QSAN Unified Storage Series Application Note

Snapshot & WORM Integrated with Veeam Backup Data Protection Guide

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This edition applies to QSAN Unified Storage series. QSAN believes the information in this publication is accurate as of its publication date. The information is subject to change without notice.

Notices

This QSAN Unified Storage series application note is applicable to the following XCubeNXT models:

XCubeNXT Storage System Rack Mount Models

Model Name	Controller Type	Form Factor, Bay Count, and Rack Unit
XN8026D	Dual Controller	SFF 26-disk 2U Chassis
XN8024D	Dual Controller	LFF 24-disk 4U Chassis
XN8016D	Dual Controller	LFF 16-disk 3U Chassis
XN8012D	Dual Controller	LFF 12-disk 3U Chassis

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Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

Table of Contents

Veeam Data Protection

Executive Summary

Digital transformation era boosts enormous data growth, digital data becomes the essential asset for every organization. Veeam is the leader in Cloud Data Management, providing a simple, flexible and reliable backup & recovery solution for all organizations. QSAN collaborates with Veeam to liberate the traditional backup architecture. Providing the modern data backup and protection solutions to prevent business or organization from cyber-attack.

Audience

This document is applicable for QSAN customers and partners who are interested in learning about how Veeam and QSAN collaborate the data protection solutions for preventing from ransomware or any cyberattack. It assumes the reader is familiar with QSAN products and has general IT experience, including knowledge as a system or network administrator. If there is any question, please refer to the user manuals of products, or contact QSAN support for further assistance.

Overview

With rapid data growth, digital data evolves continuously. More than 70% of companies do not have effective data protection strategies, leaving companies in a dangerous state at all times. However, effective data protection is usually complex and expensive, and the current dated backup technology is difficult to manage and protect the ever-expanding data. The backup solution continues to transform in response to demand. More and more ransomware and cyber-attacks became significant issues of digital transformation.

Most of the business think that data has been backed up multiple times, the current data can still be stored safely while attacking by ransomware, but this is not 100% truth. The ransomware will attack the entire shared folder. When the ransomware is in one of the backup platforms, all the data in the network neighborhood will not be spared. Eventually, it

will fall into the trap of ransomware, and the enterprise will have to spend extra cost to get it decrypted. However, together with Veeam, integrating backup software and storage system, we provide not only easy data backup but the high availability data protection.

The Structure of QSAN and Veeam Integration

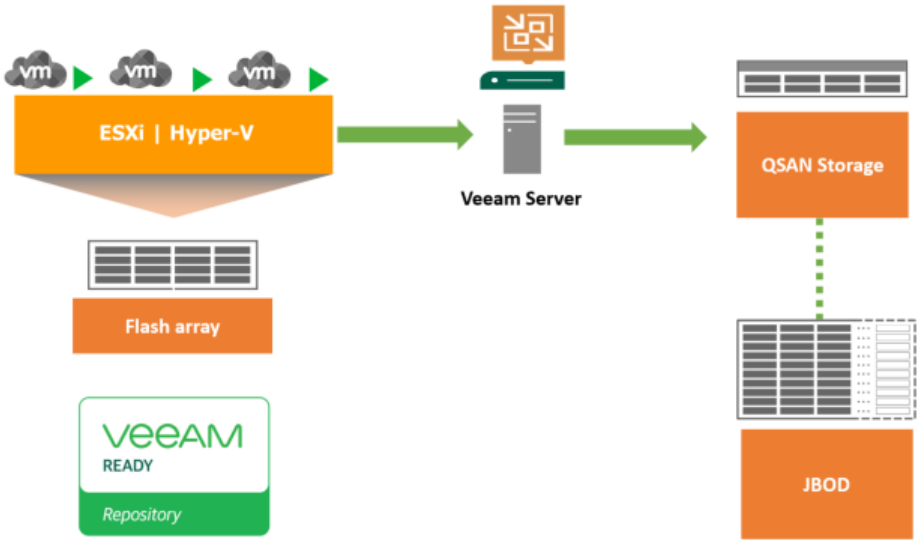

Figure 1-a QSAN and Veeam Integration Structure

Create VMs on server and save all the data into QSAN primary storage. Applying Veeam software for backing up to QSAN storage for data integration.

The Integration with Veeam from QSAN through Snapshot Mechanism

Snapshot is the read only file stored in the safe Zettabyte File System (ZFS). No matter your data is attacking by ransomware or the unexpected condition happened in the storage, snapshot file can help to recover all the data. To achieve rapid data protection and recovery short-term data preservation through storage snapshot integration technology. Making sure the unexpected issues do not affect online operating data.

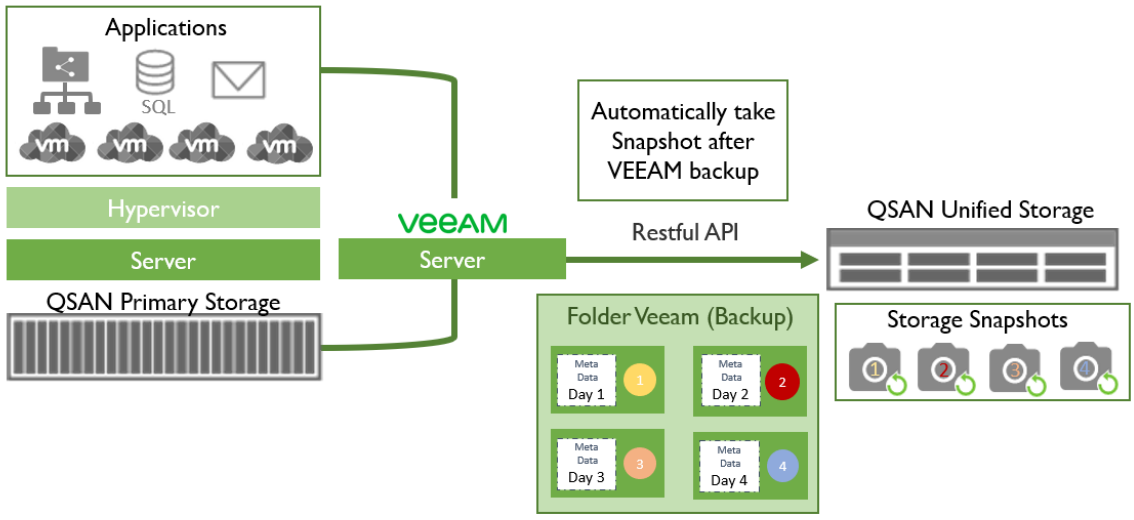

Figure 2-b How QSAN Snapshot Works for Data Protection

All of the VM data are stored in QSAN primary storage, applying Veeam for backup to QSAN Unified Storage. Using Restful API to communicate between Veeam and QSAN Unified Storage. The Restful API provided by QSAN is scripted as “automatically take snapshot after Veeam finish backup.” Thus, QSAN and Veeam integration makes business data protection automatically done by taking snapshot that ensure snapshot file is kept in ZFS, there’s no need to worried about data is been tempered by cyber-attacks.

