Introduction to Huawei Storage Planning and Design Tool (LLDesigner)

Foreword

- This course describes how to use LLDesigner, a Huawei storage planning and design tool, to plan and design enterprise storage, mass data storage, and edge data storage[Note 1].

Note 1: LLDesigner supports the following storage products: OceanStor Dorado series, OceanStor converged storage series, OceanProtect series, OceanStor Pacific series, OceanStor 100D series, FusionStorage series, and FusionCube series.

Objectives

- Upon completion of this course, you will be able to understand:
  - Enterprise storage planning and design
  - Mass data storage planning and design
  - Edge data storage planning and design

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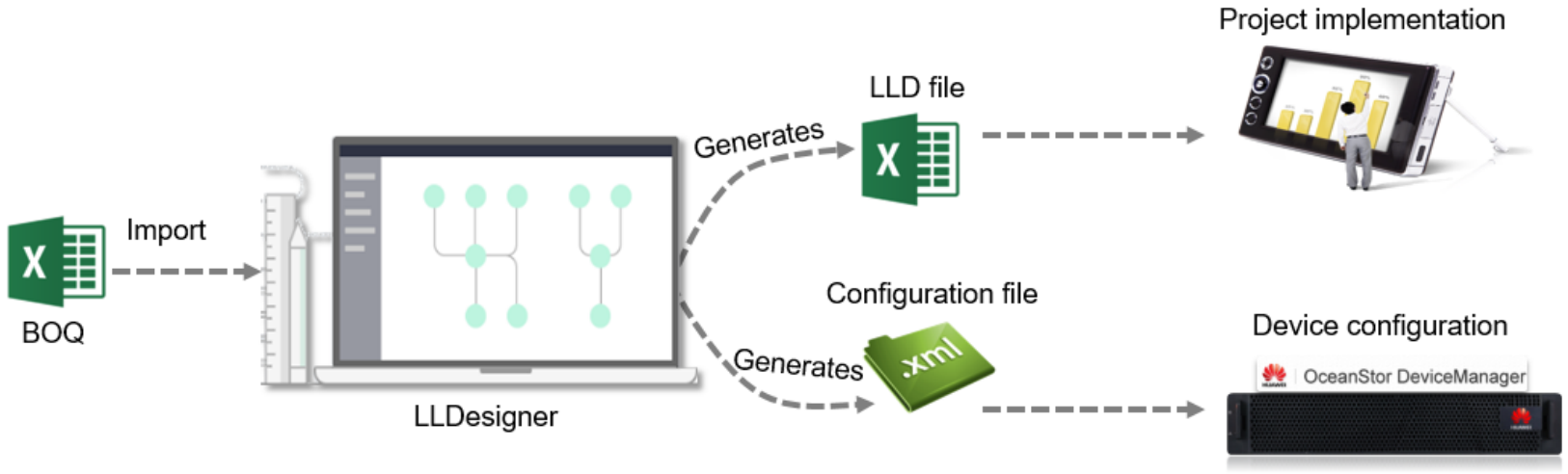
LLDesigner Overview

LLDesigner provides functions such as hardware configuration, device networking, and resource provisioning to quickly complete product planning and design.



Wizard-based

Provides guidance for the entire process from networking to service planning.

Visualized

Provides Web-based hardware configuration, device networking, and resource provisioning.

Standardized

Provides a unified LLD file, simplifies project parameter configuration, and shortens the project planning and design duration by **90%**.

Automated

Quickly generates LLD files and offline configuration files. Basic service configuration is completed within **10 minutes**.

LLDesigner Overview

① Three domains

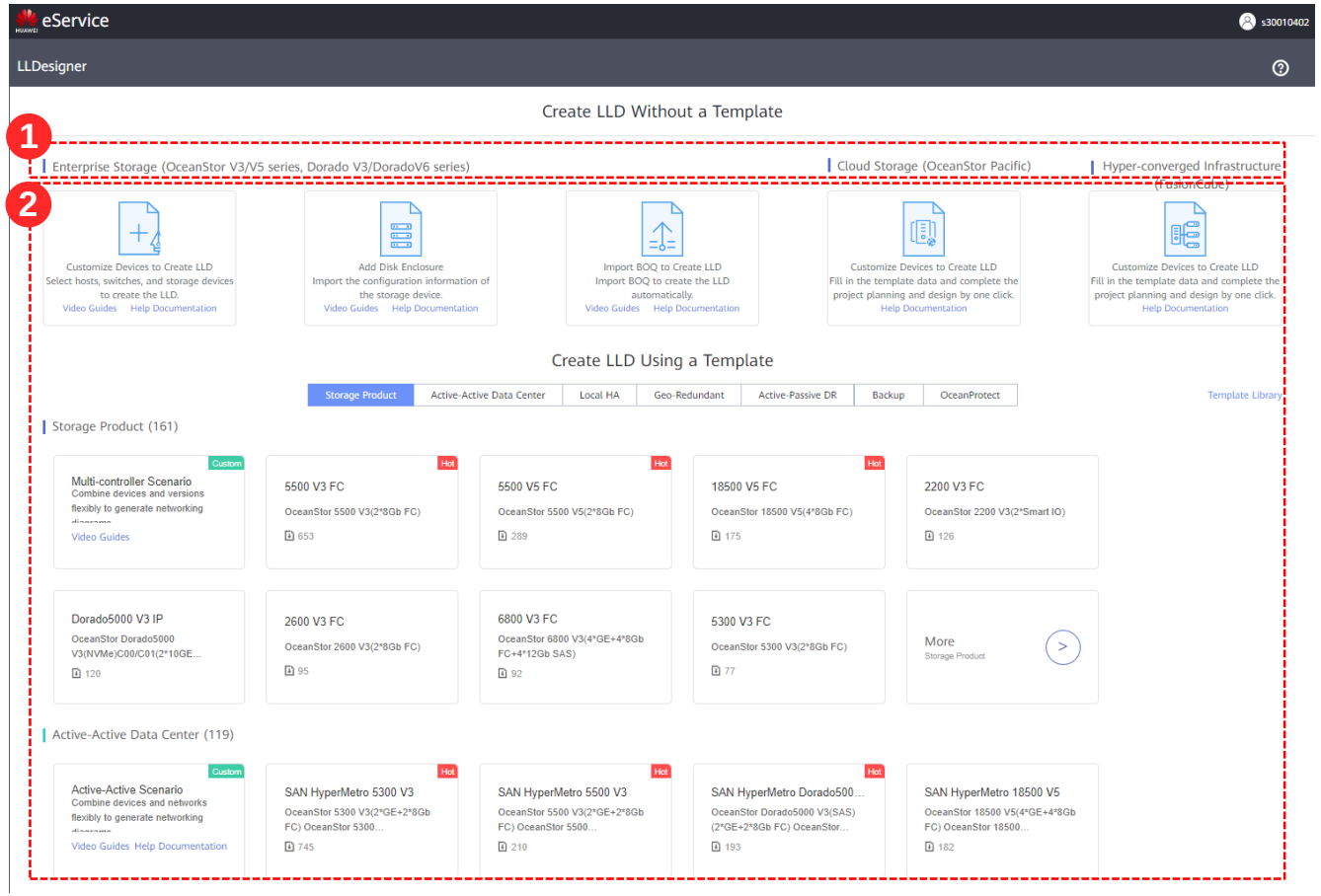
- Enterprise storage
- Mass data storage
- Edge data storage

