Sangfor HCI Setup Guide

Application Note

November 2024

ANNOUNCEMENT

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PREFACE

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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.

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CAUTION

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

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1. INTRODUCTION TO SANGFOR HCI

Sangfor HCI (Hyper-Converged Infrastructure) is an advanced IT solution that integrates computing, storage, networking, and security into a single platform. This innovative architecture simplifies data center management and enhances operational efficiency by consolidating traditionally separate components into a unified system.

Chapter 2 offers a detailed guide on creating a VM (Virtual Machine) using Sangfor HCI. It walks through the steps for mounting an iSCSI LUN, configuring it as a datastore, and deploying a virtual machine. By utilizing the iSCSI protocol for block-level storage, it enables efficient resource allocation and management in virtualized environments, making it a preferred choice for high-performance storage solutions.

In summary, Sangfor Hyper-Converged Infrastructure represents a comprehensive solution for organizations seeking to modernize their IT environments. Its combination of performance, scalability, cost efficiency, and robust security makes it an attractive option for businesses across various industries looking to streamline operations and support digital transformation initiatives.

1.1. Recommended Storage for Virtualization

Before starting, first understand which storage is suitable for virtualization. The table below summarizes our findings and provides a clear overview of the maximum number of VMs that each storage type can support, regardless of latency. This comprehensive analysis is designed to assist in selecting the most appropriate storage solution based on specific performance needs and workload requirements, ensuring optimal deployment and scalability of virtual environments.

Table 1-1   Storage Options to Enhance VM Performance

STORAGE TYPE	LATENCY THRESHOLD	ADDITIONAL VMS SUPPORTED UNDER LATENCY	NUMBER OF VMS SUPPORTED
NVMe Storage	< 100 µs	50+ VMs	Up to 1,000 VMs
SAS SSD Storage	< 500 µs	20 ~ 30 VMs	Up to 300 VMs
Hybrid Drive Storage	< 1 ms	10 ~ 20 VMs	Up to 150 VMs
SAS HDD Storage	< 50 ms	3 ~ 4 VMs	Up to 15 VMs

In addition, we provide a tool to select the appropriate storage for virtualization. Here are the steps.

1. Use XCalc. tool on the QSAN website to obtain recommended storages.
2. Enter the **Total Usable Capacity Required** and the desired **RAID Level**.
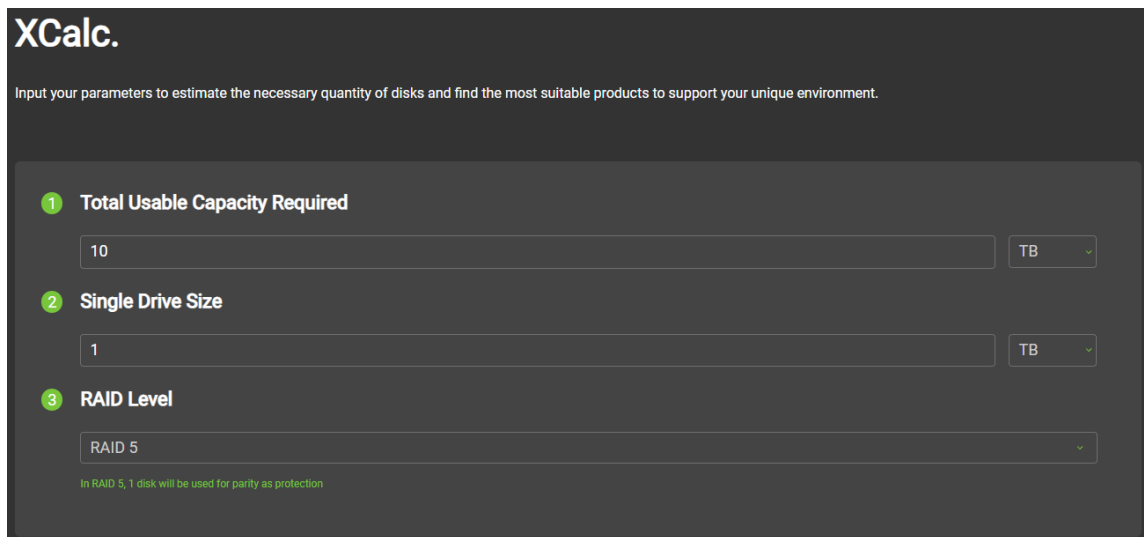
Figure 1-1   Use XCalc. Tool to Obtain Recommended Storages

