



## COURSE DESCRIPTION

Acquire the skills to make your data protection strategy successful with the *Veritas NetBackup 9.1: Administration* course. You will learn the general principles, configuration, and management of NetBackup, including how to best utilize the NetBackup tools and interfaces, effectively monitor backup and restore operations, and ensure that the data recovery objectives are met.

### Delivery Method(s)

This course is available in the following delivery methods:

- [Instructor-led training \(ILT\)](#)
- [Virtual instructor-led training \(VILT\)](#)
- [Learning Lab](#)

### Duration

- Instructor-led training - ILT: 5 days, including 6 months of lab access
- Virtual instructor-led training - VILT: 5 days, including 6 months of lab access
- Learning Lab – Self-paced lesson guide plus 6 months of lab access

### Course Objectives

After completing this course, you will be able to:

- Describe the functions of the Primary/Master server, media servers, and clients.
- Describe how NetBackup backs up and restores data.
- Use the NetBackup Administration Console, Web User Interface, and OpsCenter.
- Configure and manage NetBackup security certificates.
- Configure, manage, and Monitor BasicDisk and AdvancedDisk storage units and storage unit groups.
- Configure file system backup policies and schedules.
- Perform manual backups and user-directed backups.
- Restore files using the Java or Windows BAR interface and OpsCenter Operational Restore.
- Provision storage and configure MSDP.
- Manage NetBackup cloud backups and cloud storage.
- Optimize file system backups with NetBackup Accelerator.
- Backup, restore and protect virtual environments like VMware and Hyper-V.
- Configure Storage Lifecycle Policies (SLPs) and initiate jobs that use SLPs.
- Protect and manage the NetBackup catalog.
- Configure NetBackup WORM protection.
- Optimize NetBackup for performance.
- Generate NetBackup reports in NetBackup, OpsCenter, and APTARE IT Analytics.
- Initiate NetBackup upgrades using VxUpdate.
- Identify and use resources for troubleshooting NetBackup, including the support information gathering tools.

### Who Should Attend

This course is intended for technical professionals responsible for the design, configuration, operation, monitoring, or support of NetBackup.

### Prerequisites

Students should be familiar with general network and storage concepts, and the administration and configuration of Windows or Linux operating systems. Knowledge of virtualization and cloud technologies is useful.

### Hands-On

This course includes practical hands-on lab exercises to apply your new skills in a virtual NetBackup domain. At the start of class students will choose between Windows-based or Linux-based NetBackup servers to perform lab exercises.

## COURSE OUTLINE

### Introducing NetBackup

- Data Protection and the NetBackup Environment
- NetBackup and Flex Appliances: Overview
- NetBackup Integrated Solutions
- NetBackup Installation
- NetBackup Administration Interfaces

### Labs:

- Exercise A: Creating Users and Groups
- Exercise B: Installing the NetBackup Primary/Master Server Software
- Exercise C: Installing the NetBackup Java Remote Administration Console
- Exercise D: Installing the NetBackup Media Server Software
- Exercise E: Installing the NetBackup Client Software
- Exercise F: Exploring the NetBackup Administration Console

### Working with the NetBackup Web UI

- NetBackup Web User Interface
- Configuring NetBackup for Single Sign-On
- Protecting Workload Assets
- Managing Role-based Access Control
- Alerts and Notifications
- Managing User Sessions

### Labs:

- Exercise A: Accessing and Navigating the NetBackup Web User Interface
- Exercise B: Configuring Role-based Access Control
- Exercise C: Configuring NetBackup for Single Sign-On
- Exercise D: Viewing and Configuring Notifications
- Exercise E: Managing User Sessions

### Performing NetBackup Certificate Administration

- Understanding Security Certificates
- Working with Certificate Revocation Lists
- Configuring NetBackup Security Certificates
- Managing NetBackup Security Certificates
- Using External Security Certificates with NetBackup

**Labs:**

- Exercise A: Viewing NetBackup Certificates
- Exercise B: Manually deploying NetBackup Certificates
- Exercise C: Revoking and Reissuing Host ID-based Certificates
- Exercise D: Using External Certificates with NetBackup

**Configuring Basic and Advanced Disk Storage**

- NetBackup Storage Device Concepts
- Configuring a BasicDisk Storage Unit
- Configuring AdvancedDisk
- Managing AdvancedDisk Storage
- Configuring Storage Unit Groups

**Labs:**

- Exercise A: Configuring a BasicDisk Storage Unit
- Exercise B: Configuring AdvancedDisk Storage
- Exercise C: Monitoring and Managing AdvancedDisk Storage
- Exercise D: Configuring a Storage Unit Group

**Configuring NetBackup Policies and Schedules**

- Backup Policies: Overview
- Creating and Configuring Policy Attributes
- Creating a Policy Schedule
- Adding Clients to a Policy
- Creating Backup Selections
- Exclude and Include Lists
- Managing Policies

**Labs:**

- Exercise A: Configuring a Policy to Use a Frequency-based Schedule
- Exercise B: Configuring a Policy to Use a Calendar-based Schedule
- Exercise C: Managing NetBackup Policies

