WORM (Write Once Read Many)

White Paper

April 2024

ANNOUNCEMENT

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PREFACE

Technical Support

Do you have any questions or need help trouble-shooting a problem? Please contact QSAN Support, we will reply to you as soon as possible.

- Via the Web: https://www.qsan.com/technical_support
- Via Telephone: +886-2-77206355
- (Service hours: 09:30 - 18:00, Monday - Friday, UTC+8)
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- Via Email: support@qsan.com

Information, Tip, and Caution

This document uses the following symbols to draw attention to important safety and operational information.

INFORMATION

INFORMATION provides useful knowledge, definition, or terminology for reference.

TIP

TIP provides helpful suggestions for performing tasks more effectively.

CAUTION

CAUTION indicates that failure to take a specified action could result in damage to the system.

1. OVERVIEW

This document describes the implementation process and concepts of WORM (Write Once Read Many), which has retention settings that allow administrators to meet retention period requirements, and the technology to verify the validity of WORM settings.

1.1. What is WORM

WORM stands for "Write Once Read Many" and represents a groundbreaking feature integrated into QSAN's innovative storage solution. This unique property is the cornerstone of scenarios that require increased levels of data security, integrity, and immutability. Whether it's a surveillance video recording, an ongoing project document, a regulatory compliance submission, or multiple iterations of collaborative document editing, WORM technology ensures that once data is written, it remains immutable and read-only. This feature provides valuable protection against unauthorized modification or deletion, thereby maintaining the accuracy and reliability of critical information. By maintaining the integrity of files and documents over time, WORM enables organizations to maintain compliance standards, protect intellectual property rights, and reduce the risk of data tampering or corruption.

Enabling the WORM feature requires intentionally making the specified folder unmodifiable, ensuring that any data written therein remains read-only, preventing unauthorized modification or deletion until the specified retention period has elapsed. The primary goals of WORM are to meet the stringent requirements of compliance regulations, facilitate seamless archiving, enhance electronic record protection measures, and reduce risks associated with intentional and unintentional file deletion and potential virus attacks.

The versatility of WORM technology spans a variety of fields and industries, including security, education, healthcare, finance, research facilities, patent management, government agencies and large enterprises. These industries, characterized by an urgent need for stringent data security measures, find WORM to be a critical tool in protecting critical information assets and ensuring compliance with regulations. By adopting WORM, organizations can increase their resilience to data breaches, enhance operational integrity, and foster a culture of trust and reliability within their digital infrastructure.

INFORMATION

WORM (Write Once Read Many) – When WORM is enabled, data written to this file volume will remain read-only (protected from modification / deletion) until the specified retention days have elapsed. If a file volume has WORM enabled, it cannot be deleted while there is still data in it.

2. CONFIGURATION SETTINGS

In this chapter, we will use configuring WORM on QSAN storage as an example. WORM expiration dates are based on the retention periods of individual subfolders and files. For example, set the retention period of each file in the folder to 7 days.

