# QSAN Compatibility Test
# ISCSI Test Report

Sangfor Technologies

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# Overview

## 1.1 Test Background

Currently, there are various hardware manufacturers in the market, and their performance on servers depends on the hardware and hyper-convergence software. Providing hardware import adaptation can meet the applicable scenarios of HCI versions on different server hardware.

### 1.1.1 Purpose of the test

Import QSAN compatibility test iSCSI storage .

Added new compatible hardware adaptation to enhance the applicable scenarios of the HCI version and strengthen product competitiveness.

### 1.1.2 Product Information

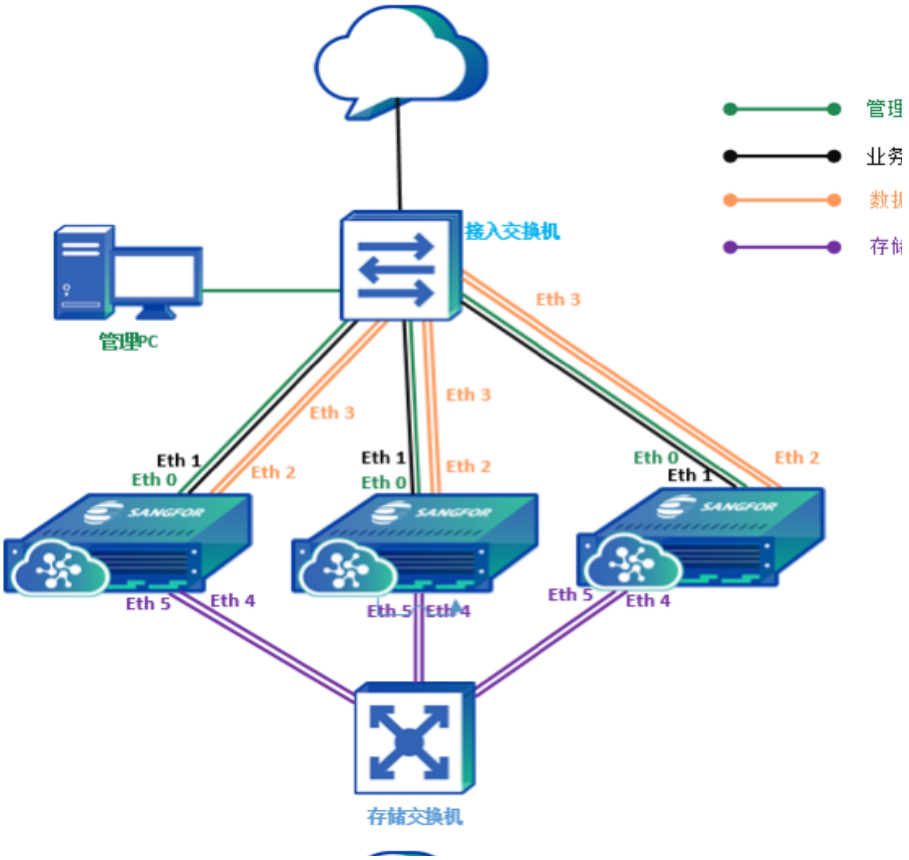
| | |
|---|---|
| **Product Name** | QSAN compatibility test iSCSI storage |
| **Server Type** | X86 |

### 1.1.3 Testers

| No. | Name | Department | Content |
|---|---|---|---|
| 1 | Fan Jiaying | Sangfor | Test |
| 2 | Xu Yongchang | Sangfor | Development |

