DSDP Target Management 3.2 In the Helios Coordinated Release

Slide deck v1 – May 28, 2010

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Spotlight Talking Points

- TM 3.2 New Features
  - RSE 3.2 is mostly a maintenance release (stability, performance, usability)
  - Terminal now also for Local connections on Linux, Solaris, Mac (incubating)
  - TCF new features: Streams service, Zero Copy binary transfer, Debug Server as Value-add, new targets (Symbian, Mac, x86_64), dynamic agent plugin system, more asynchronous implementation (ACPM), . EDC as part of CDT.
- API Quality:
  - Few well-reviewed API additions backed by API Tooling.
  - Fully binary compatible with TM 3.1
- End-of-Life issues:
  - TM Discovery component no longer actively developed
- 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:
  - 10 committers (5 WindRiver, 4 IBM, 1 Mentor Graphics) constant – was 10 in 3.1
  - 15 additional contributors: WindRiver, IBM, Freescale, Nokia, Anyware-Tech, Shanghai Kortide, Red Hat, Individual – was 18 in 3.1
  - Traffic on newsgroup and mailing lists relatively low

DSDP Target Management – Introduction

- Major project milestones
  - Project Created – June 2, 2005
  - RSE 1.0 – Nov 12, 2006
  - Yearly Train Release since TM 2.0 (Europa)
- Strong uptake on TCF (still incubating though)
  - Nokia / Symbian base EDC debugger on TCF
  - Interest in tracing and performance, ports to new targets
- Remote System Explorer (RSE) remains stable
  - 10 individual contributors to RSE, mostly from IBM - constant
  - Large contribution (local terminal), but WinCE contributor lost
- TM 3.2 project size
  - Slightly increasing, especially TCF (R3.0: RSE 356k + TCF 162k)

Target Management vs. RSE

„Data models and frameworks to configure and manage remote systems, their connections, and their services“.

- **org.eclipse.tm.core**: Core Components (few dependencies)
  - Terminal Widget and View
  - RAPI wrappers, Jakarta Commons/Net 3rd party library
- **Target Communication Framework (TCF, Incubating):** Extensible protocol framework for development-time tooling
- **org.eclipse.tm.rse**: A consistent framework and UI for accessing remote compute resources from Eclipse.
- Remote System Explorer (RSE) integrates core components. **TM is the “project”, RSE is the “product”**.

TM 3.2 New Features

- 3.2 Plan available at
  http://www.eclipse.org/projects/project-plan.php?projectid=dsdp.tm
- New Features
  - TCF: Streams service, Zero Copy binary transfer, Debug Server as Value-add, new targets (Symbian, Mac, x86_64), dynamic agent plugin system. Eclipse Debugger (EDC) as part of CDT.
  - Terminal: Local Terminal on Linux, Mac, Solaris
  - RSE: Made FTP faster and robust, Dstore processes on Solaris, XML filetype, EFS performance improved
  - Many Unittests added, Athena CBI build on Hudson
- Plan items that were deferred
  - Bring TCF to maturity, add Terminal public API
- Exact descriptions of changes and migration docs available from each milestone's build notes

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 Tutorials 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 by IBM as well as the Babel project
- Publications and Conference talks (EclipseCon)

API: 3.2 Status

- During the 3.2 cycle, Eclipse API Tooling was (again) used to ensure
  - Proper split of API and non-API without API Leakage
  - Proper version numbering, documentation and @since tags
  - Proper documentation of intended API usage
  - Without examples & tests: 1093 API types / 1568 non-API (3.0: 935 API / 1476 non-API)
  - **3.2 showed that current APIs are maintainable. No new weaknesses added.**
- RSE Core Model - Subsystem / Services / Filters API
  - 5 clients in RSE, plus 2 examples
  - New ITerminalService created from scratch
  - Full Javadoc, architectural overview, tutorials, examples
  - Some automated Unit tests
- Dstore Miners API
  - 4 clients in RSE, additional commercial clients at IBM
  - Full Javadoc, architectural overview
  - Currently no Unit tests