3. Select the **Virtualization** option.

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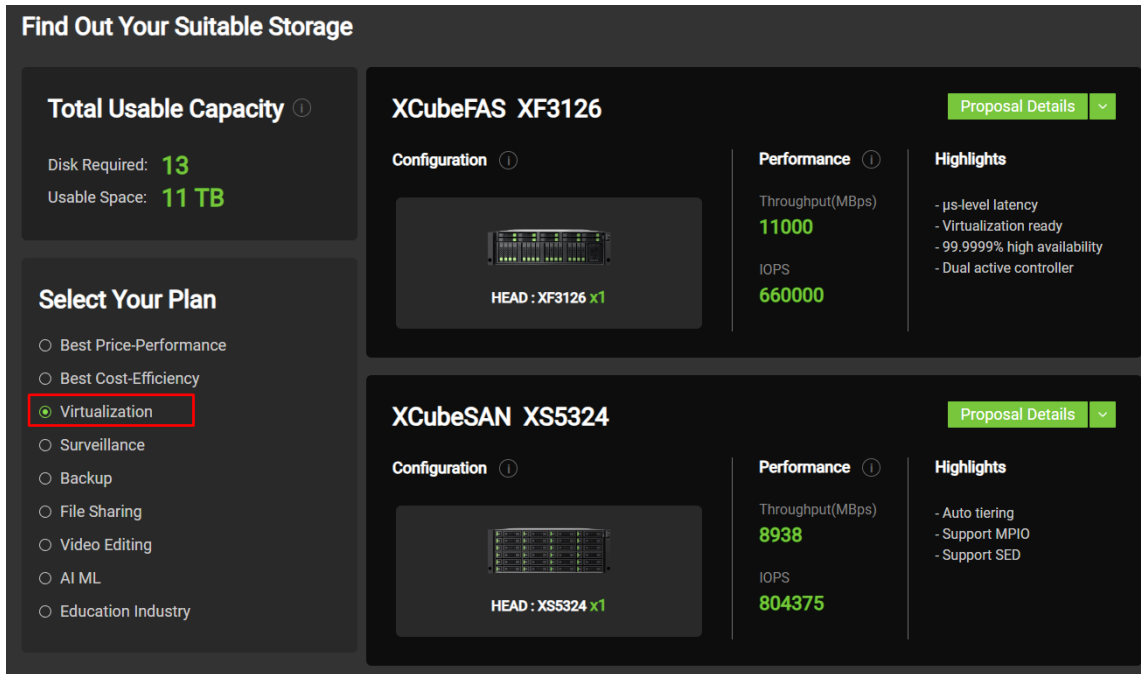
Figure 1-2   Select Virtualization Option

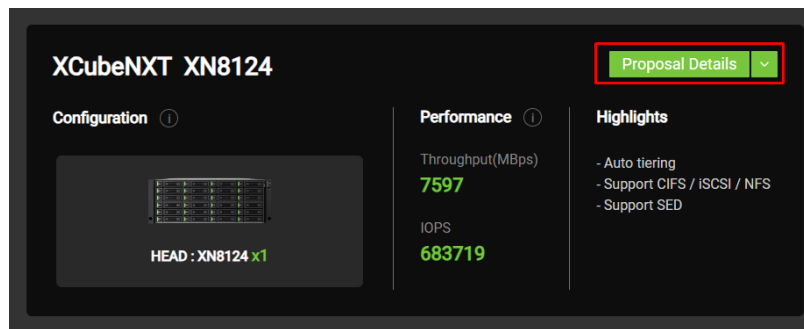4. Select the model and click the **Proposal Details** button to view more.

