

Pushing Data to WITSML Server(s)

For a quick info on WITSML, please see [this Wikipedia entry](http://en.wikipedia.org/wiki/Wellsite_information_transfer_standard_markup_language)
[http://en.wikipedia.org/wiki/Wellsite_information_transfer_standard_markup_language].

RDS can be configured to push survey, depth and time log data, and messages in real time to as many as four different WITSML servers.

Click on “**Configuration**” section on top of the screen and then select the “**WITSML Config**” tab.

The screenshot shows the 'WITSML Config' tab within the 'Configuration' section of the RDS software. The interface is divided into two main panels. The left panel, titled 'Add/Edit WITSML Server', contains four input fields: 'Name', 'Server', 'Login', and 'Password'. Below these fields are two buttons: 'Test WITSML access' and 'Add To List >>'. The right panel, titled 'WITSML Servers', features a large text area labeled 'Empty List'. To the right of this list are three buttons: 'Start Data Push', 'Stop Data Push', and 'WML Settings...'. Below the list are three buttons: '<< Edit', 'Remove', and 'Show Config'. At the bottom of the right panel is an 'Import Configuration' section with a 'Choose File' button, the text 'No file chosen', an 'Import...' button, and a checkbox labeled 'Replace all existing WITSML entries:'.

If RDS logging is disabled, WITSML data will not be pushed out – this is by design and saved network bandwidth at rig site.

To add a new WITSML server, please request server information, login, and password from the WITSML vendor. WITSML server name almost always begins with <http://> or <https://>. It is our suggestion that you insist on HTTPS:// (see the “S” at the end – it indicates SECURE server). This way you ensure that the data being pushed cannot be sniffed by unauthorized software or personnel.

WITSML Server configuration now supports importing pre-configured file.
See next page for details.

Add/Edit WITSML Server

Name

Server

Login

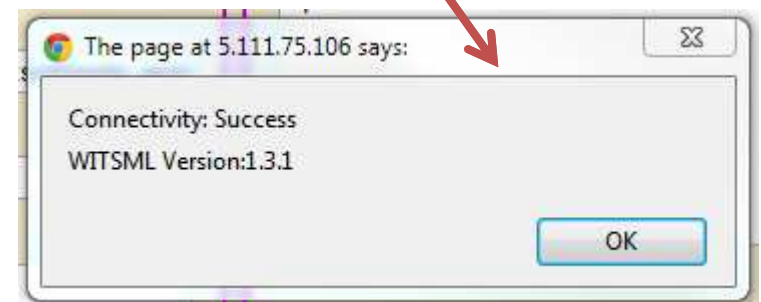
Password:

Enter any identifying name for the server – as in “Big Company Server” – this is free form and you may enter anything you wish – this is REQUIRED.

Enter server address, login and password as given to you.

Click here to make sure all the information that you have entered is correct. This will make a connection and verify your information. This will popup a result dialog box.

If satisfied with result, click here to save the information and add to the list of WITSML servers on the right.



This is the right side of the screen. You can add as many as four servers at one time.

Click here at any time, to copy data to left side of the screen to either edit information or test connectivity.

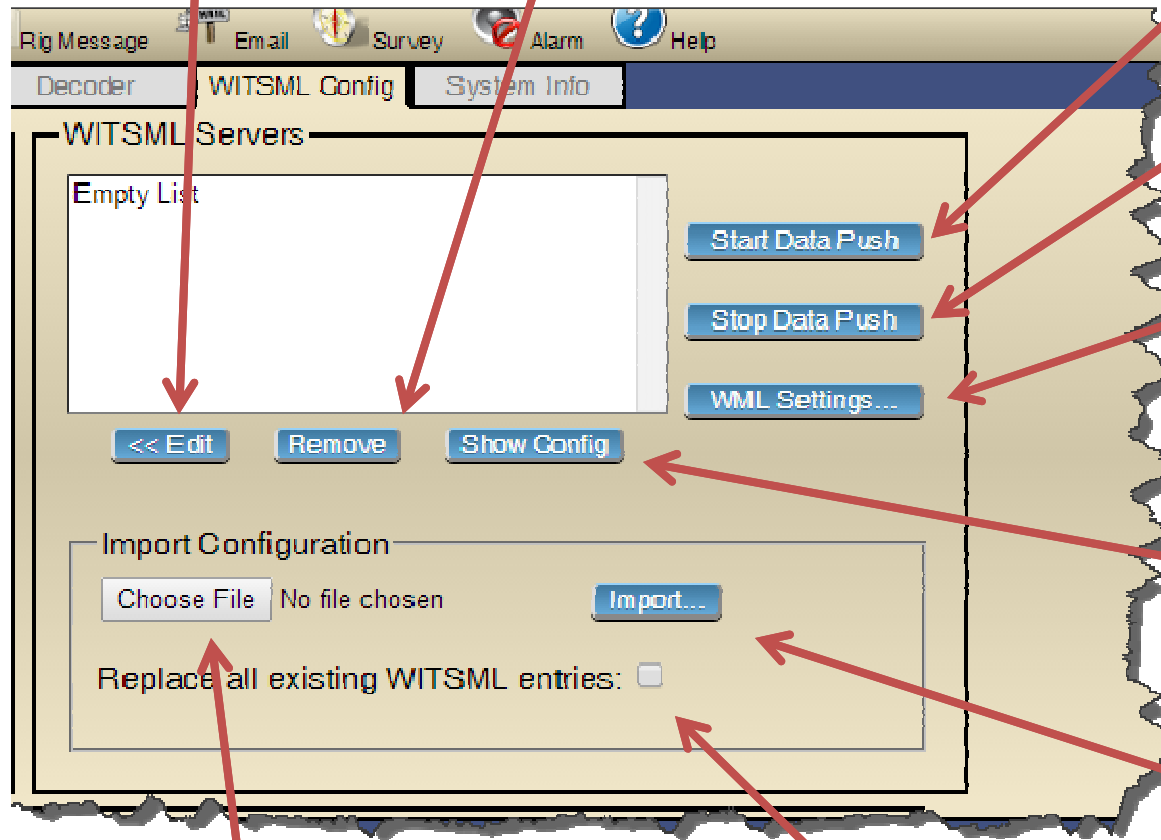
Click here to remove any server from the list.