How to Set Up Auto-Snapshot After Veeam Backup

Step 1. Open **Control Panel**

Step 2. Go to **File Sharing** → **Folder** → **Shared Folder**

Step 3. Click on **Create**

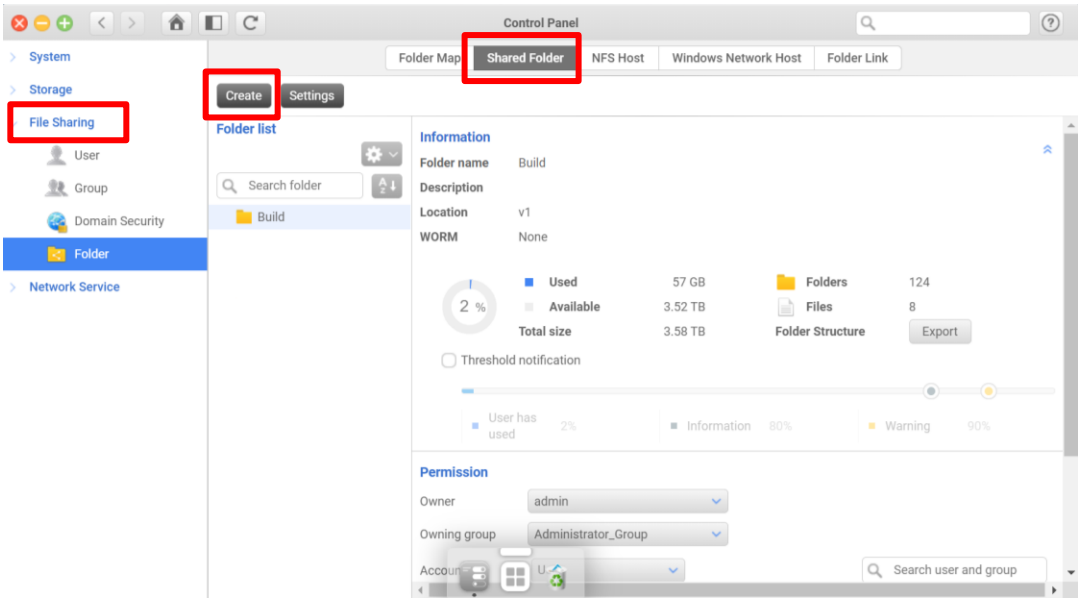

Figure 1-1 Configuration Page for folder Setup

Step 4. Select **Create a Share Folder** → Click **Next** bottom

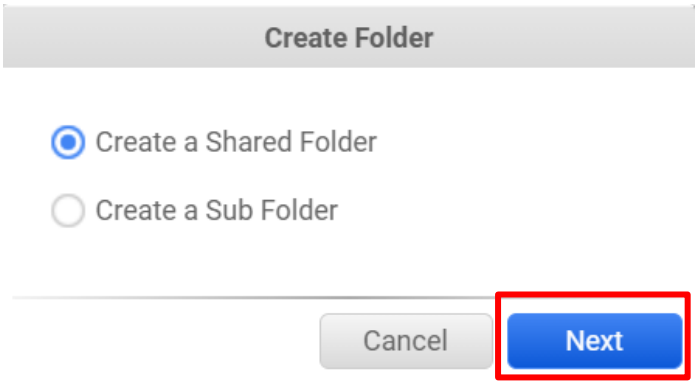

Figure 1-2 Create a Shared Folder

Step 5. Type in **Folder name** → Click **Confirm** bottom

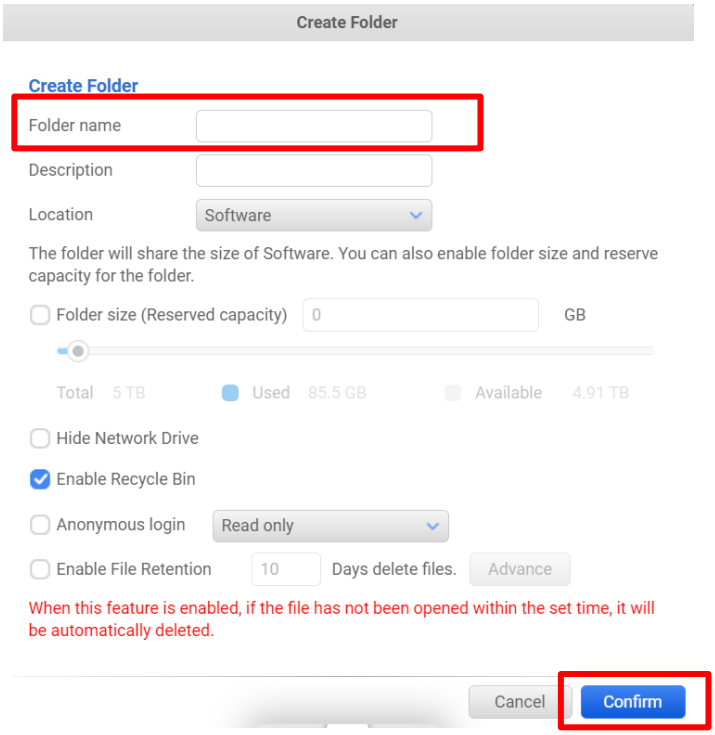

Figure 1-3 Type in Folder Name to Create Folder

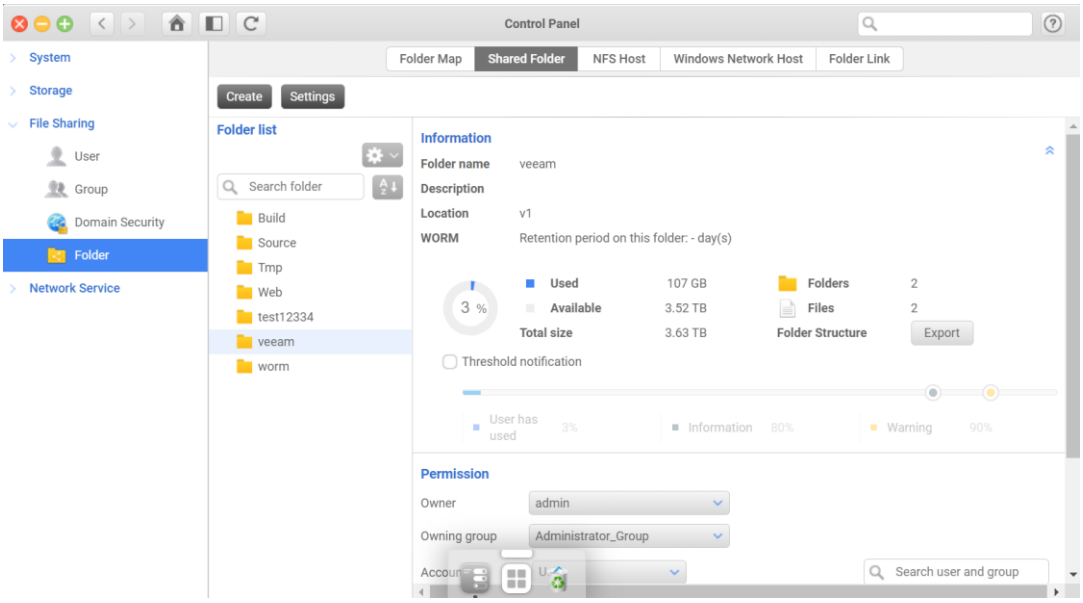

Figure 1-4 Finish Set Up Veeam Folder

Step 6. Please refer to **B. Set Up in Veeam Backup and Replication UI**

Make the Protection Triple! WORM, Snapshot, and Veeam

WORM, stands for write once read many, is the unique feature designed by QSAN and comes with Unified Storage that doubles the level of data protection. WORM can ensure that the status of the written data will not change, it can neither be deleted nor changed. The WORM mechanism has "locked" the data status, and inherently prevented the possibility of ransomware attacks, encryption or deletion of data.

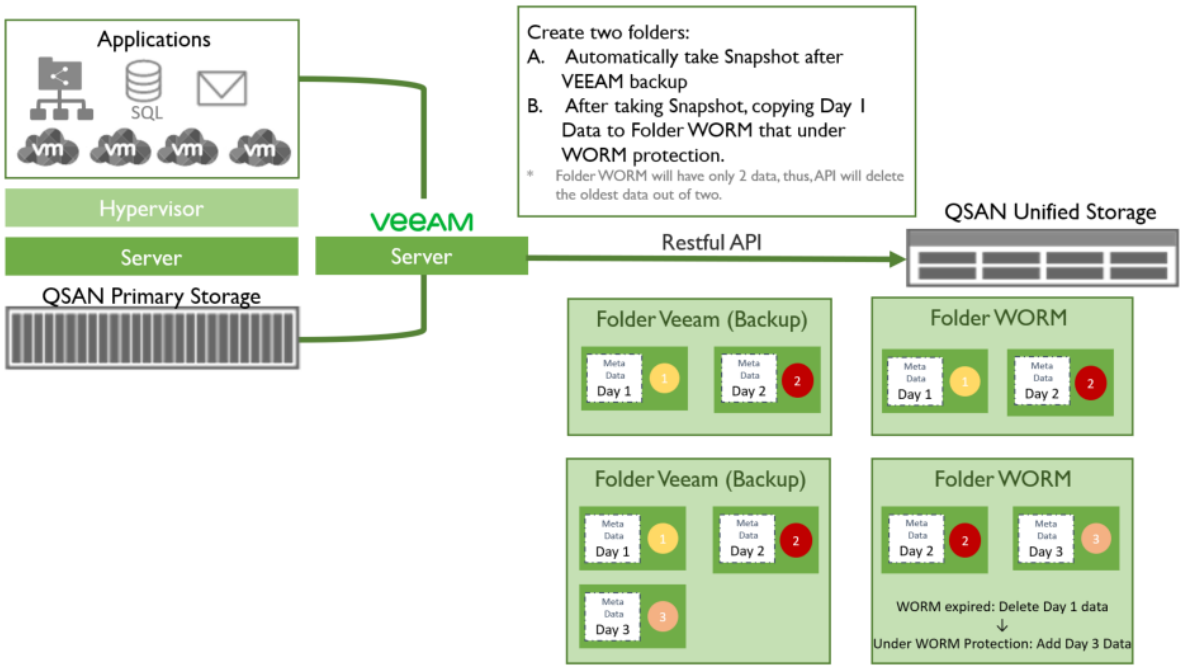

Figure 2 How QSAN WORM Works for Data Protection

QSAN provides the Restful API to communicate between Veeam and QSAN Unified Storage. User decides the Veeam Backup period, the same period will be applied to WORM Protection.