Figure 1-3   Click Proposal Details Button to View More

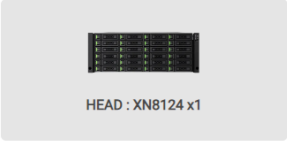5. If necessary, click the **Export the Result** button to export the report.

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Figure 1-4   Click Export Button to Export Result

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2. CONNECT WITH SANGFOR HCI

With the rapid advancement of virtualization technology, enterprises increasingly rely on virtual machines to enhance flexibility and resource utilization within their IT infrastructure. This document outlines the specific steps to mount the iSCSI LUN from QSM to a Windows host and explains how to create a virtual machine using Windows Hypervisor Manager. This process not only improves storage management efficiency but also supports the deployment of virtualized environments. By following the correct procedures, businesses can utilize resources more effectively, achieving sustainable development.

2.1. Configure Steps

In this section we will provide an example of setting up in QSM.

2.1.1. Environment and Topology

Demonstration Environment

- Storage

    - Model: XN8116D
      Memory: 16 GB per controller
      Firmware: QSM 4.1.0
      Data Port IP: 192.168.222.91

- Server

    - Model: ASUS Server
      OS: Windows Server 2016
      Server IP: 192.168.202.121

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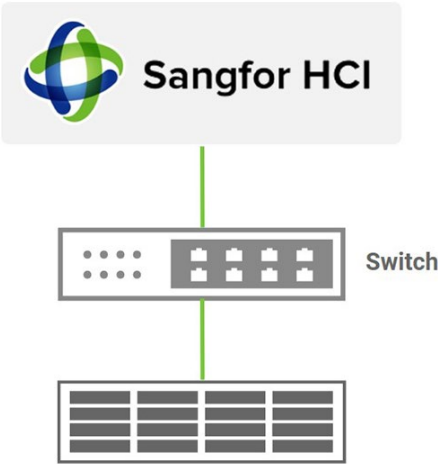
Demonstration Topology

Figure 2-1   Demonstration Topology

2.1.2.   Configure Storage

1.   In XN8116D, create a pool and a block volume, then create a block HostGroup and add the
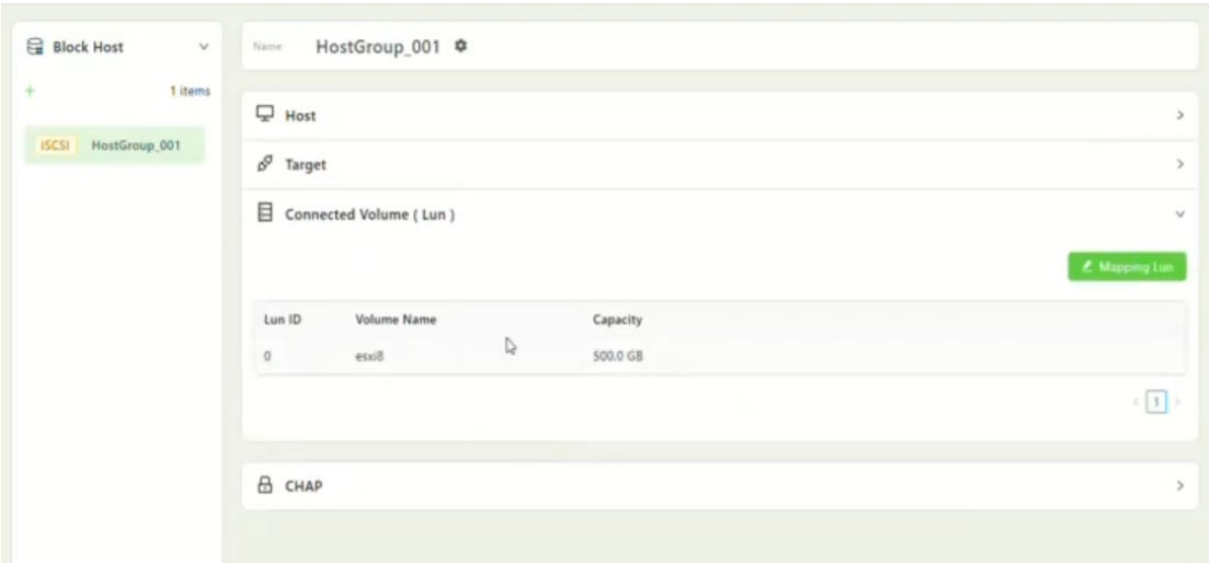   volume to the HostGroup.

