



Heterogeneous Development using Rational®
Team Concert™
Eclipse and Rational® Team Concert™
For Microsoft® Visual Studio™
IDE

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Architect/Developer, RTC for Visual Studio

Rational. software



Why do we care about heterogeneity?

- The Jazz initiative is composed of three elements:
 - ▶ An architecture for lifecycle integration
 - ▶ A portfolio of products designed to put the team first
 - ▶ A community of stakeholders



Contents

- What is the Rational[®] Team Concert[™] For Microsoft[®] Visual Studio[™] IDE?
- A quick tour
- Self-hosting: Real teams, Real insights
- Homogeneity in heterogeneity
 - ▶ Any resemblance to the RTC Eclipse Client is purely intentional ☺



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What is RTC for Microsoft Visual Studio™ IDE?

Team Collaboration for .NET Developers

- -A Team Collaboration environment for .NET developers.
- -Provide source control, work item tracking, build, process & collaboration services
- -leverage and extend the Jazz Platform

A Visual Studio Client Integration

A First Class Integration with Microsoft Visual Studio

to enhance developer productivity





Innovative Software Engineering

Heterogeneity

- -A Common Team Collaboration Server infrastructure based on Jazz.
- -A Visual Studio Client for .NET developers
- -An Eclipse Client for Java developers
- -A Web Client for contributors
- -Powered by Jazz



Vision

Brings the Jazz vision to .NET developers :

The value and experience that future Rational products can bring to software and systems delivery teams

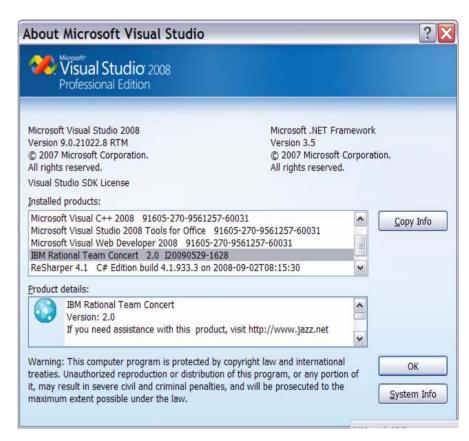
Rational.





RTC for Microsoft® Visual Studio™ IDE

- Natively implemented in Visual Studio
 - ▶ A first class integration into Visual Studio
- An extension of the Visual Studio IDE
 - Integrates into Solution Explorer, Options pages, Toolbars, Menus, Tool Windows
 - Integrates into Visual Studio as a source control provider
 - Integrates into the Error List View
 - Integrated Help
- Supports Visual Studio 2005 and 2008
- Developed using WPF, the latest Microsoft UI technology
- The first Jazz client written in C#
- Follows Visual Studio international settings

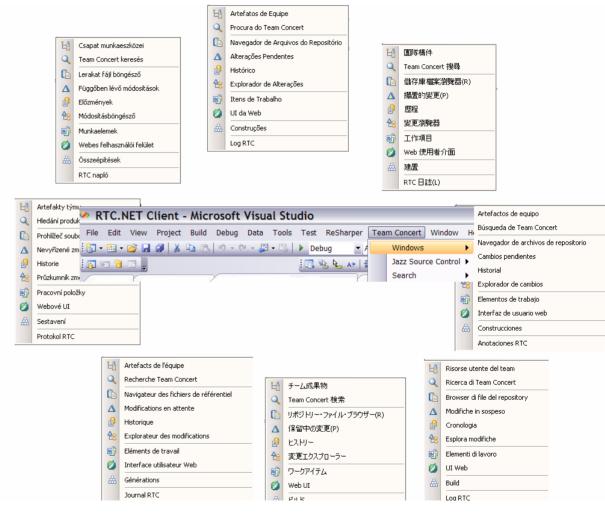






Internationalization

 Available in all group 1 languages.





Installs and Downloads

- Installable via IBM Installation Manager
- Downloadable from jazz.net
 - https://jazz.net/downloads/rational-team-concert/milestones/2.0.0.1M1
 - 2.0, 1.0.1.1, integration builds, betas...