For Example:

1. User creates 2 folders (Named Folder Veeam & Folder WORM for example), and set up Veeam to do data backup EVERYDAY.
2. After Veeam finish backing up in day 1, it will take snapshot automatically, and copy the meta data and transaction file saving them in folder WORM.
3. Under WORM protection, Data Day 1 in folder WORM cannot be modify for 2 day.

4. Veeam will automatically do the second backup after a day (user set up). After Veeam backup, repeating the second and third steps.
5. After 2 days, WORM is expired, it will automatically delete Day 1 data in folder WORM (Make Folder WORM always have only two data to save storage capacity).

Benefit of Veeam and QSAN WORM Integration

Single data backup is not enough for preventing ransomware. Veeam and QSAN WORM integration doubles the level of data protection!

- Enable WORM protection mechanism after Veeam automatic backup for an active data protection.
- Make sure the ransomware cannot modify the metadata and transaction files that are kept intact by WORM.
- However, if business is unfortunately being attacked by a ransomware, business can still complete data recovery from a folder protected by WORM.
- The 24-hour WORM expiration setting will delete previous metadata automatically, so that your data is not only perfectly protected, but also not occupying your storage capacity.

How to Set Up Auto-WORM After Veeam Backup

A. Set Up in QSAN UI

Step 1. Open **Control Panel**

Step 2. Go to **File Sharing** → **Folder** → **Folder list**

Step 3. Select a **Share Folder** → Click on the **Gear icon** → Select **WORM** from dropdown menu

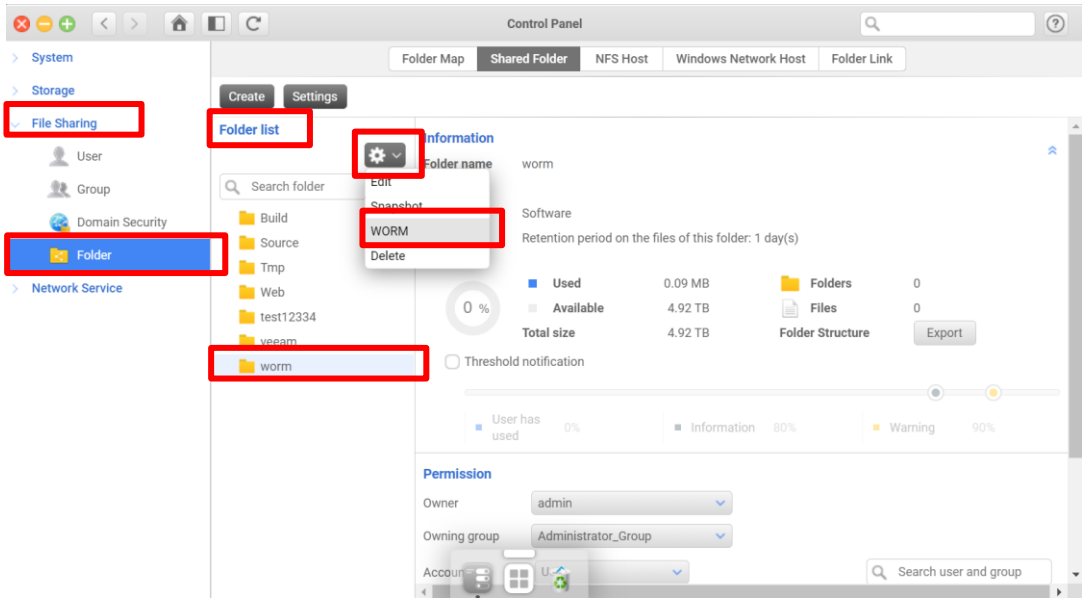

Figure 2-1 Configuration for WORM Setup

Step 4. Check **Enable WORM protection** box to enable WORM→

Click on the **Set Retention Period on Each File of This Folder** radio button
① Enter a number equal to or greater than 1 Day(s)
② Click on the **Next** button

[Note] Days set up proportion is 1:2 (Veeam backup : WORM)

For example:

- If user set Veeam backup every day, then set WORM retetion for two days.
- If user set Veeam backup every two day, then set WORM retetion for four days

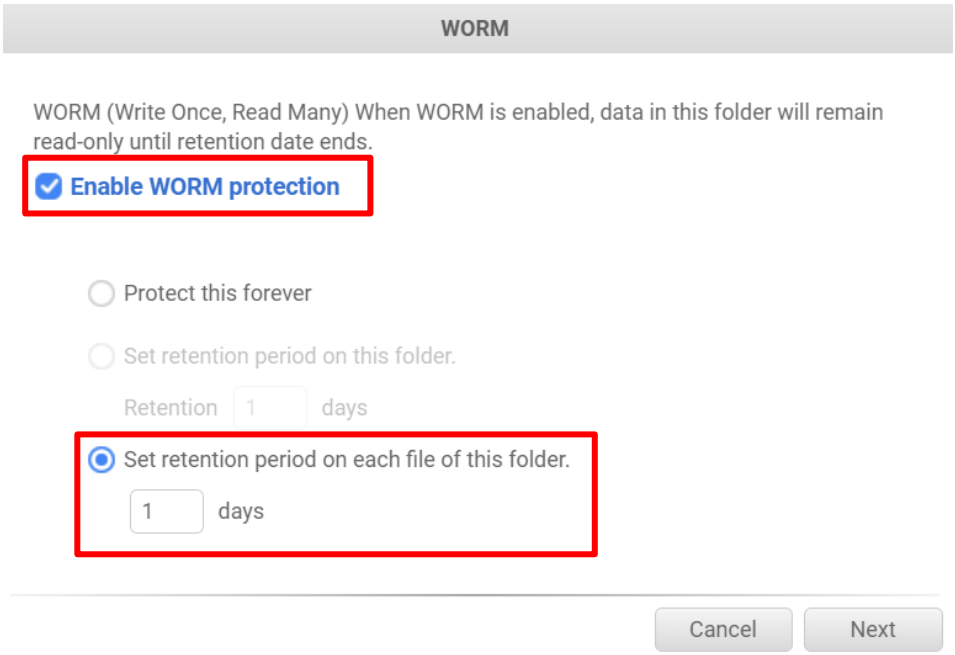

Figure 2-2 Configuration for WORM Setup

④ Click on the **Confirm** button if all information is correct

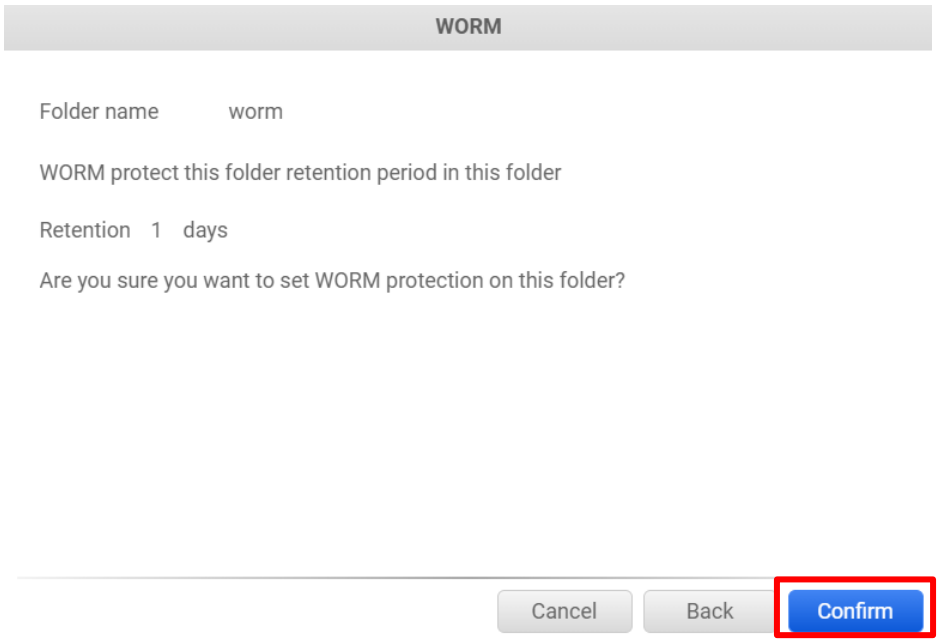

Figure 2-3 Confirmation: Applying Set Retention Period on Each File of This Folder

Step 5. Click on the **Apply** button to apply WORM protection onto designated Share Folder

