IBM

Session ID: 490122 | 26 MI

IBM WebSphere Development Studio Client
for iSeries Workbench Basics:

Everything You Need to Know but Didn't Know to Ask

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Development manager : WebSphere Development Studio Client for iSeries

COMMON | Spring 2006

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Agenda

- **Eclipse, workbench history, & IBM**

- **Workbench basics**

- **Components**

- **Online help**

- **Applying updates**

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The Challenge

- Tools from different companies do not work well together

- Developers had [and still do!] better things to do than integrate tools

- Tool vendors had [and still do!] better things to do than reinvent the wheel

- No one vendor could do it all
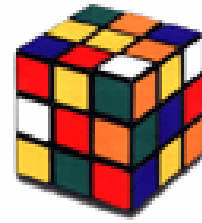
The Solution
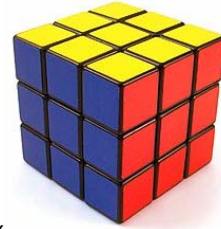
- Eclipse project originally created by OTI and IBM

- Framework on which a variety of tools can be built
  - Wide range of operating systems: Windows, Linux, Unix ....

- Extensible, seamless tool integration – new tools easily added by writing plug-ins

- Language independent

- Attracted a community of tool developers
  - Now over 100 active vendor participants

- Effort transitioned into open source project
  - IBM donated initial Eclipse code base

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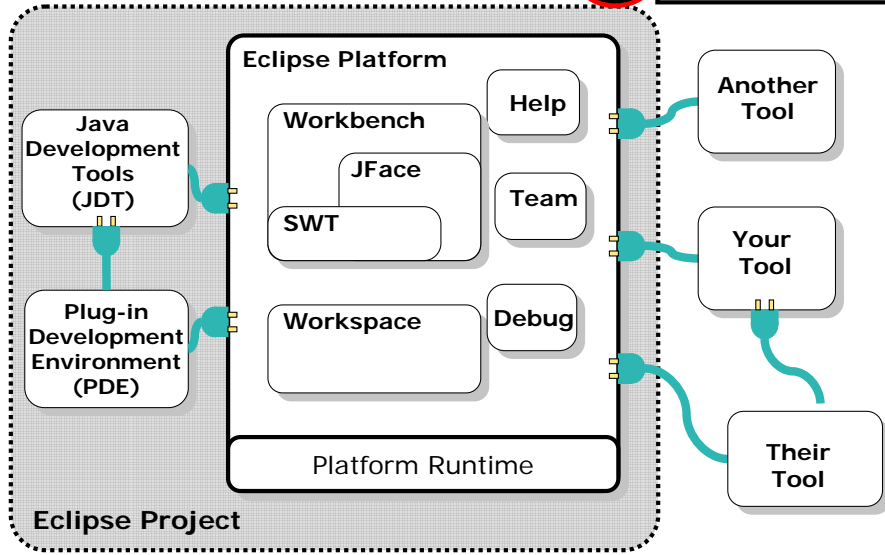# Eclipse Overview: *On the outside*
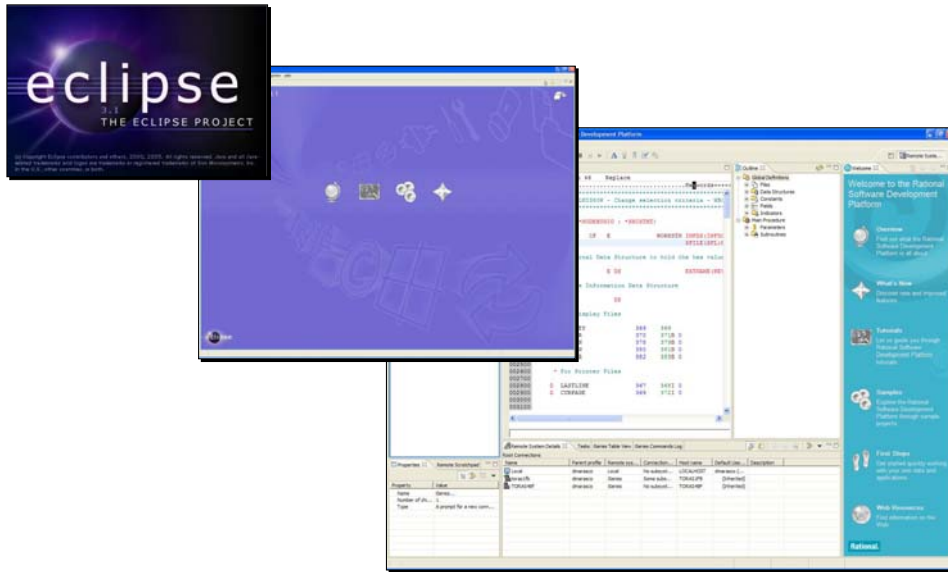
If you only get to show one slide, this is the one that best captures "The Big Picture".

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Eclipse Overview: *On the inside*

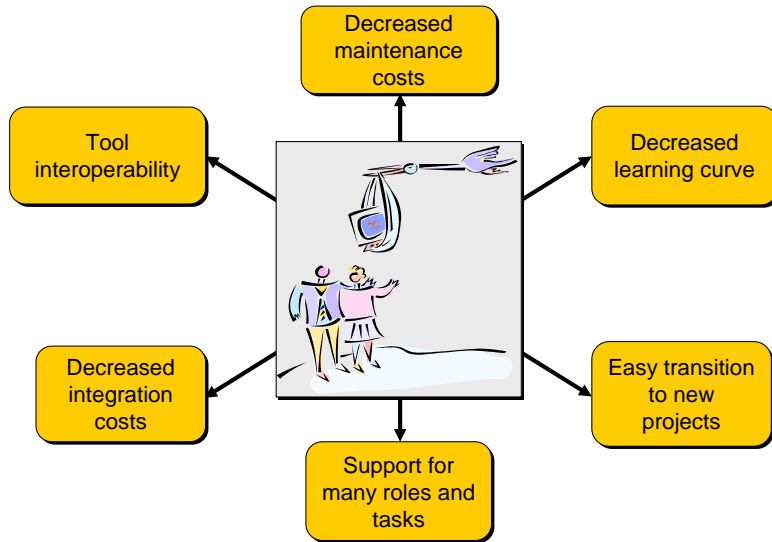Defined as a set of contributions, a plug-in is the smallest unit of Eclipse functionality.

