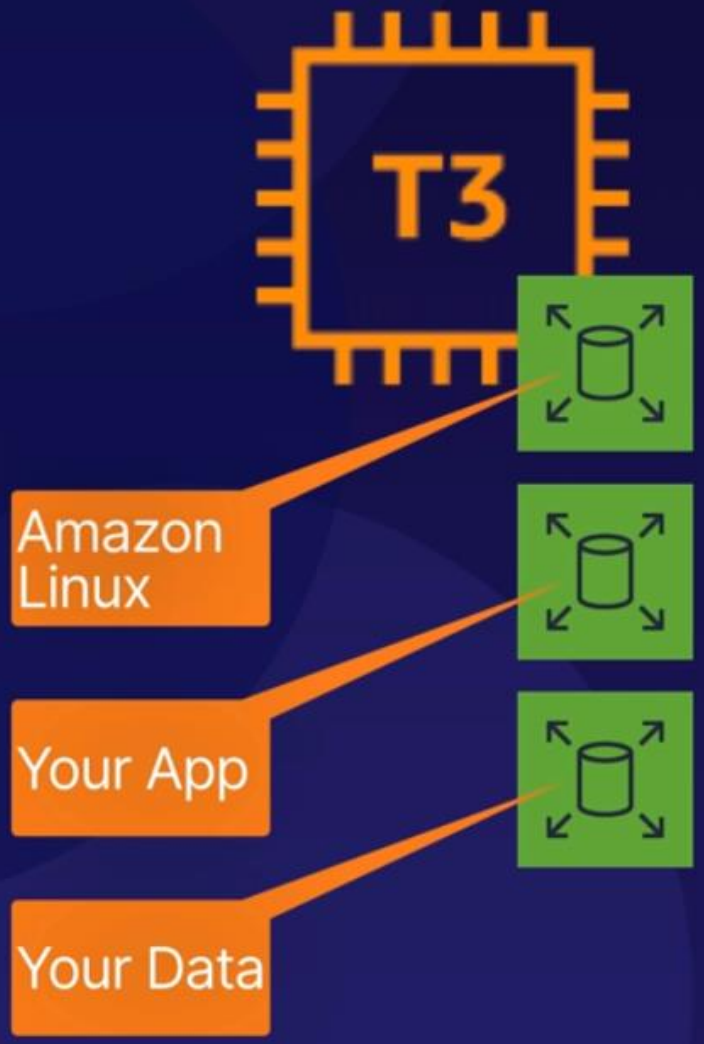
## What Is EBS?






# Elastic Block Store

Storage volumes that you can attach to your EC2 instances.

Use them the same way you would use any system disk.
Create a file system.
Run a database.
Run an operating system.
Store data.
Install applications.

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# Mission Critical

1. **Production Workloads**

   Designed for mission critical workloads.