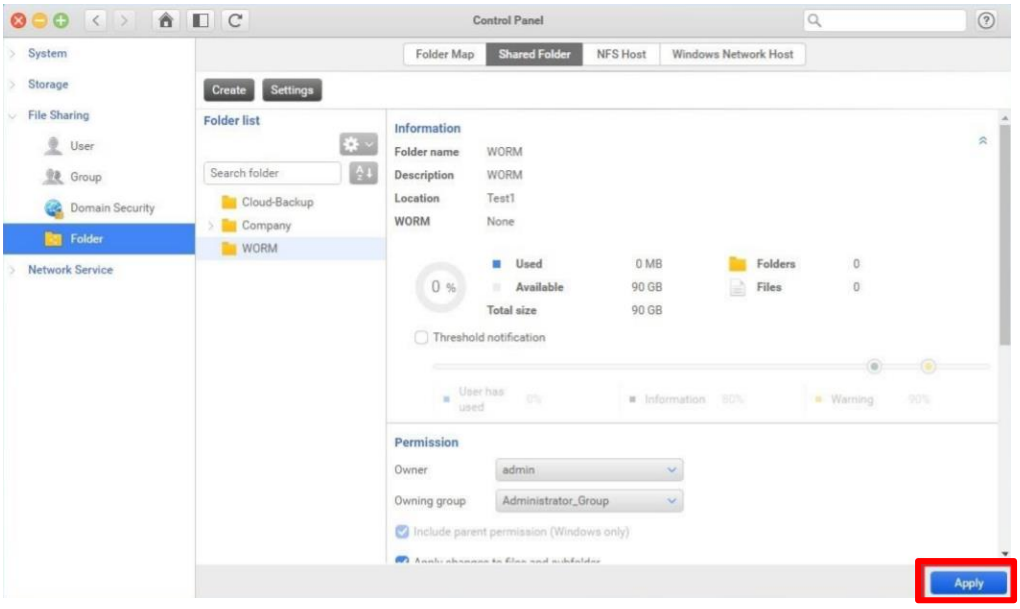

Figure 2-4 Apply WORM

B. Set Up in Veeam Backup and Replication UI

video tutorial

Step1-1. Click **BACKUP INFRASTRUCTURE** → Select **Managed Servers** → Click **Add Server**

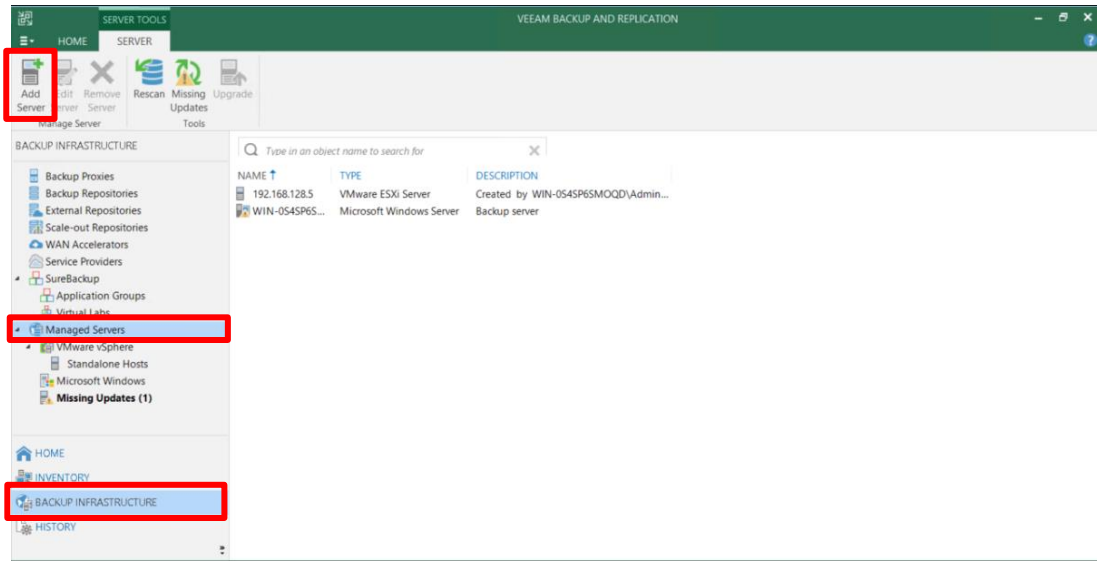

Figure 2-5 Configuration of Server Adding

Step 1-2. Click **Network attached storage**

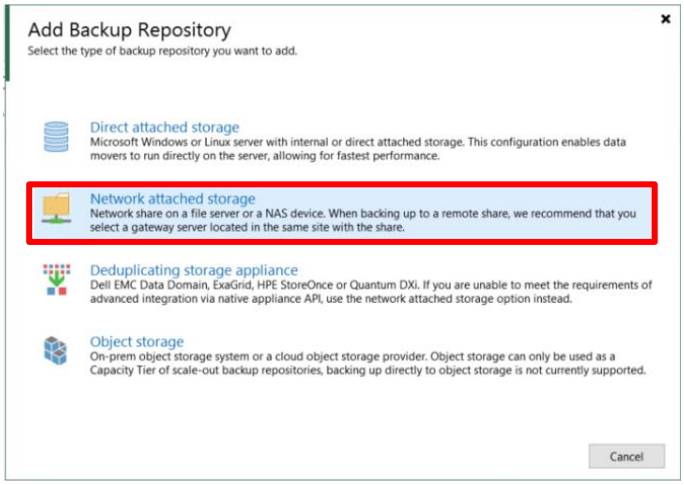

Figure 2-6 Add Backup Repository

Step 1-3. Choose either one on based on the environment

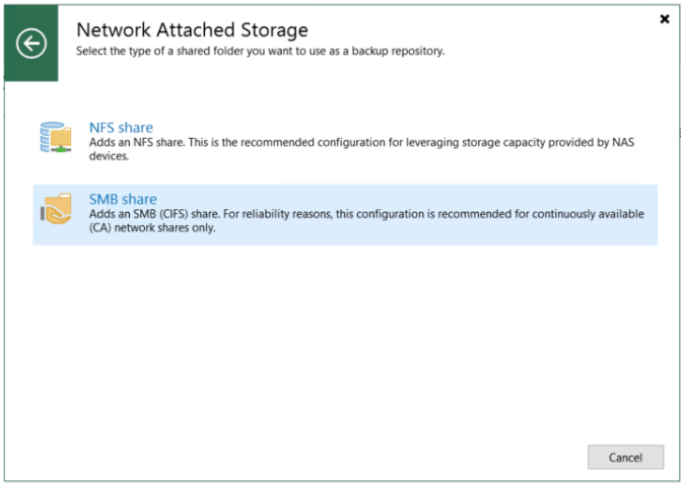

Figure 2-7 Network Attached Storage

Step 1-4. Type in the **Name** for this backup repository → Click **Next**

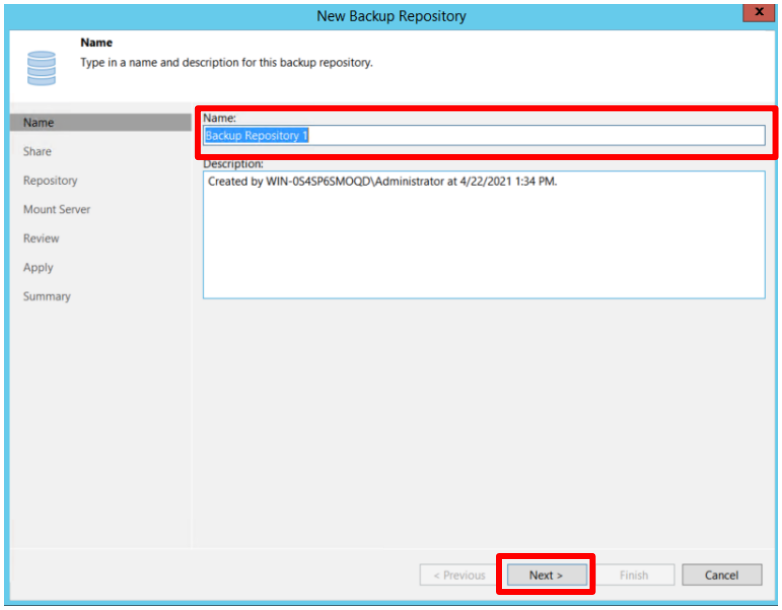

Figure 2-8 Network Attached Storage

Step 1-5. Type in the location of the **Shared folder** that created in QSAN UI → Tick the checkbox in **This share requires access credentials** → select or create an account → Click **Next**

