



XCubeSAN Series Application Note

Backup VM via Veeam Backup & Replication



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This XCubeSAN series white paper is applicable to the following XCubeSAN models:

XCubeSAN Storage System 4U 19" Rack Mount Models

| Model Name | Controller Type | Form Factor, Bay Count, and Rack Unit |
|------------|-------------------|---------------------------------------|
| XS5224D | Dual Controller | LFF 24-disk 4U Chassis |
| XS3224D | Dual Controller | LFF 24-disk 4U Chassis |
| XS3224S | Single Controller | LFF 24-disk 4U Chassis |
| XS1224D | Dual Controller | LFF 24-disk 4U Chassis |
| XS1224S | Single Controller | LFF 24-disk 4U Chassis |

XCubeSAN Storage System 3U 19" Rack Mount Models

| Model Name | Controller Type | Form Factor, Bay Count, and Rack Unit |
|------------|-------------------|---------------------------------------|
| XS5216D | Dual Controller | LFF 16-disk 3U Chassis |
| XS3216D | Dual Controller | LFF 16-disk 3U Chassis |
| XS3216S | Single Controller | LFF 16-disk 3U Chassis |
| XS1216D | Dual Controller | LFF 16-disk 3U Chassis |
| XS1216S | Single Controller | LFF 16-disk 3U Chassis |

XCubeSAN Storage System 2U 19" Rack Mount Models

| Model Name | Controller Type | Form Factor, Bay Count, and Rack Unit |
|------------|-------------------|---------------------------------------|
| XS5212D | Dual Controller | LFF 12-disk 2U Chassis |
| XS5212S | Single Controller | LFF 12-disk 2U Chassis |
| XS3212D | Dual Controller | LFF 12-disk 2U Chassis |
| XS3212S | Single Controller | LFF 12-disk 2U Chassis |
| XS1212D | Dual Controller | LFF 12-disk 2U Chassis |
| XS1212S | Single Controller | LFF 12-disk 2U Chassis |
| XS5226D | Dual Controller | SFF 26-disk 2U Chassis |
| XS5226S | Single Controller | SFF 26-disk 2U Chassis |
| XS3226D | Dual Controller | SFF 26-disk 2U Chassis |
| XS3226S | Single Controller | SFF 26-disk 2U Chassis |
| XS1226D | Dual Controller | SFF 26-disk 2U Chassis |

| | | |
|---------|-------------------|------------------------|
| XS1226S | Single Controller | SFF 26-disk 2U Chassis |
|---------|-------------------|------------------------|

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All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

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Backup VM via Veeam Backup & Replication

Executive Summary

Veeam Backup & Replication is a powerful, easy-to-use and affordable backup and availability solution. It provides fast, flexible and reliable recovery of virtualized applications and data, bringing VM (virtual machine) backup and replication together in a single software solution. Veeam Backup & Replication delivers award-winning support for VMware vSphere and Microsoft Hyper-V virtual environments. This application note provides technical guidance for backing up VM or its valuable data through Veeam Backup & Replication application along with QSAN XCubeSAN series product.

Audience

This document is applicable for those technical members who are familiar with QSAN products, and for those who are good at network trouble shooting, Windows Server and Unix-Like OS operations, and basic hardware installations.

Please read this document carefully before trying to adjust any parameter on server side. Doing an adjustment with wrong understanding may lead you to get a worse performance experience than ever. If you have any questions about the adjustment, please consult QSAN Technical Support for further assistance.

Best Storage Configuration

Network Configuration and Diagram

We used a quite easy environment which is direct connections between a Windows Server and QSAN XCubeSAN's both controllers to demonstrate the operations with Veeam Backup & Replication application.

| iSCSI Ports | | | | | | | | | |
|--------------|----------|-------------|--------|-----|---------|---------------|---------|-------------|-------------------|
| Controller 1 | | | | | | | | | |
| | Location | Port Name | Status | LAG | VLAN ID | IP Address | Gateway | Jumbo Frame | MAC Address |
| ▼ | Onboard | LAN1 (10Gb) | 1 Gb/s | N/A | N/A | 10.10.1.101 | | Disabled | 00:13:78:d4:02:2a |
| ▼ | Onboard | LAN2 (10Gb) | 1 Gb/s | N/A | N/A | 192.168.100.2 | | Disabled | 00:13:78:d4:02:2b |

| Controller 2 | | | | | | | | | |
|--------------|----------|-------------|--------|-----|---------|-------------|---------|-------------|-------------------|
| | Location | Port Name | Status | LAG | VLAN ID | IP Address | Gateway | Jumbo Frame | MAC Address |
| ▼ | Onboard | LAN1 (10Gb) | 1 Gb/s | N/A | N/A | 10.10.1.103 | | Disabled | 00:13:78:d4:02:34 |
| ▼ | Onboard | LAN2 (10Gb) | 1 Gb/s | N/A | N/A | | | Disabled | 00:13:78:d4:02:35 |

Figure 1 XCubeSAN Network Configuration

The network settings were quite simple as well.

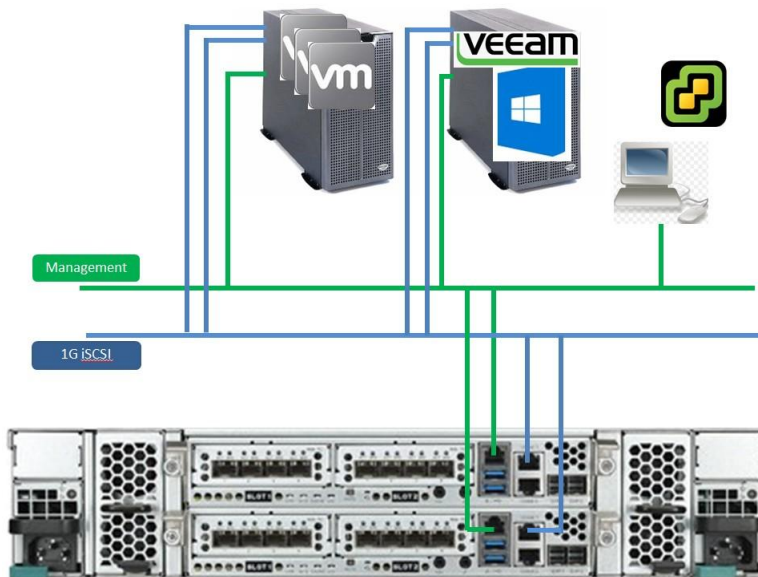


Figure 2 Network Diagram

RAID Configuration

- Storage
 - Model: XCubeSAN XS5212D
 - Memory: 16GB (2 x 8GB in bank 1 & 3) per controller
 - Firmware 1.2.2
 - HDD: 12 x Seagate Constellation ES, ST500NM0001, 500GB, SAS 6Gb/s
 - HDD Pool: 1 x RAID 6 Pool with 12 x NL-SAS HDDs in Controller 1

- HDD Volume: 1 x 100GB in Pool
- LUN Mapping: iSCSI target0 – LUN0



INFORMATION:

RAID configuration may vary depending on the real environment on field site, please create RAID pool and volume to be fitted for the environment.

