

Using ECF for Lightweight Distributed Team Collaboration

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

A few harmless flakes working together can
release an avalanche of destruction



<http://www.despair.com>

Teams they are a changin'

- Membership
 - ◆ Distributed
 - ◆ Cross-organizational/Multi-organizational
 - ◆ More Diverse Skills, Backgrounds, Cultures
- Project Organization
 - ◆ Flat(ter)
 - ◆ Voluntary
 - ◆ Members Have More Control
- Community Expectations
 - ◆ Open Planning
 - ◆ Responsiveness
 - Bug reports
 - Contributions
 - Newsgroups, Mailing Lists, IRC, etc.

Technology for Today's Teams

- Interoperability
 - ◆ Multiple protocols, multiple clients, multiple services
- Integration
 - ◆ Reduce complexity
- Extensibility
 - ◆ Customizable
 - Processes and conventions
 - ◆ Team-specific Tools
 - ◆ Dynamic discovery of services between peers

ECF Goal

**Lower Barriers to Team and Community
Communication**

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
- Bad Diversity (?)



Exploit Diversity via Communication

- Make it Easy for 'Outsiders' to Communicate/Contribute
 - ◆ Client Interoperability
- Communicate Publicly and Frequently
 - ◆ Dev Mailing List, Wiki, Bugzilla, IRC, IM/Conference Calls, ECF Collaboration Groups, etc.
- Expose Unfinished Work/Problems
 - ◆ Milestones, Dev Mailing List, Wiki, Bugzilla ALL GOOD
 - ◆ Solicit Contributions
 - Bugzilla/BugDay/IRC, etc.

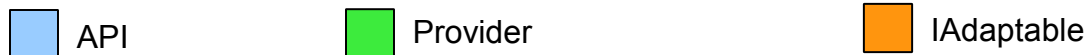
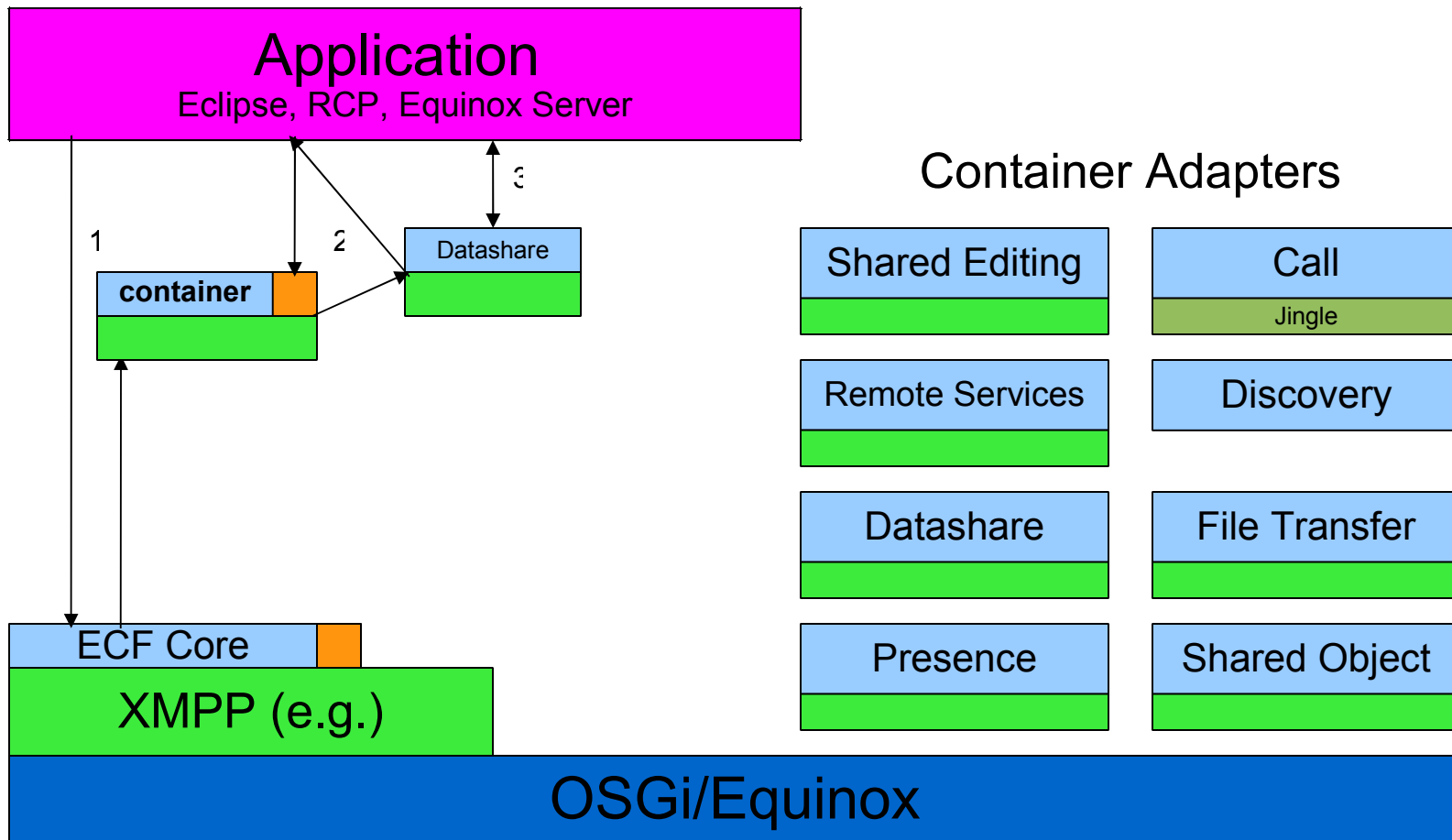
Can Absence Make a Team Grow Stronger?