**Protecting File Systems**

- Performing Manual Backup Operations
- Using and Customizing the NetBackup Activity Monitor
- Performing User-directed Backups
- Backup Job-related Tips
- Introduction to Restores
- Performing Restore Operations Using the NetBackup Web UI
- Performing Restore Operations Using the BAR interface

**Labs:**

- Exercise A: Using and Customizing the Activity Monitor
- Exercise B: Performing Manual Backups
- Exercise C: Performing User-initiated Backups
- Exercise D: Restoring Client Files to their Original Location
- Exercise E: Restoring Client Files to an Alternate File System Location
- Exercise F: Restoring Client Files to an Alternate Client System

**Configuring Media Server Deduplication**

- Introduction to MSDP
- Variable-Length Deduplication

- MSDP Architecture
- Planning a Deployment
- Provisioning Storage and Configuring MSDP

**Labs:**

- Exercise A: Configuring NetBackup Media Server Deduplication
- Exercise B: Configuring a Policy to Use MSDP Storage
- Exercise C: Performing Backups to MSDP Storage
- Exercise D: Configuring and Using Client-side Deduplication
- Exercise E: Managing and Monitoring NetBackup MSDP Storage

**Configuring Cloud Storage**

- Using the Cloud with NetBackup
- Configure NetBackup Cloud Storage
- Managing NetBackup Cloud Backups and Cloud Storage

**Labs:**

- Exercise A: Performing Preliminary Tasks
- Exercise B: Configuring Cloud Storage in NetBackup
- Exercise C: Configuring and Performing Backups to the Cloud
- Exercise D: Restoring Client Data from Cloud-based Storage

**Optimizing Filesystem Backups**

- File System Backup Challenges
- Optimizing File System Backups
- Optimizing File System Backups with NetBackup Accelerator
- NetBackup FlashBackup
- Using multiple data streams
- Handling Busy Files on UNIX and Windows File Systems

**Labs:**

- Exercise A: Configuring and Performing Synthetic Backups
- Exercise B: Optimizing Backups Using the NetBackup Accelerator
- Exercise C: Optimizing Backups Using NetBackup FlashBackup
- Exercise D: Configuring and Using Multiple Data Streams

**Protecting VMware Environments**

- Introduction to Virtual Machine Backups
- Configuring VMware Backups
- Performing VMware Backups

**Labs:**

- Exercise A: Configuring NetBackup to Perform VMware Backups
- Exercise B: Configuring a VMware Policy
- Exercise C: Performing and Monitoring VMware Virtual Machine Backups
- Exercise D: Excluding Disks from a VMware Virtual Machine Backup
- Exercise E: Configuring Continuous Data Protection

### Recovering VMware Environments

- Performing VMware Restores
- Instant Access and Instant Rollback for VMware
- VMware Agentless Restores

#### Labs:

- Exercise A: Recovering Virtual Machine Files (agent-based)
- Exercise B: Recovering a VMware Virtual Machine Disk
- Exercise C: Recovering an Entire VMware Virtual Machine
- Exercise D: Using the VMware Agentless Restore
- Exercise E: Downloading Files and Folders from a VM Backup Image
- Exercise F: Creating Instant Access VM from a NetBackup Backup Image
- Exercise G: Instant Rollback for VMs
- Exercise H: Performing Restores on CDP Protected Backup

### Duplicating and Replicating Backups

- Duplication Strategies
- Storage Lifecycle Policy: Concepts
- Using Storage Lifecycle Policies
- Additional Storage Lifecycle Policy Features and Benefits

#### Labs:

- Exercise A: Configuring a Storage Lifecycle Policy
- Exercise B: Configuring a Policy to Use an SLP
- Exercise C: Customizing SLP Settings
- Exercise D: Viewing and Monitoring SLP Operations
- Exercise E: Using SLPs to Perform MSDP Optimized Duplication
- Exercise F: Configuring SLPs for Replicating Backup Images

### Protecting the NetBackup Catalog

- Understanding NetBackup Catalog
- Protecting the NetBackup Catalog
- Performing NetBackup Catalog Recovery
- Maintaining the NetBackup Catalog

#### Labs:

- Exercise A: Verifying Catalog Configuration Files
- Exercise B: Configuring and Running NetBackup Catalog Backups
- Exercise C: Recovering the Catalogs Using the NetBackup Catalog Recovery Wizard
- Exercise D: Performing Catalog Operations
- Exercise E: Configuring a Policy for Catalog Archive

### Configuring Immutable and Indelible Storage

- Ransomware Overview
- NetBackup Protect Against Ransomware
- Configuring NetBackup WORM Protection
- Backup Anomaly Detection

#### Labs:

- Exercise A: Configuring Disk Pool and WORM Storage Unit
- Exercise B: Configuring NetBackup Policy

- Exercise C: Understanding Catalog Operations on WORM Image Copy
- Exercise D: Configuring and Identifying Backup Anomaly