Server Configuration

Network Configuration

Please make sure the connected ports which are used for iSCSI connections have been configured with the same IP segment as the XCubeSAN's controllers side, once the IPs could be pinged it shall be able to be logged in with iSCSI sessions.

As there were two iSCSI sessions in this case, enabling MPIO on the Windows Server side was necessary to make the multipath work.

Veeam Installation and License Activation

Follow the installation wizard of Veeam application and it will guide you to go through and finish the installation step by step, please remember firstly to activate the license to get everything worked as expected.

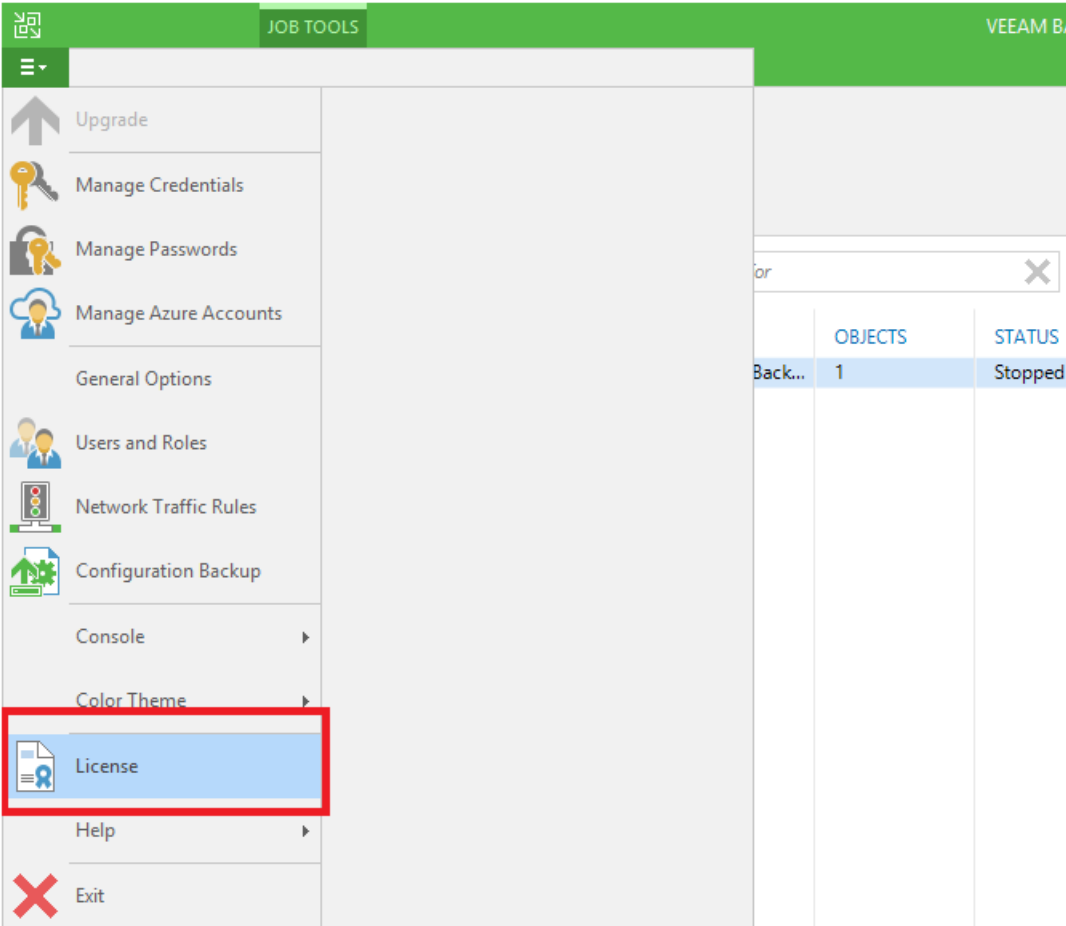


Figure 3 License Activation in Veeam

Connecting to Hypervisor Server

1. Click the **Add Server** button on the left-corner on Veeam Backup & Replication application.