Figure 2-2   Create a Block Volume and Add into HostGroup

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2.1.3. Configure Sangfor HCI Server

1. Visit the GUI of Sangfor HCI, navigate to the **Nodes** -> **Physical Interface** tab, and then edit the network IP address.
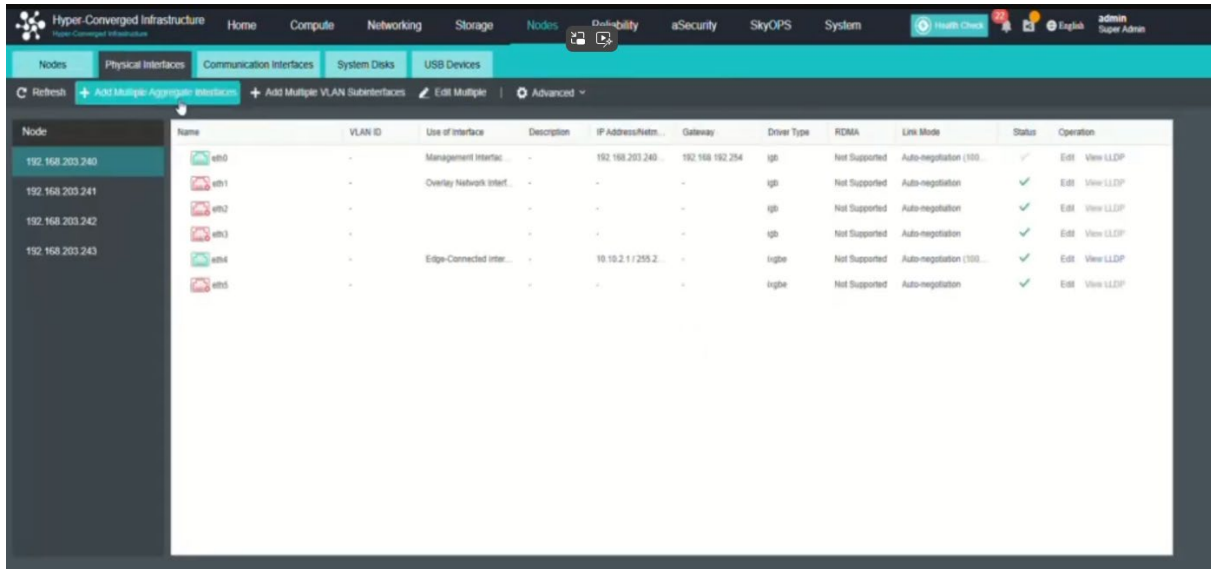

Figure 2-3   Edit IP Address in Sangfor HCI Server

2. Go to **Storage** -> **Other Datastores** -> **iSCSI Servers** tab, then add a new iSCSI server to discover the NAS iSCSI LUN.
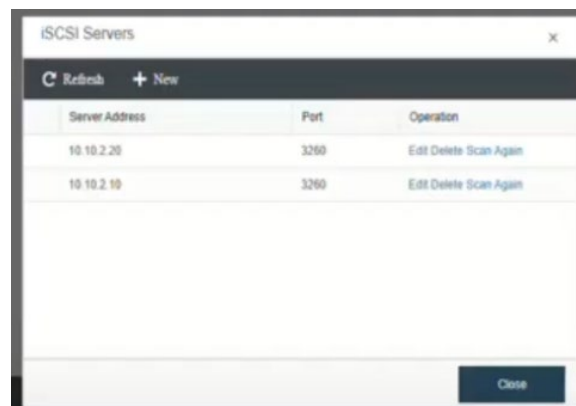