### Generating NetBackup Reports

- Generating Reports in NetBackup
- NetBackup OpsCenter
- Generating NetBackup Reports in OpsCenter
- Generating Reports Using APTARE IT Analytics

#### Labs:

- Exercise A: Using the NetBackup Reports Utility
- Exercise B: Configuring OpsCenter Data Collection for NetBackup
- Exercise C: Generating Reports Using OpsCenter

### Upgrading and Updating NetBackup

- NetBackup Upgrades: Overview
- VxUpdate: Overview
- Deployment Policy Management
- Initiating Upgrades Using VxUpdate
- VxUpdate: Error Codes

#### Labs:

- Exercise A: Populating the Repository with NetBackup Packages
- Exercise B: Configuring a Deployment Policy
- Exercise C: Manually Initiating Upgrades from the Primary/Master Server Using VxUpdate
- Exercise D: Initiating Upgrades from the Client Using VxUpdate
- Exercise E: Viewing the Deployment Job Status

### Collecting Logs and Diagnostic Information

- Performing Basic NetBackup Troubleshooting
- Identifying NetBackup Processes, Services, and Daemons
- NetBackup Logging: Overview
- Using Support Utilities
- Using NetBackup Support Resources

#### Labs:

- Exercise A: Viewing the NetBackup Services
- Exercise B: Using the **nbsu** and **nbcplogs** Commands
- Exercise C: Viewing and Setting Debug Logging Properties
- Exercise D: Enabling NetBackup Legacy Debug Logging
- Exercise E: Viewing Debug Logging Levels for Unified Logs
- Exercise F: Using the Logging Assistant

### Appendix A: Protecting Hyper-V Environment

- Introduction to NetBackup for Hyper-V
- Configuring Hyper-V Backups
- Configuring NetBackup Policies for Hyper-V
- Performing and Monitoring Hyper-V Backups
- Performing Hyper-V Restores
- Performing Hyper-V Restores with the NetBackup Add-in for SCVMM

#### Labs:

- Exercise A: Configuring NetBackup Communication with Hyper-V
- Exercise B: Configuring a Hyper-V Intelligent Policy and Backing Up Hyper-V Virtual Machines
- Exercise C: Restoring Individual Files
- Exercise D: Restoring the Full Hyper-V Machine
- Exercise E: Performing Hyper-V Backups and Restores in an SCVMM Environment

#### **Appendix B: Protecting NAS Data**

- Introduction to NetBackup for NDMP
- Preparing for NDMP Backups
- Configuring Local NDMP Backup
- Configuring Remote NDMP Backups
- Accelerator for NDMP Filers
- Protecting a NetApp cDOT NDMP Filer
- Understanding NDMP Three-way Backups
- Data Protection Configuring NDMP Three-way Backups
- Dynamic NAS (DNAS) Data Protection

#### **Labs:**

- Exercise A: Authorizing NetBackup Access to NDMP Hosts
- Exercise B: Configuring and Performing NDMP Backups
- Exercise C: Using NetBackup Accelerator for NDMP
- Exercise D: Performing NDMP Restores
- Exercise E: Performing Prerequisite Tasks for D-NAS Configuration
- Exercise F: Configuring and Performing D-NAS Backups
- Exercise G: Restoring D-NAS Backups

#### **Appendix C: Configuring and Managing Tape Storage**

- Media Manager Storage Units
- Configuring Tape Devices
- Verifying Tape Storage
- NetBackup Media Concepts
- Configuring Media
- Managing Robots and Tape Drives
- Monitoring Media and Media States
- Managing Tapes
- NetBackup Device Troubleshooting
- Common NetBackup Device Issues
- Media And Device Selection
- Media-related Status Codes
- Using Multiple Data Streams
- Optimizing Tape Drive Performance Using Multiplexing
- Troubleshooting Frozen and Suspended Media

#### **Labs:**

- Exercise A: Verifying and Discovering Tape Devices
- Exercise B: Viewing Configured Tape Devices
- Exercise C: Configuring Tape Devices
- Exercise D: Configuring Volume Pools
- Exercise E: Configuring Media
- Exercise F: Viewing Tape Drive and Robot Configuration Settings
- Exercise G: Using the Device Monitor to Monitor and Manage Tape Drives
- Exercise H: Managing Media
- Exercise I: Using the Robtest Utility

- Exercise J: Running NetBackup Reports from the Command Line
- Exercise K: Media State Management Using the Command Line

#### **Appendix D: Performing Instant Recovery**

- Using VMware Instant Recovery
- VMware Instant Recovery: Differences
- VMware Instant Recovery: Process
- VMware Instant Recovery: Options
- NetBackup Plug-in in vSphere Web Client
- Instant Recovery Cleanup
- Executing the nbrestorevm Command

#### **Labs:**

- Exercise A: Performing Non-NetBackup Pre-requisite Tasks for IRV
- Exercise B: Performing NetBackup Pre-requisite Tasks for IRV
- Exercise C: Performing Instant Recovery for VMware Using the vSphere Web Client