DSDP Target Management 2.0
In the Europa Coordinated Release

Eclipse Development Process version 2.3.1 – January 17, 2007
Slide deck v1 – May 30, 2007

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Spotlight Talking Points

- **TM 2.0 New Features**

    - Main focus on API review and cleanup:
      UI/Non-UI splitting, API/Non-API splitting, Jobs vs. UI Threads, Extension Point review and cleanup, removing duplicate and obsolete code, Improved flexibility for system type and action contributions, Persistence pluggable and outside workspace.

    - Fixed EFS provider, Import/Export facility, Shell Processes subsystem, Telnet subsystem, DNS-SD Discovery, FTP Listing Parser extension point.

- **API Quality:**

    - Good quality on extension points, core and new functionality. But ran out of time reviewing some legacy parts – shooting for a 3.0 release next year with Source Compatibility in most places, but won't be able to be binary compatible.

- **End-of-Life issues:**

    - Removed 4 extension points which turned out to be covered by modern Platform extension points now (popupMenus, propertyPages, actions, commands).

- **IP Clearance and Licenses:**

    - All licenses and about files are in place as per the Eclipse Development Process, the Due Diligence Process was followed for all contributions.

- **Community and Committer Diversity:**

    - 8 committers (4 WindRiver, 3 IBM, 1 Symbian), plus contributions from (MontaVista, ACCESS, Celunite), some more pending. Commercial adoption by at least 13 companies. Involvement with other Eclipse projects (Platform/Team, ECF, CDT, Orbit).

DSDP Target Management – Introduction

- **Major project milestones**

  - Project Created – June 2, 2005

  - RSE 1.0 – Nov 12, 2006

  - RSE 1.0.1 – Dec 15, 2006

- **Continuing to expand community**

  - EclipseCon tutorial – Mar 5, 2007

  - 2300 Downloads of RSE 1.0.1 – April 17, 2007

  - Increasing activity on Mailing List, Newsgroup, Bugzilla

  - Commercial adoption by at least 8 companies

- **TM 2.0 project size**

  - 290 kLOC (compared to TM/RSE 1.0: 242 kLOC)

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.

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

TM 2.0 New Features

- 2.0 Plan available at
  http://www.eclipse.org/dsdp/tm/development/tm_project_plan_2_0.html

- Main focus on API review and cleanup:
  - UI/Non-UI splitting, API/Non-API splitting
  - More background jobs for remote access
  - Improved flexibility for system type and action contributions
  - Persistence pluggable and outside workspace.
  - FTP Listing Parser extension point
  - Improved File Service (Streams, setReadOnly, setLastModified)

- New Features
  - Eclipse Filesystem (EFS) provider with credentials management
  - Import/Export facility
  - Shell Processes subsystem (contributed)
  - Telnet subsystem (contributed)
  - DNS-SD Discovery
  - Terminal Connector Framework (provisional), Optional Extra Input Line

Non-code aspects

- User documentation and tutorials
  - http://dsdp.eclipse.org/help/latest/
  - Automatically updated from nightly builds

- ISV documentation and tutorials
  - Includes Javadoc, Architectural overview and 3 tutorials
  - EclipseCon Tutorial with code, Webinar, Wiki-based FAQ
  - Elaborate New&Noteworthy / Build Notes with each Milestone

- 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

- Publications and Conference talks as part of DSDP

API: 2.0 Status

- During the 2.0 cycle, API (828 classes) was split from "internal" non-API (986 classes)

- All API is still declared provisional but proven from experience so far
  - We need to do more reviews and cleanups, incorporate community feedback, add Unit Tests until TM 3.0
  - Will strive for Source Compatibility by 3.0, but deprecate some obsolete concepts: further optimize and reduce the published API

- 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
  - Some 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: 2.0 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
  - 3 clients in RSE (PropertyFileProvieder, MetadataPropertyFileProvider, SerializingProvider)
  - Javadoc
  - No Unit Tests

- Previous RSE 1.0 release is not compatible
  - Migration docs exist on each [api] Bugzilla item, and in the build notes: will be consolidated into a single Migration doc for the final release

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)

  - Popular with remote Web page and PHP editing

- Shell and Processes subsystems out of the box, generic framework for vendor-specific subsystems (e.g. Symbian VNC-like phone browser)

- Lightweight embeddable Terminal widget

- DNS-SD Service Discovery usable standalone or integrated

- CDT Remote Launch Integration

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
        - Platform "internal" access reduced for 2.0 but not yet fully removed
        - Need to make more UI / Non-UI separation for headless and RCP usage
    - 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
    - Talking with all those projects; going to absorb Platform/Team WebDAV and synchronization support

