VRT-202 Veritas Cluster Server for UNIX/Linux Administration

COURSE DESCRIPTION
The VERITAS Cluster Server course is designed for the IT professional tasked with installing, configuring, and maintaining VCS clusters. This five-day, instructor-led, hands-on class covers how to use VERITAS Cluster Server to manage applications in a high availability environment. After gaining the fundamental skills that are needed to manage a highly available application in a cluster, you will deploy VCS in a lab environment to implement a sample cluster design.

Delivery Method
Instructor-led training (ILT)

Duration
Five days

Course Objectives
By the end of this course, you should be able to:
• Manage existing highly available application services using VERITAS Cluster Server.
• Install VCS and create a cluster.
• Configure service groups and resources.
• Implement and verify failover and failback capability for application, storage, and network services.
• Configure and optimize cluster behavior.
• Protect data in a shared storage environment.
• Configure VCS to manage an Oracle database, an NFS share, and other applications.
• Analyze, troubleshoot, and correct cluster problems.
• Implement four-node clusters.
• Configure service group dependencies and workload management.
• Implement alternative network configurations.

Who Should Attend
This course is for system administrators, system engineers, network administrators, system integration or development staff, and technical support personnel who will be working with VERITAS Cluster Server.

Prerequisites
You should have experience as a system and network administrator working in a UNIX environment. Experience developing shell or Perl scripts is helpful.

Hands-On
This course includes practical exercises that enable you to test your new skills and begin to transfer them into your working environment.

COURSE OUTLINE

VERITAS Cluster Server, Fundamentals

High Availability Concepts

• High Availability Concepts
• Clustering Concepts
• Clustering Prerequisites

VCS Building Blocks

• VCS Terminology
• Cluster Communication
• VCS Architecture

Preparing a Site for VCS Implementation

• Hardware Requirements and Recommendations
• Software Requirements and Recommendations
• Preparing Installation Information

Installing VCS

• Using the VERITAS Product Installer
• VCS Configuration Files
• Viewing the Default VCS Configuration
• Other Installation Considerations

VCS Operations

• Managing Applications in a Cluster Environment
• Service Group Operations
• Using the VCS Simulator

VCS Configuration Methods

• Starting and Stopping VCS
• Overview of Configuration Methods
• Online Configuration
• Offline Configuration
• Controlling Access to VCS

Preparing Services for High Availability

• Preparing Applications for VCS
• One-Time Configuration Tasks
• Testing the Application Service
• Stopping and Migrating an Application Service

Online Configuration

• Online Service Group Configuration
• Adding Resources
• Solving Common Configuration Errors
• Testing the Service Group

Offline Configuration

• Offline Configuration Procedures
• Offline Configuration Practices and Tools
• Solving Offline Configuration Problems
• Testing the Service Group

Sharing Network Interfaces

• Parallel Service Groups
• Sharing Network Interfaces
• Localizing Resource Attributes

Configuring Notification

• Notification Overview
• Configuring Notification
• Using Triggers for Notification

Configuring VCS Response to Resource Faults
• VCS Response to Resource Faults
• Determining Failover Duration
• Controlling Fault Behavior
• Recovering from Resource Faults
• Fault Notification and Event Handling
Cluster Communications
• VCS Communications Review
• Cluster Membership
• Cluster Interconnect Configuration
• Joining the Cluster Membership
• Changing the Interconnect Configuration
System and Communication Faults
• Ensuring Data Integrity
• Cluster Interconnect Failures
I/O Fencing
• Data Protection Requirements
• I/O Fencing Concepts and Components
• I/O Fencing Operations
• I/O Fencing Implementation
• Configuring I/O Fencing
• Stopping and Recovering Fenced Systems
Troubleshooting
• Monitoring VCS
• Troubleshooting Guide
• Cluster Communication Problems
• VCS Engine Problems
• Service Group and Resource Problems
• Archiving VCS-Related Files
VERITAS Cluster Server, Example Application Configurations
Clustering Applications
• Application Service Overview
• VCS Agents for Managing Applications
• The Application Agent
Clustering Databases
• VCS Database Agents
• Database Preparation
• The Enterprise Agent for Oracle
• Database Failover Behavior
• Additional Oracle Agent Functions
Clustering NFS
• Preparing NFS for High Availability
• Testing the NFS Service
• Configuring an NFS Service Group
• NFS Lock Failover

VERITAS Cluster Server, Implementing Local Clusters

Workshop: Reconfiguring Cluster Membership

• Task 1: Removing a System from a Running VCS Cluster
• Task 2: Adding a New System to a Running VCS Cluster
• Task 3: Merging Two Running VCS Clusters

Service Group Interactions

• Common Application Relationships
• Service Group Dependency Definition
• Service Group Dependency Examples
• Configuring Service Group Dependencies
• Alternative Methods of Controlling Interactions

Workload Management

• Startup Rules and Policies
• Failover Rules and Policies
• Configuring Startup and Failover Policies

Alternate Network Configurations

• Alternative Network Configurations
• Additional Network Resources
• Example MultiNIC Setup

Data Center Availability

• Cluster Management Console
• Storage Foundation Management Server
• Disaster Recovery
• Symantec Data Center Foundation