

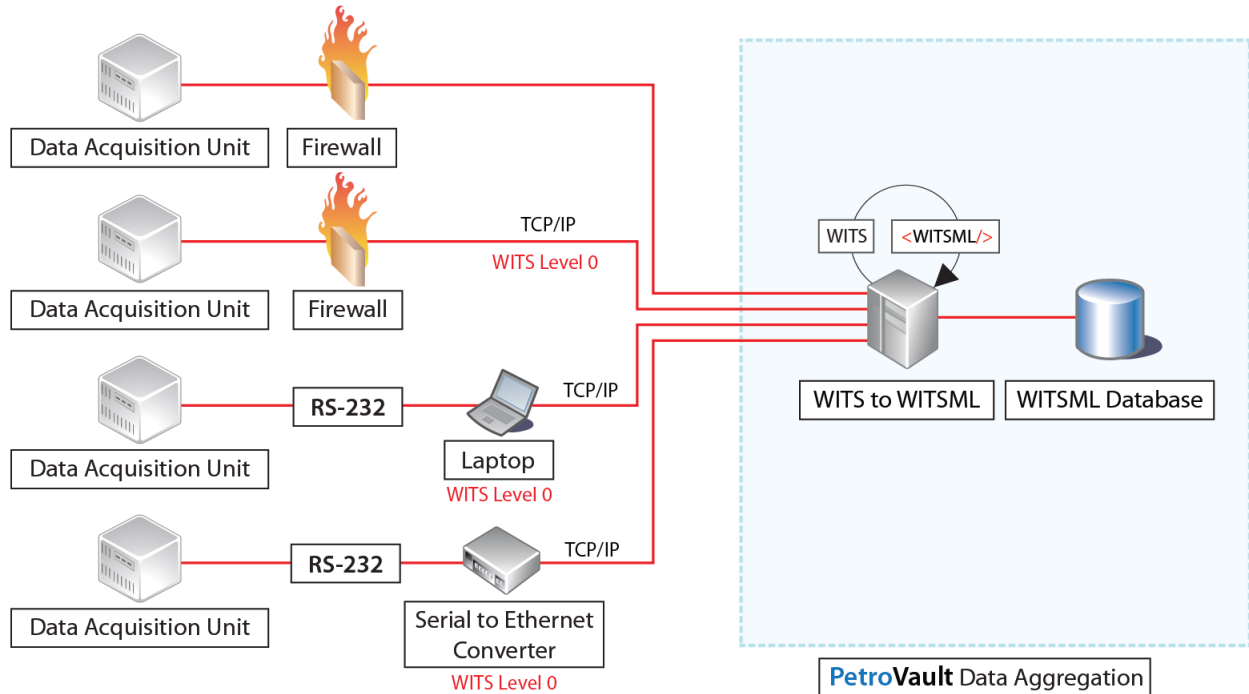
PetroVault™ is the secure storage and visualization platform that supports Petrolink's data solutions. The PetroVault system is designed to manage many data sources received from multiple operating rigs using different well service providers.

Collection/Aggregation from any and all service contractors

The PetroVault data collection and aggregation service component resides at the rig site and will take real-time data streams from any and all service contractors.

- Converts WITS 0 to WITSML 1.3.1 or WITSML 1.4.1.1
- Stores all received data in the event the communications link is lost
- Complete subscription support for WITSML 1.3.1 or 1.4.1.1 Data Flows
- WITSML 1.4.1.1 Publisher/Subscriber capability (provide data to WITSML compliant applications)
- Extended WITSML 1.3.1/1.4.1.1 STORE capabilities
- Monitoring and alarm system
- Fully customizable graphical interface with image capabilities
- Secure Socket Layer (SSL) encrypted access
- Data archive
- Unlimited number of users
- Accessible by an Internet browser or standalone application.

Data can be collected through Serial Ports or TCP/IP, which is converted to WITSML on site before transmitting onshore. The PetroVault system can be flexibly adapted depending on client requirements and service company capabilities.



The rig server is simple to install and can be prepared in the office and sent to the field location. Petrolink is able to train company staff to setup and administer the software in-house. Using an encrypted connection, it is possible for the Petrolink real-time operations team to configure and manage the data flow once the service companies have connected their data streams.

Storage

The PetroVault solution consists of a suite of interlinked modules that operate together to provide seamless data capture, conversion, transmission, storage and display functionality.

