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*Terraform: AWS EBS*

## *Terraform : Deployment Automation*

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- EBS - Elastic Block Storage. EBS volume is a durable, block-level storage device that you can attach to your instances.
- EBS is like a secondary disk with Instance, which is flexible.
- User can dynamically increase size, modify the provisioned IOPS capacity, and change volume type on live production volumes.
- User can attach multiple EBS volumes to a single instance.
- EBS volume and instance must be in the same Availability Zone.

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- **Types of AWS EBS Volumes -**
- Two Amazon EBS volume type categories: SSD-backed volumes and HDD-backed volumes.
- SSD-backed volumes are optimized for transactional workloads, where the volume performs a lot of small read/write operations. The performance of such volumes is measured in IOPS (input/output operations per second).
- HDD-backed volumes are designed for large sequential workloads where throughput is much more important (and the performance is measured with MiB/s).

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Solid State Drives (SSD)	Hard Disk Drives (HDD)
<b>General Purpose SSD</b> Balanced for economy and performance	<b>Throughput Optimized HDD:</b> Inexpensive, for high use, intensive workloads
<b>Provisioned IOPS SSD</b> High performance, for important applications	<b>Cold HDD</b> Cheap, used for infrequent access

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- **General Purpose SSD (gp2)** - Balanced for price and performance and recommended for most use cases.
- Max 3000 IOPS allowed in gp2.
- Sizes of gp2 volumes can vary from 1 GiB to 16 TiB, while maximum throughput is capped at 160 MiB/s.
- **Provisioned IOPS SSD (io1)** - Used for critical production applications and databases that need the high performance (up to 32,000 IOPS).
- Io1 volume sizes vary from 4 GiB to 16 TiB, while throughput is maxed at 500 MiB/s.

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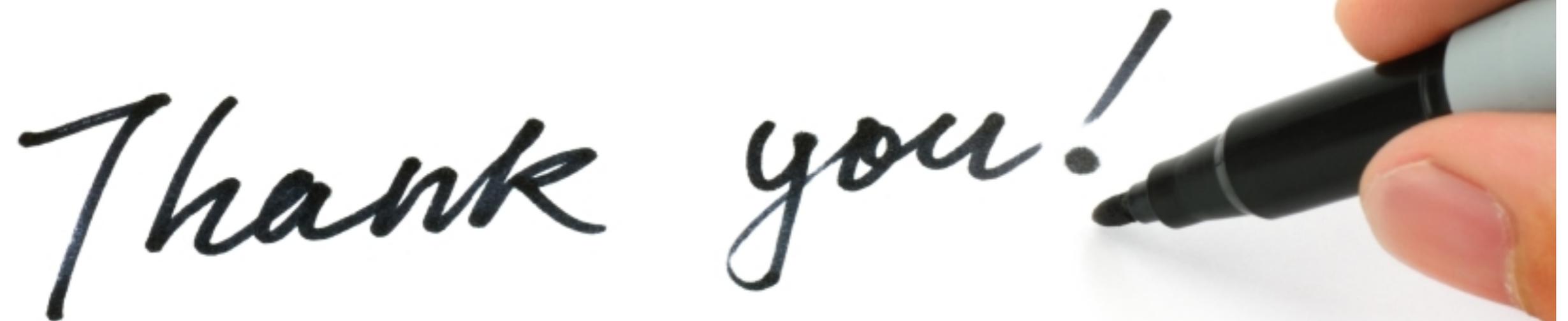
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- **Throughput Optimized HDD (st1)** - HDD is designed for applications that require larger storage and bigger throughput, such as big data or data warehousing, where IOPS is not that relevant.
- Maximum throughput is capped at 500 MiB/s, sizes vary from starting 500 GiB to 16 TiB.
- **Cold HDD (sc1)** - Cold HDD (sc1) is a magnetic storage format suitable for scenarios where storing data at low cost is the main criteria. Sizes vary from 500 GiB to 16 TiB, throughput can reach 250 MiB/s.

*Will see you in Next Lecture...*

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*Thank you!*

A close-up photograph of a hand holding a black marker, writing the words "Thank you!" in a cursive script on a white surface. The hand is positioned on the right side of the frame, with the fingers gripping the marker. The text is written in a dark, fluid cursive style. The background is plain white.

*See you in next lecture ...*