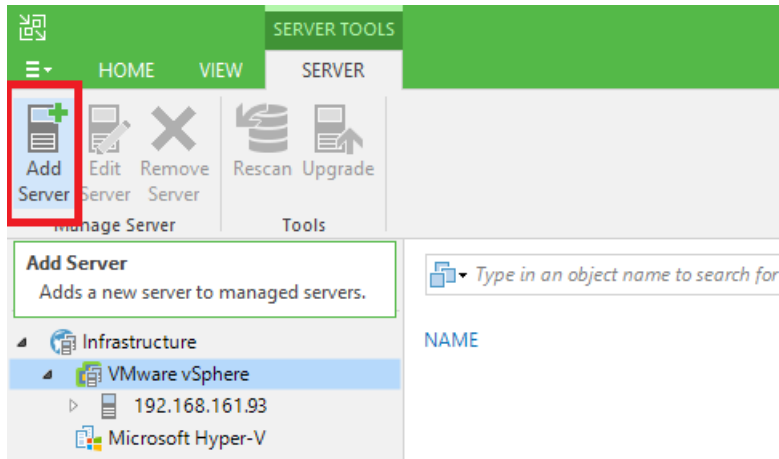


Figure 4 Add Server

2. Follow the Wizard to complete the process of adding a new Hypervisor Server.

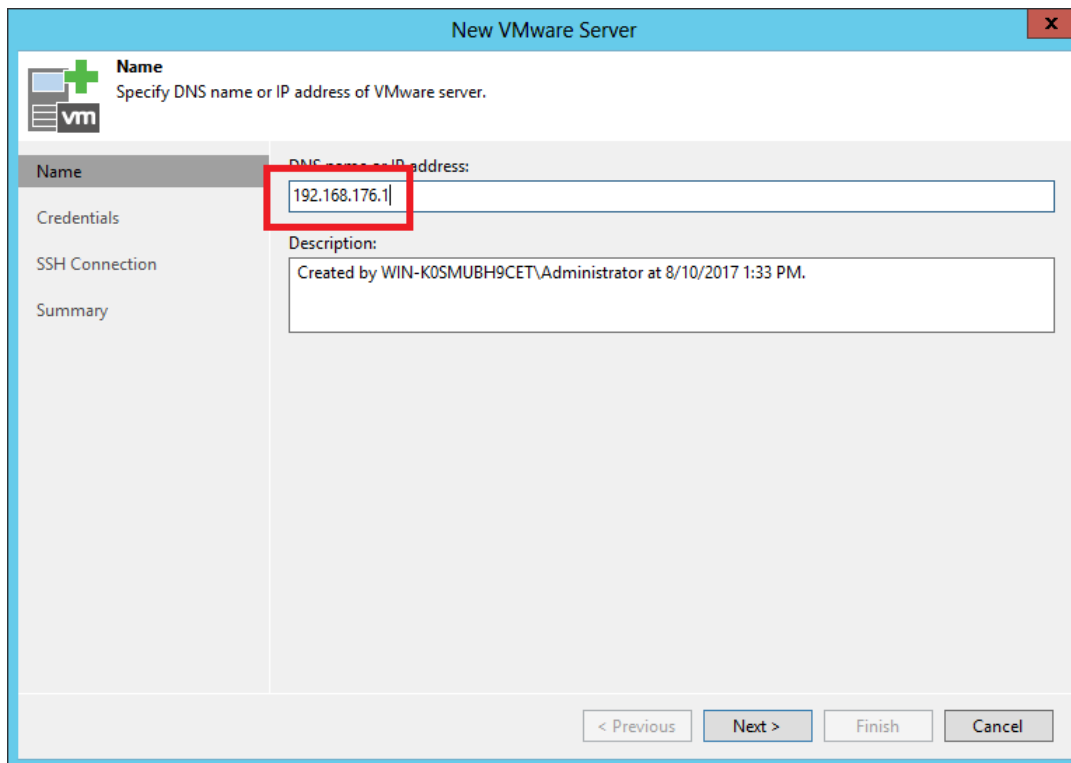


Figure 5 Add Server Wizard Step 1

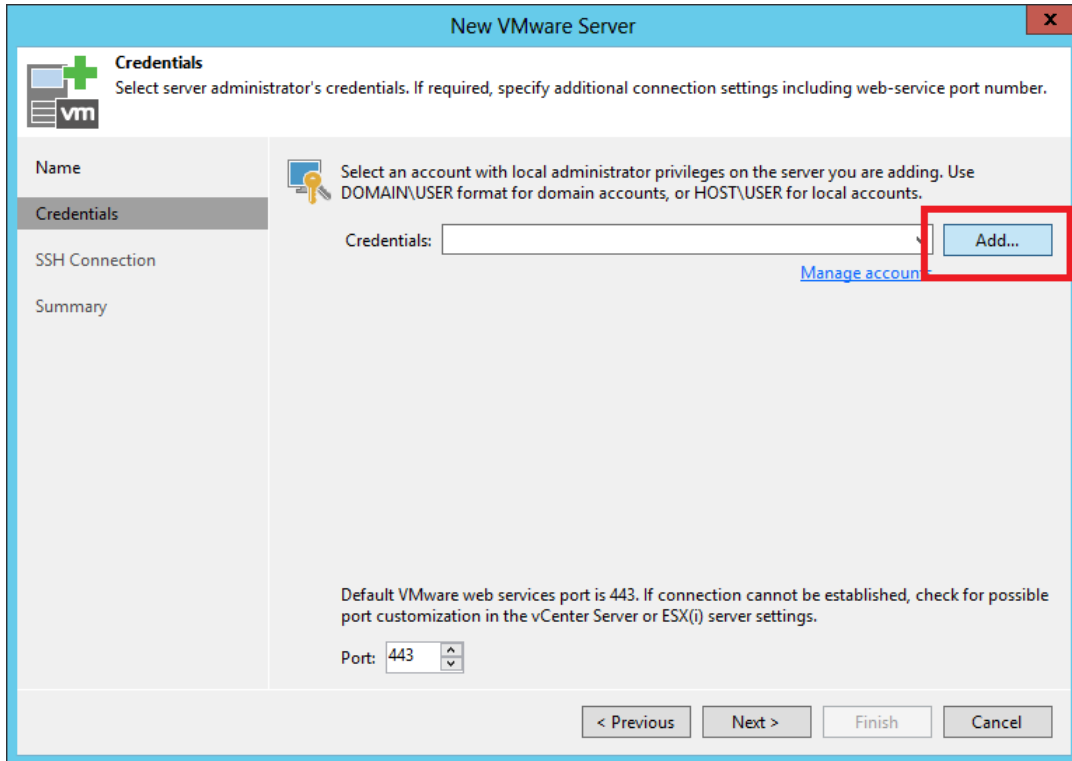


Figure 6 Add Server Wizard Step 2

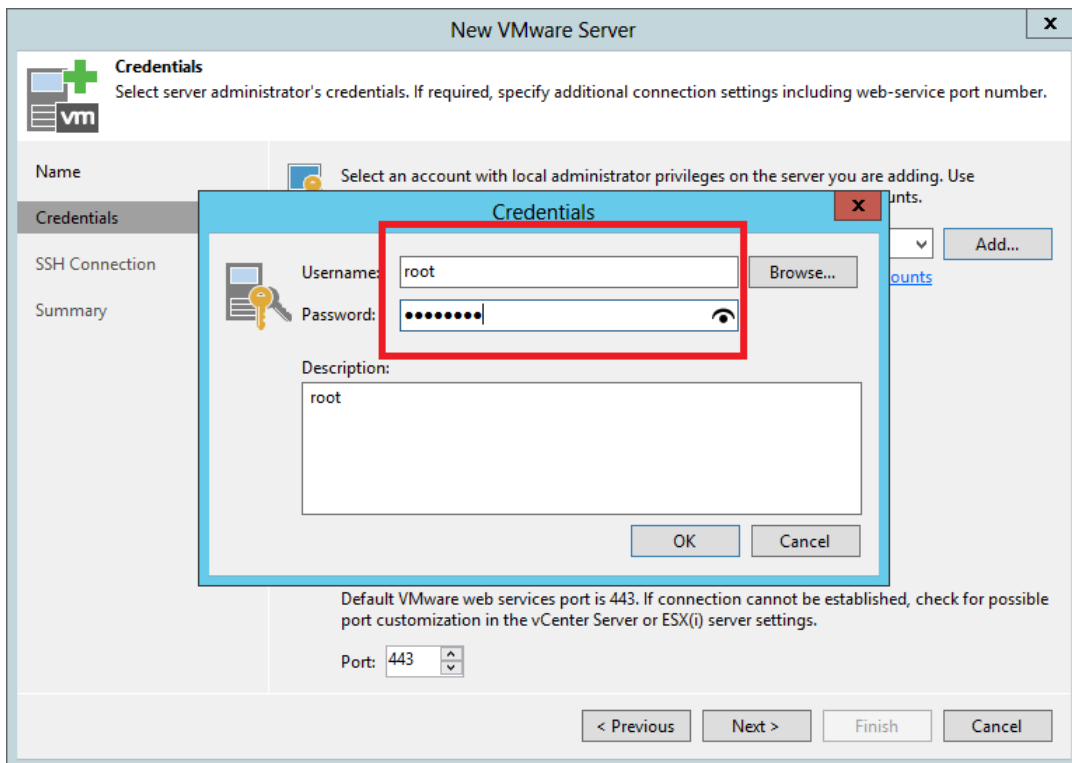


Figure 7 Add Server Wizard Step 3

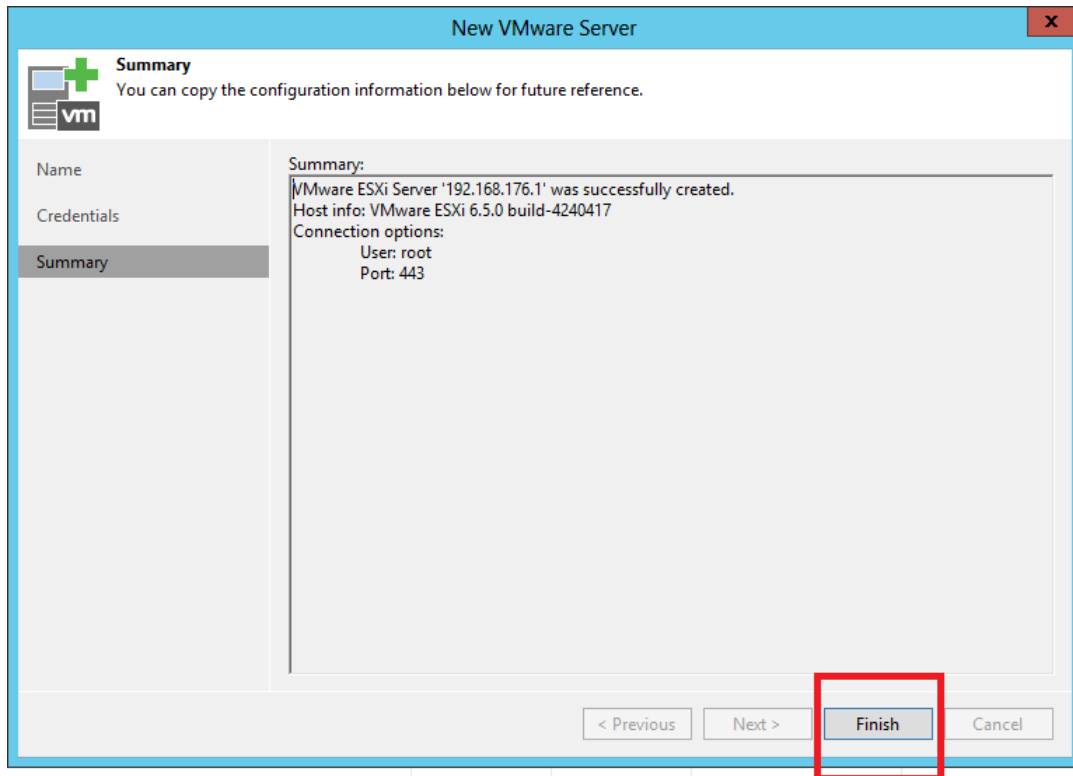


Figure 8 Add Server Wizard Step 4

3. A new server is created and is displayed in the left window.

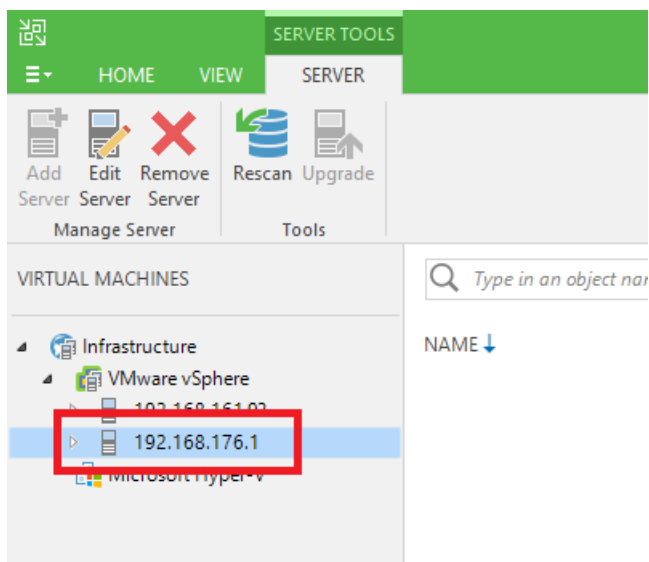


Figure 9 A New Server is Created

Create Backup Job

1. In BACKUP & REPLICATION page, click the **Backup Job** button at the left-corner.

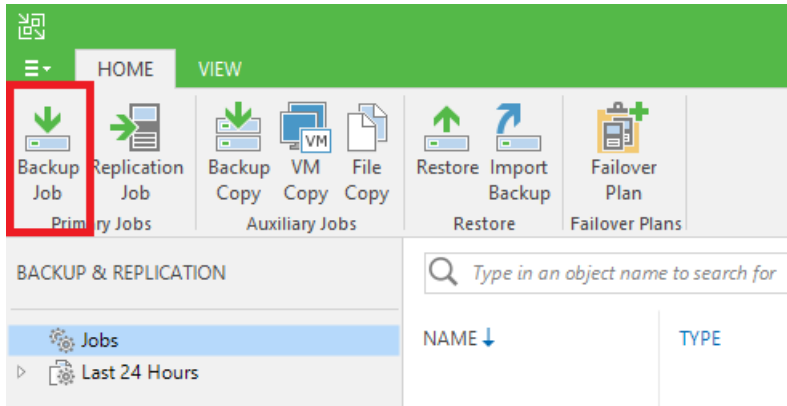


Figure 10 Create a Backup Job

2. Follow the wizard to finish the process.