Focus

- Caters to teams developing in .NET
- Currently provides
 - SCM integration with VS.NET artifacts
 - Work Items integration
 - Build Integration
- Emphasis on Developer use cases
- Supports heterogeneous teams in conjunction with RTC Eclipse





Contents

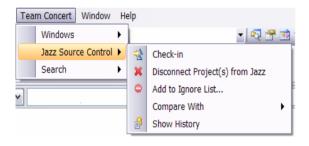
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RTC Visual Studio™ at a glance

Visual Studio IDE extended with Jazz/RTC capabilities for

- Artifacts management
 - Repository connections, Project areas, streams, workspaces, components
- Work items management
- Build management



- Repository search
 - Change sets, components, streams and workspaces, snapshots



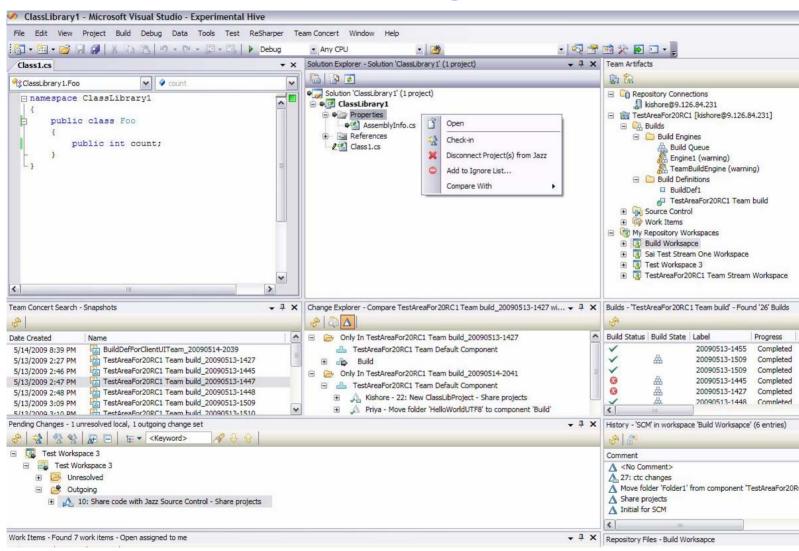
Source control management







RTC Visual Studio™ at a glance

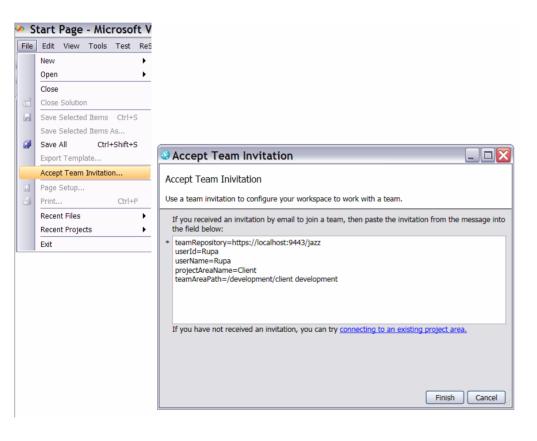






Getting initiated is a breeze...

When your team lead adds you to a team, you get an email.



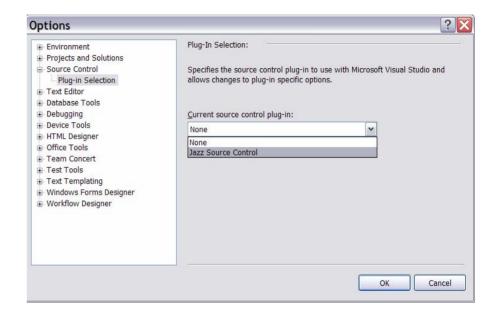
All you need to do is to paste the contents of the mail into the Accept Team Invitation dialog box.





Activating Jazz Source Control

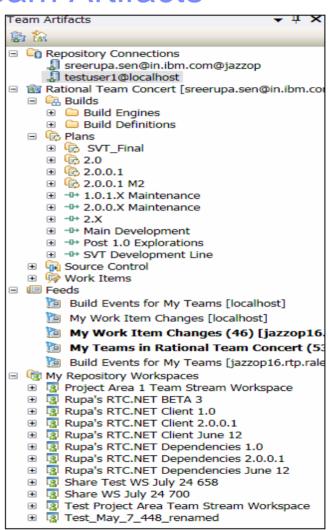
- Once you choose Jazz as your source control provider
 - A Source Control node will appear under each project area that you've connected to
 - Expanding Source Control will show you your team's streams and components
 - My Repository Workspaces will be populated with any existing repository workspaces that you may have.





