Remote Services

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Why

• PTP does lots of things remotely
  – Launching and debugging
  – Monitoring
  – Remote synchronized projects
  – RDT projects

• Need easy way to run commands and manipulate files remotely

• Looked at other remote frameworks
  – RSE is UI centric and does not provide simple API
  – Jsch is too low level
  – TCF requires agent on remote end
  – Needed to support ssh to work with secure HPC systems
Remote Support

• Used to provide remote services throughout PTP
• Light weight, connection oriented
• Abstraction of remote concepts
  – IRemoteConnection
  – IRemoteResource
  – IRemoteProcess
  – IFFileStore
• Allows different service providers to be used
  – Important to allow other remote functionality to be used seamlessly with PTP
• Adoption
  – Was not being used by other projects because of “fear of dependencies”
  – Was hindering remote enablement of Linux Tools which would benefit PTP
Remote Services Architecture

- PTP
- Linux Tools
- CDT

Remote API

- Adapter
- RSE
- Remote Tools
- Local
- Adapter
- JSch
Plugins

• Remote API
  – org.eclipse.remote.core
  – org.eclipse.remote.ui
  – No PTP dependencies

• Adapters
  – org.eclipse.ptp.remote.*
  – org.eclipse.remote.jsch.*

• Remote Implementations
  – com.jcraft.jsch
  – org.eclipse.rse.*
  – org.eclipse.ptp.remotetools.*
API Features

- IRemote* interfaces
- IRemoteConnectionWorkingCopy
  - All set* methods
  - save() method
- IRemoteServices#getCapabilities() provides user with information on what is supported by implementation
  - Connection creation/editing
  - Port forwarding
  - X11 forwarding
- remoteResources extension point maps project nature to remote resource
  - IRemoteResource res = (IRemoteResource)getAdapter(project);
- processFactory extension point allows alternate implementation of java.lang.Runtime#exec()
  - E.g. org.eclipse.cdt.utils.spawner.ProcessFactory
Preference Page

![Image of a preference page showing connections and an edit dialog box]

- Remote Services: Built-in SSH
- Connections table with columns for Status, Connection Name, Host, and User
- Edit Connection dialog box for a specific connection (trestles) with fields for Host, User, Password, and Passphrase

Resource Browser
UI Features

- IRemoteUI* interfaces to replicate many of the non-UI versions
- Widgets for embedding UI features in SWT layouts
JSch Provider

- Preferred provider
- Requires one sftp channel and one exec channel
- If MaxSessions < 2, will create two separate ssh sessions
  - Only happens once when the connection is opened
Availability

• Git:
  – git://git.eclipse.org/gitroot/ptp/org.eclipse.remote.git

• Update site

• Docs
  – https://wiki.eclipse.org/PTP/designs/remote/API