Figure 2-4   Discover iSCSI LUN

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3. Enter the IP address of storage, if the CHAP option is already configured in the hostgroup of storage, please check the **One-Way CHAP** item, then enter **Username** and **Password**.
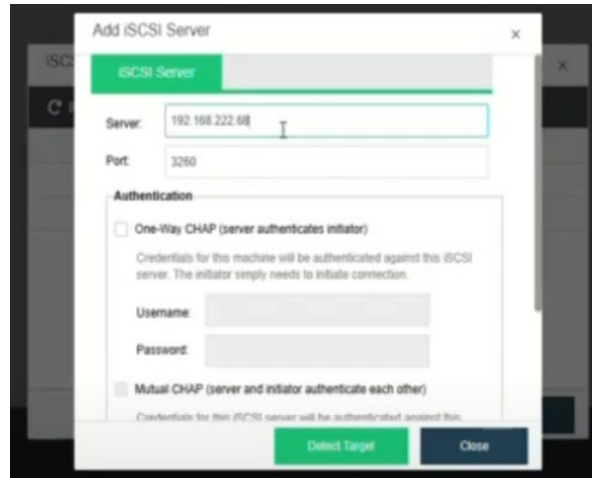

Figure 2-5   Add iSCSI Server

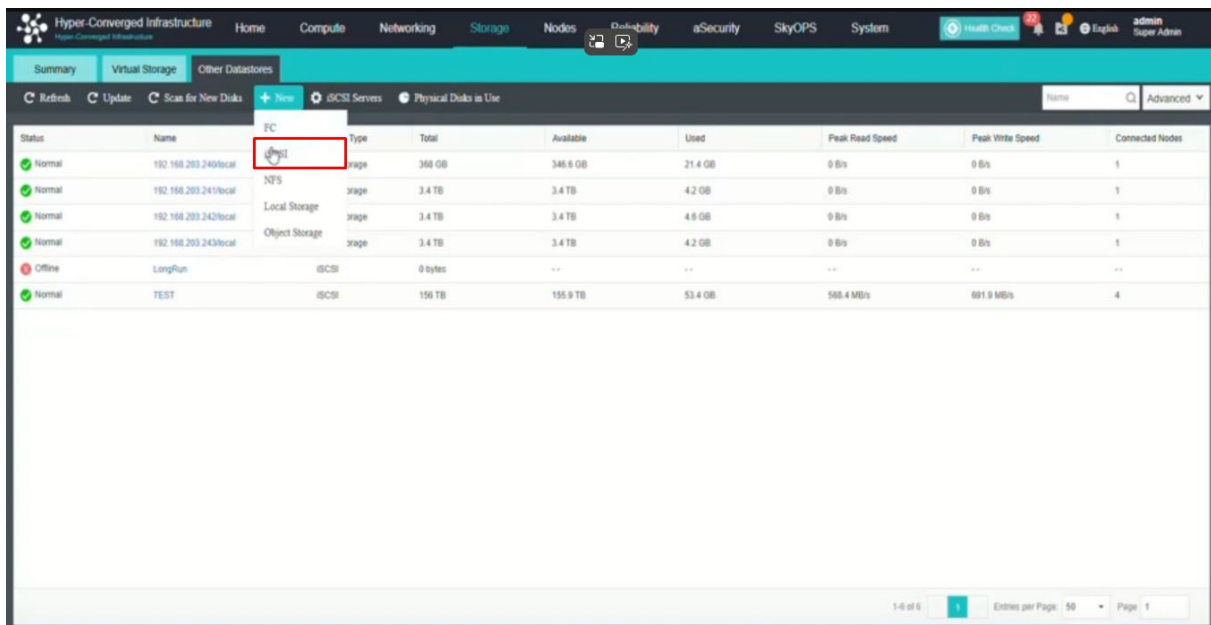4. Click the **New** item and select the **iSCSI** option to create a new datastore.

