



ClearCase/ClearQuest

Build Forge 7.0

Highlights of the new 7.0 capabilities for managing change throughout the Application Development Lifecycle.

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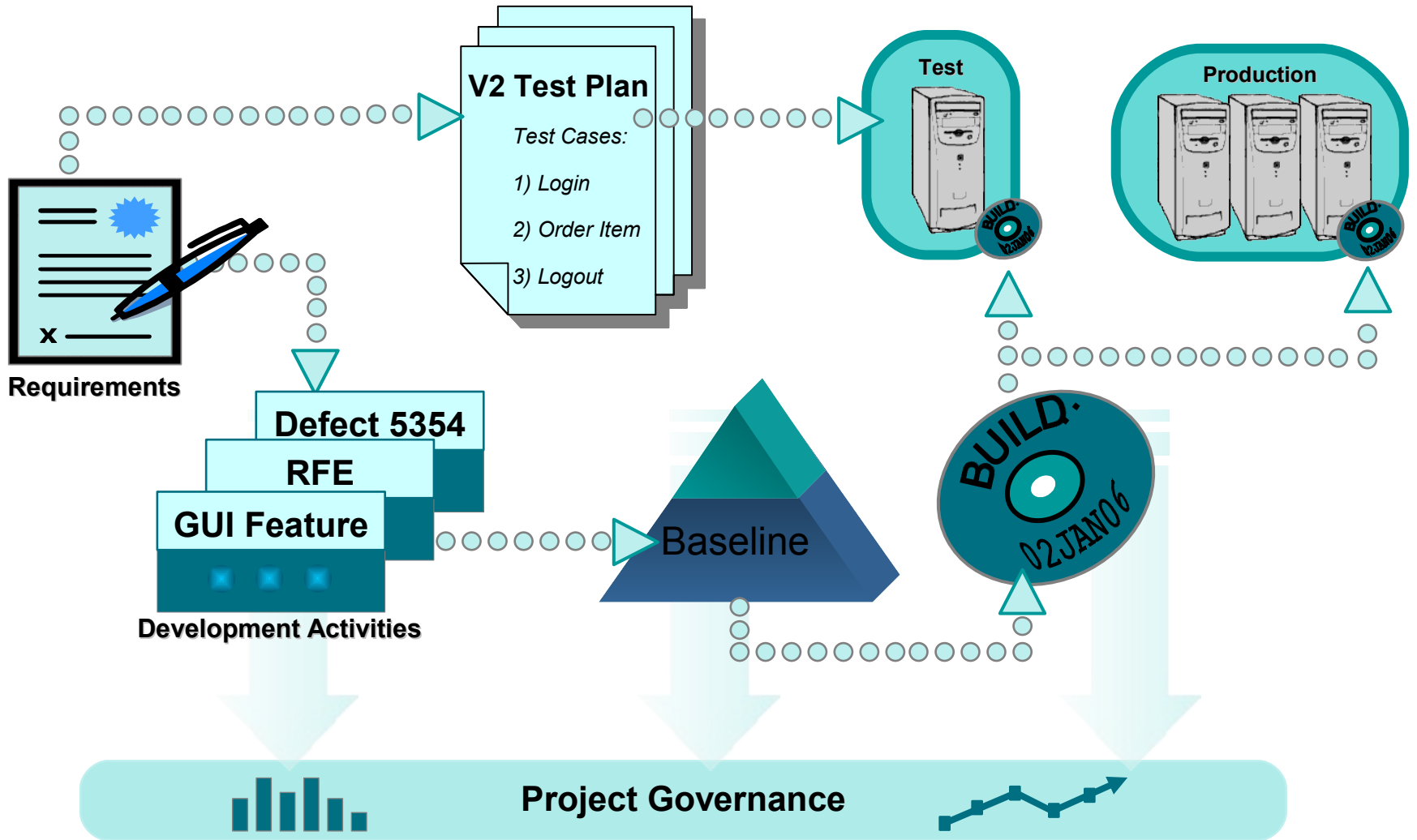
BuildForge Evangelist

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Software Configuration Management

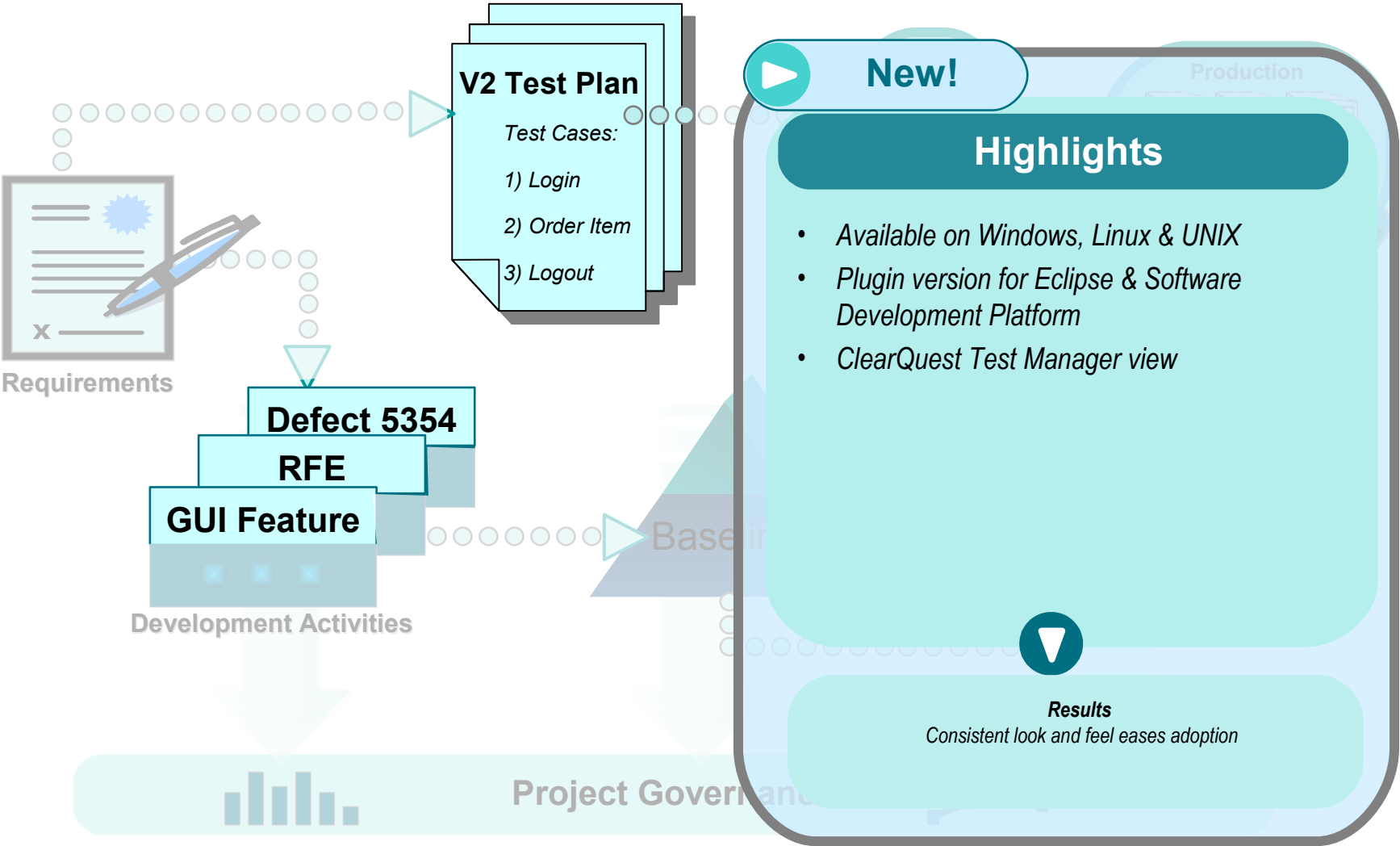
Community of Practice Leader West Europe