② Four creation modes

- Custom device
- Adding disk enclosures
- BOQ import
- Template

③ Use permission

- Huawei engineers (application not required)
- Partner engineers
- Device users
- Partner users



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Enterprise Storage Planning and Design

For enterprise storage, LLDesigner covers four scenarios: directly creating LLD, creating LLD by importing a BOQ, creating active-active LLD, and creating multi-controller LLD.

1. Directly creating LLD

Features: Users can flexibly select devices, such as hosts, switches, and storage devices, to create LLD.

Suitable for: common scenarios

2. Creating LLD by importing a BOQ

Features: A BOQ is imported, achieving automatic device selection, automatic card insertion, loop configuration, and cable connection.

Suitable for: BOQ device networking

3. Creating active-active LLD

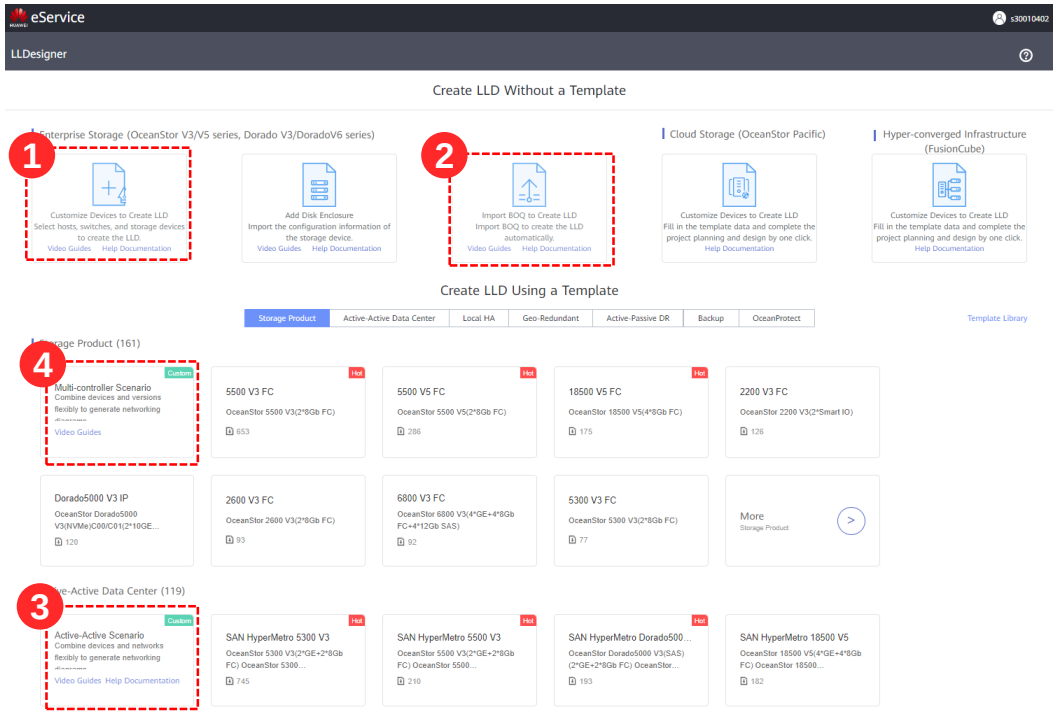
Feature: Users can flexibly specify device and network parameters and networking diagrams are automatically generated.

Suitable for: active-active networking

4. Creating multi-controller LLD

Feature: Users can flexibly select devices and versions and networking diagrams are automatically generated.

Suitable for: multi-controller networking



Enterprise Storage Planning and Design > Directly Creating LLD

Users can flexibly select devices, such as hosts, switches, and storage devices, to create LLD.

