



# **WORM storage**

## **Cloud Manager**

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July 05, 2021

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# WORM storage

You can activate write once, read many (WORM) storage on a Cloud Volumes ONTAP system to retain files in unmodified form for a specified retention period. WORM storage is powered by SnapLock technology in Enterprise mode, which means WORM files are protected at the file level.

Once a file has been committed to WORM storage, it can't be modified, even after the retention period has expired. A tamper-proof clock determines when the retention period for a WORM file has elapsed.

After the retention period has elapsed, you are responsible for deleting any files that you no longer need.

## Activating WORM storage

You can activate WORM storage on a Cloud Volumes ONTAP system when you create a new working environment. This includes setting the default retention period for files.



You can't activate WORM storage on individual volumes—WORM must be activated at the system level.

The following image shows how to activate WORM storage when creating a working environment:

The screenshot shows the 'Create a New Working Environment' wizard in the Cloud Manager interface. The title bar is blue with 'Cloud Manager' on the left and user/account information on the right. Below the title bar is a navigation menu with tabs: Canvas, Replication, Backup & Restore, K8s, Data Sense, File Cache, Compute, Sync, and All Services (+8). The main content area is titled 'Create a New Working Environment' and 'WORM (write once, read many)'. It features a 'Previous Step' button and a 'Write Speed' section with two options: 'Normal' (selected) and 'High'. The 'Normal' option description states: 'Data is written directly to disk, reducing the likelihood of data loss in the event of an unplanned system outage.' The 'High' option description states: 'Data is buffered in memory before it is written to disk, which provides faster write performance. Due to this caching, there is the potential for data loss in the event of an unplanned system outage.' To the right, the 'WORM' section explains that WORM storage is used to retain critical files in unmodified form for regulatory and governance purposes and to protect from malware attacks. It includes a 'Learn More' link and two radio buttons: 'Disable WORM' and 'Activate WORM' (selected). Below this, a 'Notice' states: 'If you activate WORM storage, data tiering to object storage will be disabled on the system.' At the bottom, there is a 'Retention Period' field set to '15' and a dropdown menu set to 'years'. A blue 'Continue' button is at the bottom center. The footer shows 'Cloud Manager 3.9.9 Build: 0 Jun 30, 2021 02:52:27 pm UTC Environment: staging' and a chat icon.

## Committing files to WORM

You can use an application to commit files to WORM over NFS or CIFS, or use the ONTAP CLI to autocommit files to WORM automatically. You can also use a WORM appendable file to retain data that is written incrementally, like log information.

After you activate WORM storage on a Cloud Volumes ONTAP system, you must use the ONTAP CLI for all management of WORM storage. For instructions, refer to [ONTAP documentation](#).



Cloud Volumes ONTAP support for WORM storage is equivalent to SnapLock Enterprise mode.

## Limitations

- WORM storage in Cloud Volumes ONTAP operates under a "trusted storage administrator" model. While WORM files are protected from alteration or modification, volumes can be deleted by a cluster administrator even if those volumes contain unexpired WORM data.
- In addition to the trusted storage administrator model, WORM storage in Cloud Volumes ONTAP also implicitly operates under a "trusted cloud administrator" model. A cloud administrator could delete WORM data before its expiry date by removing or editing cloud storage directly from the cloud provider.
- When WORM storage is activated, data tiering to object storage can't be enabled.
- Cloud Backup must be disabled in order to enable WORM storage.

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