Eclipse Project

Eclipse Platform

Java Development Tools (JDT)

Plug-in Development Environment (PDE)

Workbench

JFace

SWT

Help

Team

Workspace

Debug

Platform Runtime

Another Tool

Your Tool

Their Tool

If you only get to show one slide, this is the one that best captures "The Big Picture".

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Benefits of Adopting Eclipse Platform

Eclipse 3.1 took 40 days to reach 1,000,000 downloads!

Now, that's quick uptake.

- Decreased maintenance costs
- Tool interoperability
- Decreased learning curve
- Decreased integration costs
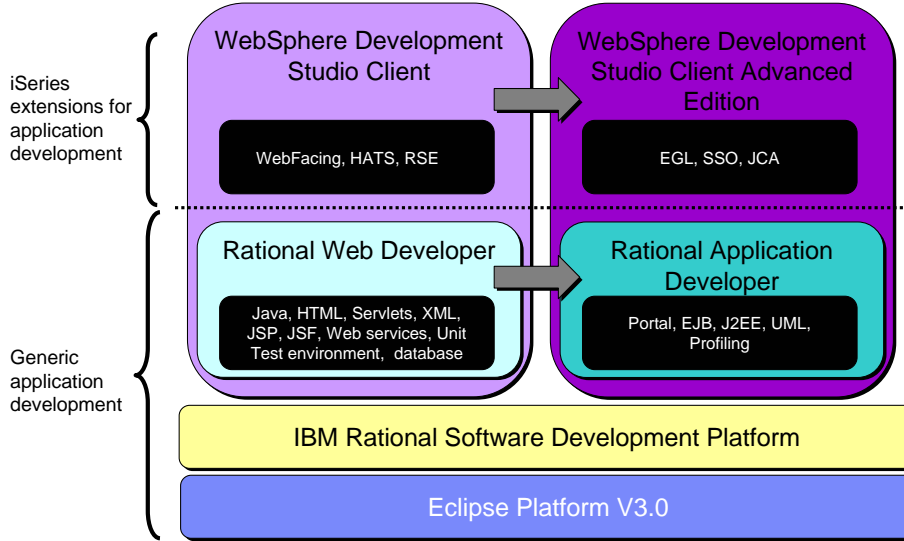- Support for many roles and tasks
- Easy transition to new projects

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So, what's IBM got to do with Eclipse?

- IBM is a founding member of Eclipse
- Actively participates on Eclipse.org board of stewards and its working subcommittees
- IBM builds on Eclipse V3.0 for many products:
  - IBM Rational Software Development Platform
  - Rational Software Architect (RSA)
  - Rational Application Developer (RAD)
  - Rational Web Developer (RWD)
  - WebSphere Development Studio Client for iSeries

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This is what IBM's got to do with Eclipse: *Packaging*

iSeries extensions for application development

WebSphere Development Studio Client

WebFacing, HATS, RSE

WebSphere Development Studio Client Advanced Edition

EGL, SSO, JCA

Generic application development

Rational Web Developer

Java, HTML, Servlets, XML, JSP, JSF, Web services, Unit Test environment, database

Rational Application Developer

Portal, EJB, J2EE, UML, Profiling

IBM Rational Software Development Platform

Eclipse Platform V3.0

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Who's on Board?

- Wide range of software vendors on Eclipse board
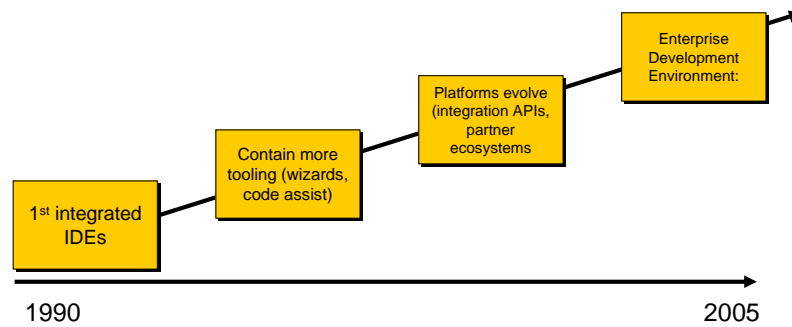
- Represent various development tool markets

Next…

- Eclipse, workbench history, & IBM

- **Workbench basics**

- Components

- Online help

- Applying updates

What's an IDE?

IT Synonyms: Often when people refer to the IDE they often call it a "workbench". These two terms are used interchangeably.

