



# **Monitor performance**

## Cloud Manager

NetApp  
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# Monitor performance

## Learn about the Monitoring service

The Monitoring service gives you insights into the health and performance of your Cloud Volumes ONTAP instances and helps you troubleshoot and optimize the performance of your cloud storage environment.

### Features

- Automatically monitor all volumes
- View volume performance data in terms of IOPS, throughput, and latency
- Identify performance issues to minimize impact on your users and apps

### Supported cloud providers

The Monitoring service is supported with Cloud Volumes ONTAP for AWS and Cloud Volumes ONTAP for Azure.

### Cost

NetApp doesn't charge you for using the Monitoring service, but Cloud Manager launches a virtual machine in your VPC to facilitate monitoring. This VM results in charges from your cloud provider.

### How the Monitoring service works

Cloud Manager leverages [NetApp's Cloud Insights service](#) to provide monitoring.

At a high-level, Cloud Insights integration with Cloud Manager works like this:

1. You enable the Monitoring service on Cloud Volumes ONTAP.
2. Cloud Manager configures your environment. It does the following:
  - a. Creates a Cloud Insights tenant (also called *environment*) and associates all users in your Cloud Central account to the tenant.

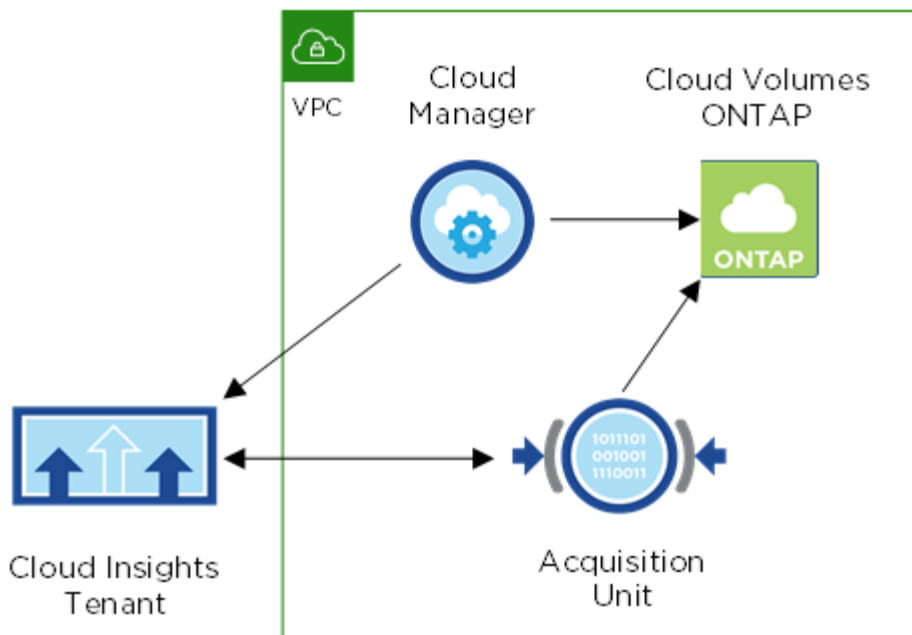
If you already have a tenant, then Cloud Manager uses that existing tenant.

- b. Enables a free trial of Cloud Insights.

On the 29th day, your plan automatically transitions from the Trial Version to the [Basic Edition](#).

- c. Deploys a virtual machine in your VPC/VNet called an Acquisition Unit. The Acquisition Unit facilitates monitoring of volumes (this is the VM mentioned in the Cost section above).
  - d. Connects the Acquisition Unit to Cloud Volumes ONTAP and to the Cloud Insights tenant.
3. In Cloud Manager, you click Monitoring and use the performance data to troubleshoot and optimize performance.

The following image shows the relationship between these components in an AWS VPC:



## The Acquisition Unit

When you enable Monitoring, Cloud Manager deploys an Acquisition Unit in the same subnet as the Connector.

An *Acquisition Unit* collects performance data from Cloud Volumes ONTAP and sends it to the Cloud Insights tenant. Cloud Manager then queries that data and presents it to you.

Note the following about the Acquisition Unit instance:

- In AWS, the Acquisition Unit runs on a t3.xlarge instance with a 100 GB GP2 volume.
- In Azure, the Acquisition Unit runs on a D4\_v3 virtual machine with a 30 GB Standard SSD.
- The instance is named *AcquisitionUnit* with a generated hash (UUID) concatenated to it. For example: *AcquisitionUnit-FAN7FqeH*
- Only one Acquisition Unit is deployed per Connector.
- The instance must be running to access performance information in the Monitoring tab.