Figure 2-6   Add New Datastore Step 1

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5. Select the iSCSI LUN which just discover, then select the controller node and type a name as "SangforTest1".
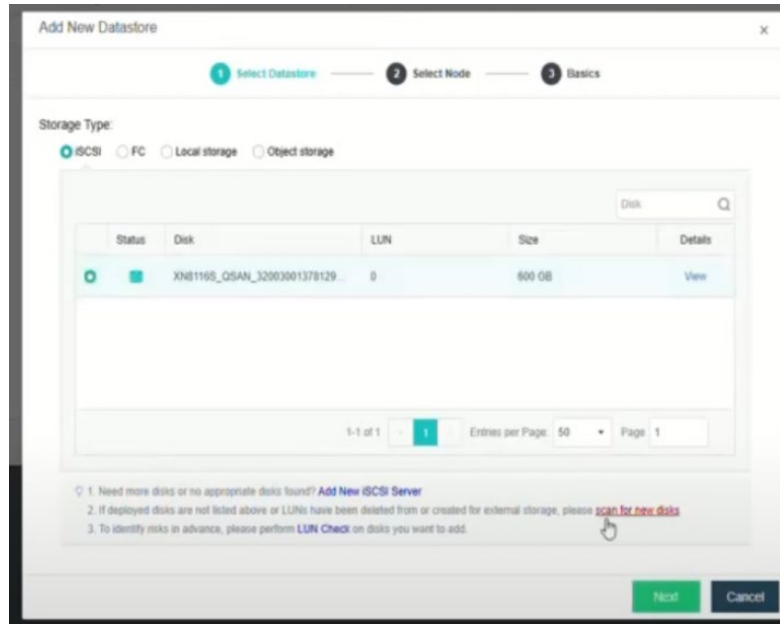

Figure 2-7   Add New Datastore Step 2

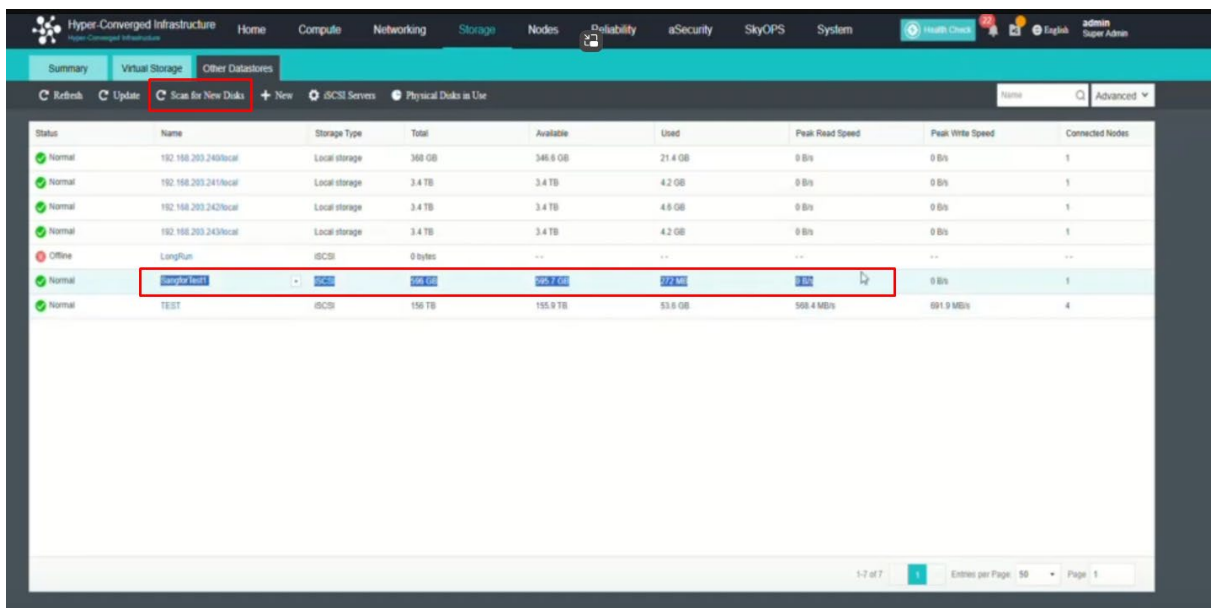6. Click the **Scan for New Disks** item, then you can check the datastore which just created.