Click here to START pushing data to the selected WITSML server.

Click here to STOP pushing data to selected WITSML server.

Click here to set WITSML server specific information – which well should be push data to, how frequent, etc. This will take you to another screen – (more on this screen later).

To get a quick check on configuration click on this button. This is VIEW only mode and does not make any changes. See next figure.



Click here to select configuration file – this file is pre-configured with list of all WITSML Servers and related parameters.

Check this box if you want to delete all existing entries in list above.

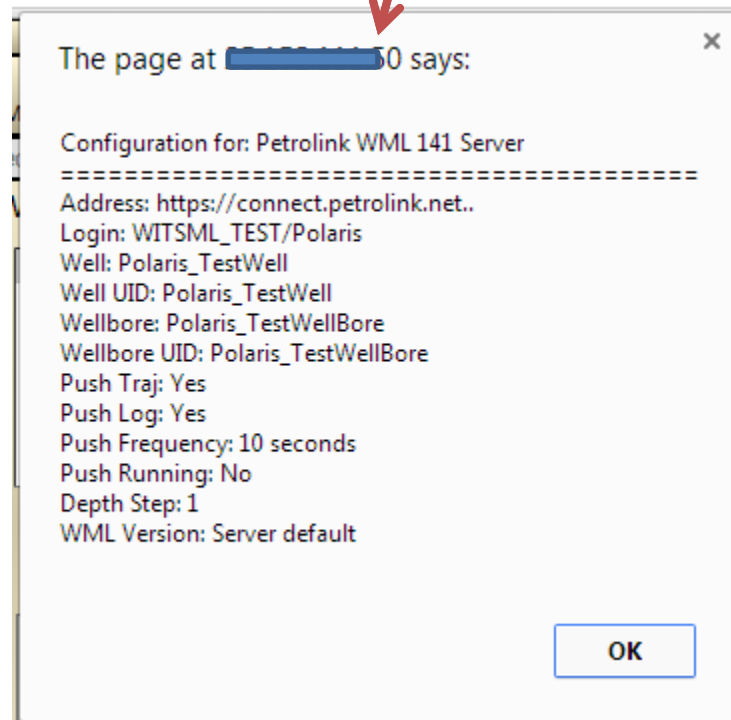
Import the chosen file. Once the data is imported, the data push automatically starts.



"Show Config" button brings up the following information for quick reference.

You will see the following information:

- Server name (in this case "Petrolink Server")
- Server address
- Login
- Well and Well Unique ID configured to push data to.
- Wellbore and Wellbore Unique ID configured to push data to.
- Is Survey/Trajectory push enabled?
- Is Depth Log push enabled?
- How often to push depth log data? Survey data is pushed as soon as RDS detects any changes in current survey data.
- Is the overall data push enabled?



At the bottom of the WITSML configuration screen, you will see the STATUS bar. It shows the most current information on each WITSML server in the list. The information in status bar is updated every 30 seconds.

Petrolink Server	RUN: ENABLED	CONFIG: VALID	CONNECT: OK
ApolloDART Server	RUN: DISABLED	CONFIG: VALID	CONNECT: -

Server Name

Is the data push (log or survey) been enabled for this server?