## Cloud Insights tenant

If you don't already have a *tenant*, Cloud Manager sets one up for you when you enable Monitoring. A Cloud Insights tenant enables you to access the performance data that the Acquisition Unit collects. The tenant is a secure data partition within the NetApp Cloud Insights service.

## Cloud Insights web interface

The Monitoring tab in Cloud Manager provides basic performance data for your volumes. You can go to the Cloud Insights web interface from your browser to perform more in-depth monitoring and to configure alerts for your Cloud Volumes ONTAP systems.

## Free trial and subscription

Cloud Manager enables a free trial of Cloud Insights to provide performance data within Cloud Manager and for you to explore the features that Cloud Insights Standard Edition has to offer.

On the 29th day, your plan automatically transitions from the Trial Version to the [Basic Edition](#).

You have the option to subscribe to the Standard or Premium editions to gain access to additional features from the Cloud Insights web interface.

[Learn how to subscribe to Cloud Insights.](#)

## Monitoring Cloud Volumes ONTAP

Complete a few steps to start monitoring Cloud Volumes ONTAP performance.

### Quick start

Get started quickly by following these steps or scroll down to the remaining sections for full details.



#### Verify support for your configuration

- You need a Cloud Volumes ONTAP system running in AWS or Azure.
- For AWS, you need a Connector running version 3.8.4 or later.
- For Azure, you need a Connector running version 3.9.3 or later.



#### Enable Monitoring on your new or existing system

- New working environments: Be sure to keep Monitoring enabled when you create the working environment (it's enabled by default).
- Existing working environments: Select a working environment and click **Start Monitoring**.



#### View performance data

Click **Monitoring** and view performance data for your volumes.

## Requirements

Read the following requirements to make sure that you have a supported configuration.


### Supported Cloud Volumes ONTAP versions

Any version of Cloud Volumes ONTAP in AWS or in Azure.

### Supported Connector

- For AWS, you need a Connector running version 3.8.4 or later.
- For Azure, you need a Connector running version 3.9.3 or later.



You can view a Connector's version by clicking the  icon and then **Support > Connector**.

## Email address for Cloud Central

The email address for your Cloud Central user account should be your business email address. Free email domains like gmail and hotmail aren't supported when creating a Cloud Insights tenant.

## Networking for the Acquisition Unit

The Acquisition Unit uses 2-way/mutual authentication to connect to the Cloud Insights server. The client certificate must be passed to the Cloud Insights server to be authenticated. To accomplish this, the proxy must be set up to forward the http request to the Cloud Insights server without decrypting the data.

The Acquisition Unit uses the following two endpoints to communicate with Cloud Insights. If you have a firewall between the Acquisition Unit server and Cloud Insights, you need these endpoints when configuring firewall rules:

```
https://aLOGIN.<Cloud Insights Domain>  
https://<your-tenant-ID>.<Cloud Insights Domain>
```

For example:

```
https://aLOGIN.c01.cloudinsights.netapp.com  
https://cg0c586a-ee05-45rb-a5ac-  
333b5ae7718d7.c01.cloudinsights.netapp.com
```

Contact us through the in-product chat if you need help identifying your Cloud Insights domain and tenant ID.

## Networking for the Connector

Similar to the Acquisition Unit, the Connector must have outbound connectivity to the Cloud Insights tenant. But the endpoint that the Connector contacts is slightly different. It contacts the tenant host URL using the shortened tenant ID:

```
https://<your-short-tenant-ID>.<Cloud Insights Domain>
```

For example:

```
https://abcd12345.c01.cloudinsights.netapp.com
```

Again, you can contact us through the in-product chat if you need help identifying the tenant host URL.




## Enabling monitoring on a new system

The Monitoring service is enabled by default in the working environment wizard. Be sure to keep the option enabled.

### Steps

1. Click **Create Cloud Volumes ONTAP**.

2. Select Amazon Web Services or Microsoft Azure as the cloud provider and then choose a single node or HA system.
3. Fill out the Details & Credentials page.
4. On the Services page, leave the Monitoring service enabled and click **Continue**.

 Monitoring  

NetApp Monitoring is an infrastructure monitoring tool that gives you visibility into your complete infrastructure. With Monitoring, you can monitor, troubleshoot and optimize all your resources including your public clouds and your private data centers.

