



Modern Application Development Featuring Web 2.0 for System z

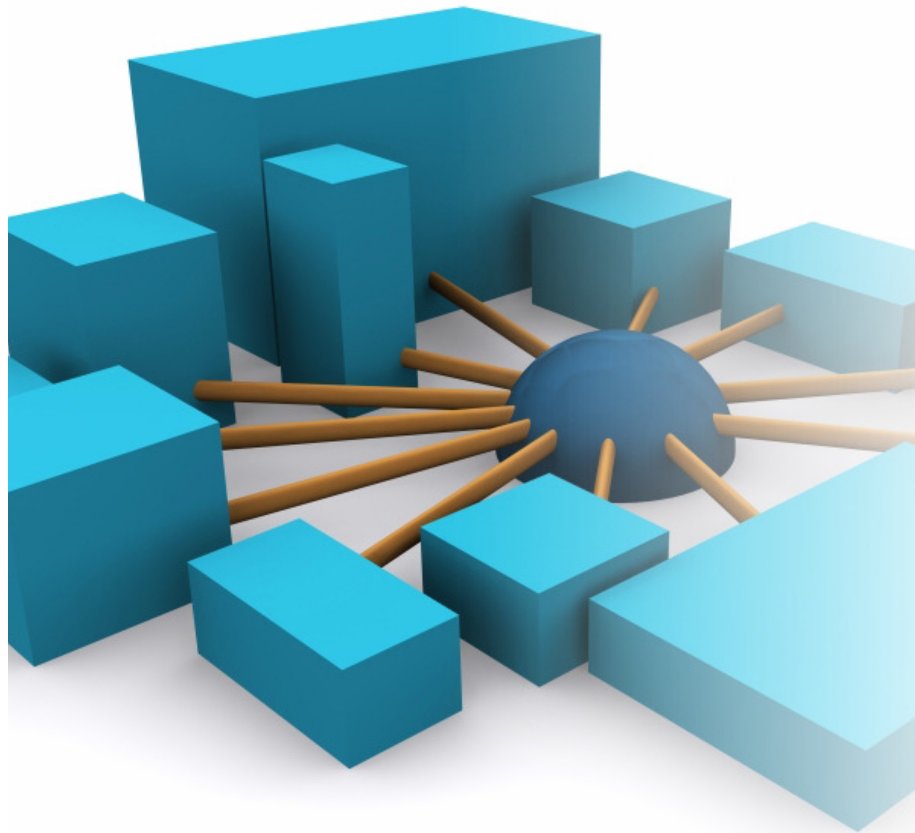
Application Lifecycle Management with
ClearCase, ClearQuest, and Build Forge

Rational. software

Management Challenges for n-tier Applications

- **Heterogenous platforms/consistent functions**
 - z/OS, i5os
 - Linux/UNIX variants
 - Windows variants
- **Parallel activities (new development, maintenance)**
- **Consistent user interface & process paradigms**
- **Automated, heterogeneous builds**
- **Coordinated promotions & backout**
- **Impact analysis**
- **Deployment support**

Solution: Simplify your Environment ***Standardize your cross-platform application development***



Rational Developer for System z

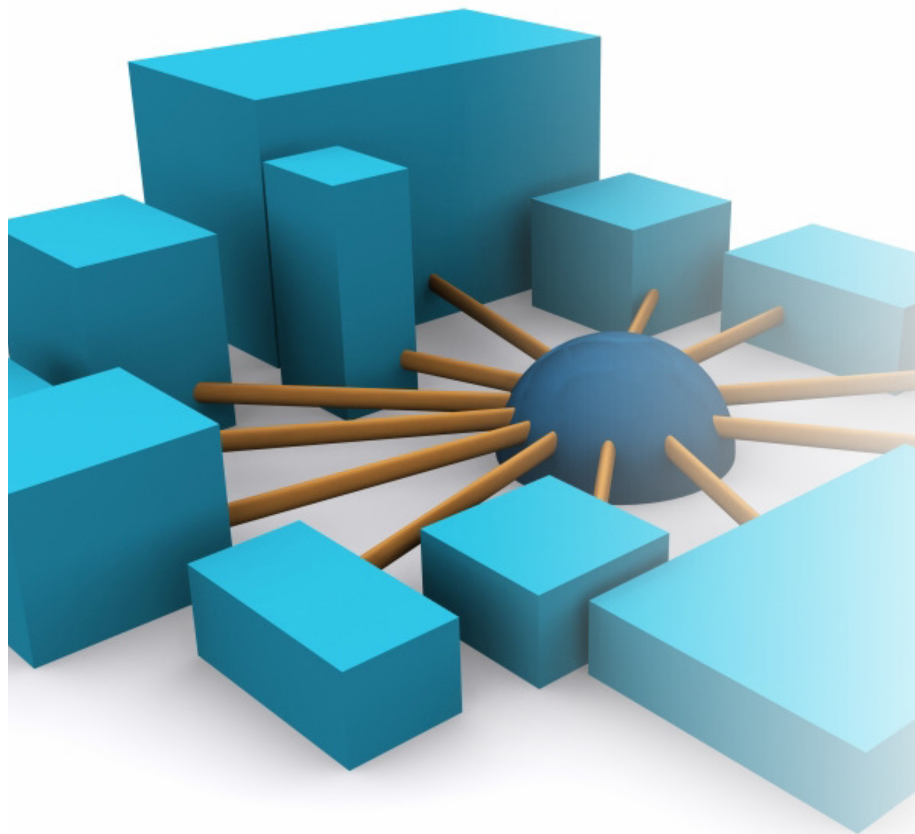
Integrated Host/desktop IDE

- Local COBOL/PL1 edit, syntax check
- Integrated java, C/C++ development
- Automated host/local filesystem synchronization
- Remote test, debug, job monitoring

