



Trinity Software Solutions

Supporting IBM/Rational Tools and Technologies

www.trinity-software.com

“All Ways Rational”

- **Overview Of Trinity**
- **Enterprise CM with ClearCase and ClearQuest**
- **Trinity's Asset Library**
- **Service Offerings**
- **Q&A**

Overview Of Trinity

Overview of Trinity

- **Trinity Software Solutions** has been a Rational consulting and training partner for over 5 years.
- Trinity Software focuses on providing customers comprehensive ***training, mentoring, consulting*** and ***support services*** centered around the Rational Tools and Processes.
- Trinity Software has been engaged on some of the largest deployments of Rational products in the United States.
- By solely focusing on the Rational products and process, Trinity Software can provide a depth of knowledge and experience unsurpassed.

Rational Partnership Status

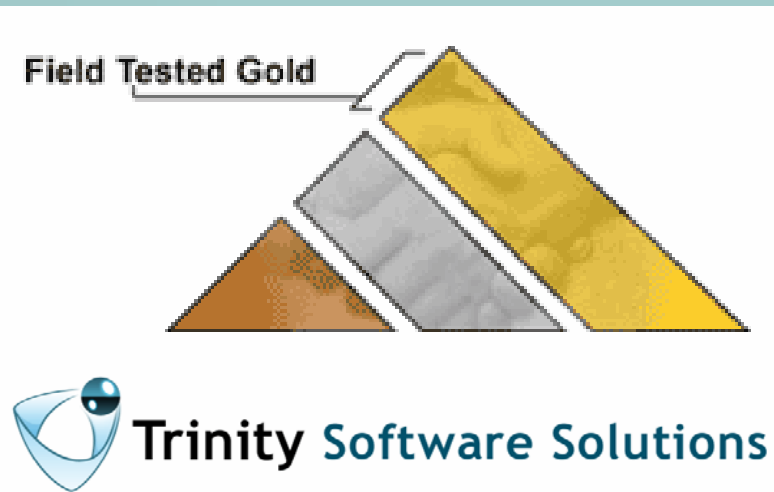
- The Rational Business Alliance Program is a value-driven program designed to identify program members who deliver the complementary, quality solutions and services that help Rational customers succeed.
- The Rational Business Alliance Program awards its members with one of three designations. These designations indicate that the alliance member has key credentials. This helps ensure that you receive solutions and services from organizations that are knowledgeable about Rational tools and technologies.
 - Alliance Member Bronze Level
 - Field Tested Silver Level
 - Field Tested Gold Level

Rational Partnership Status



- Alliance Members with the Field Tested Gold Level designation are Rational's premiere group of Alliance Members. Field Tested Gold Level Alliance Members have a very large number of Rational certifications and a very large number of customer successes or customer references. They have also submitted original content to Rational information resources such as the Rational Developer Network.

Rational Partnership Status



● Overall, these members have met or exceeded a stringent set of criteria that only the very best Alliance Members can achieve. In each case, the service or solution provided by these alliances, their high ethics, their willingness to ensure consistent success and satisfaction, and their ability to work as an extension to the Rational team has been documented and verified. You can select these alliances with the highest degree of confidence.

Rational Partnership Status

- Trinity is also an Education Partner with Rational.
- Only 5 companies in the world are classified as both a Gold Level Service Provider and an Education Partner.
- Education partnership indicates that Trinity staffs consultants that have been certified by Rational University as qualified to deliver the Rational University Courseware.
- Trinity has the ability to deliver exactly the same training that Rational delivers.
- Trinity also has it's own line of training material that can be customized to the client's specific needs.

- At Trinity Software Solutions, we focus our services on improving our customers software development capability and productivity through the implementation of the Rational Unified Process and Rational Software's associated tools.
- Our vast experience has shown us that customers need a unified tool-process strategy that is practical, implementable and supported with consulting, mentoring and training.

Enterprise CM With ClearQuest and ClearCase

● IBM Rational software configuration management solutions

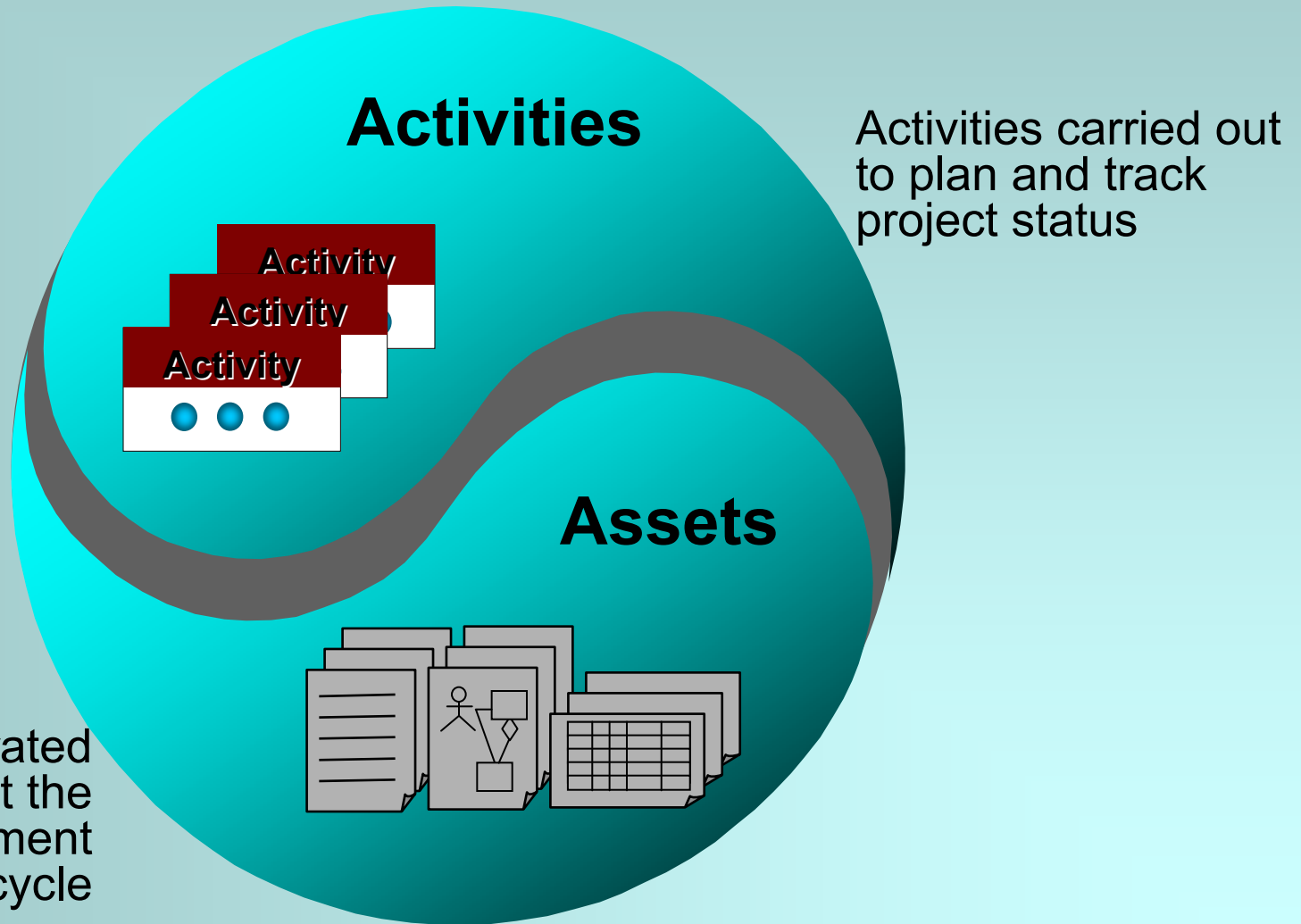
- Simplify and control change requests with ClearQuest
- Accelerate productivity with parallel development using ClearCase
- Adapt quickly to business demands using Rational Unified Change Management (UCM)

Rational ClearQuest

Basic ClearQuest Usage

- ClearQuest is a change request management system.
- Change Requests such as defects and enhancements are created and managed using ClearQuest and are referred to as “Activities” .
- There is a direct integration between ClearCase and ClearQuest which provides a mechanism to link change requests with modifications to software artifacts such as source code and documentation.

Solution: Manage and control change at the activity level

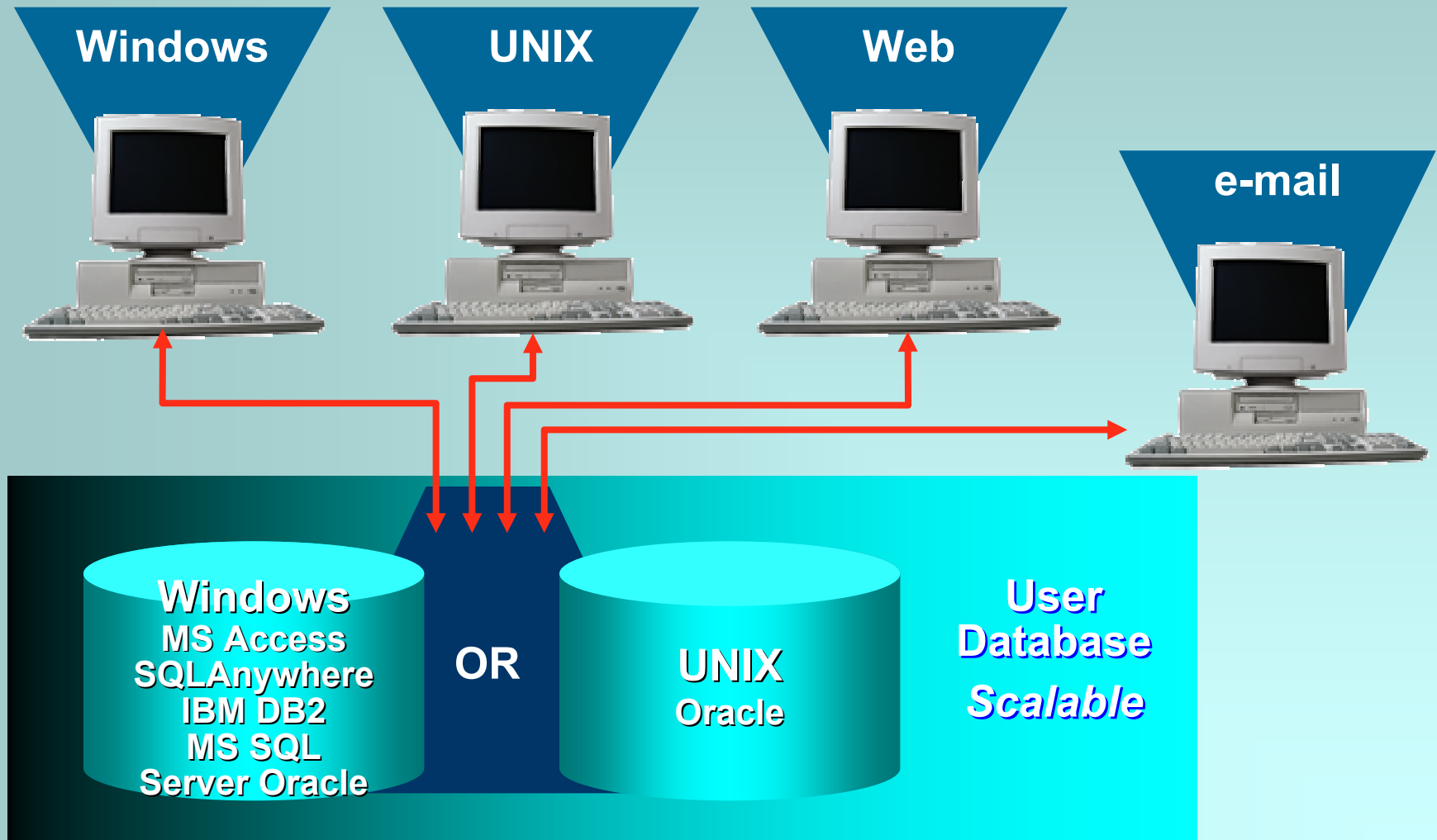


Rational ClearQuest

- **Capture** change requests
- **Communicate** real-time project status
- **Control** change at the “Activity” level
- **Customize** Rational ClearQuest to meet your needs



Easily capture change requests



Rational ClearQuest: *Windows*

● Core capabilities

- Submit and modify change requests
- Run queries, charts and reports
- Drill-down charting
- Design and generate report formats

● Integrations

- Rational Suite
- Rational ClearCase/UCM
- Microsoft Project

● Database support

- Oracle (UNIX or Windows)
- SQL Server (Windows)
- IBM DB2 (Windows or AIX)
- SQL Anywhere, MS Access

● ClearQuest Designer

- Administrator only



Windows



UNIX



Web



e-mail

Rational ClearQuest: *UNIX*

● Core capabilities

- Submit and modify change requests
- Run queries and charts
- View text-based reports

● Integrations

- Rational ClearCase/UCM
- Command-line interface

● Database support

- Oracle (UNIX)
- SQL Server (Windows)
- IBM DB2 (Windows or AIX)

● Platform support

- Solaris, HP-UX, Linux, AIX



Windows



UNIX



Web



e-mail

Rational ClearQuest: *Web and WebEntry*

● ClearQuest Web

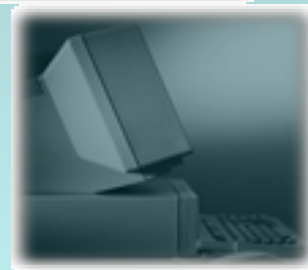
- Submit and modify change requests
- Run queries, charts and reports
- No integration support



Windows

● ClearQuest WebEntry

- Capture/Query client capability
 - Submit new change requests
 - Run a single query
- No license required!



UNIX



Web



e-mail

Rational ClearQuest: *e-mail*

- Submit and modify change requests
 - Rational Mail Reader runs as a service
 - E-mail submissions use formatted text
- No license required!



Windows



UNIX



Web



e-mail

Communicate real-time project status

● Queries & Charts

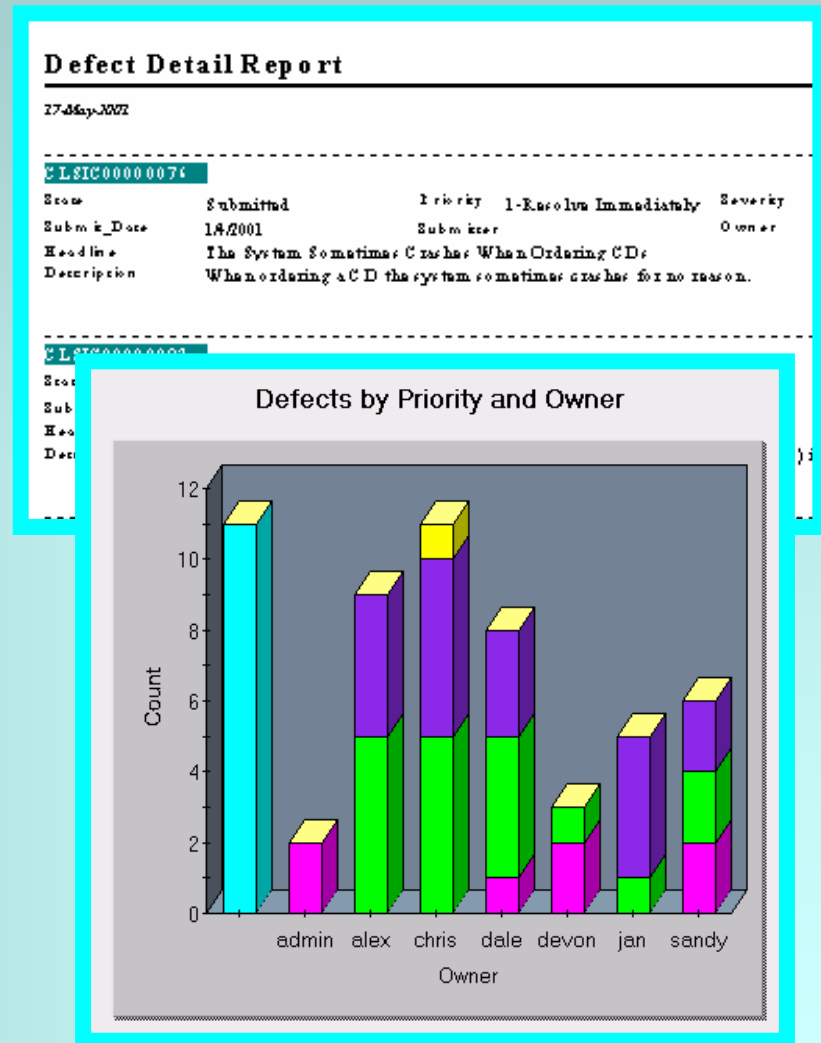
- Easily create and modify with Wizards
- Charts: Aging, Trend, Distribution

● Reports

- Crystal Reports-based run-time engine
- Export to many common formats (Excel, Word, HTML)

● E-mail notification rules

- Automatic notification of events and state changes
- Configurable through GUI interface
- No programming required!



Project metrics for managers

● Resource allocation

- “Are change requests distributed evenly across the team?”
- “Who is available to take on a mission-critical bug fix?”

● Project status

- “How many Priority 1 defects are still outstanding?”

● Trends

- “How long is it taking to fix the average bug?”
- “How long is taking to implement enhancement requests?”

● Testing

- “How many defects are in the verifying state?”

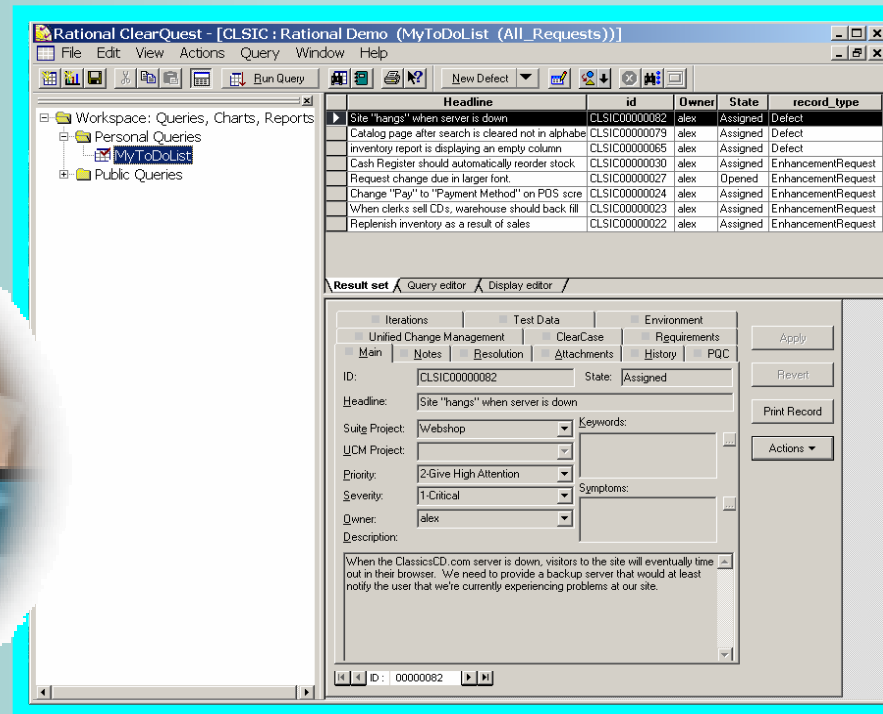


Resources for individual team members

● To-do list

● “What change requests have been assigned to me?”