Is the well name configured for this server? This does not verify that the well name data is being pushed to is where the data is supposed to go – just if any well name is set or not.

- If data push is active, then this shows information if WITSML server has responded with any error.
- This clears up automatically if server clears up the error.
- In case data push is not enabled, the information here is invalid.

Clicking on the “WML Settings...” button on the WITSML configuration screen brings you to this screen. Here you can configure a variety of parameters – However, the only REQUIRED data is the well/wellbore name. Rest all are optional.

Server setting for Petrolink WML 141 Server
Address: <https://connect.p...> @ WITSML TEST/Polaris

Well/Wellbore Information

Pick Well/Wellbore :
Polaris_TestWell/Polaris_TestWellBore(Polaris_ ▾

Well Name: **Polaris_TestWell**
Wellbore Name: **Polaris_TestWellBore**
API: --
Lat/Long: -- / --
Northing/Easting: -- / --
Location: -- / --

Data Information

WITSML Version:
☐ 1.3.1.1
☐ 1.4.1.1
☐ Reset

Data To Send:
☒ Send Trajectory (survey)
☒ Send Log (depth & time)
☐ Send Messages (rig status)

Push LOG data every seconds
Depth Step: ft

Preferred Trajectory Name:
Restart From Depth:

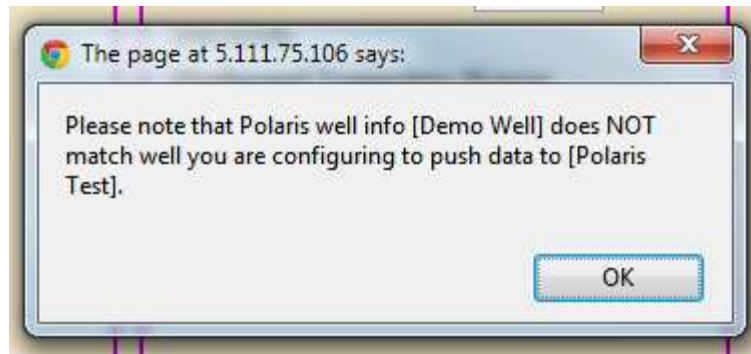
All values here are optional. However, feel free to change them. Make sure you click on save button, if you change any values.

You will see well name, wellbore name, API, latitude and longitude, northing and easting as well as county, state and country location for the well. Since this information is pulled from WITSML server so not all data may be available. However, if available, this allows you to make sure you are on the right well.

This list is populated with all the well / wellbore that you have access to. It is important that you select the right well / wellbore combination from this list else data will be associated with an incorrect well on the server. See next page for an important information.

Once you select the well/wellbore, click on this button, to fetch additional information on the well. This will NOT save the data so feel free to try out various wells to make sure that you are on right well. **No data is saved until you click on the SAVE button.**

If you set a well name which does not match the WELL name for which this RDS is configured, you will get a WARNING message as follows.



What this is saying is that RDS is configured for well called “Demo Well” and you are selecting well name “Polaris Test” well from the drop down list. It is possible that you may have picked a wrong well.

However, it is also possible that the well name is spelled wrong somewhere or coded incorrectly on WITSML server – so if you are sure of what you are doing ignore this and continue on.

Data Information

WITSML Version

☐ 1.3.1.1
☐ 1.4.1.1
☐ Reset

Data To Send

☒ Send Trajectory (survey)
☒ Send Log (depth & time)
☐ Send Messages (rig status)

Push LOG data every seconds

Depth Step: ft

Preferred Trajectory Name:

Restart From Depth:

Save

All information on right side of the page are OPTIONAL.

Shows up if the WITSML server supports multiple WML versions – Software automatically picks higher version – you can override here. Click reset if you want to revert back to software choose automatically.

Do you want to push survey (trajectory)?

Do you want to push depth and time logs?

Do you want to push messages (rig status)?

How often do you want to push depth logs (in seconds)? Pushing too often would load up the WITSML server and may not even be needed. In our case of depth logs, pushing data every 20/30 seconds is more than enough.

Control depth increment for LOG depth.

Has the vendor requested for a specific name for surveys being pushed? This can be changed at any time – even in the middle of job.

In case, there has been a depth reset or there has been a data correction, you can set whatever depth you wish to resend the data from. Next push will start from this depth.

- Data is pushed in increments of 1000' (or whatever units are being used).
- There is a data overlap of 500' between successive pushes – so any data correction in last 500' is automatically pushed again.

Click on SAVE to save any changes you make.

Click on “Back to WITSML...” to go back to WITSML Configuration main screen.

Demo Well
Rig: Demo rig

Edit Data
[Back To WITSML Config](#)

Server setting for PetroLink Server

You might need to know....

