COURSE DESCRIPTION

Acquire the skills to make your data protection strategy successful with the *Veritas NetBackup 9.1: Advanced Administration* course. You will learn advanced NetBackup topics, including NetBackup performance, security, disaster recovery, application and database protection on physical and virtual machines, and protecting data backed up to and from the cloud.

This course also covers using NetBackup to manage Oracle, Microsoft Exchange, Microsoft SQL, Microsoft SharePoint, and Hadoop database backups and restores along with other modern workloads like containerized applications, Red Hat Virtualization, and Nutanix Acropolis Hypervisor. NetBackup APIs, Parallel Streaming Framework, Universal Shares, Bare Metal Restore, and NetBackup MSDP Cloud are also discussed in this course.

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
By the completion of this course, you will be able to:
- Improve NetBackup performance by addressing bottlenecks and becoming familiar with NetBackup performance enhancement features.
- Ensure that your NetBackup environment and data are secure using security certificates, key management services, and encryption.
- Prepare for common disasters and plan for disaster recovery using optimized duplication and NetBackup MSDP cloud.
- Optimize NetBackup deduplication storage and use by managing performance-enhancing features for backups and restores.
- Configure NetBackup to back up and restore Oracle, Microsoft Exchange, Microsoft SQL, Microsoft SharePoint, and Hadoop databases.
- Configure, run, and manage backups for applications running in virtual machines.
- Use NetBackup to protect modern workloads like containerized applications, Red Hat Virtualization, and Nutanix Acropolis Hypervisor.
- Protect in-cloud workloads using NetBackup and orchestrate restores of NetBackup images.
- Manage NetBackup cloud storage and cloud backups.

- Work with Veritas NetBackup APIs.
- Configure NetBackup integration with Veritas Resiliency Platform and Access Appliance 3340 (7.4.2).
- Configure and use Bare Metal Restore.
- Protect databases using NetBackup XBSA.
- Protect application data with universal shares.

Who Should Attend
This course is intended for NetBackup system administrators, system engineers, technical support personnel, and system integration and development staff who are responsible for implementing new and advanced NetBackup 9.1 features and functions.

Prerequisites
Students should be familiar with general network and storage concepts, and the administration and configuration of Windows or Linux operating systems. Students must also have one to three years of experience with basic NetBackup administration, configuration, and operation. These prerequisites can be met by attending any version of the NetBackup Administration course plus additional on-the-job experience.

Hands-On
This course includes practical hands-on lab exercises to apply the new skills learned 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

Securing Backup Data
- Understanding Security Concerns in a Backup Environment
- Using NetBackup Key Management Services
- Encrypting NetBackup Deduplication Data
- Using NetBackup Client Encryption

Labs
- Exercise A: Configuring and Using the NetBackup Key Management Service (KMS)
- Exercise B: Backing up and Recovering KMS Database Files
- Exercise C: Configuring and Performing a MSDP Encrypted Backup
- Exercise D: Configuring and Performing a Client Encrypted Backup

Improving NetBackup Performance
- Configuration and Performance Guidelines
- Guidelines for Managing the NetBackup Catalog
- Performance Guidelines for NetBackup Policies
- Measuring and Evaluating NetBackup Performance
- Tuning the NetBackup Data Transfer Path

Labs
- Exercise A: Understanding the Implications of Different Storage Selection Methods

- Exercise B: Managing the NetBackup Catalog Size
- Exercise C: Measuring and Evaluating NetBackup Performance
- Exercise D: Tuning the NetBackup Data Transfer Path

Configuring and Using NetBackup MSDP Cloud
- MSDP Cloud Support
- MSDP Cloud Immutable (WORM) Storage
- Image sharing Using MSDP Cloud

Labs
- Exercise A: Configuring NetBackup MSDP Cloud
- Exercise B: Duplicating Backups from Local MSDP Storage to MSDP Cloud
- Exercise C: Examining MSDP Cloud Configuration Files
- Exercise D: Using the MSDP Image Sharing Feature

Managing and Optimizing NetBackup Deduplication
- Improving Deduplication Backup Performance
- Optimizing Deduplication Restores and Rehydration
- Managing NetBackup MSDP
- Protecting and Recovering MSDP Catalog

Labs
- Exercise A: Seeding MSDP Backup Data
- Exercise B: Configuring and Performing Client Direct Restores
- Exercise C: Defragmenting Backups Using Image Rebasing
- Exercise D: Configuring and Performing MSDP Catalog Backups
- Exercise E: Simulating an MSDP Catalog Corruption
- Exercise F: Performing and Verifying the Recovery of the MSDP Catalog

Protecting Application Data with Universal Shares
- Introduction to Universal Shares
- BYO Universal Shares
- Configuring Universal Shares
- Backing Up to a Universal Share
- Protecting Data in a Universal Share

Labs
- Exercise A: Verifying BYO Media Server Configuration
- Exercise B: Creating and Mounting a Universal Share
- Exercise C: Performing Backup to a Universal Share
- Exercise D: Protecting Data in a Universal Share
- Exercise E: Restoring Data to a Universal Share

