Hewlett Packard Enterprise

Managing Zerto: Setup, Protection, and Recovery
H61K2S

HPE course ID	H61K2S
Course length	2 days
Format	ILT/VILT
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This course prepares beginner to intermediate Zerto users to deploy, configure, and manage the solution in VMware vSphere® environments. It is ideal for hands-on practitioners, and the training focuses on core concepts and components with Zerto, including material on the major recovery operations such as failovers, tests, and restores. Hands-on labs are included to give learners firsthand experience with setup and protection, plus instant recovery from ransomware after a simulated infection.

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Audience

This course is ideal for Zerto customers and Zerto Partners.

Prerequisites

No prior Zerto experience is required. However, before attending this course, you should have an understanding of VMware vSphere and virtualization technologies.

Course objectives

After completing this course, you should be able to:

- Articulate the top use cases Zerto supports and what architectures are needed for each use case
- Describe the major Zerto components and how they interoperate
- Install, set up, and configure Zerto in a vSphere environment
- Protect virtual machines replicating locally and to a secondary peer site
- Perform the most common recovery operations, including file restores, failover tests, live failover, and moves

Detailed course outline

Module 1: Zerto Overview	• Define Zerto platform • Explain Zerto platform functionalities • Zerto components	• Zerto use cases • Complete data protection with Zerto and HPE
Module 2: Zerto Virtual Manager Appliance (ZVMA)	• Define Zerto Virtual Manager Appliance (ZVMA) • Requirements	• Resources
Module 3: Virtual Replication Appliances (VRAs)	• Virtual Replication Appliance (VRA) overview • What Is a Virtual Replication Appliance? (VRA) • VRA deployment	• VRA: source versus target summary • VRA helpers overview • VRA setup and load balancing

Module 4: Architectures	• Basic on-premises architecture
	• Operational recovery architecture
	  – Local, same-site replication with optional offsite copy
	• Disaster recovery architecture
	  – Replication to remote site for classic DR
		• DR with extended journal copy architecture
		  – Remote DR with additional copy on the DR site or sent to the cloud
		• Operational recovery and DR architecture
		  – Local replication plus DR site and additional copy from both

Module 5: Journal	• Journal overview
	• Journal-based recovery
	• Journal technology
		• Journal Settings and Sizing
		  – Journal history
		  – Journal size hard limit
		  – I/O considerations
		  – Estimating journal sizing

Module 6: Zerto Replication	• Zerto replication overview • What Is a Checkpoint? • What is write-order fidelity? • Replication types	• Replication: Initial Sync • Replication: Bitmap Sync • Replication: Delta Sync

Module 7: Virtual Protection Groups (VPG)	• Virtual Protection Group (VPG) overview
	• Consistent protection and recovery
	• Creating VPG: Four main options
	• Three Types of VPGs
	  – Remote DR and continuous backup VPG
	  – Local continuous backup VPG
	  – Data mobility and migration VPG
		• VM Auto-Protect
		• VPG replication prioritization overview
		• VPG replication prioritization in GUI
		• One-to-many overview
		• Exclude disks
		• VPG considerations

Module 8: Real-time Encryption Detection	• Anatomy of an Attack
	• Backup-based Detection is Inadequate
	• Earliest warning when an attack is occurring
	• Replicate and Detect
	• Zerto Resilience Observation Console
		• Encryption Analyzer
		  – Collection phase
		  – Inspection phase
		  – Reaction phase
		    ▫ Alerting
		    ▫ Tagging
		    ▫ User Response
		• Considerations

Module 9: File and VM Restores	• Instant Restores of Files, Folders, and VMs	• Restore Limitations
	• Instant File/Folder Restores	• File Restore Process
	• Recovery Operations: File Restore	• Instant VM Restores

Module 10: Recovery Concepts	• Recovery Operations: Key Concepts	• Commit Policy Considerations
	• Scratch disk size and location	• Reverse Protection Overview
	• Commit Overview	• VM Shutdown Options
	• Commit Policies	
	– None	
	– Auto-Commit	
	– Auto-Rollback	

| **Module 11: Recovery Operations: Failover Test** | • Failover test overview | • Recovery report |
| | • Failover test Process | • Alternative uses for the failover test |

Module 12: Recovery Operations: Live Failover	• Failover live: Pre-commit	• Failover live: Commit
	– 1. Source VMs power down	– 1. Data promoted to VM disks from scratch disks
	– 2. Failed over VMs power up	– 2. Scratch disks and journals removed
	– 3. VMs read from journal and replicas	– 3a. With reverse protection, replicate back to original source
	– 4. VMs write to scratch journals	– 3b. Could instead fail back if so desired
		• Before Your First Live Failover

Module 13: Recovery Operations: Move	• Move Operation	– User or script commits operation; data promotes
	– User or script initiates move.	• Move Parameters: Keep Source VMs
	– Production VMs are shut down; uses last checkpoint so RPO = zero.	
	– Pre-commit VMs are created and powered on.	

Module 14: Recovery Operations: Clone	• Creating an Offsite Clone	– Select which site and datastore to clone to
	– Select the VMs to clone	– Clones come up as powered off VMs with a checkpoint timestamp
	– Select the journal checkpoint to use	

Module 15: Extended Journal Copy	• Zerto Extended Journal Copy Overview	• Continuous Data Protection with Extended Journal Copy
	• Extended Journal Copy	• Extended Journal Copy Scale - Out - Read
	– Architecture	• Index and Search Architecture
	– Repository	• Recovering Across the Short and Long Term
	– Disk Objects Map	
	– Scale-Out - Write	

Module 16: Zerto Analytics	• Zerto Analytics Full Reporting Suite	• Zerto Analytics API
	• Enabling Zerto Analytics	• Lab Exercises
	• Zerto Analytics Secure Architecture	• Recovery Operations Recap
	• Resource Planner	• Course Summary
	• Resource Planner Process	• Certification
	• Resource Planner Requirements	

Detailed Lab outline

Exercise 1: Introduction to HPE Virtual Labs

Exercise 2: Deploy the Zerto Virtual Manager Appliance (ZVMA)

Exercise 3: Configure the ZVMA

Exercise 4: License and Pair Zerto Sites

Exercise 5: VRA Installation

Exercise 6: Create a Virtual Protection Group

Exercise 7: Create Local Virtual Protection Group

Exercise 8: Copy a Virtual Protection Group

Exercise 9: Edit a Virtual Protection Group

Exercise 10: Restore Files and Folders After a Ransomware Attack

Exercise 11: Failover Test

Exercise 12: Perform a Live Failover

Exercise 13: Perform a Move Operation

Exercise 14: Create an Extended Journal Repository

Exercise 15: Edit VPG to Enable Extended Journal Copy

Exercise 16: Restore a VM

Exercise 17: Using Zerto Analytics

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