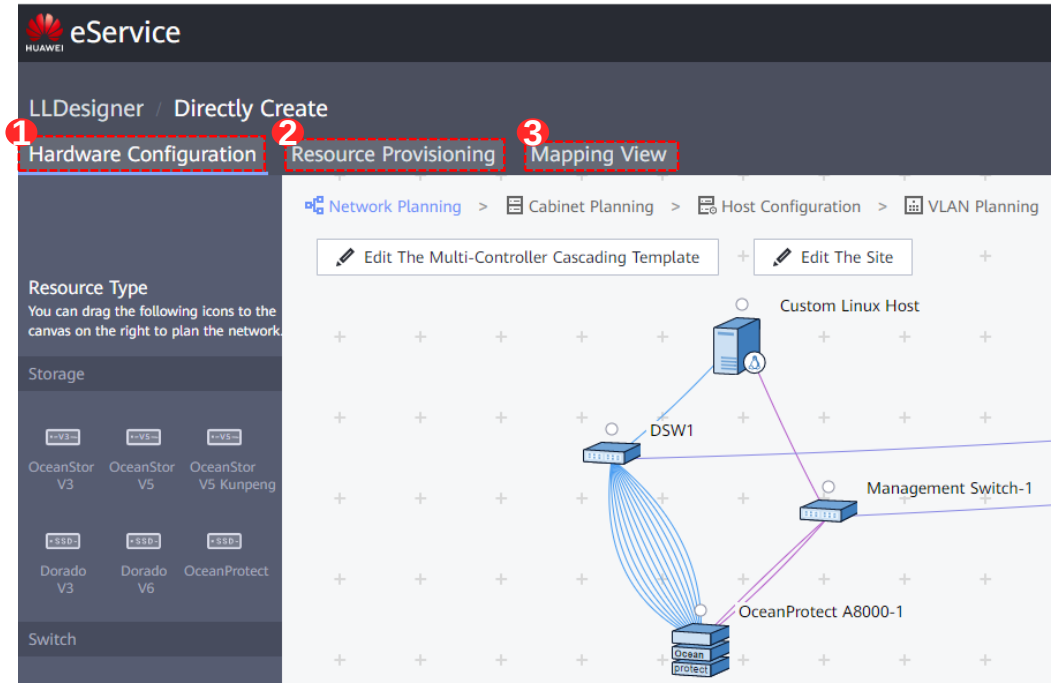
Procedure

Project creation → Network planning → Cabinet planning → Host configuration → VLAN planning → Resource provisioning → Mapping view → LLD export

Type	Supported Models
Storage	OceanStor Dorado: V3 and V6 series OceanStor converged storage: V3 and V5 series OceanProtect: A and X series
Switch	FC, IP, and PCIe
Host	Linux, Windows, Solaris, HP-UX, AIX, XenServer, Mac OS, VMware ESX, and Windows Server 2012

Key functions:

1. Hardware configuration: networking planning, cabinet planning, host configuration, and VLAN planning
2. Resource provisioning: creating storage pools and resource pools
3. Mapping view: creating mapping views



Enterprise Storage Planning and Design > Creating LLD by Importing a BOQ

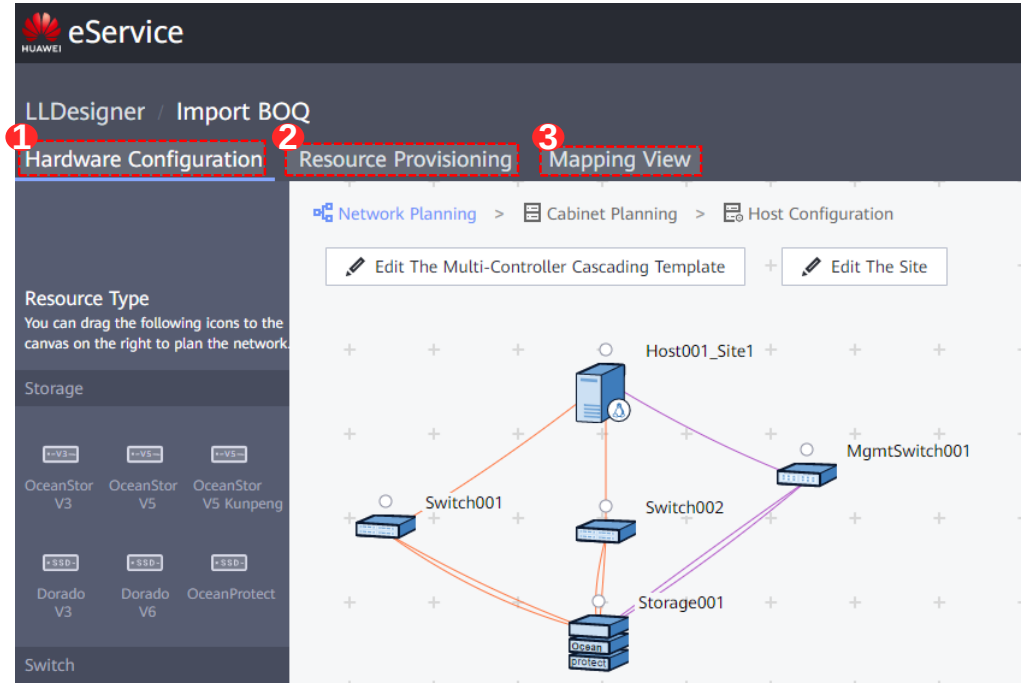
A BOQ is imported to automatically create LLD.

Procedure

Project creation → Site parameter configuration → Cabinet planning → Host configuration → Resource provisioning → Mapping view → LLD export

Key functions:

1. Hardware configuration: networking planning, cabinet planning, and host configuration
2. Resource provisioning: creating storage pools and resource pools
3. Mapping view: creating mapping views

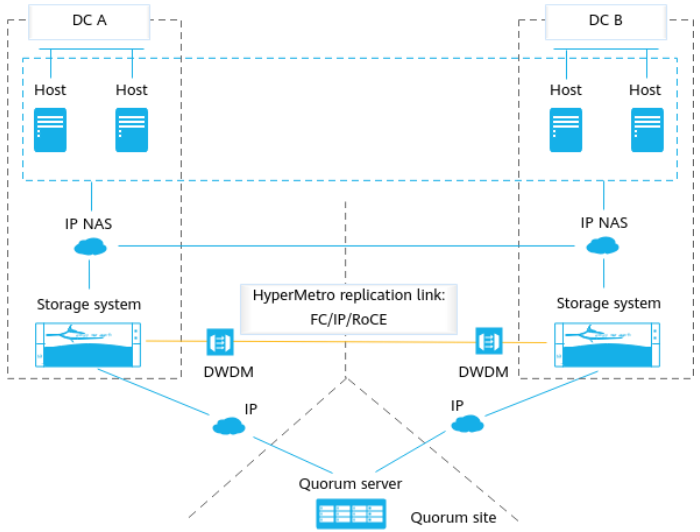


Enterprise Storage Planning and Design > Creating Active-Active LLD Using a Template