- Integrated Development Environment (IDE) is a set of tools that developers work with every day to construct and maintain software

- Evolved dramatically in the past few years

- Eclipse is the **first IDE** that offers an enterprise development environment for non-Microsoft technologies

Enterprise Development Environment:

Platforms evolve (integration APIs, partner ecosystems)

Contain more tooling (wizards, code assist)

1st integrated IDEs

1990   2005

IBM Rational Software Development Platform

- IBM branded IDE

- Based on a 4-pronged infrastructure: Eclipse, Eclipse Modeling Framework (EMF), MDD platform, & standard modeling approaches (e.g. UML)

- Includes products from **all** IBM Software Group brands (Rational, WebSphere, Tivoli, DB2 and Lotus)
  - Advantage of unifying all IBM Software Group development tools within a single platform

- Open and modular workbench
  - Can purchase and adopt it in parts

- Spans all capabilities of software development cycle
  - requirements & analysis → deployment management

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Workbench component

- Workbench is the user interface
- Implemented by the workbench UI plug-in
- Plug-in defines and manages all object that you see
  - E.g. menu and toolbars, dialogs, wizards
- UI paradigm centered around
  - Perspectives
  - Views
  - Editors
- Each UI element has a defined role
  - Editors work on resources in the workspace
  - Views share information about their defined 'input'
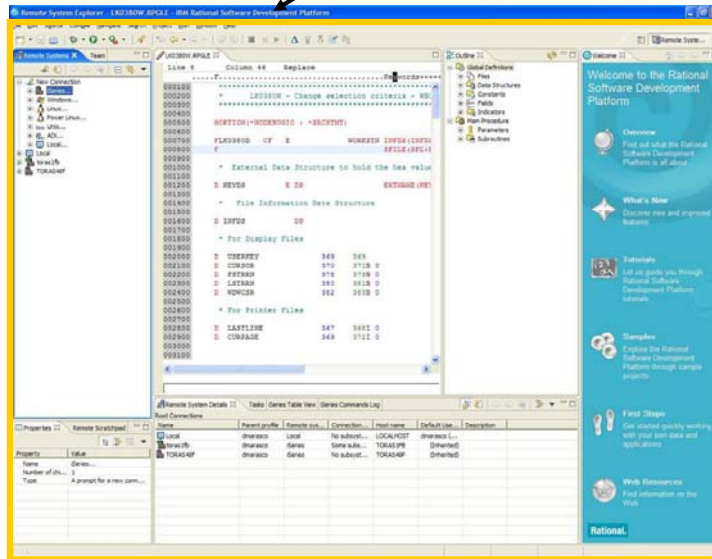 - Perspectives organize views and the editor 'space' to support defined tasks
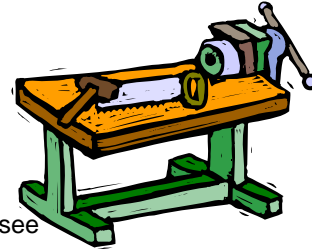
Workbench responsibilities

- Manages windows and perspectives
- Eclipse Platform creates menu and tool bars
  - Labels and icons listed in plug-in manifest
  - Contributing plug-ins not activated
- Eclipse Platform creates views and editors
  - Instantiated only as needed
- Scalable to large numbers of installed tools

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[Contains animated elements]

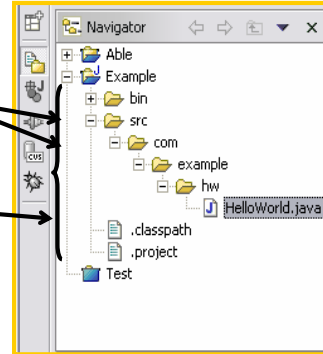[Contains animated elements]

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Next…

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- **Components**

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- Applying updates

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Workspace component

- Local directory where the workbench stores all your projects, files, folders

- Location is set in the dialog that first opens when you start the Workbench
  - Can modify location by selecting File > Switch Workspace.... (Eclipse V3.0)

- Workspace holds 1 or more top-level **projects**
  - Projects map to directories in file system

- {Files, Folders, Projects} termed **resources**

- Resources are displayed in a tree structure of **folders** and **files**

Each preference dialog has a Restore Defaults button. Click this button, to restores the default settings.

Perspectives

- Perspectives are collections of views and editors in the workbench

- Provides a set of functionality aimed at accomplishing a specific type of task, or working with a specific type of resource
  - e.g. RSE perspective is for managing and working with remote file system objects

- Name of the active perspective is shown in the title of the window

- Can open, customize, reset, save, and close perspectives
 - Window menu

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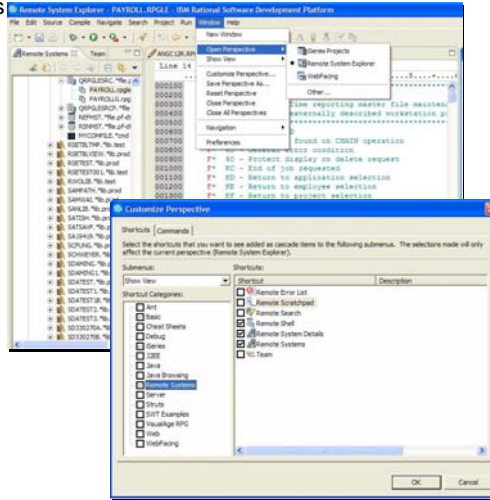
Switching perspectives

Perspectives require memory, so it's good practice to close perspectives when not being used to improve performance!

- There are two ways to open another perspective:
    1. Click the Open a perspective icon in the top right corner of the Workbench working area and select the appropriate perspective from the list
    2. Select **Window** > **Open Perspective**.
- In either case, there is also an **Other...** option

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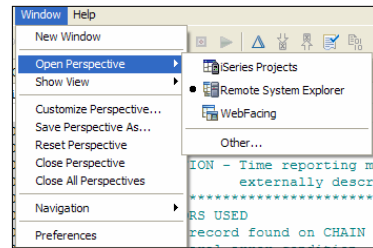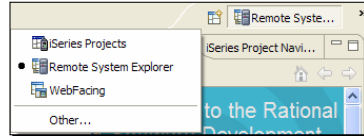
Tailor made perspectives…

- Flexibility of the IDE allows you to open, customize, reset, save, and close perspectives
  - **Window > Customize Perspective...**.