Lifecycle Traceability



- *ClearQuest Client (Windows, Linux, UNIX) – NEW based on Eclipse RCP*
 - *ClearQuest Client for Eclipse (Eclipse, SDP) – UPDATED Eclipse plugin*
- *ClearQuest for Windows Client (Windows)*
 - *ClearQuest for VS.net (Windows)*
- *ClearQuest Web Client (Windows, Linux, UNIX, Macintosh)*
 - *RWP (Rational Web Platform) hosted on Windows, Linux, or UNIX*
 - *CEEE XI (Hosted on Windows)*

- *Note: ClearQuest UNIX/Linux client no longer provided*





The screenshot displays the IBM Rational ClearQuest Client interface. On the left is the 'ClearQuest Navigator' showing a tree view of project assets. The main area is divided into two panes: 'Test Cases - By State - ClearQuest Query Results' and 'ClearQuest Record Details'.

Test Cases - By State - ClearQuest Query Results

id	Headline	State	Priority	Owner	Description
CLSLIC00000046	Purchase a CD	Planned		alex@classics.com	This test case implements the set of commands neces
CLSLIC00000047	Cancel Purchase	Draft		alex@classics.com	TBD
CLSLIC00000048	Login	Planned		alex@classics.com	Provides a generic test case that works for existing c
CLSLIC00000049	Inquiry on order status	Planned		alex@classics.com	This test case automates the steps necessary to inqu

Query: Public Queries/TM Queries/Test Cases - By State
Type: TMTestCase

ClearQuest Record Details

ClearQuest Record Details (alex@classics.com, CQ@CLSLIC)

Main | Test Motivator | Execution | History | Legacy Data | Notes | Requirements

ID: CLSLIC00000049 State: Planned

Headline: Inquiry on order status

Owner: alex@classics.com Priority:

Test Plan:

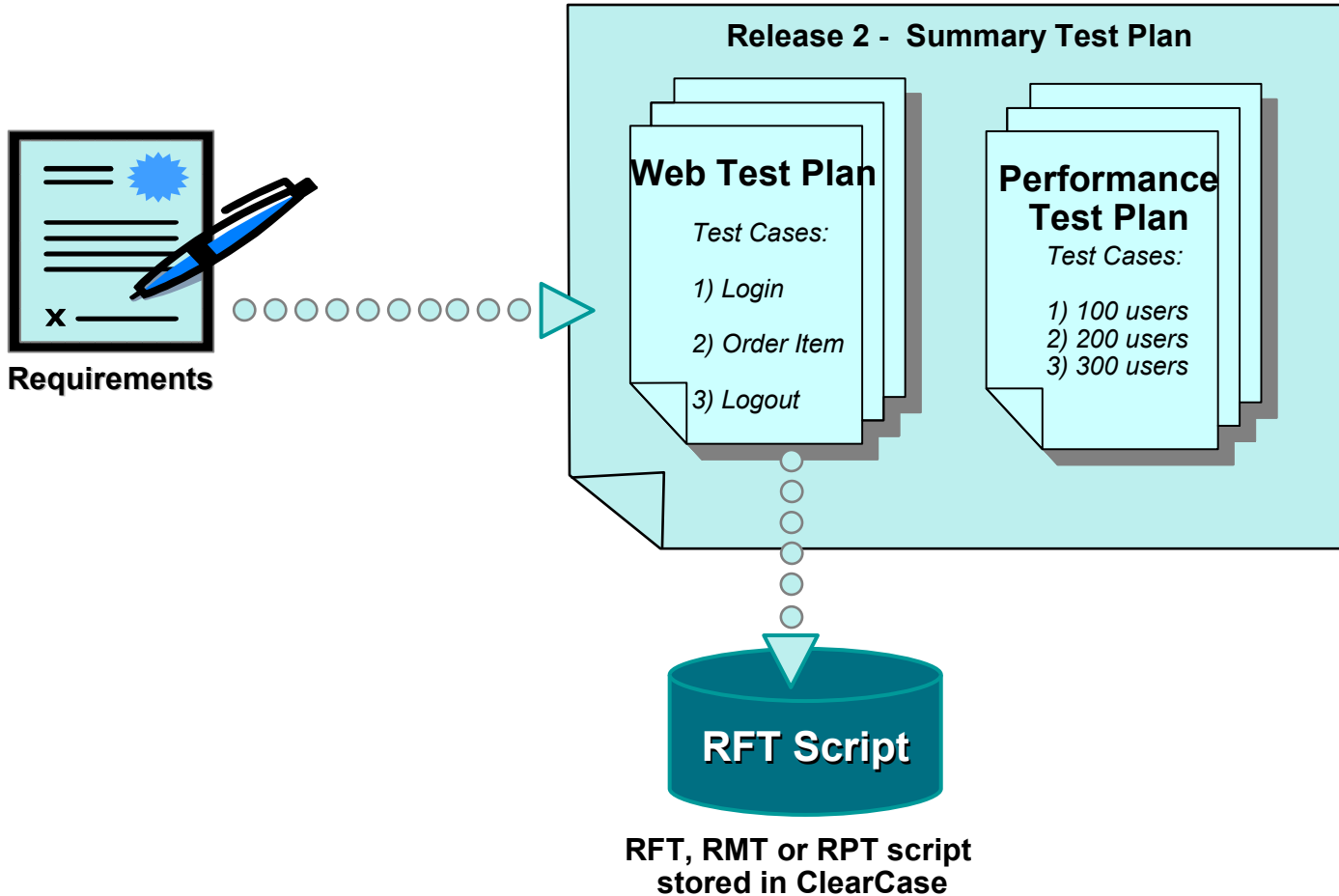
id	Headline	AssetRegistry
CLSLIC00000043	Customer us...	Classics V3.0

Iterations:

Name	StartDate	EndDate	AssetRegistry
v3-1	2005-11-01 ...	2006-03-31 ...	Classics V3.0

ClearQuest Test Manager

Test Planning



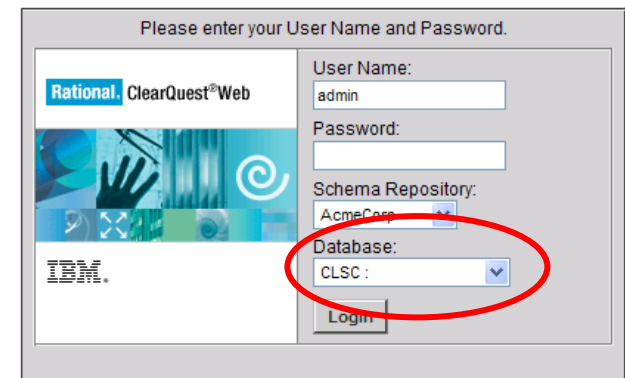
- *Result Set navigation: first/last next/prev page*



- *Record navigation: first/last next/prev record in the result set*



- *Logon screen allows database selection*



- *Min/Max/Restore capability for result set frame*

The screenshot displays the ClearQuest Web interface. At the top, there is a navigation bar with links for Home, Site Configuration, Logon Statistics, User Profile, Help, About, and Log Out. Below this is a search bar with a dropdown menu set to 'CLSC' and a 'Go' button. The main content area is divided into two sections. The upper section, titled 'Results for Query "Public Queries/alldefects"', shows a table of defects. The lower section, titled 'Defect: CLSC00000001', provides a detailed view of a specific defect, including fields for ID, State, Headline, Priority, Severity, Owner, and Project, along with a description.

