

# Tytuł szkolenia: HPE Serviceguard on Linux

## Kod szkolenia: H4C12S

### Wprowadzenie

This course is designed for experienced Linux system and network administrators implementing HPE Serviceguard A.12.40. Topics include the basic requirements of a highly available system and progress through to the configuration of a Serviceguard cluster/packages, culminating in using both NFS and Oracle 11gR2 and 12G toolkit packages along with the cluster simulator and analytics utilities. The course is 50 percent lecture and 50 percent hands-on labs using RHEL 7.

### Adresaci szkolenia

Linux system and network administrators who currently, or soon will, develop, design, implement, and monitor Serviceguard (SG) clusters on Linux

#### Prerequisites

- Background in Linux system and network administration including Logical Volume Manager (LVM) and/or Veritas Volume Manager (VxVM)

### Cel szkolenia

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

- Configure, implement, and manage an HPE SG cluster and packages
- Install HPE Serviceguard A.12.00 and Serviceguard Manager
- Use "cmeasyinstall"
- Utilize basic troubleshooting techniques
- Install and configure NFS and Oracle packages using the toolkits
- Use Live Application Detach and "rolling upgrade"
- Configure generic resources
- Use the SG simulator and SG cluster analytics

### Czas i forma szkolenia

- 21 godzin (3 dni x 7 godzin), w tym wykłady i warsztaty praktyczne.

### Plan szkolenia

#### Module 1: Course Introduction

#### Module 2: Introduction to High Availability

- What is high availability and reducing the risk
- Storage technologies and HA network design

#### Module 3: High Availability with Serviceguard (SG)

- SG features and benefits and SG packages
- Minimizing planned downtime
- Installing prerequisite software
- Serviceguard Manager

#### Module 4: Storage for Serviceguard

- Volume management

- Persistent reservation overview
- Review of LVM and VxVM concepts
- Configure a shared LVM volume and VxVM data group
- Using hosttags

#### **Module 5: Cluster Concepts and Configuration**

- Describe the difference between heartbeat, stationary and standby LAN interfaces
- Configure active/standby LAN interfaces using channel bonding
- Cluster arbitration using a LockLUN and Quorum server
- Steps to configure a Serviceguard cluster
- View the status of the cluster and log file

#### **Module 6: Additional Cluster Features**

- Test the local LAN failover
- Node failures and cluster reformation
- Node joining and leaving a cluster
- Basic cluster management

#### **Module 7: Packages and Services**

- Configure a basic Serviceguard package
- The package configuration file
- Package and node switching management
- Interpret package status from cmviewcl
- Package log file

#### **Module 8: Package Policies**

- Package FAILOVER and FAILBACK policies
- Package access control
- Using package dependencies, priorities and weights

#### **Module 9: Application Monitoring Scripts and Toolkits**

- Writing and using an application monitor
- The package control script
- Application integration toolkits

#### **Module 10: Cluster Troubleshooting**

- Test clusters and packages for problems
- Using the log files
- Using Serviceguard commands for troubleshooting
- Approaches to troubleshooting

#### **Module 11: Cluster and Package Online Reconfiguration**

- Cluster modifications online and online package modifications
- Storage reconfiguration
- Add and remove a node or package while the cluster is running

#### **Module 12: Highly Available NFS**

- Install the NFS server toolkit
- Configure an NFS server package using the NFS toolkit
- Configure an NFS client package
- Test the NFS server package for various failures

#### **Module 13: Highly Available Oracle Database**

- Install the Oracle database toolkit
- Configure an Oracle 11gR2 database package using the Oracle toolkit
- Check the operation of the Oracle database and failover

#### **Module 14: Cluster and Package Maintenance**

- Rolling upgrade of Serviceguard
- Kernel parameter change using Live Application Detach
- Package partial startup

#### **Module 15: Generic Resources**

- Configure and use generic resources in a package

**Module 16: Cluster Simulation**

- Investigate the simulator interface and actions

**Module 17: Cluster Analytics**

- Install the Analytics utility
- Display data collected by Serviceguard Cluster Analytics

**Module 18: Advanced Tookits**

- Discuss the following tookits for Serviceguard: SAP/HANA, Oracle, MS/SQL on Linux, DB2 Optional:Configure an Oracle 12g database package using the Oracle toolkit
- Check the operation of the Oracle database and failover