1. **Customize**
   - Add, close, move, and resize views
   - Window > Show View and select the view you would like to add to the currently open perspective

2. **Move**
   - Move a view to another pane by using drag and drop
   - Views are stacked > use the tabs at the top of the view to switch between them
   - Select a view's title bar, drag the view, and drop it on top of another view

3. **Drag**
   - While you drag the view, the mouse cursor changes into a drop cursor
   - Drop cursor indicates what will happen when you release the view you are dragging
   - In each case, the area that will be filled with the dragged view is highlighted with a rectangular outline.
     - E.g. ➔ = The view will dock to the right of the view under the cursor.

Saving customized perspectives come in handy in situations where a development is being shared between several developers.

…Tailor made perspectives

4. **Fast View**
   – Appears as a button in 3 docked locations in the IDE [left, bottom (default) and right]
   – Click the button to toggle whether or not the view is displayed on top of the other views in the perspective.

5. **Maximize/minimize a view**
   – Maximize a view to fill the whole working area of the Workbench
     ▪ Double-click the title bar of the view, press Ctrl+M, or click the Maximize icon
   – Minimize a view so that only the tab is visible
     ▪ Click the minimize button in the toolbar of a view

6. **Save**
   – Save customizations as your own perspective
   ▪ Window > Save Perspective As....

7. **Restore**
   – Restore the currently opened perspective to its original layout
     ▪ Select Window > Reset Perspective.

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- **Ctrl+O:** Opens the outline view for the currently selected type

Views

- Views provide information on an object

- Support editors and provide alternative presentations or navigations of the information in the Workbench
  - *Outline view* summarizes editor content

- Views augment other views
  - *Properties view* describes selection in outline view

- Access from Window menu
  - Window > Show view

- WDSC standard views include:
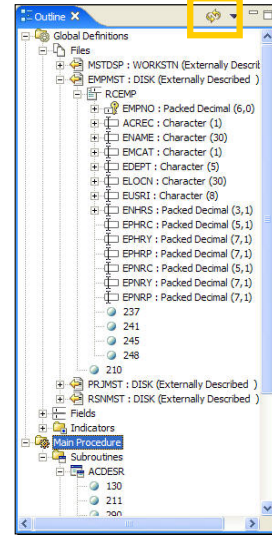 - Remote System Explorer, Outline, Properties, Error List

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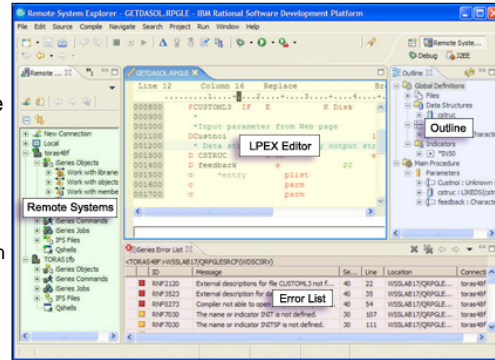
Views: *Outline*

• Periodically refresh your source while using the Outline view by clicking the refresh button at the top of the view.

- Great resource when you want to edit ILE RPG, COBOL, or DDS source
  - View is also available for Java

- Displays a structural outline of items defined in the file currently open in the editor
  - Icons are provided to indicate the type of element in the source, such as a record (DDS), Fields (ILE RPG)

- Clicking an item in the outline will position you in the editor view at the line where that structure element is defined

- Uses:
  1. Check definitions in the Outline view instead of jumping back and forth in the source between the calculations and the definitions
  2. If you notice that a definition is incorrect, click the definition in the outline view to quickly jump to the appropriate place in your source, without having to search for the definition.
 3. Quickly view the return and resolved values listed beside your procedure prototypes

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Views: *Tasks*

- Displays system-generated errors, warnings, or information associated with a resource
- Can also display manually added tasks
  - Optionally associated with a resource
- Ability to filter tasks:
  - See only problems logged by the Workbench,
  - Tasks that you have logged as reminders to yourself
  - According to which resource or group of resources they are associated with, by text string within the Description field, by problem severity etc.

• Right-click in the gray border at the left of the editor area, beside the line of text or source code
• Select "Add Task"

Task marker
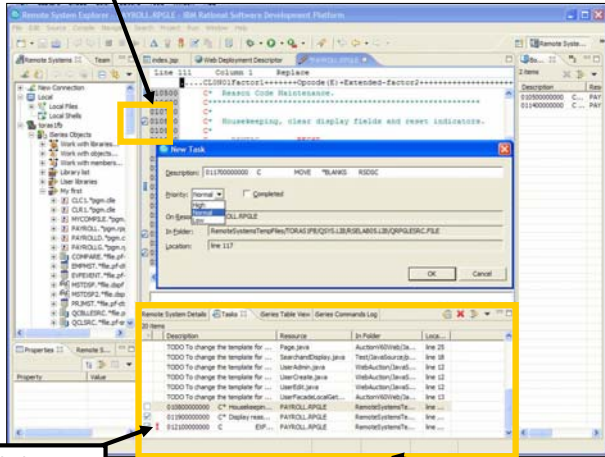
Priority indicator

Tasks view

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Views: *Bookmark*

- **Right-click in the gray sidebar to the left of your code in the editor**
- **Select "Add Bookmark"**
- **Enter the name of the bookmark and click OK.**

- Bookmarks are another simple way to navigate to resources that you frequently use
- Displays all bookmarks in the Workbench
  - created bookmark is indicated by the symbol in the marker bar
- Double-click the bookmark in the view to open the file and navigate to the line where the bookmark has been created