# Test Preparation

## 1.2 Environment topology diagram




## 1.3 Test environment

| | |
|---|---|
| Server Model | Z9PR-D12 Series |
| Server Type | x86_64 |
| Server | |

| | |
|---|---|
| Manufacturers | |
| Motherboard model | Z9PR-D12 Series (version: Rev 1.xx) |
| BIOS version | 5103 |
| BMC version | |
| CPU | Intel(R) Xeon(R) CPU E5-2620 0 @ 2.00GHz |
| memory stick | "dev_name": "DIMM_A1",<br>"vendor": "Transcend",<br>"model": "TS1GKR72V3HL",<br>"capacity": "8 GB",<br>"specification": "DDR3",<br>"speed": "1333 MT/s",<br>"slot": "DIMM_A1",<br>"height": "N/A","date": "N/A" |
| OS Disk | "dev_name": "sda",<br>"model": "ST500DM009-2DM14C",<br>"vendor": "SEAGATE",<br>"serial_number": "Z4X0ZKYB",<br>"capacity": "500 GB",<br>"sector": "512",<br>"firmware_version": "CC46",<br>"interface_type": "sata", |
| ISCSI | "model": "XN5112D",<br>"vendor": "QSAN",<br>"serial_number": "201300137814E380",<br>"capacity": "322 GB",<br>"firmware_version": "N/A",<br>"es_type": "iscsi"<br><br>"model": "XN5112D", |

| | |
|---|---|
| | "vendor": "QSAN",<br>"serial_number": "201300137814E380",<br>"capacity": "322 GB",<br>"firmware_version": "N/A",<br>"es_type": "iscsi" |
| NIC Configuration | "dev_name": "eth0",<br>"model": "Intel Corporation 82574L Gigabit Network Connection [8086:10d3]",<br>"controller_chip_model": "Intel Corporation 82574L Gigabit Network Connection [8086:10d3]",<br>"subsystem": "ASUSTeK Computer Inc. Motherboard [1043:8369]",<br>"firmware_version": "2.1-3",<br>"driver_version": "e1000e 3.2.6-k",<br>"pcieid": "[8086:10d3]",<br>"subsystem_pid": "[1043:8369]",<br>"vendor": "Intel Corporation",<br>"interface_type": "electrical",<br>"link_status": "no",<br>"max_speed": "1000",<br><br>"dev_name": "eth1",<br>"model": "Intel Corporation 82574L Gigabit Network Connection [8086:10d3]",<br>"controller_chip_model": "Intel Corporation 82574L Gigabit Network Connection [8086:10d3]",<br>"subsystem": "ASUSTeK Computer Inc. Motherboard [1043:8369]",<br>"firmware_version": "2.1-3",<br>"driver_version": "e1000e 3.2.6-k",<br>"pcieid": "[8086:10d3]", |

"subsystem_pid": "[1043:8369]",
"vendor": "Intel Corporation",
"interface_type": "electrical",
"link_status": "no",
"max_speed": "1000",

"dev_name": "eth2",
"model": "Intel Corporation 82574L Gigabit Network Connection [8086:10d3]",
"controller_chip_model": "Intel Corporation 82574L Gigabit Network Connection [8086:10d3]",
"subsystem": "ASUSTeK Computer Inc. Motherboard [1043:8369]",
"firmware_version": "2.1-3",
"driver_version": "e1000e 3.2.6-k",
"pcieid": "[8086:10d3]",
"subsystem_pid": "[1043:8369]",
"vendor": "Intel Corporation",
"interface_type": "electrical",
"link_status": "no",
"max_speed": "1000",

"dev_name": "p_eth3",
"model": "Intel Corporation 82574L Gigabit Network Connection [8086:10d3]",
"controller_chip_model": "Intel Corporation 82574L Gigabit Network Connection [8086:10d3]",
"subsystem": "ASUSTeK Computer Inc. Motherboard [1043:8369]",
"firmware_version": "2.1-3",
"driver_version": "e1000e 3.2.6-k",