#	id	Headline	State	Submit_Date	Priority	Severity
1	CLSC00000001	Report shows error on page 3 see attachme...	Assigned	2006-03-07 00:00:00	1-Resolve Immediately	1-Critical
2	CLSC00000002	web service is returning an error on sale...	Submitted	2006-03-07 00:00:00		1-Critical
3	CLSC00000003	service perform poorly with over 100 user...	Assigned	2006-03-07 00:00:00	2-Give High Attention	1-Critical
4	CLSC00000004	sale item is reduced by 10% when it shoul...	Assigned	2006-03-07 00:00:00	1-Resolve Immediately	1-Critical

Defect: CLSC00000001

Main | Notes | Resolution | Attachments | History | PQC | Requirements

Unified Change Management | Test Logs

ID: CLSC00000001 | State: Assigned

Headline: Report shows error on page 3 see attachment

Priority: 1-Resolve Immediately | Keywords:

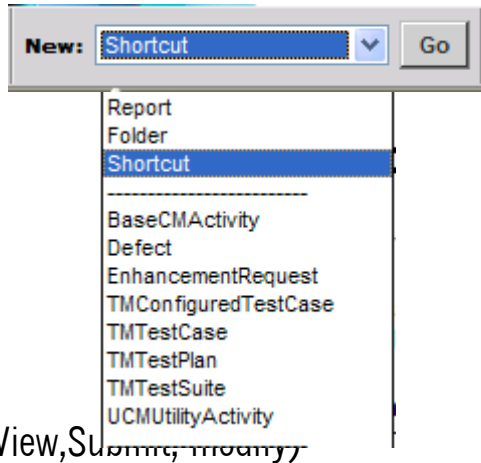
Severity: 1-Critical

Owner: admin | Symptoms:

Project: fooddistribution

Description:
The distribution report of purchase over a 3 month period is suppose to have three sections. 1 page per each section. The third page, which graphs the weekly totols for the product lines, does not show a bar if the number of purchases for the week is less than 100.

- *Type*
 - Login
 - Find
 - Record (View, Submit, History)
 - Query
 - Chart
 - Report
- *Options*
 - Auto login
 - Include banner, workspace, toolbar



New Shortcut URL Template

Create a shortcut URL template for quick access to items, features that you frequently use. The wizard will assist you in creating URL templates that can be used to integrate ClearQuest Web with other web applications. Or simply use these URLs as favorites from your web browser.

Shortcut type
Run a Query

Select a query
[+] Personal Queries
[+] Public Queries

Automatically log in
 Include the banner, workspace tree, and main toolbar

Copy the URL template from text area below to use it within a web application or simply from another web browser window. "{Enter}" within a URL represents a place holder for user data.

Shortcut URL Template

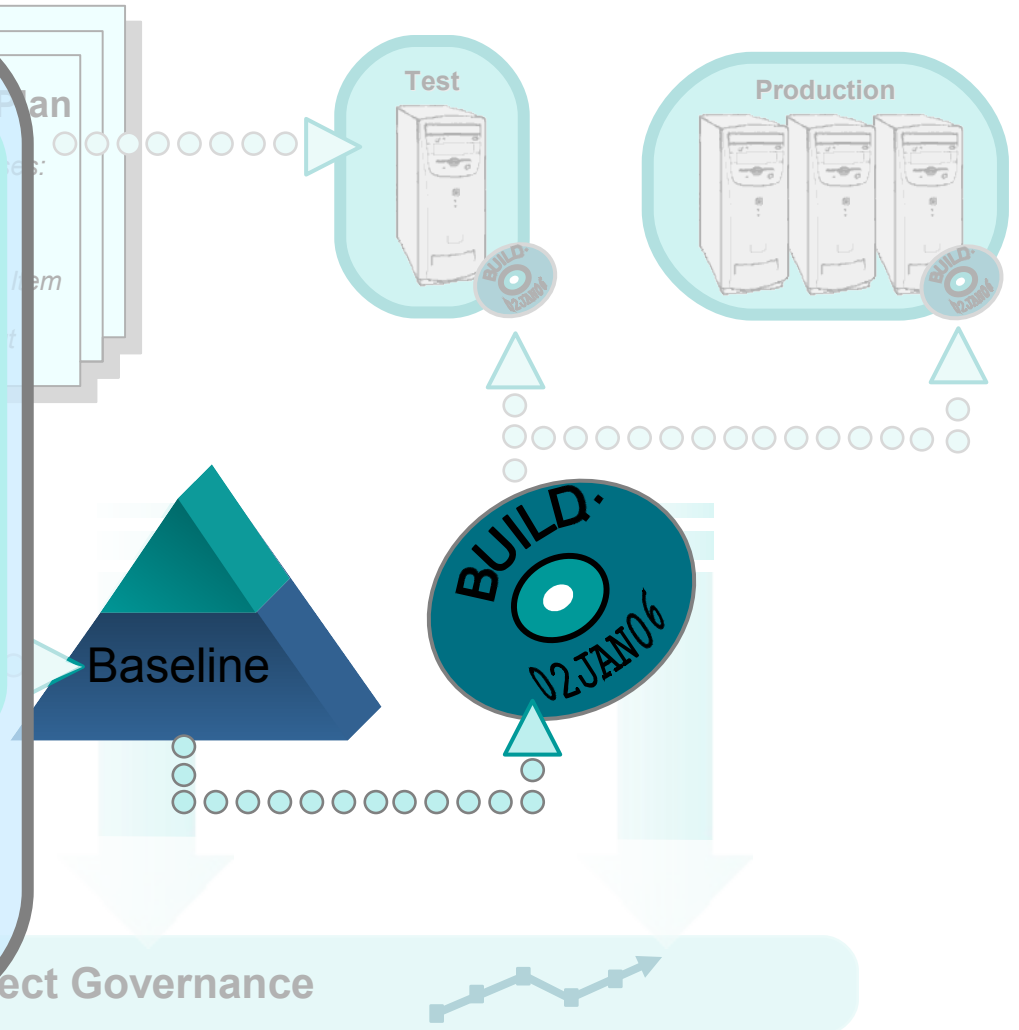
```
http://localhost/cqweb/main?  
schema=AcmeCorp&contextid=CLSC&shortcut=true&command=ExecuteQuery&dbid=33554603&user  
ername={Enter}&password={Enter}
```

New!

