# DELL Technologies

# Dell Avamar Implementation and Administration
## Course Description

### Overview

This course explains and demonstrates the deployment, configuration, and use of Avamar. Students learn how to deploy Avamar Virtual Edition; how to upgrade all models of Avamar to the latest release; how to configure Avamar for operation; how to create and manage user accounts; how to configure and initiate backup and restore of data; and how to monitor Avamar operation. This course includes labs to reinforce these skills through exercises.

### Audience

This course is intended for Dell internal, external customers and partners, whose roles are backup administrators, software support specialists, and others who install, configure, and support Avamar environments.

### Prerequisite Knowledge/Skills

To understand the content and successfully complete this course, a student must have:

- A basic knowledge of application backup requirements.
- An understanding of host to storage operations.
- A general knowledge of networking protocols.
- Linux and Windows system administration
- PowerProtect DD systems and administration

### Course Objectives

Upon successful completion of this course, participants should be able to:

- Describe the Avamar solution, its component, and processes
- Locate Avamar installation procedures and best practices
- Deploy Avamar
- Perform an upgrade of Avamar
- Start and stop Avamar processes
- Configure Avamar server software
- Integrate supported systems into Avamar
- Verify operation of Avamar
- Establish remote connectivity for support monitoring and assistance

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- Troubleshoot and resolve installation or upgrade issues
- Perform Avamar administrative tasks using various interfaces
- Run scheduled and on-demand backups for a variety of systems
- Restore files using Avamar Administrator and Avamar Client interfaces
- Describe and configure Avamar replication
- Describe Avamar server daily maintenance activities
- Use Avamar tools to perform system monitoring, maintenance, capacity management, and troubleshooting
- Deploy Avamar clients
- Integrate Avamar with Data Domain

## Course Outline

### Avamar Concepts

The content of this course is designed to support the course objectives.

- Explore Dell Avamar
- What is Avamar
- Avamar Features
- Avamar Data Deduplication
- Avamar System Fault Tolerance
- Avamar Terminology
- Examine Dell Avamar Architecture
    - System Components
    - Avamar Server Editions
    - Avamar Data Store (ADS) Specifications
    - Server Node Types and Configurations
- Integration with Dell Avamar
    - Avamar NDMP Integration
    - Avamar Integrated with PowerProtect DP series appliances
    - Avamar Integrated with PowerProtect DD series appliances
    - Avamar Support for Virtual Machines
    - Sizing with PowerProtect DD

### Avamar Implementation

- Explore Avamar Virtual Edition
    - What is AVE
    - AVE Supported Environments

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- o  AVE Configurations and Pre-requisites
- Examine AVE Configurations
  - o  Appropriate Environments for AVE
  - o  AVE Installation in VMware Environment
  - o  VM Disk Configuration
- Explore the Install and Upgrade
  - o  Simulation Activity- Install AVE
  - o  Upgrading Avamar
  - o  Post Installation Activities
- Analyze Expanding AVE with ave_scale Command
  - o  What is the ave_scale command
  - o  Running the ave_scale command
  - o  Examples of the ave_scale command

### Avamar Administration

- o  Avamar Overview
- o  Avamar System Components
- o  Avamar Client Processes
- o  Avamar Administrative and Management Interfaces
- o  Client-Server Data Port Usage and Firewall Requirements
- o  Avamar AUI Dashboard Overview
- o  Avamar AUI Dashboard Demo
- o  Avamar Processes and Port Requirements

- Examine Avamar Backup Client Software
  - o  Avamar Client Structure and Processes
  - o  Avamar Backup Client Software and Requirements
  - o  Avamar Windows Client Software Plug-Ins
  - o  Avamar Database Clients
  - o  Avamar Desktop/Laptop Client Overview
  - o  Avamar Desktop/Laptop Authentication
  - o  Installing Avamar Windows Client Software
  - o  Avamar Client Directory Structure
- Exploring Avamar Account Management
  - o  Asset Management
  - o  Avamar Domains
  - o  Avamar Users and Roles
  - o  Creating and Editing Avamar Users
  - o  Creating and Editing Domains
  - o  Registering and Activating Avamar Clients
  - o  Managing Directory Services