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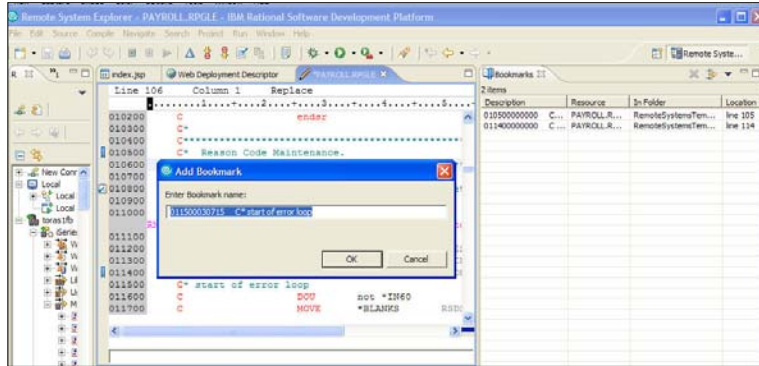
Views: *Navigator*

- Navigator view provides a hierarchical view of the resources in the Workbench

- Project type is noted by the icon

- From Navigator you can open files for editing or select resources for operations such as exporting
  - **Right-click** on any resource in the Navigator view to open a pop-up menu that allows you to perform operations
    - e.g. copying, moving, creating new resources, comparing resources with each other, or performing team operations

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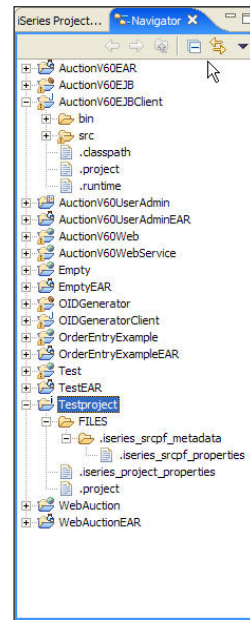
Unless otherwise specified, projects are created in the workspace directory. When projects are deleted, you have the choice of also deleting the contents or not.

Projects

- Top level of organization of your resources in the workbench
  - Contains files and folders

- Used for building, version management, sharing, and organizing resources

- May contain session and persistent properties, settings for environmental variables, and references to other projects

- You can create different kinds of projects with different structures
  - e.g. Java, Web, WebFacing, iSeries

- The type of project specifies its properties

- To create a project:
  - Select **File > New > Project...**.

iSeries projects

You can upload all local source physical files and members created or imported into an iSeries project from the Remote Actions menu.

- An iSeries project represents the starting point for any development
- Two required properties (or attributes):
  1. **An iSeries connection:** You must specify an iSeries connection that you want to associate with the iSeries project
  2. **An associated library:** The associated library is a single remote library on the iSeries server that contains the build objects for a project
- iSeries Projects perspective focuses on disconnected development
- Projects are local containers for local source
  - Edit these resources locally
 - Push these changes to an iSeries server to submit a build of your project
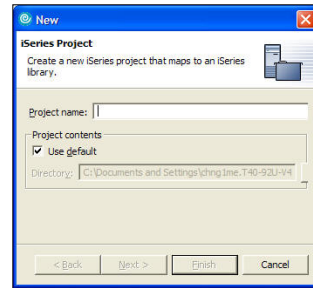
| **Session ID: 490122 26 MI** | Workbench Basics

• **Ctrl+F6: Next Editor**
• **Ctrl+F5: Refresh**
• **Ctrl+Shift+V: Verify**
• **Ctrl+Shift+C: Compile**

Editors

- Editors appear in workbench editor area

- Contribute actions to workbench menu and tool bars

- Editor is dependent on type of file being edited
    - Open with >

- Open editors are stacked and can be activated by clicking the tab

- Name of the file appears in the tab of the editor

- An asterisk (*) at the left side of the tab this indicates that the editor has unsaved changes.
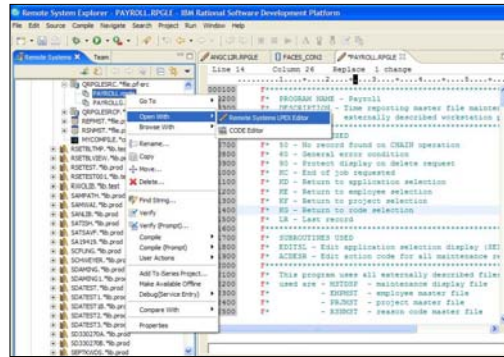
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Each preference dialog has a "Restore Defaults" button. Click this button to restores the default settings.

Preferences

- Preference and properties dialogs provide stored values for workbench components
  - workbench, editors, debug,
- You can change the default settings to suit your tasks
- Accessed from Window > Preferences
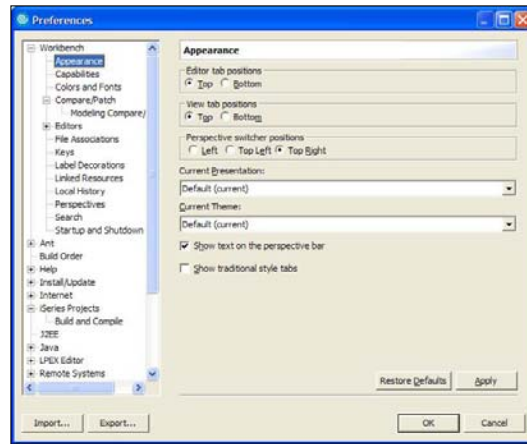
(a few of my favorite) Workbench preferences

1. **Keys**
   - You can assign key sequences & strokes to many of the IDE commands [shortcuts]