● “What should I work on first”



Customize Rational ClearQuest to meet your needs

- Choose from several “out of the box” schema implementations
- Extend functionality using pre-defined Packages
- Take control of your schema with the Rational ClearQuest Designer
 - Add fields and control behavior
 - Modify forms
 - Configure the State Transition Matrix
 - Extend your system with hooks

Rational ClearQuest “out of the box” schemas

● Blank

- Used to create a schema from scratch

● Common

- Basic field structure common to all other pre-defined schemas

● DefectTracking

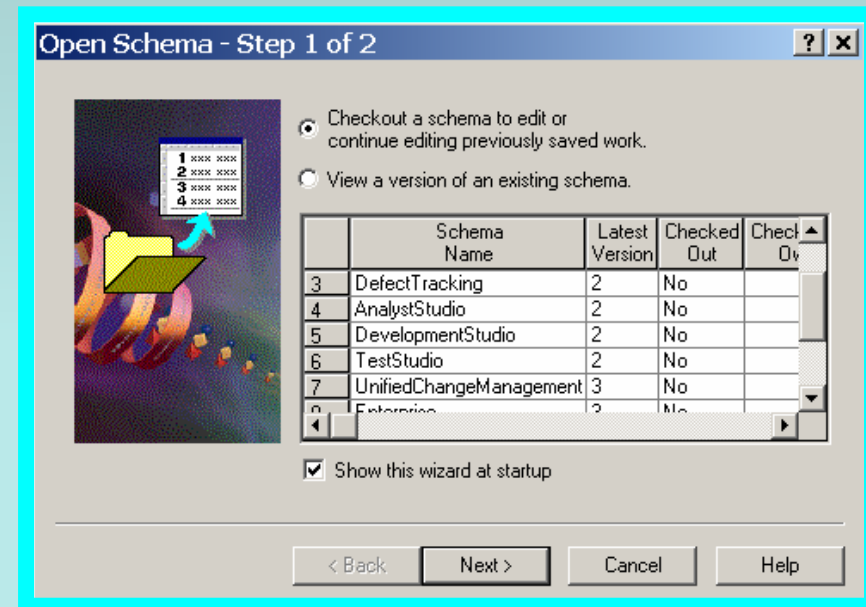
- Standard “out of the box” defect tracking solution

● AnalystStudio, DevelopmentStudio, TestStudio, Enterprise

- Rational Suite product integrations

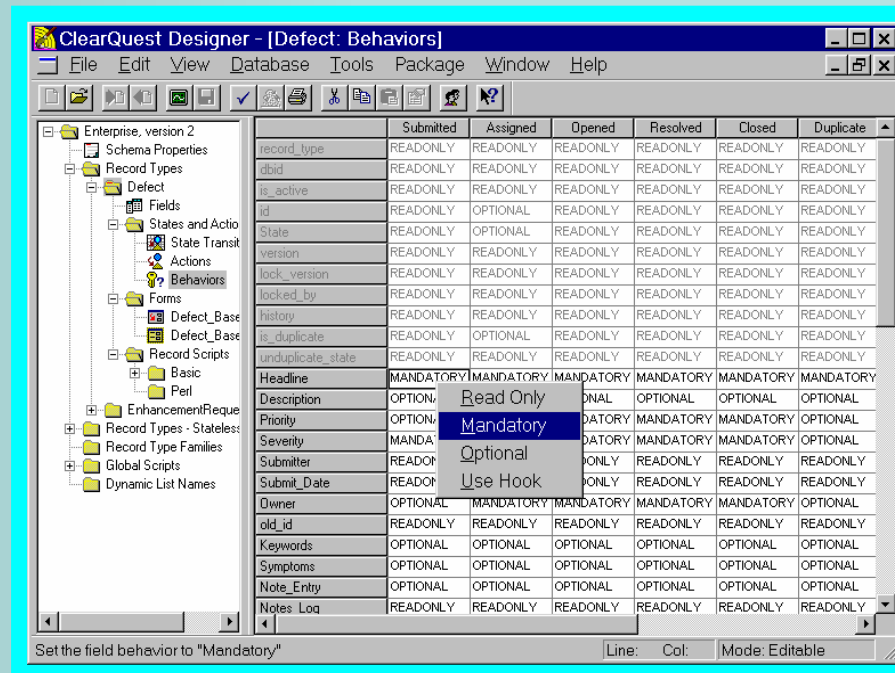
● UnifiedChangeManagement

- Supports UCM-enabled projects, allowing true “Activity-based” development



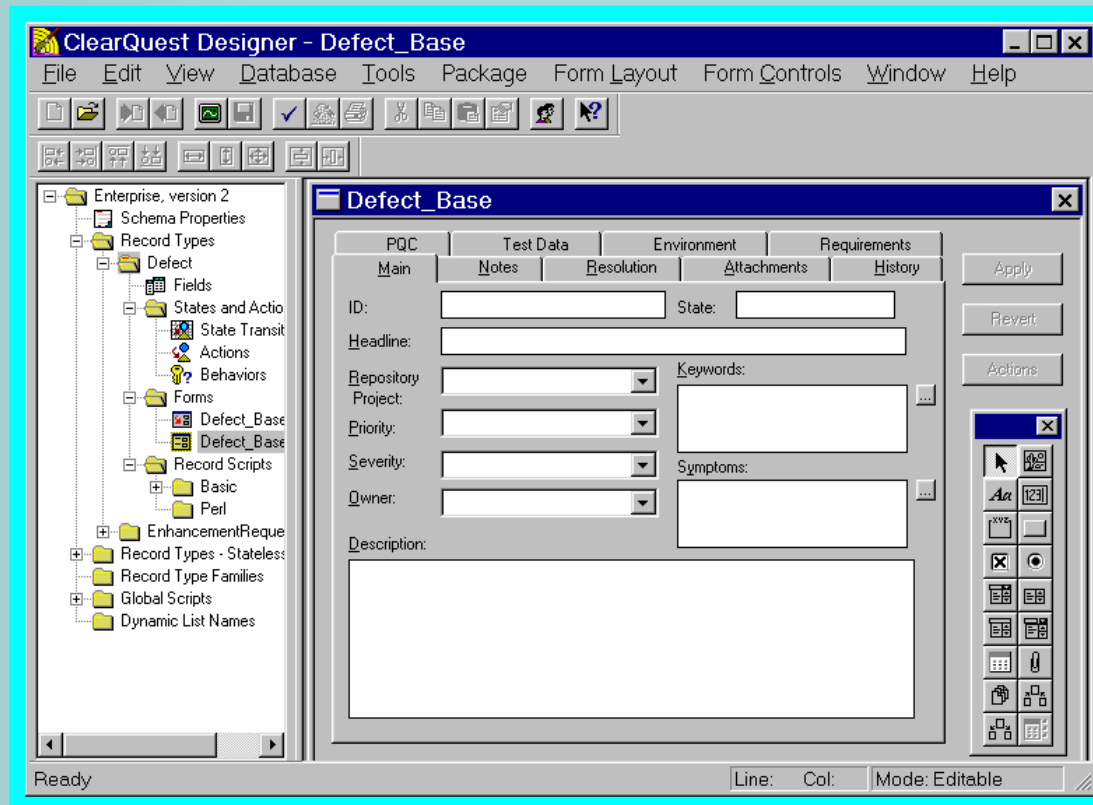
Rational ClearQuest Designer

- Create new fields of any type
 - Integer, date/time, short string, multi-line string, attachment list, reference, reference list
- Easily set a field's behavior



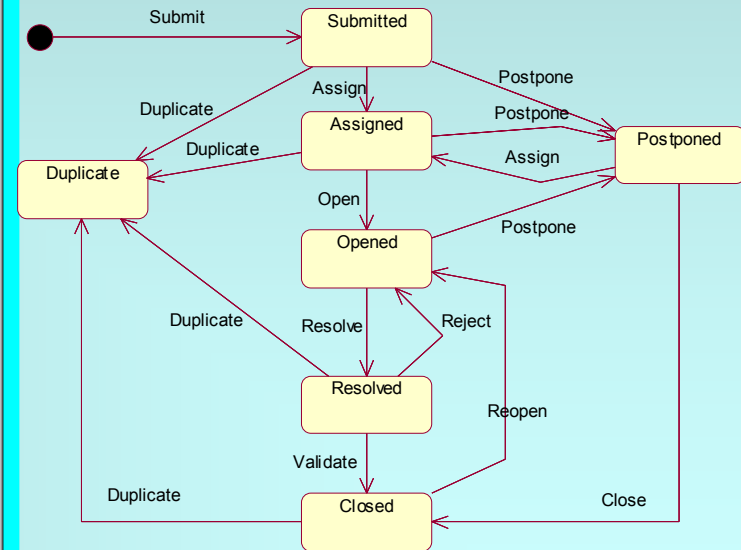
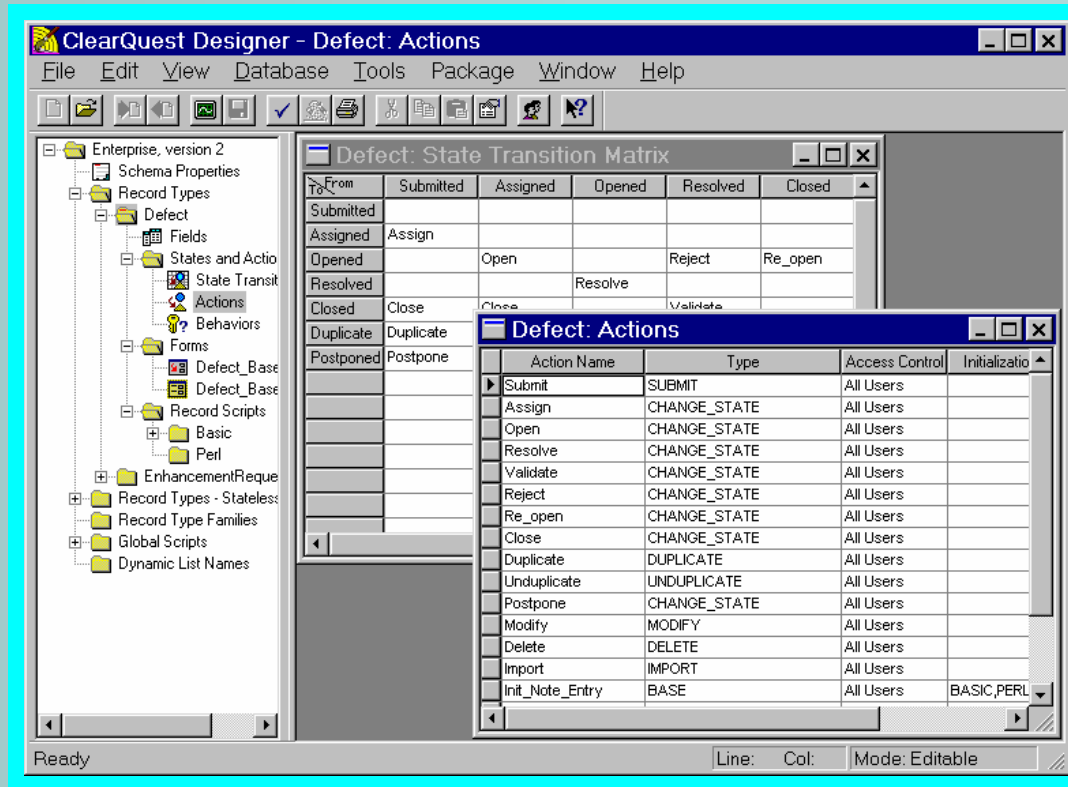
Rational ClearQuest Designer

● Built-in visual form editor



Rational ClearQuest Designer

● A state machine controls the flow of records through your system



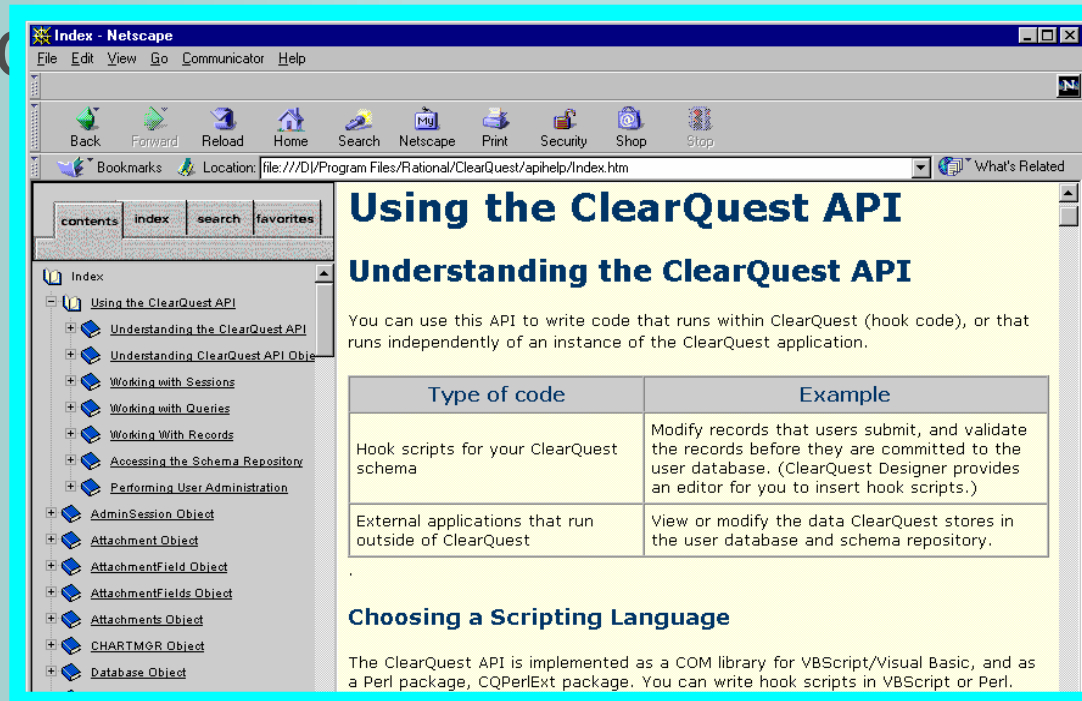
Rational ClearQuest Designer

- Automate and enforce your process
- Hooks can be written in industry-standard languages – VBScript or Perl
- Built-in text editor (ClearQuest Designer)
- Documented with sample code included
- Examples:
 - Dependent list – use a field choice list hook so that the values in a choice list vary according to the value entered in another field.
 - Field value validation – use an action validation hook to prompt the user if invalid data has been entered in one or more fields.
 - Default value – use a default value hook to initialize a field value:

```
Sub submitter_DefaultValue(fieldname)
' fieldname As String
' entityDef = swbug
SetFieldValue fieldname, GetSession().GetUserLoginName()
End Sub
```

Robust Rational ClearQuest API

- COM-based
- Allows other programs access to the core
- API documentation and sample code included



Rational software configuration management

- Simplify and control change with ClearQuest
- **Accelerate productivity with parallel development with ClearCase**
- Adapt quickly to business demands using Rational Unified Change Management (UCM)

* International Data Corp, *SCM Tools Forecast and Analysis, 2001-2005*

The leading SCM solution ranked #1 for the last four years.*

Rational ClearCase

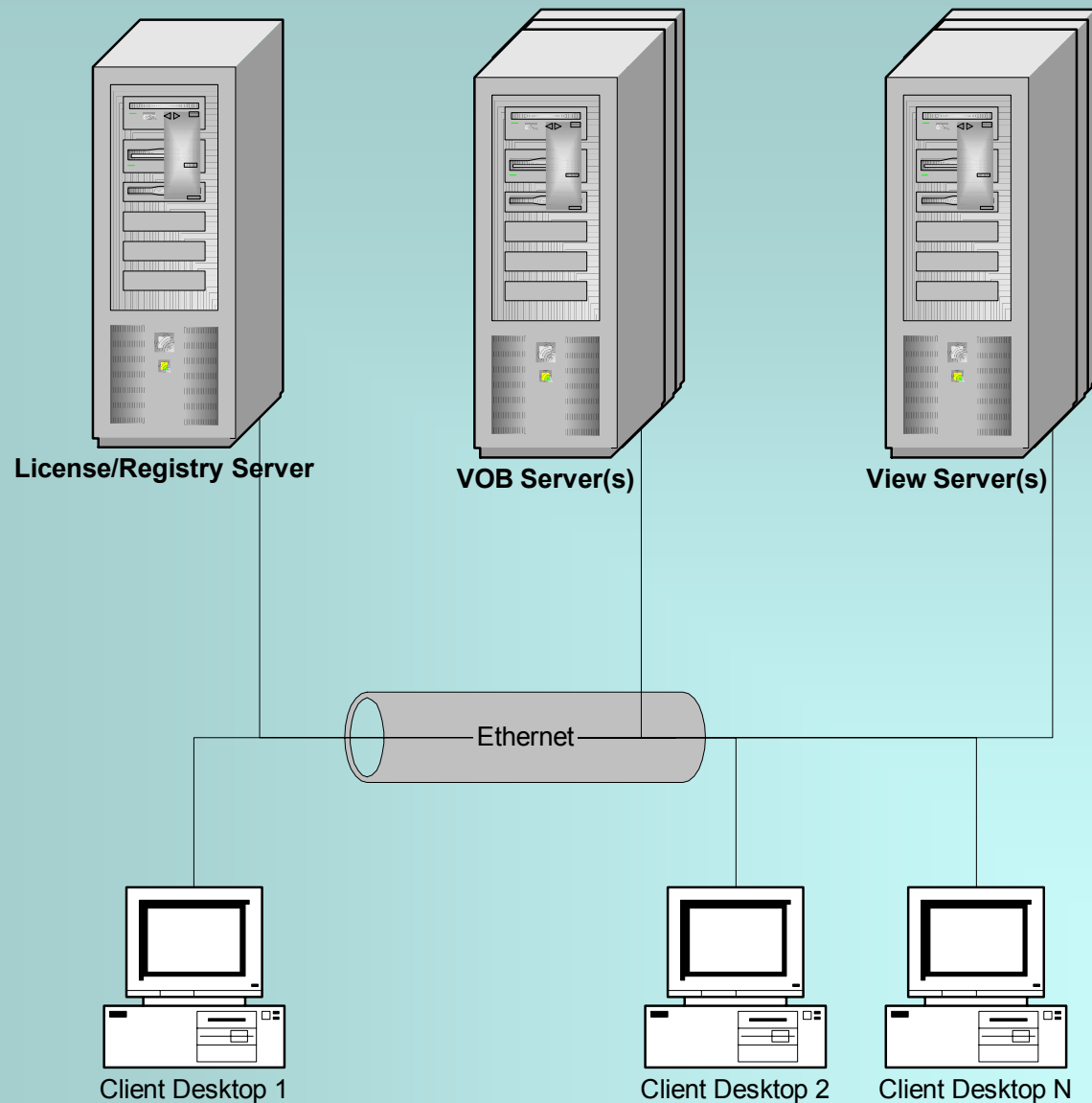
-
- ClearCase is a software configuration management (SCM) tool that provides **secure access control, version control, work space management, and parallel development** capabilities for the software development and release process

Overview of ClearCase Support for SCM

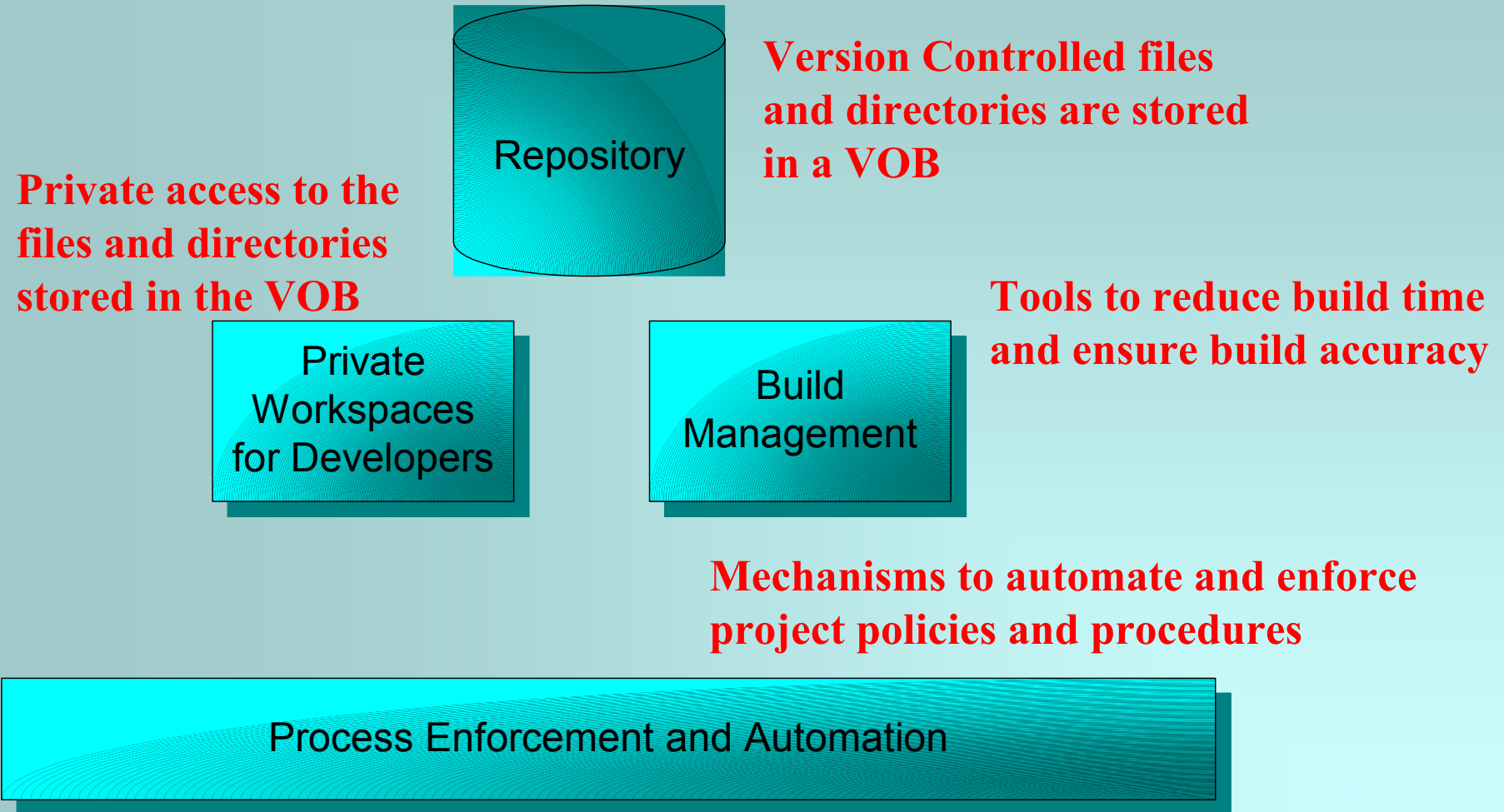
● Architecture

- ClearCase is a distributed application with a client/server architecture.
- This means that multiple processes running on multiple hosts govern “how” ClearCase operates.
- ClearCase has its own file system, called the MVFS (Multi Version File System)
- MVFS is an extension to the native file system
- On Windows, MVFS is a file system driver mapped by default to drive letter M:
- On UNIX, MVFS is linked with the OS either statically or dynamically
- ClearCase implements access controls based on the platform users and groups authentication method.