Protecting Oracle Databases
- Introduction to Oracle Databases
- NetBackup for Oracle: Overview
- Managing Oracle
- Configuring Oracle Database Backups
- Monitoring and Maintaining: Oracle Database Backups
- Oracle Database Disaster Recovery Considerations
- Real Application Clusters

Labs
- Exercise A: Initial Configuration of Oracle
- Exercise B: Registering the Oracle Instance with NetBackup

- Exercise C: Creating an Oracle Intelligent Policy
- Exercise D: Performing a Backup Using an Oracle Intelligent Policy
- Exercise E: Simulating a Failure of an Oracle Database
- Exercise F: Restoring an Oracle Database

Protecting Microsoft SQL Databases
- Introduction to Microsoft SQL Server
- NetBackup for SQL Server: Overview
- Managing SQL Server Objects
- Protecting Microsoft SQL Server Assets
- Using SQL Server Intelligent Policies
- Restoring Microsoft SQL Server Assets
- Instant Access for Microsoft SQL Server

Labs
- Exercise A: Introduction to the SQL Server Environment
- Exercise B: Registering SQL Instance with NetBackup
- Exercise C: Configuring and Performing a SQL Server Backup
- Exercise D: Deleting a SQL Database
- Exercise E: Restoring a SQL Database
- Exercise F: Using the Instant Access for SQL Feature
- Exercise G: Creating a NetBackup SQL Intelligent Policy (Optional)
- Exercise H: Performing a Manual SQL Server Backup Using an Intelligent Policy (Optional)
- Exercise I: Restoring a SQL Database Using NetBackup MS SQL Client (Optional)

Protecting Microsoft SharePoint
- Introduction to Microsoft SharePoint Server
- Configuring NetBackup for SharePoint
- SharePoint Disaster Recovery Considerations

Labs
- Exercise A: Configuring a Microsoft SharePoint Policy in NetBackup
- Exercise B: Performing NetBackup Tasks to Enable SharePoint Granular Recovery
- Exercise C: Performing a Manual Backup Using a SharePoint Policy
- Exercise D: Performing a SharePoint Document Restore
- Exercise E: Restoring a SharePoint Web Application

Protecting Microsoft Exchange
- Introduction to Microsoft Exchange Server
- Configuring NetBackup for Exchange
- Exchange and High Availability Environments
- Monitoring and Maintaining Exchange Database Backups
- Exchange Disaster Recovery Considerations

Labs
- Exercise A: Configuring a Microsoft Exchange Backup Policy
- Exercise B: Performing NetBackup Tasks to Enable Exchange Granular Recovery (GRT)
- Exercise C: Performing a Microsoft Exchange Database Backup
- Exercise D: Performing a Roll-Forward Recovery

- Exercise E: Performing Point-in-Time Recovery
- Exercise F: Performing an Exchange GRT Database Backup
- Exercise G: Recovering a Deleted E-mail Message
- Exercise H: Performing Full and Differential Backups of an Exchange Database (Optional)
- Exercise I: Restoring the Exchange Database from Full and Differential Backup Images (Optional)

Protecting Hadoop Data Using NetBackup
- Parallel Streaming Framework: Overview
- Protecting Hadoop Data Using NetBackup
- Backing Up a Hadoop Cluster
- Recovering Data to a Hadoop Cluster
Labs
- Exercise A: Understanding Hadoop Configuration
- Exercise B: Configuring Credentials for Hadoop in NetBackup
- Exercise C: Configuring the NetBackup Policy
- Exercise D: Performing Hadoop Backup
- Exercise E: Restoring Hadoop Data

Protecting Nutanix Acropolis Hypervisor Workloads
- NetBackup for Nutanix Acropolis Hypervisor: Overview
- Configuring NetBackup Communication with AHV
- Configuring Secure Communication
- Protecting AHV Virtual Machines
- Recovering Nutanix AHV Virtual Machines
Labs
- Exercise A: Configuring NetBackup Communication with AHV
- Exercise B: Configuring, Performing, and Monitoring Backups of Nutanix AHV Virtual Machines
- Exercise C: Performing Restores of Nutanix AHV Virtual Machines

Protecting In-cloud Workloads Using NetBackup
- Veritas CloudPoint: Overview
- NetBackup Integration with CloudPoint
- Protecting Cloud Workloads
- Recovering Cloud Workloads
Labs
- Exercise A: Protecting Cloud Assets Using NetBackup (Optional)
- Exercise B: Restoring Cloud Assets Using NetBackup (Optional)

Protecting Containerized Applications
- Container Fundamentals
- Protecting Containerized Applications in Docker
- Protecting Containerized Applications in Kubernetes
- Managing Kubernetes Assets
- Protecting and Recovering Kubernetes Assets
Labs
- Exercise A: Obtaining and Deploying the NetBackup Client Container Docker Image
- Exercise B: Protecting Application Data Using the NetBackup Client Container