2. **Highly Available**

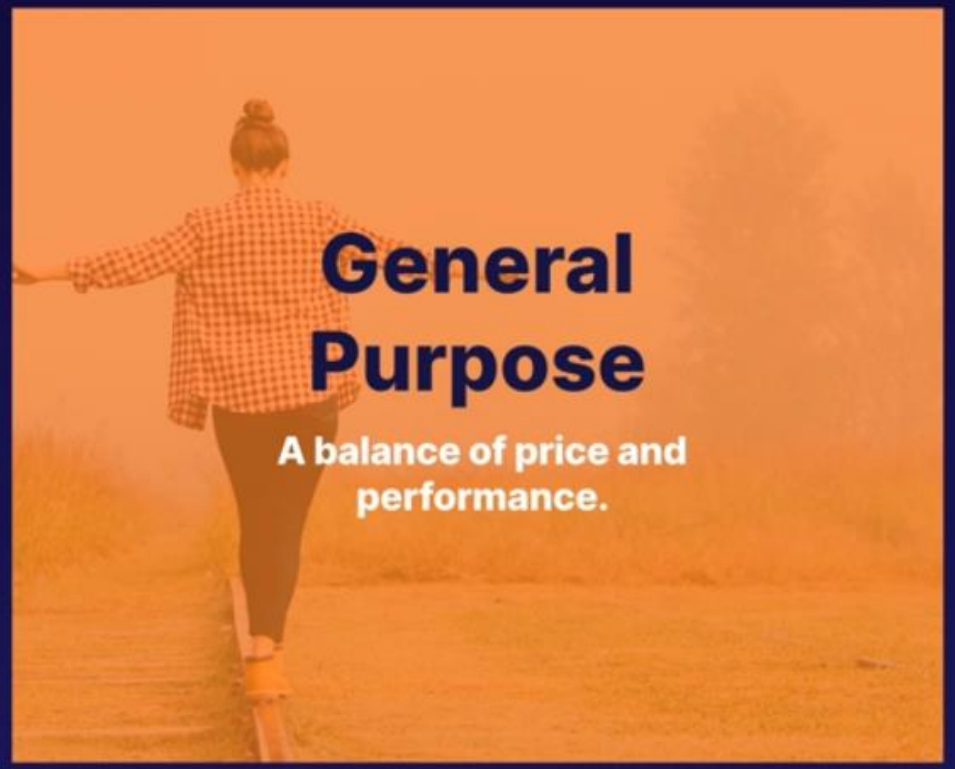
   Automatically replicated within a single Availability Zone to protect against hardware failures.

3. **Scalable**

   Dynamically increase capacity and change the type volume with no downtime or performance impact to your live systems.

# EBS Volume Types - Solid State Disk






## General Purpose SSD (gp2)

3 IOPS per GB, up to a maximum of 16,000 IOPS per volume. gp2 volumes smaller than 1 TB can burst up to 3,000 IOPS. Good for boot volumes or development and test applications which are not latency sensitive.

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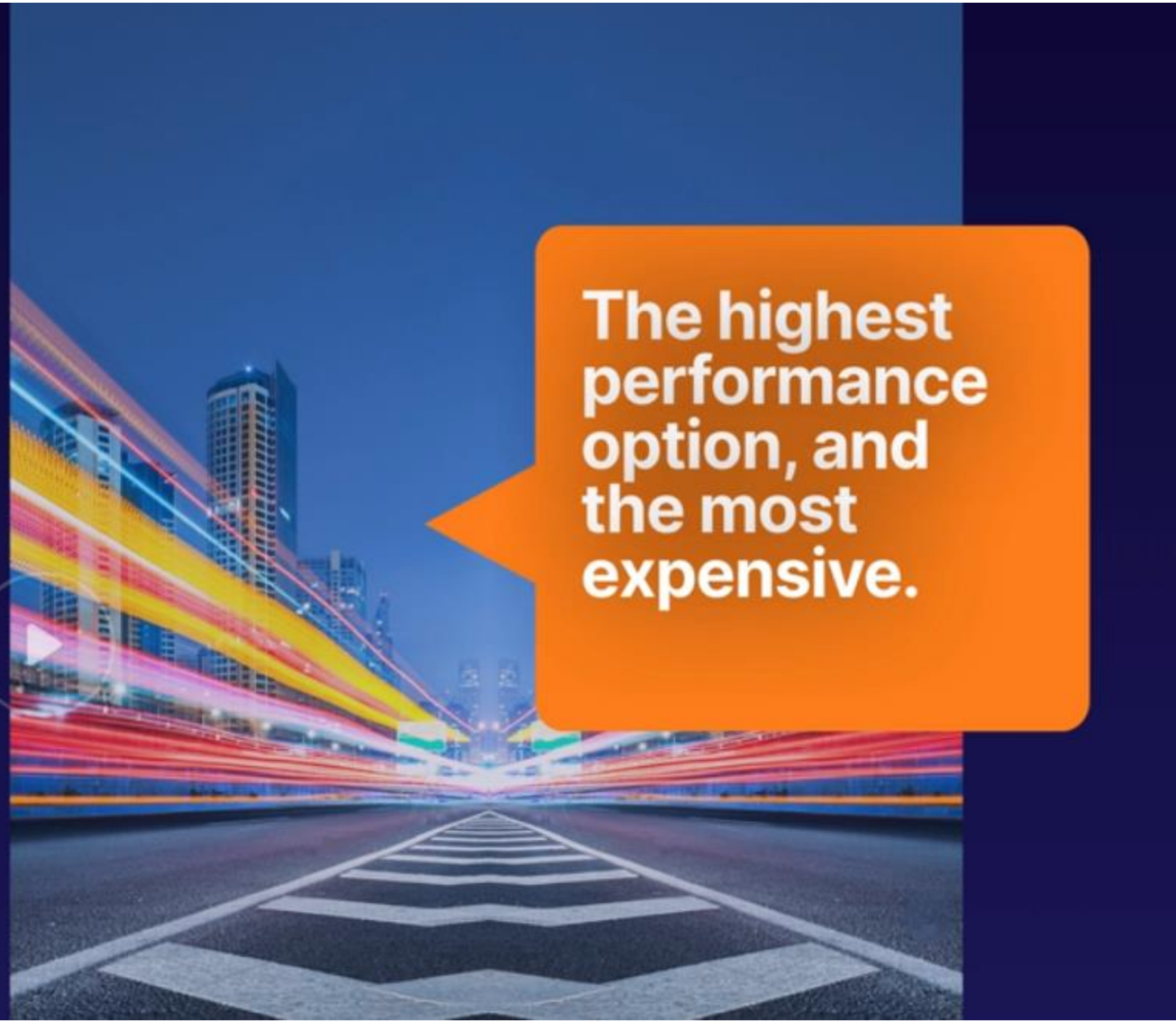
# Provisioned IOPS SSD (io1)

