Target Management / RSE 1.0 Release Review

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DSDP Target Management – Introduction

- **Major project milestones**

  - TM Proposed as part of DSDP – May 2005; Created – June 2, 2005

  - IBM RSE contribution passed EMO review – Feb 2006

  - EclipseCon presentation on TM (70 participants) – March 2006

  - M1 stable build – April 2006

- **Continuing to expand community**

  - Wind River ssh contribution – May 2006

  - PalmSource CDT Launcher contribution – May 2006

  - Symbian Discovery contribution – Aug 2006 (not part of 1.0)

  - Jakarta Commons/Net passed EMO review – Sep 2006

- **Current project size (20-Sep-2006)**

  - Core: 140 files / 6321 LOC, RSE: 2150 files / 230161 LOC

Target Management vs. RSE

„The Target Management project creates data models and frameworks to configure and manage remote systems, their connections, and their services".

- **org.eclipse.tm.core**: Core Components for remote access that can be re-used without other dependencies.

  - Jakarta Commons/Net 3rd party library

  - Discovery Framework and Zeroconf impl (needs EMF; not in 1.0)

  - Wind River Terminal contribution (not in 1.0)

- **org.eclipse.tm.rse**: A consistent framework and UI for accessing remote compute resources from Eclipse.

- We are releasing Remote System Explorer (RSE) 1.0, which integrates some (but currently not all) core components. **TM is the "project", RSE is the "product"**.

RSE 1.0 Features

- 1.0 Plan available at
  http://www.eclipse.org/dsdp/tm/development/plan.php

- A single consistent UI for accessing remote resources

  - Tree View (pluggable system types, subsystems, filters), Table View, Remote Monitor

  - Remote Drag&Drop, Copy&Paste, Edit&Compare, Properties, Search

  - Standard widgets and dialogs for remote open-file, enter-password, move …

- Provided standard subsystems / services

  - Remote **file system** access through ssh, ftp or dstore protocols

  - Remote **shell** (command) access through ssh or dstore protocols

  - Remote **process** access through dstore protocol on Linux

- dstore protocol implementation and agent for remote search, remote archive exploring, remote process and other pluggable miners

- CDT Remote Launch Integration using gdbserver

- Team sharing of connection and filter definitions

RSE 1.0 Features (cont.)

- Subsystem / Service Framework
  - It's very easy to contribute new UI-less service implementations for the existing File, Command, Processes subsystems
  - Fully configurable UI for new subsystems – commercially used for IBM iSeries Jobs, Wind River Debugger Kernel Objects, and others
  - Pluggable password / credential management

- Remote File System Features
  - Local caching of downloaded files, with conflict detection
  - Symbolic link and file type detection
  - Remote archive exploring and search (dstore only)
  - Experimental EFS provider

- Shell / Command View Features
  - Pattern-based output parsing (e.g. jump to error locations of remote compile commands)
  - Content assist for file pathes and environment variables

Non-code aspects

- User documentation and tutorials

    - http://dsdp.eclipse.org/help/latest/

    - Automatically updated from nightly builds

    - 1.0 stable docs will be available from the infocenter

- ISV documentation and tutorials

    - Includes Javadoc, Architectural overview and 3 tutorials

- Working Example Code

    - Adding a custom subsystem, Adding a custom service, Adding a remote popup menu action, Adding a remote Preference page

- Externalization and Accessibility guidelines followed, Localization will be done by IBM and contributed back for RSE 2.0

- Publications and Conference talks as part of DSDP

API: 1.0 Status

- All API is declared provisional but proven from IBM experience

  - We want to incorporate more community feedback until RSE 2.0

  - API will be made solid by RSE 2.0 (Europa train – June 2007)

- RSE Core Model - Subsystem / Services / Filters API

  - 3 clients in RSE, plus 2 examples

  - Additional commercial clients at Wind River and IBM

  - Full Javadoc, architectural overview, tutorials, examples

  - Automated Unit tests being added

- Dstore Miners API

  - 4 clients in RSE, additional commercial clients at IBM

  - Full Javadoc, architectural overview

  - Currently no Unit tests

API: 1.0 Status (cont.)