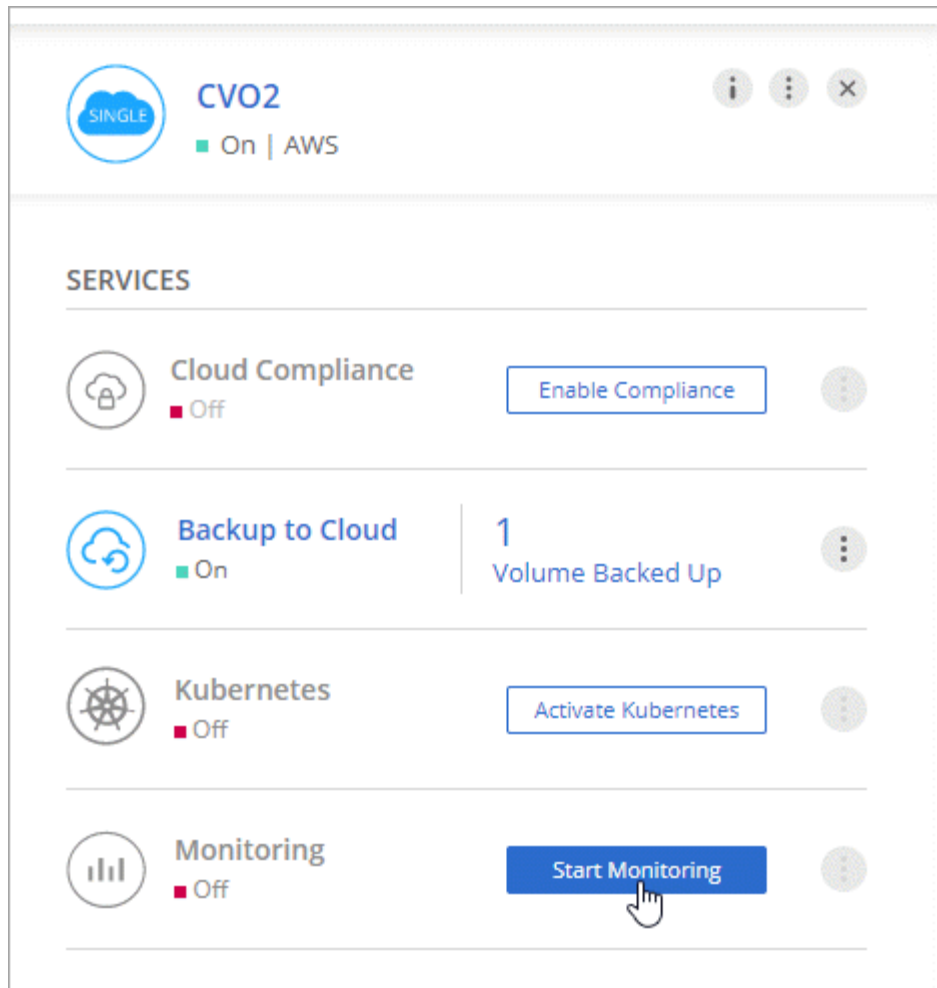
ADVANTAGES	CLARIFICATIONS
> Automatically monitor all volumes - no configuration is required	> Activation is free, but requires deploying a small-size cloud instance which will incur charges by your cloud provider
> Prevent performance issues from impacting your users and apps	> Monitoring can be disabled at any time

## Enabling monitoring on an existing system

Enable monitoring at any time from the working environment.

### Steps

1. At the top of Cloud Manager, click **Canvas**.
2. Select a working environment.
3. In the pane on the right, click **Start Monitoring**.