Highlights

- *Integrated with Build Forge*
- Build artifact in ClearQuest
- ClearCase views/commands
- *ClearCase ANT build auditing*

Results
Shortens development cycles with reliable builds



- *Java ANT build auditing*
 - Extends current clearaudit capabilities to J2EE build environments
 - Collecting an accurate, bill of materials for built objects
 - Build script executed
 - Inputs – Version of Source files, included files, DOs
 - Outputs – Objects, JAR, EAR or WAR
 - Build audit trails critical for regulatory compliance

ANT Build Audit Trail: Example

To Create this object

Derived object: `\Classics_vob\Proj\build\classes\com\client\ClassicsPOS$1.class@@--05-25T14:21.2147488633`

Target compile:javac built by alex.ccusers

Host "wus-alex" running NT 5.1 (i586)

Reference Time 2006-05-25T14:21:15-04, this audit started 2006-05-25T14:21:19-04

View was wus-alex:C:\views\alex_Rel3.vws

Initial working directory was M:\alex_Rel3\Classics_vob\Proj

 MVFS objects:

`\Classics_vob\Proj\build\classes\com\client\ClassicsPOS$1.class@@--05-25T14:21.2147488633`

`\Classics_vob\Proj\build\classes\com\client\ClassicsPOS.class@@--05-25T14:21.2147488636`

`\Classics_vob\Proj\build\classes\com\util\ClassicsCDShop.class@@--05-25T14:21.2147488646`

`\Classics_vob\Source\com\rational\cdshop\servlets\CDNewAccountServlet.java <2006-05-13T17:40:50-05>`

`\Classics_vob\Source\com\rational\cdshop\servlets\CDOrdersServlet.java@@\main\1 <2006-05-13T15:06:48-05>`

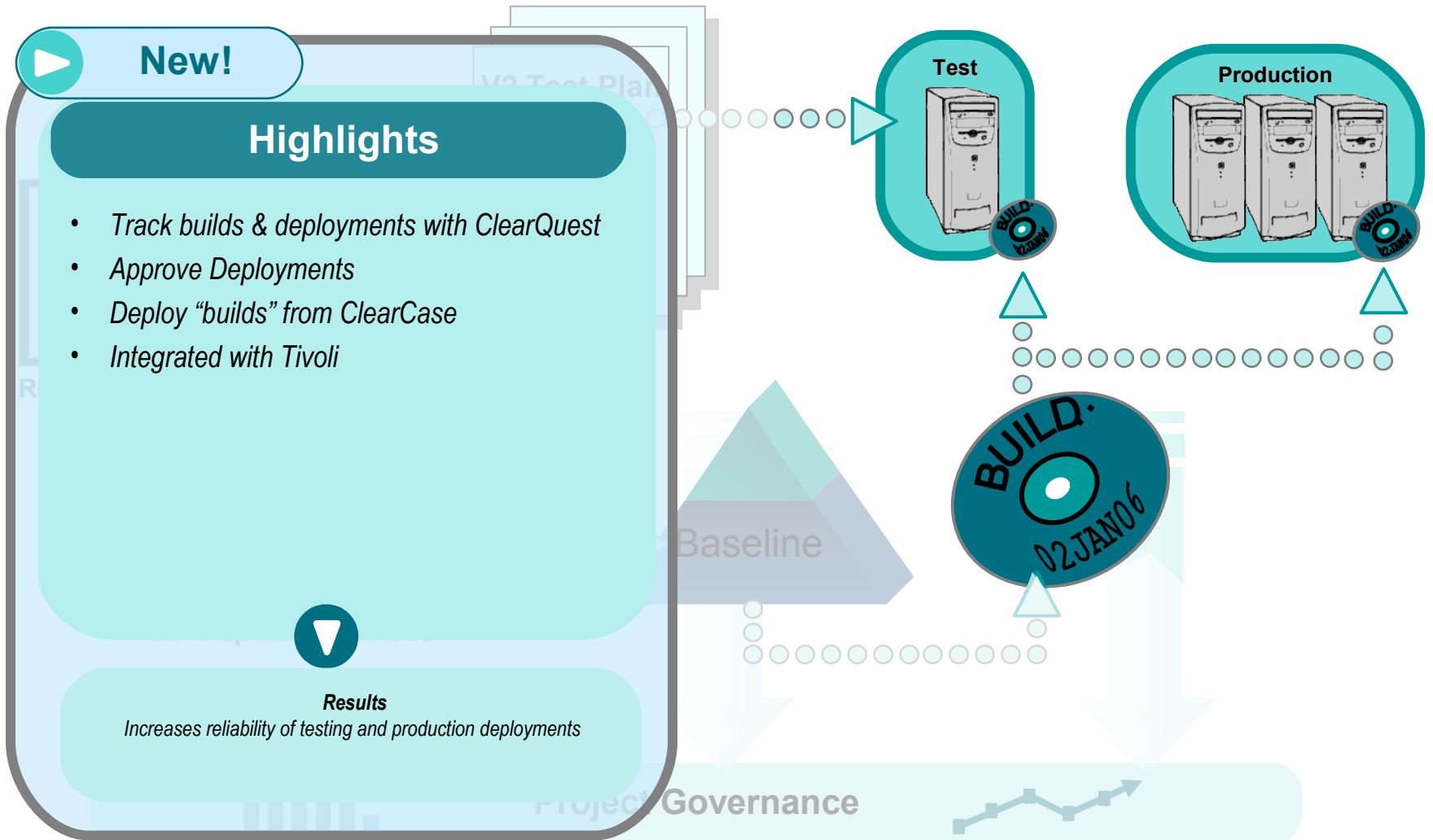
`\Classics_vob\Source\com\rational\cdshop\servlets\CDReorderServlet.java <2006-05-13T14:05:37-05>`

 Build Script:

 javac

Used this source from ClearCase

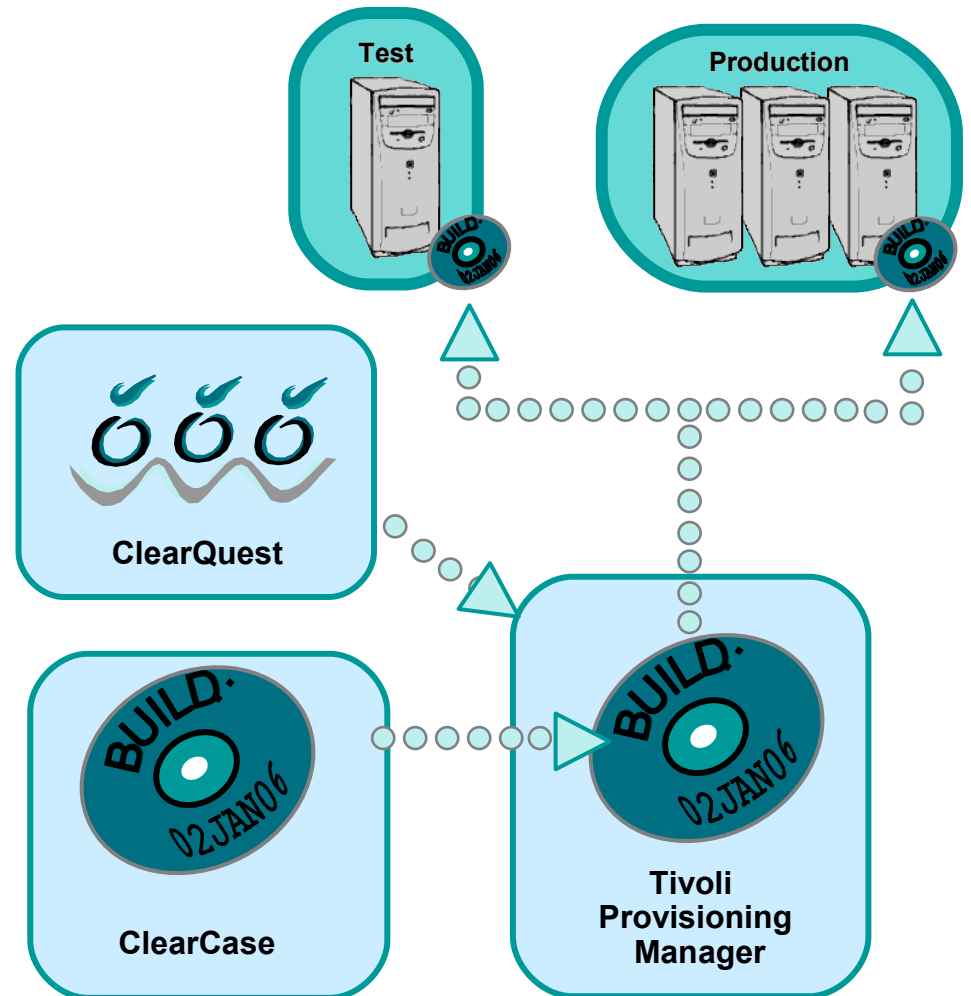
This Build Script

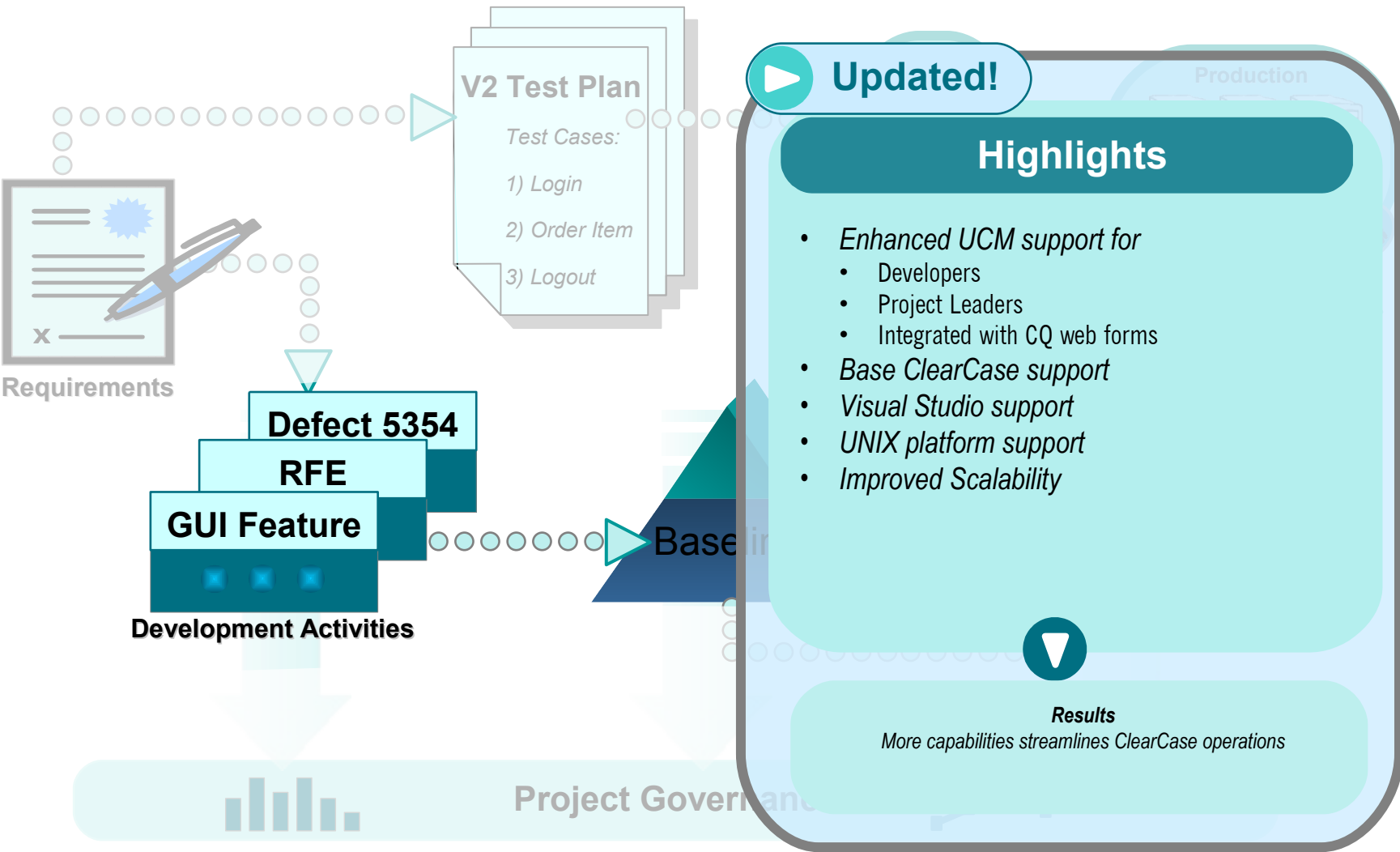


Deployment Tracking

New!

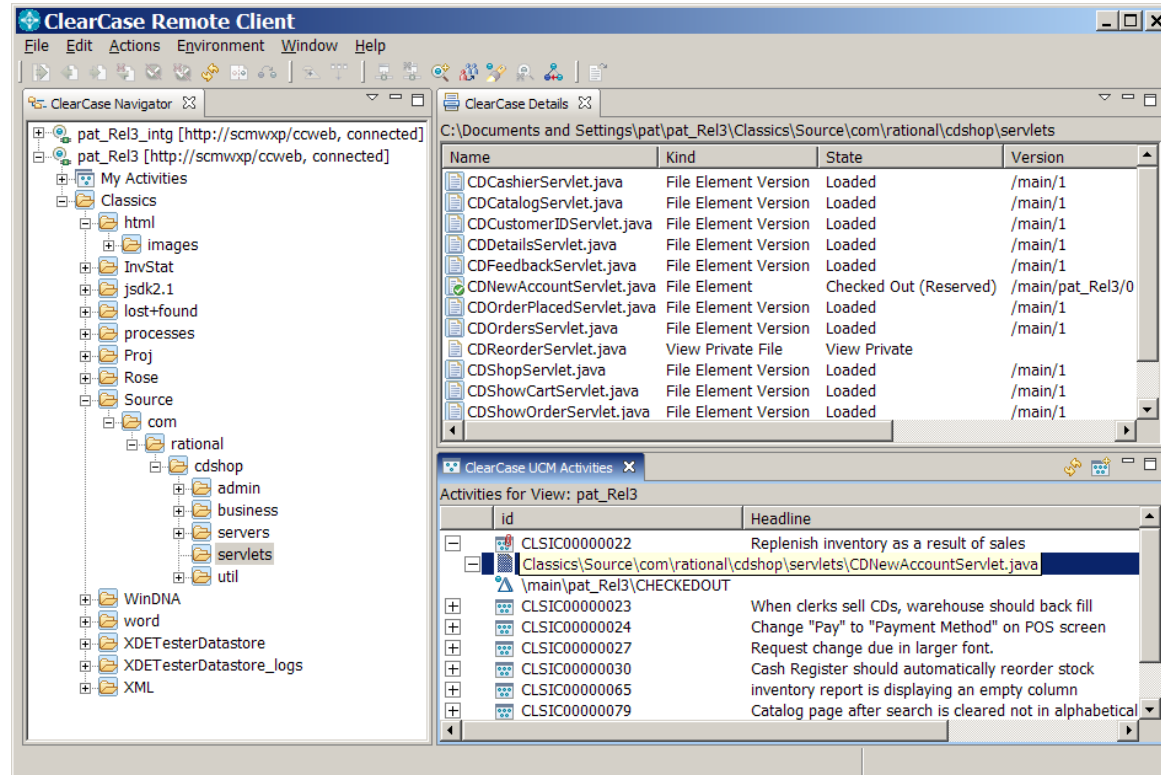
- **ClearQuest Manages the process**
 - Deployment record identifies the work
 - Records required approvals
 - Initiates the deployment
 - Records the deployment
- **ClearCase Manages the artifacts**
 - Versions source code and build artifacts
- **Tivoli Deploys to target**
 - Deploy complex software applications to data centers and distributed systems
 - Copies build artifacts from ClearCase
 - Simplify & trace deployments into production
 - Schedule & automate the installation & configuration of test and production servers





