IBM Rational ClearCase Advanced

Course Summary

Description

This course is intended for those who will be using, supporting, maintaining or configuring ClearCase to support the various configuration management tasks for a team or project. These tasks include, but are not limited to:

- VOB planning involving asset identification and structure (assets can include source code, test cases, design documents, specifications, project management documents etc).
- Defining tags and developing ClearCase policies to support release and build management.
- Planning branch labels, branch-merge strategies for various work flow models.
- Designing and supporting views for various areas of responsibility: for example new development, support programming, QA functions, release management.
- Developing and supporting policies and procedures for use of VOB elements and views.
- Scripting to automate ClearCase tasks and integrate with project tools.
- View management – maintaining config specs, snapshot view protocols and storage, etc.
- Providing administrative support: backups, security, auditing and management analysis.
- Establishing metrics and evaluating ClearCase use effectiveness.

These various concepts are introduced and demonstrated during lecture and class discussion, then are reinforced though hands-on project exercises. The exercises in this course consist of students playing the role of a ClearCase project administrator for two different projects: (1) A mainstream development project that has to support maintenance releases in between major releases and; (2) an Agile project with multiple simultaneous feature development branches.

The specific ClearCase topics that are covered include but are not limited to:

- VOB internals. How VOBs are structured, organized and maintained.
- VOB storage allocation, public and private VOBs.
- VOB planning and using ClearCase utilities like clearfsimport to prepare VOBs for use.
- View planning; snapshot or dynamic.
- Writing, testing and editing config specs
- Defining and using tags and ClearCase tag utilities.
- Defining branches, automating branching, retiring branches.
- Writing and testing merge scripts.
- Working with meta-data for management purposes and auditing.
- Integrating ClearCase with existing tools and scripts.
- Using ClearCase management utilities.
- Identifying and solving typical ClearCase problems.

At the end of the course, students should be able to manage a ClearCase project from beginning to finish including troubleshoot typical sorts of ClearCase problems and issues that often arise.

Topics

Configuration Management Concepts
ClearCase Review
Setting Up the Project VOBs
Planning Views
Tags and Release Management
Branching
Extended Path Names and Version Trees
Merging
Meta-data and Metrics
Retirement and Archiving
Final Wrap up

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Course Summary (cont'd)

Audience

This course is intended primarily for those who will be planning the use of ClearCase, configuring or managing the product as part of the CM function for a project or team.

Prerequisites

Students must have taken *IBM Rational ClearCase Introduction* as a prerequisite since knowledge of that material is assumed and will not be covered in this course.

Duration

One day

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Course Outline

I. Configuration Management Concepts
- A. The role of the ClearCase CM on a project.
- B. Processes, policies and procedures that need to be implemented before ClearCase is used.
- C. Developer support.
- D. QA support.
- E. PM support.
- F. ClearCase resources and utilities.
- G. ClearCase support for CM principles and practices..
- H. Introduction to the lab projects.

II. ClearCase Review
- A. ClearCase architecture.
- B. VOBs, views, servers and registries.
- C. Different flavors of ClearCase.
- D. ClearCase design goals.
- E. What ClearCase assumes you are doing.
- F. Common CM/ClearCase mistakes.

III. Setting Up the Project VOBs
- A. What we need to know from the administrators: servers, policies,etc.
- B. Planning VOBs – who, what, where.
- C. Planning the layout of a VOB.
- D. Validating a VOB before use.
- E. Populating the VOB.
- F. Using clearfsimport.
- G. Setting up VOB policies.

IV. Planning Views
- A. Defining views by responsibility
- B. Defining views by work flow.
- C. Planning for snapshot versus dynamic.
- D. View policies and procedures
- E. Special considerations for keeping snapshot views synchronized.

V. Tags and Release Management
- A. Release management planning.
- B. Defining tags for release management.
- C. Other uses of tags.
- D. Using and applying tags.
- E. Best practices for tagging.
- F. Branching
- G. Defining branch labels to support work flow.
- H. Mainline development branch strategy.
- I. Parallel new feature branch strategy
- J. Isolating branches with views.
- K. Ending a branch.
- L. Common errors in branching.

VI. Extended Path Names and Version Trees
- A. Extended path name syntax.
- B. Using extended path names in scripts.
- C. How version trees and branches work.
- D. Deltas and non versioned objects.
- E. Advanced config spec programming.
- F. Using extended pathnames for script nd tool integration.

VII. Merging
- A. How merging works: combining deltas.
- B. Additive and subtractive merges.
- C. Merging strategies, correct merging.
- D. Using the ClearTool merge command.
- E. Validating and rolling back merges.

VIII. Meta-data and Metrics
- A. Kinds of meta-data and how to access.
- B. Auditing the project with meta-data.
- C. Measuring ClearCase usage.

IX. Retirement and Archiving
- A. Taking VOBs out of commission.
- B. Archiving assets.
- C. Closing and deprecating versions.

X. Final Wrap up
- A. Review of concepts
- B. Best practices summary
- C. Common errors and pitfalls summary
- D. Questions.

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