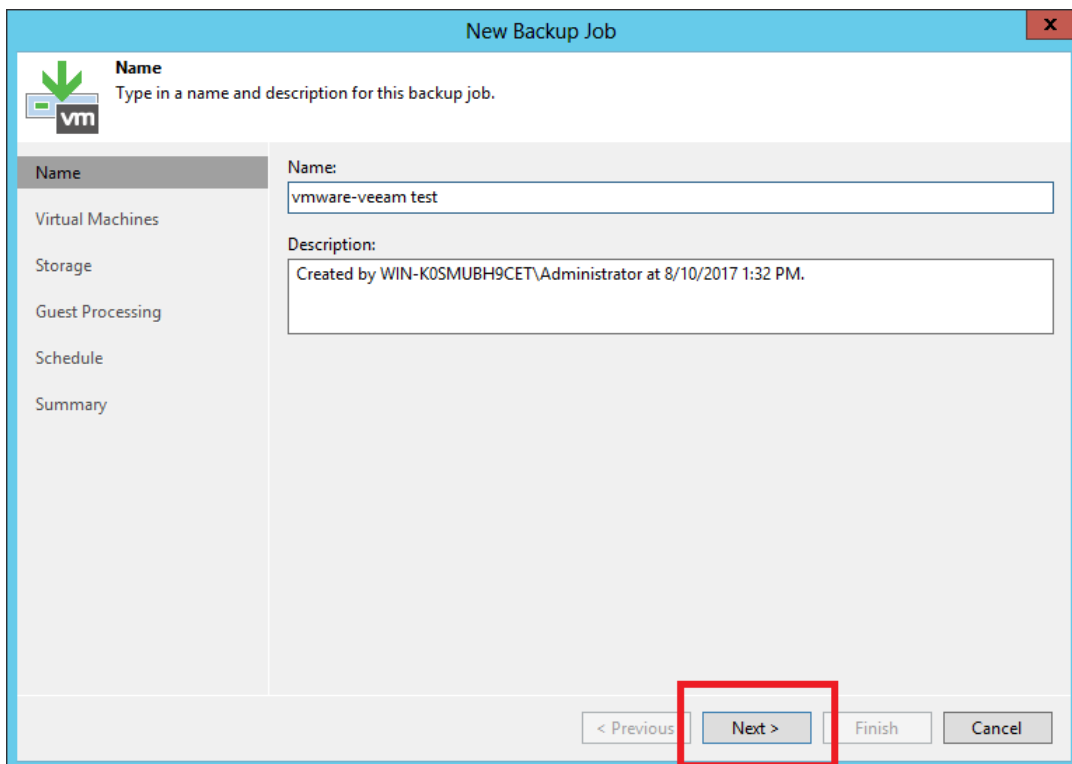


Figure 11 Create a Backup Job Step 1

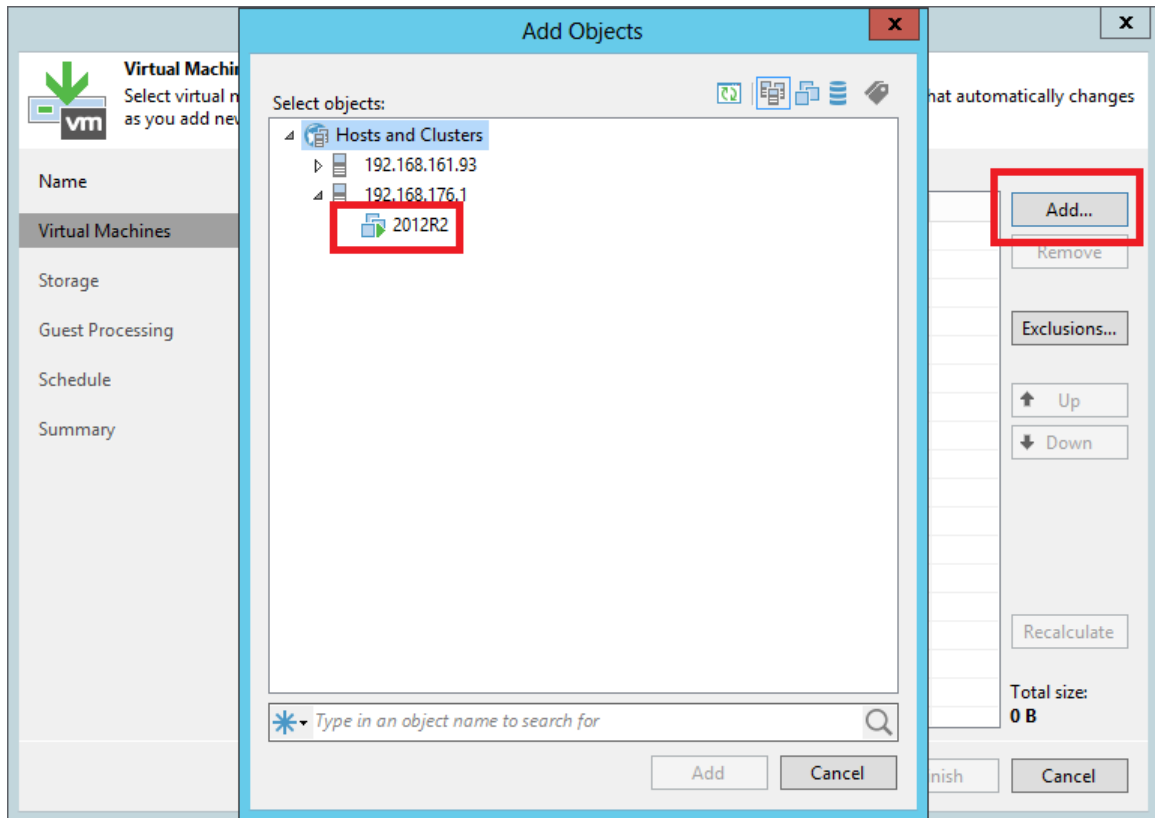


Figure 12 Create a Backup Job Step 2



TIP:

The storage could be specified according to customer’s needs, XCubeSAN’s iSCSI volume has been formatted as E: drive, so here we chose E: drive as the backup repository.

3. Run backup job.

The screenshot displays the Veeam Backup and Replication interface. At the top, the 'JOB TOOLS' menu includes options like Start, Stop, Retry, Active Full, Statistics, Report, Edit, Clone, Disable, and Delete. The main area shows a list of backup jobs, with 'vmware-veeam backup' selected and highlighted in red. Below the list, the job progress is shown as 7% complete. A summary table provides details on duration, processing rate, and bottleneck. The action log, also highlighted in red, lists the steps of the backup process.

| NAME | TYPE | OBJECTS | STATUS | LAST RES... | NEXT RUN |
|---------------------|----------------|---------|--------------------|-------------|---------------|
| vmware-veeam backup | VMware Back... | 1 | 7% completed at... | | <not schedule |

| SUMMARY | DATA | STATUS |
|--------------------------|-------------------------------|-------------|
| Duration: 0:01:44 | Processed: 1.9 GB (7%) | Success: 0 |
| Processing rate: 82 MB/s | Read: 1.6 GB | Warnings: 0 |
| Bottleneck: Source | Transferred: 1003.0 MB (1.6x) | Errors: 0 |

| NAME | STATUS | ACTION |
|--------|--------|---|
| 2012R2 | 7% | <ul style="list-style-type: none"> Job started at 8/10/2017 1:54:13 PM Building VMs list VM size: 26.0 GB Changed block tracking is enabled Processing 2012R2 All VMs have been queued for processing |

