

Using ECF for Lightweight Distributed Team Collaboration

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<http://www.eclipse.org/ecf>

Teams they are a changin'

- Membership
 - ♦ Distributed
 - ♦ Multiple Groups
 - ♦ Diverse Skills, Backgrounds, Cultures
- Project Organization
 - ♦ Flat
 - ♦ Self-driven/Voluntary
 - ♦ Project Leadership Has Less Control Over Team
- Community Expectations
 - ♦ Open Planning Required
 - ♦ Responsiveness to Community Contributions
 - Bug reports, patches, documentation, etc.

Communication/Collaboration Requirements

- Interoperability
 - ♦ People use Different Communication Tools
 - ♦ Multiple Teams -> Multiple Protocols
- Integrate
 - ♦ Max 5 UIs
 - ♦ Tools – Workbench, Mylyn, Editors, Debuggers, Reporting, RCP apps, other tooling, etc.
- Extensible
 - ♦ Team-specific Tools
 - ♦ Support for specific processes/approaches/conventions

ECF Goal

**Lower Communication Barriers
to
Increase Team Productivity
Increase Team Trust
Increase Community Participation
by providing**

Interoperable, Integrated, Extensible Framework

Team Productivity: Diversity Trumps Ability

The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools, and Societies

- Conditions
 - ♦ High-performing individuals
 - ♦ Difficult problems
- Good Diversity
 - ♦ Cognitive Diversity: Think Different
 - ♦ Leads to more varied 'team toolboxes'
 - ♦ Avoid 'Local Maxima'
- Bad Diversity
 - ♦ Fundamental preferences
 - ♦ e.g. 'What are the project's goals'?

How to Exploit Diversity

- Make it Easy for 'Outsiders' to Communicate/Contribute
 - ♦ Client Interoperability
- Communicate Publicly with Community
 - ♦ IRC, IM/Conference Calls, ECF Collaboration Groups, etc.
 - ♦ Solicit Contributions
 - Bugzilla/BugDay/IRC, etc.
- Expose Unfinished Work/Problems
 - ♦ Milestones, Dev Mailing List, Wiki, Bugzilla ALL GOOD
 - ♦ Also IM/Chat
 - ♦ Opportunities for External Contributions

Increasing Integration

- Real-Time Communication Integrates Well With
 - ♦ Workbench (sharing resources)
 - ♦ Bug Tracking (Mylyn sharing tasks)
 - ♦ Conferencing
 - Shared Editing

Demos

- IM/Chat
 - ♦ Multi-Protocol, public services, sharing info as well as direct communication
- Real-Time Collaboration
 - ♦ Integrate communication into tooling
 - ♦ Provide common UI
- Shared Editing
 - ♦ Use Case: Code Review and others

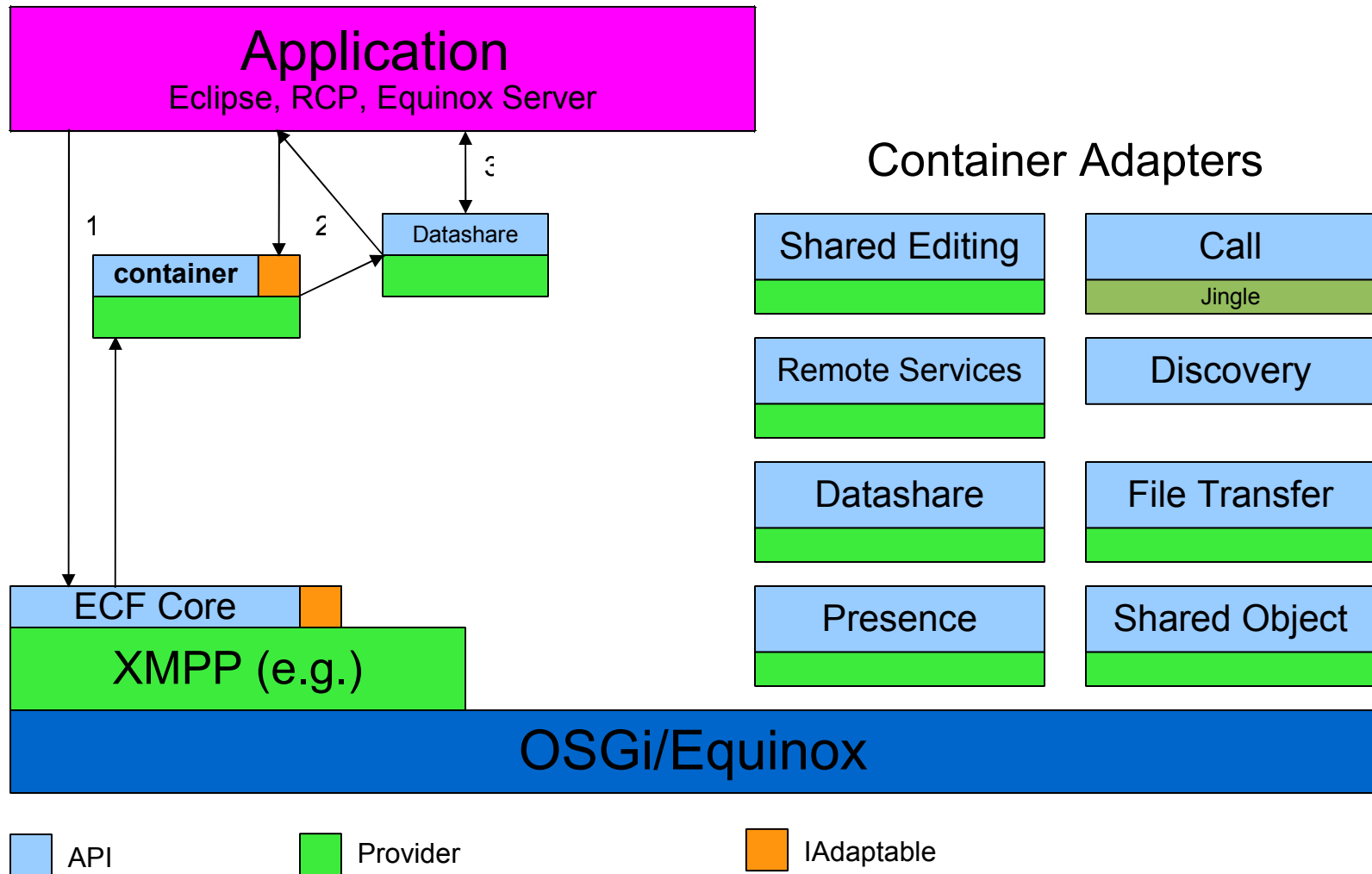
Can Absence Make a Team Grow Stronger?