Up to 64,000 IOPS per volume.

Use if you need more than 16,000 IOPS.

Designed for I/O intensive applications, large databases, and latency-sensitive workloads.



## EBS Volume Types - Hard Disk Drive (MB/s-Intensive)



# Throughput Optimized HDD (st1)

Low-cost HDD volume.

Baseline throughput of 40 MB/s per TB.
Ability to burst up to 250 MB/s per TB.
Maximum throughput of 500 MB/s per volume.
Frequently-accessed, throughput-intensive workloads.
Big Data, data warehouses, ETL, and log processing.
Cannot be a boot volume.

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THE LOWEST COST OPTION

# Cold HDD (sc1)

Baseline throughput of 12 MB/s per TB.
Ability to burst up to 80 MB/s per TB.
Max throughput of 250 MB/s per volume.
A good choice for colder data requiring fewer scans per day.
Good for applications that need the lowest cost and performance is not a factor.
Cannot be a boot volume.

UNDERSTANDING EBS VOLUMES

# IOPS Versus Throughput?

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## IOPS

- Measures the number of read and write operations per second
- Important metric for quick transactions, low latency apps, transactional workloads.
- The ability to action reads and writes very quickly.
- Choose Provisioned IOPS SSD (io1).

VS

## Throughput

- Measures the number of bits read or written per second (MB/s).
- Important metric for large datasets, large I/O sizes, complex queries.
- The ability to deal with large datasets.
- Choose Throughput Optimized HDD (st1).

Exam Tips

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# Elastic Block Store

**Highly available and scalable storage volumes you can attach to an EC2 instance.**

## gp2

### General Purpose SSD

Suitable for boot disks and general applications.
Up to 16,000 IOPS per volume.

## io1

### Provisioned IOPS SSD

Suitable for OLTP and latency-sensitive applications.
Up to 64,000 IOPS per volume.
High performance and most expensive.

## st1

### Throughput Optimized HDD

Suitable for Big Data, data warehouses, ETL.
Max throughput is 500 MB/s per volume.
Cannot be a boot volume.

## Exam Tips

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**LOW COST OPTION**

# Cold HDD (sc1)

Max throughput of 250 MB/s per volume.
Less-frequently-accessed data.
Cannot be a boot volume.
Lowest cost.