Figure 13 Run Backup Job

Restore the Backup VM to Another Hypervisor Server

1. Click the **Backups** item, and select the drive you used to store the backup VM images.

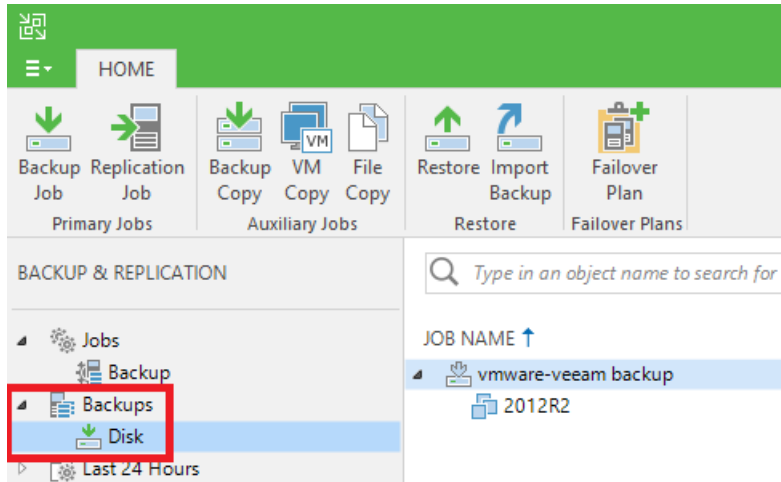


Figure 14 Restore the Backup VM Step 1

2. Select the backup image that you would like to restore and right-click it; choose the **Restore entire VM...** item.



Figure 15 Restore the Backup VM Step 2