Exploring your Repository: Team Artifacts

- The Team Artifacts Tool Window is your window into the jazz repository
- Use the Team Artifacts Window to
 - Connect to Project Areas
 - Create and manage
 - Streams
 - Components
 - Workspaces
 - Snapshots
 - Work Items
 - Queries
 - Build Requests
 - Plans
 - Feeds

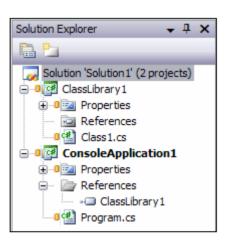


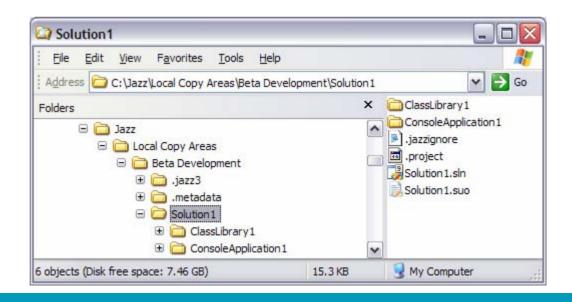




Sharing a solution

- To start checking in your sources to the repository, you need to share your solution
- A solution is shared into a Jazz component
 - The Microsoft recommended way is to have the physical file layout follow the solution structure
 - The solution file sits is in a root folder.
 - The projects are in sub-folders







Organizing your source code

- We support and recommend the best practices outlined by Microsoft team development literature
 - http://msdn.microsoft.com/en-us/library/ms998208.aspx
- Use a single jazz component/solution in simple cases
 - Does not scale well
 - Project dependencies result in frequent rebuilds of multiple projects event for minor changes
- Use a partitioned solution approach for scalable component based development



Multi-component development with Partitioned Solutions

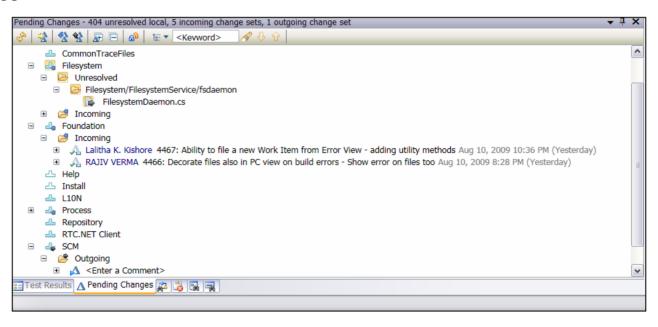
- Each component corresponds to a solution.
 - A project may be included in multiple solutions
 - ▶ A project is created in it's "home" solution
 - And referenced by dependent components/projects in other solutions, via project references.
- Separate solution files let you work in smaller sub-systems fairly independently.
 - ▶ Each sub-system corresponds to a jazz component.
 - Scalable
 - Rebuilds less frequently
- Having project references ensures that you always have the latest sources for components you depend on.
- You can have a master solution for system-wide builds.
- We followed the partitioned solution approach for the RTC Client for Microsoft Visual Studio.





Keeping in sync: Pending Changes

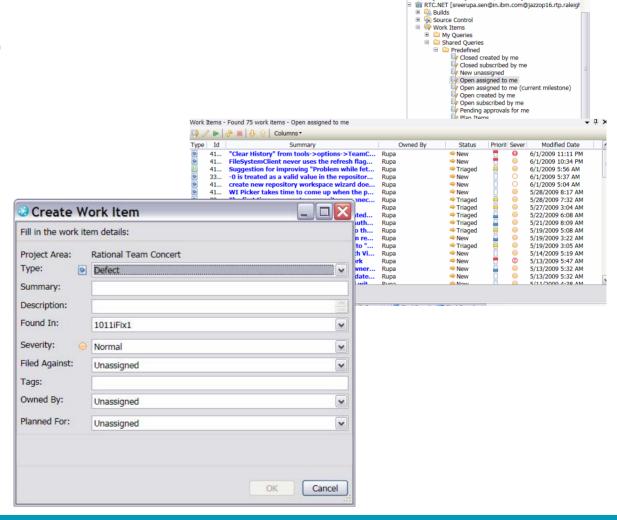
- Your window to your team's source code changes
- Lets you check in, deliver, suspend, resume, discard, reverse change sets
 - Resolve merge conflicts
 - Create snapshots and baselines
 - Lock/unlock source files
 - Filter change sets