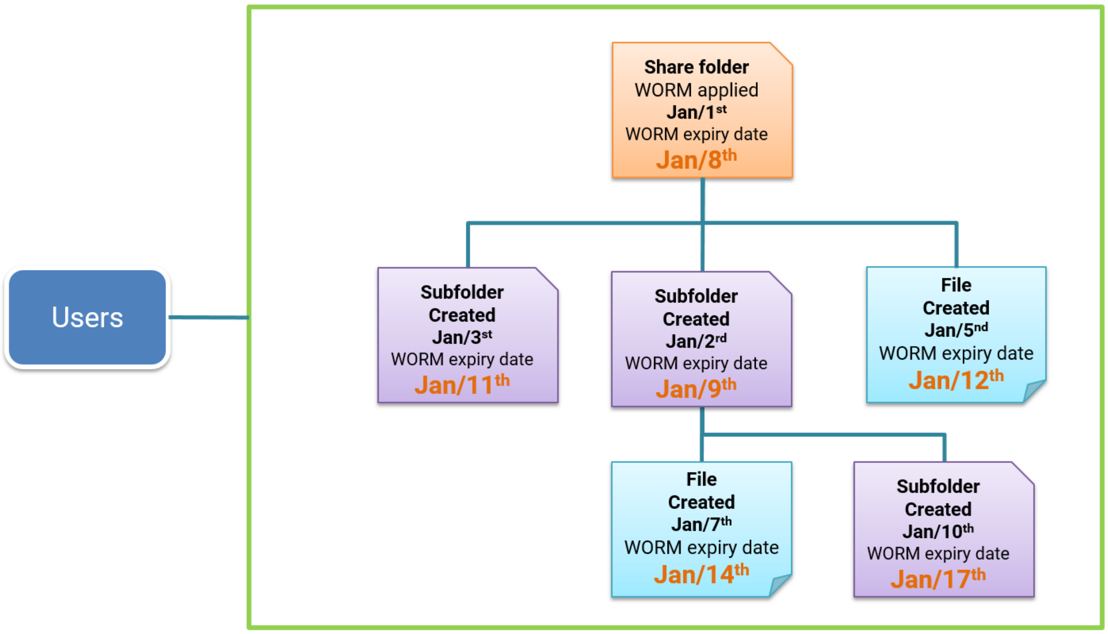

Figure 2-1 WORM Settings with Retention Period

TIP

Before applying WORM on a file volume, be aware of and fully understand the behavior of each WORM policy. Because once WORM is enabled, it cannot be deactivated.

2.1. Configure Steps

Check out this tutorial to set up WORM settings, or follow the steps here to configure the requirements accordingly.

1. Make sure a RAID pool exists and at least one file volume is created.

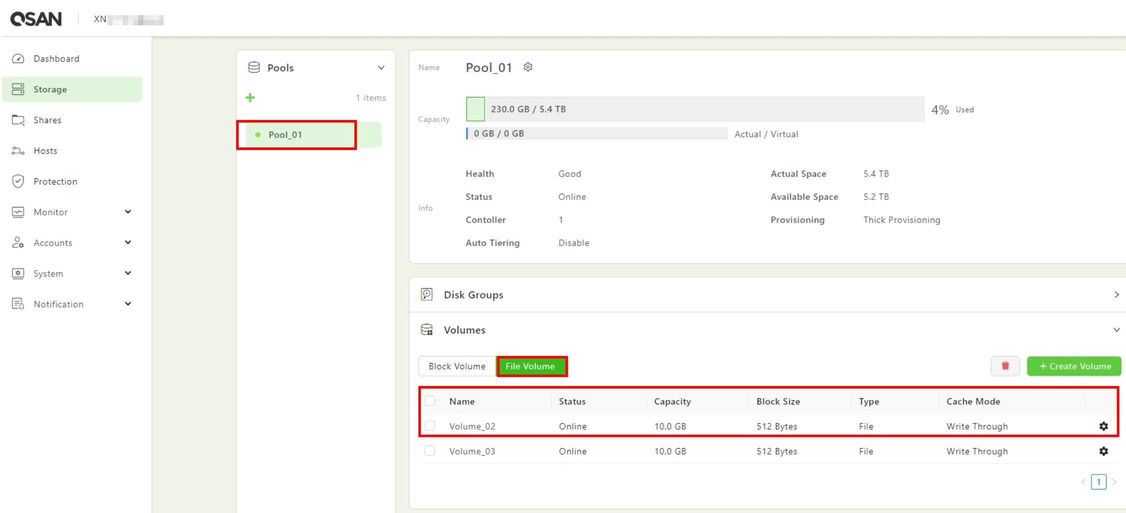

Figure 2-2 Create a Pool and a File Volume

2. Click the gear icon and select WORM to set the configuration.

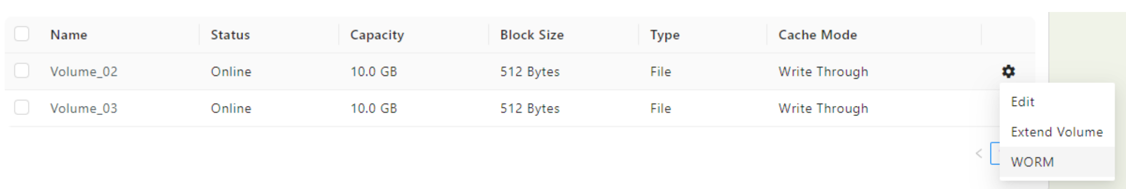

Figure 2-3 Select WORM Settings

3. Enter the **Retention Period** as required and click the **Apply** button.

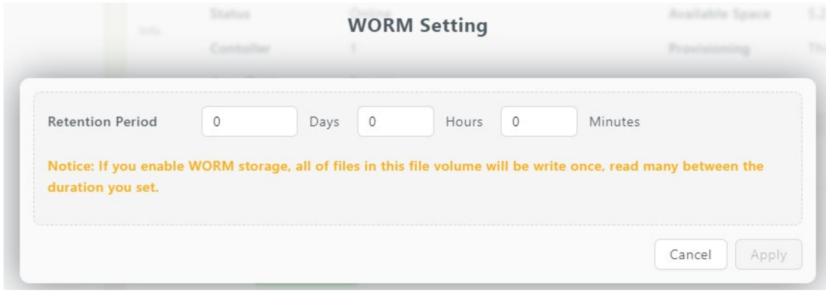

Figure 2-4 Enter Retention Period

4. Login to the shared folder configured with WORM.
5. Test an existing folder or file within a shared folder. There are two methods to test existing folders or files in a share folder.
   - Test 1: Rename the existing folder or file; if the rename fails, it means WORM is enabled.

