Arctera InfoScale Availability 9.0 for UNIX/Linux: Administration

Course Description

COURSE DESCRIPTION

The Arctera InfoScale Availability 9.0 for Unix/Linux: Administration course is designed for IT professionals tasked with installing, deploying, configuring, maintaining Arctera Cluster Server (VCS) clusters, InfoScale features support for protection against ransomware, and InfoScale support for Cloud environments.

This course discusses how to use InfoScale Availability to manage applications and databases in high-availability environments and Cloud environments. The course is designed to enable you to gain the necessary fundamental and advanced skills that are required to manage a highly available application in a cluster. It also discusses how to deploy InfoScale Availability in the lab environment to practically implement a sample cluster design and deployment.

Delivery Methods

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:

- Outline the different VCS cluster communication mechanisms.
- Explain InfoScale support for multi-version clusters.
- Perform common administrative cluster operations.
- Summarize VCS user and agent account passwords encryption standards.
- Outline online and offline configuration procedures.
- Configure notifications and triggers to customize VCS behaviour in response to events.
- Explain how VCS responds to resources faults.
- Describe how the Intelligent Monitoring Framework improves fault detection.
- Describe VCS response to common system and cluster interconnect failures.
- Illustrate how I/O Fencing protects data in common cluster scenarios.
- Manage applications and databases in a VCS environment.
- Explain InfoScale support for containers and Kubernetes.
- InfoScale features support for protection against ransomware, and InfoScale support for Cloud environments.

Who Should Attend

This course is designed for UNIX/Linux system administrators, system engineers, technical support personnel, network/SAN administrators, and systems integration/development staff, who will install, configure, manage, and integrate InfoScale Availability.

Prerequisites

Knowledge of and hands-on experience with UNIX/Linux systems administration is required.

Hands-On

This course includes practical lab exercises that enable you to test your new skills and begin to transfer those skills into your working environment.

COURSE OUTLINE

Cluster Server Basics

High Availability Concepts

- High Availability Concepts
- Clustering Concepts
- High Availability Applications
- Clustering Prerequisites

Labs: Introduction

- Exercise A: Viewing Virtual Machine Configuration Details
- Exercise B: Verifying Network Connectivity

Labs:

- Exercise A: Performing a CPI Pre-installation Verification
- Exercise B: Performing a SORT Pre-installation Verification
- Exercise C: (Optional) Visualizing InfoScale Information in AI Browser

Installing and Licensing InfoScale

- Introducing the Arctera InfoScale Product Suite
- Tools for Installing InfoScale Products
- InfoScale Cloud Offerings
- Installing Arctera InfoScale Storage
- Installing Arctera InfoScale Availability
- Upgrading Arctera InfoScale Enterprise

Labs:

- Exercise A: Installing InfoScale Enterprise Using the Common Product Installer (CPI)
- Exercise B: Running a Post-installation Check
- Exercise C: Adding Managed Hosts to the IOM Management Server

VCS Building Blocks

- VCS Terminology
- Cluster Communication
- VCS Architecture
- Multi-version Cluster
- InfoScale Operations Manager (IOM): Overview

Labs:

- Exercise A: Working with the IOM GUI Dashboard and Inventory Information
- Exercise B: Exploring the IOM GUI License Options
- Exercise C: Working with the IOM GUI Settings Option

VCS Operations

- Common VCS Tools and Operations
- Service Group Operations
- Resource Operations
- VCS Custom Scripts: Operations

Labs:

- Exercise A: Displaying Cluster Information
- Exercise B: Displaying Status and Attributes
- Exercise C: Performing Service Group Operations
- Exercise D: Manipulating Resources

VCS Configuration Methods

- Starting and Stopping VCS
- Configuration Methods: Overview
- Online Configuration
- Controlling Access to VCS
- VCS Password Encryption

Labs:

- Exercise A: VCS Configuring the State and Stopping VCS
- Exercise B: Configuring Automatic Backup of VCS Configuration
- Exercise C: Setting Non-default VCS Stop Options

Preparing Services for VCS

- Preparing Applications for VCS
- Performing One-time Configuration Tasks
- Testing the Application Service
- Stopping and Migrating a Service
- Collecting Configuration Information

Labs:

- Exercise A: Configuring and Examining Storage for a Service
- Exercise B: Examining the Application
- Exercise C: Manually Starting and Stopping the Application

Online Configuration

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

Labs:

- Exercise A: Creating a Service Group for the Loopy Application
- Exercise B: Configuring Resources for the Loopy Application
- Exercise C: Performing a Virtual Fire Drill (VFD) on the Service Group
- Exercise D: Testing the Service Group
- Exercise E: Setting Resources to Critical
- Exercise F: (Optional) Examining Arctera File System Locking by VCS

Offline Configuration

- Offline Configuration Examples
- Offline Configuration Procedures
- Solving Offline Configuration Problems
- Testing the Service Group

Labs:

- Exercise A: Editing a Copy of the main.cf File Using a System Editor
- Exercise B: Stopping VCS
- Exercise C: Restarting VCS Using the Edited main.cf File

Configuring Notification

- Notification: Overview
- Configuring Notification
- Triggers: Overview

Labs:

- Exercise A: Configuring and Testing Notifier Using IOM
- Exercise B: Configuring Trigger Scripts

Cluster Server Additions

Handling Resource Faults

- VCS Response to Resource Faults
- Determining Failover Duration
- Controlling Fault Behavior
- Recovering from Resource Faults
- Fault Notification and Event Handling

Labs:

- Exercise A: Observing Non-Critical Resource Faults
- Exercise B: Observing Critical Resource Faults
- Exercise C: (Optional) Observing Faults in Frozen Service Groups
- Exercise D: (Optional) Observing ManageFaults Behavior
- Exercise E: (Optional) Observing RestartLimit Behavior

Intelligent Monitoring Framework

- Intelligent Monitoring Framework: Overview
- Intelligent Monitoring Framework: Configuration
- Faults and Failover with Intelligent Monitoring

Labs:

- Exercise A: Examining IMF Monitoring on a Resource
- Exercise B: (Optional) Examining IMF Default Configuration

Cluster Communications

- VCS Communications: Overview
- Cluster Interconnect Configuration
- Cluster Startup
- System and Cluster Interconnect Failure
- Changing the Interconnect Configuration

Labs:

- Exercise A: Reconfiguring LLT
- Exercise B: Observing Jeopardy Membership

Cluster Server Applications

Clustering Applications

- Application Service: Overview
- Manage Applications Using VCS Agents
- Working with the Application Agent
- IMF Support and Prevention of Concurrency Violation

Labs:

- Exercise A: Adding a Resource of Type Application
- Exercise B: Testing the Resource
- Exercise C: IMF and Application Agent Monitoring Options

Clustering Databases

- VCS Database Agents
- Database Preparation
- Database Agent For Oracle
- Database Failover Behavior
- Additional Oracle Agent Functions

Labs:

- Exercise A: Verifying the Oracle Configuration
- Exercise B: Preparing Storage and Network Resources for the Oracle Service Group
- Exercise C: Testing the Oracle Database Manually
- Exercise D: Configuring Oracle Under VCS Control
- Exercise E: Running a Virtual Fire Drill and Switching the Oracle Service Group
- Exercise F: (Optional) Oracle Monitoring

InfoScale Support for Cloud Environments

- InfoScale Solutions for Cloud Environments
- InfoScale Support for Kubernetes on Linux
- Preparing for InfoScale Installations in Cloud Environments
- Configuration for Cloud Environments
- Migration Support for AWS
- Application Mobility Overview
- Troubleshooting Issues in Cloud Environment

Labs:

- Exercise A: Configuring REST API Server
- Exercise B: Verifying S3 Server Details
- Exercise C: Creating InfoScale Storage Support for S3 Connector
- Exercise D: Using IOM Deploy Application Migration and Storage Migrations Add-Ons
- Exercise E: Adding IOM Management Server in the Global Reports Perspective
- Exercise F: Generating IOM Reports

Cluster Server Data Protection

Using I/O Fencing for Application Data Integrity

- Data Protection Requirements
- I/O Fencing Concepts
- I/O Fencing Operations
- I/O Fencing Implementation
- Fencing Configuration

Labs:

- Exercise A: Fencing Configuration Pre-Checks
- Exercise B: Configuring VCS for IO Fencing
- Exercise C: IO Fencing Configuration Verification
- Exercise D: Verifying Data Disks for IO Fencing
- Exercise E: Testing Protection from Data Corruption
- Exercise F: Observing Response to System Fault
- Exercise G: Observing Response to Interconnect Failure

Implementing Coordination Point

- Coordination Point Concepts
- Server-based Fencing Architecture
- CPS Operations
- Installing and Configuring a CP Server
- Configuring I/O Fencing with CPS
- Coordination Point Agent

Labs
A: Configuring a Single-node Coordination Point Server

- Exercise A: Installing a Single-node VCS Cluster
- Exercise B: Configuring a Single-node CP Server
- Exercise C: Verifying the CP Server Configuration
- Exercise D: Configuring for IO Fencing with a CP Server
- Exercise E: Testing CP Server Communication Failure
- Exercise F: Testing CP Server Caching
- Exercise G: Restoring the Original Configuration

B: (Optional): Configuring Coordination Point Server on a VCS Cluster

- Exercise A: Configuring a CP Server on a VCS Cluster
- Exercise B: Verifying the Clustered CP Server Configuration
- Exercise C: Modifying the Fencing Configuration on the Application Cluster
- Exercise D: Testing CP Server Failover and Communication Failure
- Exercise E: Restoring the Original Configuration

Administering Fencing Configurations

- Installing and Configuring Clustered CP Servers
- Administering CPS
- Administering Disk-based I/O Fencing
- Configuring Preferred Fencing

Labs:

- Exercise A: Enabling Preferred Fencing for System-based Race Policy
- Exercise B: Testing Interconnect Failure with System-based Preferred Fencing
- Exercise C: Enabling Preferred Fencing for Group-based Race Policy
- Exercise D: Testing Interconnect Failure with Group-based Preferred Fencing
- Exercise E: Disabling Preferred Fencing Policies