

Veritas Storage Foundation 5.0 for Oracle 10g RAC *for Solaris*

COURSE DESCRIPTION

Course Objectives

You will learn how to use Veritas Storage Foundation for Oracle RAC (SFRAC) with Oracle 10gR2 (10.2.0.1). In this instructor-led training, you are introduced to the general features of Storage Foundation and Oracle Real Application Clusters (RACs). You are provided with a detailed description of the components and core architecture of SFRAC. You also perform hands-on practice on how to install, configure, administer, and troubleshoot SFRAC.

Delivery Method

Instructor-Led Training

Duration

Five days

Course Objectives

By the end of this course, you should be able to

- Describe cluster concepts and the SFRAC architecture.
- Install and configure SFRAC.
- Describe basic Oracle transactions and recovery principles.
- Configure resources to manage storage, networking, and databases.
- Perform administrative operations in SFRAC.
- Configure I/O fencing.
- Troubleshoot common operational issues in SFRAC.

Who Should Attend

This course is for database administrators, system engineers, help desk personnel, and system integration staff who will be installing, operating, or integrating with Veritas Storage Foundation for Oracle 10g RAC.

Prerequisites

You should be familiar with the installation, configuration, and administration of Solaris operating systems and networks. You should also be familiar with Oracle fundamentals, as well as Volume Manager, File System, and Cluster Server configurations.

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

Fundamentals

Lesson 1: Cluster Concepts

- Cluster Terminology
- Cluster Communication
- Storage Foundation for Oracle 10g RAC
- Course Lab Design

Lesson 2: SFRAC Architecture

- SFRAC Product Overview
- Communication Infrastructure
- Low-Level Communication
- Shared Storage Management
- Veritas Cluster Server
- Oracle Clusterware/RAC Extensions
- SFRAC Component Relationships

Lesson 3: Installing SFRAC

- SFRAC Contents
- Installation Requirements
- Preparing to Install
- Installation Procedure
- Viewing the Installed Configuration
- Configuring I/O Fencing

Lesson 4: Configuring CVM and CFS

- Cluster Volume Manager
- CVM Configuration Differences
- CVM Startup and Recovery
- Cluster File System
- CFS Configuration Differences
- Cluster File System Recovery
- Coordinating CVM and CFS Configuration

Lesson 5: Oracle Database Concepts

- Database Concepts
- Oracle Operations
- Oracle Recovery
- Oracle in a Storage Foundation Environment

Lesson 6: Oracle RAC Concepts

- Oracle RAC Concepts and Terminology
- Cache Fusion
- Oracle RAC Instance Recovery
- Oracle RAC Infrastructure Requirements

COURSE OUTLINE

continued

Lesson 7: Installing Oracle RAC

- Oracle Clusterware Overview
- Determining Oracle File Locations
- Installation Overview
- Preparing the Environment
- Installing Oracle 10g CRS and RAC
- Postinstallation Tasks
- Creating and Testing the Oracle Database

Lesson 8: Cluster Management Using VCS

- VCS in an Oracle 10g RAC Environment
- Resources for Managing CRS Components
- Oracle 10g RAC Service Groups
- VCS Configuration Review

Lesson 9: Managing Oracle Using VCS

- The Oracle Resource Type
- Configuring Fault Management
- Manual Administration

Lesson 10: I/O Fencing

- Understanding the Data Protection Problem
- Data Protection Requirements
- I/O Fencing Concepts and Components
- I/O Fencing Implementation

Troubleshooting Workshop

Lesson 1: Troubleshooting Installation

- Troubleshooting SFRAC Installation
- Troubleshooting Fencing Configuration
- Troubleshooting CRS Installation
- Troubleshooting Oracle Installation

Lesson 2: Monitoring the Cluster

- Verifying SFRAC
- Monitoring Oracle
- Using Log Files
- Configuring Notification

Lesson 3: Troubleshooting Startup

- Automatic Startup
- Manual Startup
- Problems with Cluster Startup
- Problems with Resource and Service Group Startup

Lesson 4: Troubleshooting Faults

- System Faults
- Interconnect Failures
- CRS Faults
- VCS Response to Resource Faults
- Advanced Oracle Agent Functions

Lesson 5: Troubleshooting Shutdown

- Automatic Shutdown
- Manual Shutdown
- Problems with Cluster Shutdown
- Problems Stopping Resources and Service Groups

Lesson 6: Upgrades and Maintenance

- Operating System Upgrades
- SFRAC Upgrades
- Upgrading Oracle 9i to 10g
- Common Problems with Upgrades
- Maintenance in a SFRAC Cluster

Advanced Concepts (Optional)

Lesson 1: Database Volume Snapshots

- Storage Checkpoints
- How Storage Checkpoints Work
- Checkpoints Configuration Overview
- Storage Rollback
- Other Point-In-Time Solutions

Lesson 2: Database Storage Checkpoints

- Storage Checkpoints
- How Storage Checkpoints Work
- Checkpoints Configuration Overview
- Storage Rollback
- Other Point-In-Time Solutions

Lesson 3: Oracle ASM and CVM

- Supported Configurations
- Configuration Overview
- Recommended Practices