Managing your Tasks and Defects: Work Items

- Create/run queries to find out what's assigned to you.
- Create new work items and queries.
- Update/Bulk-edit existing work items
- Have active discussions with the rest of your team.

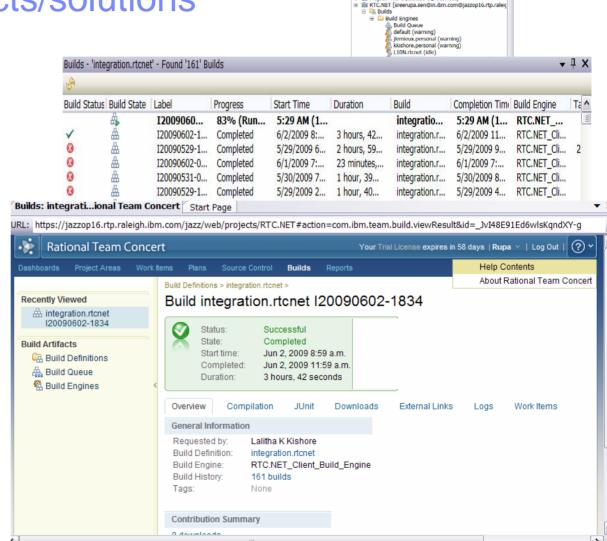






Building your projects/solutions

- Visual Studio developer can access Jazz Builds from within the IDE
- Developers can
 - Request Builds
 - Request Personal Builds
 - Monitor Build Activity
 - See Details of Individual Build and download associated artifacts
 - Create a repository workspace or stream from a given build



Team Artifacts

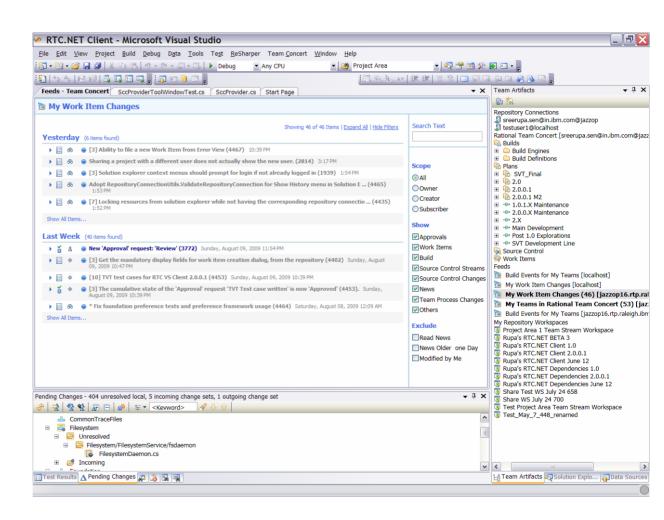
Repository Connections
 Project Area 1 [testuser1@localhost]





Staying Current with Feeds

- Create feeds for
 - work items, queries
 - builds, build definitions
 - team events
- A consolidated view of events in your team area/project area
- Feeds refresh automatically
- You can customize feeds by filtering