Rational Developer for System z

Rational. software

***Solution: Simplify your Application Lifecycle
Standardize your development process across your enterprise***



IBM Rational ClearQuest

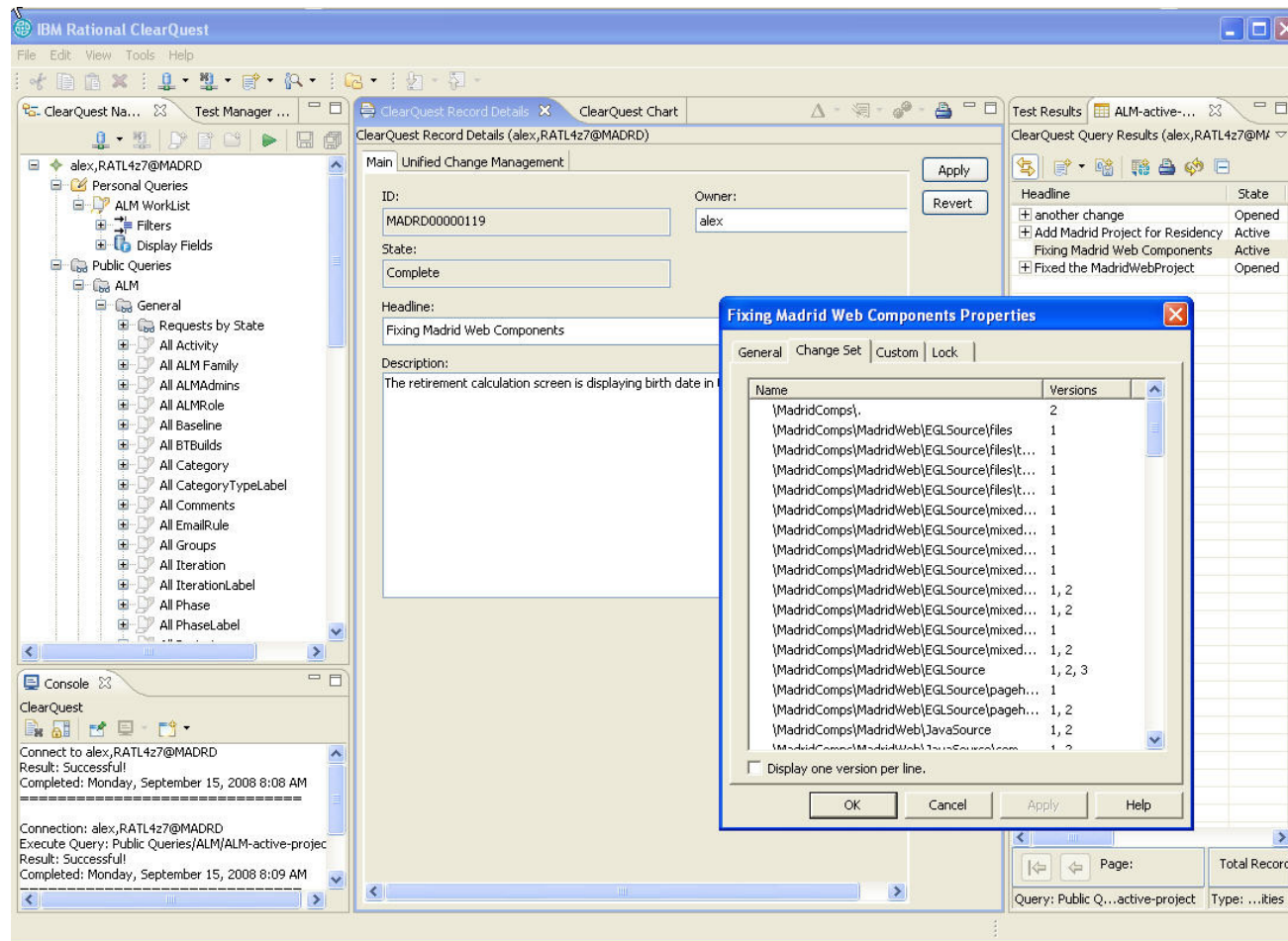
Activity and Deployment Management

- Configurable, enforceable workflows
- Central repository, real-time status
- Graphical and text-based reporting
- RDz (Eclipse), Web, Windows clients

IBM Rational ClearQuest

Rational. software

Rational ClearQuest: Automating Activity Management



Windows



UNIX/Linux



Eclipse



e-mail

Slide 5

- r1** where CQ on screen?
rkennedy, 9/5/2006
- r2** eliminate client references on right?
rkennedy, 9/5/2006

Automating Workflow Management

The screenshot displays the IBM Rational Developer for System z environment. The main window shows the ClearQuest Navigator on the left, listing various queries and reports. The central pane displays the 'ClearQuest Chart: Active Defects by Owner' window, which contains a 3D bar chart. The chart shows the count of active defects for each owner. The x-axis lists the owners: admin, alex, Brian, chris, dale, dana, devon, jan, morgan, sandy, and tracy. The y-axis represents the count, ranging from 0 to 5. The bar for 'dale' is the tallest, reaching a count of 5. A 'Capture Image' button is visible at the bottom right of the chart area, with a tooltip indicating the keyboard shortcut <CTRL><F11>.