3. Select below option at this step.

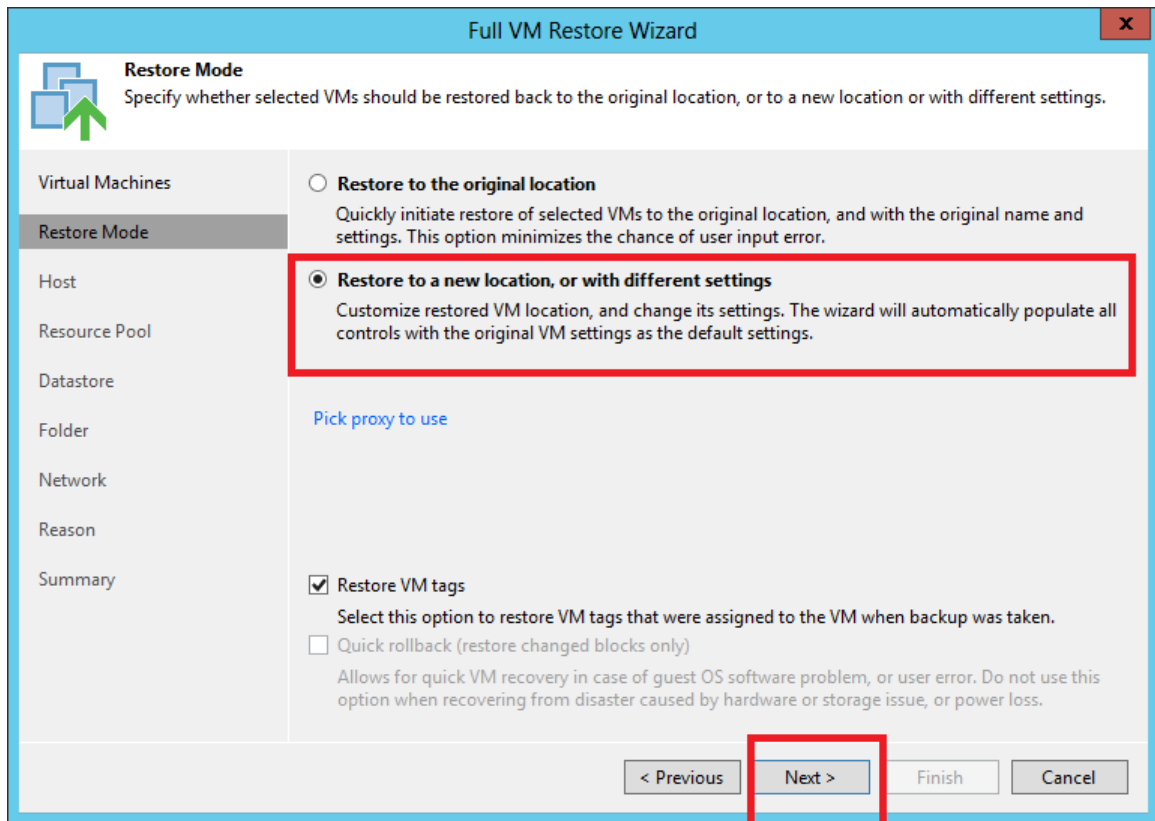


Figure 16 VM Restore Wizard Step 1

4. Choose the destination.

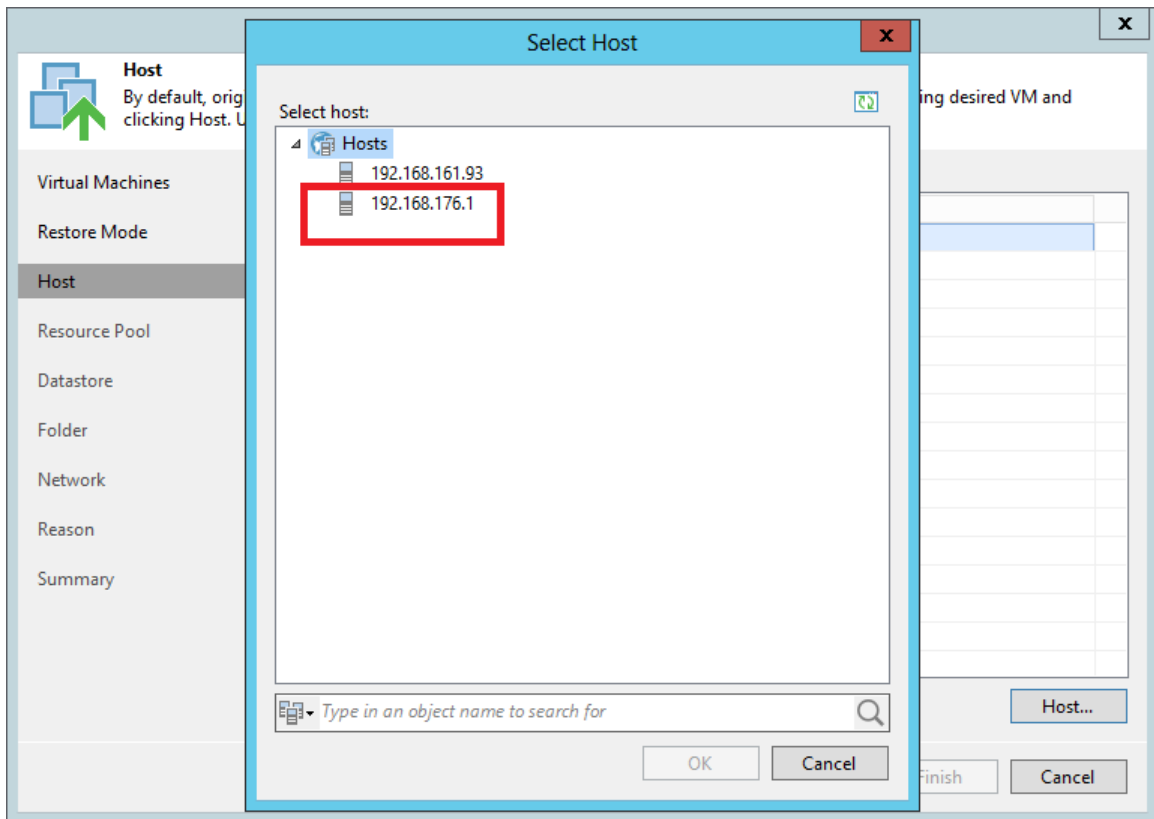


Figure 17 VM Restore Wizard Step 2

5. Choose the Datastore you want to put the VM into in the destination server

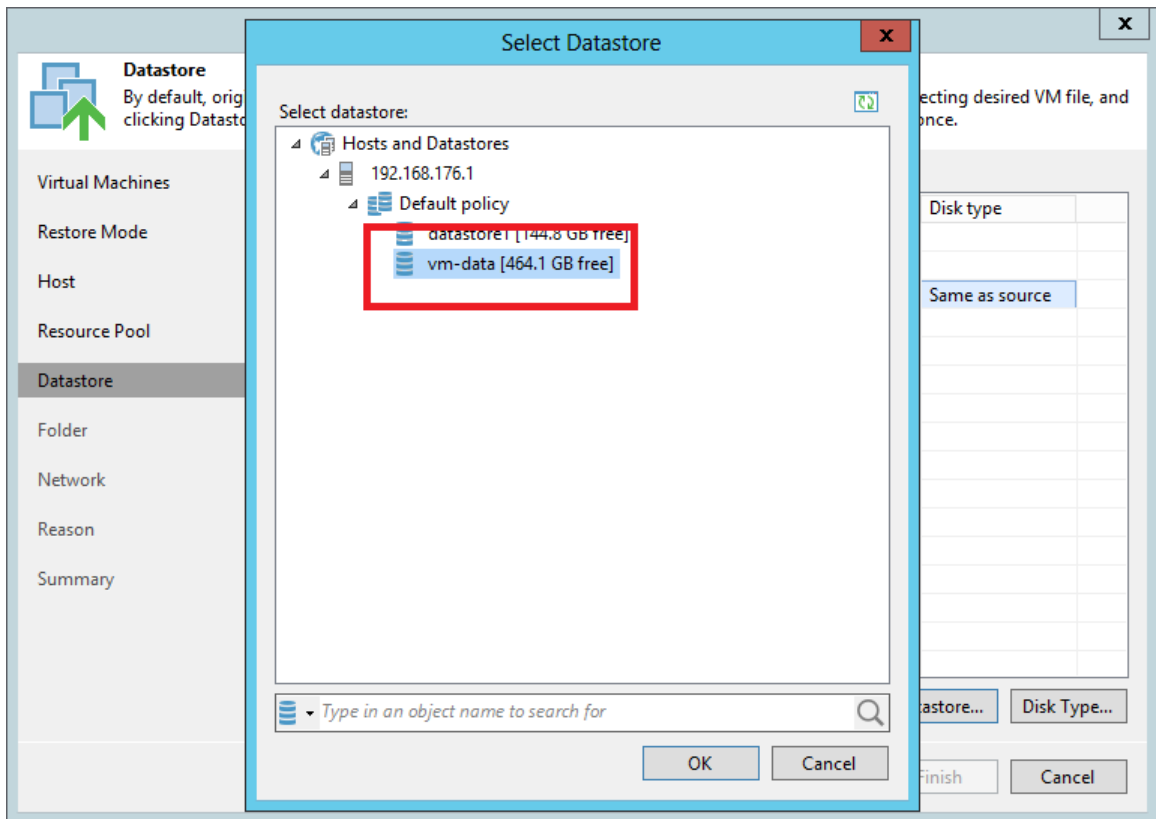


Figure 18 VM Restore Wizard Step 3

- Specify a name for the restoring image as the new VM's name.