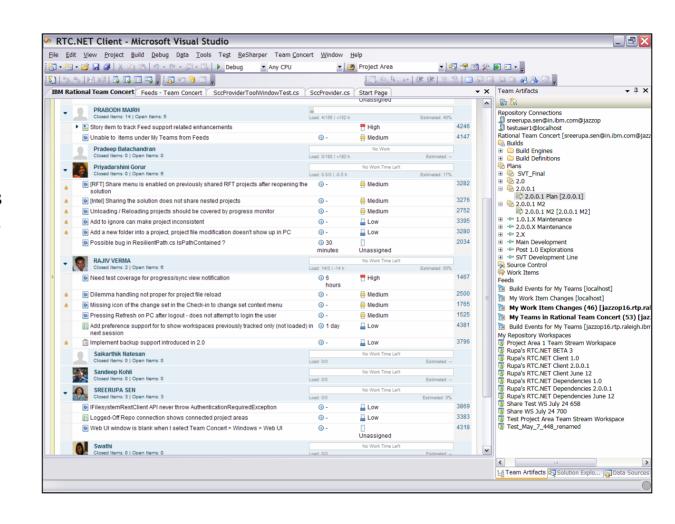






Agile Planning

- Visual Studio users can now
 - Access project plans from within the IDE
 - Create/update plans





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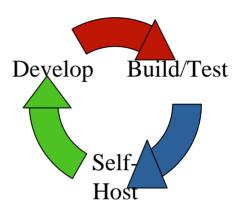
Self-hosting in RTC for Microsoft® Visual Studio™ IDE

- We started with
 - A plain vanilla Visual Studio IDE for development and
 - ▶ The RTC Eclipse Client for our Jazz Needs
- As we integrated SCM, Work Items, Builds into Visual Studio we went to the Eclipse Client less and less
- We've been self-hosting in the RTC client in Visual Studio since October 2008
- Real teams, Real Insights, Real Results!



Self-hosting (contd.)

- At the completion of each iteration, we selfhost.
- Our continuous and integration builds are Jazz builds
- We've integrated our builds with Microsoft's unit testing framework
 - Each build runs through all the unit tests
- We follow the develop-build-test-selfhostdevelop cycle













Real teams, Real Insights

- As we developed using the RTC Client for Visual Studio, we added features
 - Based on our self-hosting experiences
 - Improving the user experience for the Visual Studio developer



When we faced the music...

- Visual studio specific processing for SCM operations
 - Warnings for incomplete change set check-ins, to avoid build breaks
 - For example if you're checking in a new file, but forgot the associated project
 - Automatic reloading of multiple project files while accepting changes from other users
 - ▶ Filtering in Pending Changes: searching for specific files in your change sets or the change sets of your team
 - Project can be part of multiple solutions, but physically associated with one.
 - We let you share it from any location and also detect and warn you about it.



And...

- Background execution of long repository operations
 - enabling you to continue your work in Visual Studio in the meantime
- Support for code refactoring
 - Renaming a file preserves its history in the repository
 - Moving file(s) within a project preserves history as well
 - Moving top level folders across components preserves history
- Support for compare/merge
 - Automatic merge in most cases
 - UI-aided conflict resolutions
- Integrating Pending Changes with the Error List



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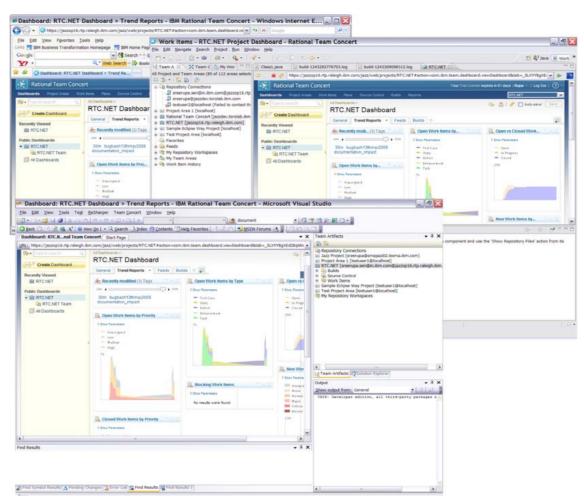
Teams not restricted to

- Single Physical location
- Single Operating System
- Single Platform
- Single IDE
- Single Programming language