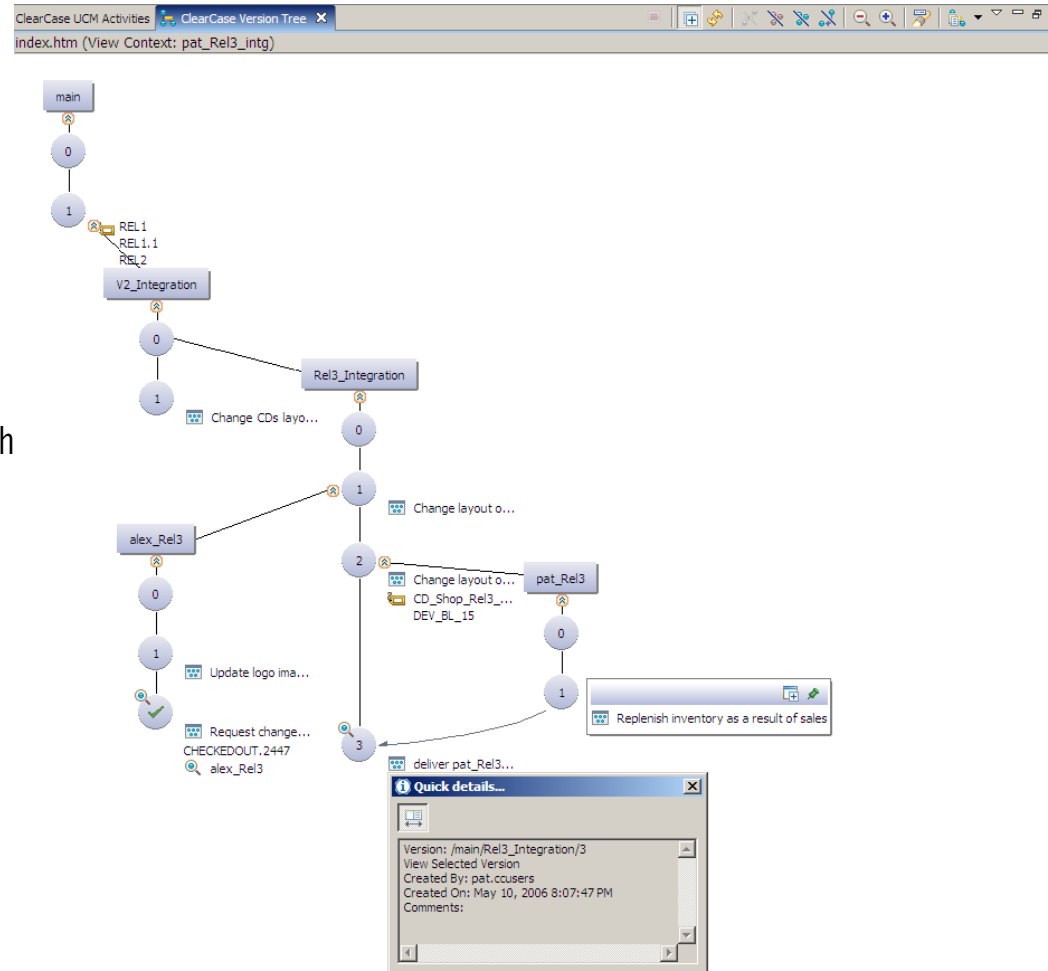
Rational ClearCase Remote Client Enhancements

- *Enhanced UCM support*
 - Developer use cases:
 - Support for posted deliveries
 - rebase to non-recommended baselines
 - UCM Activities View
 - Improved CQ-enabled UCM support with CQ Web forms
 - View Stream & Baseline Properties
 - Project Lead use cases:
 - Navigate PVOB hierarchies
 - Create and recommend baselines



Rational ClearCase Remote Client Enhancements

- *Enhanced Base CC Support*
 - Version Tree View
 - Navigate VOB hierarchies
 - Improved Metadata Support
 - Ability to create branch types
 - Ability to create and apply labels
 - Ability to view existing label types & branch
- *Improved usability*
- *Improved scalability*
- *Unix platform support*



- *Integration with CQ Web to ease working remotely*
- *Displays CQ Web form when required to show CQ form*
 - During “Work On”, ex. as part of checkout
 - During “Finish Activity” or completing a Deliver
 - UCM Activity Properties displays the CQ record form
- *Does not require installing CQ on the client*
- *Limitations*
 - Windows and Linux only
 - Cannot create CQ-enabled activities from CCRC. Use CQ or CQ Web.

Rational ClearQuest

Defect: **sqwd10000021** (Action: AssignTwo)

Main Notes Resolution Attachments History

Unified Change Management **SQUIDWARD**

AssignedTwoMandatory: OpenMandatory:

RefList1	#	id	Head
<input checked="" type="radio"/>	1	sqwd10000022	H AUX1 HHH
<input type="radio"/>	2	sqwd100000149	Sentella's test

Duplicate Base ID :

Duplicate Dependents :

* red text indicates required information

Close

Enhanced Support for Microsoft Visual Studio .NET

- *VS.NET 2005 IDE in shell support for Rational ClearCase/Rational ClearQuest*
 - Support for rename and delete
 - New Pending Checkins, Rational ClearCase Search tool windows
 - Improved usability
 - Supports VS.NET (2002, 2003, 2005)
- *Rational ClearCase Remote Client (CCRC) support within VS.NET 2005 shell*
 - Integration will add support for web views (WAN)
 - Rational ClearCase Remote Client support will work with VS 2005

- *ClearCase database uses a lock manager process to manage access/updates to database files*
 - This single threaded process created bottlenecks in large multi-CPU systems hosting large number of VOBs with 100s of active users
 - A shared memory lock manager (SMLM) implementation was introduced in ClearCase v4 to reduce contention on a VOB server basis and to improve scalability for Solaris and HP-UX
- *With v7, enhancing the SMLM implementation to a per VOB basis for*
 - Solaris
 - HP-UX
 - Linux x86 (New platform support!)
 - AIX (coming very soon after V7 GA)

- *Rational ClearCase to join rest of Rational Team products with Rational Common Licensing*
 - FlexLM support
- *Atria licensing remains the default license manager for Rational ClearCase*
- *Provides license failover support*
 - This is one of the prerequisites to providing HA support, which we will provide in a future release;

- *LDAP authentication introduced in V2003.06.15 (SR5)*
- *SSL support new*
 - Enable ClearQuest to talk securely with an LDAP server
 - Supports
 - Certificate store and/or client certificate
 - Setldapinit commands
 - -Z enable SSL support
 - -p SSL port
 - -K Certificate keyfile location
- *Sun Solaris Client Support new*

- *Add support for the following Windows Code pages*
 - 950 Traditional Chinese
 - 1250 Central European
 - 1251 Cyrillic
 - 1253 Greek
 - 1254 Turkish
 - 1257 Baltic
- *Add Locale support*
 - Support for 121 locales based on these code pages
 - Consistent with ClearCase support for these same locales

Existing Code Page Support

20127	ASCII
932	Japanese
936	Simplified Chinese
949	Korean
1252	Latin-1
1255	Hebrew

- *Eliminate restriction that ClearQuest Client OS codepage must be the same as ClearQuest Data Code page*
- *Provides the ability to have*
 - mono-lingual (1 code page for all platforms)
- *Provides the ability to mix OS clients*
 - Example: Japanese & English in same deployment
- *Provides non-ASCII Support on UNIX*
 - ClearQuest Client and Client for Eclipse
 - ClearQuest Web Server

- *Enterprise Build and Release Management to accelerate global software delivery*

