

Course Outline



Course Name: Presales-Data Center Network Planning and Design

Course Code: HW-HCSP-IPNDS

DURATION	LEVEL	TECHNOLOGY	DELIVERY METHOD	TRAINING CREDITS
5 Days	Pre-Sales Professional	Data Center	VITL/In Class	Huawei Learning Vouchers

Introduction

The HCSP-Presales-Data Center Network Planning and Design version 1.0 course covers the data center network (DCN) architecture and application of typical technologies (DCN principles, VXLAN, BGP EVPN, Underlay & Overlay, and M-LAG), CloudFabric solution and components, service automation scenarios (network virtualization, computing, OpenStack cloud-network integration, and Kubernetes container network) of the CloudFabric solution, intelligent lossless technology, and CloudFabric's "three data centers (DCs) in two cities" network design, CloudFabric's "multiple DCs in multiple cities" network design, CloudFabric network security design, and intelligent O&M of the CloudFabric solution.

Target Audience

- Presales engineers who are expected to have basic knowledge and capabilities in the data center field and be familiar with Huawei CloudFabric products and solutions.
- For those who want to obtain the HCSP-PreSales-Data Center Network Planning and Design Qualification.

Prerequisites

- Participants should have a fundamental understanding of IP technologies and networks.
- It is recommended that you complete the HCSA-Presales certification course before attending this training.

Course Objectives

On completion of this course, participants should be able to:

- Understand the key technologies in the data center (DC) field, including underlay/overlay, VYLA, M-LAG, BGP EVPN, virtualization, network security and intelligent network O&M technologies.
- Describe the typical data center network (DCN) architecture.
- Describe the common DCN virtualization and reliability technologies. Their working principles, as well as their application scenarios of various virtualization technologies.
- Describe the basic principles and functions of the CloudFabric Solution.
- Describe the basic concepts and working principles of VXLAN, as well as the benefits brought by XLAN in DCNs.
- Describe the intelligent lossless Ethernet technology.
- Describe the M-LAG technology for DCs.
- Describe the four scenarios for automatic service provision in the CloudFabric scenario.
- Design the CloudFabric underlay and overlay network solutions.
- Design large-and medium sizes ClouFbaricDCN solutions.
- Describe the main functions and cases of FabricInsights-based intelligent O&M.

Course Content

Lesson 1: Data Center Network Overview

- DC and DCN overview
- Terms and key technologies of DCs

Lesson 2: Technical Fundamentals of Data Communications Networks

- Basics of Ethernet switching
- Network reachability
- Network reliability
- Network service and management
- Network security
- VPN

Lesson 3: VXLAN and BGP EVPN

- Overview of VXLAN and DCN virtualization
 - Basic concepts of VXLAN
 - VXLAN fundamentals
 - Application of VXLAN on DCNs
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Lesson 4: M-LAG

- Overview of M-LAG
- Fundamentals of M-LAG
- M-LAG failure protection
- M-LAG deployment scenarios

Lesson 5: Intelligent Lossless Data Center Network

- Data center network in the era of intelligence
- Key technical principles of intelligent lossless Ethernet networks
- Typical networking

Lesson 6: Huawei CloudFabric Solution

- Basic concepts of Huawei CloudFabric solution
- Architecture and functions of Huawei CloudFabric solution
- Components of Huawei CloudFabric solution

Lesson 7: Four CloudFabric Service Automation Scenarios and Related Solutions

- Overview of the four CloudFabric service automation scenarios
- Service automation scenarios of CloudFabric: network virtualization
- hosting, network virtualization
- computing, cloud- network integration
- OpenStack, and Kubernetes container network

Lesson 8: iMaster NCE-Fabric

- Introduction to iMaster NCE-Fabric
- Key functions of iMaster NCE-Fabric
- Installation and deployment, reliability, and openness of iMaster NCE-Fabric

Lesson 9: CloudFabric Underlay and Overlay Network Design

- Underlay network design
- Overlay network design
- High-reliability design of a physical network

Lesson 10: Typical Data Center Network Design Guide

- DCN overview
- DCN planning and design methods
- Typical DCN design case

Lesson 11: CloudFabric Solution Demonstration for the Network Virtualization Scenario

- Huawei CloudFabric solution overview
 - Huawei CloudFabric solution demonstration
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Lesson 12: CloudFabric Solution Demonstration for the Cloud-Network Integration Scenario

- Huawei CloudFabric solution overview
- Huawei CloudFabric solution demonstration

Lesson 13: Intelligent O&M of the CloudFabric Solution

- Overview of CloudFabric intelligent O&M
- iMaster NCE-Fabric O&M functions
- iMaster NCE-FabricInsight O&M functions

ASSOCIATED CERTIFICATIONS & EXAM

The HCSP-Presales-Data Center Network Planning and Design certification #H19-402 written exam cover the data center network (DCN) architecture and application of typical technologies (DCN principles, XLAN, BGP EVPN, Underlay&Overlay and M-LAG) CloudFabric solution and components, service automation scenarios (network virtualization, computing, OpenStack cloud-network integration and Kubernetes container network) of the CloudFabric solution, intelligent lossless technology and CloudFabric “three datacenters (DCs) in two cities” network design, CloudFabric’s “ multiple DCs in multiple cities” network design, CloudFabric network security design, and intelligent O&M of the CloudFabric solution.