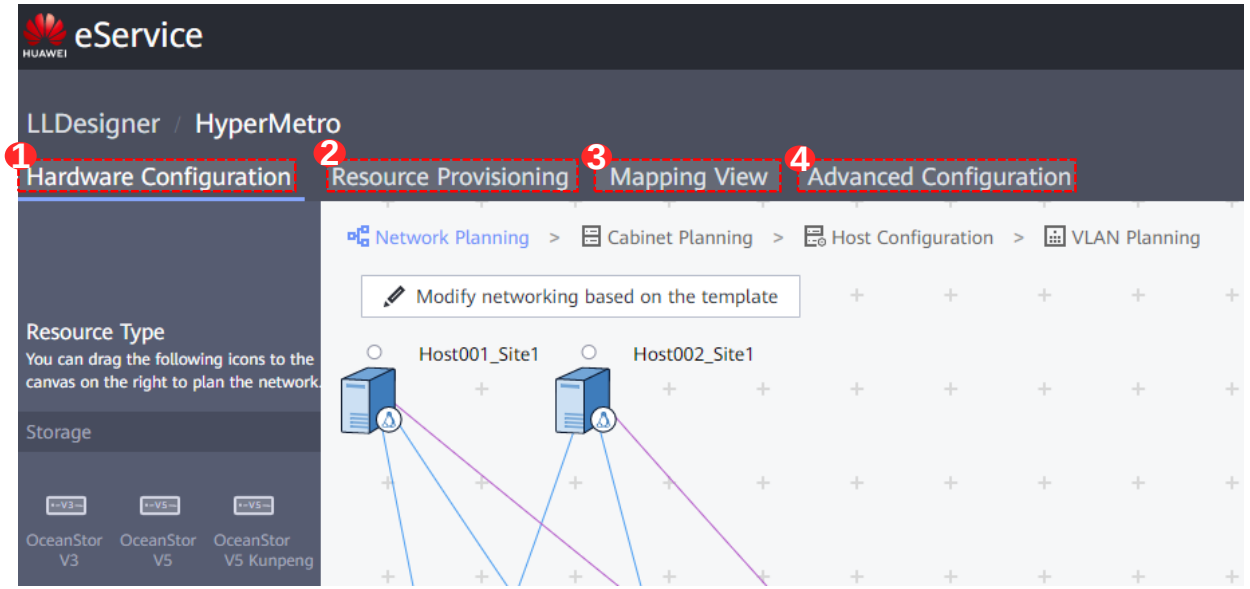
Users can flexibly specify device and network parameters and networking diagrams are automatically generated.

Procedure

Project creation → Network and site configuration → Cabinet planning → Host configuration → VLAN planning → Resource provisioning → Mapping view → Advanced configuration → LLD export



Active-active DC deployment



Key functions:

1. Hardware configuration: networking planning, cabinet planning, host configuration, and VLAN planning
2. Resource provisioning: creating storage pools and resource pools
3. Mapping view: creating mapping views
4. Advanced configuration: HyperMetro domain configuration

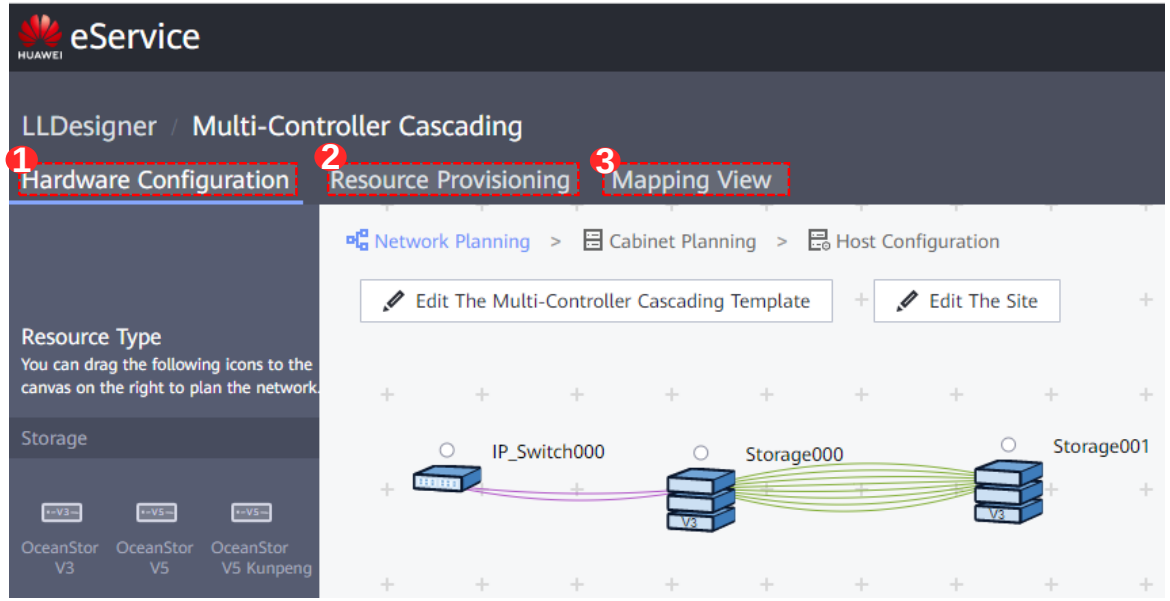
Enterprise Storage Planning and Design > Creating Multi-Controller LLD Using a Template

Users can flexibly select devices and versions and networking diagrams are automatically generated.

Procedure

Key functions:

1. Hardware configuration: networking planning, cabinet planning, and host configuration
2. Resource provisioning: creating storage pools and resource pools
3. Mapping view: creating mapping views



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Mass Data Storage Planning and Design

After setting template parameters, you can quickly complete project planning and design. You do not need to manually add devices, insert cards, or connect cables.