Owner	Count
admin	2
alex	1
Brian	1
chris	3
dale	5
dana	1
devon	1
jan	2
morgan	3
sandy	2
tracy	1

Console output:

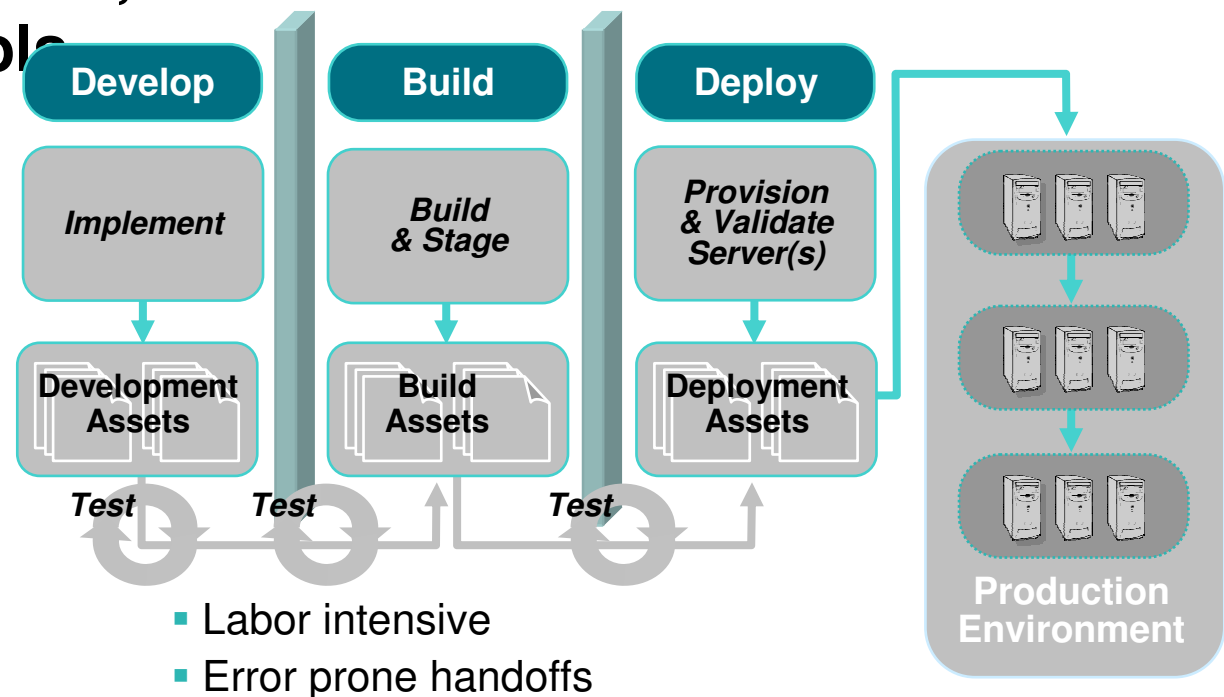
```
ClearQuest
Connect to admin,RATL427@AUCT
Result: Successful!
Completed: Thursday, January 24, 2008 12:36 PM

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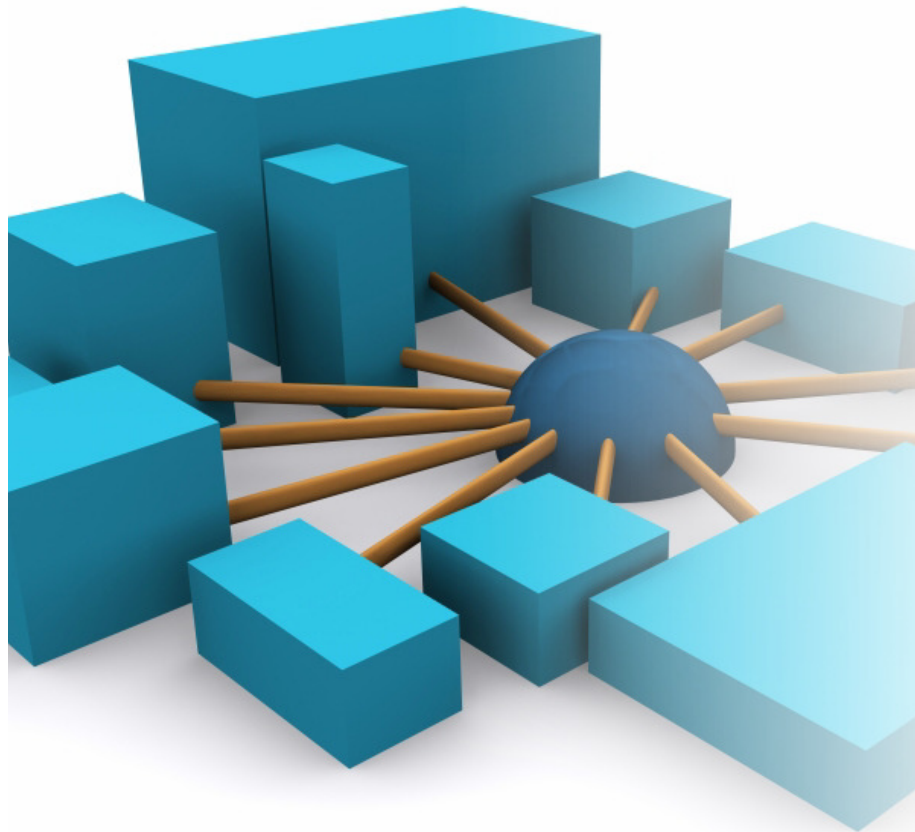
Connection: admin,RATL427@AUCT
Execute Chart: Public Queries/Distribution Charts-All Projects/Active Defects by O
Result: Successful!
Completed: Thursday, January 24, 2008 12:41 PM
```

