NetApp

Supported configurations for Cloud Volumes ONTAP 9.8 in AWS

Cloud Volumes ONTAP

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Two pricing options are available for Cloud Volumes ONTAP: pay as you go and Bring Your Own License (BYOL). For PAYGO, you can choose between Explore, Standard, and Premium. Each of these licensing options enables you to choose a configuration that meets your needs.

Pay-as-you-go overview

- Offers Cloud Volumes ONTAP in three different configurations: Explore, Standard, and Premium.

- A 30-day free trial is available for the first Cloud Volumes ONTAP system that you deploy in AWS.

    ◦ There are no hourly software charges, but AWS infrastructure charges still apply (compute, storage, and networking).

    ◦ When the free trial ends, you'll be charged hourly according to the selected license, as long as you subscribed. If you haven't subscribed, the system shuts down.

- Conversions from PAYGO to BYOL aren't currently supported.

- Basic technical support is offered, but you must register and activate the NetApp serial number associated with your system.

    Register pay-as-you-go systems in Cloud Manager

BYOL overview

- Single node or HA license with term-based subscription options like 12 months, 24 months, and more.

- Support is included for the length of the subscription term.

- You can purchase multiple licenses for a Cloud Volumes ONTAP BYOL system to allocate more than 368 TB of capacity.

    For example, you might purchase two licenses to allocate up to 736 TB of capacity to Cloud Volumes ONTAP. Or you could purchase four licenses to get up to 1.4 PB.

Supported number of nodes

Cloud Volumes ONTAP is available in AWS as a single node system and as a high-availability (HA) pair of nodes for fault tolerance and nondisruptive operations.

Upgrading a single node system to an HA pair is not supported. If you want to switch between a single node system and an HA pair, then you need to deploy a new system and replicate data from the existing system to the new system.

Supported storage

Cloud Volumes ONTAP supports several types of EBS disks, and S3 object storage for data tiering. The maximum storage capacity is determined by the license that you choose.

Storage support by license

Each license supports a different maximum system capacity. The maximum system capacity includes disk-based storage plus object storage used for data tiering. NetApp doesn't support exceeding this limit.

	Explore	Standard	Premium	BYOL
Maximum system capacity (disks + object storage) [1]	2 TB	10 TB	368 TB [2]	368 TB per license [2]
Supported disk types	• General Purpose SSD (gp2) [3,4] • Provisioned IOPS SSD (io1) [3] • Throughput Optimized HDD (st1) • Cold HDD (sc1 - single node only)			
Cold data tiering to S3	Not supported	Supported, but not with Cold HDD disks		

1. For an HA pair, the capacity limit is for the entire HA pair. It's not per node. For example, if you use the Premium license, you can have up to 368 TB of capacity between both nodes.

2. For some HA configurations, disk limits prevent you from reaching the 368 TB capacity limit by using disks alone. In those cases, you can reach the 368 TB capacity limit by tiering inactive data to object storage. For information about disk limits, refer to storage limits.

3. Enhanced write performance is enabled when using SSDs with Cloud Volumes ONTAP Standard, Premium, and BYOL.

4. gp3 SSDs are not supported.

Supported disk sizes

In AWS, an aggregate can contain up to 6 disks that are all the same type and size.

General Purpose SSD (gp2)	Provisioned IOPS SSD (io1)	Throughput Optimized HDD (st1)	Cold HDD (sc1 - single node only)
• 100 GB • 500 GB • 1 TB • 2 TB • 4 TB • 6 TB • 8 TB • 16 TB	• 100 GB • 500 GB • 1 TB • 2 TB • 4 TB • 6 TB • 8 TB • 16 TB	• 500 GB • 1 TB • 2 TB • 4 TB • 6 TB • 8 TB • 16 TB	• 2 TB • 4 TB • 6 TB • 8 TB • 16 TB

Supported compute

Each Cloud Volumes ONTAP license supports different EC2 instance types. For your convenience, the table below shows the vCPU, RAM, and bandwidth for each supported instance type. You should refer to AWS for the latest and complete details about EC2 instance types.

The bandwidths shown in the table below match the documented AWS limits for each instance type. These limits don't completely align with what Cloud Volumes ONTAP can provide. For the expected performance, refer to NetApp Technical Report 4383: Performance Characterization of Cloud Volumes ONTAP in Amazon Web Services with Application Workloads.

License	Supported instance	vCPU	RAM	Flash Cache [1]	Network bandwidth (Gbps)	EBS bandwidth (Mbps)	High write speed [2]
Explore and BYOL	m5.xlarge	4	16	Not supported	Up to 10	Up to 4,750	Supported (single node only)
Standard and BYOL	r5.xlarge	4	32	Not supported	Up to 10	Up to 4,750	Supported (single node only)
	m5.2xlarge	8	32	Not supported	Up to 10	Up to 4,750	Supported

License	Supported instance	vCPU	RAM	Flash Cache [1]	Network bandwidth (Gbps)	EBS bandwidth (Mbps)	High write speed [2]
Premium and BYOL	m5n.2xlarge	8	32	Not supported	Up to 25	Up to 4,750	Supported
	r5.2xlarge	8	64	Not supported	Up to 10	Up to 4,750	Supported
	r5d.2xlarge	8	64	Supported	Up to 10	Up to 4,750	Supported
	c5d.4xlarge	16	32	Supported	Up to 10	4,570	Supported
	m5.4xlarge	16	64	Not supported	Up to 10	4,750	Supported
	m5d.8xlarge	32	128	Supported	10	6,800	Supported
	r5.8xlarge	32	256	Not supported	10	6,800	Supported
	c5.9xlarge	36	72	Not supported	10	9,500	Supported
	c5d.9xlarge	36	72	Supported	10	9,500	Supported
	c5n.9xlarge	36	96	Not supported	50	9,500	Supported
	c5.18xlarge	48 [4]	144	Not supported	25	19,000	Supported
	c5d.18xlarge	48 [4]	144	Supported	25	19,000	Supported
	m5d.12xlarge	48	192	Supported	12	9,500	Supported
	c5n.18xlarge	48 [4]	192	Not supported	100	19,000	Supported
	m5.16xlarge	48 [4]	256	Not supported	20	13,600	Supported
	r5.12xlarge [3]	48	384	Not supported	10	9,500	Supported

1. Some instance types include local NVMe storage, which Cloud Volumes ONTAP uses as *Flash Cache*. Flash Cache speeds access to data through real-time intelligent caching of recently read user data and NetApp metadata. It's effective for random read-intensive workloads, including databases, email, and file services. Compression must be disabled on all volumes to take advantage of the Flash Cache performance improvements. Learn more about Flash Cache.

2. Cloud Volumes ONTAP supports high write speed with most instance types when using an HA pair. High write speed is supported with all instance types when using a single node system. Learn more about choosing a write speed.

3. The r5.12xlarge instance type has a known limitation with supportability. If a node unexpectedly reboots due to a panic, the system might not collect core files used to troubleshoot and root cause the problem. The customer accepts the risks and limited support terms and bears all support responsibility if this condition occurs. This limitation affects newly deployed 9.8 HA pairs and HA pairs upgraded from 9.7. The

limitation does not affect newly deployed single node systems.

4. While these EC2 instance types support more than 48 vCPUs, Cloud Volumes ONTAP supports up to 48 vCPUs.

5. When you choose an EC2 instance type, you can specify whether it is a shared instance or a dedicated instance.

6. Cloud Volumes ONTAP can run on either a Reserved or On-demand EC2 instance. Solutions that use other instance types aren't supported.

Supported regions

For AWS region support, see Cloud Volumes Global Regions.