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- o   Avamar Client Manager
- Managing Avamar Backups
  - o   Avamar Backups
  - o   Avamar Policies
  - o   Avamar Schedules
  - o   Allowing Overtime Option
  - o   Avamar Retentions
  - o   Creating a Dataset
  - o   Managing Backups
  - o   Avamar Backup and Maintenance Windows
- Examine Avamar and PowerProtect DD Integration
  - o   Avamar Integration with PowerProtect DD Overview
  - o   PowerProtect DD Integration Features
  - o   Types of PowerProtect DD Configurations with an Avamar Environment
  - o   Backup Processes for PowerProtect DD with Avamar
  - o   Adding and Deleting a PowerProtect DD System
  - o   Restoring from PowerProtect DD with Avamar
  - o   Instant Access
  - o   Impacts of Avamar Maintenance Activities on PowerProtect DD
- Managing Avamar Restores
  - o   Types of Avamar Restores
  - o   Operating System Server Recovery Solutions
  - o   Volume Snapshot Services (VSS) Recovery Pre-Requisites
  - o   Avamar Bare Metal Recovery Wizard
  - o   Windows Full System Backup
- Exploring VMware Backups and Restores
  - o   Avamar Guest Backup Overview
  - o   Avamar Image Backup Overview
  - o   VMware Image Components and Backup Processes
  - o   VMware Image Backup Configuration
  - o   Auto-Discovery of Virtual Machines
  - o   Virtual Machine Restore Overview
  - o   Instant Access – PowerProtect DD
  - o   File-Level Restore (FLR) Process Overview
- Managing Replication
  - o   Avamar Replication Overview
  - o   Replication Types
  - o   Avamar to PowerProtect DD Replication
  - o   PowerProtect DD Appliance Destination Setting
  - o   Replication Destination
  - o   Setting up Replication Policies and Schedules

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### Course Duration
5 Days

- o   How to Perform and Monitor On-Demand Replication
- o   Avamar Data Migration Replication
- Exploring Cloud Tier with Avamar
  - o   Cloud Tier Overview
  - o   Cloud Tier Configuration
  - o   Recalling Backups from the Cloud Tier
  - o   File Level Restore from Cloud Tier
- Examine System Maintenance and Monitoring
  - o   Avamar Profiles
  - o   Creating Customer Event Profile
  - o   Event Management in AUI
  - o   Avamar Email Home/Connect EMC
  - o   Avamar Checkpoints
  - o   Rolling Back a Checkpoint
  - o   Avamar Monitoring
  - o   Backup and Maintenance Windows
  - o   Impact of Maintenance Activities and Backups
  - o   Impact of Maintenance Activities on PowerProtect DD
- Analyze Avamar Capacity
  - o   Avamar Server Capacity Definitions
  - o   Avamar Server Lifecyle
  - o   Capacity Thresholds
  - o   Using the Capacity.sh Utility
  - o   Monitoring Capacity with Integrated PowerProtect DD

- Explore Avamar Reporting Tools
  - o   Avamar Fitness Analyzer Overview
  - o   Fitness Analyzer Overview and Header
  - o   Fitness Analyzer Reports
  - o   Fitness Analyzer Summaries
  - o   Fitness Analyzer Demo
  - o   Running a Report with Avamar Administrator
  - o   Using Third-Party Reporting Tools with Avamar
- Examine Troubleshooting and Logs
  - o   Challenges When Managing Backups
  - o   Managing Backups Successfully
  - o   Possible Client Initialization Issues
  - o   Avamar **getlogs** Utility
  - o   MCS and CRON Logs
  - o   Maintenance Activity Logs

### Course Delivery Modes and Product Version Information

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5 Days

Refer to the **Product Version Description** document for a list of Delivery Modes and product versions covered by this course.

**Support Contact**
Education Services

**DELL Corporation**
Hopkinton
Massachusetts
01748-9103
1-508-435-1000
In North America
1-866-464-7381