API: 3.1 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 TM / RSE 3.1 release is binary compatible

Architectural Issues

- Well-proven extensible subsystem / services concept
  - New subsystem ideas implemented by Community
- Legacy code (especially RSE) still not fully cleaned up
  - Need to get rid of Platform non-API use in preparation of e4
  - Better UI / Non-UI separation and componentization
  - TCF's new technology is much cleaner
- Need even 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
  - Disconnected "Remote Development (RDT)" effort at IBM / PTP

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 (no longer maintained)

End-of-life

- Service Discovery no longer actively maintained.

Bugzilla

- Statistics as of 28-May-2010

TM 3.2 Bugs fixed by Target Milestone											TM 3.2 bugs still open						
	3.1.1	3.1.2	M3	M6	M7	RC1	RC2	RC3	3.2	**3.2 Fixed**	3.2	3.2.1	3.2.2	3.3	—	Future	**Total**
blocker	1	.	.	1	.	.	.	.	2	**4**	.	.	.	.	1	.	**1**
critical	2	.	.	2	.	.	.	.	.	**4**	1	.	.	.	.	1	**2**
major	2	1	1	4	2	.	.	1	2	**13**	.	6	.	1	9	2	**18**
normal	45	5	1	27	12	4	1	16	21	**132**	4	56	6	26	160	97	**349**
minor	4	.	.	.	1	.	.	1	.	**6**	1	13	1	4	29	59	**107**
trivial	2	.	.	.	.	1	.	.	.	**3**	.	1	1	.	5	14	**21**
enhancement	5	.	.	5	2	.	3	.	6	**21**	1	2	.	16	112	134	**265**
Total	61	6	2	39	17	5	4	18	31	**183**	7	78	8	47	316	307	**763**

- Currently 183 fixed in 3.2 / 763 open (3.1: 224 fixed / 690 open)
  - Fix rate decreased, backlog slightly increased
  - But good handle on hi-severity issues (21 fixed / 21 open)
- http://www.eclipse.org/dsdp/tm/development/bug_process.php
- Release Exit Criteria: 0 Critical / Blocker, 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 (tested with Babel)
- Externalization mostly through Eclipse NLS mechanism, partially through systemMessages.xml
- Localization IBM (for WebSphere), and Eclipse Babel project

Schedule

- Original Planning document on the Wiki
- Original XML project plan posted Aug-2009
  - Helped on XML plan format specification
- Milestone dates were hit

Process

- Strong focus on Open, Transparent Planning and Execution:
  - 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
- 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

Committers and Contributors

- 10 committers from 3 organizations (WindRiver, IBM, Mentor Graphics)
  - Was same 10 committers in 3.1, no change
- Direct contributions from 15 other individuals (was 18 in 3.1)
- Mailing list and Newsgroup participation stagnating
- Monthly development calls, Bi-weekly committer calls
  - De-facto all calls are 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 TCF
- Talks at EclipseCon’s since 2007; EclipseSummit Europe since 2006
- A well-respected and known member of the Community

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
  - Eclipse Summit Europe, October 2007, http://www.eclipsecon.org/summiteurope2007/index.php?page=detail/&id=21
  - EclipseCon Tutorial, March 2008, http://www.eclipsecon.org/2008/?page=sub/&id=38
  - Eclipse Magazin (German), May 2008, 6-page project article

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 - DSDP"
- ... 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 automated IP Log at http://www.eclipse.org/projects/ip_log.php?projectid=dsdp.tm

Future Plans

- Service Releases with the Helios train
  - TM 3.2.1 and 3.2.2
- Shooting for backward compatibility again next year
  - TM 3.3 release in June 2011 to be backward compatible
- Moving forward on deferred items from the 3.2 plan
  - Bug backlog reduction
  - Performance, Scalability, Usability
  - TCF – Component to exit incubation

Thank You

And please provide feedback…

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news://news.eclipse.org/eclipse.dsdp.tm