IBM Rational Build Forge

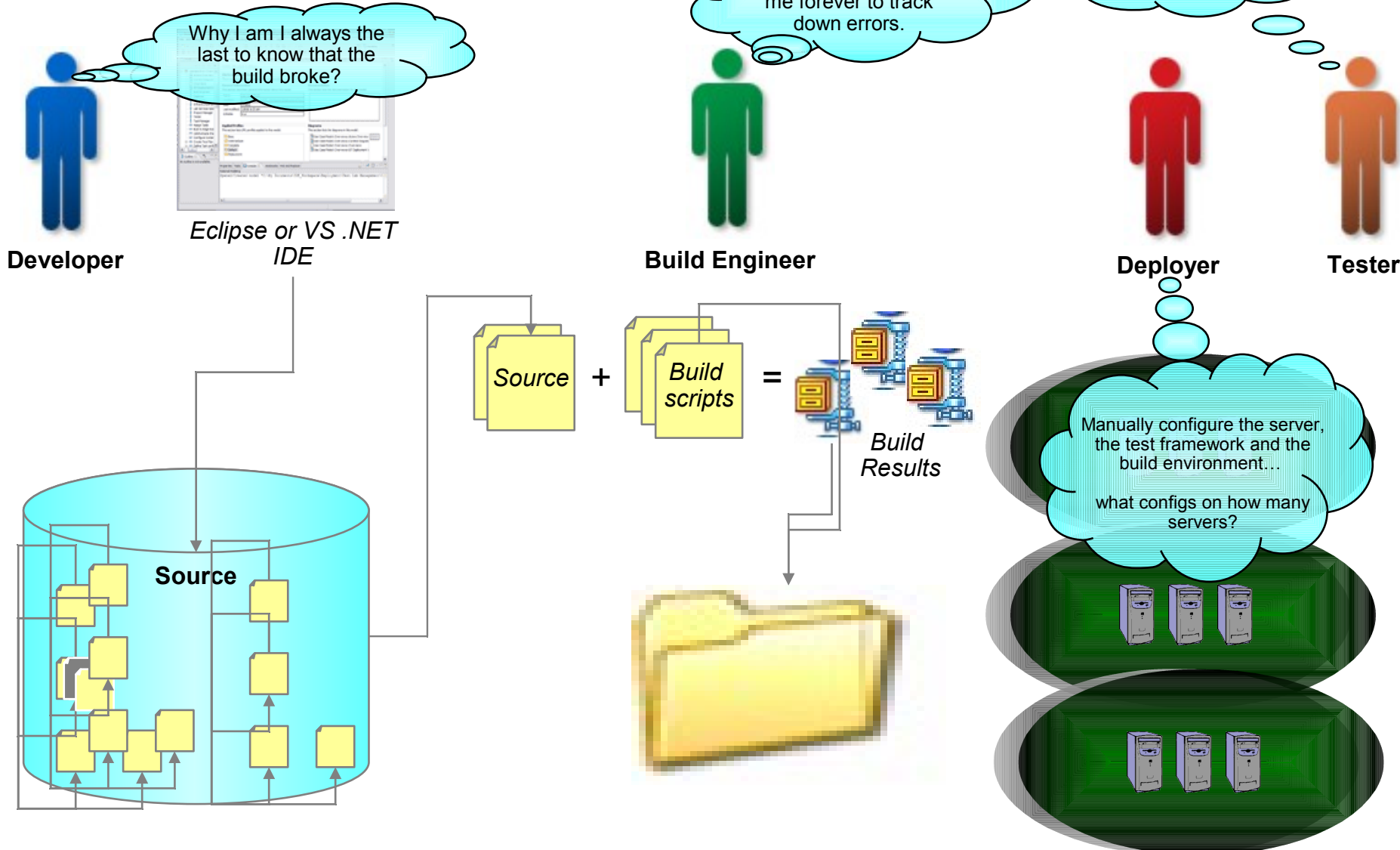


New!

Provides an adaptive framework to standardize and automate repetitive tasks, share essential product information, and respond quickly to change

- **Delivers:**
 - **Process efficiency:** Reliable and scalable process
 - *Delivers automation, speed, productivity*
 - **Sustainable compliance:** Auditing and IT controls “baked in”
 - *Delivers audit trails, complete bill of materials, reproducibility*
 - **Globally distributed teams:** Integrated and in synch
 - *Delivers automated handoffs, streamlined communication, secure access*
 - **Implementing agile methods:** Developer self-service and continuous integration
 - *Delivers predictable quality, fewer errors, faster troubleshooting*

A typical deployment cycle



Typical Build and Release Environments

Current Conditions

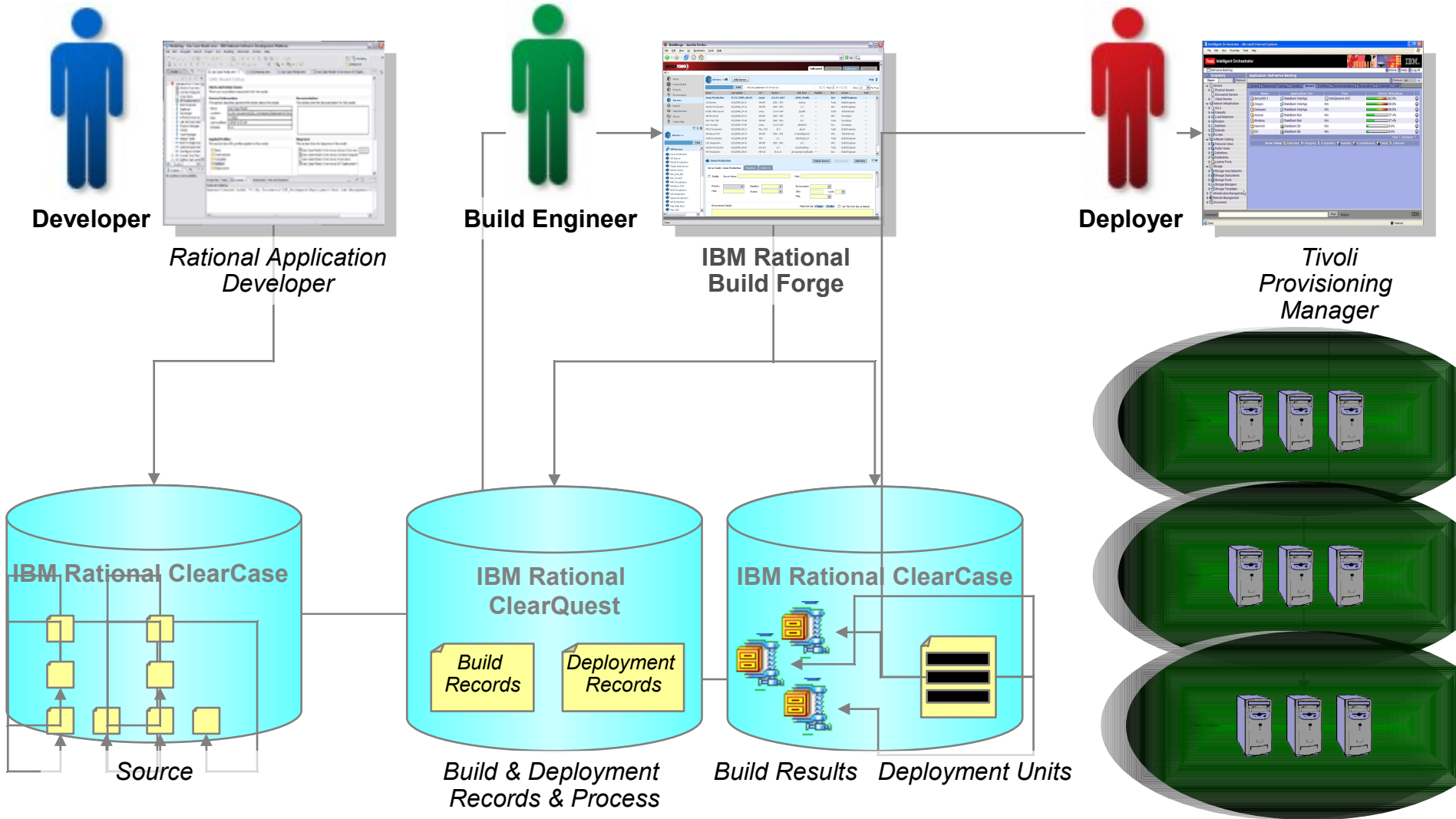
- **Manual**, error-prone build processes
- Proprietary **internally-developed** systems
- **Inconsistent processes** across products and platforms
- **Dependence on build staff** to execute, troubleshoot, and provide feedback
- **Inconsistency** between developer environments and production systems
- **Time consuming** to detect and resolve problems
- Lack of **traceability and compliance** readiness