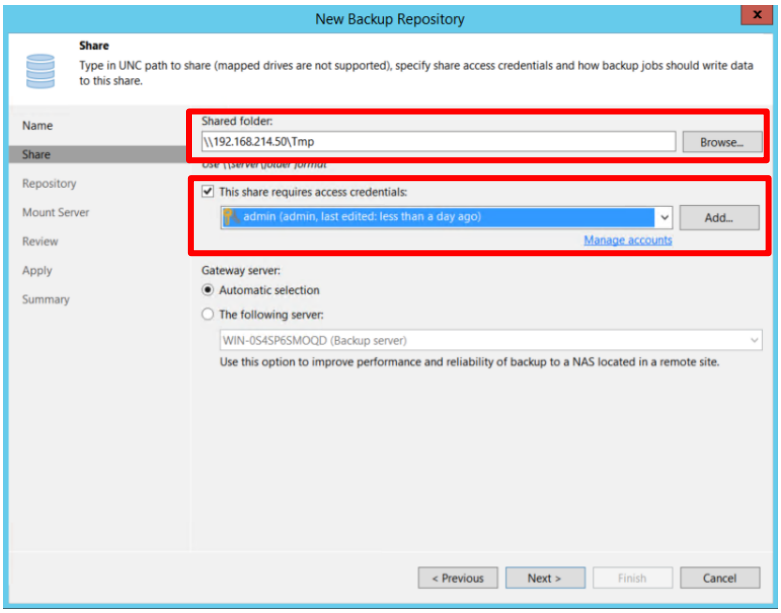

Figure 2-9 Shared Folder Location

Step 1-6. Check the **Path to folder** is correct → Click **Next**

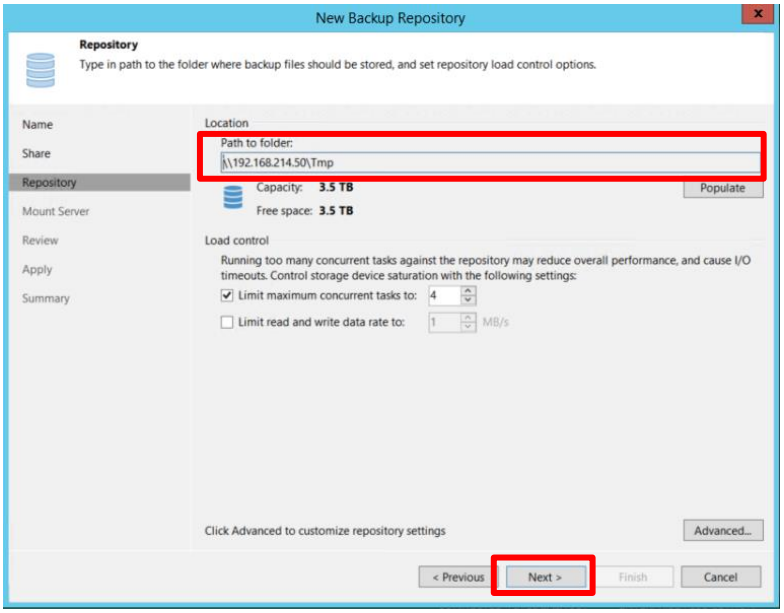

Figure 2-10 Path of folder

Step 1-7. Click **Next**

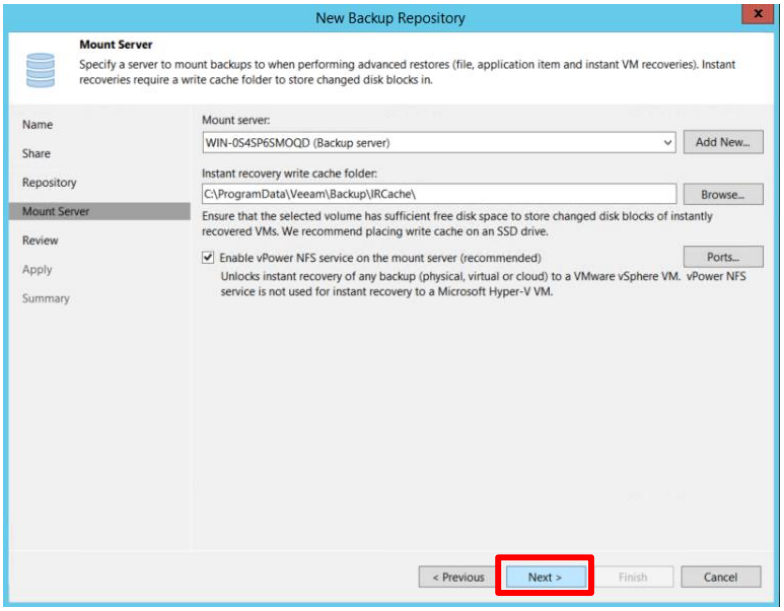

Figure 2-11 Mount Server

Step 1-8. Check all the status → Click **Apply**

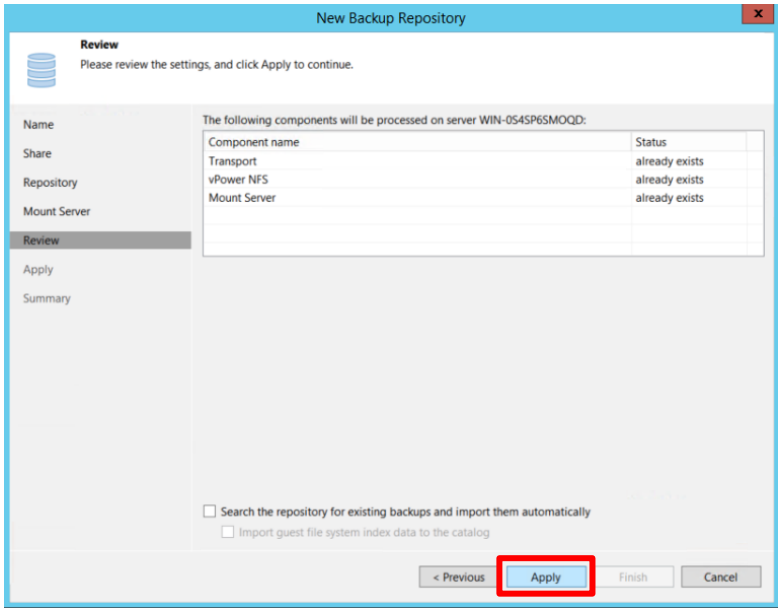

Figure 2-12 Review

Step 1-9. Click **Next**

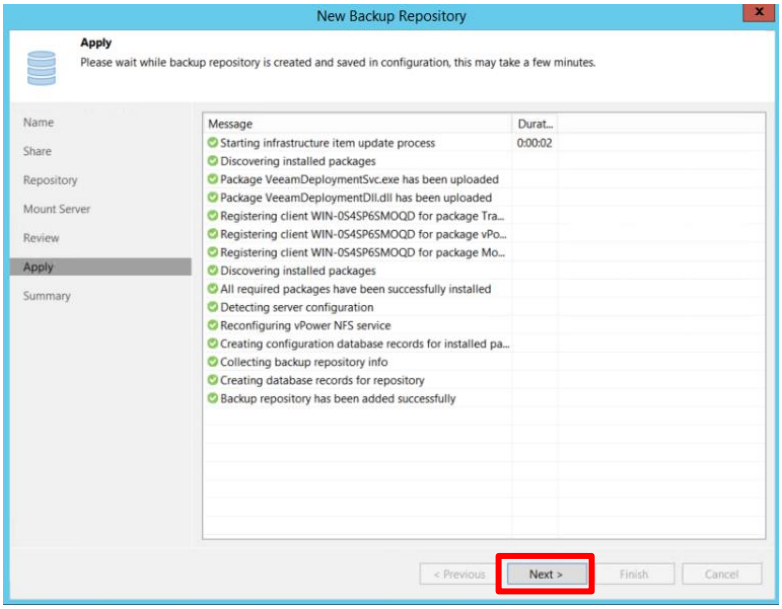

Figure 2-13 Apply

Step 1-10. Click **Finish**

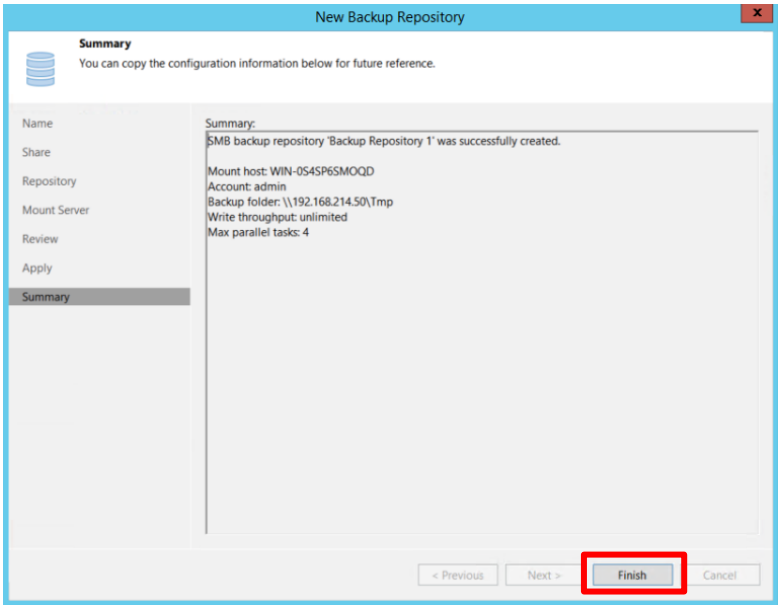

Figure 2-14 Summary

Step 2. Click **INVENTORY** → check all the VMs are included

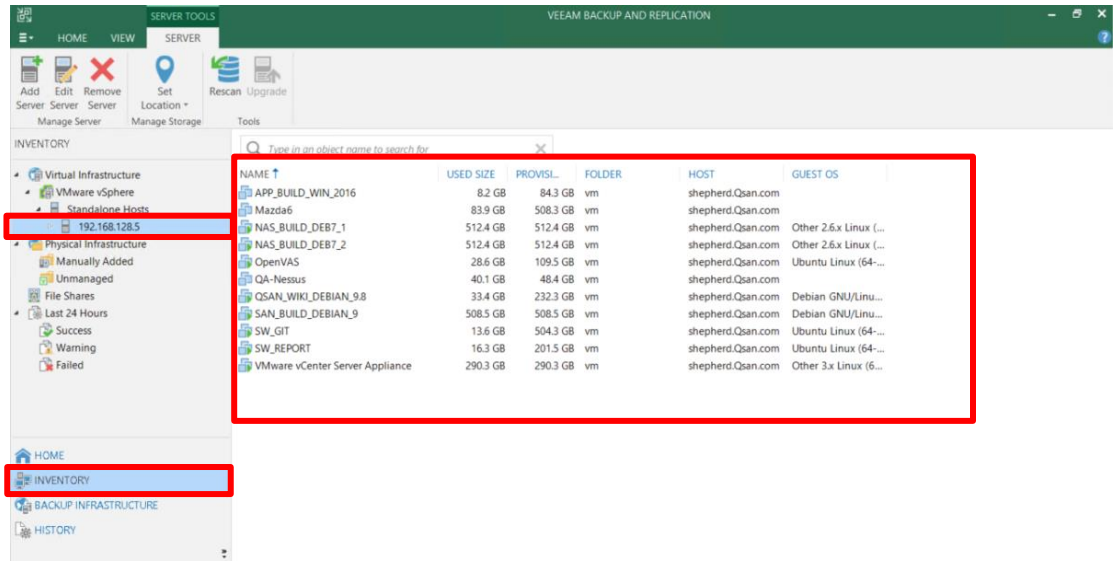

Figure 2-15 INVENTORY

Step 3-1. Select **HOME** → Click **Backup Job** → Click **Virtual machine**