Challenge: Silos Between Development, Build and Deployment

- Difficulty tracking testing status of multiple builds
- No shared processes, artifacts or controls
- “Over the wall” communication
- Minimal reuse



Solution: Simplify Builds and Deployments cross-platform application builds and deployments



Rational Build Forge

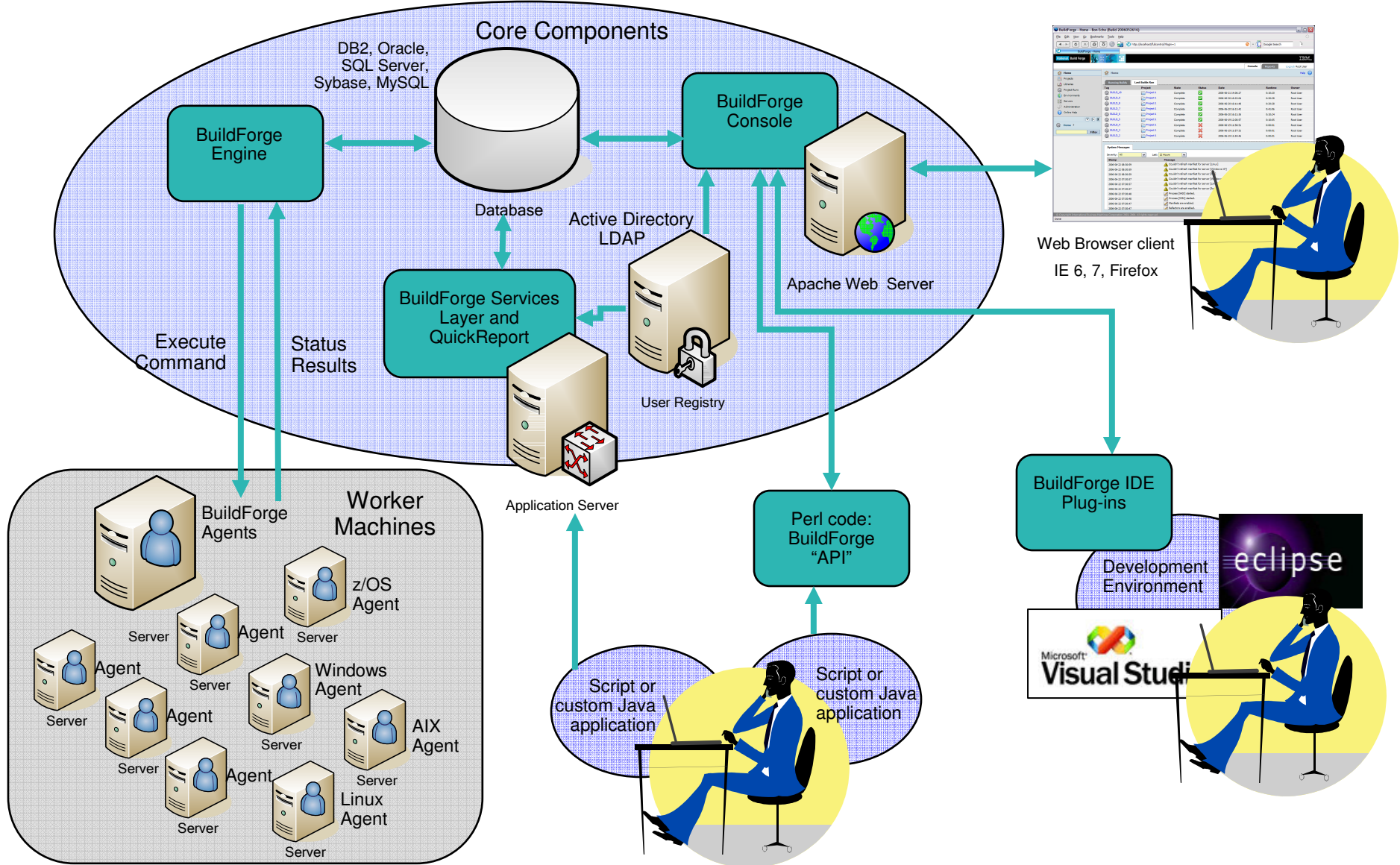
Synchronize enterprise builds

- Centralized build management
- Local (host and distributed) agents
- RDz (Eclipse), Web clients
- Comprehensive audit trails