2. **Editors**
   - Customize the appearance and colors of annotations, quick differences, & structured text editors
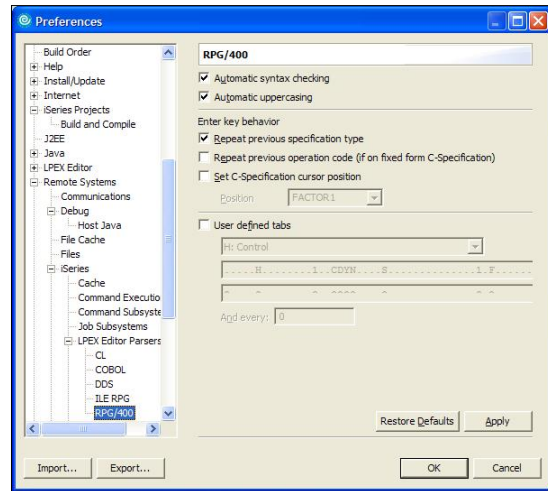
3. **File Associations**
   - Add or remove file types recognized by the Workbench
   - Associate editors with file types in the file types list

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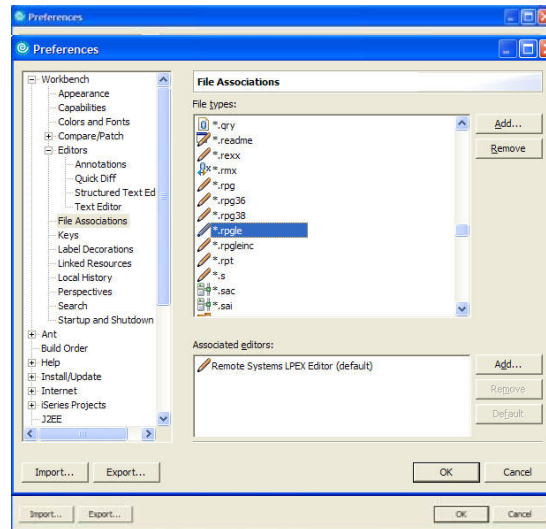
iSeries development preferences

1. iSeries Projects
   – Specify logging options for iSeries Projects Perspective for tracing and problem determination

2. Build & compile
   – Specify default build style for all new projects created

Capabilities

Capabilities not enabled will impact the context of the IDE such as help system, windows preferences, opening perspectives, and the file new menus.

- Filtered slice of functionality, views, menus, and help based on task
  - e.g. Java Developer, iSeries Developer
- The default setup does not enable a large proportion of the capabilities such as team support for CVS, & Web Services development
- Enabled in a number of ways:

1. Welcome view
2. Window > Preferences > Capabilities
3. Opening a perspective

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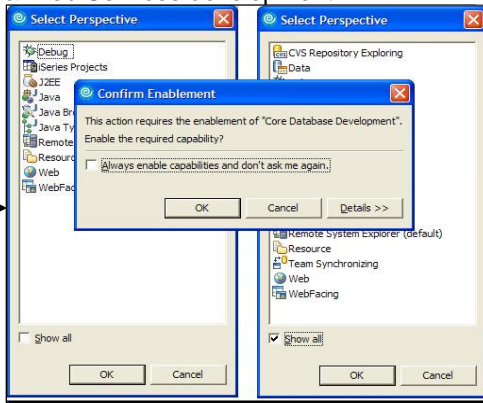
User actions

- User defined server commands that run against resources such as files and folders on your server

- Each user action has:
    1. A unique name
    2. A command (that might have substitution variables)
    3. Substitution variables that are replaced with information from the resource (such as its name) when the command is run
    4. An optional comment used to describe the action in more detail
    5. Various options to affect what happens when the command is run
        - e.g. Prompt first
    6. One or more file types that limit the action to specific types of remote resources

- Expand the connection containing the kinds of resources you want to act on, navigate to the subsystem that would contain those resources
    - Select **Work with > User actions > Work With User Actions** window

Team component

- Workbench provides tools to manage, share and synchronize resources

- Eclipse platform includes CVS repository provider

- Share the folders and files of a project
  - Each team member sends their changes to the repository, and receives changes that were made by a team member from the repository

- For iSeries, a single project is created for all the non-remote resources managed by RSE

- Profiles are stored in that project; everything belonging to a profile can be shared

- Profiles contain:
  1. Connections -- including various subsystem properties. User IDs and passwords are not shared.
  2. Filters, filter pools, and filters pool references
 3. User-defined actions
  4. Compile commands
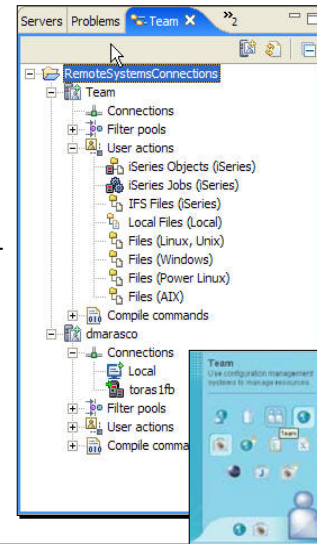
Next…

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- Workbench basics
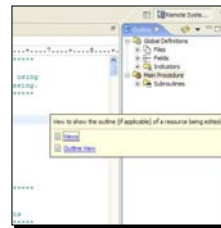
- Components

→ **Online help**

- Applying updates

Help! *The Information Center*

- Workbench provides a number of ways to provide help information
  - Both inline and online

- "Information Center" provides access to the documentation
  - Eclipse-based help system

- Able to browse, search, and print system documentation

- Organized into sets of information that are analogous to books
  - Includes a full text search engine for finding the information you need by keyword

- Able to browse and print help content

- Help mechanisms available to all plug-ins
  - All Eclipse based products including 3rd party tools can contribute

- Launch Information Center by:

  1. Selecting **Help > Help Contents**

  2. Pressing **F1** [context sensitive help]
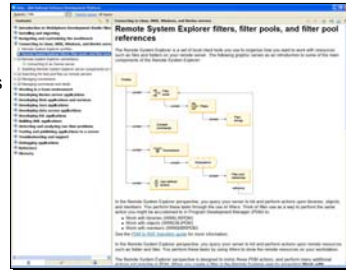
Help! *Context Sensitive Help and Infopops*

- A small window of help associated with a particular workbench component

- It displays context-sensitive help and links to related help topics for the component

- To use infopops:
  1. Bring focus to the interface widget in question [by clicking on it or using the Tab key
  2. Press F1

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Help! *Context Sensitive Help and Infopops*

- A small window of help associated with a particular workbench component

- It displays context-sensitive help and links to related help topics for the compor...