Mass data storage product versions and functions supported by LLDesigner

Function	Product Version	FusionStorage 8.0.0	OceanStor 100D 8.0.3	OceanStor Pacific Series 8.1.0	OceanStor Pacific Series 8.1.1
Hardware configuration	Network planning	√	√	√	√
	Cabinet planning	√	√	√	√
	Host configuration	√	√		
	Storage configuration			√	√
	Domain name planning		√		
Network configuration	Port bonding/VLAN planning			√	√
	Control cluster creation			√	√
	Routing policy planning			√	√
	Data cluster creation			√	√
Resource provisioning	Storage pool creation			√	√
	Disk pool creation			√	√

Mass Data Storage Planning and Design

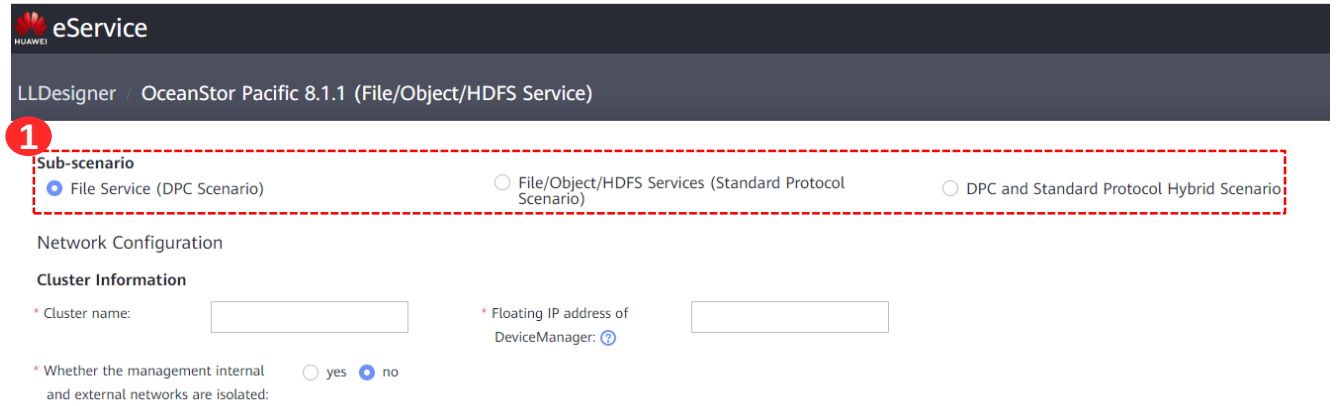
OceanStor Pacific series 8.1.1 is used as an example to describe how to use LLDesigner.

Procedure

Project creation → Networking parameter setting → Cabinet planning → Storage configuration → Network configuration → Resource provisioning → LLD export

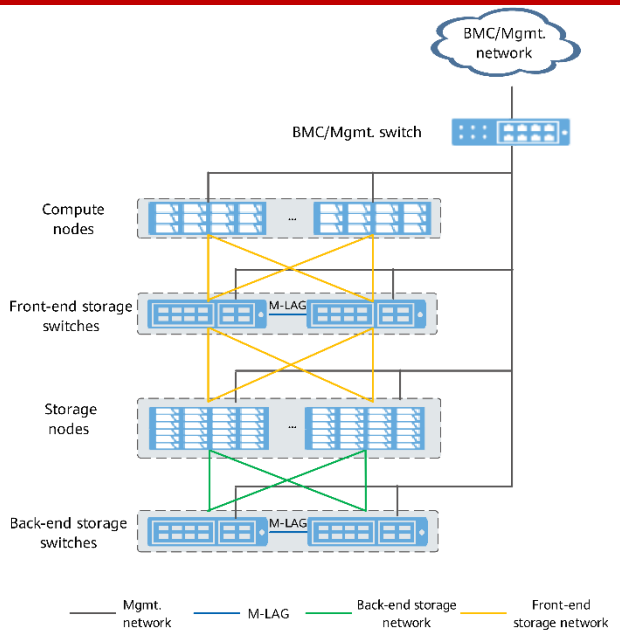
Supported scenarios:

- File service (DPC scenario)
- File/Object/HDFS service (standard protocol scenario)
- DPC and standard protocol hybrid scenario