Business Impact

- **Unpredictable** product release cycles
- **Costly** systems to support & maintain with knowledge held by a few
- **Limited repeatability or portability** for new projects and platforms
- **Staff burden, delays, lost productivity,**
- **Unforeseen errors surface** later in the release cycle
- **More people required** to do more work
- Extensive **ad hoc effort** spent in audit preparation

“Software build management increasingly impacts successful software deployments, business and IT productivity and is becoming a focus for IT organizations.” - IDC

Our Solution: Managing & Automating the Process



System Overview

BUILD/RELEASE FRAMEWORK

Management Console

Centralized Web-based, Collaborative Distributed Access, Role-Based Security

IDE Plug-Ins

Developer Self-Service, Role-Based Security

Workflow

Control

Acceleration

Notification

Scheduling

Log Analysis

Tracking

Reporting

Process Automation

Automated, Repeatable Application Development Lifecycle

Development

Source Control

Product Build

Quality Assurance

Package

Release

Scripting

Python, VBscript, Batch, Perl, KSH

IDEs

- RAD
- Eclipse
- Visual .NET

Languages

- Java
- C
- C++
- C#
- etc.

Source Control

- ClearCase
- StarTeam
- Perforce
- CVS
- PVCS
- VSS
- Synergy
- Subversion
- etc.

Change Mgmt

- ClearQuest
- Remedy
- ChangeMan
- DevTrack
- Bugzilla
- etc.

Build Tools

- ClearMake
- Ant
- NAnt
- Make
- GNUMake
- NMake
- Open Source
- etc.

Test Tools

- TestManager
- Performance
- Functional
- Robot
- LoadRunner
- TestDirector
- WinRunner
- Junit
- etc.

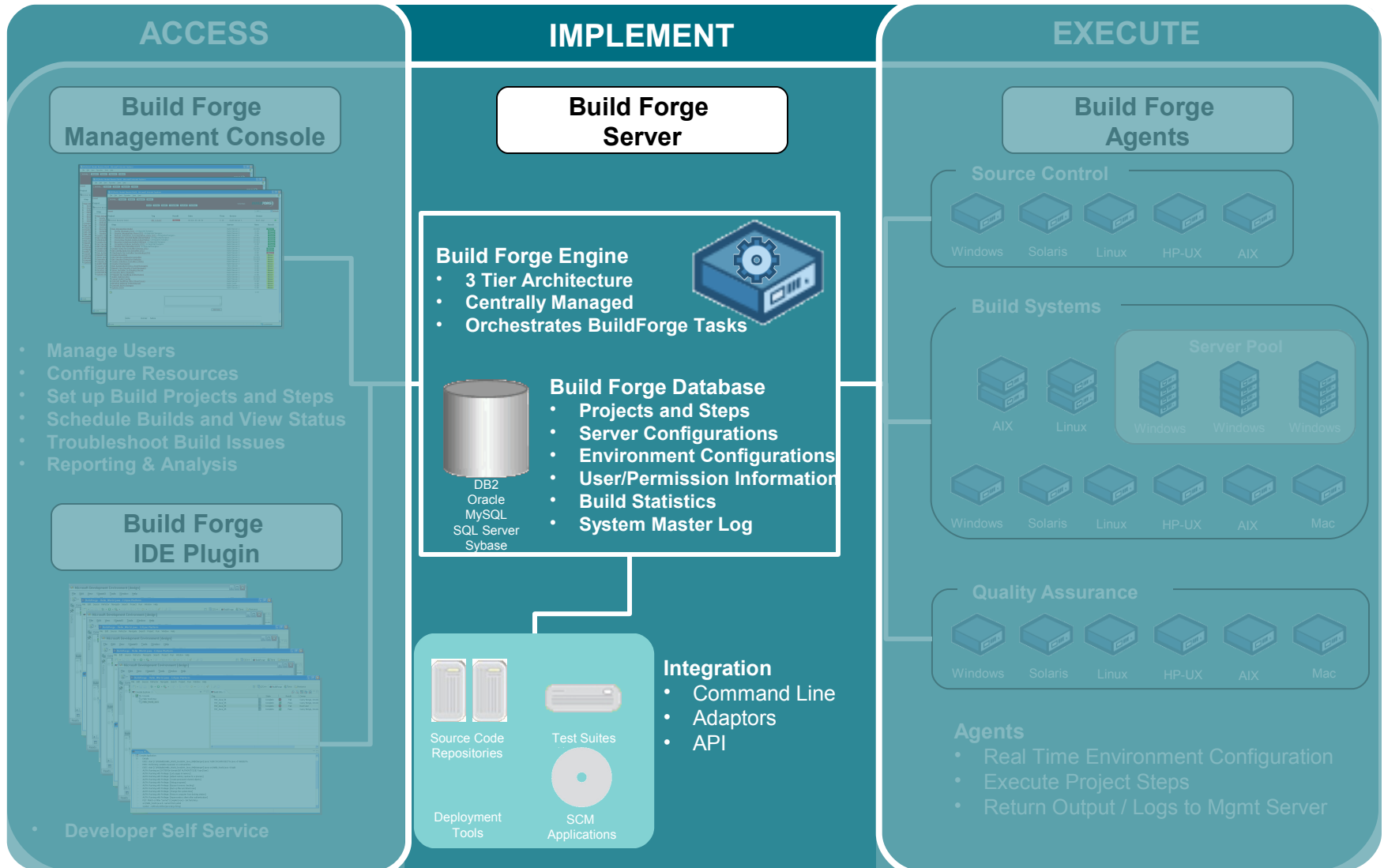
Release Tools

- Tivoli
- WebSphere
- WebLogic
- WIS
- etc.

Platforms

UNIX, Windows Mac, Linux, Proprietary

Functional Architecture



Data Elements...Building Blocks...



Steps

```
1a. cleartool mkview -tag $BF_TAG \\views\${BF_TAG}
1b. cleartool setcs -tag $BF_TAG config.spec
```

```
2a. gcc main.c -o main.o
2b. gcc main.c -o ui.o
2c. gcc main.o ui.o -o HelloWorld.exe
```

```
3a. testscript.sh -run -r $RELEASE -module HelloWorld.exe
```



Project



Source



Build



Test



Package



Deploy

...



Environment

```
1. RELEASE=Release_1.1
2. JAVA_HOME=C:\Program Files\Java\jdk1.5.0_06
3. PATH=C:\:\Program Files\Java\jdk1.5.0_06\bin
4. ...
```

Operational Architecture...Putting it all together...