Clear Case Network Topology



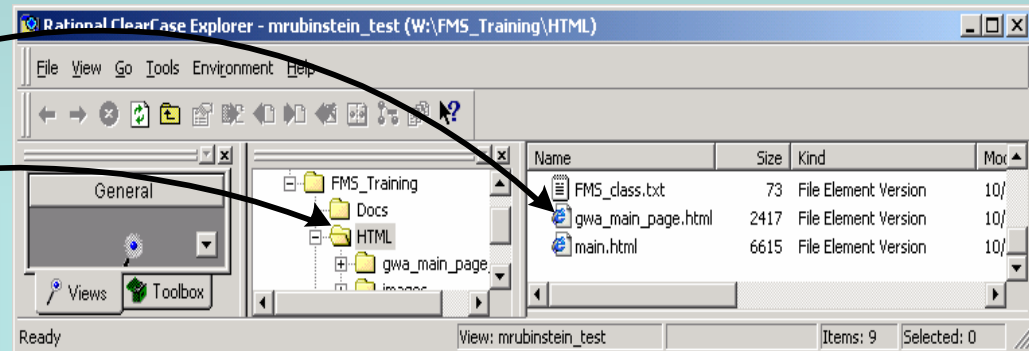
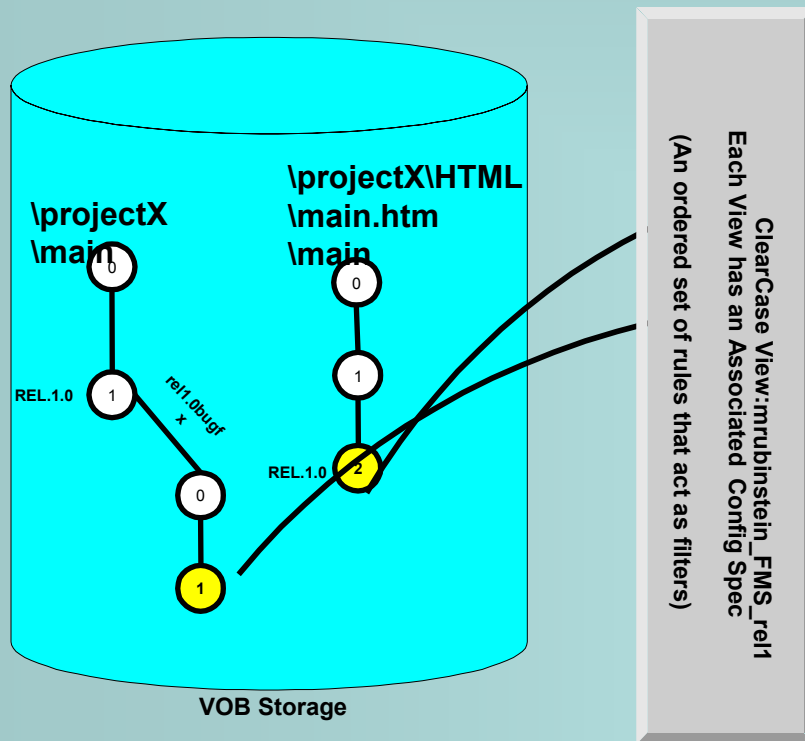
ClearCase Support for SCM



Core ClearCase Concepts

- **Elements** are files and directories each encompassing a set of versions and history
- A **VOBs** is a network wide repository/database that stores the version history of elements (files and directories) and all metadata relating to the elements.
- A **view** provides a developer with a private workspace for development. A view is used to to gain visibility to elements stored in the VOBs
- **Metadata** is data associated with elements which supplements the file system related data. Metadata includes triggers, labels, attributes, branches, hyperlinks and element types.

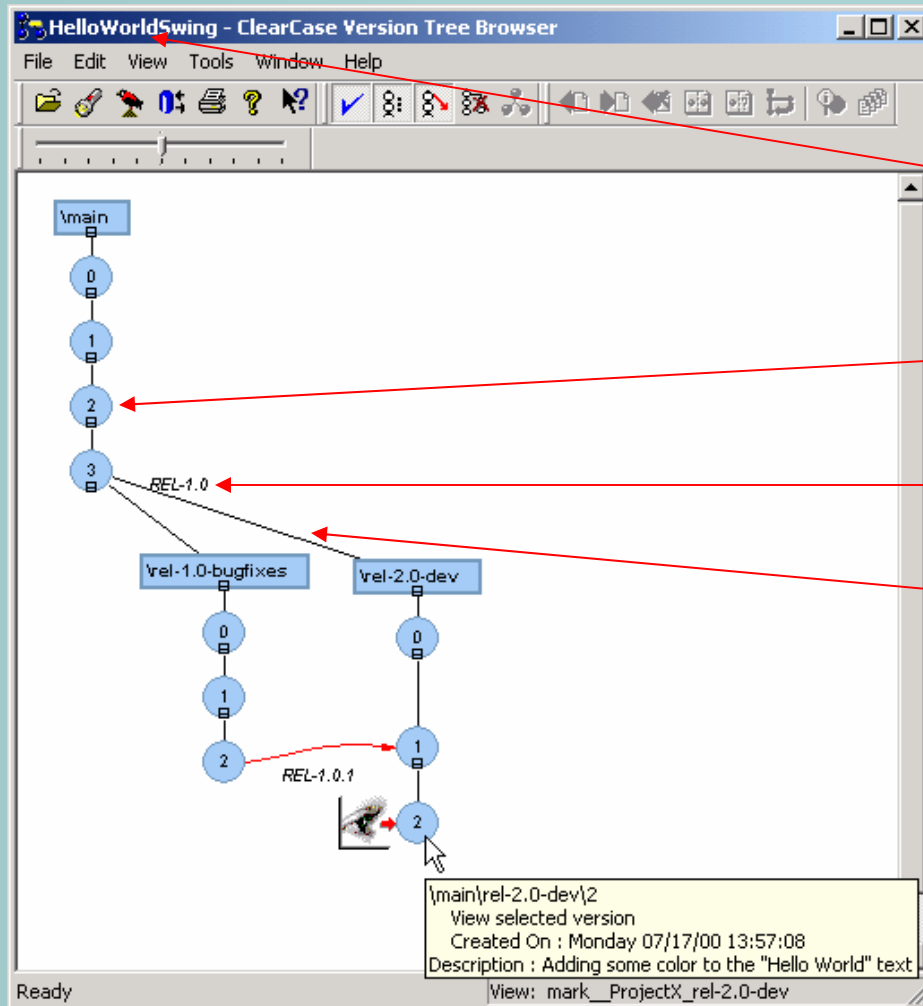
Elements, VOBs, Views



```
element * CHECKEDOUT
element * /main/rel.1.0.bugfix/LATEST
element * REL.1.0 -mkbranch rel.1.0.bugfix
element * /main/LATEST -mkbranch rel.1.0.bugfix
```

Elements

- An element is either a file or a directory and has a history that is represented as a version tree



This version tree shows the change history for the file “HelloWorldSwing.java”.

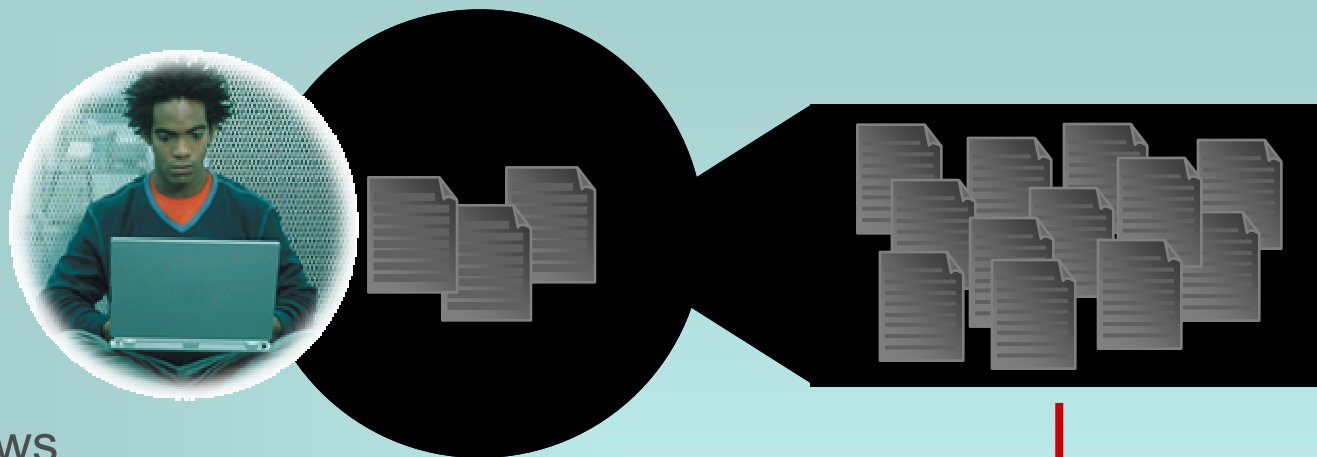
Version

Label

Branch

Easy to Use: Workspace management

Network or disconnected access

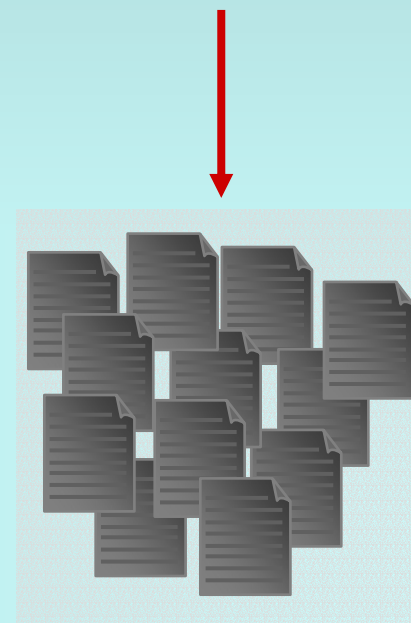


- Dynamic Views

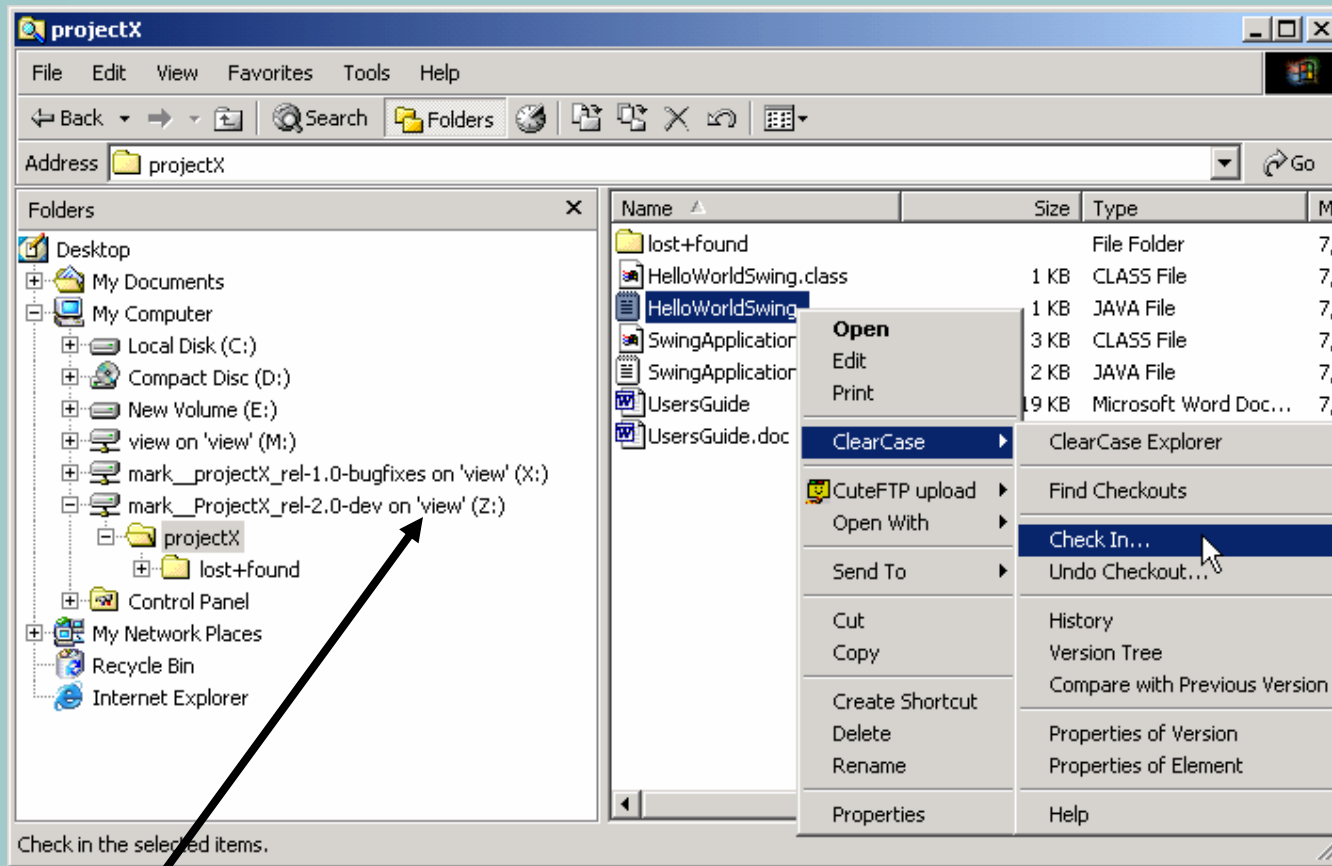
- Access any configuration immediately
- Global view of code base enables sharing

- Snapshot Views

- Intelligent disconnected use
- Automatically detects and re-synchronizes “hijacked files”

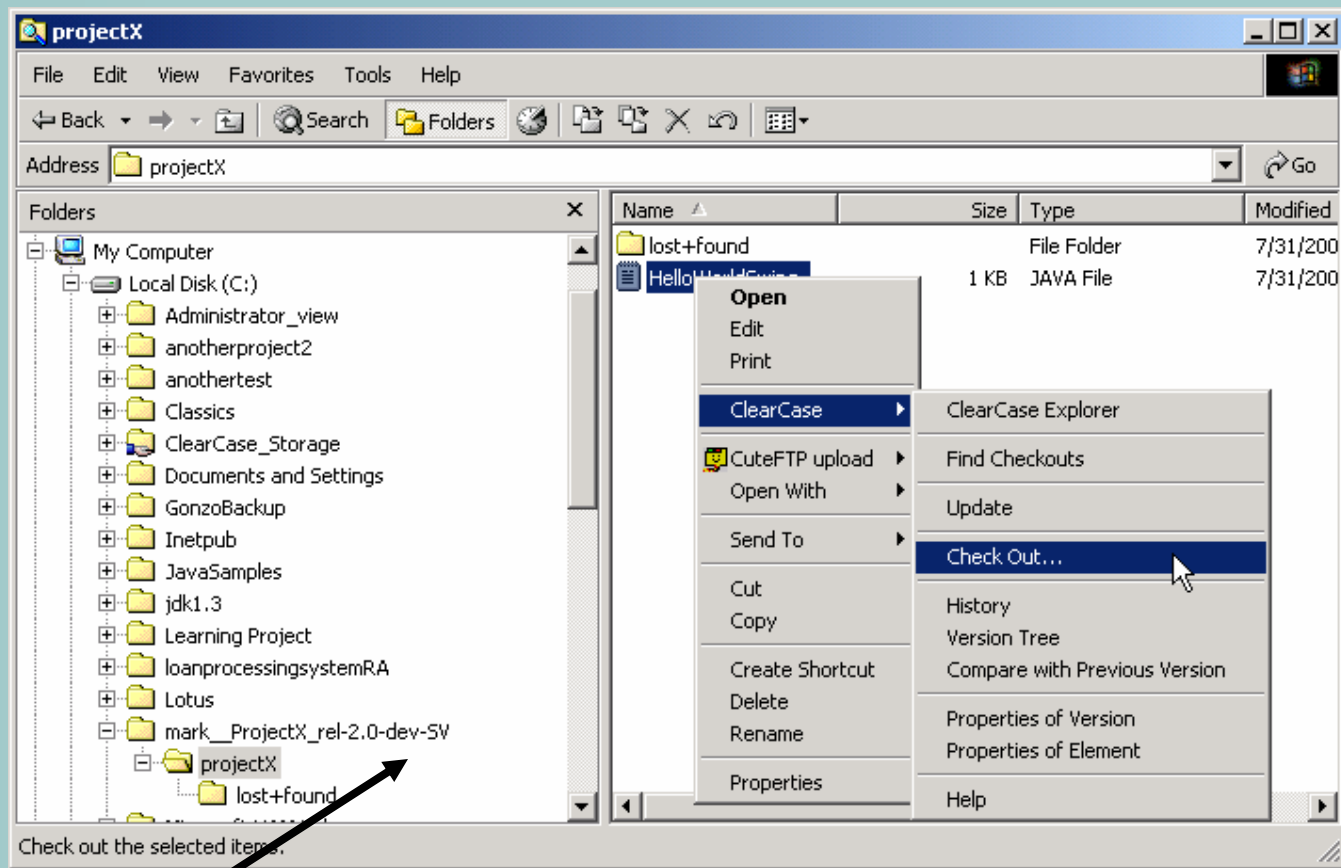


Dynamic View



The view is visible to a client workstation as a mapped network drive. The actual location of the view storage is either on a central server or local to the client machine.