Homogeneity in Heterogeneous Teams

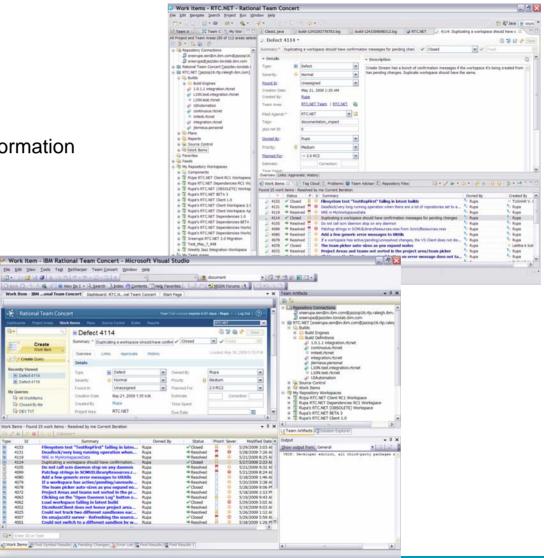
- One repository for all your artifacts
- Which means you share
 - Same Project and Team
 - Same Dashboard





Homogeneity in Heterogeneous Teams

- Same Process
- Same Builds Infrastructure
- Same Work Items and related information
 - Discussions
 - Builds
 - Approvals
 - Attached change sets

















Our commitment

- People will work in the area of technology best suited to the requirements...
- ... rather than being restricted by their infrastructure.
- RTC clients will preserve the flavor of your favorite IDE
 - ▶ They are non-intrusive.
 - They're natively implemented for Eclipse and for Microsoft Visual Studio.
 - ▶ They are first class integrations into the IDEs that they extend.
- Barring environment specific needs, the over all look and feel will be homogeneous across RTC clients in different IDEs
 - Should you switch from one IDE to the other, you will not get lost



Take Our Survey!

- First Impressions of RTC for Visual Studio
 - https://www.ibm.com/survey/oid/wsb.dll/s/ag246



The demo scenario

- Echo Server
 - Server is in Java
 - Client is in C#
- Like any project
 - Defects move across components
 - ▶ There are lots of discussions between team members
 - ▶ The same process holds: same approval rules, same delivery rules, same permissions...































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BACKUP



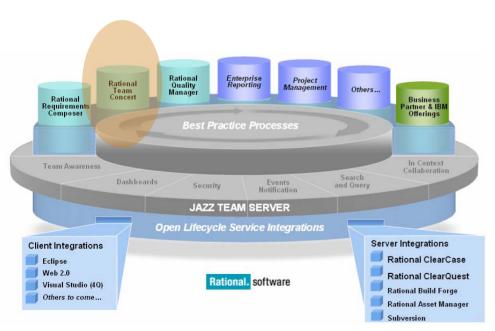


Jazz and Rational Team Concert

Jazz is a technology platform

Jazz is the foundation of the collaborative application lifecycle management (C/ALM) system

Jazz is a scalable, extensible team-collaboration platform that integrates tasks across the software lifecycle. The platform also provides useful building blocks and frameworks that facilitate the development of new products and tools. This unprecedented approach is unique within the industry and has significant advantages.



Rational Team Concert the first Jazz based product

- ➤ A collaborative software development environment
- ➤ Rational Team Concert enables developers to collaborate together using
 - √ Integrated Planning
 - ✓ Source Control
 - √ Work Items
 - ✓ Build
 - ✓ Dashboards
 - ✓ Reports
 - ✓ Process Support
- ➤ Native Clients in Eclipse and Visual Studio .NET.
- ➤ Web UI support based on Web2.0









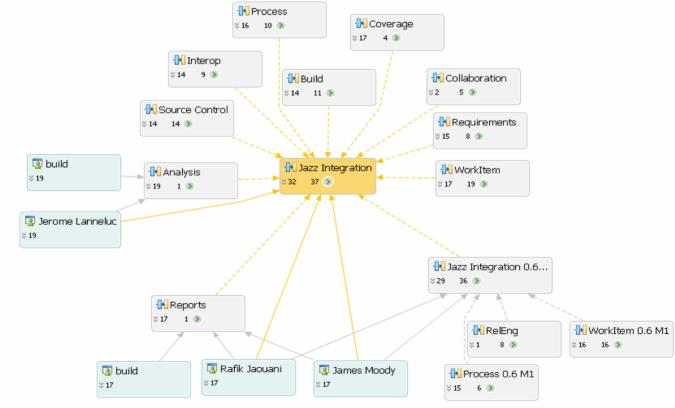






Teams of teams

- This simple model allows scaling to teams of teams.
- Provides isolation when needed at both the individual and team level.

