

qiWorkbench™ – an extensible open-source platform for seismic interpretation

Gil Hansen

Michael Glinsky

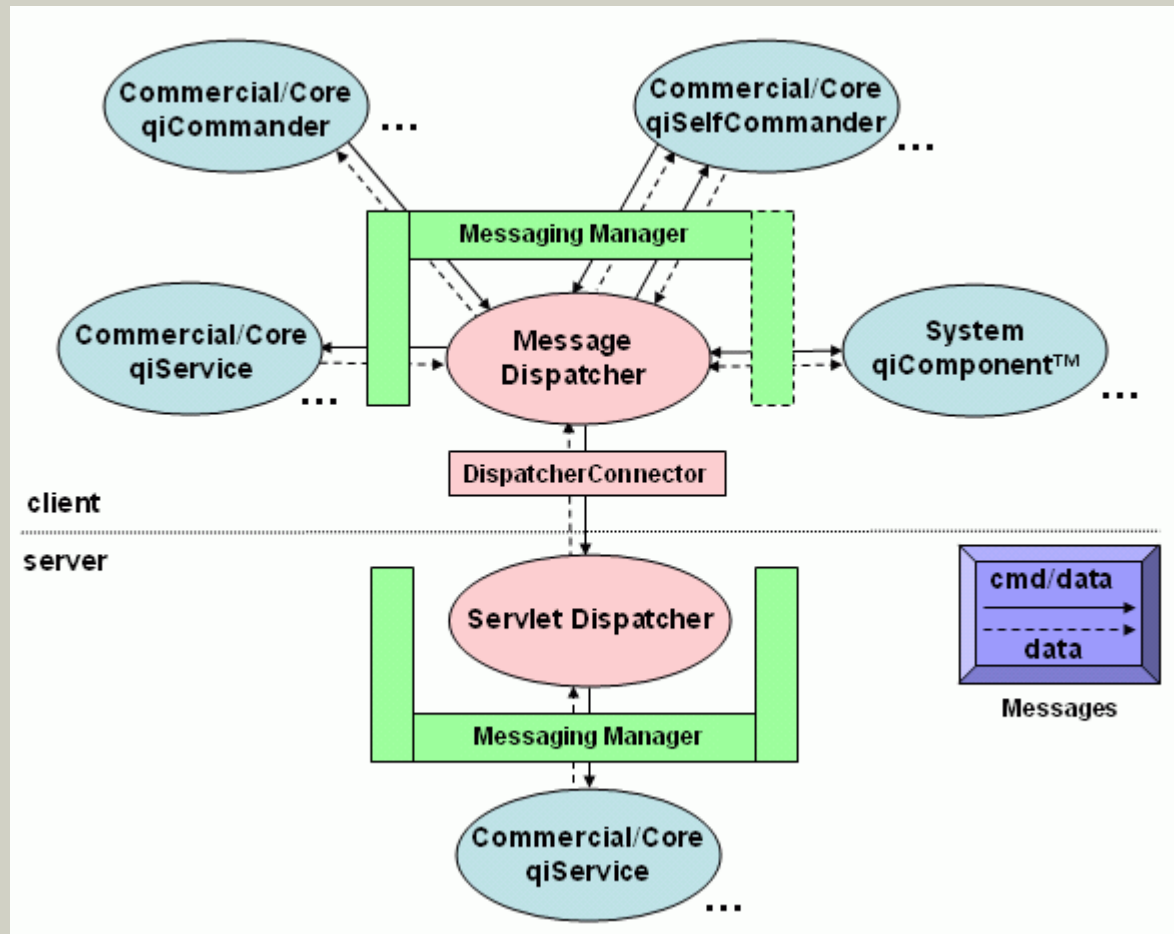


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What is the qiWorkbench?