## Monitoring your volumes

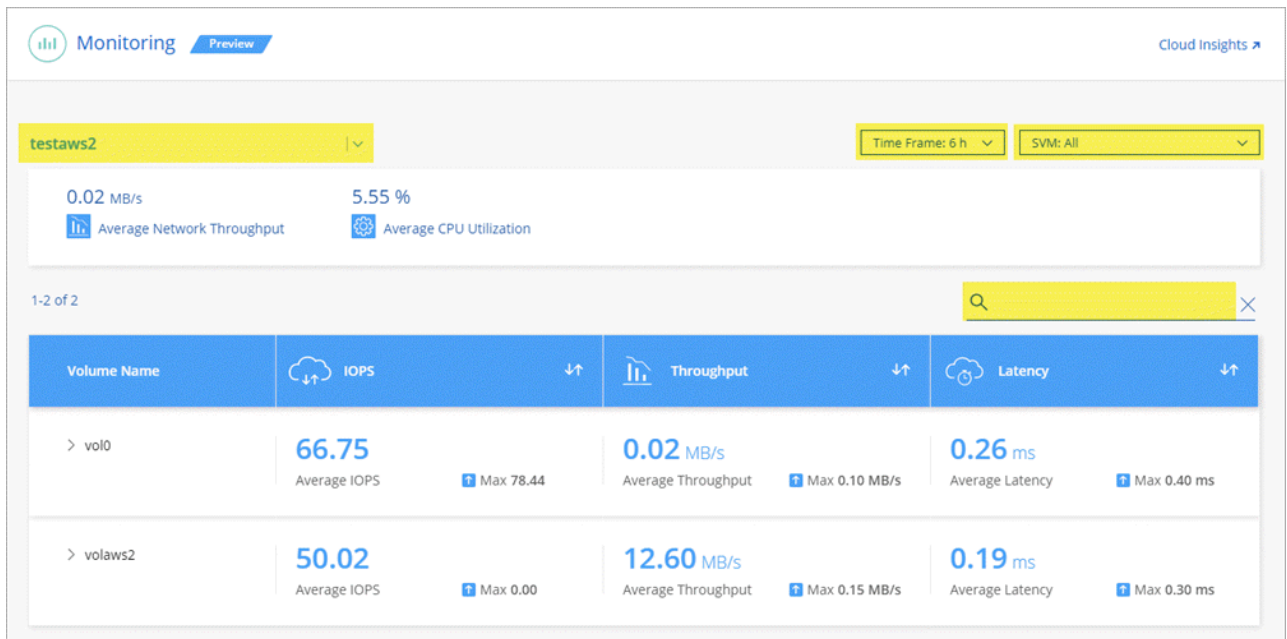
Monitor performance by viewing IOPS, throughput, and latency for each of your volumes.

### Steps

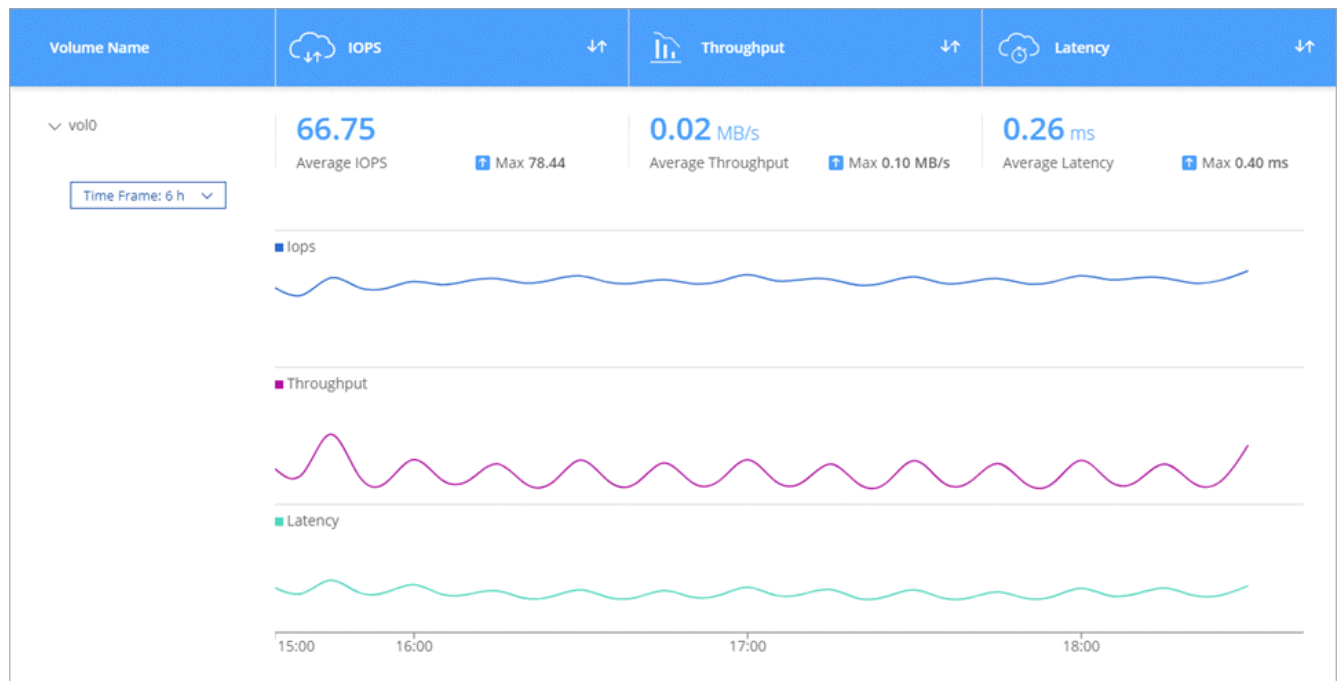
1. At the top of Cloud Manager, click **Monitoring**.
2. Filter the contents of the dashboard to get the information that you need.
  - Select a specific working environment.
  - Select a different timeframe.
  - Select a specific SVM.
  - Search for a specific volume.

