

Automating the Assembly of Software Systems with Rational Build Forge and Rational Team Concert

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IBM Rational Software Development Conference 2008

WHERE TEAMS ARE **R-HEROES**



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Agenda

- Jazz Team Build
- Why use Build Forge with Team Concert ?
- Build Forge and Team Concert Integrated Experience
- Use Cases
- Architecture

Jazz Team Build

- Built around the philosophy of “Team First”
 - Teams engaged in collaborative software development
 - Developer asks “Have my latest integrated changes broken the build ?”
 - Developer asks “Can I reproduce what the customer is using ?”
 - Tester asks “what build has a bug been fixed in ?”

- Key Goals for Jazz Team Build
 - Build is a first class citizen in the development lifecycle
 - All teams members have awareness and control of builds
 - Full traceability between builds, work items and code

Jazz Team Build - Goals Alive Today

The screenshot displays the IBM Rational Team Central interface for a build named 'Build continuous.buildsystem.jazz'. The main area shows the build is 'In Progress (73%)' with a status trend bar. A 'Team Central' window shows a list of builds: 'continuous.buildsystem.jazz' (failing), 'nightly.integration.jazz' (failing), and 'weekly.integration.jazz' (successful). A notification window states 'Build finished successfully' for 'continuous.buildsystem.jazz C20080326-2149' at 9:10 PM on Wednesday, 3/26/2008.

Links

- Included in builds
 - continuous.buildsystem.jazz C20080320-1718
 - continuous.buildsystem.jazz C20080321-1439

Reported Work Items

- 1 reported against this build
- 2 currently open against continuous.buildsystem.jazz
- Create a new work item
- Associate an existing work item

Contribution Summary

- Compile: 0 errors, 553 warnings
- JUnit: 5984 tests, 0 failures, 2 errors
- Work items: 2 included in build
- Changes: Show changes

Summary | Build Activities | Compilation | JUnit | Logs | External L

Change Explorer | Problems | Error Log | History

Compare continuous.buildsystem.jazz_C20080326-1759 with continu

- Build
 - Ryan Manwiller - 36192: Security: jbe must be able to
 - Ryan Manwiller - 47307: Add optional passwordFile.

Navigation: clicking on build details link in build list will take you to build details page

Jazz Team Build – Solution Corner Stones

- Lightweight definitions
 - Build Definition
 - Build Engine Declarations
- Data Model for Build Results
 - Logs, Downloads, Links, Compile/Test Information
 - Traceability to Work Items and Code
- Build Toolkit
 - In the form to Ant Tasks
- Build Engine
 - Simple Build Engine
 - Continuous Integration Loop

Why Use Build Forge with Team Concert (1)?

- Distributed capability
 - Simultaneous execution on many platforms
 - Broader platform support
 - Distributed purge/clean-up
- Capacity/Throughput
- Ability to parallelise/accelerate process execution
- Ability to manage highly varied toolsets without scripting

Why Use Build Forge with Team Concert (2)?

- Governance/Traceability across tools and machines
- Integrated scheduler for non-compile related tasks
- Sophisticated logging of whole build output
- Integrated security
- Ability to manage processes for Jazz and non-Jazz environments simultaneously
- Process automation, not just build automation (process automation is a superset of build automation)

Build Forge and Team Concert Integrated Experience

- Build Forge becomes a normal resource in Team Concert (RTC)
 - RTC Users can pick Build Forge from Build Definition Template list
 - Connection info stored in the Jazz server for smooth flow
- Build Forge objects matched to RTC equivalents
 - Projects have matching RTC Build Definition
 - Project Environments have matching RTC Build Properties
 - Build Forge Engine has matching Jazz Build Engine
- Jazz Build Requests will fire Build Forge Jobs
- Build Forge Job results available directly in Jazz
 - Summary info directly in Jazz
 - Detail data still in Build Forge with direct link-out from Jazz

Use Cases

- Use Build Forge as a Jazz Build Engine
- Running Build Forge Project from within Team Concert
- Build Forge Build Result Linkage
- Team Concert Governance of Build Forge Builds

Use Build Forge as a Jazz Build Engine

- Allows Build Forge to operate as a standard Jazz Build Engine
- Enabled by installing RTC Client Build Forge plug-in and Jazz Server Build Forge plug-in
- User will see Build Forge projects and be able to create or associate Jazz build definitions with them