Snapshot View



The view is visible to a client workstation as a subdirectory under a local drive such as C:. It is also possible to place the snapshot view on a detached drive such as a floppy or ZIP disk.

Differences Between Dynamic & Snapshot Views

● Dynamic View

- Runs on NT, 2000 and XP
- Always up-to-date with respect to the config-spec.
- Requires little disk space because the files and directories accessed via the view are projected from the VOB.
- Requires fulltime network access.

● Snapshot View

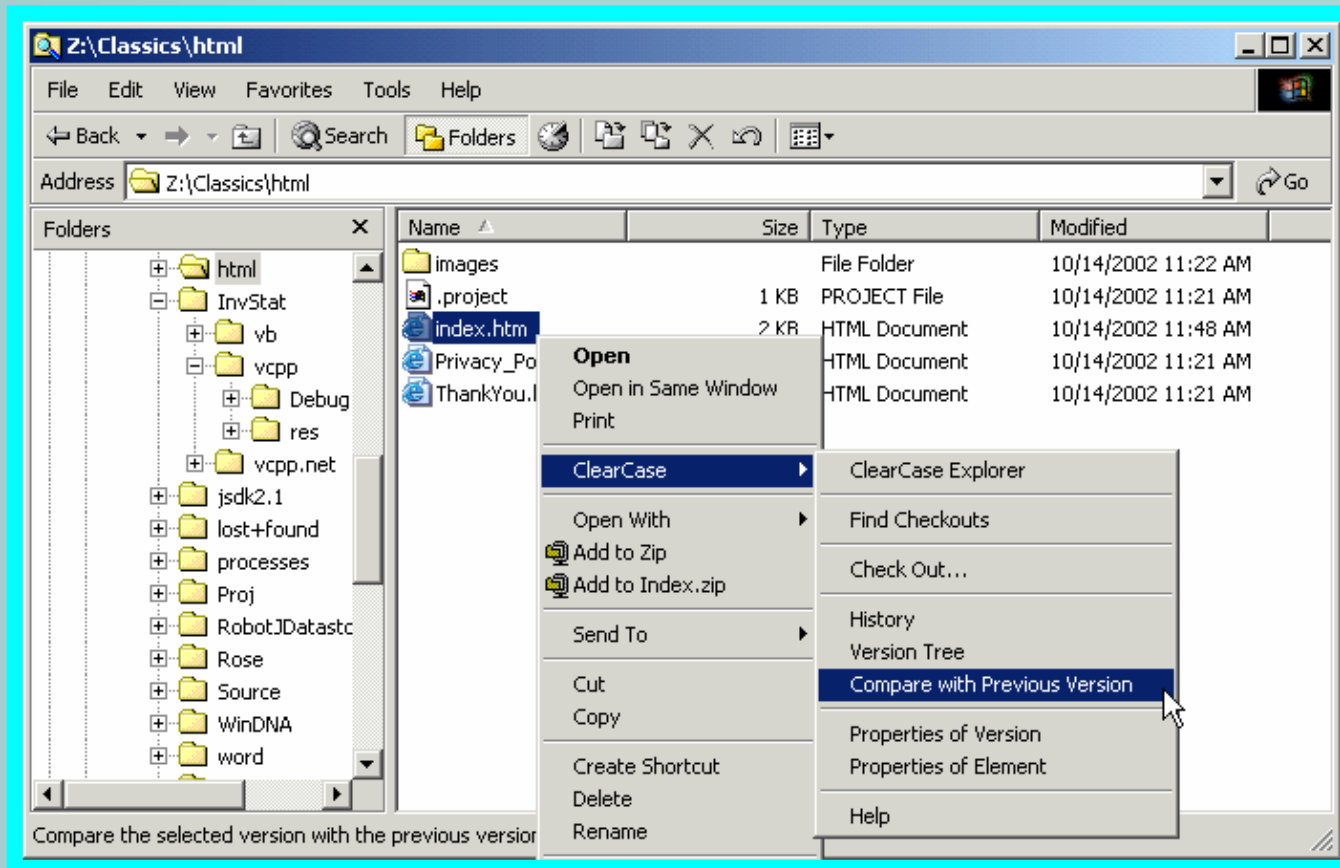
- Accessible via NT, 2000, XP, ME & 98
- Requires a View Server Process to be running on NT, 2000 or XP.
- Will become out of date as others check-in elements.
- Must be updated periodically
- Requires more disk space because files are copied from the VOB to a local directory
- Allows for work while disconnected from the network

Easy to use: ClearCase views are transparent

- Developers access files from their natural environment
 - IDE integrations and APIs
 - Windows Explorer
 - Command-line

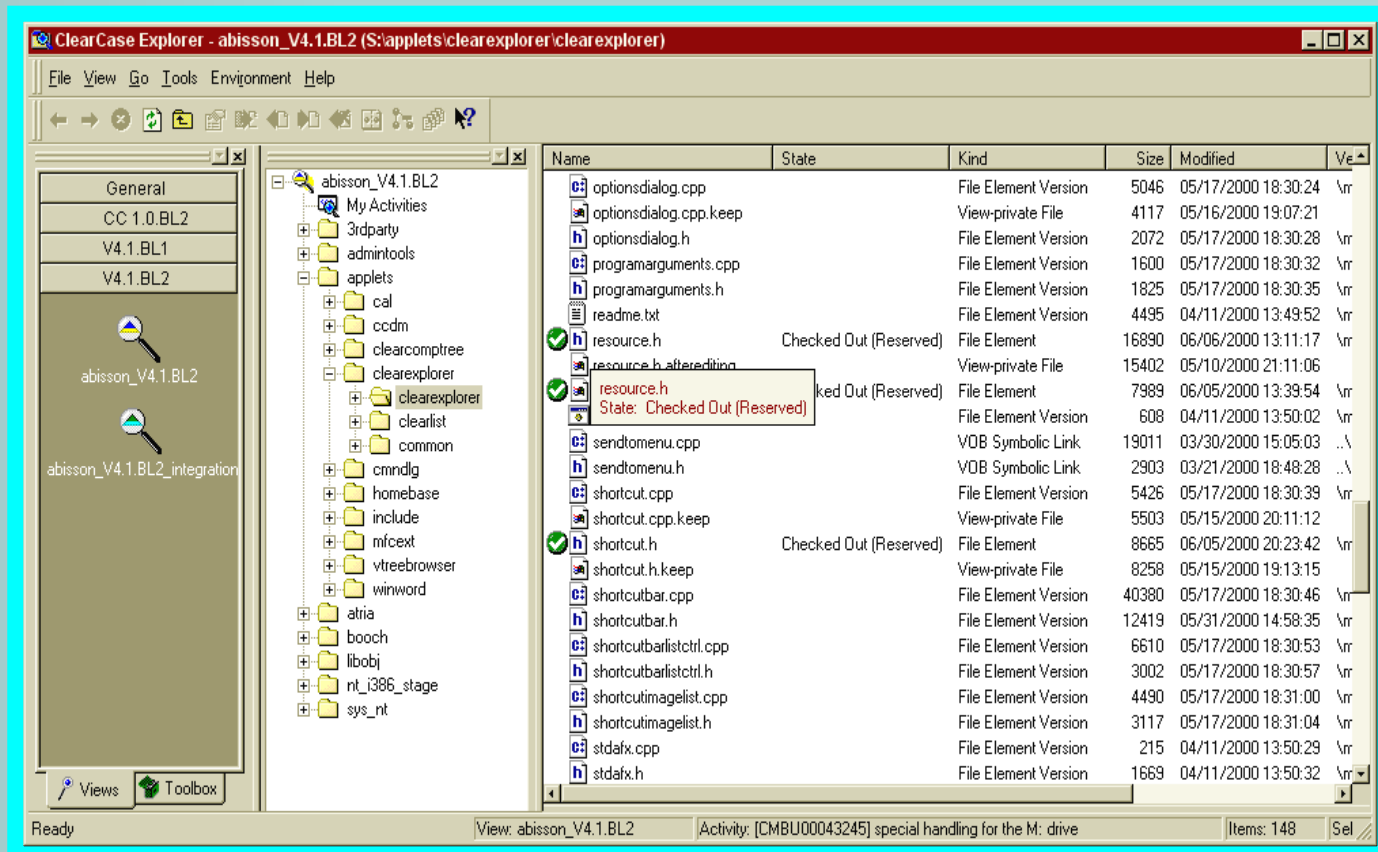
Easy to use: Windows Explorer

Intuitive, customizable integration with Windows Explorer

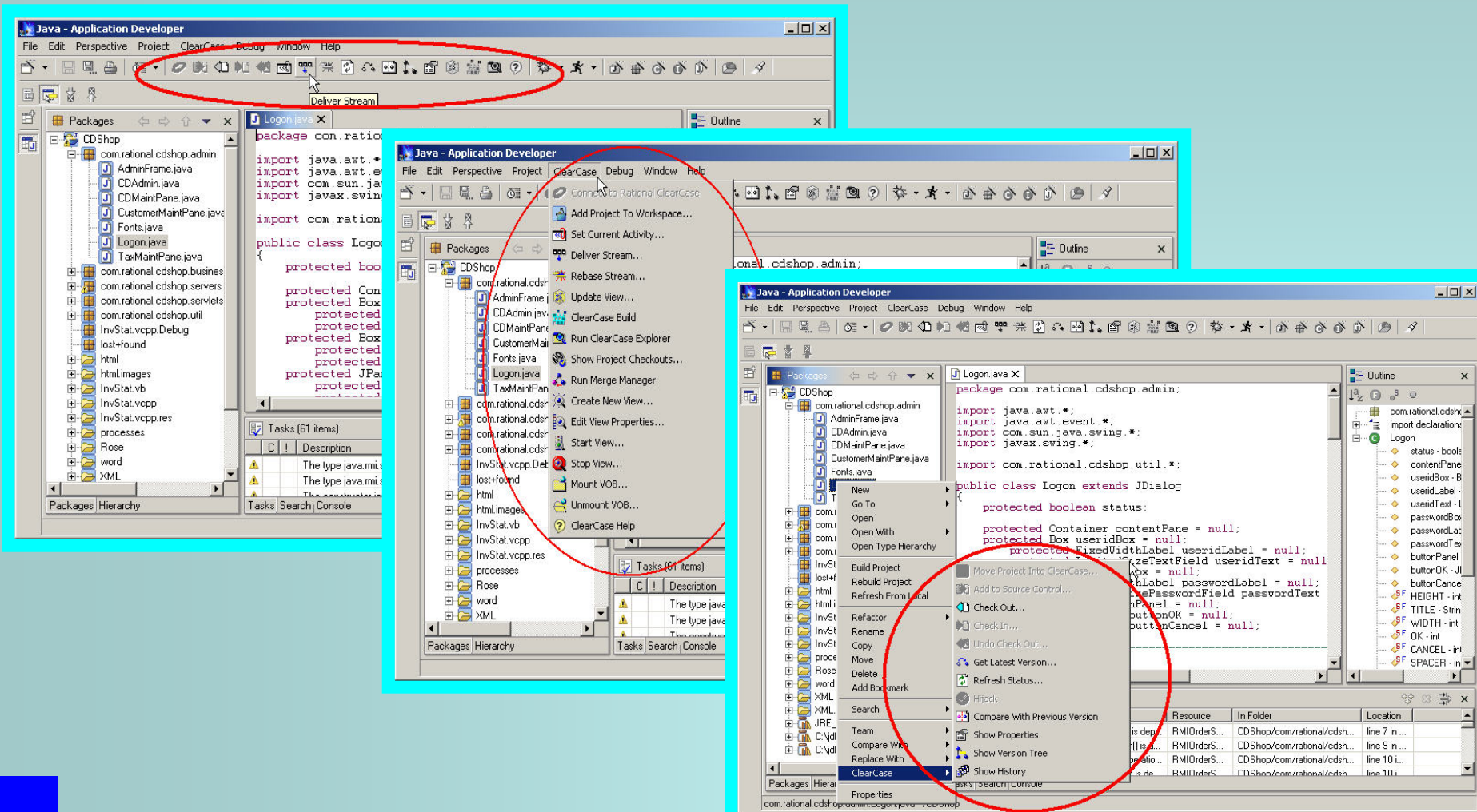


Easy to use: ClearCase Explorer

ClearCase Explorer provides a familiar, customizable interface

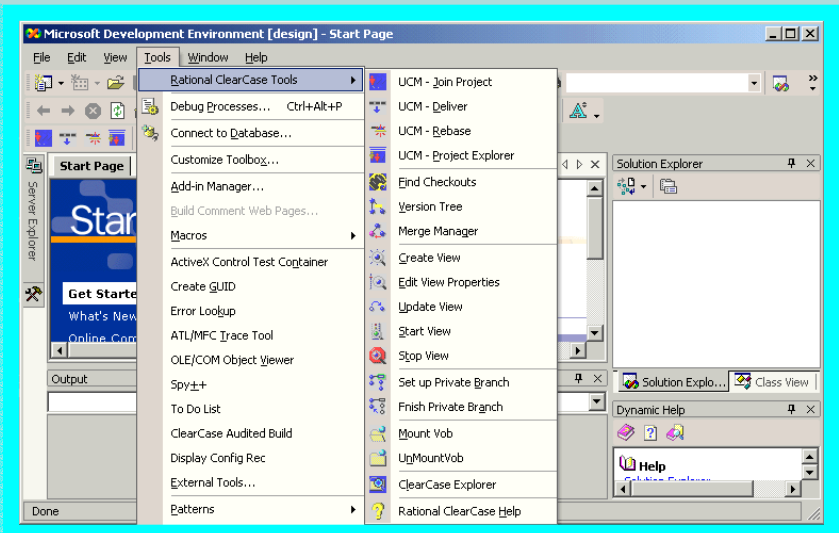
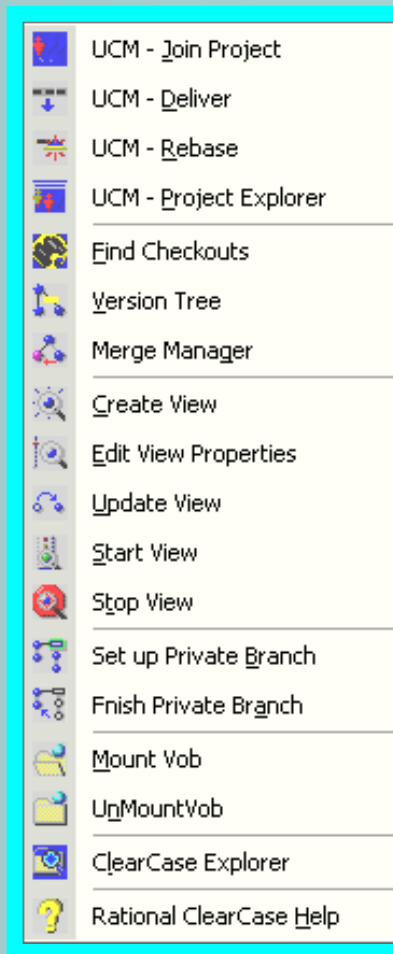


