



## **Supported configurations**

### Cloud Volumes ONTAP release notes

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# Supported configurations

## Supported configurations in AWS

Several Cloud Volumes ONTAP configurations are supported in AWS.

### Supported configurations by license

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.

	Freemium	PAYGO Explore	PAYGO Standard	PAYGO Premium	Node-based license	Capacity-based license
Maximum system capacity (disks + object storage)	500 GiB	2 TiB	10 TiB	368 TiB <sup>1</sup>	368 TiB per license <sup>1</sup>	2 PiB <sup>1</sup>

	Freemium	PAYGO Explore	PAYGO Standard	PAYGO Premium	Node-based license	Capacity-based license
<b>Supported EC2 instance types <sup>2</sup></b>	<ul style="list-style-type: none"> <li>• c4.4xlarge</li> <li>• c4.8xlarge</li> <li>• c5.9xlarge</li> <li>• c5.18xlarge</li> <li>• c5d.4xlarge <sup>3</sup></li> <li>• c5d.9xlarge <sup>3</sup></li> <li>• c5d.18xlarge <sup>3</sup></li> <li>• c5n.9xlarge <sup>4</sup></li> <li>• c5n.18xlarge <sup>4</sup></li> <li>• m4.xlarge</li> <li>• m4.2xlarge</li> <li>• m4.4xlarge</li> <li>• m5.xlarge</li> <li>• m5.2xlarge</li> <li>• m5.4xlarge</li> <li>• m5.16xlarge</li> <li>• m5d.8xlarge <sup>3</sup></li> <li>• m5d.12xlarge <sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>• m4.xlarge</li> <li>• m5.xlarge</li> </ul>	<ul style="list-style-type: none"> <li>• m4.2xlarge</li> <li>• m5.2xlarge</li> <li>• r4.xlarge</li> <li>• r5.xlarge</li> </ul>	<ul style="list-style-type: none"> <li>• c4.4xlarge</li> <li>• c4.8xlarge</li> <li>• c5.9xlarge</li> <li>• c5.18xlarge</li> <li>• c5d.4xlarge <sup>3</sup></li> <li>• c5d.9xlarge <sup>3</sup></li> <li>• c5d.18xlarge <sup>3</sup></li> <li>• c5n.9xlarge <sup>4</sup></li> <li>• c5n.18xlarge <sup>4</sup></li> <li>• m4.4xlarge</li> <li>• m4.2xlarge</li> <li>• m5.4xlarge</li> <li>• m5.16xlarge</li> <li>• m5d.8xlarge <sup>3</sup></li> <li>• m5d.12xlarge <sup>3</sup></li> <li>• r4.2xlarge</li> <li>• r5.2xlarge</li> <li>• r5.8xlarge</li> <li>• r5.12xlarge <sup>5</sup></li> <li>• r5d.2xlarge <sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>• c4.4xlarge</li> <li>• c4.8xlarge</li> <li>• c5.9xlarge</li> <li>• c5.18xlarge</li> <li>• c5d.4xlarge <sup>3</sup></li> <li>• c5d.9xlarge <sup>3</sup></li> <li>• c5d.18xlarge <sup>3</sup></li> <li>• c5n.9xlarge <sup>4</sup></li> <li>• c5n.18xlarge <sup>4</sup></li> <li>• m4.xlarge</li> <li>• m4.2xlarge</li> <li>• m4.4xlarge</li> <li>• m5.xlarge</li> <li>• m5.2xlarge</li> <li>• m5.4xlarge</li> <li>• m5.16xlarge</li> <li>• m5d.8xlarge <sup>3</sup></li> <li>• m5d.12xlarge <sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>• c4.4xlarge</li> <li>• c4.8xlarge</li> <li>• c5.9xlarge</li> <li>• c5.18xlarge</li> <li>• c5d.4xlarge <sup>3</sup></li> <li>• c5d.9xlarge <sup>3</sup></li> <li>• c5d.18xlarge <sup>3</sup></li> <li>• c5n.9xlarge <sup>4</sup></li> <li>• c5n.18xlarge <sup>4</sup></li> <li>• m4.xlarge</li> <li>• m4.2xlarge</li> <li>• m4.4xlarge</li> <li>• m5.xlarge</li> <li>• m5.2xlarge</li> <li>• m5.4xlarge</li> <li>• m5.16xlarge</li> <li>• m5d.8xlarge <sup>3</sup></li> <li>• m5d.12xlarge <sup>3</sup></li> </ul>
2	r4.xlarge			r4.xlarge	r4.xlarge	r4.xlarge

	Freemium	PAYGO Explore	PAYGO Standard	PAYGO Premium	Node-based license	Capacity-based license
<b>Supported disk types</b> <sup>6</sup>	General Purpose SSDs (gp3 and gp2), Provisioned IOPS SSDs (io1), and Throughput Optimized HDDs (st1) <sup>7</sup>					

Notes:

