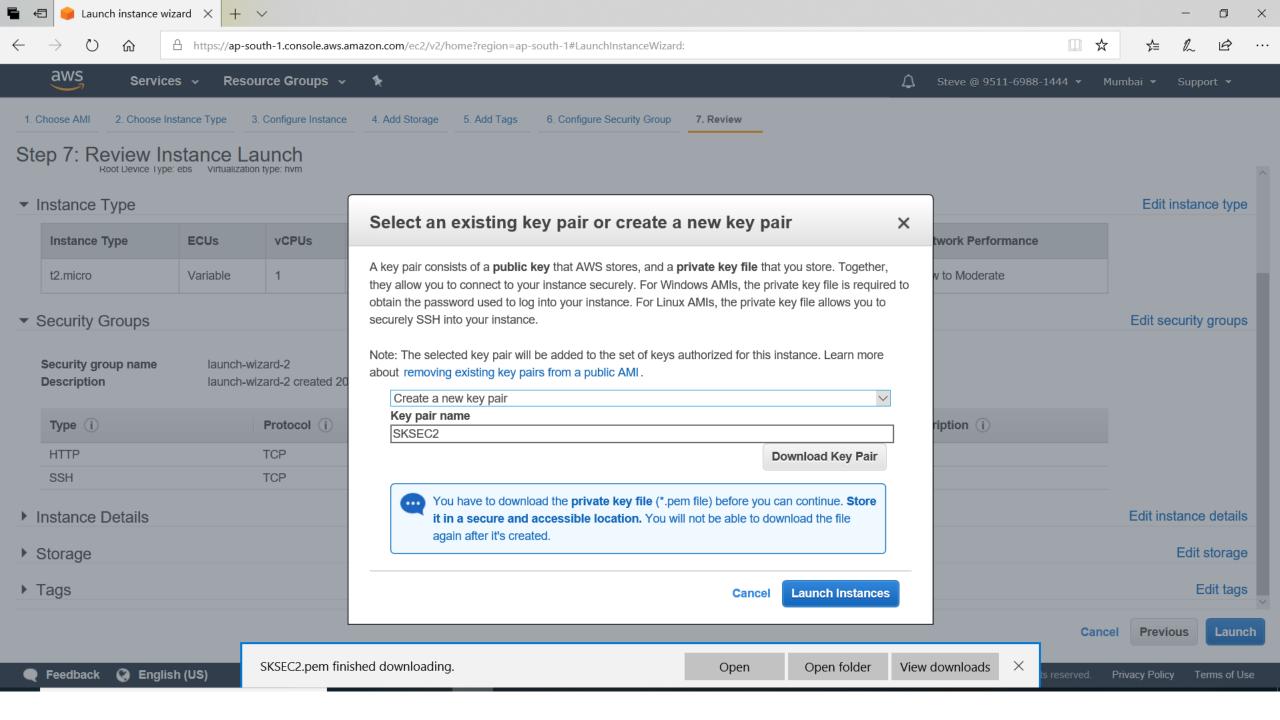


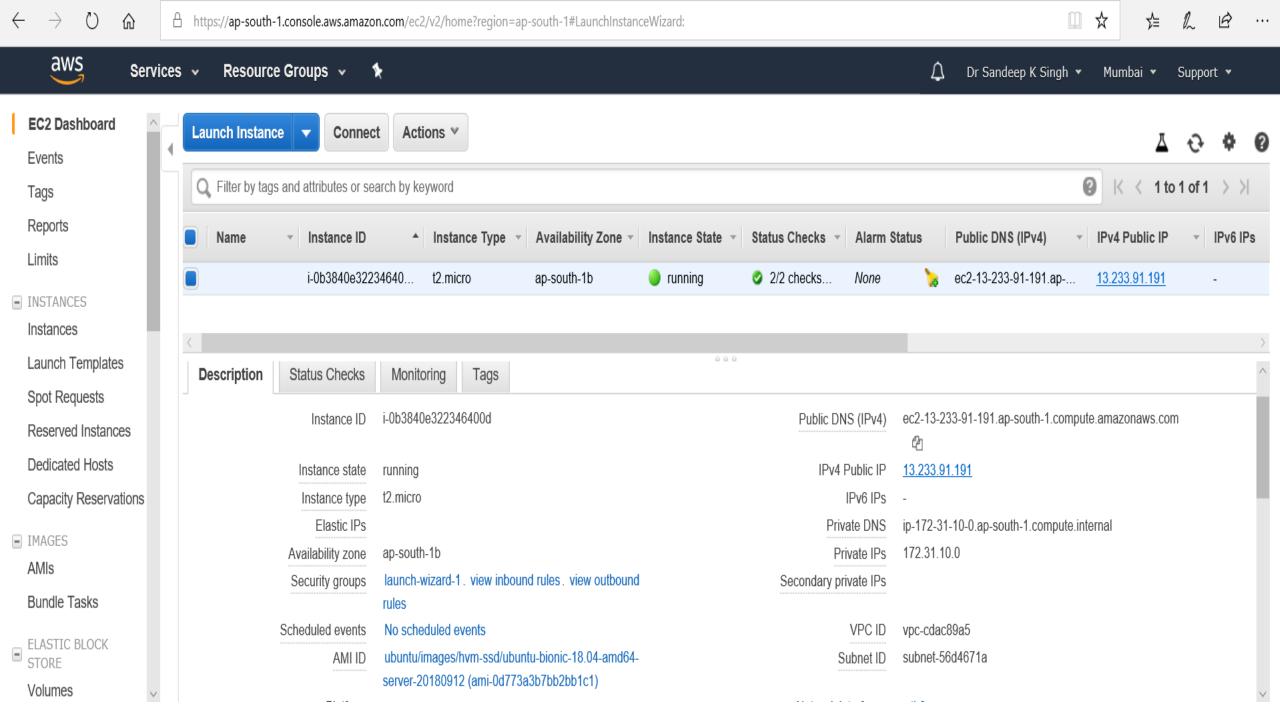


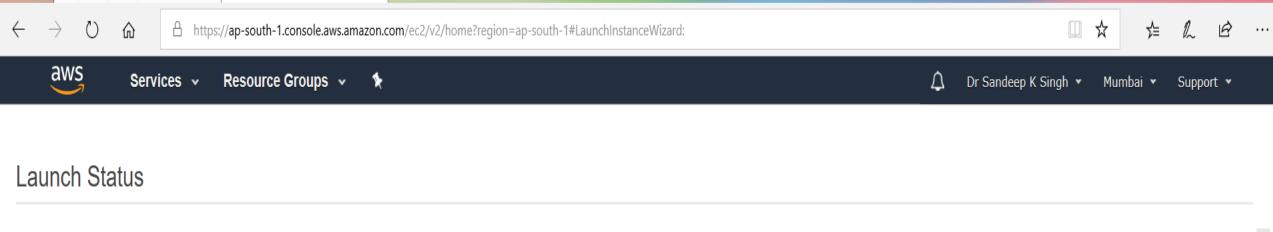


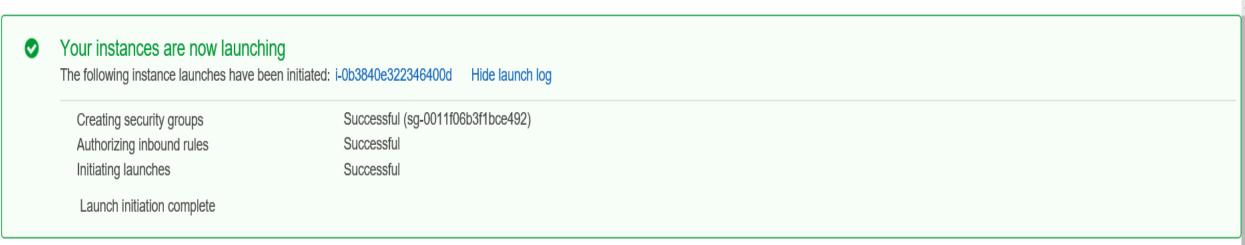














#### How to connect to your instances

Your instances are launching, and it may take a few minutes until they are in the **running** state, when they will be ready for you to use. Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances.