Rational Developer for System z

Rational. software

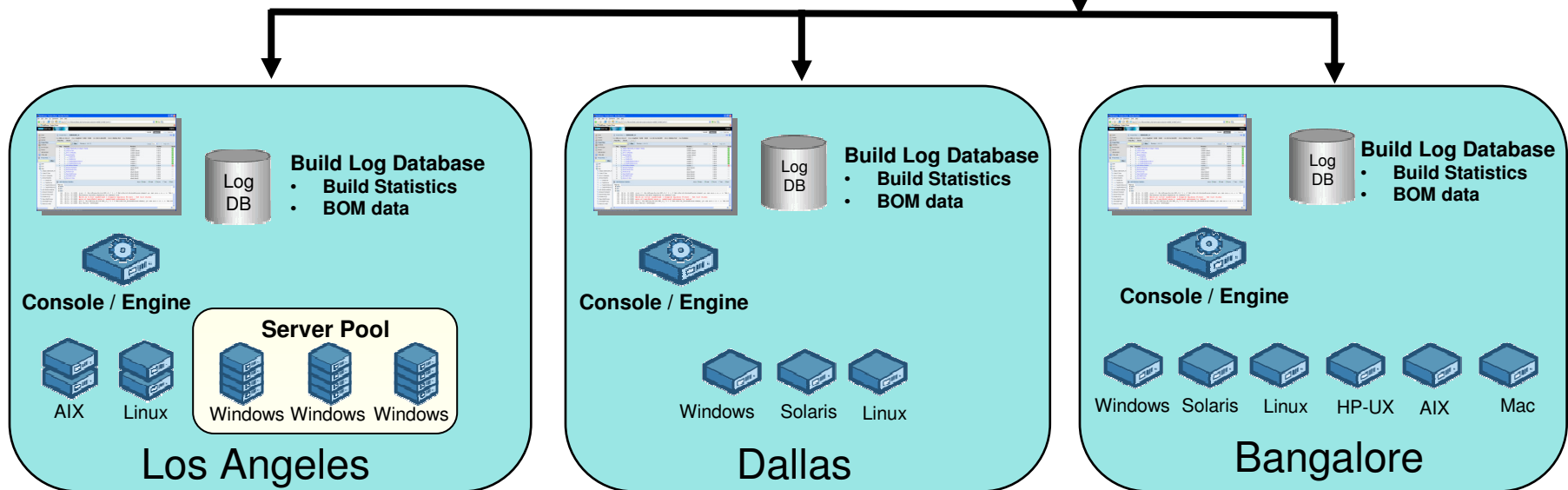
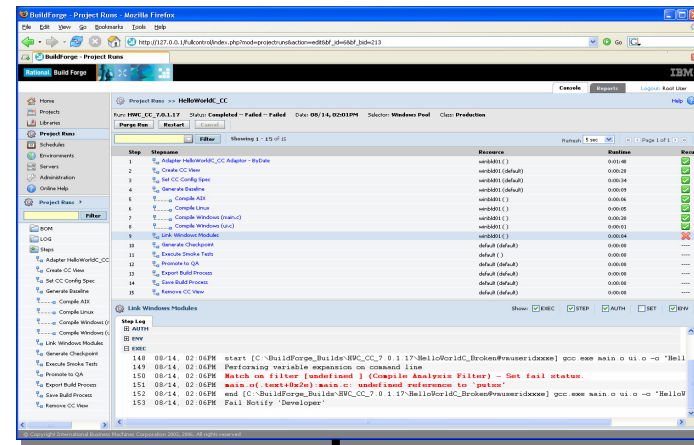
Build Forge System Architecture