- r5.2xlarge
- r5.8xlarge
- 1. For some configurations, disk limits prevent you from reaching the capacity limit by using disks alone. In those cases, you can reach the capacity limit by [tiering inactive data to object storage](#). For information about disk limits, refer to [Storage limits](#).
- 2. When you choose an EC2 instance type, you can specify whether it is a shared instance or a dedicated instance.
- 3. These 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 is 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](#).
- 4. c5n.9xlarge and c5n.18xlarge are supported starting with 9.7 P5.
- 5. 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.
- 6. Enhanced write performance is enabled when using SSDs with Cloud Volumes ONTAP Standard, Premium, and BYOL.
- 7. Tiering data to object storage is not recommended when using Throughput Optimized HDDs (st1).
- 8. For AWS region support, see [Cloud Volumes Global Regions](#).
- 9. Cloud Volumes ONTAP can run on either a Reserved or On-demand VM instance from your cloud provider. Solutions that use other VM instance types aren't 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 (gp3 and gp2)	Provisioned IOPS SSD (io1)	Throughput Optimized HDD (st1)
<ul style="list-style-type: none"> <li>• 100 GiB</li> <li>• 500 GiB</li> <li>• 1 TiB</li> <li>• 2 TiB</li> <li>• 4 TiB</li> <li>• 6 TiB</li> <li>• 8 TiB</li> <li>• 16 TiB</li> </ul>	<ul style="list-style-type: none"> <li>• 100 GiB</li> <li>• 500 GiB</li> <li>• 1 TiB</li> <li>• 2 TiB</li> <li>• 4 TiB</li> <li>• 6 TiB</li> <li>• 8 TiB</li> <li>• 16 TiB</li> </ul>	<ul style="list-style-type: none"> <li>• 500 GiB</li> <li>• 1 TiB</li> <li>• 2 TiB</li> <li>• 4 TiB</li> <li>• 6 TiB</li> <li>• 8 TiB</li> <li>• 16 TiB</li> </ul>

# Supported configurations in Azure

Several Cloud Volumes ONTAP configurations are supported in Azure.

## Supported configurations by license

Cloud Volumes ONTAP is available in Azure 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.

### Single node systems

You can choose from the following configurations when deploying Cloud Volumes ONTAP as a single-node system in Azure:

	Freemium	PAYGO Explore	PAYGO Standard	PAYGO Premium	Node-based license	Capacity-based license
<b>Maximum system capacity (disks + object storage)</b>	500 GiB	2 TiB <sup>1</sup>	10 TiB	368 TiB	368 TiB per license	2 PiB
<b>Supported virtual machine types</b>	<ul style="list-style-type: none"><li>• DS3_v2</li><li>• DS4_v2</li><li>• DS5_v2</li><li>• DS13_v2</li><li>• DS14_v2</li><li>• DS15_v2</li><li>• E32s_v3 <sup>2</sup></li><li>• E48s_v3 <sup>2</sup></li><li>• L8s_v2 <sup>3</sup></li></ul>	DS3_v2	<ul style="list-style-type: none"><li>• DS4_v2</li><li>• DS13_v2</li></ul>	<ul style="list-style-type: none"><li>• DS5_v2</li><li>• DS14_v2</li><li>• DS15_v2</li><li>• E32s_v3 <sup>2</sup></li><li>• E48s_v3 <sup>2</sup></li></ul>	<ul style="list-style-type: none"><li>• DS3_v2</li><li>• DS4_v2</li><li>• DS5_v2</li><li>• DS13_v2</li><li>• DS14_v2</li><li>• DS15_v2</li><li>• E32s_v3 <sup>2</sup></li><li>• E48s_v3 <sup>2</sup></li><li>• L8s_v2 <sup>3</sup></li></ul>	<ul style="list-style-type: none"><li>• DS3_v2</li><li>• DS4_v2</li><li>• DS5_v2</li><li>• DS13_v2</li><li>• DS14_v2</li><li>• DS15_v2</li><li>• E32s_v3 <sup>2</sup></li><li>• E48s_v3 <sup>2</sup></li><li>• L8s_v2 <sup>3</sup></li></ul>
<b>Supported disk types <sup>4</sup></b>	Standard HDD Managed Disks, Standard SSD Managed Disks, and Premium SSD Managed Disks					

Notes:

1. Data tiering to Azure Blob storage isn't supported with PAYGO Explore.
2. This VM type uses an [Ultra SSD](#) for VNVram, which provides better write performance.
3. This VM type includes 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 is 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](#).

- Enhanced write performance is enabled when using SSDs, but not when using the DS3\_v2 virtual machine type.
- For Azure region support, see [Cloud Volumes Global Regions](#).
- Cloud Volumes ONTAP can run on either a Reserved or On-demand VM instance from your cloud provider. Solutions that use other VM instance types aren't supported.

## HA pairs

You can choose from the following configurations when deploying Cloud Volumes ONTAP as an HA pair in Azure.

