Szkolenie: HPE

HPE Storage: Containers and Automation

Hewlett Packard Enterprise

Cel szkolenia:

This course provides hands-on learning for developers and administrators who create automation and integration applications. The course focuses on:

- Automating container applications using HPE storage arrays
- HPE modules for Ansible-enabled automated storage provisioning
- SDK to communicate with the HPE storage array over the WSAPI REST interface
- HPE Volume Plugin for Docker and the Container Storage Interface that provide persistent storage for your containerized applications and popular container platforms like Docker, Kubernetes, and OpenShift
- Tools and techniques to automate deployment of an application in Kubernetes with persistent storage

Course Objectives:

Upon completion of this course, students will be able to:

- Demonstrate the use of the WSAPI REST interface
- Configure and use a Docker environment using the Docker storage plug-in
- Configure a Kubernetes environment that uses HPE Primera/3PAR or HPE Nimble Storage

Audience:

Developers and administrators who create automation and integration applications

Plan szkolenia:

- Course Overview
  - Course overview and objectives
  - Course benefits
- Overview of Automating HPE Storage for a Container Environment
  - Benefits of HPE storage for containers

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- Containers and storage plugins overview
- Challenges in providing storage in a container environment
- Use cases
- DevOps CI/CD pipeline, IT operations, lift and shift, CaaS
- Storage operations for containers
- The need for a storage plug-in

- Using the Storage API
  - Storage API objects overview
  - Using the API for storage management
  - Using Curl to make API calls to storage API
  - Creating scripts to manage storage using the API
- Using PowerShell
  - Overview of PowerShell
  - Using PowerShell Invoke-RestMethod to access the storage API
  - Create and run PowerShell scripts to access the storage API
  - Install and use an HPE storage PowerShell toolkit to create scripts
- Using Ansible Automation for Storage Management
  - Installing and configuring Ansible modules for storage
  - Creating and managing storage volumes using Ansible playbooks
  - Orchestrating storage with Ansible playbooks
- Docker and Storage
  - Docker and storage overview
  - HPE Volume Plugin for Docker overview
  - Replication using RCG (replication groups)
  - Multi-array support
  - Multi-CPG support per array
  - Encrypted password support
  - Snapshot scheduling
  - Import volume capability
  - Deploying the plugin
  - Overview of the plug-in installation process
  - Installation in Docker
  - Installing and configuring the Docker plugin
  - Configuring and running an Ansible playbook for automatically deploying the HPE Volume Plugin for Docker
  - Installing and configuring the managed Docker storage plugin

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- Storage operations in Docker
- Creating and managing volumes
- Deploying a Docker application with volume creation
- File sharing operations
- Cloning and snapshots
- Cloning a volume using Docker tools
- Troubleshooting storage in Docker

- Kubernetes and Storage
  - Kubernetes overview
  - Storage in Kubernetes
  - Storage plugins for Kubernetes
  - Automated storage provisioning
  - Creating persistent volume claims
  - Setting the default storage class
  - Deploying an application with automated volume creation and attachment
  - Volume replication, backup and recovery operations

Using storage in a CI/CD environment

Wymagania:

Prior to this course, students should have experience with:

- Basic storage concepts
- Virtualization concepts, including Docker and Kubernetes
- Scripting or coding

Poziom trudności

Certyfikaty:

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

Prowadzący:

Authorized HPE Trainer.

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