Szkolenie: HPE
# Managing HPE Alletra 9000

## Cel szkolenia:

The Managing HPE Alletra 9000 course describes the HPE Alletra 9000 portfolio hardware building blocks, theory of operation and features. Using hands-on labs (HOL), students learn to perform common day-to-day management tasks, including how to create hosts, volumes, and sets, as well as how to monitor the product. This course also provides knowledge of more advanced features, including local and remote replication, disaster recovery, QoS, as well as maintenance and data migration. You gain a practical understanding of HPE Alletra 9000 array capabilities using extensive hands-on lab exercises, performed on all applicable user interfaces.

Course objectives

After completing this course, you should be able to:

- Describe HPE Alletra 9000 hardware and features
- List and compare HPE Alletra 9000 management options, roles, and security
- Explain provisioning terminology
- Perform HPE Alletra 9000 array on-boarding and initialization
- Work with volumes, hosts, and corresponding sets
- Protect data with snapshots, clones, and use protection policies
- Describe priority optimization and quality of service (QoS)
- Explain different types of Remote Copy implementations and failure scenarios
- Briefly describe data migration, high availability, and disaster tolerance solutions
- Describe HPE Alletra monitoring and alerting options including HPE InfoSight
- Describe the HPE Alletra 9000 OS update procedure, maintenance, and data migration options

Audience

Customers, administrators and channel partner sales or technical sales.

## Plan szkolenia:

- Hardware and Features
  - Array architectures
  - HPE Alletra 9000 Gen6 ASIC



Compendium Centrum Edukacyjne Spółka z o.o.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70

BNP Paribas Bank Polska S.A.
Oddział w Warszawie
Nr konta: PL 20 1600 1462 1853 6451 3000 0001

- Features of the HPE Alletra 9000 series arrays
- HPE Alletra 9000 family
- HPE Alletra 9000 basic specs
- HPE Alletra 9000 hardware building blocks
- HPE Alletra 9000 4U controller enclosure
- HPE Alletra 9000 controller node
- Port number (N:S:P)
- HPE Alletra 9000 PCIe adapters
- HPE Alletra 9000 connectivity maximums
- HPE Alletra 2240 NVMe drive enclosure
- Disk number and chassis position (C:M:0)
- HPE Alletra 9000 drive options
- HPE Alletra 9000 data-at-rest encryption
- HPE Alletra 9000 capacity expansion
- HPE Alletra 2240 NVMe drive enclosure connectivity
- HPE Alletra 9000 software details

- Management Options
  - HPE Alletra 9000 manageability
  - HPE GreenLake edge-to-cloud platform
  - Data Services Cloud Console
  - Provisioning options
  - Data Ops Manager
  - Block storage
  - Intent-based provisioning
  - Data Services Cloud Console public REST API
  - HPE Alletra 9000 UI
  - HPE Alletra 9000 CLI
  - HPE Alletra 9000 Web Services API (WSAPI)
  - REST(ful) API
- Provisioning Terminology
  - HPE Alletra 9000 OS virtualization—logical view
  - HPE Alletra 9000 OS virtualization—concepts
  - Chunklet concept
  - System wide sparing
  - Logical disk (LD) concept and controller node ownership
  - RAID concepts



Compendium Centrum Edukacyjne Spółka z o.o.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70

BNP Paribas Bank Polska S.A.
Oddział w Warszawie
Nr konta: PL 20 1600 1462 1853 6451 3000 0001

- Common Provisioning Group
- HPE Alletra 9000 high availability
- Virtual volume overview
- HPE Alletra 9000 data reduction technologies overview
- Thin provisioning
- Space reclamation
- Allocation units and alignment
- Thin persistence
- Deduplication and compression
- Data reduction
- Data packing
- What to data reduce?
- Data reduction estimation

- Initialization and Array Status
  - Installation
  - Documentation and resources
  - HPE Alletra 9000 simplified setup
  - System startup
  - HPE Alletra 9000 software initialization
  - Device onboarding
  - Data Services Cloud Console setup service
- Hosts
  - HPE Alletra 9000 OS virtualization
  - HPE Alletra 9000 host support
  - Host to HPE Alletra 9000 front-end configuration
  - HPE Alletra 9000 block I/O connectivity
  - HPE Alletra 9000 persistency features
  - HPE Alletra 9000 WWN format of host ports
  - Obtaining host HBA WWNs
  - HPE Smart SAN for HPE Alletra 9000
  - HPE Alletra 9000 zoning overview
  - HPE Smart SAN for HPE Alletra 9000
  - HPE Host Explorer
  - HPE LunInfo
- Volumes and Sets
  - HPE Alletra 9000 OS virtualization