The following image highlights each of these options:





3. Click a volume in the table to expand the row and view a timeline for IOPS, throughput, and latency.



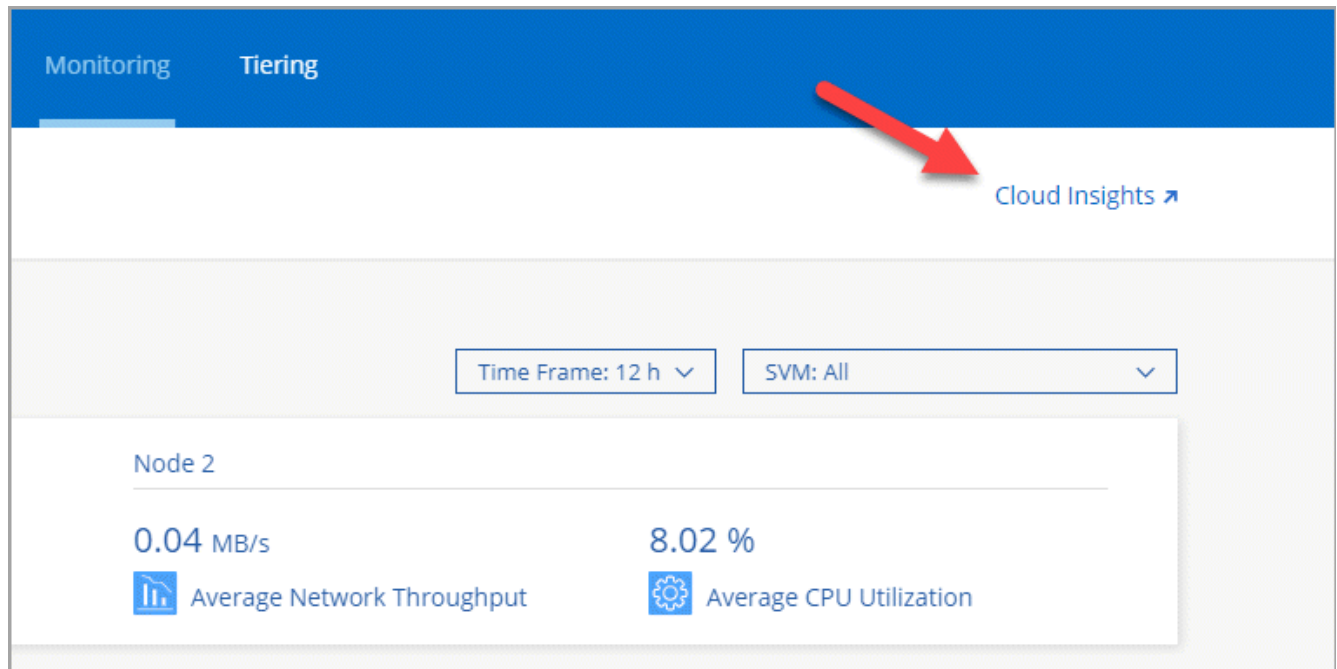
4. Use the data to identify performance issues to minimize impact on your users and apps.

## Getting more information from Cloud Insights

The Monitoring tab in Cloud Manager provides basic performance data for your volumes. You can go to the Cloud Insights web interface from your browser to perform more in-depth monitoring and to configure alerts for your Cloud Volumes ONTAP systems.

### Steps

1. At the top of Cloud Manager, click **Monitoring**.
2. Click the **Cloud Insights** link.



## Result

Cloud Insights open in a new browser tab. If you need help, refer to the [Cloud Insights documentation](#).


## Disabling monitoring

If you no longer want to monitor Cloud Volumes ONTAP, you can disable the service at any time.



If you disable monitoring from each of your working environments, you'll need to delete the virtual machine instance yourself. The instance is named *AcquisitionUnit* with a generated hash (UUID) concatenated to it. For example: *AcquisitionUnit-FAN7FqeH*

## Steps

1. At the top of Cloud Manager, click **Canvas**.
2. Select a working environment.
3. In the pane on the right, click the  icon and select **Deactivate Scan**.

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