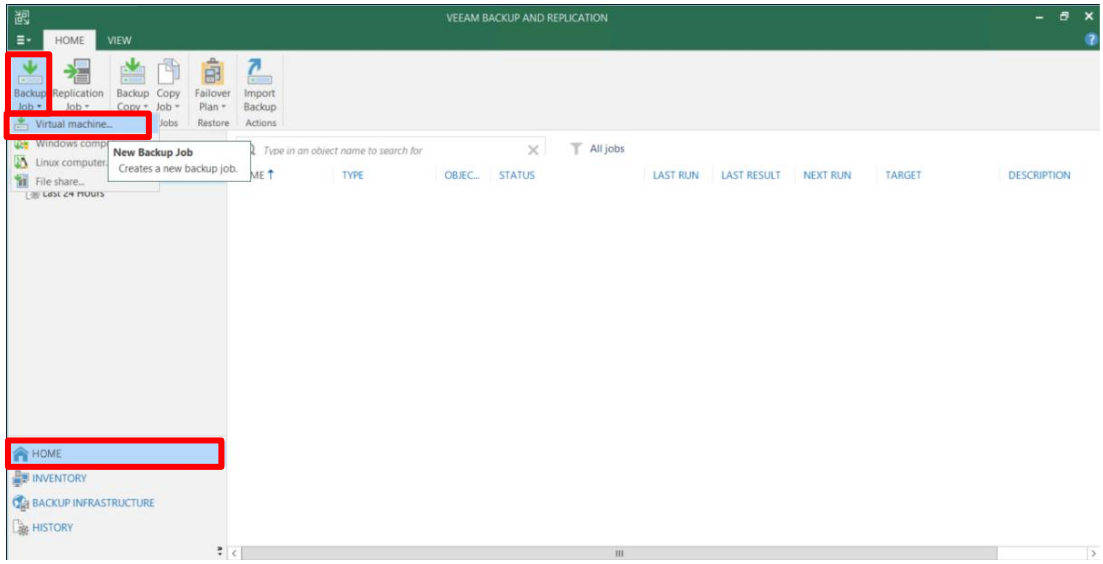

Figure 2-16 Configuration of Adding Backup Job

Step 3-2. Type a **Name** for this backup job

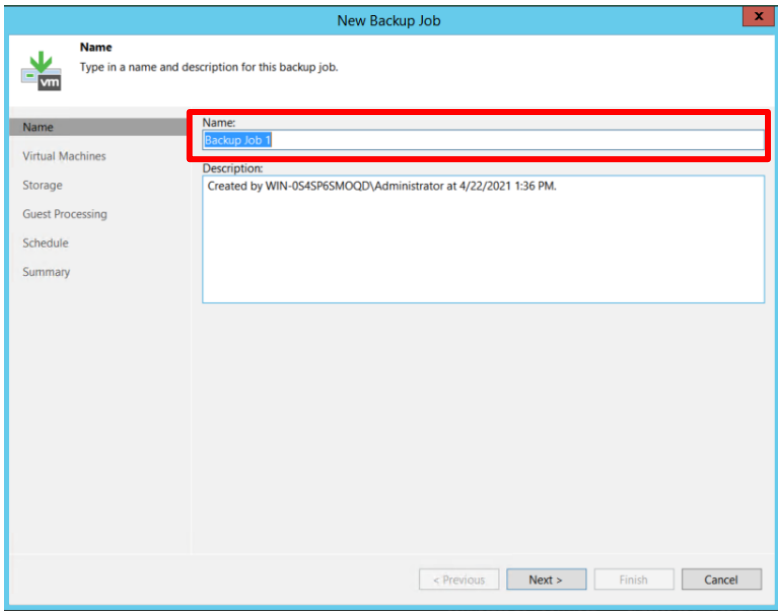

Figure 2-17 Name

Step 3-3. Click **Add** →Choose a Virtual Machine to **Add Object** for backup

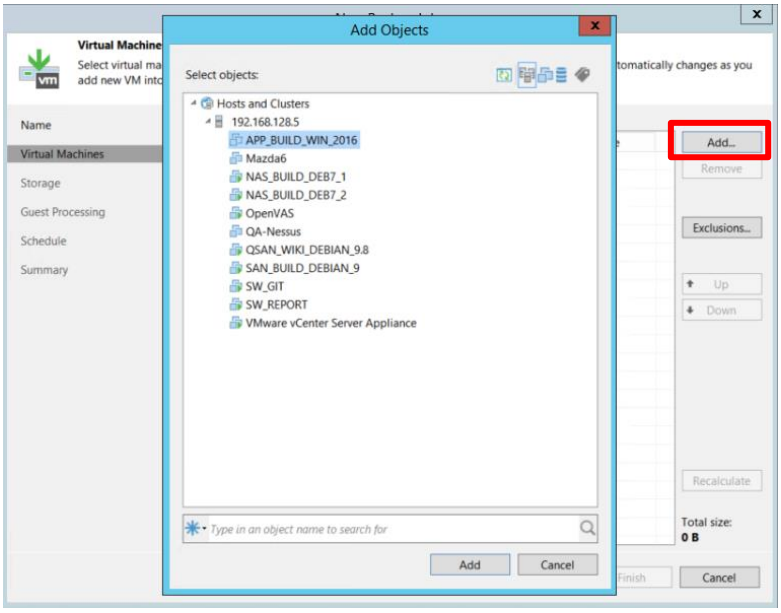

Figure 2-18 Add Virtual Machine

Step 3-4. Click **Next**

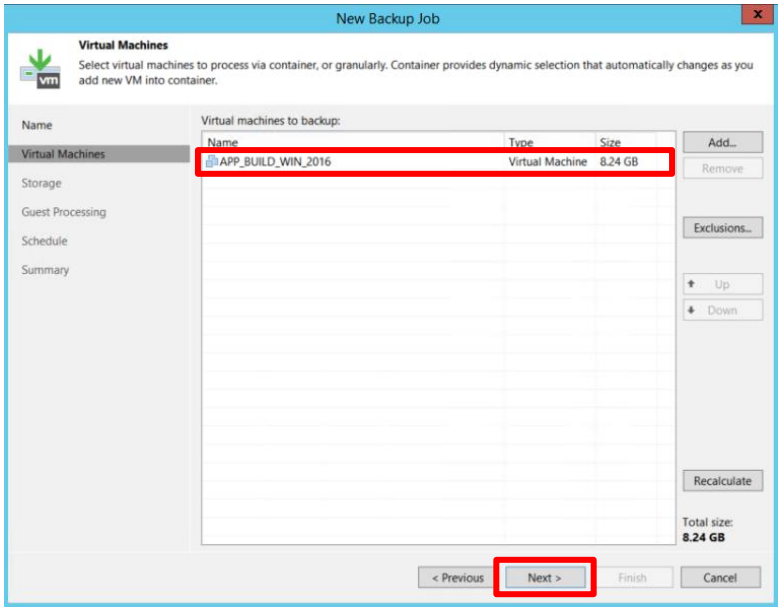

Figure 2-19 Virtual Machines

Step 3-5. Select **Backup repository** to map backup → Click **Advanced**

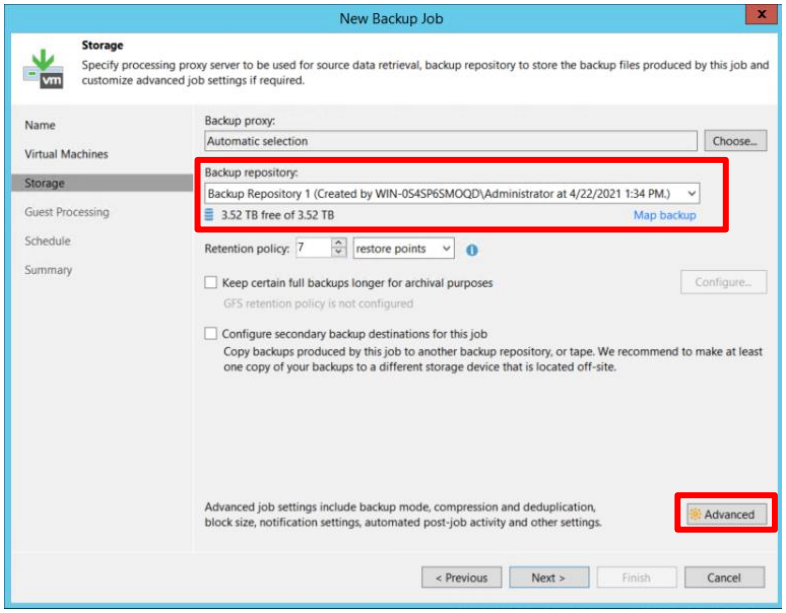

Figure 2-20 Storage

Step 3-6. Select **Scripts**→ Tick the checkbox of **Run the following script after the job:** → Click **Browse**

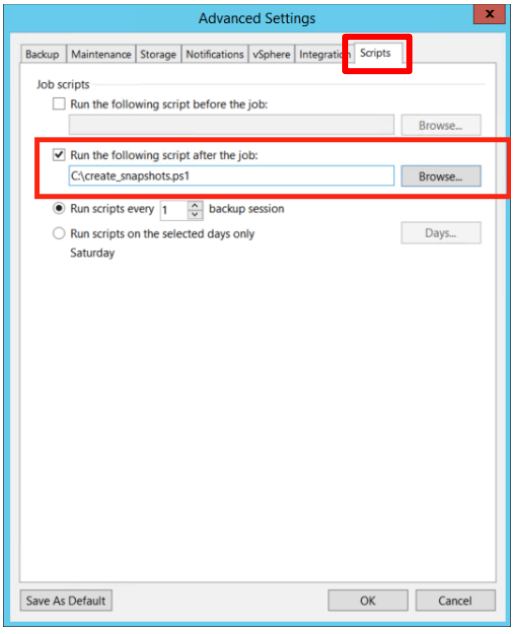

Figure 2-21 Add Scripts in Advanced Settings