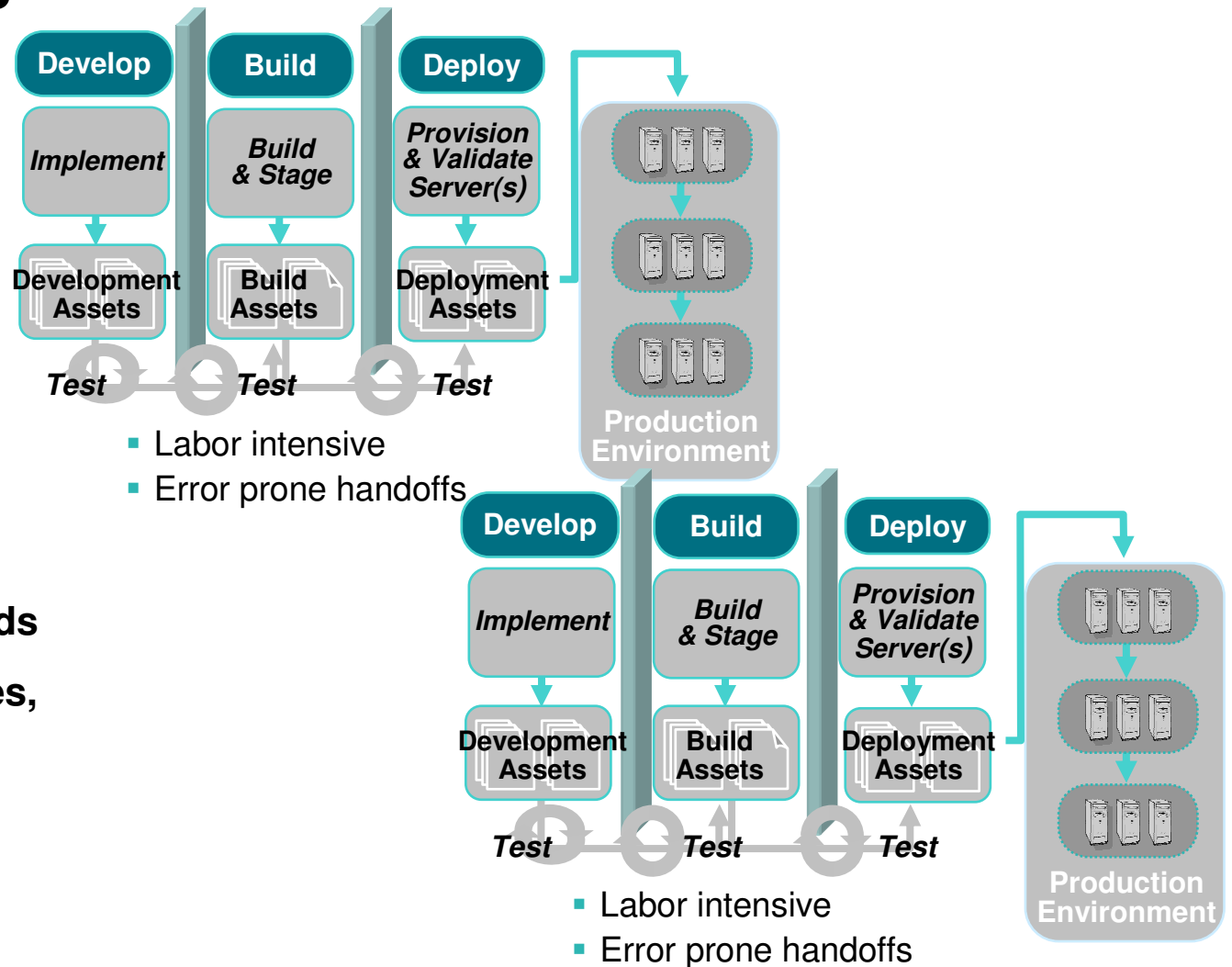
IBM Rational Build Forge

Centralized management across geographically distributed teams

- Web-based management console
- Consolidated, real-time project view
- Safe, secure access via user authentication
- Unicode support for international projects

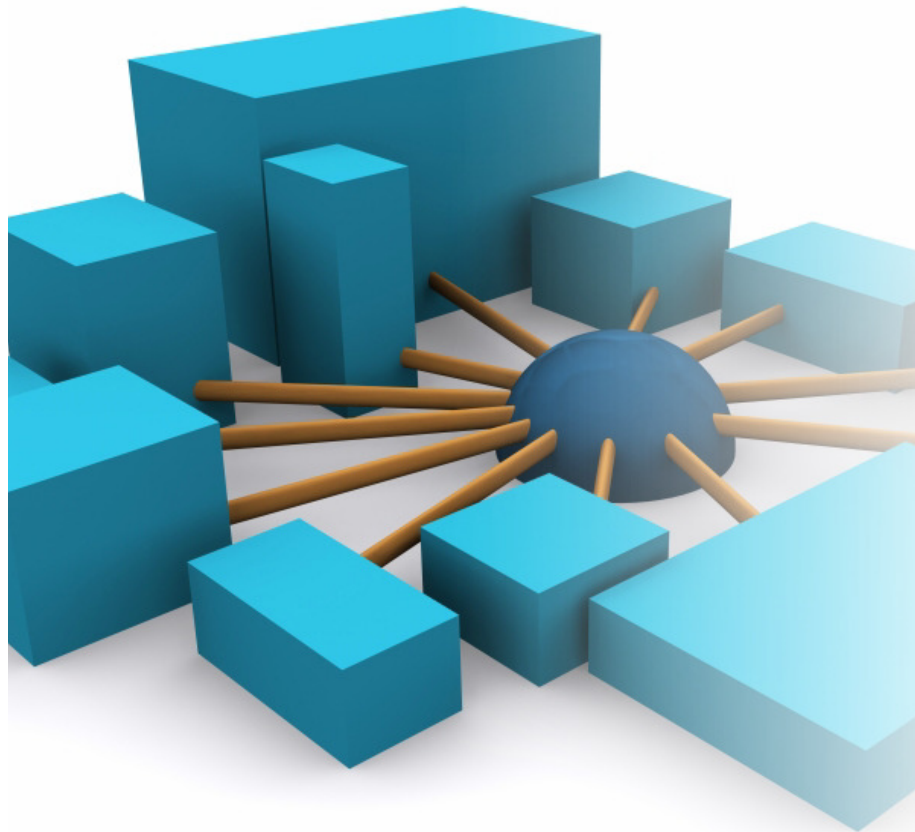


Challenge: Silos Between z/OS & Distributed Environments



- Difficulty tracking migrations and builds
- No shared processes, artifacts or controls
- “Over the wall” communication

Solution: Simplify Software Asset Management ***Manage enterprise assets with a single repository solution***



Rational ClearCase

Enterprise-level SCM

- Secure hosting of software assets
- Desktop, RDz, z/OS, web clients
- Distributed and z/OS build capability
- Built-in extensible process model

Rational ClearCase

Rational ClearCase: Automating SCM

Workspace management

- Work in isolated workspaces
- Work in parallel with other developers
- Manage multiple releases

Stability

Version control

- Version all types of files and directories in secure repositories
- Merge versions of elements

Safety

Build management

- Ensure the integrity of builds
- Accurately reproduce every release
- Trace and reproduce builds

**Reproducibility
Traceability**

Process control

- Record and report actions, history, and milestones
- Customize process
- Automate defect and change tracking

**Auditability
Control**



The Process Model: Unified Change Management

- Automatically maps ClearCase change sets to ClearQuest activities
- Built-in, fully customizable promotion model
- Implements a component-based application lifecycle approach

