



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 joined – July 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

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)
 - Wind River Terminal contribution
- **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 (PropertyFileProvider, 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

- Statistics as of 12-Sep-2006

| | | Resolution | | | | | |
|----------|-----------------|------------|----------|---------------------|----------|----------|--------|
| Severity | | NEW | ASSIGNED | REOPENED | RESOLVED | VERIFIED | CLOSED |
| | critical | - | - | - | 7 | - | - |
| | major | - | 5 | - | 17 | 2 | - |
| | normal | 13 | 38 | 3 | 69 | 7 | 1 |
| | minor | 7 | 30 | 1 | 28 | 2 | - |
| | trivial | 2 | 5 | - | 2 | - | - |
| | enhancement | 8 | 26 | - | 11 | - | 2 |
| | Total | 30 | 104 | 4 | 134 | 11 | 3 |
| | = 104 Open Bugs | | | = 135 Resolved Bugs | | | |

- 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 through automated tests
 - 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 the 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>

IP Log



- Committers with active code (all EPL v1.0)

- ddykstal
- dmcknight
- kmunir
- jmontalvo
- moberhuber
- tewillia

- Developer Contributions (all EPL v1.0)

- Michael Berger, IBM: Several Dstore related contributions
 - Bugs 142974, 141813, 144226, 145843, 146339, 146326, 140408, 147791, 140406, 148434, 147531, 149080
- Ewa Matejska, PalmSource: CDT Remote Launch contribution
 - Bugs 137839, 157426

- Third Party Software

| <u>NAME/VERSION</u> | <u>LOCATION</u> | <u>LICENSE</u> | <u>USAGE</u> |
|---|---------------------------------|--------------------|--|
| org.apache.oro-2.0.8 | org.eclipse.tm.core/thirdparty/ | APL v1.1 | Needed for commons.net (unmodified object) |
| org.apache.commons_net-1.4.1 object) | org.eclipse.tm.core/thirdparty/ | APL v2.0, MPL v1.1 | FTP client (unmodified |

- Full IP Log available at

- <http://eclipse.org/dsdp/tm/development/tm-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](https://news.eclipse.org/eclipse.dsdp.tm)