- **Component-based application**
 - qiSelfCommanders – 2D, 3D, well log
 - qiCommanders – Amplitude Extraction, Wavelet Decomposition, XMLeditor
 - qiServices – text IO, seismic IO, job, file chooser dialog, error dialog
- **Message-based architecture - message framework supports component communication via messages**
- **State saving, state restoring capability**
- **Web-based – install workbench on any client machine from server deployed to**
- **Thick client – majority of functionality and processing on client machine**
- **Platform independent – written in pure Java; runs on Windows, Linux, MacOS**
- **Extensible – add core or external components (application components)**
- **Open Source; under GPL license**
- **Component API allows 3rd party vendors to build commercial components; under BSD license**
- **New messages registered to avoid duplication and conflicts**
- **Patent pending**

Architecture



Message Framework

- **Components interact via message**
 - CID of producer (CID is a unique system-wide ID for component)
 - CID of consumer
 - Kind of Message – command with arguments or data
 - Content type
 - Content – arbitrary object
 - Status – processing status of a request
- **Message Dispatcher – routes client-side request and response messages**
- **Dispatcher Connector - communication interface between the Message Dispatcher and the Servlet Dispatcher**
- **Servlet Dispatcher – routes server-side request and response messages**
- **Messages transmitted over the network are serialized**
- **Message handler per component – manages message queue (enqueue, dequeue)**

Messaging Manager

- Communication interface between a component and the message dispatcher
- Messaging manager per component – communicates via component's message handler
- Artifact of licensing
- Functionality provided
 - Manage component's message queue via component's message handler
 - High-level message methods – route message to message dispatcher
 - Register and unregister component with message dispatcher
 - Retrieve information maintained by message dispatcher (e.g., component descriptor of a registered component)
 - Extract parts of a message

qiComponents™

- qiCommanders – send requests, receive responses; Ex: Amplitude Extraction
- qiSelfCommanders – send and receive requests and responses; Ex: viewers (2D, 3D, well log)
- System qiComponents
 - Workbench Manager – manages workbench GUI and canvas
 - State Manager – save and restore state of active component and workbench upon request
- qiServices – common utilities; Ex: read/write text or seismic data, execute job, file chooser dialog, error dialog

Software Installation

- qiWorkbench requires Java 1.5.0_06 Runtime Environment (JRE) or above be installed on client machine
- qiWorkbench downloaded and installed by Java WebStart from Tomcat server where deployed
- WebStart automatically updates to newer version of qiWorkbench each time application launched