Compendium Centrum Edukacyjne Spółka z o.o.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70

BNP Paribas Bank Polska S.A.
Oddział w Warszawie
Nr konta: PL 20 1600 1462 1853 6451 3000 0001

- Virtual volume review
- Host sets and virtual volume sets
- Managing from Data Services Cloud Console
- Managing from HPE Alletra 9000 UI
- Managing from CLI
- HPE Alletra 9000 online virtual volume conversion
- HPE Virtual Lock

- Protection Policies, Snapshots and Clones
  - Snapshot—Virtual Copy
  - Virtual Copy for backup use case
  - Virtual Copy creation
  - Virtual Copy writes
  - Promote/restore
  - Clone terms and specifics
  - Protection policies
  - Managing from Data Services Cloud Console
  - Managing from HPE Alletra 9000 UI
  - Managing from CLI
- Priority Optimization and Quality of Service (QoS)
  - HPE Alletra 9000 OS virtualization—concepts
  - HPE Alletra 9000 Priority Optimization—quality of service
  - Priority Optimization introduction
  - How Priority Optimization works
  - Managing from Data Services Cloud Console
  - Managing from HPE Alletra 9000 UI
  - Managing from CLI
- Remote Replication
  - HPE Alletra 9000 data availability and protection
  - HPE Alletra Remote Copy overview
  - Remote Copy network transport methods
  - Remote Copy Groups
  - Remote Copy modes
  - Remote Copy topologies
  - Remote Copy operations
  - Failure scenario
  - Remote Copy actions



Compendium Centrum Edukacyjne Spółka z o.o.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70

BNP Paribas Bank Polska S.A.
Oddział w Warszawie
Nr konta: PL 20 1600 1462 1853 6451 3000 0001

- Setting up and managing from Data Services Cloud Console
- Setting up and managing from CLI

- High Availability and Disaster Tolerance Solutions
  - HPE Alletra 9000 Data availability and protection
  - HPE Classic Peer Persistence
  - Classic Peer Persistence implementation example
  - Classic Peer Persistence transparent failover options
  - HPE Alletra 9000 Active Peer Persistence
  - Active Peer Persistence implementation example
  - HPE Alletra 9000 Peer Persistence infrastructure view
  - Quorum Witness software
  - HPE Peer Persistence deployment matrix
  - Host access configuration available in Active Peer Persistence
  - HPE Alletra 9000 Active Peer Persistence host proximity
  - 3DC Peer Persistence
  - 3DC disaster recovery configurations
  - HPE Cluster Extension CLX for Windows overview
  - VMware vSphere® disaster recovery with Site Recovery Manager overview
- Monitoring, Alerts and Events
  - HPE InfoSight
  - HPE InfoSight views
  - HPE InfoSight Cross-Stack Analytics for VMware® environments
  - System Reporter introduction
  - Performance metrics available using API and CLI
  - CLI: stat commands
  - CLI: hist* commands
  - CLI: srstat commands
  - System Reporter Performance alerts
  - SNMP
  - HPE Alletra 9000 MIB
  - Alerts and events
  - Sample HPE Alletra 9000 OS message
  - Managing alerts with the CLI
  - Setting system alerts
  - Example alert
  - Monitoring and managing the event log



Compendium Centrum Edukacyjne Spółka z o.o.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70

BNP Paribas Bank Polska S.A.
Oddział w Warszawie
Nr konta: PL 20 1600 1462 1853 6451 3000 0001

- Example event
- Syslog
- checkhealth command
- Options available in Data Services Cloud Console and Data Ops Manager
- Options available in HPE Alletra 9000 UI

## Wymagania:

- An understanding of general storage concepts including fiber channel, iSCSI technology and RAID
- Operator level functionality in a Windows environment

## Poziom trudności



## Certyfikaty:

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

## Prowadzący:

Authorized HPE Trainer.



Compendium Centrum Edukacyjne Spółka z o.o.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70

BNP Paribas Bank Polska S.A.
Oddział w Warszawie
Nr konta: PL 20 1600 1462 1853 6451 3000 0001