	Freemium	PAYGO Standard	PAYGO Premium	Node-based license	Capacity-based license
<b>Maximum system capacity (disks + object storage)</b>	500 GiB	10 TiB	368 TiB	368 TiB per license	2 PiB
<b>Supported virtual machine types</b>	<ul style="list-style-type: none"><li>• DS4_v2</li><li>• DS5_v2</li><li>• DS13_v2</li><li>• DS14_v2</li><li>• DS15_v2</li></ul>	<ul style="list-style-type: none"><li>• DS4_v2</li><li>• DS13_v2</li></ul>	<ul style="list-style-type: none"><li>• DS5_v2</li><li>• DS14_v2</li><li>• DS15_v2</li></ul>	<ul style="list-style-type: none"><li>• DS4_v2</li><li>• DS5_v2</li><li>• DS13_v2</li><li>• DS14_v2</li><li>• DS15_v2</li></ul>	<ul style="list-style-type: none"><li>• DS4_v2</li><li>• DS5_v2</li><li>• DS13_v2</li><li>• DS14_v2</li><li>• DS15_v2</li></ul>
<b>Supported disk types</b>	Premium page blobs				

Notes:

- PAYGO Explore isn't supported with HA pairs in Azure.
- For Azure region support, see [Cloud Volumes Global Regions](#).
- Cloud Volumes ONTAP can run on either a Reserved or On-demand VM instance from your cloud provider. Solutions that use other VM instance types aren't supported.

## Supported disk sizes

In Azure, an aggregate can contain up to 12 disks that are all the same type and size.

### Single node systems

Single node systems use Azure Managed Disks. The following disk sizes are supported:

Premium SSD	Standard SSD	Standard HDD
<ul style="list-style-type: none"> <li>• 500 GiB</li> <li>• 1 TiB</li> <li>• 2 TiB</li> <li>• 4 TiB</li> <li>• 8 TiB</li> <li>• 16 TiB</li> <li>• 32 TiB</li> </ul>	<ul style="list-style-type: none"> <li>• 100 GiB</li> <li>• 500 GiB</li> <li>• 1 TiB</li> <li>• 2 TiB</li> <li>• 4 TiB</li> <li>• 8 TiB</li> <li>• 16 TiB</li> <li>• 32 TiB</li> </ul>	<ul style="list-style-type: none"> <li>• 100 GiB</li> <li>• 500 GiB</li> <li>• 1 TiB</li> <li>• 2 TiB</li> <li>• 4 TiB</li> <li>• 8 TiB</li> <li>• 16 TiB</li> <li>• 32 TiB</li> </ul>

## HA pairs

HA pairs use Premium page blobs. The following disk sizes are supported:

- 500 GiB
- 1 TiB
- 2 TiB
- 4 TiB
- 8 TiB

## Supported configurations in Google Cloud

Several Cloud Volumes ONTAP configurations are supported in Google Cloud.

### Supported configurations by license

Cloud Volumes ONTAP is available in Google Cloud Platform as a single node system.

	Freemium	PAYGO Explore	PAYGO Standard	PAYGO Premium	Node-based license	Capacity-based license
<b>Maximum system capacity (disks + object storage) <sup>1</sup></b>	500 GB	2 TB <sup>2</sup>	10 TB	368 TB	368 TB per license	2 PiB



	Freemium	PAYGO Explore	PAYGO Standard	PAYGO Premium	Node-based license	Capacity-based license
<b>Supported machine types</b> <sup>3</sup>	<ul style="list-style-type: none"> <li>• custom-4-16384</li> <li>• n1-standard-8</li> <li>• n1-standard-32</li> </ul>	custom-4-16384	n1-standard-8	n1-standard-32	<ul style="list-style-type: none"> <li>• custom-4-16384</li> <li>• n1-standard-8</li> <li>• n1-standard-32</li> </ul>	<ul style="list-style-type: none"> <li>• custom-4-16384</li> <li>• n1-standard-8</li> <li>• n1-standard-32</li> </ul>
<b>Supported disk types</b> <sup>4</sup>	Zonal persistent disks (SSD and standard)					

Notes:

1. Disk limits can prevent you from reaching the maximum system capacity limit by using disks alone. You can reach the capacity limit by [tiering inactive data to object storage](#).

[Learn more about disk limits in Google Cloud.](#)

2. Data tiering to Google Cloud Storage isn't supported with PAYGO Explore.
3. The custom-4-16384 machine type is no longer supported with new Cloud Volumes ONTAP systems.

If you have an existing system running on this machine type, you can keep using it, but we recommend switching to the n2-standard-4 machine type.

4. Enhanced write performance is enabled when using SSDs.
5. For Google Cloud Platform region support, see [Cloud Volumes Global Regions](#).
6. Cloud Volumes ONTAP can run on either a Reserved or On-demand VM instance from your cloud provider. Solutions that use other VM instance types aren't supported.

## Supported disk sizes

In Google Cloud, an aggregate can contain up to 6 disks that are all the same type and size. The following disk sizes are supported:

- 100 GB
- 500 GB
- 1 TB
- 2 TB
- 4 TB
- 8 TB
- 16 TB

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