- To use...
  1. Br... using the Ta...
  2. Pr...

> Presentation to provide you all the basics you need to know about the WebSphere Development Studio Client workbench.
>
> ---
>
> 📄 WebFacing - Advanced Topics
>
> 📄 Introduction to IBM Web Tools and the iSeries

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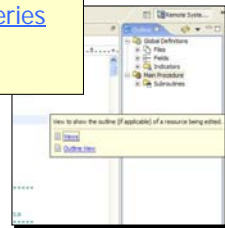
Help! *Content Assist*

- Provides a list of suggested completions for partially entered strings
- Available for ILE RPG, ILE COBOL, and C++, EGL and Java
- To use content assist:
    1. Open a file you want to edit
    2. From the **Edit** workbench menu, select **Content Assist** or press **Ctrl+Space**
        - Editor opens a list of valid code completions
   3. Double-click on a possible completion from the list

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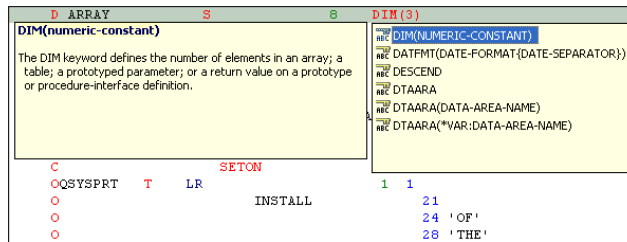
Help! *Cheatsheets*

- Special view that helps guide user through a series of complex tasks to achieve an overall goal
  - e.g. create a hello world Java application
- Implement a task scenario spanning **multiple smaller tasks** and **tools** used to create some application, object or code Includes actions and text
- Launch from **Help>Cheat Sheets**
- iSeries specific cheatsheets:
  1. Edit, compile and run your RPG or COBOL application
 2. Debugging a 5250 RPG or COBOL application

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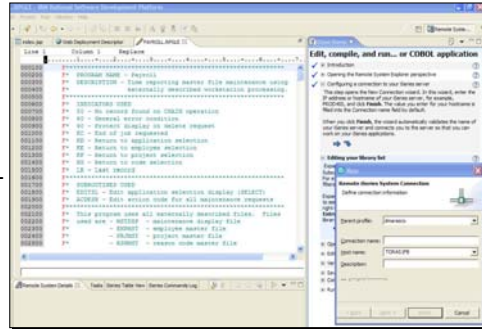
Help! *Welcome view*

- First page shown when the product is first started
- Provides information on a variety of getting started topics
- Information offered in different formats
  - Documentation
  - Tutorials
  - Samples
  - Wizards
- Maximized view within the Remote System Explorer perspective
- Double-click tab or click on arrow to minimize

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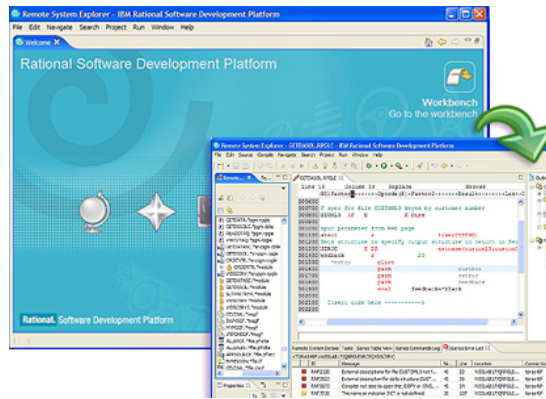
Help! *Tutorials & Samples*

- Number of tutorials & samples ship with the workbench
- Based on a variety of topics for a variety of skill levels
  - e.g. Create a connection [tutorial], WebFacing Order Entry [sample]
- Housed in "Tutorials Gallery" and "Samples Gallery"
  1. Help > Tutorials gallery, Samples gallery
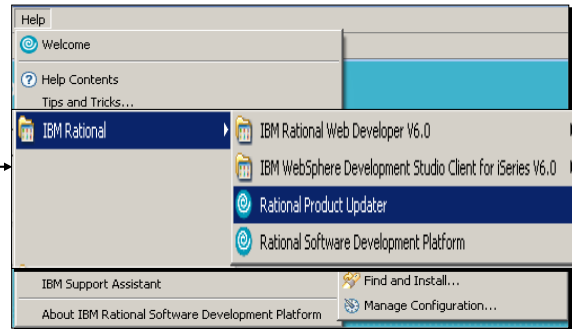 2. Welcome view > Tutorials, Samples
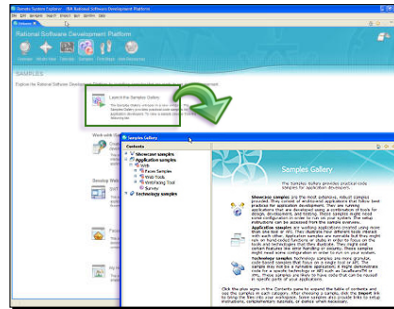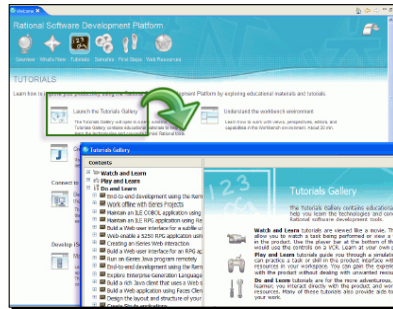
Next…