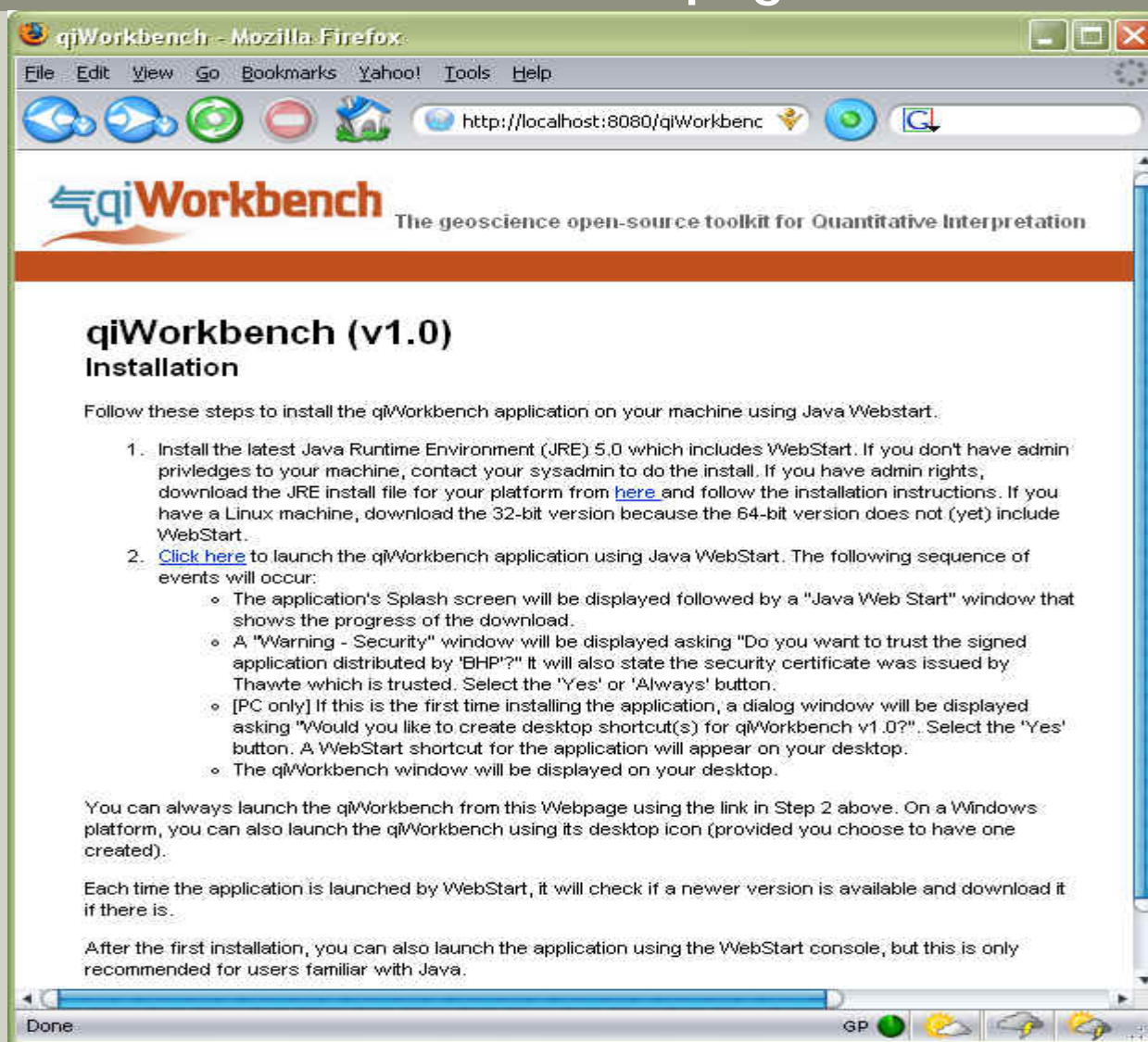
Software Prerequisites

- Java 1.5.0_06 Runtime Environment (JRE) or above with WebStart
- Seismic Un*x (optional)
- BHP SU (optional)
both available from Colorado School of Mines
at <http://www.cwp.mines.edu/cwpcodes/>

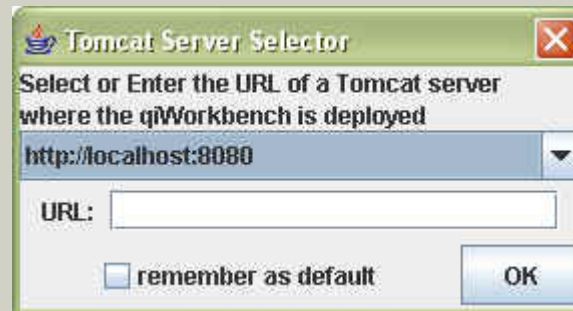
Development Status

- Available end of June 2006 at qiworkbench.org
- No eCommerce mechanism (yet) to install and update commercial components; currently manual install
- System can recognize, load and launch commercial components
- Message framework and Messaging Manager in place
- qiComponents: 2D viewer, Amplitude Extraction
- Local and remote text IO, job services, file chooser dialog, error dialog
- Save and restore state
- Local and remote seismic IO services being implemented
 - Read/write any variation of segy format (rev 0)
 - Read/write Landmark data
- Implementing Wavelet Decomposition component
- qiWorkbench.org Website for developing qiComponents: Wiki, bug tracking, register new commands, Subversion
- Contact: info@qiworkbench.org