At the heart of the solution is the PetroVault WITSML Server. This is an extremely scalable data repository that allows integration of all well data from a range of sources into a single, coherent store. Supporting a number of different WITSML “dialects”, PetroVault can combine and aggregate real-time data from different sources and standards, and make it available for 3rd party applications such as Gravitax, Petrel, OpenWorks and Paradigm, in a variety of data types, such as WITSML, WellLogML and Tabular ASCII

The PetroVault WITSML server is also able to publish data so that (real-time) computations such as pore pressure predictions can be made. In this way Petrolink’s system allows raw and processed data to be viewed and compared in real-time.

With all data flows based on the open WITSML standard, our solutions for data management and storage ensure that data is available to personnel both on the rig and in the office at all times.

The PetroVault™ WITSML Store can be hosted in our secure data centers or on client networks. This centrally managed solution allows for the consolidation of WITSML data from all sources including Petrolink, other service contractors, a client’s internal system and from service company data centers.

Full redundancy so your data is always available

Our standard solution offers full redundancy through an identically configured second server which is synchronized with the primary. PetroVault provides the supporting infrastructure to enable the integration of real-time data into native applications (OpenWorks, Finder, etc.) and/or into a wide variety of Corporate Databases (e.g., Oracle).

Digital Well File on PetroVault platform

PetroVault, through its Digital Well File service, also allows well and project static data files to be shared, managed, categorized and searched in an intuitive and logical manner. Geoscientists and engineers can view and download data through a simple and familiar web browser as well as on mobile devices. PetroVault flexibility allows the sharing of data in environments that include:

- Well operations
- Seismic acquisition operations
- Exploration planning
- Geophysical site investigations
- Field development including facilities engineering design
- Contract tendering

PetroVault makes it easy for operators to manage the various files that need to be sent in from the rig site. The data can be organized by chronological order, by well, well status, report type or user-posted view. In addition, advanced search and filter capabilities eliminate time wasted searching for data.

The e-Alert feature provides real-time email and SMS notification upon receiving new reports or updates to reports. The self-subscribe feature enables to user to manage the alerts on a large scale.

Synchronization

The PetroVault system is easily replicated to other secure servers providing redundancy and quick download access for users in other regions.

For transmission of data between sites, our inter-store data synchronization module allows data transport between WITSML Stores. It supports all vendor extensions and is capable of handling non-standard implementations.

Customized visualization

The PetroVault viewer can be used for viewing data on the PetroVault WITSML Store. It provides fast and totally secure access via the Internet. Real-time data visualization is provided through the PetroVault server at the rig, office or RTOC. Standard time and depth templates are included and any customized displays can be generated upon request to meet the client's requirements.

Users can rearrange the majority of the parameters, i.e., scales, curve colors, shading between curves, comments. Lithologies and symbols can be simply managed from a standard graphical interface.

Visualization Capabilities

- Ability to integrate surface and down hole logging data
- Display logs in depth, vertical depth and time
- Fully configurable logs (scale, tracks, curves, etc.)
- Ability to insert log comments and annotations
- Change curve attributes (line type, color, thickness, etc.)
- Perform calculations on parameters to create custom curves
- Import historic data files and display correlation logs
- Export data - LAS, ASCII, WITSML, etc.
- Create plots from LAS files on users hard disk
- Log displays can be printed continuously (no gaps) to scale on HP and Epson printers directly from the website
- Display image tracks from transmitted LWD curves (upon request)
- Display mud logging lithology and cuttings data (upon request)

See your data how you want to with customizable dashboards

Petrolink understands that each company would like to monitor their own display with different parameters. PetroVault Console allows you to build your own drilling dashboard to monitor single or multiple wells at the same time.

You can also build several drilling dashboards and switch between them easily with the tab system or you can view it inside a new window browser to maximize the view. This customizable drilling dashboard will make sure your monitoring job is more effective and efficient.

PetroVault Console uses a modular widget system to display real-time data. A user can choose the kind of widgets they want to utilize.

These are the widgets that are currently available in PetroVault Console:

- Log Plot Widget
- Correlation Plot Widget
- Digital Gauges Widget
- Drilling Activity Widget
- Well Map Widget
- 2D and 3D Trajectory Widget
- Geosteering Widget
- Rig Chat Widget
- Cross Plot Widget
- Torque and Drag Widget
- And many more types

Petrolink is also able to build customized widgets which are tailored specifically for your real-time operations requirements.

Interoperability

PetroVault provides the supporting infrastructure to enable the integration of real-time data into native applications and/or into a wide variety of corporate databases (e.g. Oracle, SQL). The system has proven integration with the following 3rd party applications:

HRH Gravitas
Geologix
OpenWorks
Petrel
Decision Space
DrillWorks

GeoDraft
GeoFrame
Geolog
Perfomix
Techlog