

Szkolenie: HPE
HPE SAN Essentials II: Advanced B-series Networking

FORMA SZKOLENIA	MATERIAŁY SZKOLENIOWE	CENA	CZAS TRWANIA
Stacjonarne	Tradycyjne	4600 PLN NETTO*	2 dni
Stacjonarne	Tablet CTAB	5200 PLN NETTO*	2 dni
Metoda dlearning	Tradycyjne	4600 PLN NETTO*	2 dni
Metoda dlearning	Tablet CTAB	5200 PLN NETTO*	2 dni

* (+VAT zgodnie z obowiązującą stawką w dniu wystawienia faktury)

LOKALIZACJE

Kraków - ul. Tatarska 5, II piętro, godz. 9:00 - 16:00

Warszawa - ul. Bielska 17, godz. 9:00 - 16:00

DOSTĘPNE TERMINY

2020-11-05 | 2 dni | Wirtualna sala (Termin gwarantowany)

Cel szkolenia:

This course is designed for advanced B-Series SAN administrators and is a follow-up to the SAN Essentials I: Administration Fundamentals class. It does not cover basics since those are discussed in the Fundamentals training. This course introduces new topics such as advanced Fibre Channel (FC) features, additional B-Series management options, SAN extension technologies, advanced SAN security, and hardware installation. All practical parts are based on B-Series devices. This course helps students gain the experience needed to tackle the challenges of working in medium-sized and enterprise-class B-Series SAN environments.

At the conclusion of this course, you should be able to:

- Explain advanced FC terminology
- Describe the role of the principal switch
- Talk about FCP routing
- Explain ISLs and trunking
- Explain advanced FC concepts ,SAN services, and associated well-known addresses
- Describe FC stack, Classes of Service, and frame structure
- Discuss additional zoning types (Peer, TDPZ, TI, QoS) as well as ingress rate limiting
- List and talk about SAN extension options, B-Series Extended Fabrics, and Buffer-to-Buffer Credits

- Describe FCIP technology including tunnels, circuits FCIP QoS, performance and security
- Discuss FC-FC routing including definitions and elements.
- Talk about Virtual Fabrics including IDs, types of logical switches and links between them
- Present SAN security in both theory and practice (policy distribution, SCC, DCC, FCS policies as well as IP Filter and AUTH policies)
- Talk about performance monitoring on HPE StoreFabric B-series products (Fabric Vision, with focus on Flow Vision and MAPS)
- Talk about additional SAN management options and switch firmware
- Present basic troubleshooting and diagnostics methods by using SAN Network Advisor, Web Tools, and CLI.
- Perform Firmware upgrade

Audience / Job Roles

Intermediate to advanced technical professionals seeking a learning path that includes more advanced knowledge of SAN technologies and experience in HPE B-series SAN environments.

Plan szkolenia:

- FCP Routing and Trunking
 - Fabric Terminology
 - Principal switch
 - Upstream and downstream links
 - Fabric Initialization Process
 - Basics of FSPF and frame routing within a fabric
 - FCping
 - Inter-Chassis Link
 - Trunking
- Advanced Fibre Channel Theory and Services
 - FC stack and layers
 - Class of service
 - Frame structure and frame head
 - Advanced Fibre Channel terminology
 - Flow control
 - Link and fabric services
 - Well known addresses
 - Fabric and N_Port login sequence
 - Registered State Change Notification

- Peer Zoning
- Target Driven Zoning
- QoS zoning
- Virtual Channels implementation
- QoS naming convention
- QoS over routers
- QoS configuration
- TI Zoning theory
- TI Zoning implementation
- TI Zone Failover
- TI and FSPF
- TI Zoning configuration
- Ingress Rate Limiting
- Long Distance Connectivity
 - Why extend the SAN?
 - Long distance cabling
 - HPE Supported SAN extension technologies
 - Cables and SFPs
 - C/DWDM
 - Fabric OS Extended Fabrics theory and configuration
 - Working with Buffer-to-Buffer Credits
- Fibre Channel over IP (FCIP)
 - FCIP and its role in SAN extension
 - FCIP Tunnels
 - FCIP Circuits
 - FCIP Trunking
 - FCIP performance and security
 - Selective Acknowledgement
 - Compression
 - Adaptive Rate Limiting (ARL)
 - FCIP QoS
 - FastWrite and Open Systems Tape Pipelining
 - FCIP network best practices, advantages and disadvantages.
 - Basic configuration and analysis overview
 - FC-FC Routing & Virtual Fabrics Introduction
 - SAN scaling and Fabric services limits

- LSAN Zoning
- EX_Ports
- Domains
- Trunking
- Integration of Fibre Channel routing and FCIP
- Supported platforms
- Virtual fabrics overview and terminology
- Logical Switch types
- FIDs and Domain IDs
- ISL Sharing
- ISL Types
- Basic configuration
- VF Supported platforms
- SAN Security
 - Security policies list
 - Policy Database Distribution
 - Switch Connection Control (SCC) policy
 - Setting Device Connection Control (DCC) policy
 - Fabric Configuration Server (FCS)
 - FCS Switch Operations
 - Authentication policy for fabric elements (FCAP and DH-CHAP)
 - IP Filter policies and rules
 - How to configure them
 - Encryption and compression
- Performance
 - B-Series Fabric Vision Introduction
 - Fabric Vision Elements
 - Dashboards
 - Flow Vision Overview
 - What is Flow?
 - Flow Vision Elements – Flow Monitor
 - Flow Monitor Example
 - Flow Vision Elements – Flow Learning
 - Flow Learning Example
 - Flow Vision Elements – Flow Generator
 - SIM port attributes and configuration

- Flow Generator Example
- Flow Generator + Monitor
- Flow Generator + Monitor Example
- Flow Vision Elements – Flow Mirroring
- Flow Mirror Example
- Flow Vision - IO Insight and VM Insight
- Monitoring and Alerting Policy Suite (MAPS)
 - MAPS monitoring categories
 - MAPS Groups, and Conditions
 - MAPS Rules, and Policies
 - MAPS Dashboard
 - Port monitoring using MAPS
 - Monitoring Flow Vision Flow Monitor data with MAPS
 - Fabric performance impact monitoring using MAPS
 - Other Features: Fabric Performance Impact (FPI) Monitoring
 - Other Features: Configuration and Operational Monitoring
- Policy Automation Services Suite (COMPASS)
 - Other Features: ClearLink Diagnostics, Forward Error
- Correction (FEC), Credit Loss/Buffer Credit Recovery
 - Fabric Vision licensing
 - SAN Network Advisor and Fabric Vision technology
- Management and Troubleshooting
 - HPE SAN Network Advisor - its features and editions
 - Configuration backup
 - CP details for B-Series switches and Directors
 - Firmware management and upgrade process
 - General approach
 - Information to collect
 - Supportshow and supportsave
 - Common issues
 - Tools and features to use
 - Diagnostic Tools and D_Port use
 - Checking FRUs status via SAN Network Advisor, Web Tools, and CLI

Wymagania:

- HPE SAN Essentials I: Administration Fundamentals (HM9Q1S)
- A good technical understanding of networking and storage concepts
- Basic experience in managing Windows systems

Poziom trudności



Certyfikaty:

The participants will obtain certificates signed by HPE (course completion).

Prowadzący:

Authorized HPE Trainer.