- UI Extensions and API
  - Widgets, menus and pages for remote, similar to Eclipse Platform
  - Several internal and commercial clients
  - Full Javadoc, tutorial and examples
  - Manual Test Plans, No Unit Tests

- Persistence Providers
  - 2 clients in RSE (PropertyFileProvieder, SerializingProvider)
  - Javadoc
  - No Unit Tests

- No Open Source previous releases

- IBM-Internal previous releases: WebSphere will move from RSE 7.x to openRSE 1.0 – Migration Docs will be written

Tool Usability

- Seamless access to remote files

  - Edit, Compare, search and move remote files as if they were local

  - Browse remote archives as virtual filesystem

  - Optimized for minimal data transfer (as opposed to EFS)

- Interact with remote tools through the shell

  - Content assist and Output parsing

- User- and Team-configurable filters and profiles

  - Adapt to personal needs and preferences

Architectural Issues

- Well-proven extensible subsystem / services concept

- Legacy code not yet fully cleaned up

  - Need to make use of more modern functionality from the Platform

    - Currently some Platform "internal" access e.g. SSH Preferences

  - Need to make better UI / Non-UI separation for headless

  - XML SystemMessages for localization

- Need more Unit Tests

  - Hard to do for UI-heavy parts

- Overlaps with other projects - Many remote access APIs

  - E.g. Remote File Service – 5 APIs: Platform EFS, ECF fileshare, TPTP Agent File Interfaces, Platform/Team target API, RSE IFileService

  - RSE uses a very simple service API, and allows to integrate any other API by deriving from the subsystem

  - Need better EFS integrations (provider & client)

End-of-life

- Not applicable to Open Source since this is the first Open Source release

- For IBM clients, the following extension points are being abandoned:

  - org.eclipse.rse.ui.passwordPersistence

    - Same functionality is available through org.eclipse.rse.ui.subsystemConfigurations extension point and IConnectorService API

  - org.eclipse.rse.ui.rseConfigDefaults

    - Same functionality is available through preferenceCustomization of the org.eclipse.core.runtime.products extension point and JVM Properties

Bugzilla

- Statistics as of 20-Sep-2006

		Resolution						
		NEW	ASSIGNED	REOPENED	RESOLVED	VERIFIED	CLOSED	Total
	critical	-	-	-	7	-	-	7
	major	-	1	-	22	2	-	25
	normal	6	38	2	69	7	10	132
	minor	5	32	1	27	2	1	68
Severity	trivial	2	5	-	1	-	1	9
	enhance ment	5	21	1	18	-	4	49
	Total	**18**	**97**	**4**	**144**	**11**	**16**	**290**
		= 92 Open Bugs			= 149 Resolved Bugs			
		+ 27 Open Enhancement Requests			+ 22 Resolved Enhancement Requests			

- For actual reports, see the Bug Process page at
  http://www.eclipse.org/dsdp/tm/development/bug_process.php

- Release Exit Criteria
  - 0 Major or Critical Bugs, Release Test Pass

Standards

- RFC 959 FTP

  - Also supports RFC 1579 firewall-friendly FTP

  - Supported through Jakarta Commons/Net

  - For details, see http://jakarta.apache.org/commons/net/

- RFC 4251 ssh2

  - Also supports RFC 4252, 4253, 4254, 4256 (KI-authentication)

  - draft-ietf-secsh-filexfer-13 for sftp

  - Supported through com.jcraft.jsch

  - For details, see http://www.jcraft.com/jsch/

UI Usability

- Externalization and Accessibility guidelines followed

  - Keyboard accessibility of all items verified

  - Menu items for special keys

  - Messages marked up properly for screen readers

- All UI-visible Strings are externalized

- Externalization partially through Eclipse NLS mechanism, partially through systemMessages.xml

- Localization will be done by IBM (for WebSphere) and contributed back to Eclipse by RSE 2.0 (Europa train, June 2007)

Schedule

- Original project plan posted 2-Feb-2006

- Revised 28-Feb-2006, 19-May-2006, 5-Jul-2006

    - All plan revisions made well in advance, and with community feedback

- Some items were moved by 1 milestone, few were deferred from 1.0 in the 5-Jul-2006 revision (user actions, import/export facility)

	Planned	Actual	Comment
1.0 M1	21-Apr-2006	27-Apr-2006	
1.0 M2	19-May-2006	19-May-2006	
1.0 M3	30-Jun-2006	30-Jun-2006	
1.0 M4	11-Aug-2006	18-Aug-2006	
1.0	22-Sep-2006	TBD 20-Oct	Added M5 on 19-May

