Huawei Storage Certification Training

HCIA-Storage

HyperSnap

Scenario-based Practice

(For Trainees)



HUAWEI TECHNOLOGIES CO., LTD.

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**Huawei Certification System**

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Huawei offers three levels of certification: Huawei Certified ICT Associate (HCIA), Huawei Certified ICT Professional (HCIP), and Huawei Certified ICT Expert (HCIE).

Huawei Certified ICT Associate-Storage (HCIA-Storage) is designed for Huawei engineers, students and ICT industry personnel. HCIA-Storage covers storage technology trends, basic storage technologies, common advanced storage technologies, business continuity solutions for storage and storage system O&M management.

The HCIA-Storage certificate introduces you to the storage industry and markets, helps you understand sector innovation, and makes sure you stand out among your industry peers.



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# References and Tools

## References

The commands, documents, and document paths listed in this document are for reference only. The actual commands, documents, and document paths may vary.

Huawei OceanStor Dorado V6 Product Documentation



The specifications of HyperSnap vary by product. For details, see the product documentation of the desired product model. You can log in to Huawei's technical support website (<https://support.huawei.com/enterprise/>) and use the search box to find and download the desired document or tool.

## Software Tools

PuTTY



You are advised to use the open-source software PuTTY to log in to a terminal. You can visit its public website (putty.org) to find and download the desired document or tool.

## Version Description

| **Name** | **Version** | **Quantity** | **Remarks** |
| --- | --- | --- | --- |
| Storage device | Huawei OceanStor Dorado V6 | 1 |  |
| Windows OS | Windows Server 2012, Windows Server 2016 | -- | Recommended version |
| Linux OS | SUSE, Red Hat, CentOS, EulerOS | -- | Recommended version |

# Scenario-based Practice on HyperSnap

## Course Overview

This course provides case study and scenario-based practices to help trainees consolidate their knowledge on the use of HyperSnap. HyperSnap is a common advanced storage technology. Before using HyperSnap, you are advised to learn how to configure basic storage services.

## Objectives

* To be able to configure a snapshot of a LUN.
* To be able to roll back data using a snapshot.

## Case Background

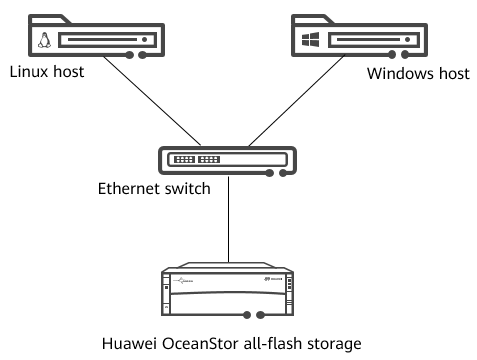


Cases in this document are examples only. The actual configurations may vary according to actual environments. For details, see the corresponding product documentation. The names of storage pools and LUNs involved in this document can be customized (for example, LUN \_XXX) for different trainees if they use the same device.

An enterprise has an OceanStor all-flash storage device. To shorten the backup window, the enterprise purchased HyperSnap.

Help the storage engineers become familiar with operations related to HyperSnap.

The following figure shows the company's live network topology.



Network topology

## Tasks

### Scenario: Using HyperSnap

Background

A 5 GB LUN named **LUN\_SOUR** has been created and mapped to a host. A file system has been created for **LUN\_SOUR** on the host and has been mounted. Two text files **A.txt** and **B.txt** containing characters have been written to **LUN\_SOUR**.

Question

What are COW and ROW?

Task 1: Configuring a Snapshot of a LUN

After a snapshot is created for a source LUN, the snapshot stores that LUN's data as of the time the snapshot was created.

Draw a flowchart for configuring HyperSnap.

Demonstrate how to configure HyperSnap.

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[Suggested Procedure]

For details about how to draw the flowchart, see **Configure** > **HyperSnap Feature Guide** > **Configuring and Managing Snapshots of LUNs** > **Configuring a Snapshot** > **Flowchart** in the product documentation.

View HyperSnap license information.

Before configuring HyperSnap, ensure that permission to use HyperSnap has been granted. Help the engineer check the HyperSnap license information.

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[Suggested Procedure]

For details about operations on DeviceManager, see **Configure** > **HyperSnap Feature Guide** > **Configuring and Managing Snapshots of LUNs** > **Configuring a Snapshot** > **Checking the License** in the product documentation.