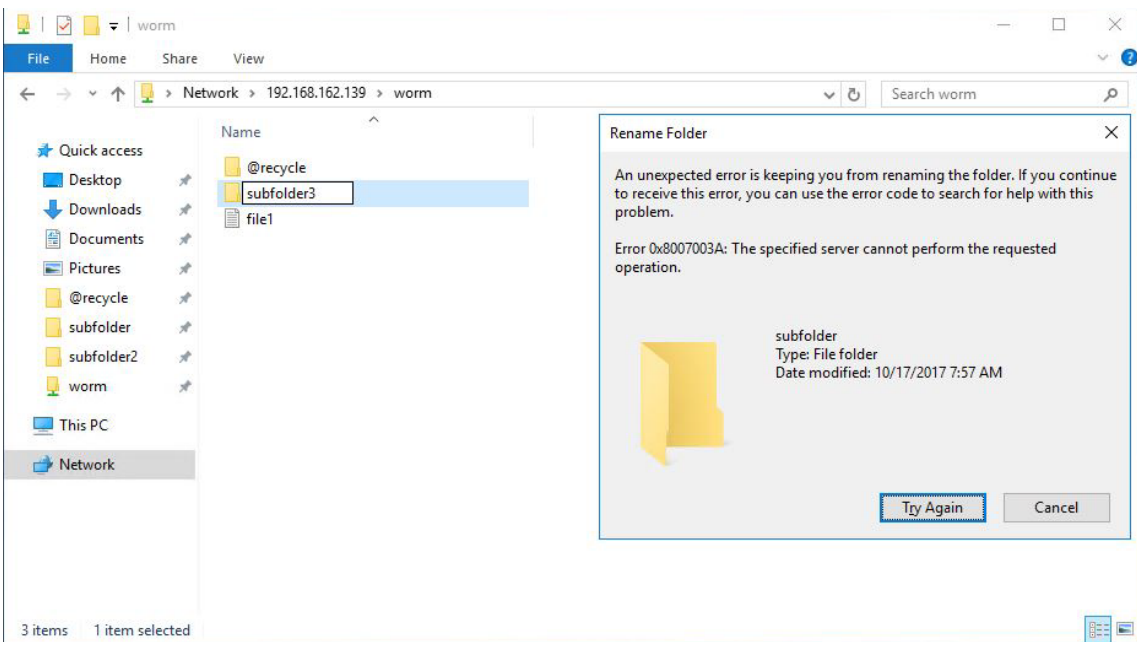

Figure 2-5 WORM Test 1: Rename Folder

   - Test 2: Delete an existing folder or file; if the deleted folder or file reappears after a refresh, WORM is activated.