Process

- Open, Transparent Planning and Execution:
  - Collected Use Cases available from the Web
  - Features and Technical Working Groups maintained on Bugzilla, with "Overview" index entries on the Wiki
  - Made all communications public on the Mailing List, Regular phone conferences open to the public
  - Picked up suggestions (MacOS support, more tutorials, CDT Launch)
- Committers: set up and documented guidelines for bug handling, due diligence, compiler warnings and code ownership
  - All linked from the Committer HOWTO on http://www.eclipse.org/dsdp/tm/development/
- Infrastructure: Automated nightly builds, CVS Changelog, Automated nightly infocenter update
- Planned and coordinated testing involving the greater community
  - See http://wiki.eclipse.org/index.php/RSE_1.0_Testing

Committers and Contributors

- 8 committers from 3 organizations (WindRiver, IBM, Symbian)

- Direct contributions from 1 other organization (PalmSource)

- Active participation (tests) from MontaVista, Siemens, LANL, HP

- Mailing list participation from Accelerated Technology, ARM, Cabot, Cisco, Ericsson, Intel, Freescale, QNX, TI

- Emphasis on growing the project

- Monthly development calls, Weekly committer calls

  - Opportunity to review status

  - Developer/design discussions: committers work closely together

- Face-to-face meetings held in Chicago and Toronto

Community

- RSE "out of the box" is a useful tool for lots of people

  - Ssh, sftp, ftp file transfer; remote and local shell access

  - More and more development happens in "connected" environments

- Embedded is rapidly adopting Eclipse

  - Every embedded IDE needs some form of Target Management

  - Expect proprietary extensions of the framework, which is possible thanks to good ISV documentation, tutorials and examples

- Download Activity

  - 200 downloads of RSE 1.0 M4 between 18-Aug and 8-Sep (3 wks)

- Release Test Participation

  - See http://wiki.eclipse.org/index.php/RSE_1.0_Testing

- Talks at EclipseCon, ESC West, EclipseSummit Europe 2006

- Press activity as part of DSDP

Publications and Conference Talks

- Publications and Conference Talks

  - Einblick in die Device Software Development Platform, Eclipse Magazin 1/2006 (German)

  - DSDP: Target Management, Embedded.com 04/05/2006,
    http://www.embedded.com/showArticle.jhtml?articleID=184419797

  - Multi-Core Software Debugging Challenges, Intel Magazine,
    http://www.embeddedintel.com/sum_38.html

  - Using and Extending the TM Framework, EclipseCON 2006,
    http://www.eclipsecon.org/2006/Sub.do?id=287

  - The Device Software Development Platform, ESC West 2006,
    https://www.cmpevents.com/ESCw06/a.asp?option=C&V=11&SessID=1262

  - The Remote Systems Explorer, Eclipse Summit Europe 2006,
    http://www.eclipsecon.org/summiteurope2006/index.php?page=detail/&id=26

IP Issues

As per the Eclipse IP Policy, the project verifies that:

- ... the about files and use licenses are in place as per the Guidelines

- ... all contributions (code, documentation, images, etc) have been committed by individuals who are Members of the Foundation and are abiding by the Eclipse IP Policy (training through Committer HOWTO)

- ... all significant contributions have been reviewed by the Foundation's legal staff – even if written by committers prior to joining Eclipse

- ... third-party libraries, have been documented in the release and reviewed by the Foundation's legal staff

- ... all contribution questionnaires have been completed

- ... the "provider" field of each plug-in is set to "Eclipse.org"

- ... the "copyright" field of each plug-in is set to the copyright owner

- See the IP Log at
  http://www.eclipse.org/dsdp/tm/development/tm-log.csv
  http://www.eclipse.org/projects/slides/tm_release_review_1.0_log.csv

Future Plans

- Going to join the Europa release train
  - RSE 2.0 release in June 07 will contain some API changes
- Plan items are currently in "Proposal" phase
  - See http://wiki.eclipse.org/index.php/RSE_2.0_Planning
  - A full project plan with timeline will be finished by Oct. 20
  - Will most likely do a Service Release in December
- Most likely items right now
  - Symbian: Add Autodetect / Discovery through Zeroconf
  - Wind River: Add a Terminal View with full Terminal Emulation
  - IBM: Add User-defined actions and External Tools integration
  - Improve Platform integration
  - Multicore / Connection Groups
  - Component-Based Launching

Thank You

And please provide feedback…

- Join the Testers on
  http://wiki.eclipse.org/index.php/RSE_1.0_Testing

  - https://bugs.eclipse.org/bugs/enter_bug.cgi?product=Target%20Management&component=RSE

- Talk to Developers on
  dsdp-tm-dev@eclipse.org
  news://news.eclipse.org/eclipse.dsdp.tm