Figure 2-8   Scan for the New Disk

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7. Go to the **Compute** -> **Sangfor Technologies HCI** tab, and click the **Create VM** function.
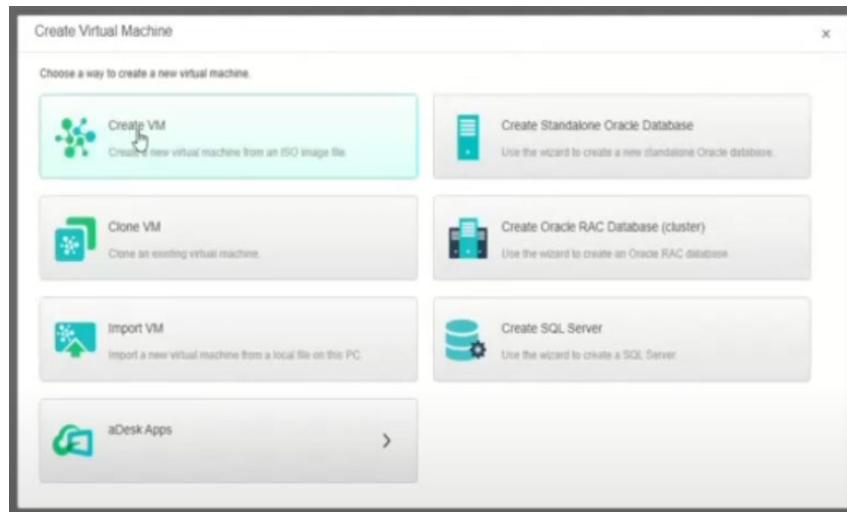

Figure 2-9   Create VM Step 1

8. Enter a new virtual machine name and select the Datastore and Guest OS, then set the hardware configuration and load ISO image file from the local drive.
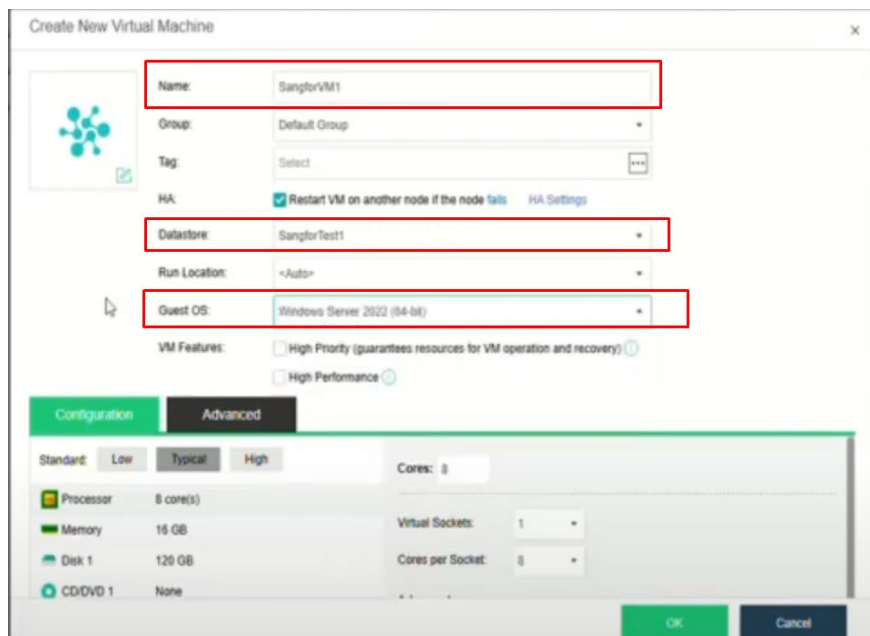