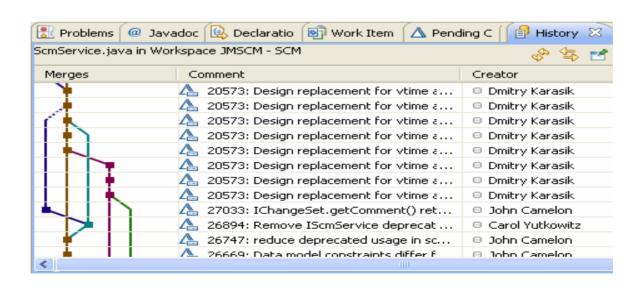






Summary

- The Jazz SCM is entirely change set based. There is no file level branching or tagging.
- Focuses on user level simplification with the added power of parallel development.
- Conscious effort to never use the word branch in the UI. People are afraid of branches, but want isolation and the features they provide





Parallel Development

- The model supports several levels of isolation
 - ▶ **Repository workspaces** Provides constant isolation. You don't have to make your changes visible to the team just to backup or use the repository features.
 - ▶ **Suspend and Resume** Provides task level isolation for personal work.
 - Work Item links Provides light weight task level isolation for personal of team work. Work on a feature, attach to a work item and discard from your workspace. You or someone else continues the work by accepting the change sets back into their repository workspace.
 - ▶ Streams Provides team isolation.
 - ▶ TimeLines Provides process isolation.

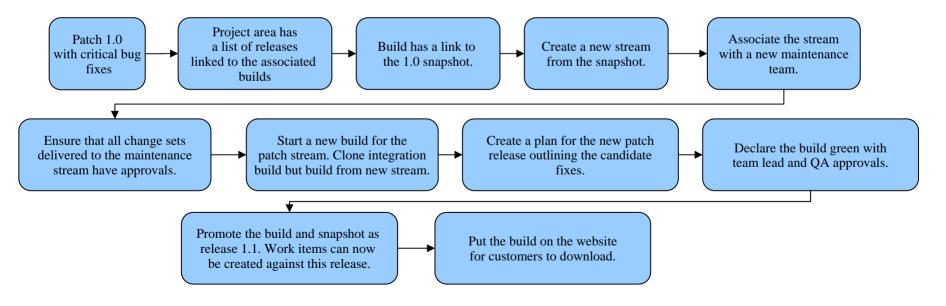
Isolate work not people. Encourage transparent planning and flexible isolation.





It's not just about SCM

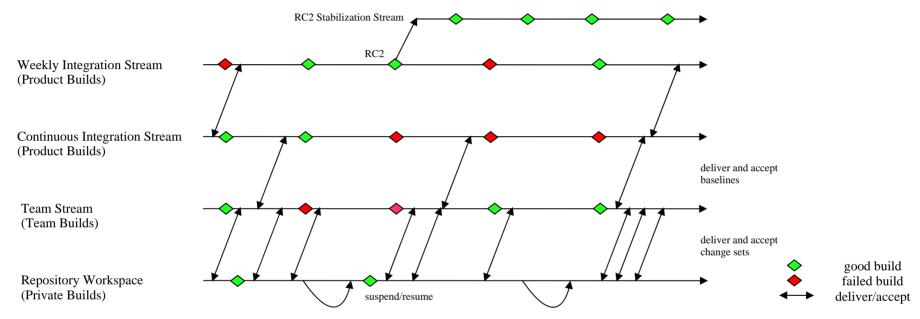
- There is much more to product level parallel development then patching the code.
- Team level productivity and turn around time for delivering fixes is impacted by the tooling of the entire process.
- Consider the number of tasks involved in patching a release that aren't related to SCM, but are tooled in Rational Team Concert.







How the Jazz team works



- Each build references a snapshot of the artifacts that were built. Reproducing a build or patching a build is as simple as creating a new stream from the snapshot. There is no planning needed to tag or baseline, builds take care of that for us.
- Developers deal mainly with accepting and delivering to their team stream. Flowing changes to and from the integration streams is the responsibility of one person on each team.





Coming Soon: Feeds