Running Build Forge Project from within Team Concert

- Facilitated by the use of two plug-ins:
 - Rational Team Concert Client plug-in
 - Jazz Server Build plug-in
- Build Forge projects appear as standard Jazz Build Definitions
- Prior Build Forge run information displayed as Jazz Build Results
 - Summary of Build results information
 - Detailed Build Forge BOM information available through request

Build Forge Build Result Linkage

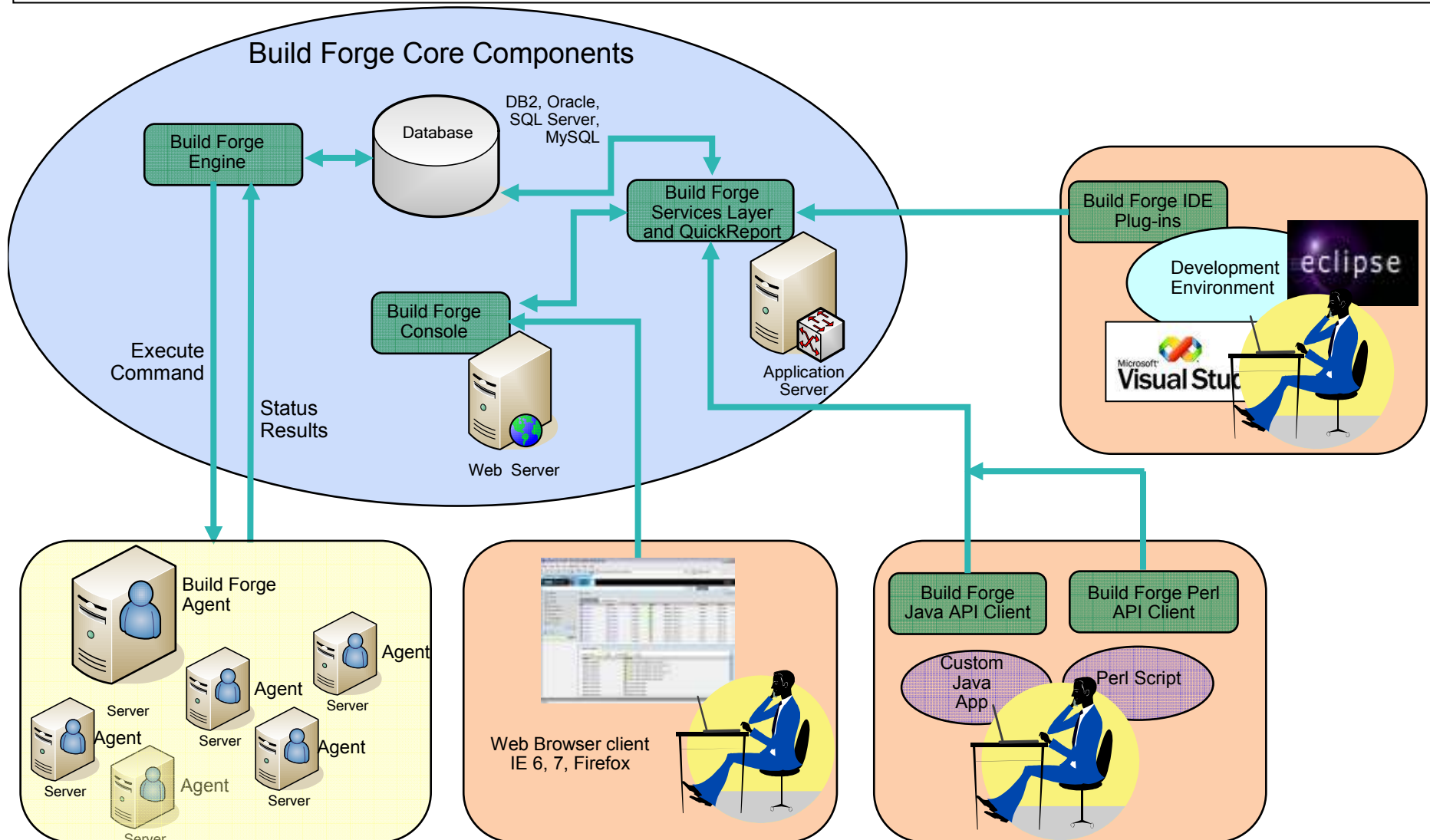
- Linked Build Forge Projects represented as true Jazz objects
 - Build Definition Items
 - Build Properties Items
 - Build Result Items
- Build Forge Linked objects also have typical Jazz pointers
 - Work Items
 - SCM artifacts
 - Requirements Items
- Same Options as “Regular” Jazz Objects
 - Example: Work items can be created automatically on failed builds