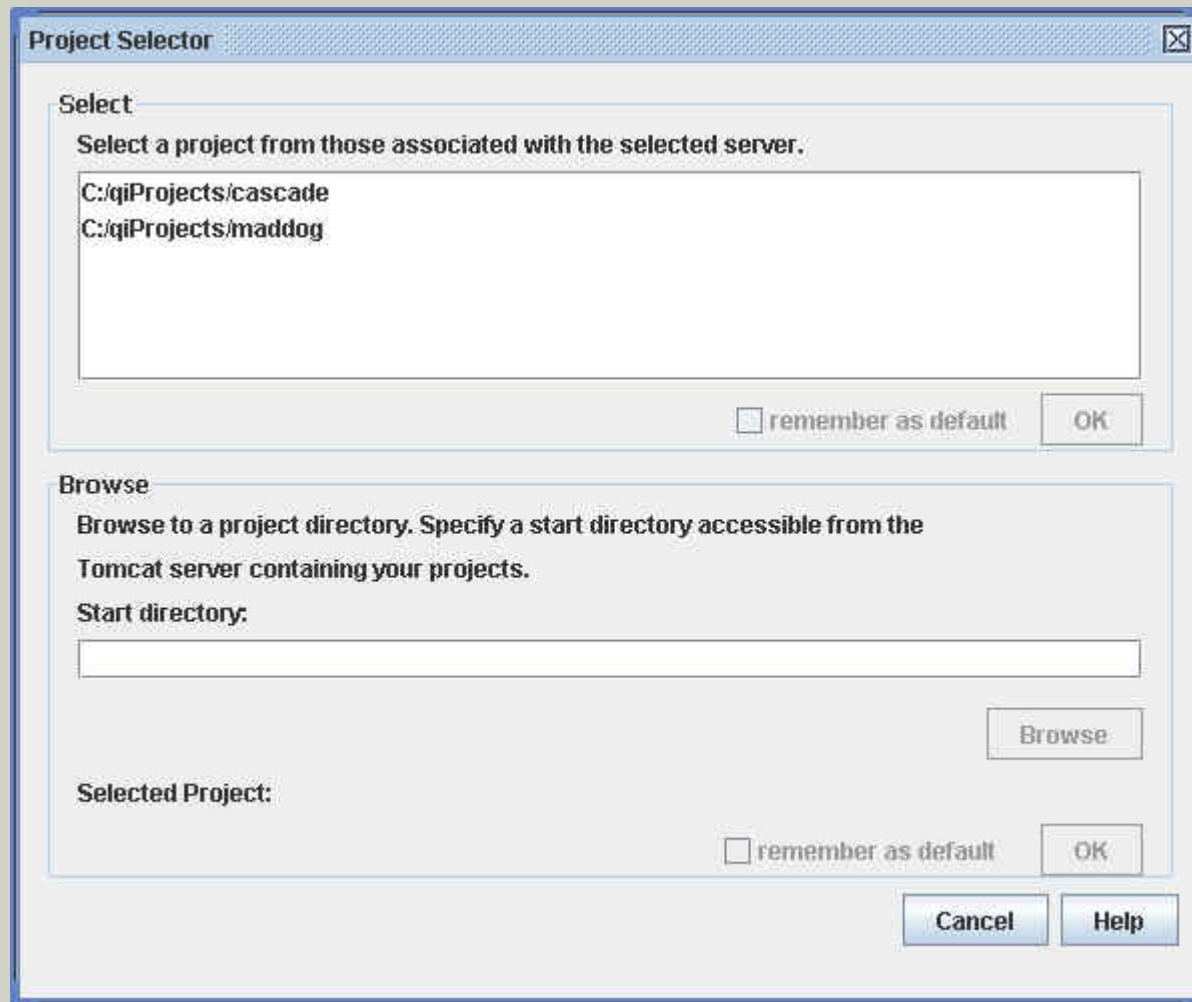
Screenshot: Installation Webpage



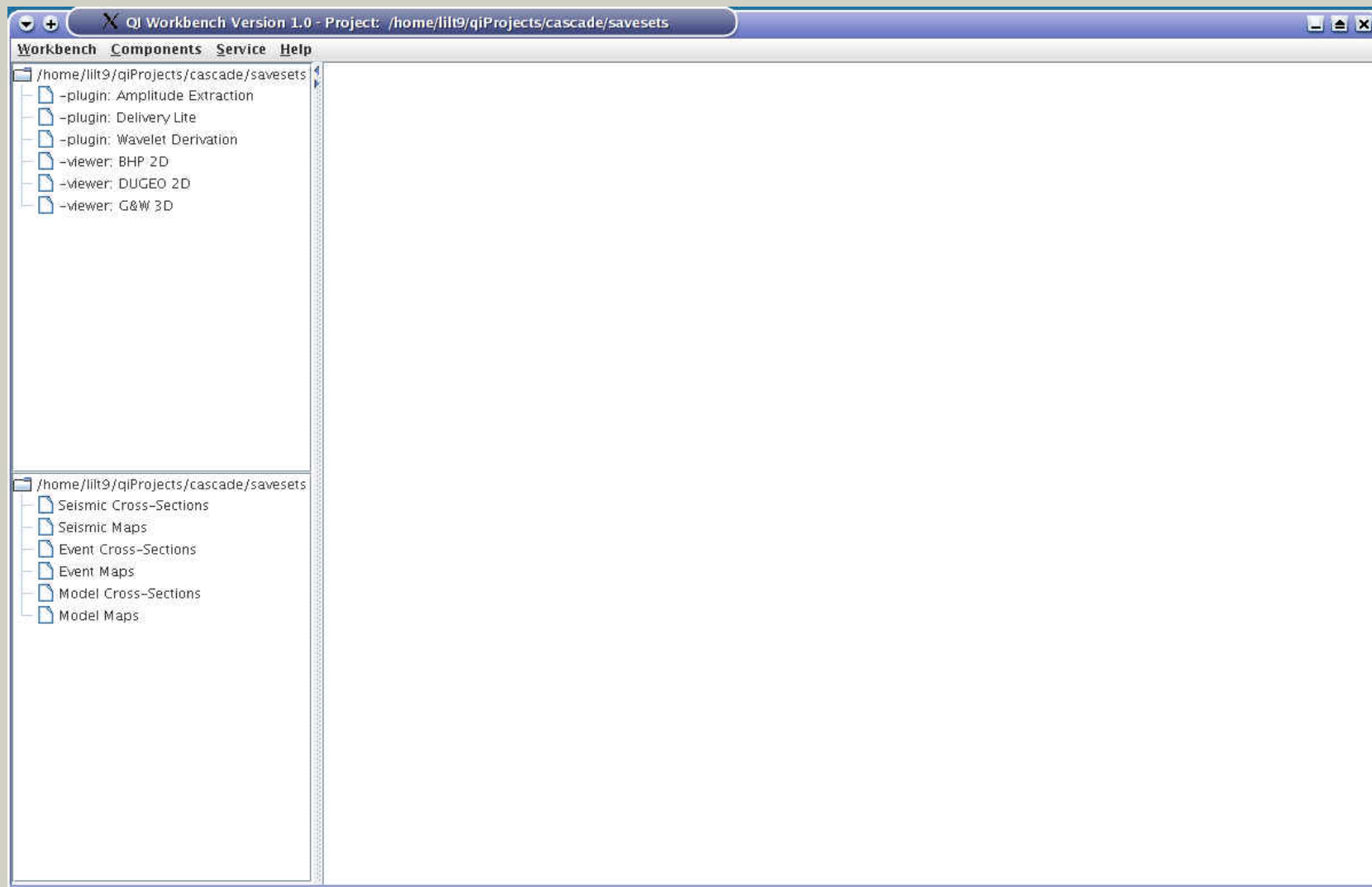
Screenshot: Select server



Screenshot: Select project



Screenshot: Blank Workbench



Screenshot: Populated Workbench