Easy to use: WebSphere integration

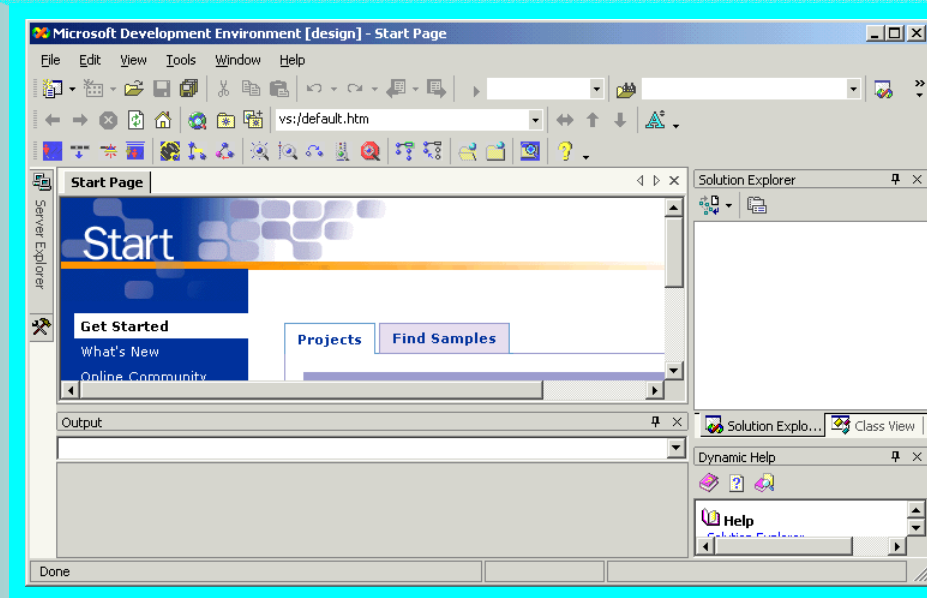


Easy to use: Rational ClearCase vs.NET integration

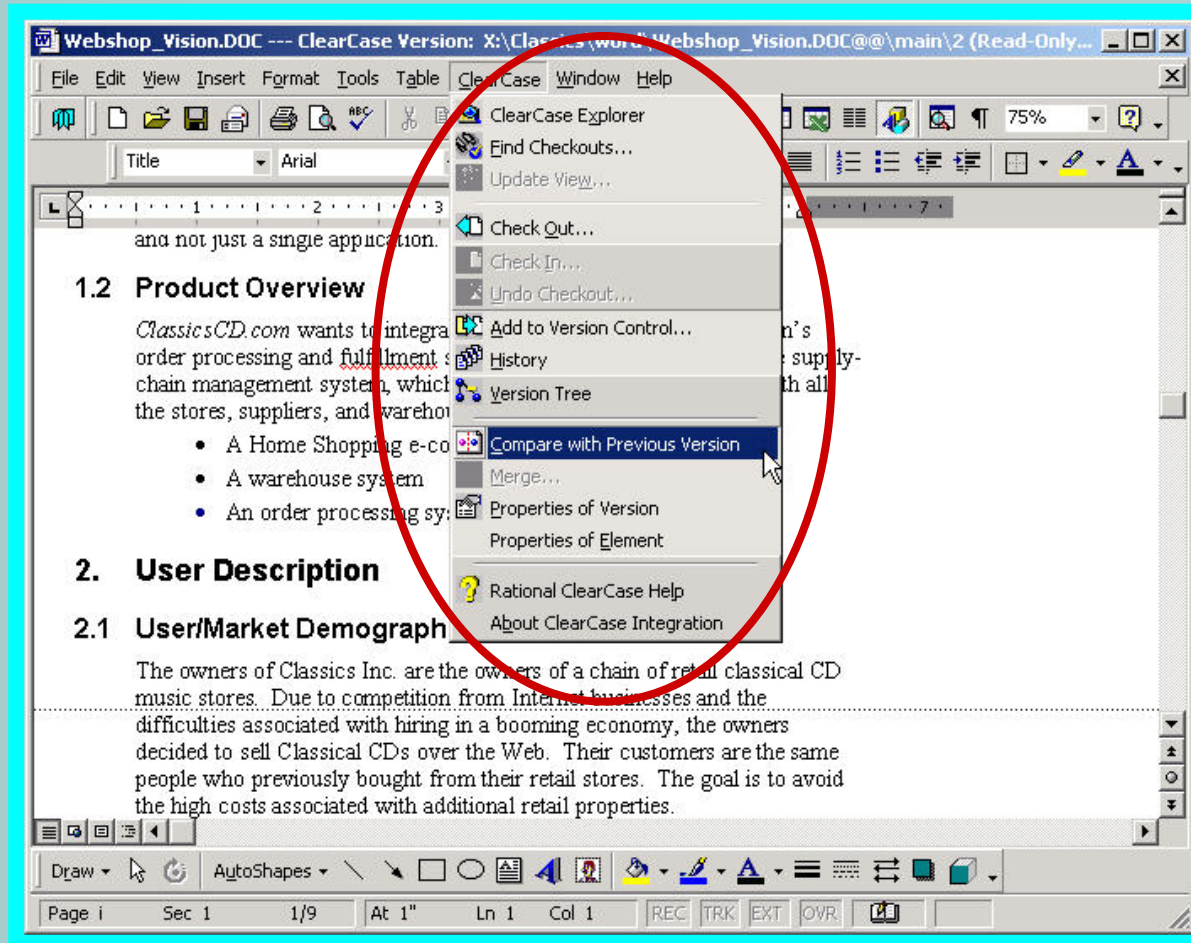
Menu Bar



Toolbar



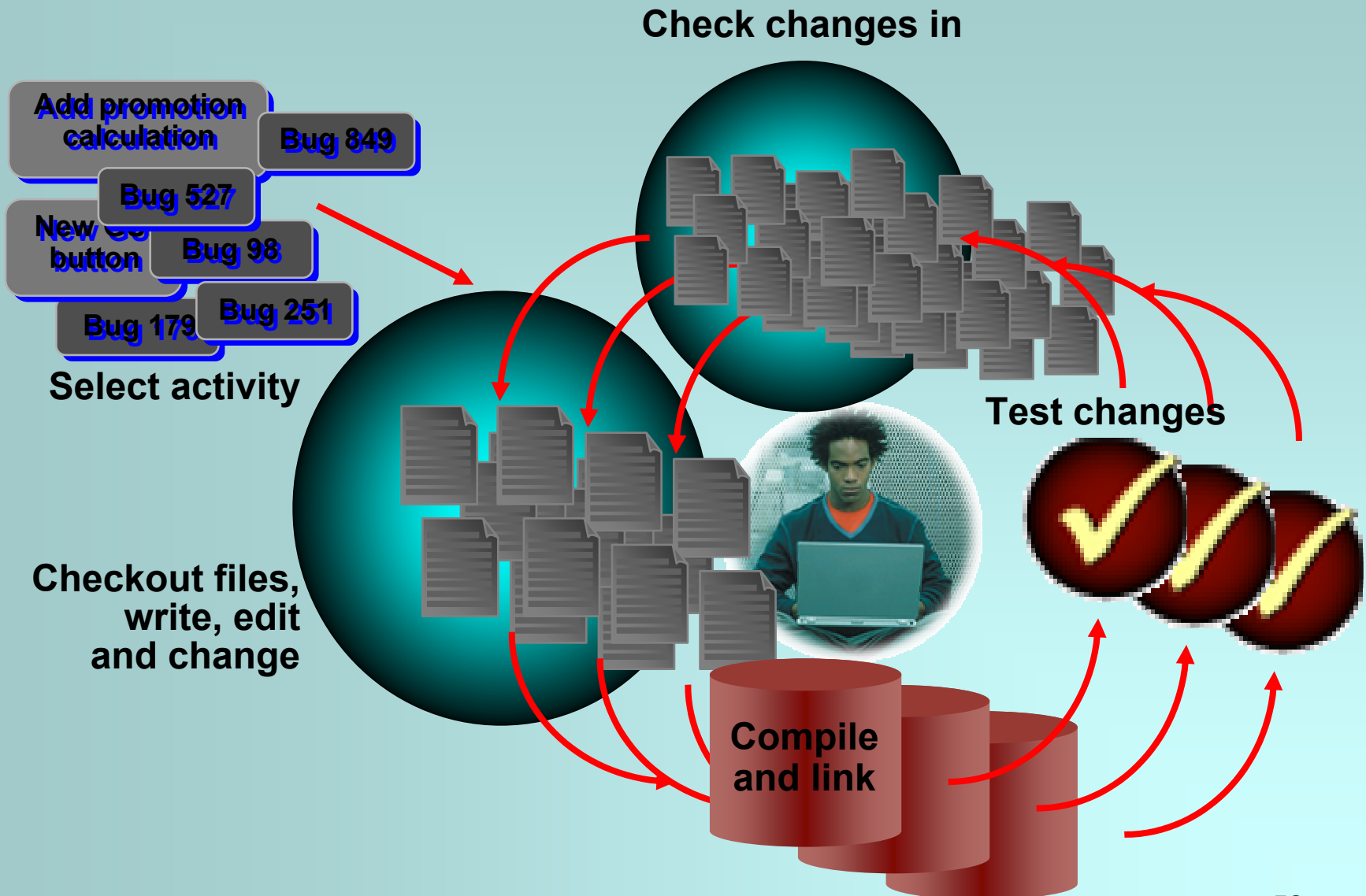
Easy to use: Microsoft Word integration



Easy to use: Many other integrations

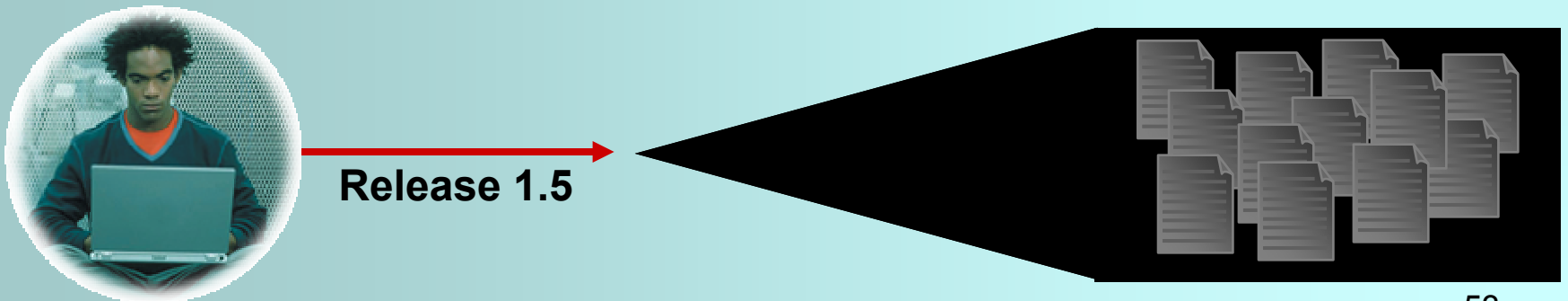


Parallel development: Working on many things at once



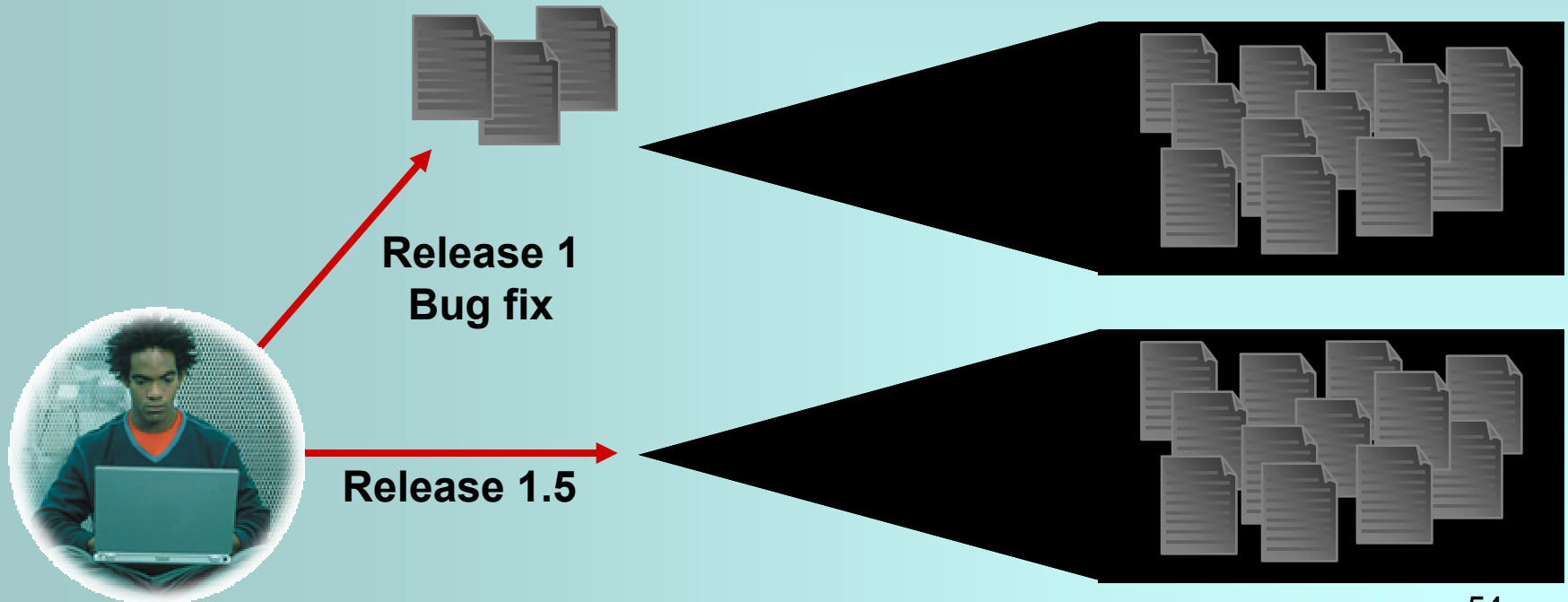
Parallel Development

Work simultaneously on multiple releases



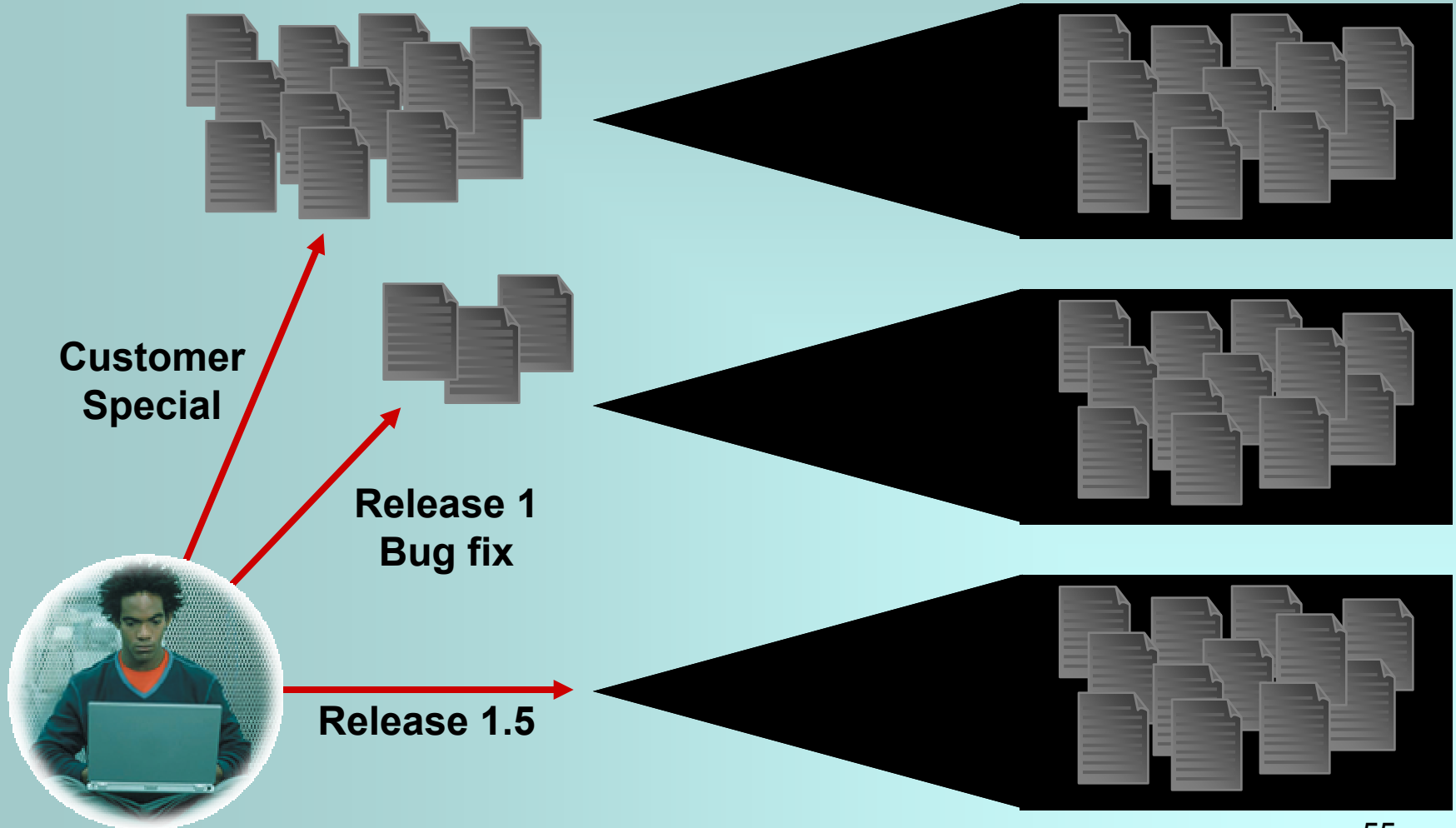
Parallel Development

Work simultaneously on multiple releases



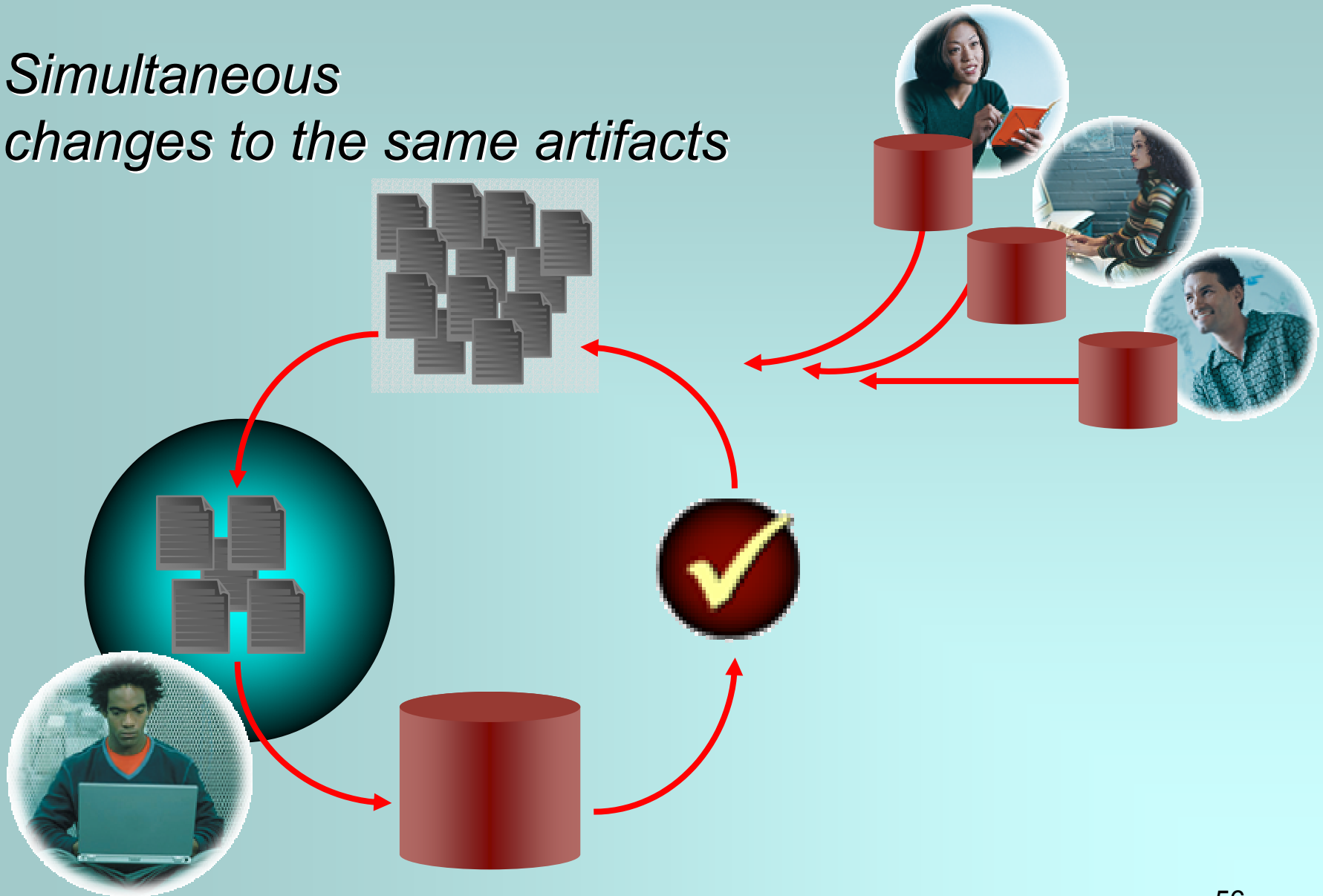
Parallel Development

Work simultaneously on multiple releases

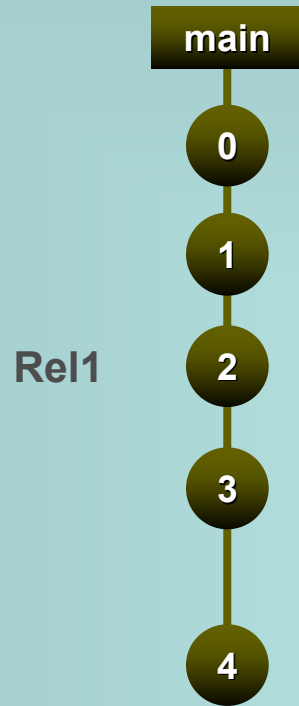


Parallel development:

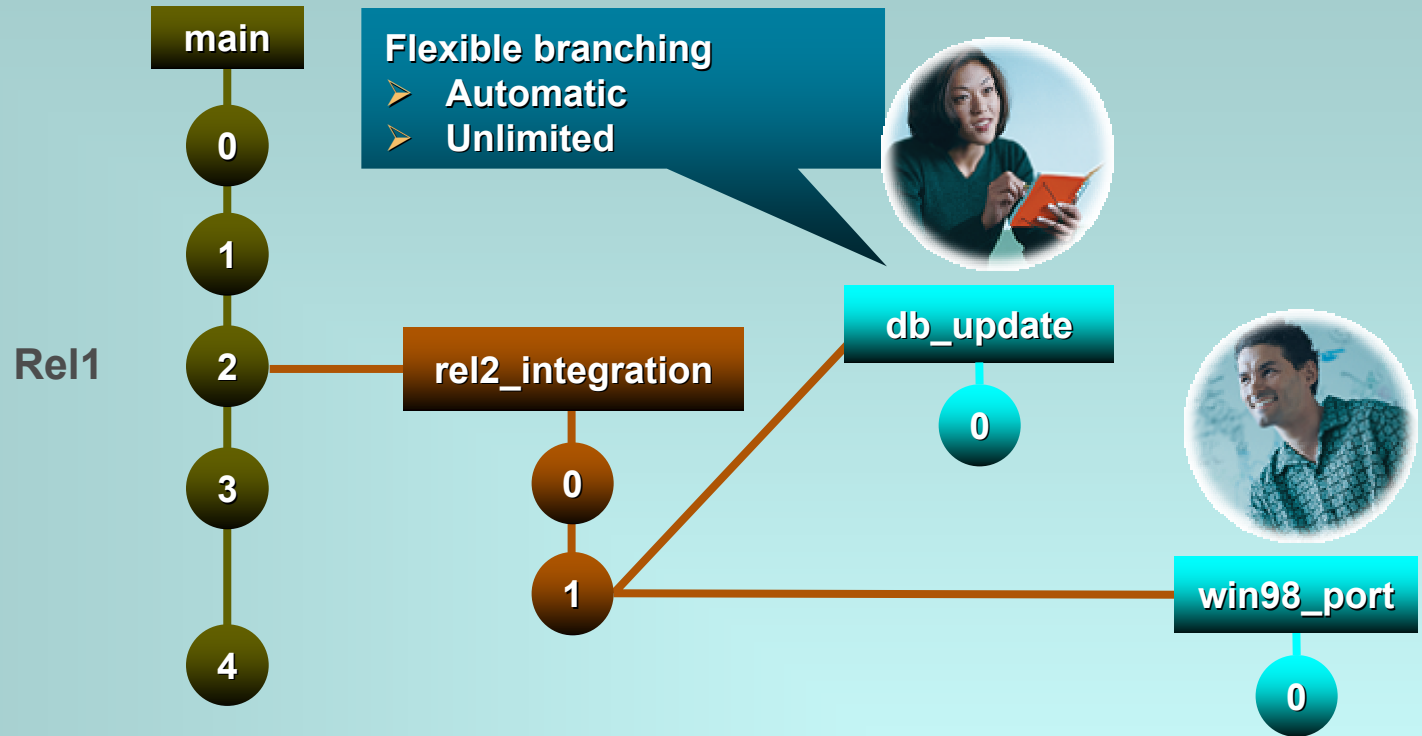
*Simultaneous
changes to the same artifacts*