Team Concert Governance of Build Forge Builds

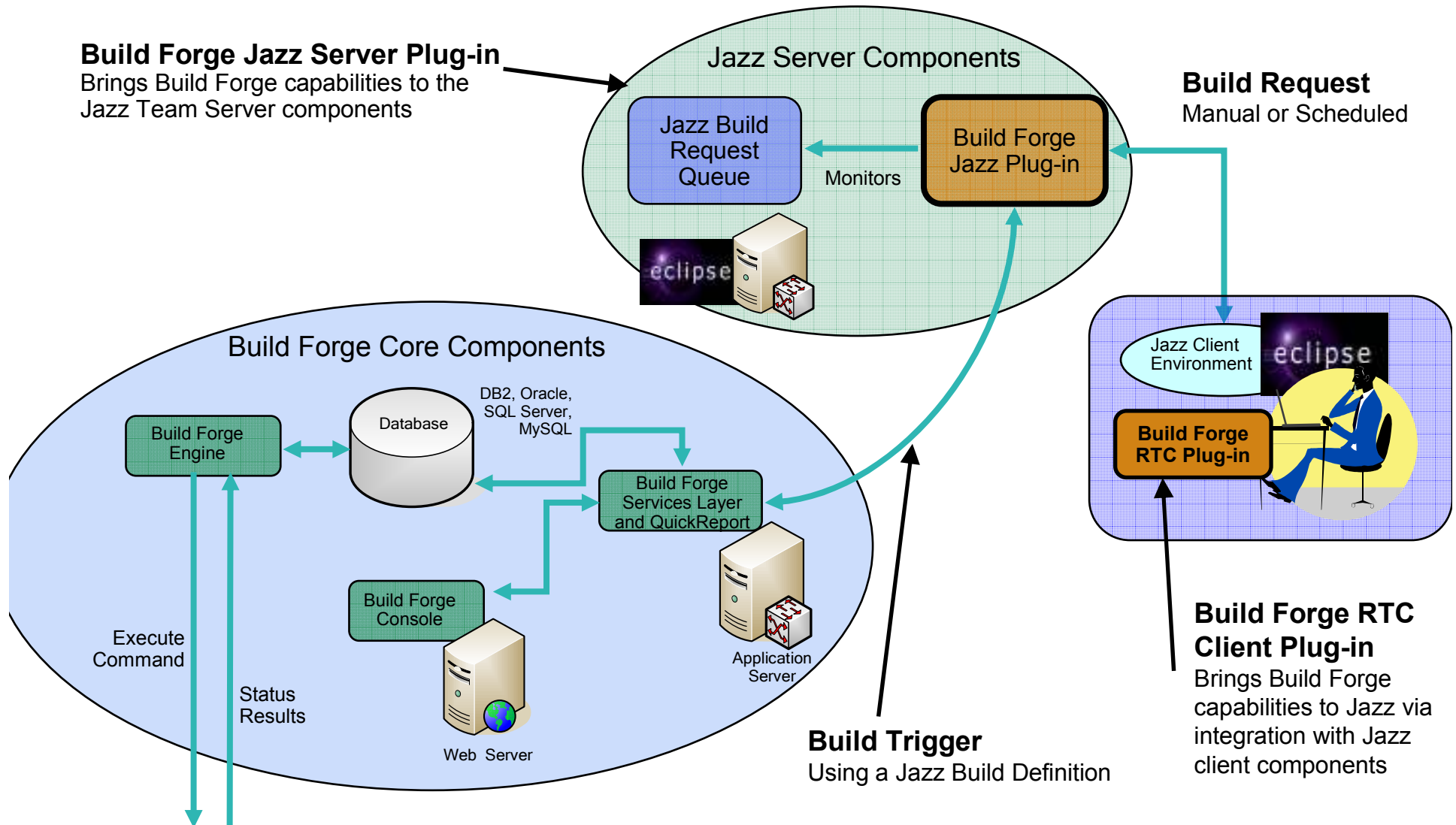
- Build Forge Jobs are part of Jazz process enactment and enforcement
 - Same Governance as work items and SCM
 - Achieved by Build Forge projects being true Jazz build definition items

- Example
 - Custom Jazz rule that requires specific build properties to be enforced on builds would show up as Build Forge Environment entries

Build Forge 7.1 Architecture Recap



Build Forge 7.1 with Jazz Integration





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