Symmetrix VMAX Performance Workshop

32 HORAS

OVERVIEW

This course introduces participants to the methodology for analyzing performance of Symmetrix VMAX 1/2 arrays. Participants will learn to analyze Symmetrix VMAX performance using ControlCenter Performance Manager and Symmetrix Performance Analyzer tools. Metrics that are relevant for analysis of each of the components in a Symmetrix VMAX 1/2 array are presented. Participants will learn to identify bottlenecks for performance and provide recommendations to remedy the problem. Hands-on lab exercises using performance archives reinforce the concepts and methodology presented in the lecture.

AUDIENCE

This course is intended for anyone responsible for operating, maintaining, and optimizing the performance of a Symmetrix storage environment.

PREREQUISITE KNOWLEDGE/SKILLS

To understand the content and successfully complete this course, a student must have a suitable knowledgebase/skill set. The student must have an understanding of basic Symmetrix DMX and VMAX 1/2 architecture and the use of ControlCenter Performance Manager. Some experience with Symmetrix Performance Analyzer will be helpful.
A list of specific prerequisite courses can be found in EMC Education Services Learning Management System.

COURSE OBJECTIVES

Upon successful completion of this course, participants should be able to:

- Relate knowledge of the Symmetrix architecture and I/O handling processes to their performance benefits
- Identify the performance impact different types of workloads have on Symmetrix VMAX 1/2 architectural components
- Use key metrics to identify performance bottlenecks and components over utilization
- Make performance-oriented recommendations when allocating new storage or migrating applications

COURSE OUTLINE

Module 1: Performance Management Overview

Module 2: Tools for Analyzing Performance

- Unisphere for VMAX Performance Overview
- Loading Data in Performance Viewer
- Navigating Performance Viewer

Module 3: Performance Analysis

- Workload Profiles and Characterization
- Performance Analysis Roadmap
- Little's Law and its Impact on Response Time

Module 4: Analyzing Performance of the Symmetrix Front-end Adapters

Module 5: Analyzing Symmetrix Cache Performance

- Symmetrix Cache Architecture
- Cache Hit and Miss I/O Operations
- System and Device Write Pending Limits
- Dynamic Cache Partitions
- Alignment of I/Os with Cache Slots
- XtremSW Cache
- Roadmap and Analysis

Module 6: Analyzing Performance of Symmetrix VMAX Backend Adapters

- Symmetrix Backend Architecture
- Analyzing Symmetrix Backend Utilization
- Analyzing I/O Imbalance
- Symmetrix Backend Optimization Algorithms
- Impact of RAID Protection on Backend Performance

Module 7: Performance Considerations for Business Continuity Operations

- TimeFinder Performance Considerations
- SRDF Performance Considerations

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