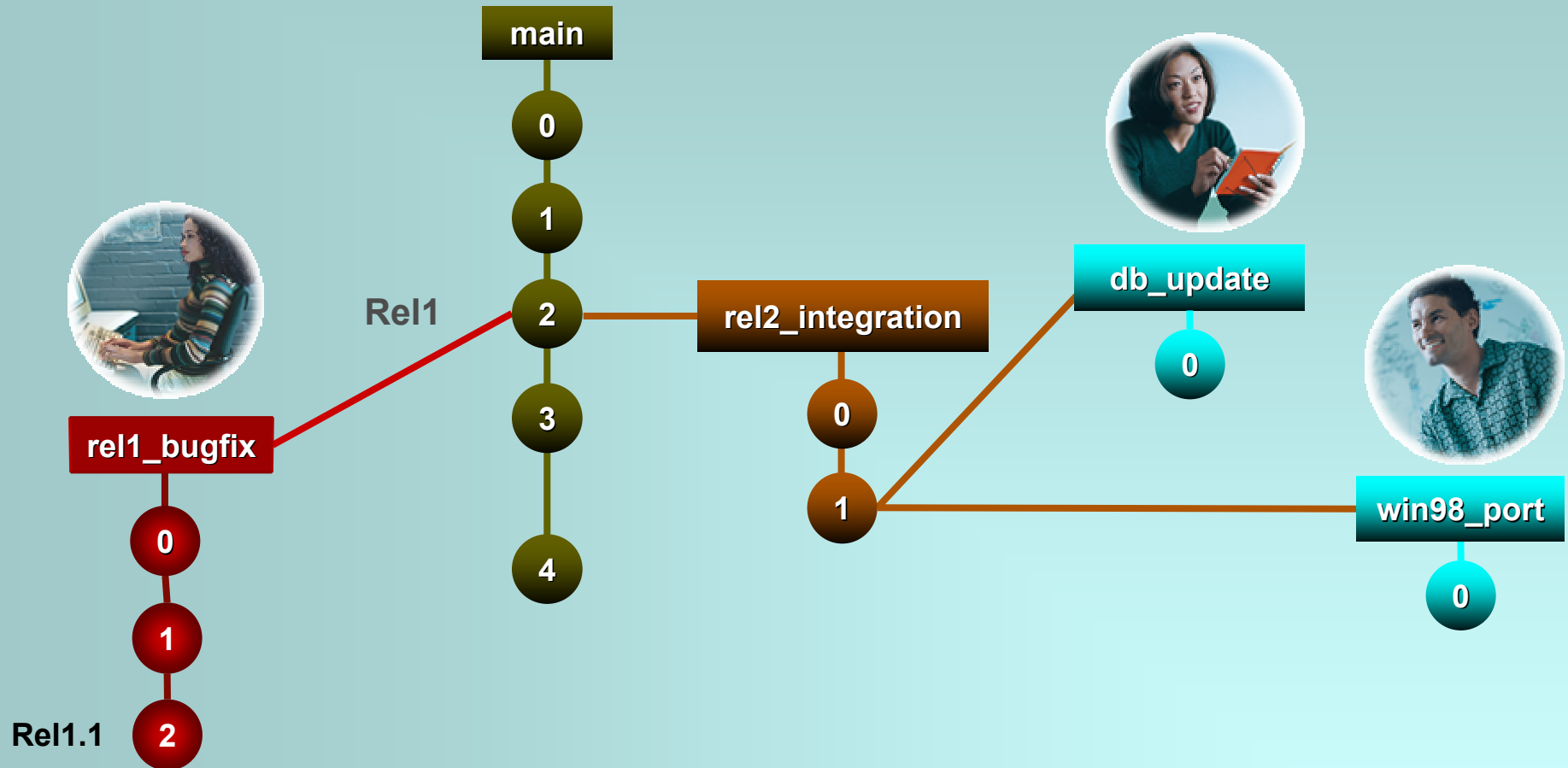
Branching without limits



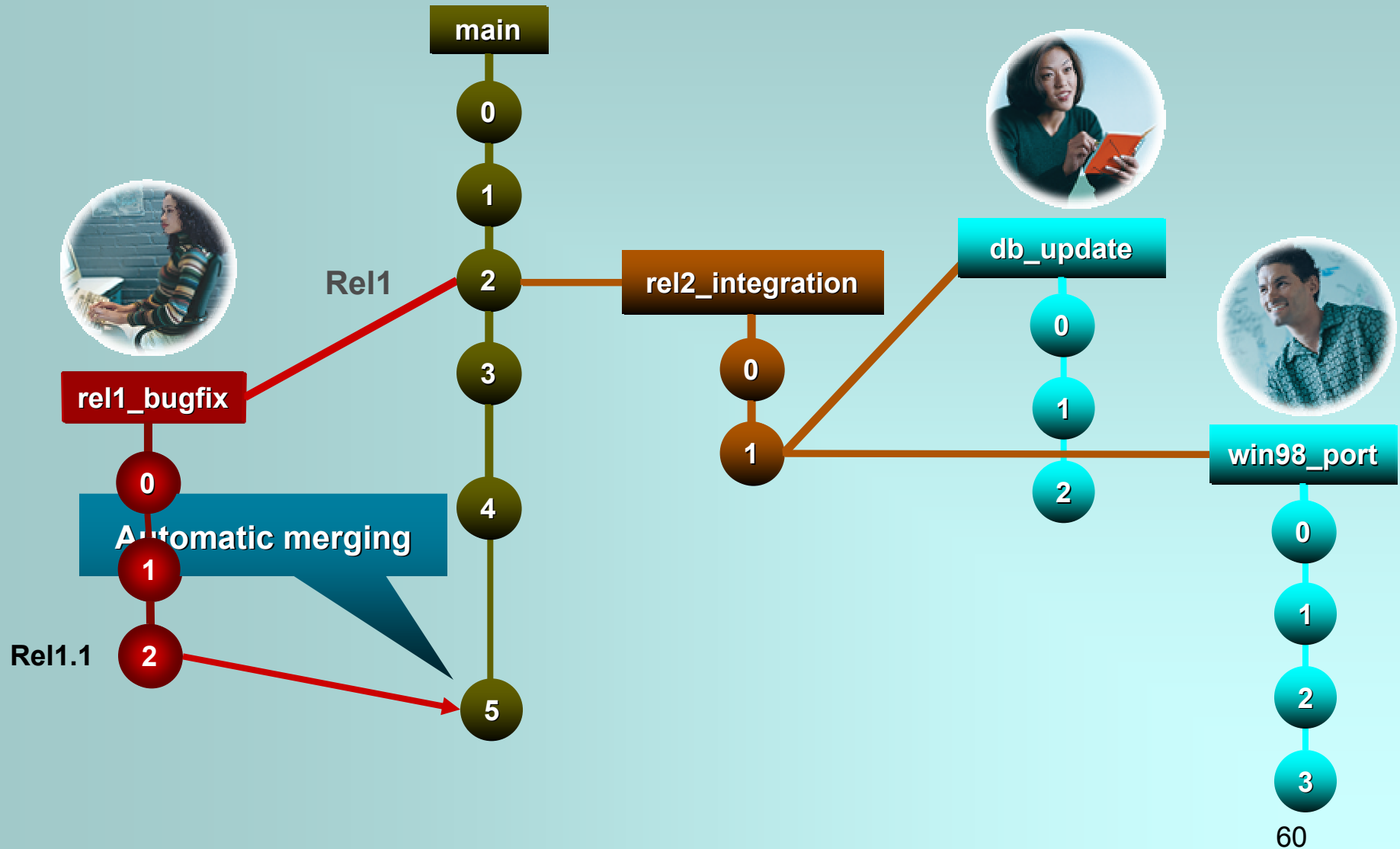
Branching without limits



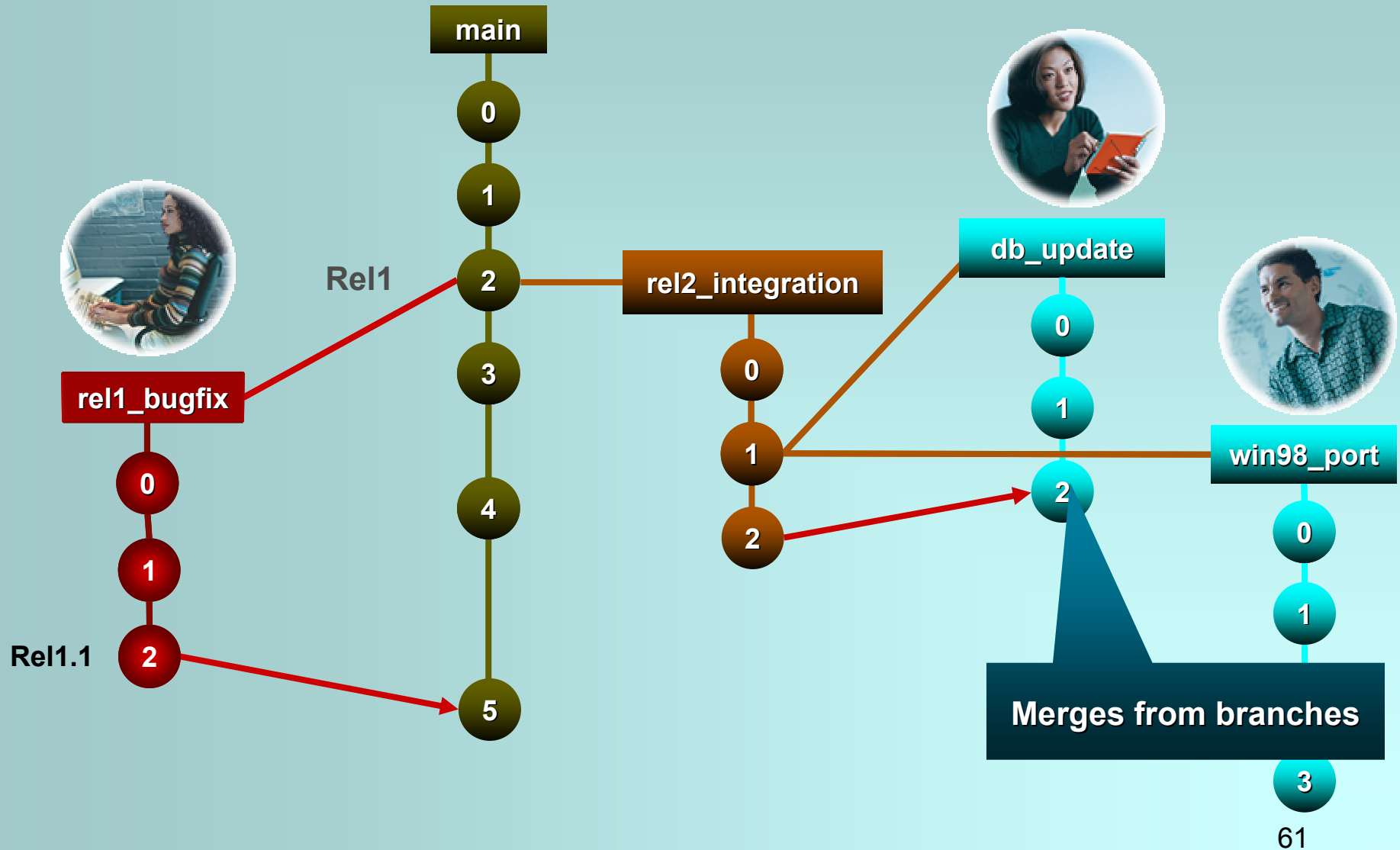
Branching without limits



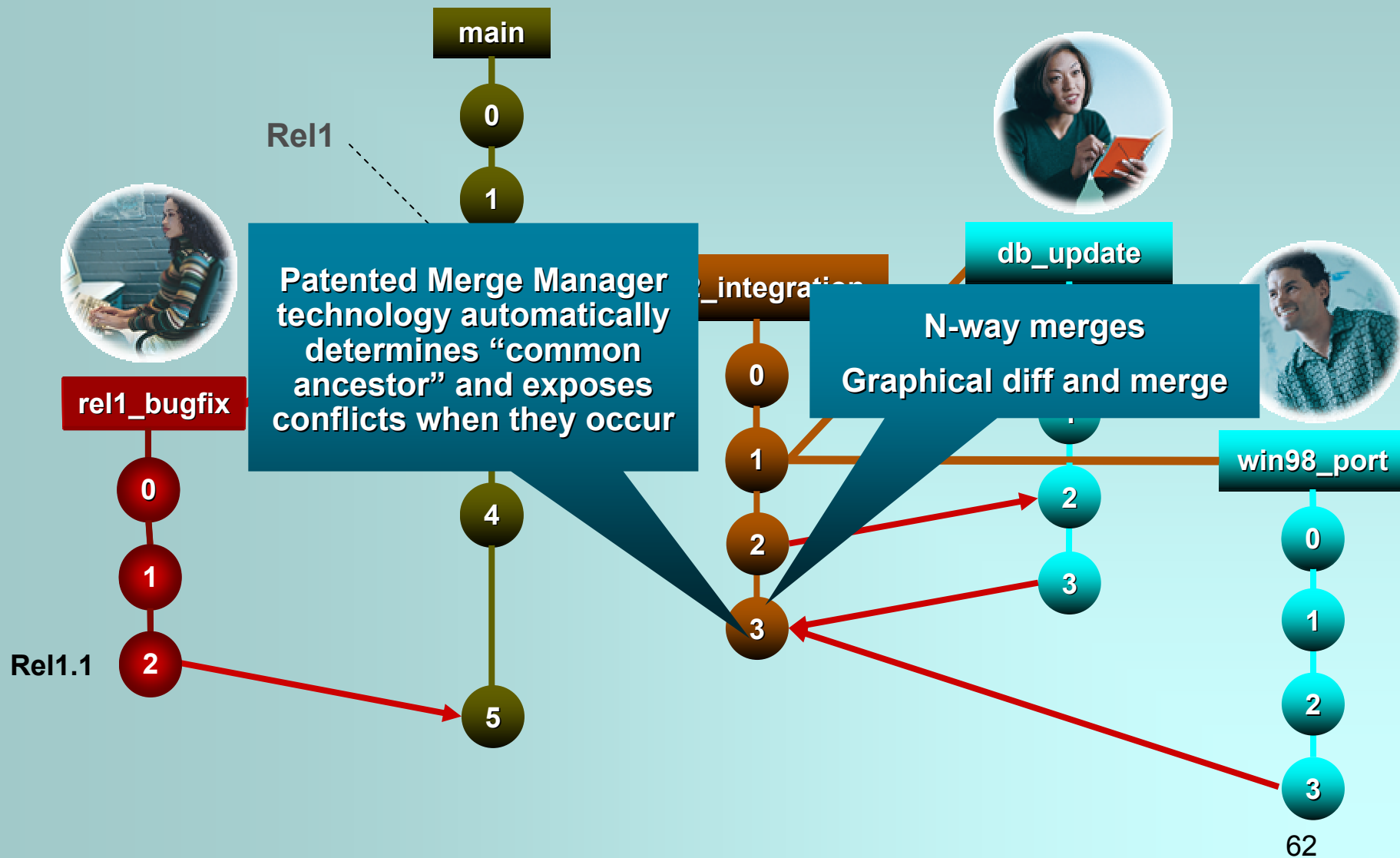
Branching without limits



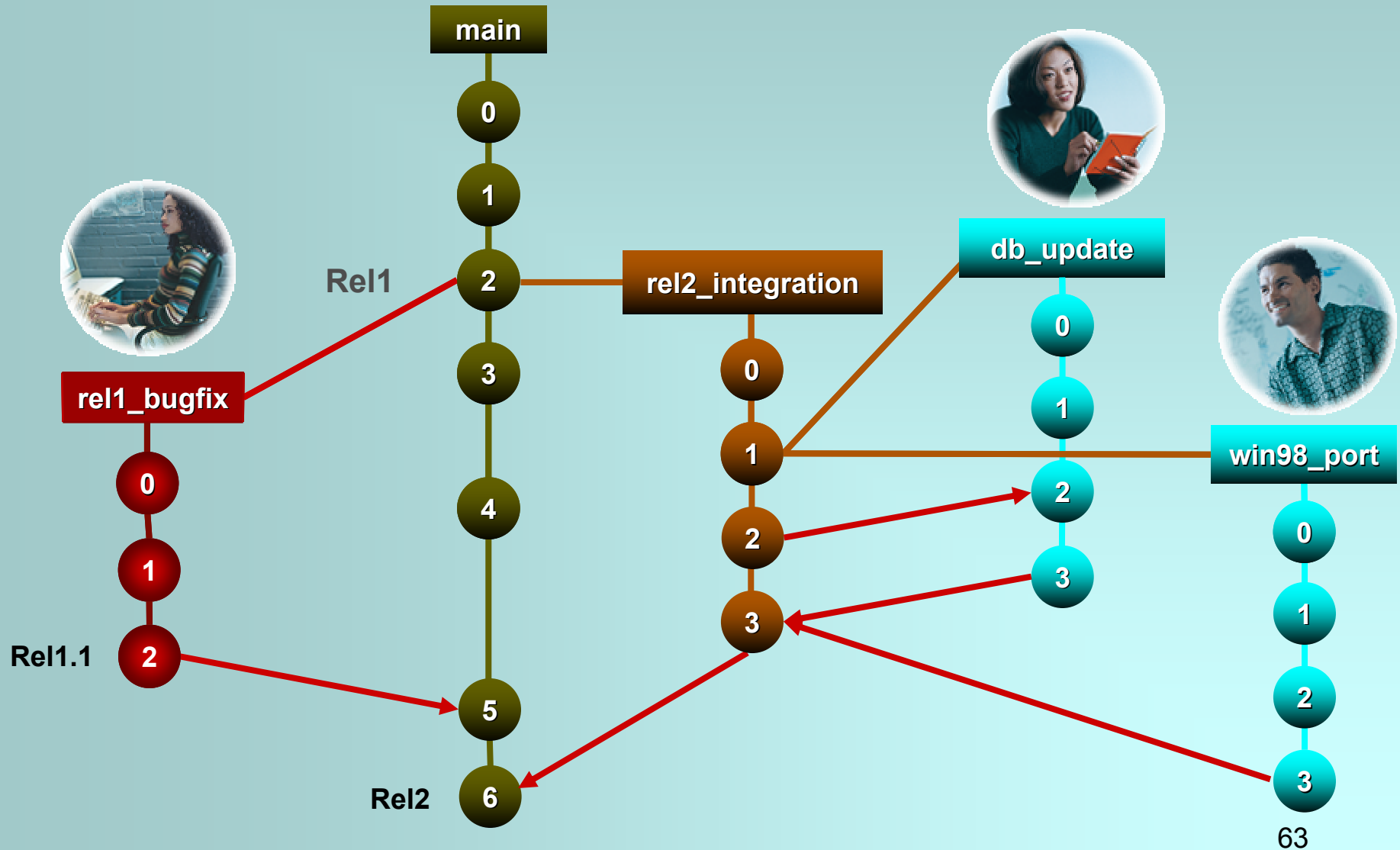
Branching without limits



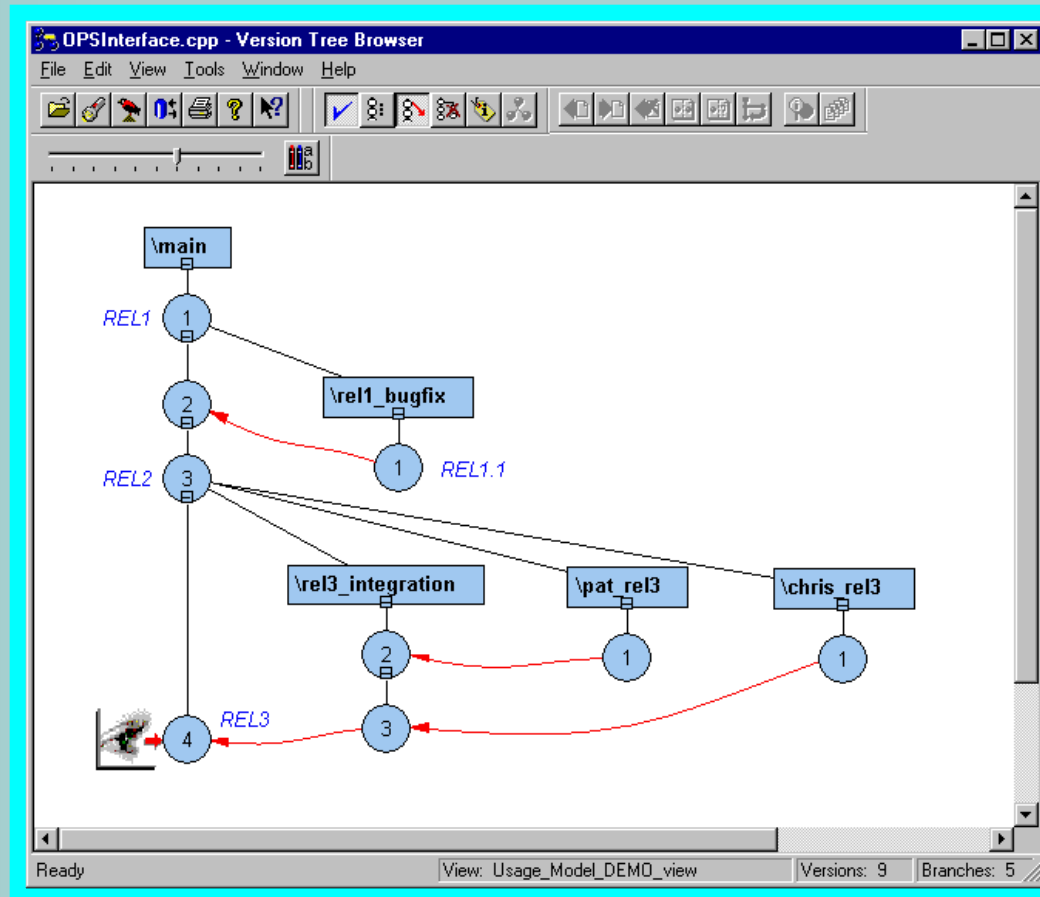
Branching without limits



Branching without limits



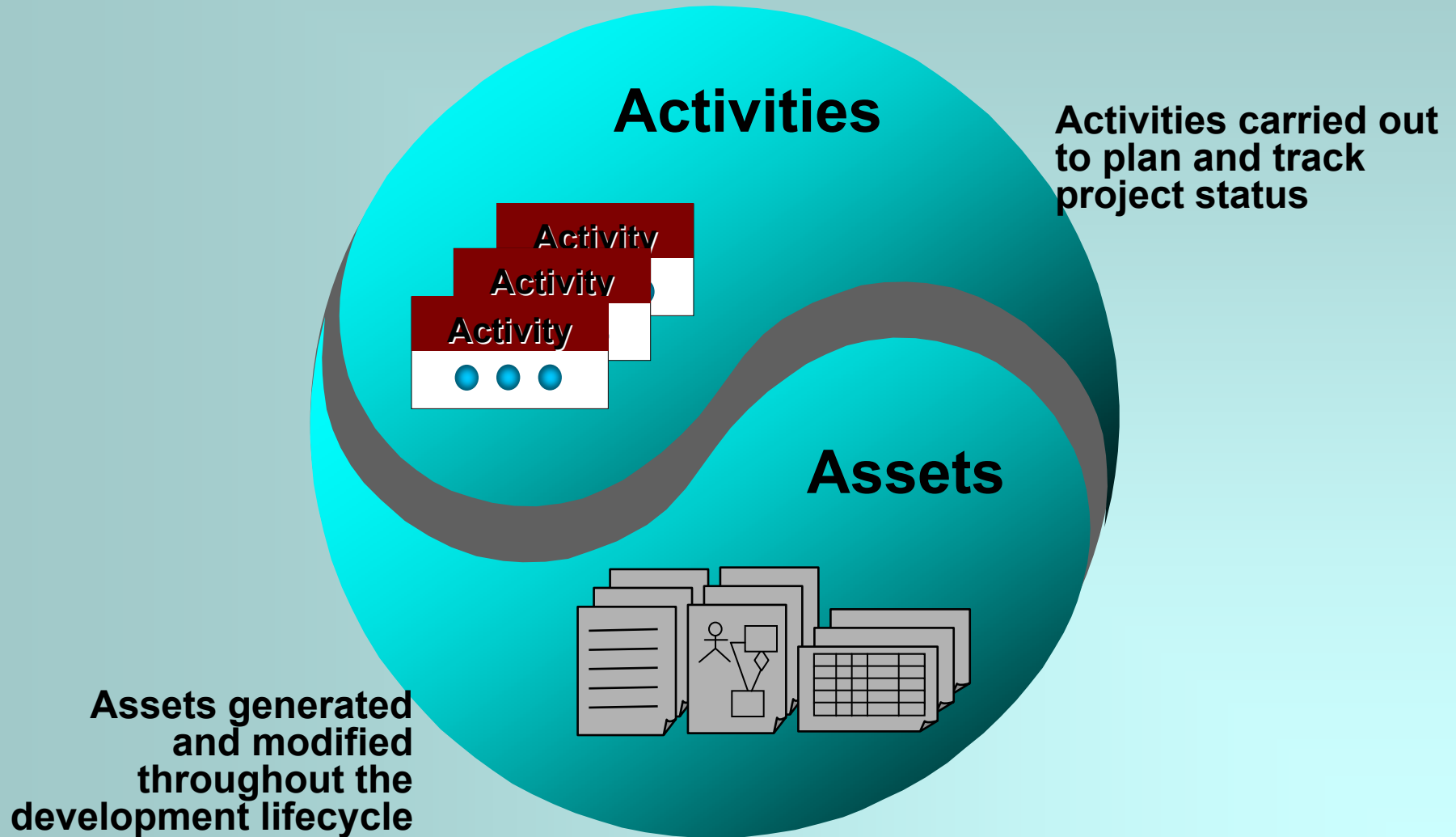
Parallel development: Version tree browser



Rational Software Configuration Management

- Simplify and control change
- Accelerate productivity with parallel development
- **Rational Unified Change Management (UCM) an “Out of the Box” Process.**

Out of the box process: Unified Change Management (UCM)



Unified change management