| | |
|---|---|
| | "pcieid": "[8086:10d3]",<br>"subsystem_pid": "[1043:8369]",<br>"vendor": "Intel Corporation",<br>"interface_type": "electrical",<br>"link_status": "yes",<br>"max_speed": "1000", |
| HBA 卡 | 无 |
| Raid Configuration | "dev_name": "0000:06:00.0",<br>"model": "Intel(R) Rapid Storage Technology enterprise",<br>"controller_chip_model": "N/A",<br>"card_model": "ASUSTeK Computer Inc. Device [1043:84ef]",<br>"is_jbod": "",<br>"firmware_version": "3.7.0.1049",<br>"fw_pkg_version": "",<br>"bios_version": "N/A",<br>"driver_version": "isci 1.2.0",<br>"pcieid": "[8086:1d6b]",<br>"subsystem_pid": "[1043:84ef]",<br>"vendor": "Intel Corporation" |
| Server startup mode | UEFI |
| HCI Version | 6.10.0_R2 |
| Patch Pack | sp-HCI-6.10.0_R2-x86-col-20250716.pkg |

## 1.4 Testing Tools

| name | use | illustrate |
|---|---|---|

| | | |
|---|---|---|
| SPEC CPU 2006 | The SPEC CPU 2006 benchmark is SPEC's newest, industry-standard CPU benchmark suite; the SPECint2006 benchmark includes 12 different tests, and the SPECfp2006 benchmark includes 19 different tests. SPEC designed this suite to provide a standardized, computationally intensive, high-performance cross-hardware CPU benchmark. | The test machine needs to install numactl |
| Unixbench 5.1.3 | UnixBench is a Unix-based system benchmark suite. Designed to provide a basic set of metrics for Unix-like systems, UnixBench uses multiple tests to assess various aspects of system performance. Each test is scored, along with an overall score, allowing for easy comparison. | |
| Stream 5.1.0 | It is used to test the memory bandwidth of high-performance computers by generating memory read and write operations in four different modes (Copy, Scale, Add, and Triad) . | |
| Fio | Fio is a very powerful IO testing software. In addition to being able to run on a local machine to test the IO (disk) performance of the local machine, it also provides the ability to simulate network applications. | |

# Test content

## 1.5 Overall test situation

tests iSCSI storage from a functional perspective and evaluates the compatibility between iSCSI storage and HCI.

## 1.6 Test Results

| hardware | Subscene | Secondary sub-scene | Test results | Remark |
|---|---|---|---|---|
| iSCSI storage | Function | [HCI&VMP]_External storage add and delete virtual machine test | pass | |
| | | [HCI]_iscsi ordinary virtual machine, non-master hot migration to iscsi storage that is not accessible to the host and to the cluster | pass | |
| | | iSCSI storage to create pre-allocated virtual machines | pass | |
| | | iSCSI storage multipath health check | pass | |
| | | iSCSI storage has disabled unmap, delete 1G file | pass | |
| | | iSCSI storage speed test | pass | |
| | | iSCSI storage status detection | pass | |
| | | iSCSI storage hardware acceleration | pass | |

| | | | | |
|---|---|---|---|---|
| | | detection | | |
| | | iSCSI storage virtual machine enables space recovery, deletes files and sends discard | pass | |
| | | Deleting iSCSI storage VMs in batches | pass | |
| | | iSCSI expansion test | pass | |
| | | iSCSI virtual machine batch hot migration across hosts and storage | pass | |
| | | The iSCSI virtual machine is resumed after being suspended, and the virtual machine is normal | pass | |
| | | Creating a snapshot of a virtual machine on iSCSI storage | pass | |
| | | iSCSI storage virtual machine hot migration operation location | pass | |
| | | Deleting snapshots of iscsi storage virtual machines | pass | |
| | | Creating snapshots of iscsi virtual machines in batches | pass | |
| | | In a three-host scenario, the non-master controller loses power. ISCSI storage virtual machine HA | pass | |
| | | Restoring after a primary path failure | pass | |