- Answer: yes
 - ♦ Rule 1: Exploit Diversity
 - ♦ Rule 2: Use Technology to Simulate Reality
 - Virtual Spaces for Team and Community
 - ♦ Rule 3: Hold Team Together: Build Trust
- See Bjorn's Blog Entries

Extensibility

- APIs through Adapters
 - ♦ Core: 2 bundles ~120k
 - ♦ API plugins/bundles – aka Container Adapters
- Providers Implement: core + 0 or more Adapters
- Extensibility: Exploits Diversity In Community
 - ♦ Shallow or Deep Additions
 - ♦ Sense of Ownership

ECF Provider Architecture



In Code

- `container =
ContainerFactory.getDefault().createContainer();`
- `ds = (IChannelContainerAdapter)
container.getAdapter(IChannelContainerAdapter.class);`
- `IChannel channel = ds.createChannel(...)`

Dynamic Service Discovery

- org.eclipse.ecf.discovery
 - ♦ IDiscoveryContainerAdapter
 - Adapter from IContainer
 - ♦ Service Discovery API
 - Properties for existing service types: iTunes, http, etc.
 - Register new types: updatesite, remotesvcs, etc.
 - ♦ Two Providers So Far
 - Bonjour
 - SLP (RFC 2608)

Demo

- Dynamic Service Discovery
 - ♦ Update site service
 - ♦ Other (non-Eclipse services)

Asynchronous File Transfer

- org.eclipse.ecf.filetransfer
 - ♦ IRetrieveFileTransferContainerAdapter
 - Adapter from IContainer
 - ♦ API
 - sendRetrieveRequest
 - Asynchronous notifications to provided listener
 - ✦ Start,Data,Done
 - ♦ Several Providers
 - URLConnection (JRE), Apache httpclient 3.0.1, SCP/SSH/JCraft, Eclipse File System
 - Uses Jobs API
 - ♦ Also have send and browse API
- Being used for p2

Demo

- File transfer
 - ♦ Multi-protocol
 - ♦ Embeddable into other plugins (e.g. P2)

Remote Services

- org.eclipse.ecf.remoteservice
 - ♦ IRemoteServiceContainerAdapter
 - Adapter from IContainer
 - ♦ API
 - Looks very much like **OSGi Services**
 - **Clients have choice**
 - ✦ **Proxy (transparent)**
 - ✦ **IRemoteService (explicit)**
 - ★ Asynchronous (Listener) Invocation
 - ★ Futures
 - ♦ Providers
 - R-OSGi, JMS ActiveMQ/BEA, ECF generic, JavaGroups, Riena
 - Others (?)

Demo

- Remote Services
 - ♦ Transparent and not-transparent for different use cases
 - ♦ Multi-protocol
 - ♦ Easy to add own service types/discover, access

Summary

- ECF for Open Project Communications
 - ♦ Build Diversity, Trust, and Community
 - ♦ Technology
 - Interoperability
 - Integration
 - Extensibility
 - ♦ Project: <http://www.eclipse.org/ecf>
 - ♦ Wiki:
http://wiki.eclipse.org/Eclipse_Communication_Framework_Project
 - ♦ IRC: <irc://irc.freenode.net/eclipse-ecf>
- <http://www.bobdylan.com/songs/times.html>