ClearQuest
Manages activities

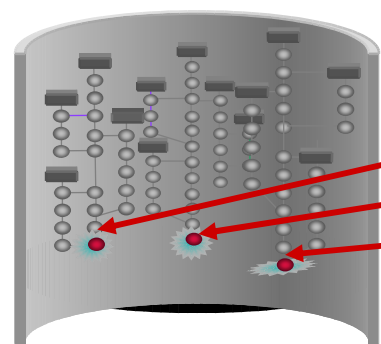
- ◆ Tasks
- ◆ Approvals

ClearCase
Manages assets

- ◆ Secure versioning
- ◆ Auditable builds

ClearQuest: Organized Activities

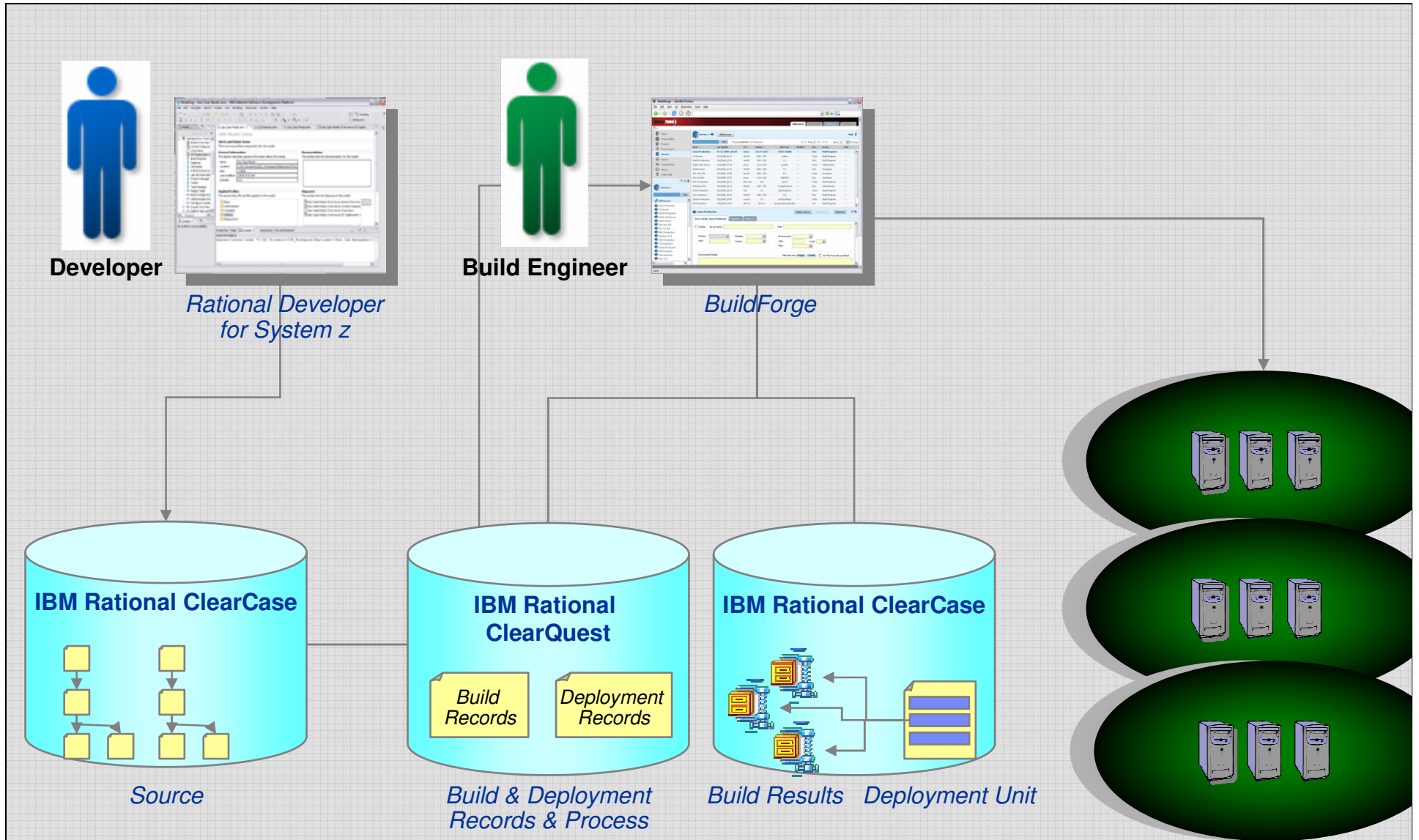
Request	Priority	Owner
Special Promo	1	Terry
Bug 527	2	Sandy
Add GUI button	2	Kim



Change Set

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

Bringing it all together . . .



Building with RDz and ClearCase Remote Build

The screenshot displays the IBM Rational Developer for System z interface. The main editor shows the source code for a program named 'MADLO2D.CBL'. The code includes a header section with fields for 'PROCESS', 'IDENTIFICATION DIVISION', 'PROGRAM-ID', 'AUTHOR', and 'DATE-WRITTEN'. The program is identified as 'MADLO2D' and was written on 6/19/07 at 7:00 AM.

