Amazon Elastic Block Store

Persistent block storage for Amazon EC2

Definition(s)

Amazon Elastic Block Store (Amazon EBS) provides persistent block storage volumes for use with Amazon EC2 instances in the AWS Cloud.

	gp2	io1	st1	sc1
Name	General Purpose SSD	Provisioned IOPS SSD	Throughput Optimized HDD	Cold HHD
Size	1 Gib - 16 TiB	4 GiB - 16 TiB	500 GiB - 16 TiB	500 GiB - 16 TiB
Base and Burst IOPS	3 IOPS/GiB; 3,000 IOPS			
Max IOPS/ Volume	10,000	20,000	500	250
	gp2/io1 based on 16KiB I/O size, st1/sc1 based on 1 MiB I/O size			
Max Throughput/ Volume	160 MiB/s	320 MiB/s	500 MiB/s	250 MiB/s
	To achieve this throughput, you must have an instance that supports it, such as r3.8xlarge or x1.32xlarge.			
Max IOPS/ Instance	65,000	65,000	65,000	65,000
Max Throughput/ Instance	1,250 Mib/s	1,250 Mib/s	1,250 Mib/s	1,250 Mib/s

Resource	Def Limit
Number of EBS volumes	5,000
Number of EBS snapshots	10,000
Total volume storage of General Purpose SSD	20 TiB
Total volume storage of Provisioned IOPS SSD	20 TiB
Total volume storage of Throughput Optimized	20 TiB
Total volume storage of Cold HDD (sc1)	20 TiB
Total volume storage of Magnetic volumes	20 TiB
Total provisioned IOPS	40,000

gp2 - general purpose SSD volume that balances price and performance for a wide variety of transactional workloads

Between a minimum of 100 IOPS (at 33.33 GiB and below) and a maximum of 10,000 IOPS (at 3,334 GiB and above), baseline performance scales linearly at 3 IOPS per GiB of volume size.

Each volume receives an initial I/O credit balance of 5.4 million I/O credits, which is enough to sustain the maximum burst performance of 3,000 IOPS for 30 minutes.

When your volume requires more than the baseline performance I/O level, it draws on I/O credits in the credit balance to burst to the required performance level, up to a maximum of 3,000 IOPS. Volumes larger than 1,000 GiB have a baseline performance that is equal or greater than the maximum burst performance, and their I/O credit balance never depletes.

io1 - highest-performance SSD volume designed for mission-critical applications.

Delivers within 10 percent of the provisioned IOPS performance 99.9 percent of the time over a given year.

An io1 volume can range in size from 4 GiB to 16 TiB and you can provision 100 up to 20,000 IOPS per volume. The maximum ratio of provisioned IOPS to requested volume size (in GiB) is 50:1. For example, a 100 GiB volume can be provisioned with up to 5,000 IOPS. Any volume 400 GiB in size or greater allows provisioning up to the 20,000 IOPS maximum.

The throughput limit of io1 volumes is 256 KiB for each IOPS provisioned, up to a maximum of 320 MiB/s (at 1,280 IOPS).

st1 - low cost HDD volume designed for frequently accessed, throughput-intensive workloads

sc1 - lowest cost HDD volume designed for less frequently accessed workloads