EC2 Instance Storage

EBS(Elastic Block Store)

1. General Purpose SSD (`gp2`)
2. Provisioned IOPS SSD (`io1`)
3. Throughput Optimized HDD (`st1`)
4. Cold HDD (`sc1`)

	Solid-state drives (SSD)		Hard disk drives (HDD)	
Volume type	General Purpose SSD (`gp2`)	Provisioned IOPS SSD (`io1`)	Throughput Optimized HDD (`st1`)	Cold HDD (`sc1`)
Description	General purpose SSD volume that balances price and performance for a wide variety of workloads	Highest-performance SSD volume for mission-critical low-latency or high-throughput workloads	Low-cost HDD volume designed for frequently accessed, throughput-intensive workloads	Lowest cost HDD volume designed for less frequently accessed workloads

Use cases	• Recommended for most workloads
	• System boot volumes
	• Virtual desktops
	• Low-latency interactive apps
	• Development and test environments
		• Critical business applications that require sustained IOPS performance, or more than 16,000 IOPS or 250 MiB/s of throughput per volume
		• Large database workloads, such as:
		  • MongoDB
		  • Cassandra
		  • Microsoft SQL Server
		  • MySQL
		  • PostgreSQL
		  • Oracle
			• Streaming workloads requiring consistent, fast throughput at a low price
			• Big data
			• Data warehouses
			• Log processing
			• Cannot be a boot volume
				• Throughput-oriented storage for large

API name	• `gp2`	• `io1`	• `st1`	• `sc1`
Volume size	• 1 GiB - 16 TiB	• 4 GiB - 16 TiB	• 500 GiB - 16 TiB	• 500 GiB - 16 TiB
Max IOPS per volume	• 16,000 (16 KiB I/O) *	• 64,000 (16 KiB I/O) †	• 500 (1 MiB I/O)	• 250 (1 MiB I/O)

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Max throughput per volume	250 MiB/s *	1,000 MiB/s †	500 MiB/s	250 MiB/s
Max IOPS per instance ††	80,000	80,000	80,000	80,000

AMI Process

Start an EC2 instance and Customize it
Stop the Instance (for data intergrity)
Build an AMI -this will also create EBS snapshots
Launch instance from other AMIs

EFS- Elastic File System

→ This for Share Mouted System
→ Managed NFS(Network File System) that can be mounted on 100s of EC2
→EFS worked with Linux EC2 Instance in Multi-AZ
→High Available, Scalable, Expensive(3*gp2), pay per use, No capacity Planning

EBS vs EFS

EBS	EFS
Connect with only 1 EC2	Connect with many Linux Ec2
Connect only Single AZ	Connect with many -AZ
Not Shared	Shared File System

Shared Responsibility Model EC2 Store

AWS	User
Infrastructure	Setting up backup/snapshot procedures
Replication for data for EBS volume& EFS drives	Setting up data encryption
Replacing Faulty Hardware	Responsible for any data in the drive
Ensuring their employees cannot your data	Understanding the risk of using EC2 Instance Store

Summary

EBS Volume:

- Network drives attached to one EC2 instance at a time
- Mapped to an Availability Zones
- Can use EBS Snapshots for backups/ Trasferring EBS volumes across AZ

AMI:

Create ready-to-use EC2 instances with our customizations

EC2 Instance Store:

- High performance hardware disk attached to our EC2 Instance
- Lost if out instance is stopped/ terminated

EFS:

- Network file system, can be attached to 100s of instances in a region

CleanUP

⇒ Delete unnecessary EC2, snapshot, Volumes also

⇒ Delete security group, key pairs