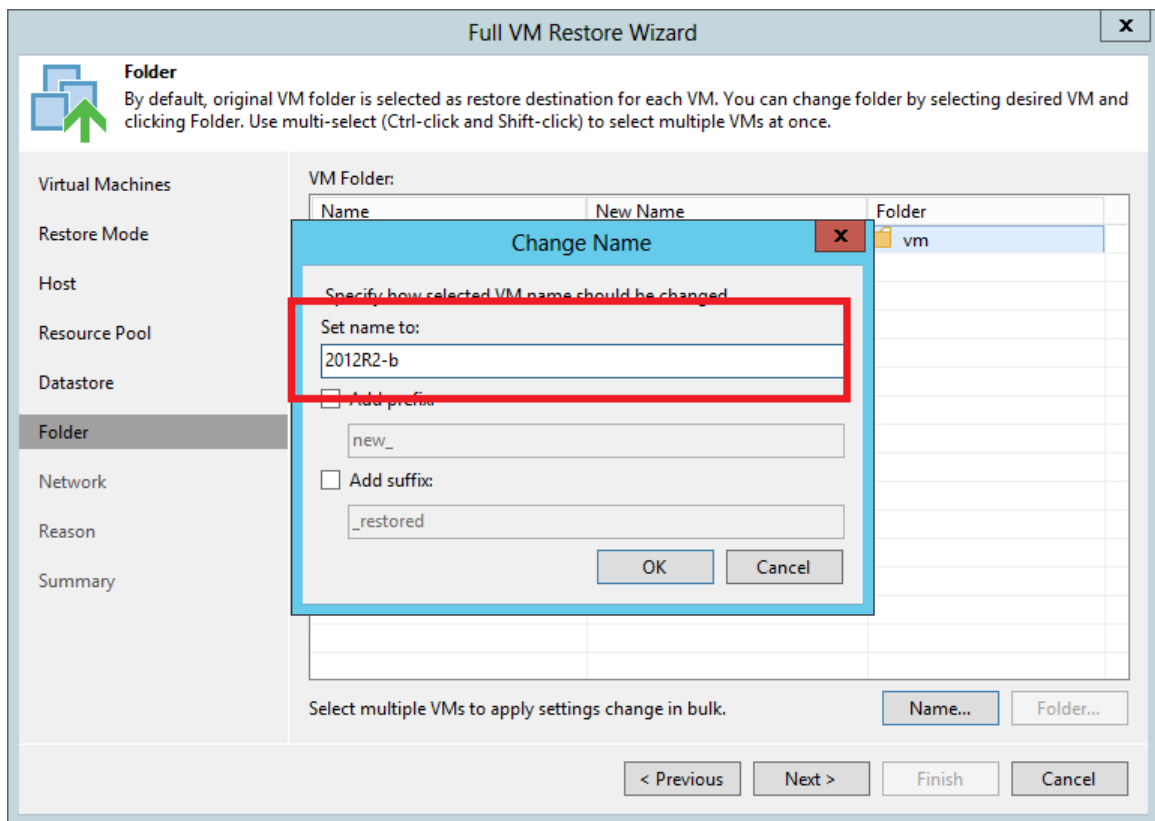


Figure 19 VM Restore Wizard Step 4

7. Wait for the restoring job to be finished.

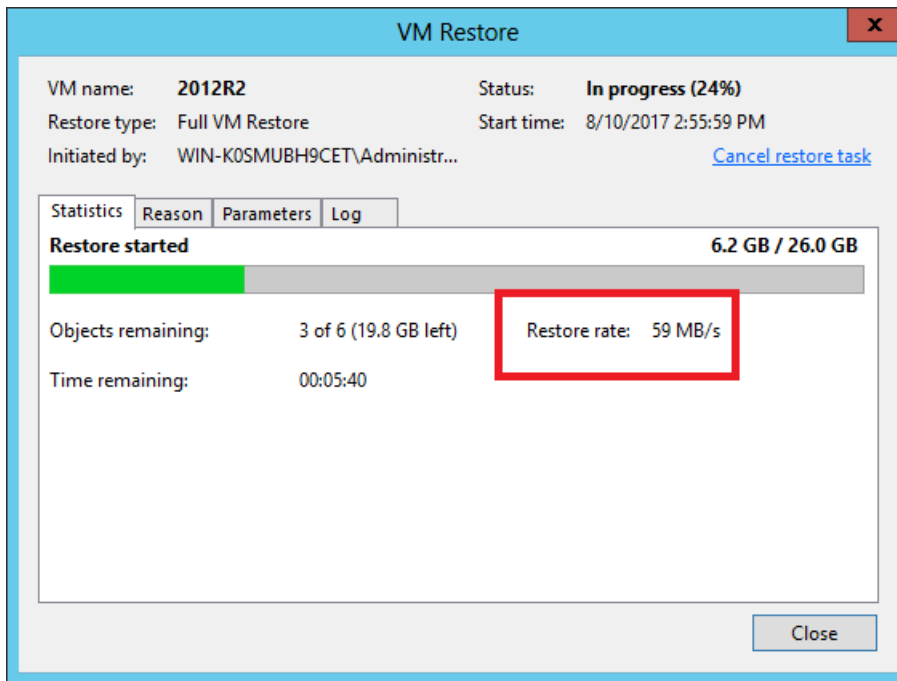


Figure 20 VM Restore Wizard Step 5

8. Check the restored files on the destination server.

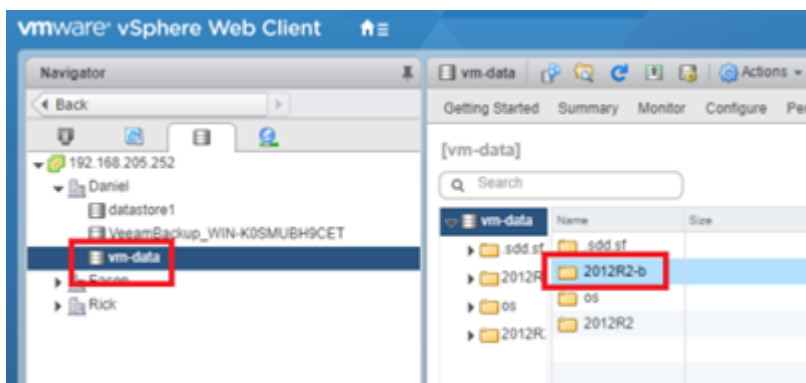


Figure 21 Check the restored files

9. Remember to register the VM to the server.

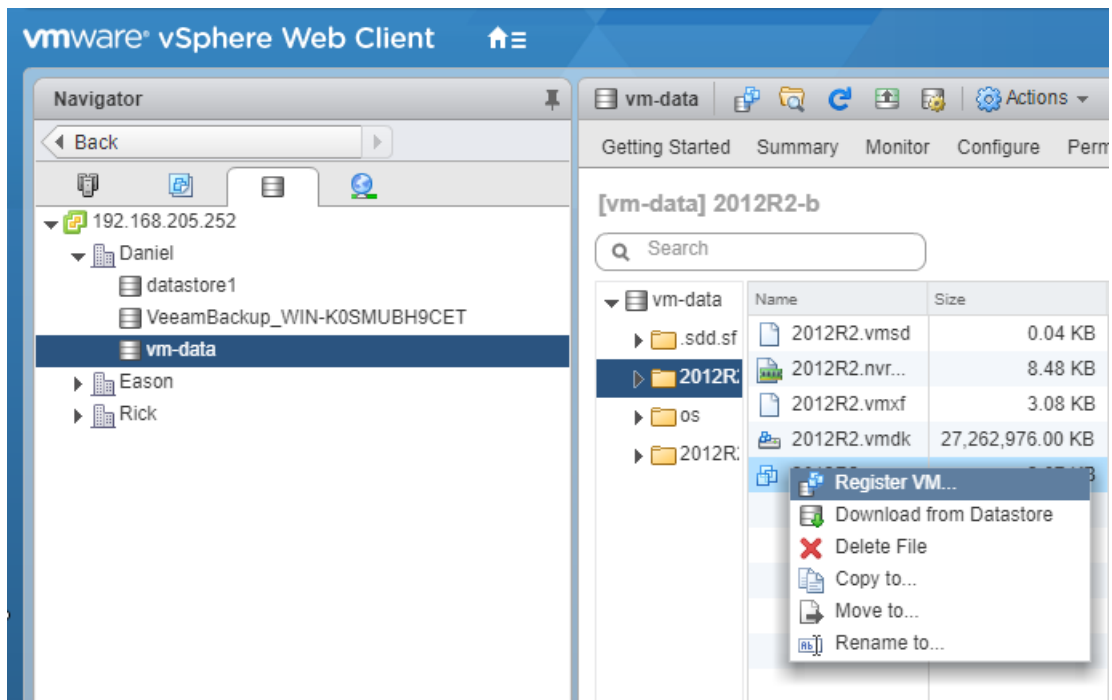


Figure 22 Register the VM

10. Done.

Conclusion

Veeam Backup & Replication is a popular backup and availability solution. Readers can setup the software along with QSAN XCubeSAN series product easily via this application note.

Apply To

- XCubeSAN XS5200 / XS3200 / XS1200 FW 1.2.2 and later

Reference

Veeam Backup & Replication

- <https://www.veeam.com/vm-backup-recovery-replication-software.html>

Appendix

Related Documents

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

- [All XCubeSAN Documents](#)
- [XCubeSAN QIG \(Quick Installation Guide\)](#)
- [XCubeSAN Hardware Owner's Manual](#)
- [XCubeSAN Configuration Worksheet](#)
- [XCubeSAN SANOS 4.0 User's 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://qsan.com/support>
- Via Telephone: +886-2-7720-2118 extension 136
(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