- UCM Activities automatically manage Change Sets
 - Activities in Rational ClearQuest track Rational ClearCase assets
 - Developers, Integrators, Testers work with Activities, not low-level assets

Rational ClearQuest

Manages activities

- ◆ To Do Lists
- ◆ Workflow

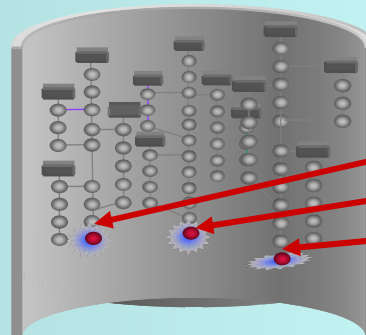
Rational ClearCase

Manages assets

- ◆ Versioning: code, models, XML, HTML
- ◆ Parallel development

Rational ClearQuest: Organized Activities

Request	Priority	Owner
Special Prom	1	Terry
Bug 527	2	Sandy
Add GUI button	2	Kim

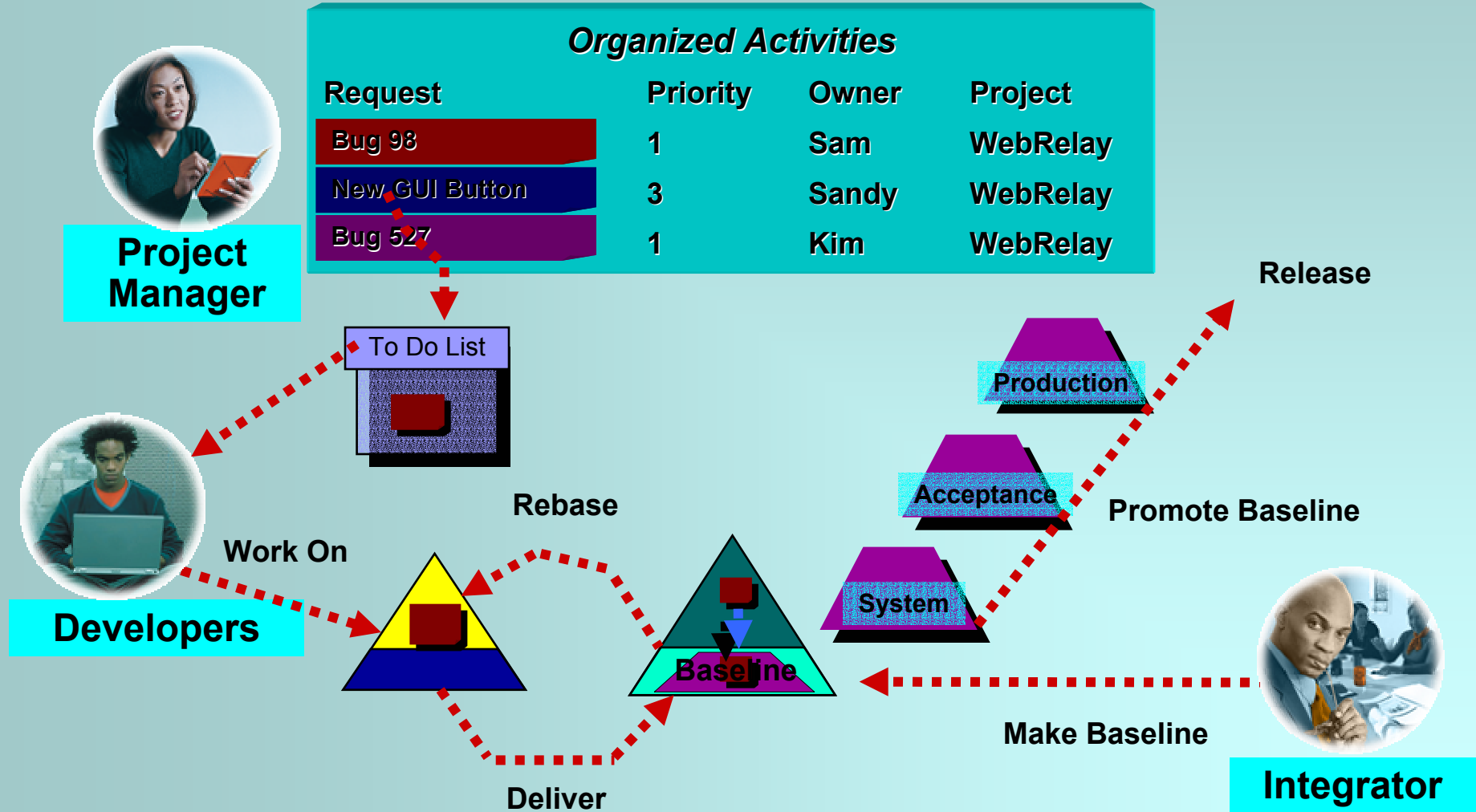


Change Set

Special Promo

a. html	V5
b. xml	V3
c. jpg	V8

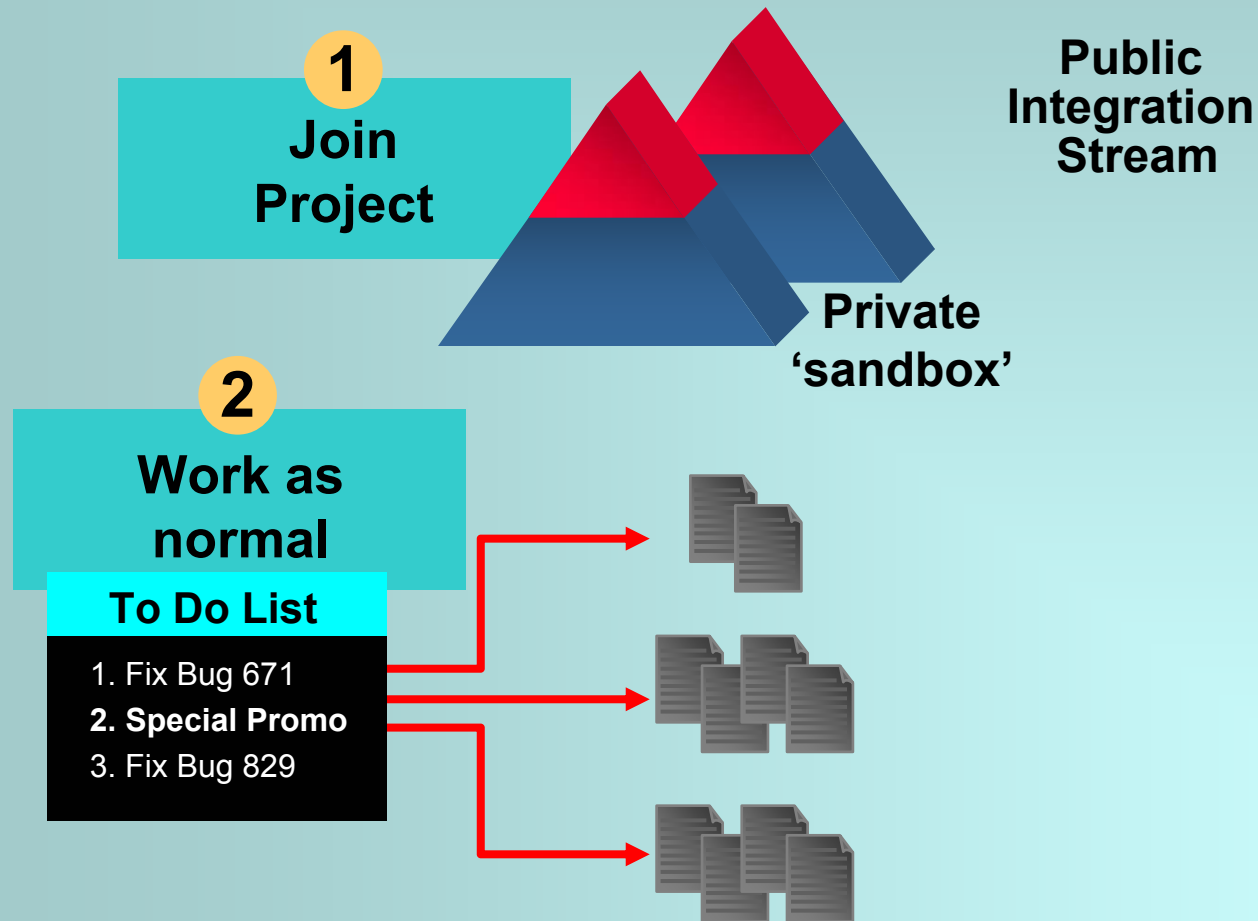
Unified change management: Workflow



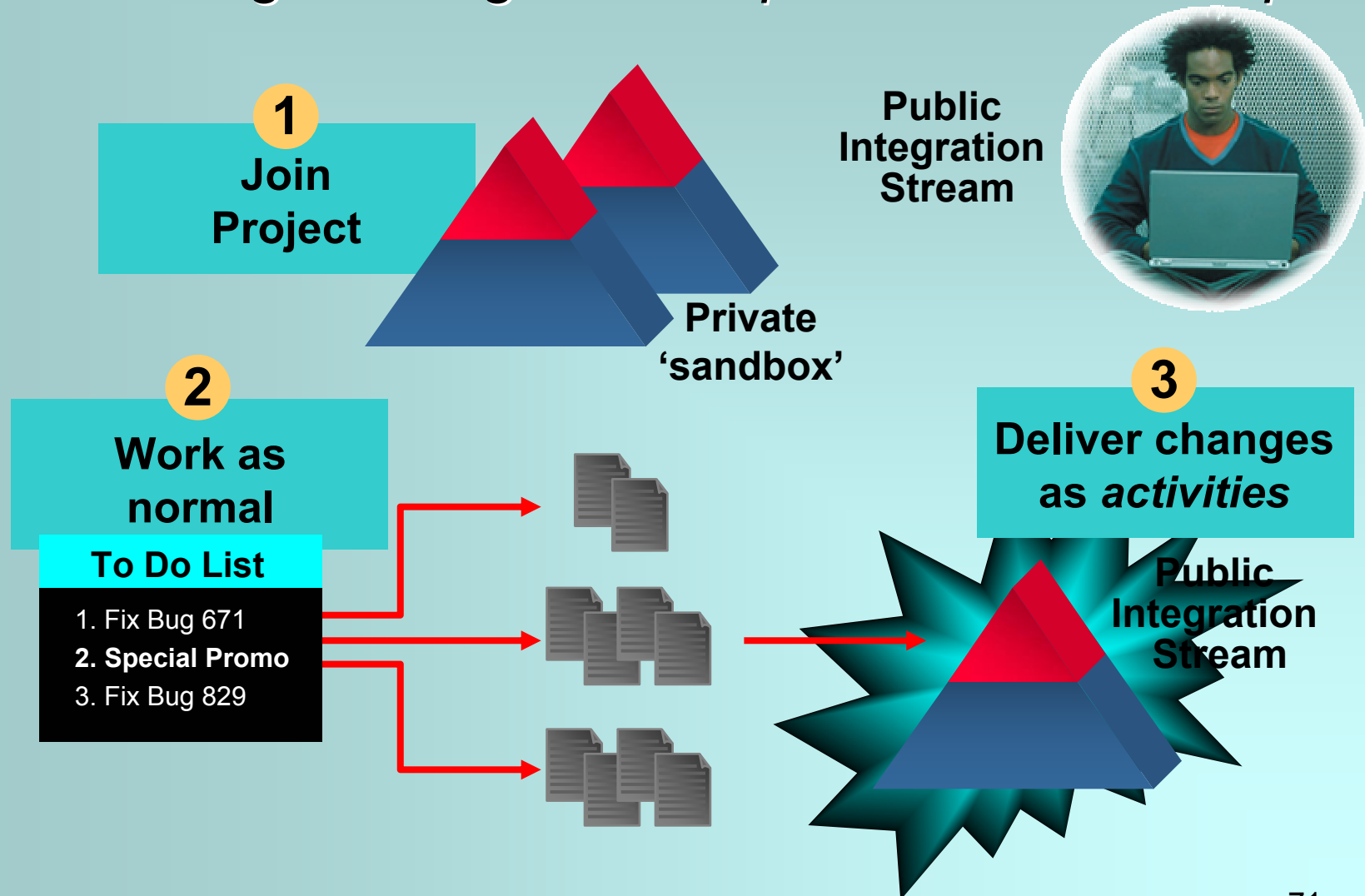
Unified Change Management: *Optimized for developers*



