

## Advanced ClearCase Administration

### Course Summary

#### Description

ClearCase is an enterprise level configuration management product which was adopted by many large organizations, both public and private, as part of the IBM Rational Suite. Because ClearCase is an enterprise level product, it has a rich and complex infrastructure that supports a highly customizable environment with a rich feature set. However getting the full power of ClearCase depends directly on how it is managed and administered.

This course is a follow-up to the Introduction to ClearCase Administration course and touches on several of the more advanced topics.

Emphasis during the course will be on working with ClearCase both Windows and Unix environments. A critical component of each module is a review of best practices for that topic as well as common errors that administrators make and how to diagnose and fix common problems.

ClearCase is an end-of-life product with IBM encouraging clients to migrate to the newer Rational Team Concert platform (Configuration Lifecycle Management or CLM). The last module provides some insight in how to leverage existing ClearCase VOBs into a RTC environment or migrating existing SCM assets into other products.

Almost all of the course is presented in a hands on environment where concepts are introduced through both theory and instructor led walk through exercises where students follow along on their own lab machines as the instructor illustrates techniques and ideas. At the end of each module, students work on individual lab problems to reinforce the skills they are learning.

#### Objectives

After taking this course, students will be able to:

- Automate ClearCase tasks using scripts
- Write triggers to control ClearCase behavior
- Work with ClearCase environment data in scripts
- Configure VOB access control lists
- Troubleshoot permissions and access problems
- Use the audit facilities of ClearCase for report generation
- Explain the UCM artifacts that are implemented in ClearCase
- Diagnose ClearTeam Explorer Problems
- Explain the special administration considerations for UCM VOBs
- Diagnose UCM issues
- Explain the ClearCase Multi-site architecture
- Explain how replicas, shippers, mastership and synchronization work in Multi-site
- Explain common problems working in a mixed Windows and Unix host environment
- Explain how to make ClearCase VOBs available in a CLM or RTC environment

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### Course Summary (cont'd)

#### Topics

- Review of Concepts
- Triggers
- Scripts
- Access Control Lists
- Audits and Reports
- UCM Constructs
- Administration Considerations for UCM
- ClearCase Multi-site
- Unix and Windows
- Integration with Rational Team Concert (CLM)

#### Audience

This course is intended for anyone either in or moving into an administrative role who will be managing or supporting a ClearCase installation, especially for those who will be working in a hands on manner administering the product. The course is not intended for ClearCase end users.

#### Prerequisites

The course is a continuation of the Introduction to ClearCase Administration course. Students are assumed to have a solid understanding of all topics and concepts presented in that course.

#### Duration

Two days

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### Course Outline

- I. Review of Concepts**
  - A. Review of ClearCase concepts and terminology
  - B. Review of administration tasks
  - C. Review of VOBs and views
- II. Triggers**
  - A. Element versus type triggers
  - B. Element versus global triggers
  - C. Preop versus postop triggers
  - D. Cascading triggers
  - E. Operating specific script execution
- III. Scripts**
  - A. Scripts for task automation
  - B. Executing scripts from the scheduler
  - C. Executing scripts from triggers
  - D. Accessing ClearCase event information using environment variables
  - E. Enforcing policies using scripts
  - F. Diagnosing problems with script execution
  - G. Some useful scripts
- IV. Access Control Lists**
  - A. How ACLs work in Windows and Unix
  - B. Fine grained ACL based control for VOBs
  - C. ACL issues in moving and backing up VOBs
  - D. Role based access, permissions and rolemaps
  - E. Adding ACL protections to VOBs
  - F. Using the protect and protect\_vob commands
  - G. Common ACL issues
- V. Audits and Reports**
  - A. Configuring the meta-data collected by ClearCase
  - B. Audit meta-data types
  - C. Resetting audit meta-data
  - D. Using audit meta-data for report generation
  - E. Using scripts for auto-report generation
- VI. UCM Constructs**
  - A. UCM concepts – components, projects, baselines and streams
  - B. Project VOBs
  - C. Defining and creating components
  - D. Creating projects and adding components
  - E. Creating streams for projects
  - F. Creating and using baselines, rebasing work areas.
  - G. How UCM is implemented by ClearCase
- VII. Administration Considerations for UCM**
  - A. Typical UCM administration issues
  - B. Backing up, restoring and moving UCM VOBs
  - C. Diagnosing problems with the config specs in streams
  - D. Problems when using multiple component VOBs or shared VOBs
  - E. Introduction to ClearTeam Explorer
  - F. Diagnosing typical ClearTeam Explorer problems
- VIII. ClearCase Multi-site**
  - A. Multi-site concepts and architecture overview
  - B. Replicas and VOB families
  - C. Exporting, shipping and importing actions
  - D. Creating replicas and syncing replicas
  - E. VOB and component mastership
  - F. Issues with user permissions across replicas
  - G. Common problems with Multi-site
  - H. Special considerations for backing up and moving replicas
- IX. Unix and Windows**
  - A. Differences in Unix and Windows OS interactions with ClearCase hosts
  - B. Migrating a VOB from one OS to another
  - C. Cross OS user and permission issues
  - D. Special administration considerations working with a multi OS site
- X. Integration with Rational Team Concert (CLM)**
  - A. Why ClearCase is an end-of-life product
  - B. ClearCase issues in modern IT infrastructure
  - C. IBM replacement for ClearCase – Rational Team Concert
  - D. Using existing VOBs in Rational Team Concert
  - E. Developing a migration plan for retiring ClearCase