Ann Majchrzak, et. al.

- Rule 1: Exploit Diversity
- Rule 2: Use Technology to Simulate Reality
 - ◆ Virtual Spaces for Team and Community
- Rule 3: Build Trust
 - ◆ Member-to-Member
 - ◆ Member<->Community

Demos

ECF Provider Architecture



Code

```
IContainer container =  
    ContainerFactory.getDefault().createContainer();
```

```
IChannelContainerAdapter adapter = (IChannelContainerAdapter)  
    container.getAdapter(IChannelContainerAdapter.class);
```

```
IChannel channel = adapter.createChannel(...)
```

Asynchronous File Transfer

- org.eclipse.ecf.filetransfer
 - ◆ API
 - Asynchronous notifications to listener
 - ✦ Start,Data,Done
 - ◆ Providers
 - URLConnection (JRE)
 - Apache httpclient 3.0.1,
 - SCP/SSH
 - Bittorrent
 - EFS
 - ◆ Receive, Send, Browse
- Used for p2 (new install/update)

Discovery API

- `o.e.ecf.discovery.IDiscoveryContainerAdapter`
 - ◆ query for known/available services
 - synchronous: `getServices()`
 - asynchronous: add/remove a service listener and get notified about service discovery/undiscovery
 - ◆ register/unregister a service
 - ◆ Unified API that abstract from discovery protocols
 - Not limited to the LAN!
- `o.e.ecf.discovery.IServiceInfo & IServiceType`
 - ◆ The actual service representation

Discovery Providers

- Network based discovery
 - ◆ SLP (based on jSLP with BSD-ish license)
 - ◆ ZeroConf/Bonjour (JMDNS with LGPL)
 - ◆ LocalDiscovery (client driven discovery)
 - ◆ ManualDiscovery (user driven discovery)
 - ◆ Framework helper (pluggability of providers)
 - CompositeProvider
 - SingletonProvider
- Filesystem based discovery
 - ◆ „auto-configuration plugin“ (GSoC '07)
 - Use case: Find e.g. a JDK on the local harddrive
 - Uses heuristics to be efficient

In the future

- Advanced (not just a context menu EP) ServiceView with extensible EMF model (DEMO)
 - ◆ Persistent storage of services
- SLP rfc & jSLP 2.0
 - ◆ Efficiency & features
 - ◆ Directory Agent „DA“ support mostly
- Providers for new protocols
 - ◆ Query a remote OSGi runtime for services
 - ◆ Your (GSoC) ideas :-)

Remote Services

- org.eclipse.ecf.remoteservice
 - ◆ API
 - **Clients have choice**
 - ✦ **Proxy**
 - ✦ **IRemoteService**
 - ★ Asynchronous (Listener) Invocation
 - ★ Futures
 - ◆ Providers
 - R-OSGi
 - JMS - ActiveMQ/BEA
 - ECF generic
 - JavaGroups
 - Riena
 - Others (?)

ECF Team Communications

Team Communications

- ◆ Build Diversity, Trust, and Community
- ◆ Technology Aids
 - 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>

Long Way to Go!