Step 3-7. Choose **PowerShell Files (*.ps1)** file type→ Select the **script file downloaded from QSAN**

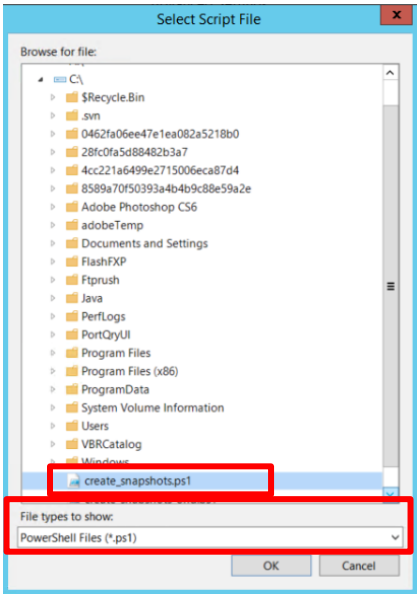

Figure 2-22 Select Script File

Step 3-8. Check the script file is the right one → Click **OK**

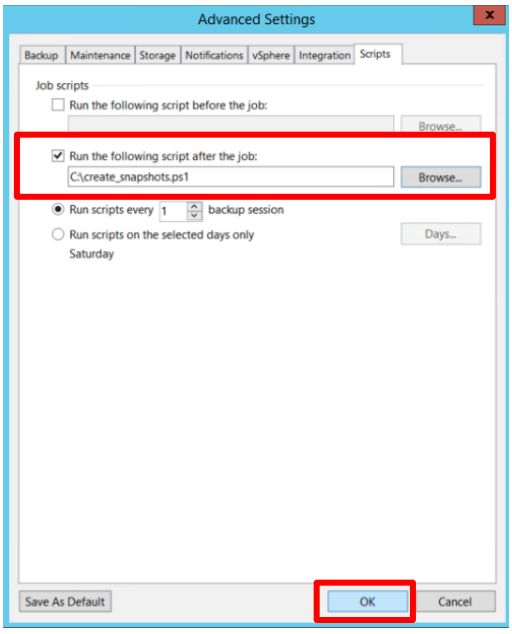

Figure 2-22 Script file to run after the job

Step 3-9. Select by the needs → click **Next**

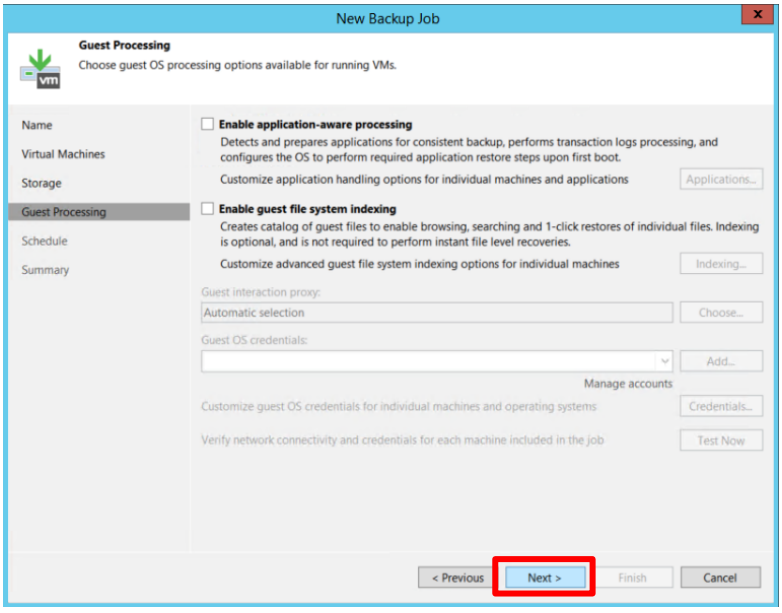

Figure 2-23 Guest Processing

Step 3-10. Tick the checkbox on **Run the job automatically** → Set the backup **Schedule**→ refer to QSAN UI WORM schedule

[Note] Schedule set up proportion is 1:2 (Veeam backup : WORM)

For example:

- If user set Veeam backup everyday, then set WORM retetion for two days.
- If user set Veeam backup every two day, then set WORM retetion for four days