- Exercise C: Using the NetBackup Client Container to Recover Application Data
- Exercise D: Deploying and Configuring the NetBackup Kubernetes Operator
- Exercise E: Adding and Configuring Settings for Kubernetes Clusters
- Exercise F: Protecting Kubernetes Assets
- Exercise G: Recovering Kubernetes Assets

Orchestrating Restores of NetBackup Images
- Introduction to Veritas Resiliency Platform
- Integrating NetBackup and Veritas Resiliency Platform
- Configuring Resiliency Group with NetBackup Virtual Machines
- Restoring NetBackup Virtual Machines
Labs
- Exercise A: Verifying and Configuring Prerequisites for Remote Recovery using NetBackup Images
- Exercise B: Performing and Monitoring Backup, Replication, and Import Jobs
- Exercise C: Adding NetBackup Primary/Master Servers in VRP
- Exercise D: Creating a Resiliency Group using NetBackup as the Copy Technology
- Exercise E: Performing a Rehearsal and Rehearsal Cleanup
- Exercise F: Restoring Data using NetBackup to On-premises Data Center

Appendix A: Implementing Long Term Retention (LTR) using Veritas Access
- NetBackup Integration with Access Appliance 3340 (7.4.2)
- Configuring an S3 Bucket on Veritas Access
- Configuring Access as a Cloud Storage Server
- Configuring Backup Over S3
- Veritas Data Deduplication
Labs
- Exercise A: Configuring Veritas Data Deduplication with Veritas Access
- Exercise B: Configuring Veritas Data Deduplication Storage in NetBackup
- Exercise C: Creating a S3 Bucket on Veritas Access
- Exercise D: Configuring Veritas Access Cloud Storage in NetBackup
- Exercise E: Configuring and Performing Backups Using NetBackup Policies

Appendix B: Configuring and Using Bare Metal Restore
- Introduction to Bare Metal Restore
- Configuring Bare Metal Restore
- Protecting Clients
- Shared Resource Trees
- Restoring Clients
- Creating a Virtual Machine from a Client Backup
Labs
- Exercise A: Configuring BMR Master Server
- Exercise B: Configuring BMR Boot server

- Exercise C: Configuring SRT
- Exercise D: Configuring Backup Policy for BMR
- Exercise E: Performing BMR Restore
- Exercise F: Creating a Virtual Machine from Client Image Backup

Appendix C: Working with Legacy Policies and Generic Application Backups
- Configuring NetBackup with Legacy Oracle Policies
- Monitoring and Maintaining Oracle Database Backups from Legacy Policies
- Using the NetBackup Microsoft SQL Client Console
- Using SQL Server Batch Files in NetBackup Policies
- Customizing Generic Application Backups

Labs
- Exercise A: Viewing Initial Configuration of Oracle
- Exercise B: Registering the Oracle Instance with NetBackup
- Exercise C: Creating an Oracle Legacy Policy
- Exercise D: Performing a Backup Using an Oracle Legacy Policy
- Exercise E: Simulating a Failure of an Oracle Database
- Exercise F: Restoring an Oracle Database
- Exercise G: Collecting Information about the SQL Server Environment
- Exercise H: Configuring and Performing a SQL Server Backup
- Exercise I: Restoring the Microsoft SQL Database
- Exercise J: Understanding Application Backup Concepts
- Exercise K: Working with the NetBackup Notify Scripts
- Exercise L: Configuring a Policy to Run a Cold Oracle Backup
- Exercise M: Performing a Cold Oracle Backup

Appendix D: Protecting Red Hat Virtualization Workloads
- Introduction to Red Hat Virtualization (RHV)
- NetBackup for RHV: Configuration and Deployment
- Protecting Red Hat Virtualization Virtual Machines
- Recovering Red Hat Virtualization Virtual Machines

Labs
- Exercise A: Configuring NetBackup Communication with RHV
- Exercise B: Protecting RHV Virtual Machines
- Exercise C: Recovering RHV Virtual Machines

Appendix E: Working with NetBackup APIs
- Introduction to NetBackup APIs
- Using NetBackup APIs for Automation
- Creating and Using API Keys

Labs
- Exercise A: Using NetBackup APIs with Swagger
- Exercise B: Using Swagger to Configure MSDP
- Exercise C: Configuring VMware Protection Using NetBackup APIs
- Exercise D: Automating the Use of NetBackup Universal Shares
- Exercise E: Automating SQL Database Backup and Recovery

Appendix F: Protecting Databases Using NetBackup XBSA
- Introduction to XBSA and NetBackup XBSA
- Introduction to NetBackup MySQL Agent
- Configuring the NetBackup MySQL Agent
- Backup and Restore of MySQL
- Introduction to NetBackup PostgreSQL Agent
- Configuring NetBackup PostgreSQL Agent
- Backup and Restore of PostgreSQL

Labs
- Exercise A: Installing and Configuring the NetBackup for PostgreSQL Agent
- Exercise B: Configuring and Performing PostgreSQL Backups
- Exercise C: Performing PostgreSQL Restores
- Exercise D: Installing and Configuring the NetBackup for MySQL Agent
- Exercise E: Configuring and Performing MySQL Backups
- Exercise F: Performing Restores of MySQL Databases