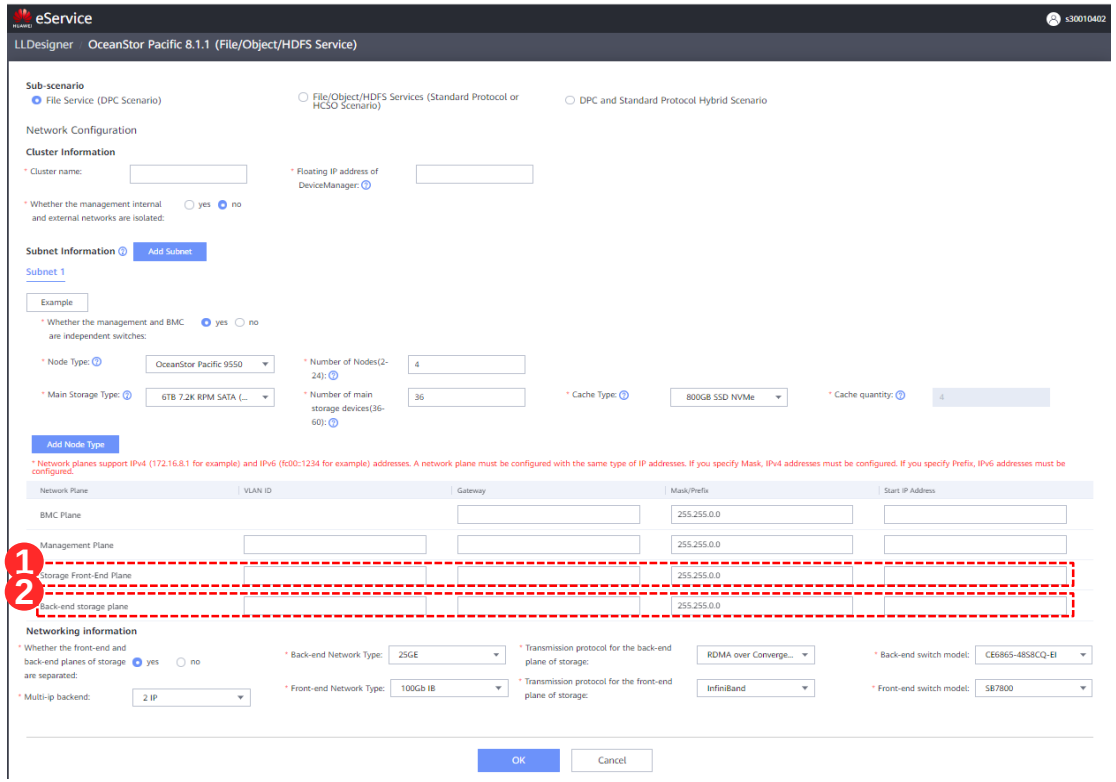


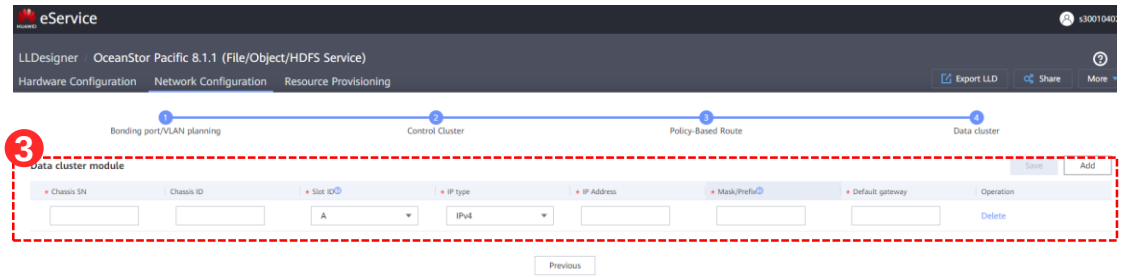
Mass Data Storage Planning and Design

OceanStor Pacific 8.1.1 series: DPC scenario



Networking diagram





Storage/Management node:

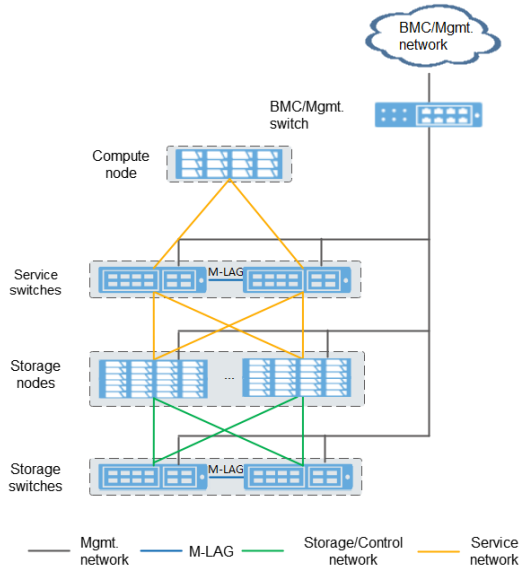
1. Front-end storage network: Two ports are used. If the IB protocol is used and the ports are bonded, configure one front-end storage network IP address.
2. Back-end storage network: Two ports are used. Configure two back-end storage network IP addresses.

Data cluster module (only for OceanStor Pacific 9950):

3. Each OceanStor Pacific 9950 device has two data cluster modules. Each data cluster module provides one management network port to connect to the BMC network.

Mass Data Storage Planning and Design

OceanStor Pacific 8.1.1 series: standard protocol scenario



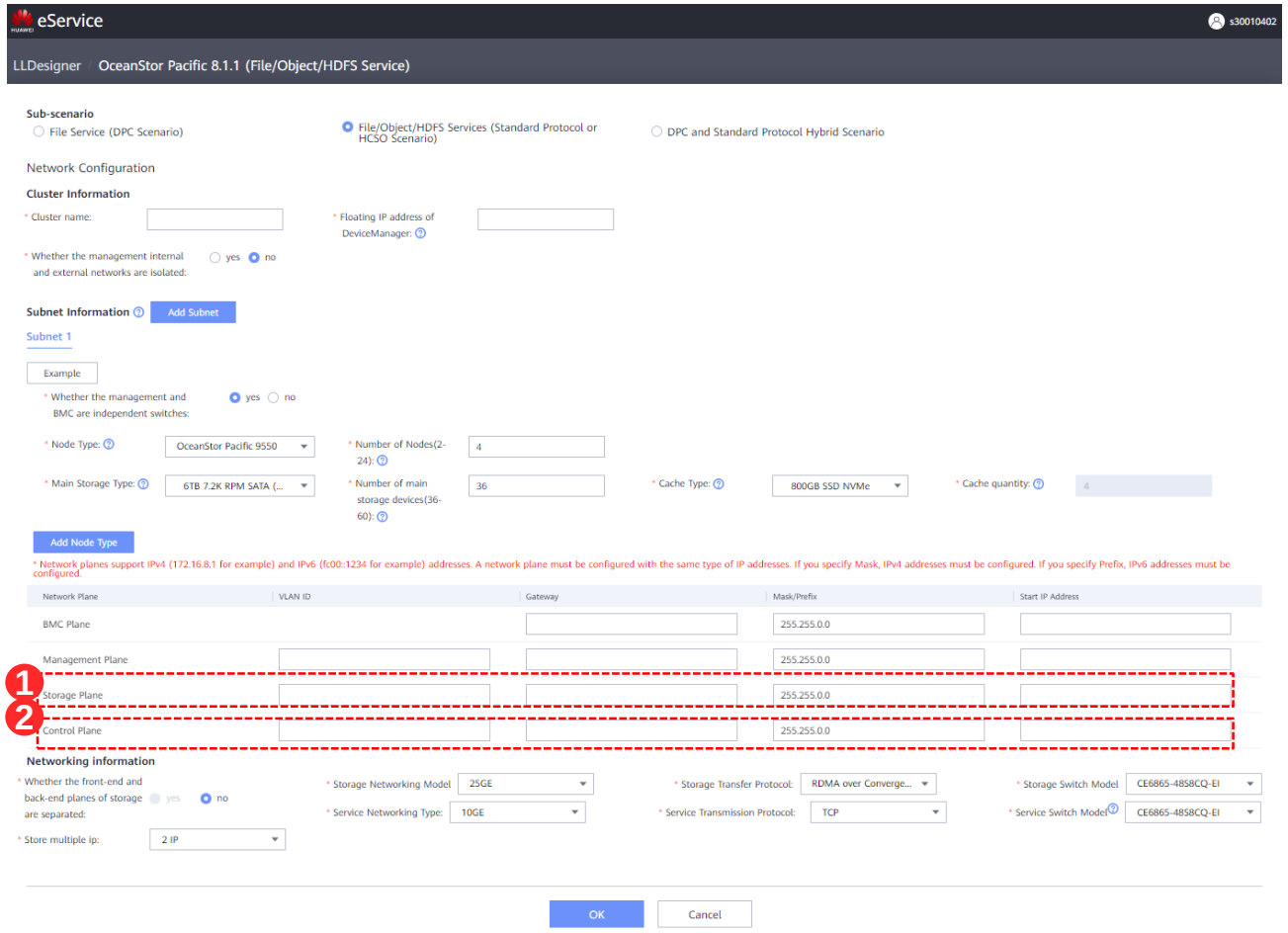
Networking diagram

Storage/Management node:

1. Storage network: Two ports are used. Configure two storage network IP addresses.
2. Control network: Configure one floating IP address for storage ports for the control network. The control network and the storage network cannot belong to the same subnet.

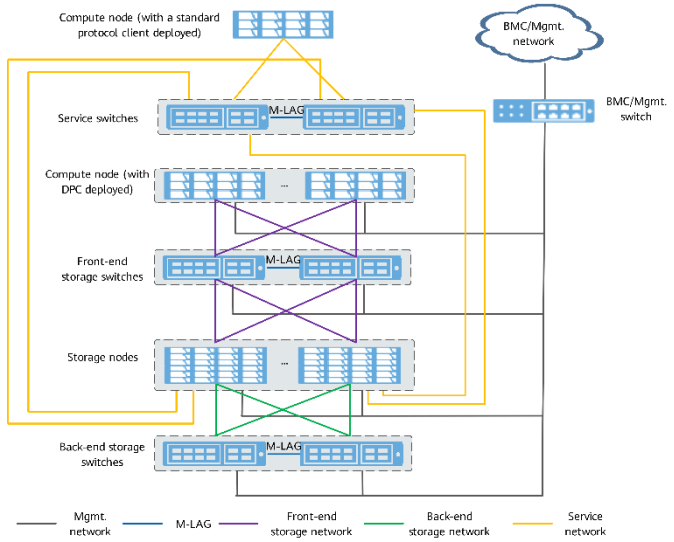
Data cluster module (only for OceanStor Pacific 9950):

3. Each OceanStor Pacific 9950 device has two data cluster modules. Each data cluster module provides one management network port to connect to the BMC network.



Mass Data Storage Planning and Design

OceanStor Pacific 8.1.1 series: DPC and standard protocol hybrid scenario



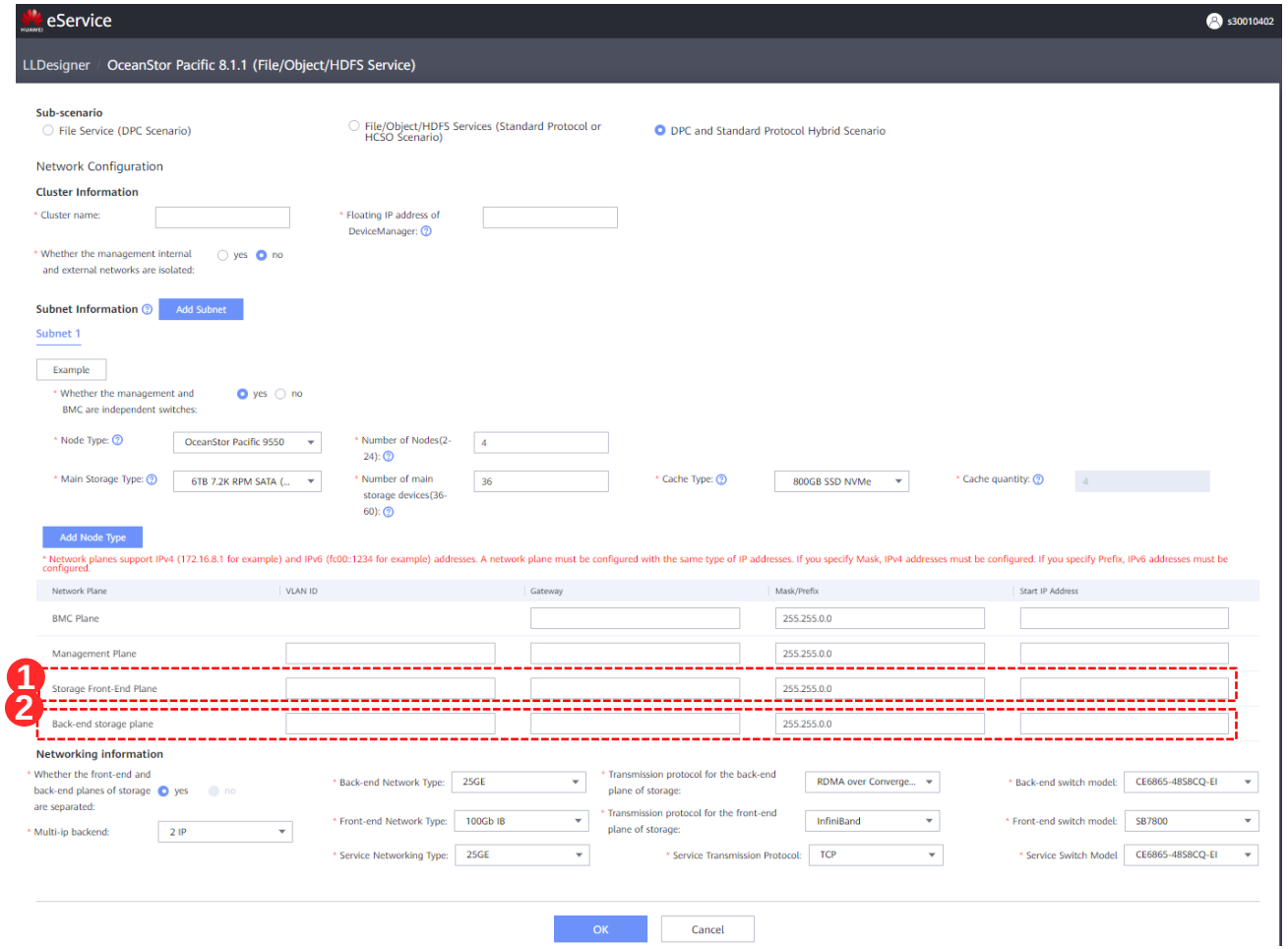
Networking diagram

Storage/Management node:

1. Front-end storage network: Two ports are used. Configure one front-end storage network IP address when the ports are bonded.
2. Back-end storage network: Two ports are used. Configure two back-end storage network IP addresses.