The 'Command Shell - Running' window shows the execution of the 'rccbuild.exe' command. The output indicates a successful build, with the following details:

```

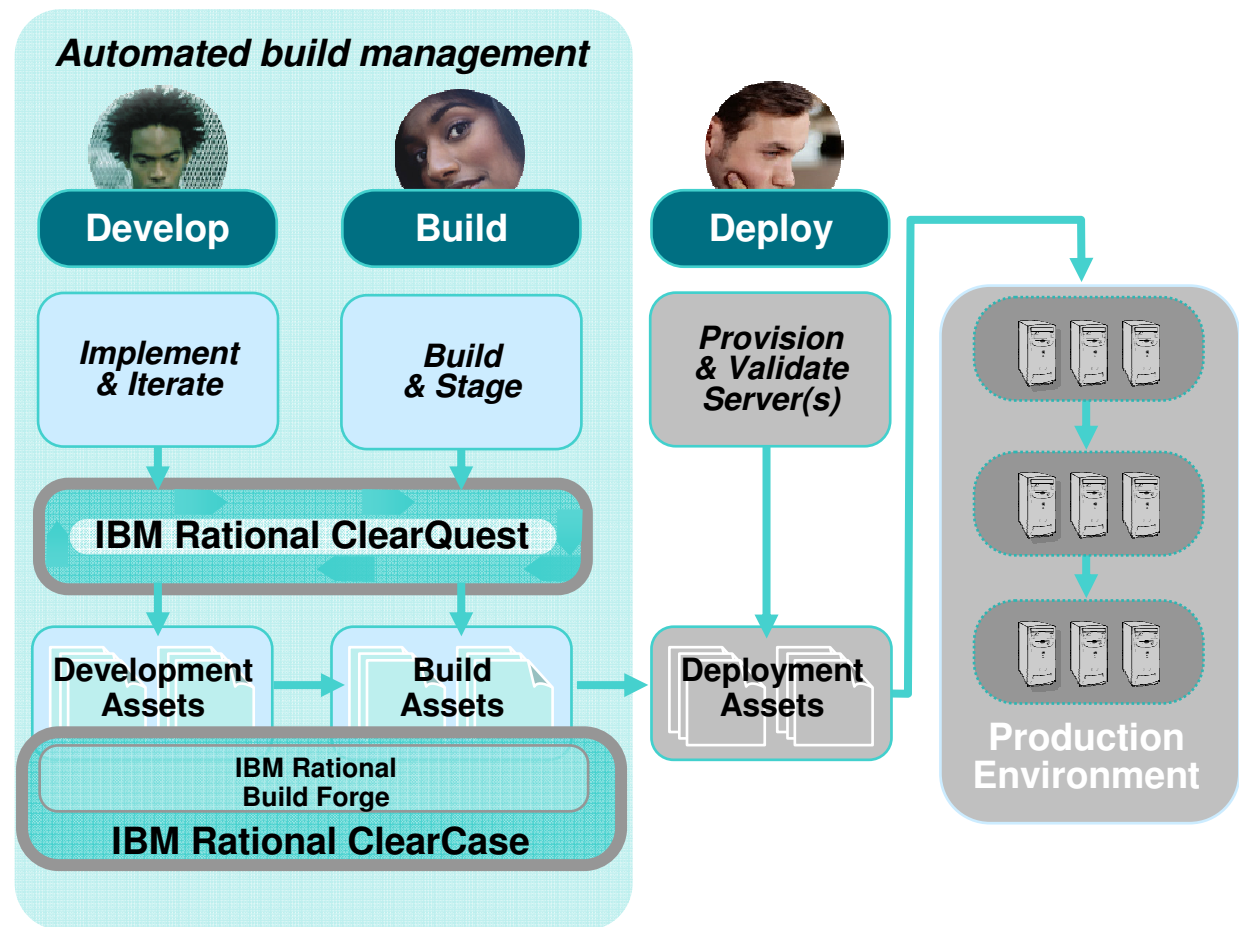
Y:\MadridComps\MadridDemo>
cd Y:\MadridComps\MadridDemo

08/09/15 09:38:53 (c) Copyright, IBM Corp. 2001
Copyright (c) 2002 Rational Software Corporation
08/09/15 09:39:00 *** Success ***
08/09/15 09:39:01
RCCI-003
Program Name : 'IGYCRCTL'.
PARM : 'EXIT(ADEXIT(ELAXNGUX)),&DATA,LIB,TEST(NONE,SYM,SEP),LIST,FLAG(I,
RCCI-004
The MVS step 'COMP' return code is '000000'.
08/09/15 09:39:01 Message files from build:
08/09/15 09:39:01 1:COMP.SYSPRINT
08/09/15 09:39:02 *-----
  
```

The 'Properties for CC-Remote-Build' dialog box is open, showing the configuration for a remote build. The 'Name' is 'CC-Remote-Build'. The 'Connection' is 'CC-view'. The 'Build Invocation' is set to '"C:\Program Files\Rational\ClearCase\bin\rccbuild.exe"'. The 'Working Directory' is 'Y:\MadridComps\MadridDemo'. The 'Arguments' are '-h demomvs.demopkg.ibm.com@3606 -b COMP -ft COMP.BCL -v USR=DNET471 -v MBR=MADLO2'. The 'Project' is 'Madrid Demo'. The 'Export files before running build' checkbox is unchecked.

IBM Rational ClearQuest and IBM Rational ClearCase with IBM Rational Build Forge integration

- Automated build management
- Detailed record of build content
- Support for continuous builds
- New IBM Rational ClearQuest build record for tracking and reporting



Build and Deploy Strategies