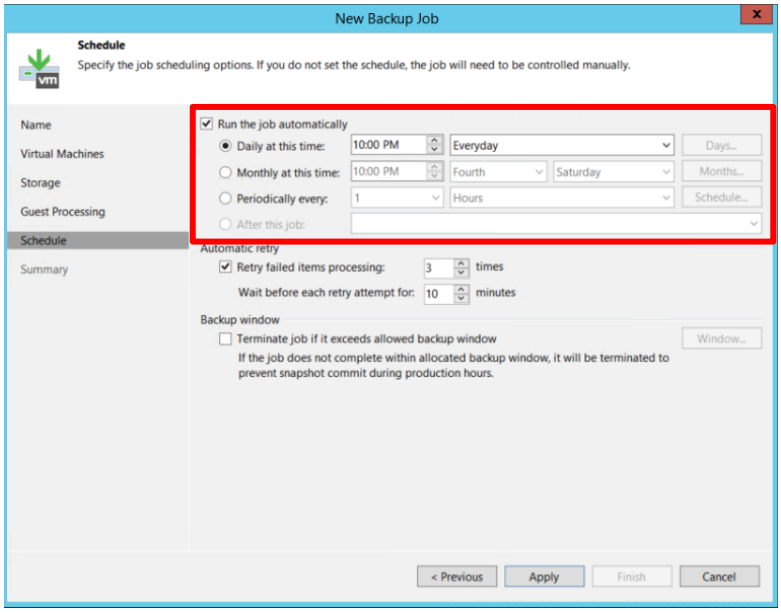

Figure 2-24 Schedule

Step 3-11. Reconfim for all the settings→Click **Finish**

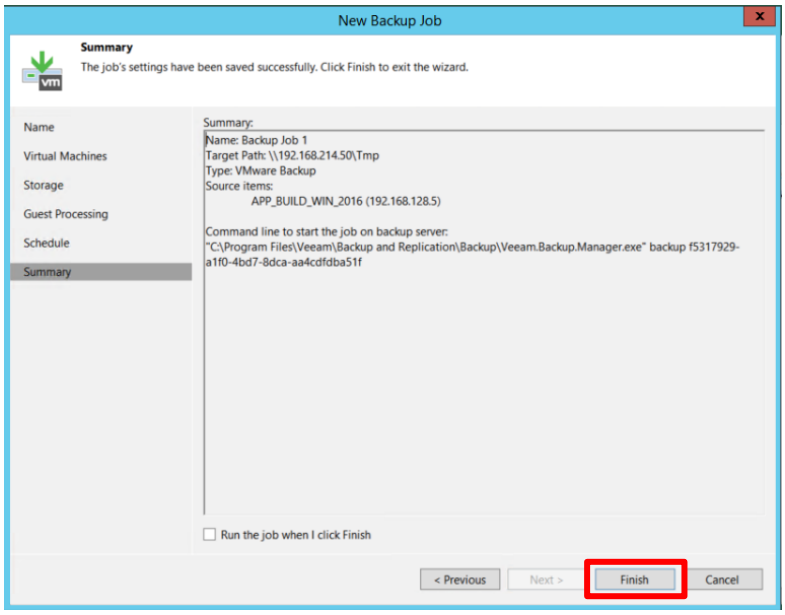

Figure 2-24 Summary

Step 3-12. The Job created appeal in the council

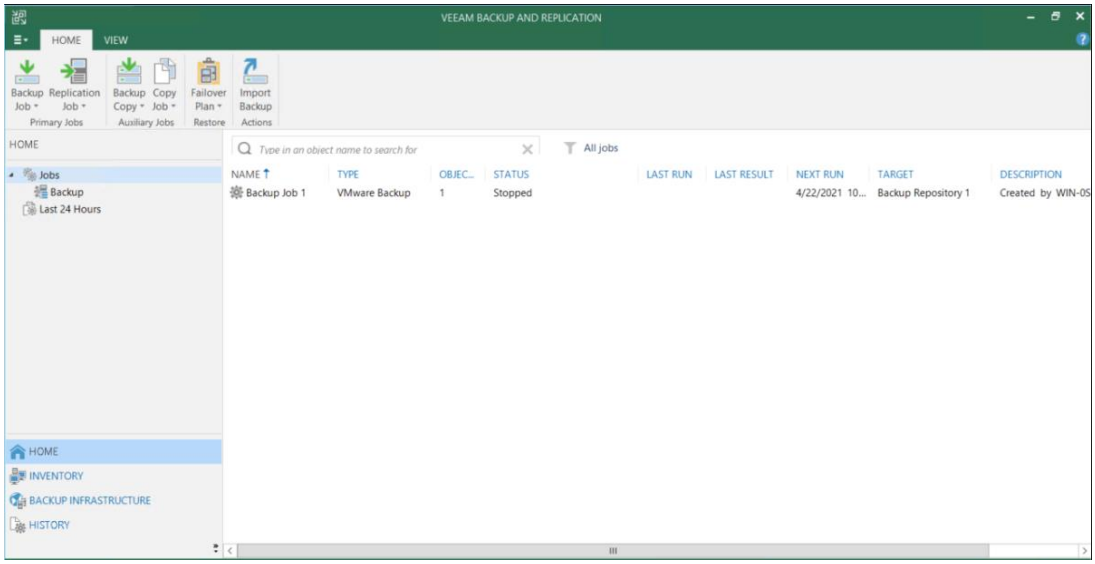

Figure 2-24 Done Setting in Veeam Backup and Replication UI

Step 4-1. Find the **Scipt file downloaded from QSAN**→Right-click →**Edit**

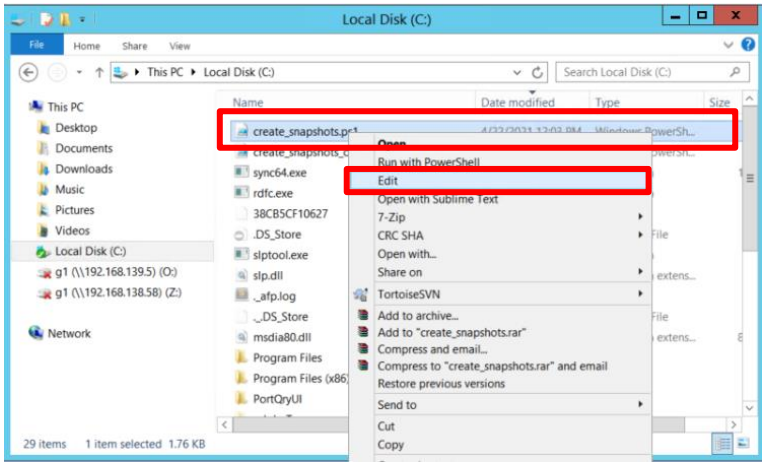

Figure 2-25 Make custom-changes on the Script

Step 4-2. Change the following customize items :

i. **NAS IP address**: into your NAS IP

ii. **NAS login user name**

iii. **Nas login password**

iv. **NAS shared folder name (Snapshot)** : into the folder name you create for snapshot (set in QSAN UI)

v. **NAS shared folder name (WORM)**: into the folder name you create for WORM (set in QSAN UI)

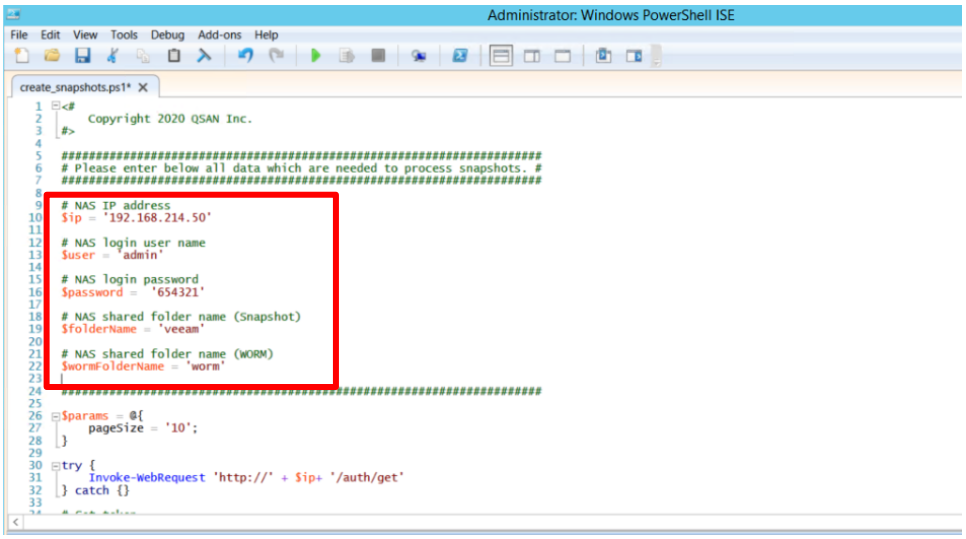

Figure 2-26 5 Items Change in the Script

Summary

The Integration between QSAN and Veeam bring higher data protection level for all business. In the age of advances in information technology, cyber-attack becomes the main issue for most business to conquer. Try to apply Veeam Backup with Snapshot and WORM mechanism to prevent from any ransomware attack. After setting up by the steps listed above then the business can enjoy the automatic data protection process.

Appendix

Related Documents

There are related documents which can be downloaded from the website.

- All XCubeNXT Documents
- QSM_WORM White Paper
- XCubeNXT Hardware Manual
- XCubeNXT_Software Manual
- Compatibility Matrix
- White Papers
- Application Notes

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)
- Via Skype Chat, Skype ID: qsan.support
  (Service hours: 09:30 - 02:00, Monday - Friday, UTC+8, Summer time: 09:30 - 01:00)
- Via Email: support@qsan.com