Data cluster module (only for OceanStor Pacific 9950):

3. Each OceanStor Pacific 9950 device has two data cluster modules. Each data cluster module provides one management network port to connect to the BMC network.



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Edge Data Storage Planning and Design

Users can fill in template data to complete project planning and design in one-click mode.

Edge data storage product versions and functions supported by LLDesigner

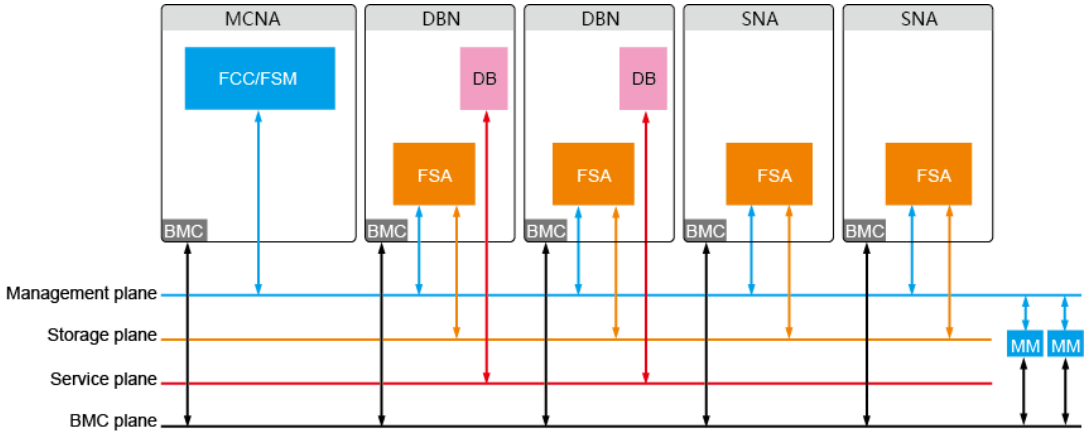
Function	Product Version	FusionCube 1000 (Hypervisor/Data V6.0)	FusionCube 1000 (Cabinet V6.0)	FusionCube 1000 (Cabinet V8.0)
Hardware configuration/ Engineering design	Network planning	√	√	√
	Cabinet planning	√	√	√
	Host configuration	√		
	Naming rules		√	√
Central site configuration	Central site configuration		√	√
Network resource configuration	IP/VLAN resource provisioning		√	√
	Stack design		√	√
	Static route		√	√
	IPsec configuration		√	√
	Checklist		√	√
Storage resource configuration	Storage resource planning		√	√
	Mapping view planning		√	√
	Datastore configuration		√	√

Edge Data Storage Planning and Design

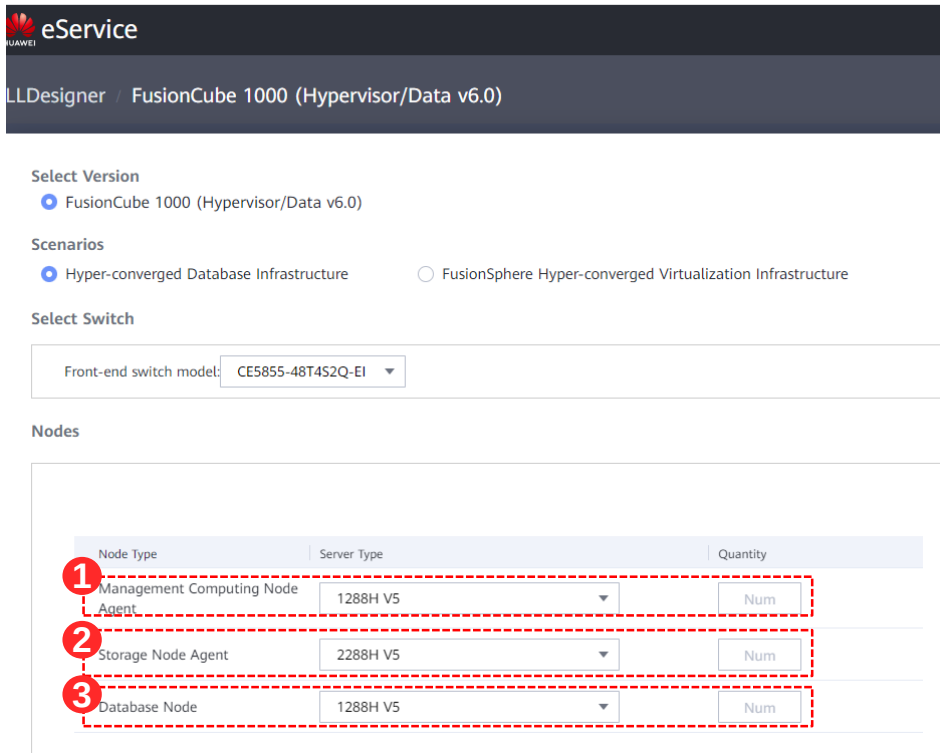
FusionCube 1000 (Hypervisor/Data V6.0) is used as an example to describe how to use LLDesigner.

Procedure

Project creation → Networking information input → Network parameter setting → Cabinet planning → Host configuration → LLD export



Networking diagram



Node description:

1. MCNA: provides management functions. One or two MCNAs can be deployed.
2. SNA: provides storage functions. Three or more SNAs can be deployed.
3. DBN: provides database functions. One or more DBNs can be deployed.

Contents

Related Resources

- **LLDesigner URL:**

  http://eservice-lld.huawei.com/#/lld/overview

- **LLDesigner online help:**

  http://eservice-lld.huawei.com/help/en/index.html

- **LLDesigner permission application email:**

  eservice@huawei.com


Thank You
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