| | | | | |
|---|---|---|---|---|
| | | Configure the path strategy as 8 strategies in sequence, click the path name details | pass | |
| | | Modify the storage adapter IQN and add iSCSI storage | pass | |
| | | Recovery after all paths fail | pass | |
| | | Delete 10G file and automatically unmap-1M | pass | |
| | | Delete iSCSI storage and collect storage status | pass | |
| | | Deleting iSCSI storage test | pass | |
| | | One-way CHAP authentication test | pass | |
| | | Bidirectional CHAP authentication test | pass | |
| | | Obtain information about the host's external storage device through SNMP on the host's backend | pass | |
| | | Storage page test | pass | |
| | | Have multiple external storages, delete the iSCSI server. | pass | |
| | | Have multiple external storages, update the storage status | pass | |
| | | Have multiple external storages, restart the host. | pass | |
| | | Have multiple external storages,rescan the iSCSI server. | pass | |

| | | | | |
|---|---|---|---|---|
| | | Have many types of storage, iSCSI storage | pass | |
| | | Enable or disable the main path | Not\ Modify | 6100 removed this enable/disable |
| | | Enable or disable some paths | Not\ Modify | 6100 removed this enable/disable |
| | | Enable or disable non-primary paths | Not\ Modify | 6100 removed this enable/disable |
| | | Enable or disable non-preferred paths | Not\ Modify | 6100 removed this enable/disable |
| | | Enable or disable the preferred path | Not\ Modify | 6100 removed this enable/disable |

| | | | | |
|---|---|---|---|---|
| | | iSCSI storage has been added, storage adapter IQN | pass | |
| | | iSCSI storage has been added, update storage status | pass | |
| | | All hosts and storage are connected normally. Check the basic storage information. | pass | |
| | | Batch edit the primary and backup paths of all host multipath policies | pass | |
| | | Batch edit all host multipath policies to group by priority, load balancing, and response time | pass | |
| | | Batch edit the multipathing policy for all hosts to group by priority, load balancing, and round-robin. | pass | |
| | | Batch edit all host multipath policies to group by priority, load balancing, and minimum number of connections | pass | |
| | | Batch edit the multipathing policy for all hosts to group by name, load balancing, and round-robin. | pass | |
| | | Batch edit the multipathing policy of all hosts to load balancing-response time | pass | |
| | | Batch edit the multipathing policy of all hosts to load balancing-round robin | pass | |

| | | | | |
|---|---|---|---|---|
| | | Batch edit all hosts' multipathing policy to load balancing - minimum number of connections | pass | |
| | | Batch edit all host multipath policies to the preferred path and use the default primary path | pass | |
| | | If the file size is larger than 128M, delete the file | pass | |
| | | No CHAP authentication test | pass | |
| | | Construct packet loss between the ISCSI server and the host, and check the alarm information | pass | |
| | | The template is located in iSCSI storage, and the template is deployed in batches to the current storage. | pass | |
| | | Deploy the template to the current storage | pass | |
| | | Add iSCSI storage test | pass | |
| | | Add iscsi storage and collect iscsi storage status information | pass | |
| | | Add multiple iSCSI storage | pass | |
| | | After disabling all paths, check the results | Not\ Modify | 6100 removed this enable/disa |

| | | | | |
|---|---|---|---|---|
| | | | | ble |
| | | Remove the iSCSI disk and rediscover the disk | pass | |
| | | Edit iSCSI Storage Test | pass | |
| | | Edit the access connection relationship of ISCSI storage | pass | |
| | | Edit the access connection relationship of the iscsi storage and cancel access to a node | pass | |
| | | The virtual machine is located on iSCSI storage and is cloned to the current storage | pass | |
| | | The virtual machines are located in iSCSI storage and are cloned in batches to the current storage. | pass | |
| | | Testing virtual machines using iSCSI disks | pass | |
| | | Recovery after partial path failure | pass | |
| | | Restoring after a non-primary path failure | pass | |
| | | Restoring after a non-preferred path failure | pass | |
| | | Recovery after a preferred path failure | pass | |

# Test Summary

This test tested QSAN compatibility iSCSI storage import from a functional perspective, and the summary is as follows:

Function: Mainly covers basic functions.

In summary, after testing, the hardware is compatible with HCI version 6.10.0R2 and the sp-HCI-6.10.0_R2-x86-col-20250716.pkg patch package .