Figure 2-10   Create VM Step 2

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9. Click the **OK** button to create a virtual machine, then select it and click the **Power On** button.
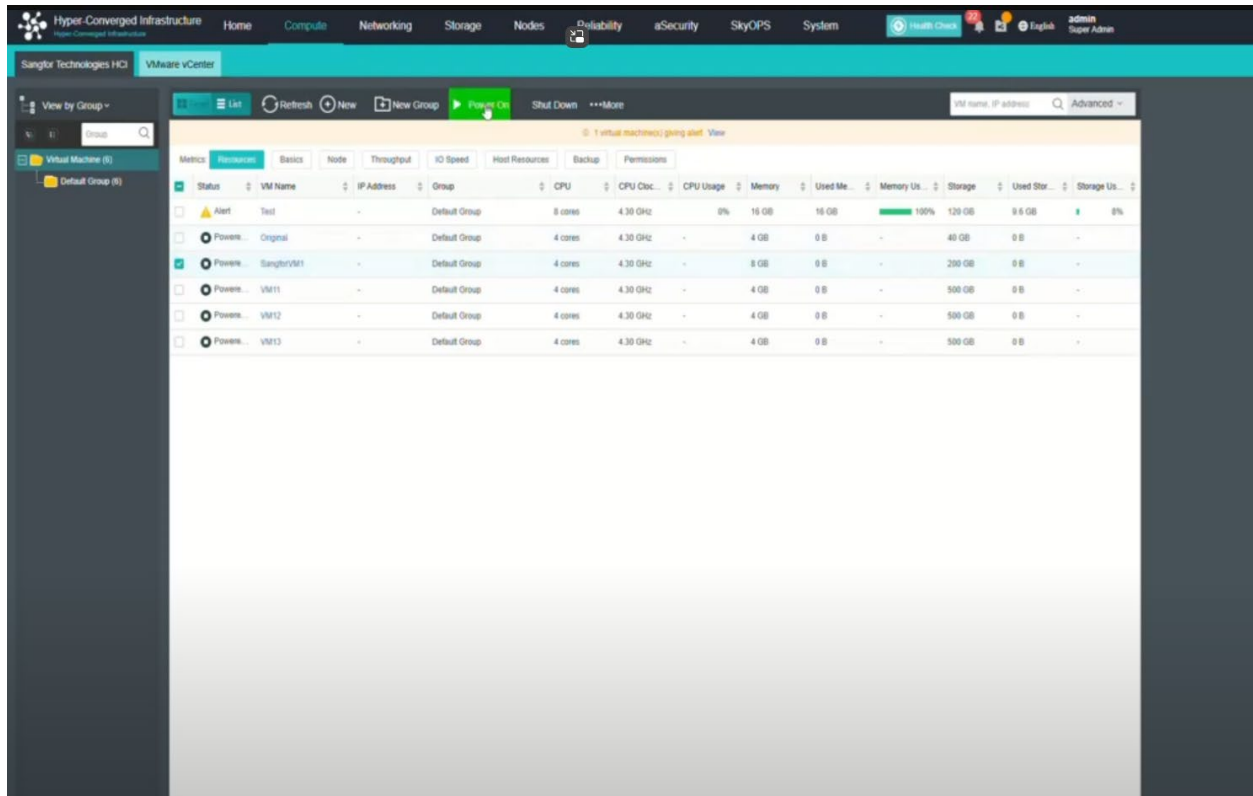

Figure 2-11   Create VM Step 3

10. Now you can install the guest OS from ISO image file and start your virtualization application.

2.2.   Conclusion

In this chapter, we will guide you to create an iSCSI LUN using QSAN storage managed by QSM and mount it to Sangfor HCI as a datastore. The process begins with configuring the iSCSI LUN on the XCubeNXT to ensure optimal performance and reliability. After the LUN is set up, it will be integrated into the Sangfor HCI system as a datastore. Finally, we will create a virtual machine to demonstrate the seamless interoperability between QSAN storage and Sangfor HCI, providing a powerful and efficient virtual environment.

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2.3. Appendix

2.3.1. Apply To

▪ QSM firmware 4.1.0 and later

2.3.2. Reference

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▪ QSM 4 Software Manual

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