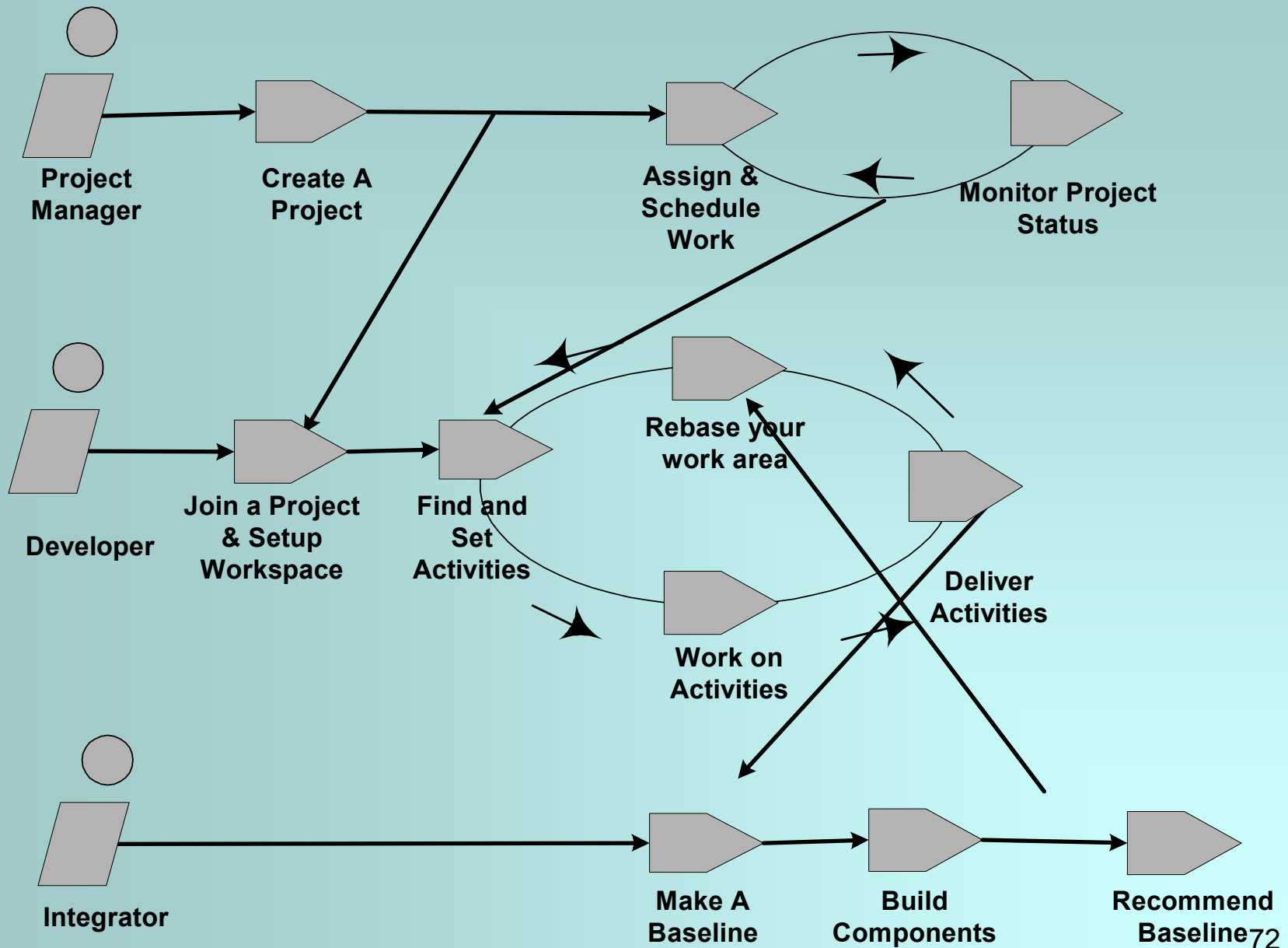
Unified Change Management: *Optimized for developers*



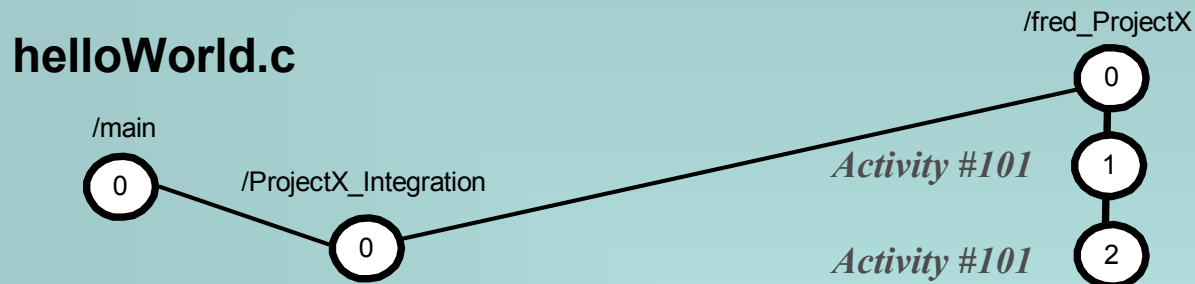
Unified Change Management: *Optimized for developers*



UCM Concepts – Workflow (cont.)

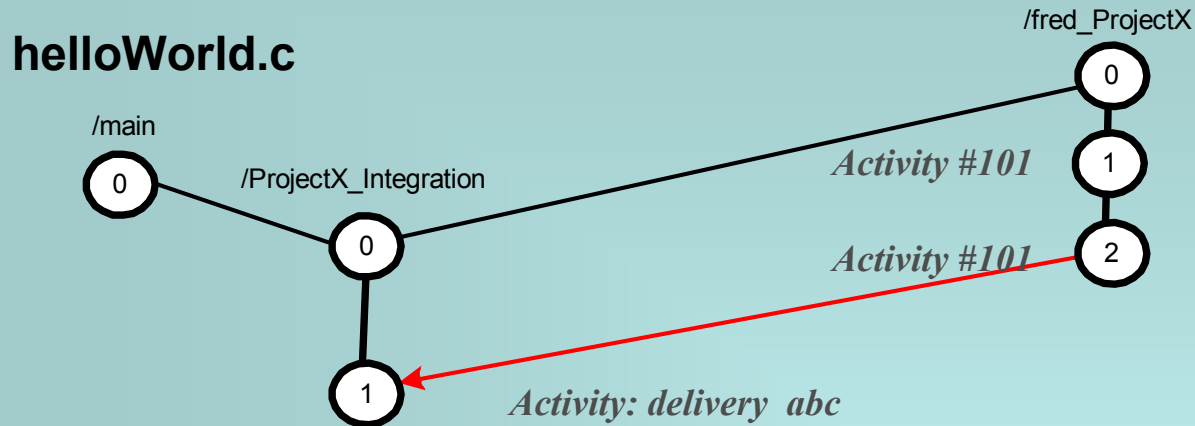


UCM Concepts – A Development Scenario



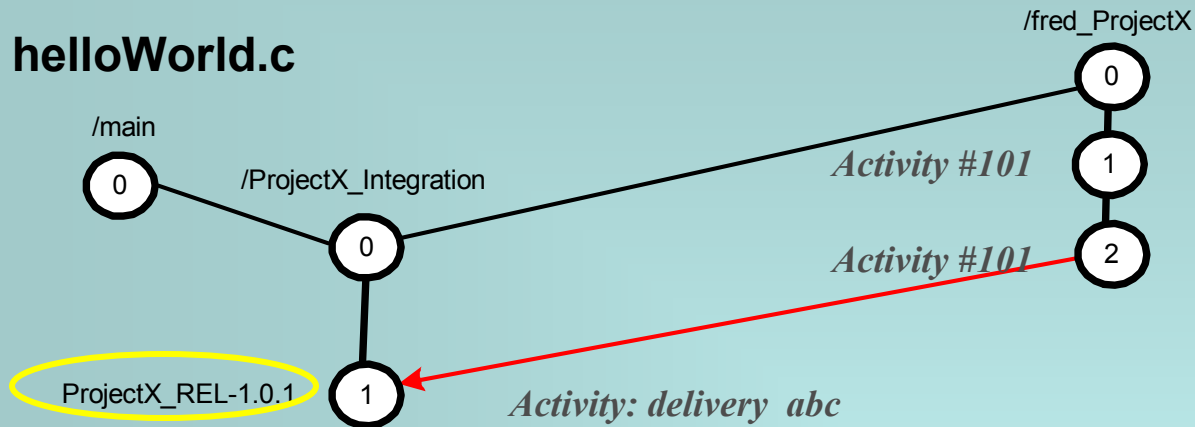
- Fred adds a new file to ClearCase
- ClearCase creates version 0 on the main stream (branch).
- ClearCase creates an instance of the ProjectX_Integration stream (branch) and creates version 0 on that stream (branch)
- Fred begins working on activities down his private stream(branch).

UCM Concepts – A Development Scenario (cont.)



- After Fred finishes working on the assigned activities he performs the action “Deliver” which effectively merges his changes associated with the specified “Activities” onto the ProjectX_Integration stream(branch).
- Fred may continue working on his stream on new or existing activities.

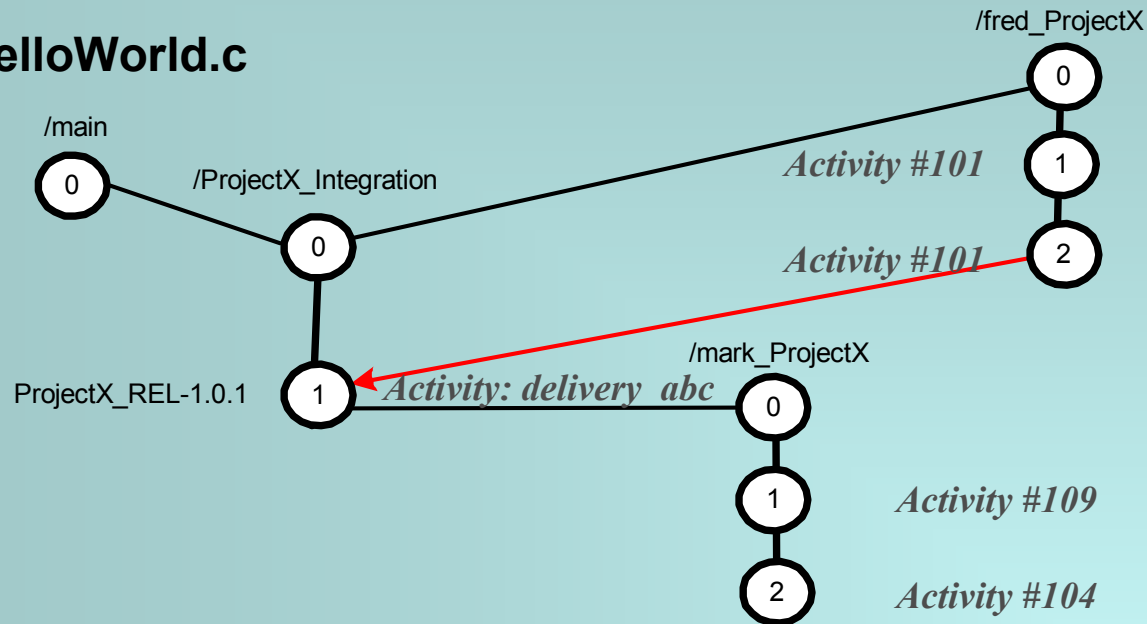
UCM Concepts – A Development Scenario (cont.)



- The integrator creates a new project baseline and assigns a “stability attribute” to the baseline.
- Over time the stability of the baselines will improve and the baselines will be recommended for use by developers

UCM Concepts – A Development Scenario (cont.)

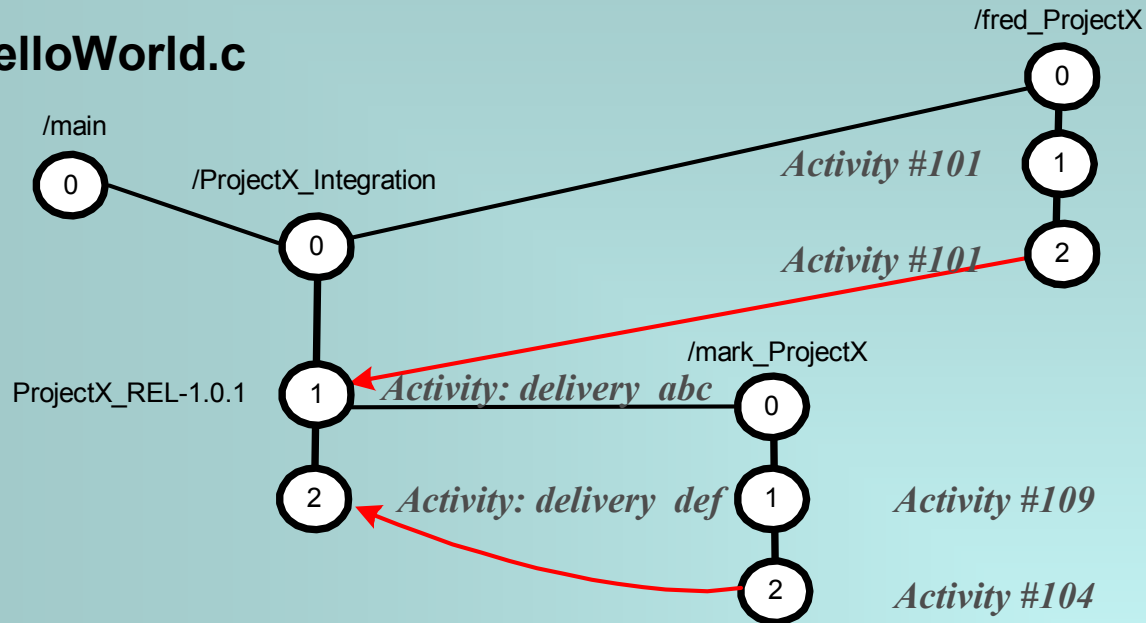
helloWorld.c



- Mark has joined the project and has been assigned “Activities” to work on related to defects in the file `helloWorld.c`
- Mark begins working against the recommended baseline “ProjectX_Rel-1.0.1”.

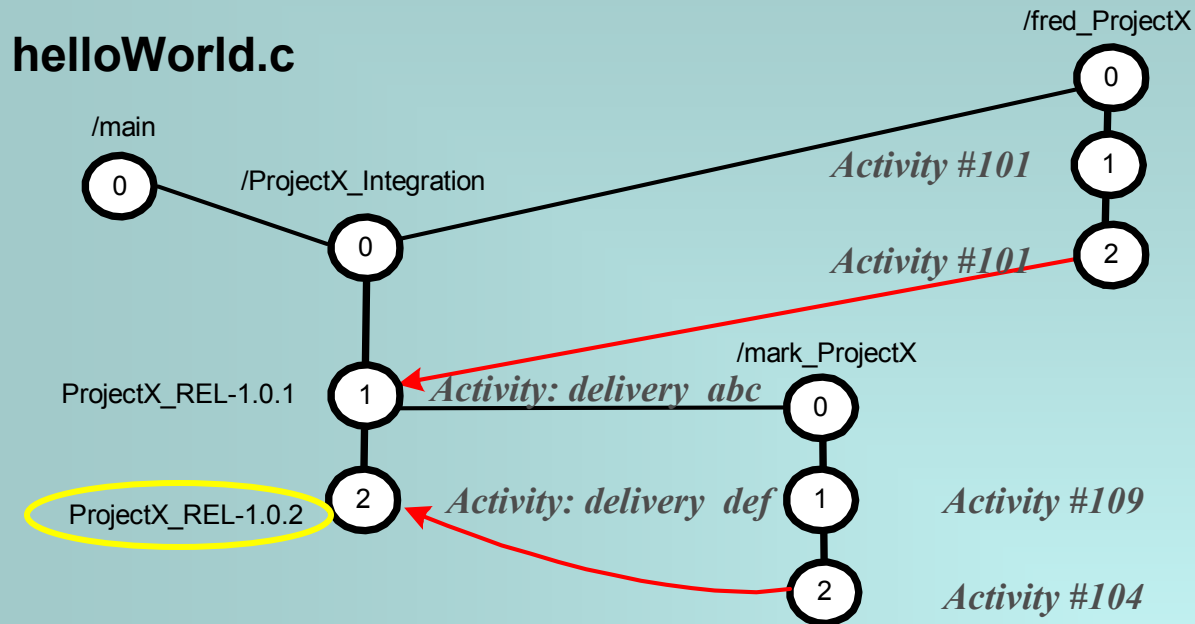
UCM Concepts – A Development Scenario (cont.)

helloWorld.c



- Mark has completed his assigned “Activities” and has then delivered those “Activities” to the integration stream(branch).
- NOTICE: Fred does not yet have visibility to the changes completed by Mark.

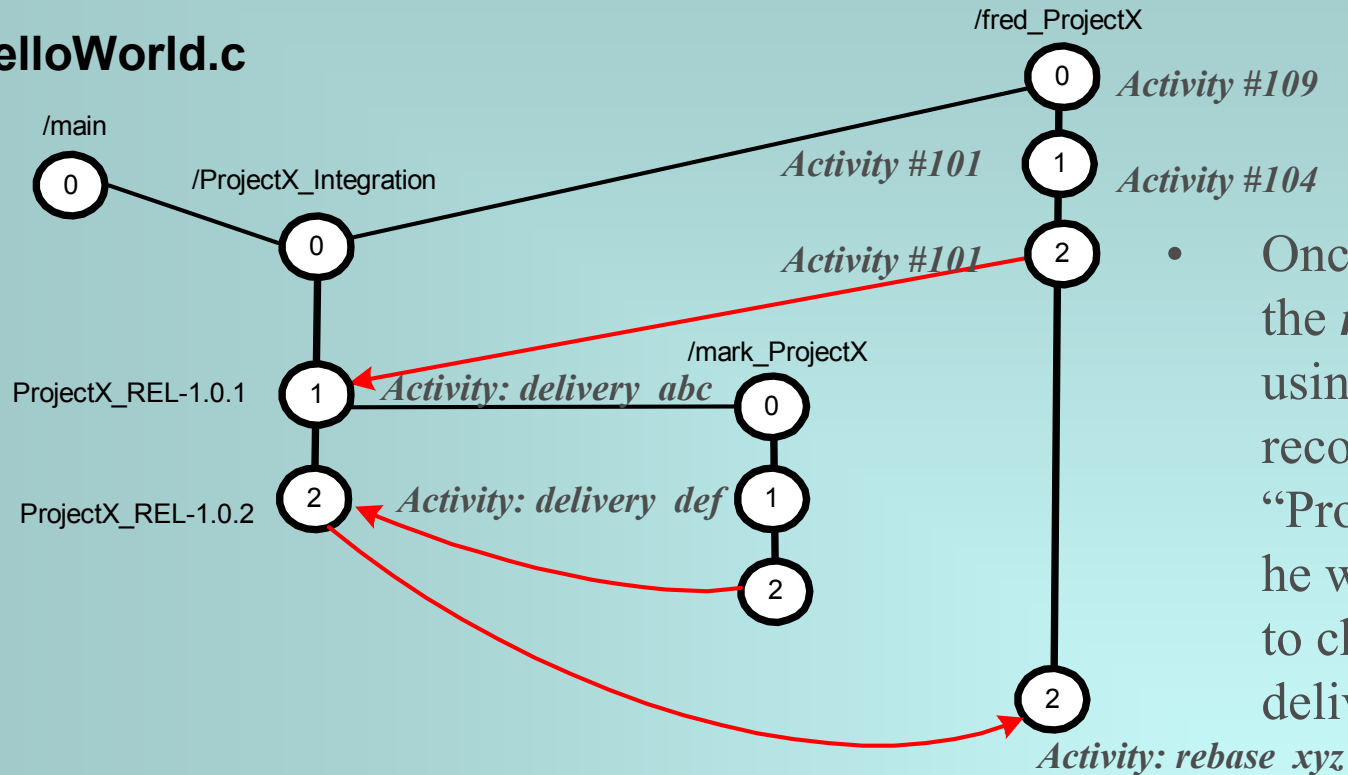
UCM Concepts – A Development Scenario (cont.)



- The project integrator once again creates a new baseline and eventually recommends it for use by the developers.
- NOTICE: Fred still does not have visibility to the changes completed by Mark included in the new baseline
“ProjectX_REL-1.0.2”

UCM Concepts – A Development Scenario (cont.)

helloWorld.c



- Once Fred performs the **rebase** operation using the new recommended baseline “ProjectX_REL-1.0.2”, he will have visibility to changes that mark delivered.



Q&A