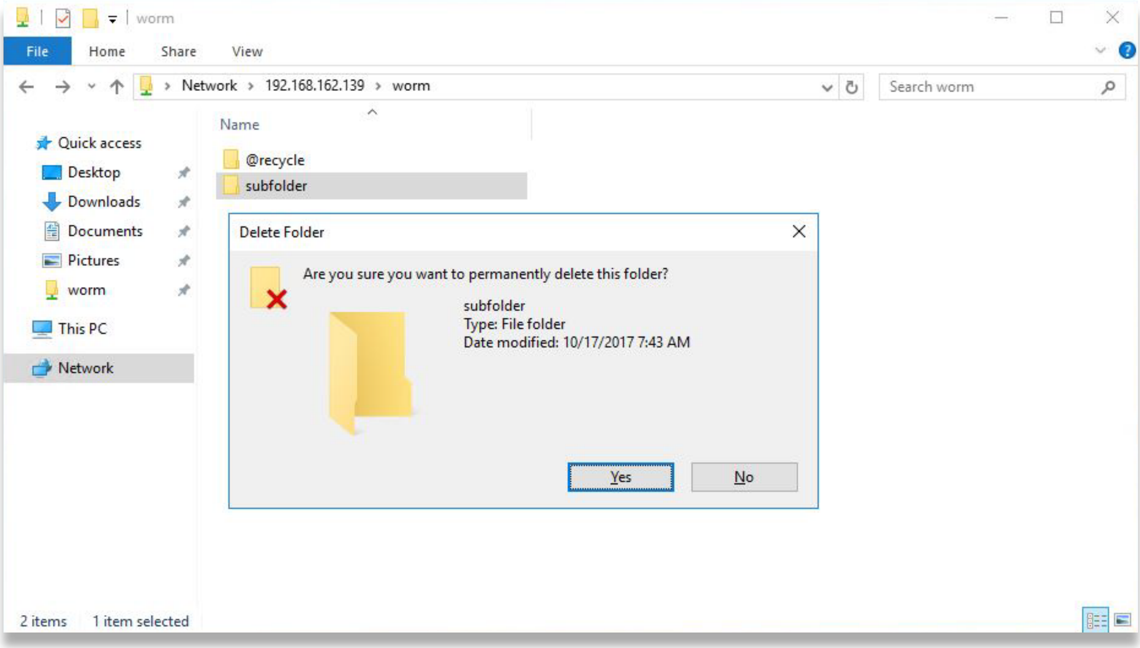

Figure 2-6 WORM Test 2: Delete Folder

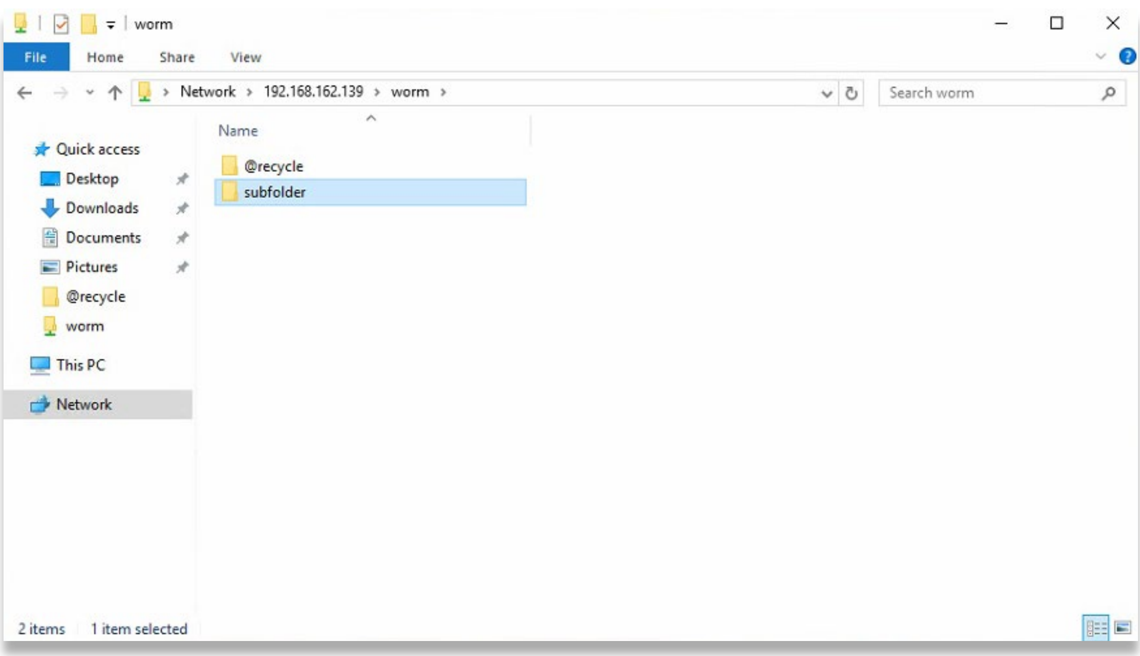

Figure 2-7 WORM Test 2: Deleted Folder Still Appears

3. CONCLUSION

The application of WORM technology exhibits considerable variability in different environments and operational scenarios. With the QSAN system, WORM capabilities extend the scope of integration of applications and operations, seamlessly transforming them into a standardized, secure file sharing platform. This enhanced integration capability ensures that WORM can be seamlessly integrated into a variety of workflows and processes, regardless of their specific requirements or industry vertical. Whether ensuring regulatory compliance, protecting sensitive intellectual property or protecting critical data assets, the versatility of WORM in the QSAN storage ecosystem enables organizations to adapt and thrive in today's rapidly evolving digital environment. By leveraging WORM technology, enterprises can confidently and easily improve their data security posture, streamline collaboration, and maintain the integrity of their information assets.

4. APPENDIX

4.1. Apply To

- QSN firmware 4.0.2 and later

4.2. Reference

Product Page

- XCubeNXT 8100 Series
- XCubeNXT 5100 Series

Document

- QSM 4 Software Manual