End-of-life

- The following RSE 1.0 extension points are being abandoned:

  - **org.eclipse.rse.ui.remoteSystemsViewPreferencesActions**

    - Available through command / parameterized Handler

  - **org.eclipse.rse.ui.dynamicPopupMenuExtensions**

    - Available through Eclipse 3.3 commands and actions improvements

  - **org.eclipse.rse.ui.propertyPages**

    - Available through org.eclipse.ui.propertyPages

  - **org.eclipse.rse.ui.popupMenus**

    - Available through org.eclipse.ui.popupMenus

- Removed the RSE Communications Daemon

  - Never quite worked in Open Source

Bugzilla

- Statistics as of 30-May-2007

TM 2.0 Bugs by TargetMilestone												
	M4	M5	M6	M7	RC1	RC2	RC3	RC4	2.0	**2.0 Total**	---	2.0.1	Future
blocker	.	.	1	2	.	1	.	.	.	**4**	.	.	.
critical	.	4	4	2	.	4	.	.	.	**14**	.	.	.
major	.	13	8	9	3	8	.	.	.	**41**	2	.	.
normal	7	47	48	67	35	71	18	.	5	**298**	22	43	44
minor	.	11	10	12	10	19	12	.	2	**76**	11	24	26
trivial	.	1	2	.	1	1	1	.	.	**6**	2	10	6
enhancement	.	21	30	37	15	17	6	1	6	**133**	23	4	84
Total	7	97	103	129	64	121	37	1	13	**572**	60	81	160

- 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)

Schedule

- Original project plan posted 19-Jan-2007

- Revised 5-Apr-2007, 21-May-2007

    - Of 13 plan items, 11 were completed

    - Had to defer "User Actions" due to a misunderstanding in planning

    - "Integrate Terminal into RSE" deferred due to lack of resources

- All milestone dates were hit; M6 resubmitted as M6a for EFS

- Focus on API and hi-priority issues: Many low-priority bugs deferred to TM 2.0.1 or Future

Process

- **Strong focus on Open, Transparent Planning and Execution:**
    - Collected Use Cases available from the Web
    - Open Planning process, 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/TM_2.0_Testing

Committers and Contributors

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

- Direct contributions from 3 other organizations (ACCESS aka PalmSource, MontaVista, Celunite)

- More contributions in the queue from Broadcom and Zylin

- Active participation (tests) from Cabot, HP, LANL, Siemens, Tradescape

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

- Monthly development calls, Weekly committer calls

  - Opportunity to review status

  - Developer/design discussions: committers work closely together

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

  - Commercial Adoption according to a Survey by ACCESS, Ames DOE Lab, Atmel, Elastos, EMAC Inc, IBM, Festo Inc, Freescale, Montavista, QNX, Symbian, Tradescape, WindRiver

Download Activity

  - 2300 downloads of TM 1.0.1 mid April

  - > 500 downloads of each 2.0 milestone

  - Release Test Participation

  - See http://wiki.eclipse.org/index.php/TM_2.0_Testing

- Talks at EclipseCon, EclipseSummit Europe 2006; Webinar

- Press activity as part of DSDP

Publications and Conference Talks

- **Publications and Conference Talks**

  - TM Webinar, April 2007,
    http://live.eclipse.org/node/229

  - DSDP Drives Adoption of Eclipse in Embedded, April 2007,
    http://www.eclipse.org/org/press-release/20070403embedded.php

  - EclipseCon Tutorial, March 2007,
    http://www.eclipsecon.org/2007/index.php?page=sub/&id=3651

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
- …there are no 3rd party logos or fonts to be licensed under the EPL
- See the IP Log at
  http://www.eclipse.org/dsdp/tm/development/tm-log.csv
  http://www.eclipse.org/projects/slides/tm_release_review_2.0_log.csv

Future Plans

- Service Releases with the Europa train
    - TM 2.0.1 and 2.0.2
- Going to join the Ganymede release train
    - TM 3.0 release in June 08 will contain some API changes
- A preliminary collection of potential plan items has been collected on the Wiki at http://wiki.eclipse.org/index.php/TM_Future_Planning
    - The Community has been invited to join the planning process
    - Most likely items
        - Scaling Down – Further componentization, becoming more RCP-aware and applicable for headless
        - Be a Better Framework – Further improvements
        - Integrate – Further collaboration with other Eclipse projects
        - Launch Action Framework in TM Core

Thank You

And please provide feedback…

- Join the Testers on
  http://wiki.eclipse.org/index.php/TM_2.0_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