For details about operations on the CLI, see **Reference** > **Command Reference** > **License Management Commands** > **license** > **show license** in the product documentation.

Create a snapshot.

Use **LUN\_SOUR** as the source LUN. Help the engineer create a snapshot named **Snap01** for **LUN\_SOUR** and set the rollback rate to **Highest**.

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[Suggested Procedure]

For details about operations on DeviceManager, see **Configure** > **HyperSnap Feature Guide** > **Configuring and Managing Snapshots of LUNs** > **Configuring a Snapshot** > **Creating a Snapshot** in the product documentation.

For details about operations on the CLI, see **Reference** > **Command Reference** > **Data Protect Management Commands** > **lun\_snapshot** > **create snapshot general** in the product documentation.

Question

How can a snapshot of a LUN be used to recover data without saving all copies of the source LUN?

Task 2: Rolling Back Data Using a Snapshot

After configuring the snapshot of the LUN, the engineer mistakenly modifies data on the source LUN. In this case, the engineer needs to roll back data on the source LUN using the snapshot. Modify the files in **LUN\_SOUR** and explain how to roll back the data using the snapshot.

Check the snapshot status.

Before the rollback, check whether the snapshot is activated.

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[Suggested Procedure]

For details about operations on DeviceManager, see **Configure** > **HyperSnap Feature Guide** > **Configuring and Managing Snapshots of LUNs** > **Managing Snapshots of LUNs** > **Viewing Snapshots** in the product documentation.

For details about operations on the CLI, see **Reference** > **Command Reference** > **Data Protect Management Commands** > **lun\_snapshot** > **show snapshot available\_snapshot** in the product documentation.

Cancel the mapping between the source LUN and the host.

To ensure data consistency, stop host services before the rollback. Help the engineer cancel the mapping between **LUN\_SOUR** and the host.

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[Suggested Procedure]

For details, see **Configure** > **Basic Storage Service Configuration Guide** > **Managing Basic Storage Services** > **Managing LUNs** > **Unmapping a LUN** in the product documentation.

Start data rollback.

Use **Snap01** to roll back data on **LUN\_SOUR**. After the rollback is complete, map **LUN\_SOUR** to the host again, mount the file system, and check whether the data on **LUN\_SOUR** has been rolled back to the time point when the snapshot was activated.

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[Suggested Procedure]

For details about operations on DeviceManager, see **Configure** > **HyperSnap Feature Guide** > **Configuring and Managing Snapshots of LUNs** > **Managing Snapshots of LUNs** > **Rolling Back a Snapshot** in the product documentation.

For details about operations on the CLI, see **Reference** > **Command Reference** > **Data Protect Management Commands** > **lun\_snapshot** > **change snapshot restore** in the product documentation.

Question

For a writable snapshot, if data on the snapshot LUN is modified, can the snapshot LUN be used to restore data on the source LUN?

Task 3: Managing Snapshots

After configuring the snapshot and rolling back data using the snapshot, the engineer wants to learn about routine snapshot management operations, such as managing and modifying snapshot properties. Help the engineer become familiar with these operations.

Modify the snapshot.

View the snapshot information, change the snapshot name to **Snap\_Test**, and set the rollback rate to **Low**.

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[Suggested Procedure]

For details about operations on DeviceManager, see **Configure** > **HyperSnap Feature Guide** > **Configuring and Managing Snapshots of LUNs** > **Managing Snapshots of LUNs** > **Modifying a Snapshot** in the product documentation.

For details about operations on the CLI, see **Configure** > **HyperSnap Feature Guide** > **Configuring and Managing Snapshots of LUNs** > **Managing Snapshots of LUNs** > **Modifying a Snapshot** in the product documentation.

Delete the snapshot.

After completing the preceding operations, delete the snapshot.

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[Suggested Procedure]

For details about operations on DeviceManager, see **Configure** > **HyperSnap Feature Guide** > **Configuring and Managing Snapshots of LUNs** > **Managing Snapshots of LUNs** > **Deleting a Snapshot** in the product documentation.

For details about operations on the CLI, see **Reference** > **Command Reference** > **Data Protect Management Commands** > **lun\_snapshot** > **delete snapshot** in the product documentation.

Discussion

How can the Huawei OceanStor all-flash storage system implement lossless performance using the ROW technology?

## Summary and Conclusion

My Opinion:

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