- Eclipse, workbench history, & IBM

- Workbench basics

- Components

- Online help

- **Applying updates**

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Get current: *Rational Product Updater*

- Rational Product Updater (RPU) is the new tool [V6.0] used for updating all Rational based products
- Replaces Update Manager
- The RPU can be accessed in 2 ways:

1. Help menu in WDSC IDE

2. Window's Start menu

Session ID: 490122 26 MI | Workbench Basics © 2006 IBM Corporation
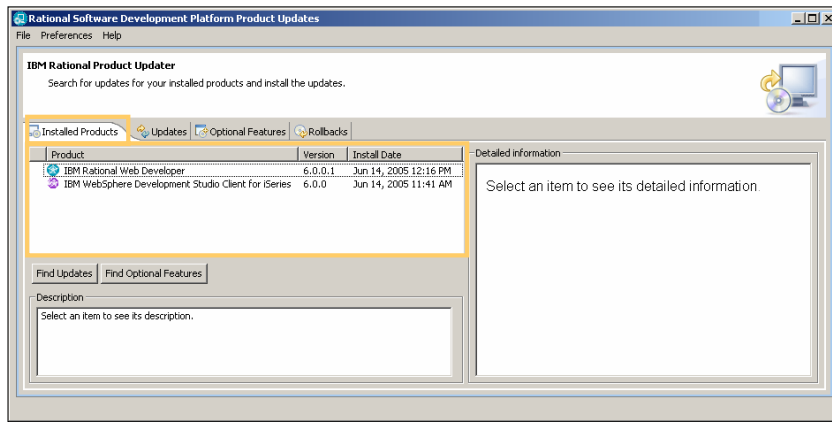
Learn more about every update and fix. Simply click an update to display its corresponding ReadMe file in the right hand panel.

RPU: *Installed Products tab*

- The RPU will display all Rational based products installed on the machine
  - Name, product version and install date for each

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RPU: *Updates tab*

- Automatically searches for any missing updates for installed products
- Displays all fixes → including fixes that depend on other fixes
- Have control over which fixes to install

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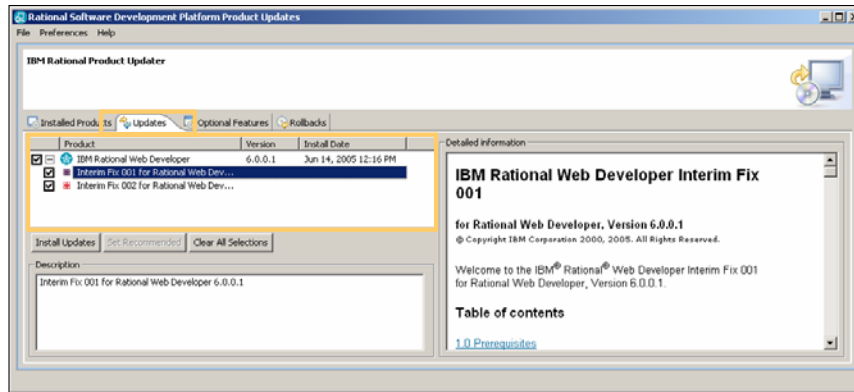
RPU: *Optional features tab*

- Displays new functionality available for an installed product

- All listed items are 'optional'
  - Can continue to work effectively without the optional features

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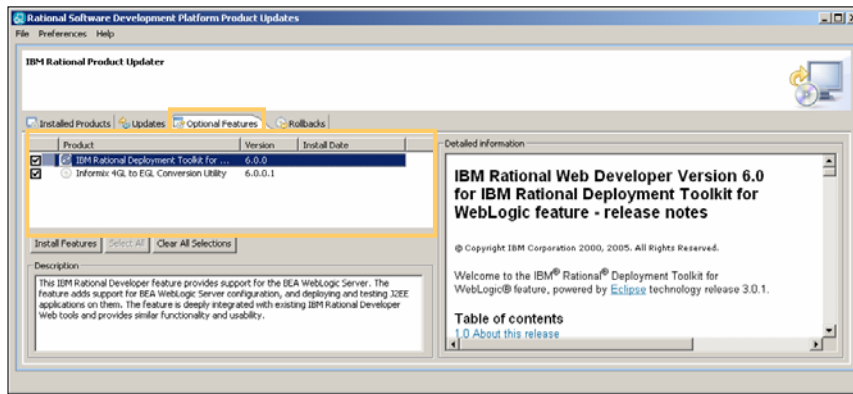
RPU: *Rollback tab*

- Allows you to remove [some] fixes already applied
- Some fixes are permanent, while others can be rolled back:
  - As defined by development team
    - e.g. some fixes are just too large and complex to allow rollback function

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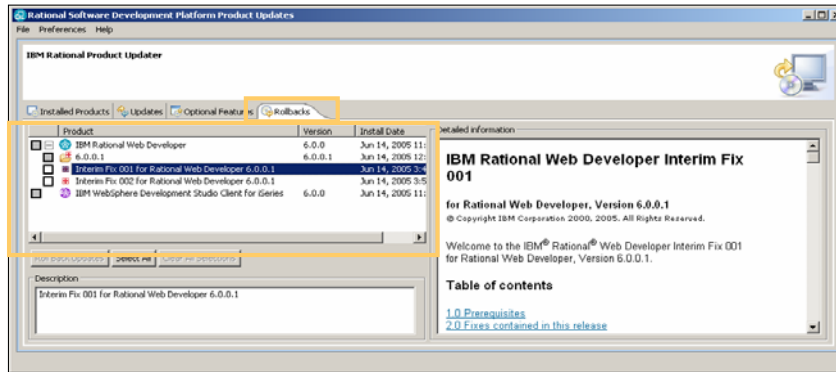
Now that you know everything,
got any questions?

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