- The actual WITSML data push runs behind the scene and does not require the browser to be up and running as long as data push has been configured correctly.
- A restart of RDS for whatever reason does not require re-configuration of WITSML information. The data push will continue from where it left when RDS was shutdown.
- When moving from one well to another, it is important to clear up existing information by going to “System Utilities” page and then navigating to “Clear Tables” tab. Make sure you select WITSML Configuration to clear out all old information (among other information you may want to clear).

The screenshot shows a web application interface for WITSML Configuration. At the top, there is a navigation bar with tabs: Monitoring, Data/Reports, Configuration, and System Utilities (which is highlighted in green). Below this, there is a header section with a 'Demo Well' label and 'Rig: Demo rig'. To the right of the header are several icons and labels: Pumps (red circle), Logging (traffic light), Rig Message (document), Email (envelope), Survey (compass), Alarm (speaker), and Help (question mark). Below the header is a sub-navigation bar with tabs: Database, System Info, Clear Tables (which is highlighted), Side Track, and Overlog Gamma. The main content area is titled 'Clear Data From Database Tables'. It contains a list of checkboxes on the left: Logged Data, Survey Data, Well Plan Data, Log Header Information, Contacts, Rig Notes, Messages, and WITSML Configuration (which is highlighted in yellow). To the right of the checkboxes are two input fields: 'Start depth: 0' and 'End Depth: 99999'. Below these fields is a 'Clear Tables' button.

Monitoring Data/Reports Configuration **System Utilities**

Demo Well
Rig: Demo rig

Pumps Logging Rig Message Email Survey Alarm Help

Database System Info **Clear Tables** Side Track Overlog Gamma

Clear Data From Database Tables

☐ Logged Data
☐ Survey Data
☐ Well Plan Data
☐ Log Header Information
☐ Contacts, Rig Notes, Messages
☒ WITSML Configuration

Start depth: 0
End Depth: 99999

Clear Tables

You might need to know (contd.)....

- If called by WITSML vendor and requested for assistance for issues like lost connectivity etc., please look at the status bar at the bottom of WITSML configuration page.
- In case the WITSML vendor requests for depth data to be re-sent from a certain depth, you can enter that information at any time in “WML Settings..” page (button on WITSML configuration tab). As soon as you save that information, the next push cycle will start data push from that depth.
- If logging is disabled on RDS, WITSML data will not be pushed – this is done to preserve bandwidth at rig site.
- It is best if WITSML data companies provide configuration file to import – this avoid mistyping server addresses, login, passwords and possibly picking incorrect job for data to push. Please see [this link](#) on creating the configuration file – this service is free for everyone.

Please see answers to frequently asked questions (FAQ) in next few pages.

FAQ

Q: WITSML servers are configured but no data is being pushed. How do I fix this?

A:

- Rig site has network access?
- WITSML connectivity okay? You can select the WITSML server from the list, click on "<<Edit" button and click on "Test WITSML Server Access" button to verify connectivity.
- Is logging enabled? No logging, no data push.
- One or more WITS tag being logged?
- "Send Trajectory/Send Log" checkbox is checked.

Q: Is the outgoing data secure? Can any one snoop data?

A:

Answer depends on the company hosting WITSML server. If the WITSML server address begins with <https://>, then yes, the data transmission is secure.

Q: How many servers can RDS push data to (at the same time)?

A: Four.

Q: What all data is being sent out?

A:

Depth log, time log, survey and rig states. Rig states are sent out as messages only if they are entered on RDS (under Configuration tab). Of course, you can disable any of this push via WITSML configuration – each of these are controlled per server.

Q: How are data corrections by MWD hand managed?

A:

- Any change in survey data (for the entire data set) is pushed out. This include updates/add/deletions.
- Any change in depth data – correcting spikes or bad data – is sent out as long as it is within 200 ft. of current hole depth. If you make changes beyond this range, you can easily reset the push to resend from any depth you want via WITSML configuration – this can be controlled per WITSML server configured.

Q: Is the outgoing data secure? Can any one snoop data?

A:

Answer depends on the company hosting WITSML server. If the WITSML server address begins with <https://>, then yes, the data transmission is secure.

contd.

FAQ contd.

Q: **Certain WITS tag is not being sent via WITSML push.**

A: Is the logging enabled for that tag? If so, it will be pushed.

Q: **Client seeing certain WITS tag in time/depth log but not in depth/time log push?**

A: The same data set is used to push for both depth and time log so it is just a matter of time data will show up in both. As long as data is being logged, data will do through for both depth and time log.

Q: **How are null values handled in WITSML push?**

A: Null value are sent as blanks intentionally – this is per WITSML server standard and definition of blank nulls are included in every WITSML push header information. Blanks were selected (as opposed to any number such as -999.25) in order to minimize network bandwidth.

Q: **Is it possible to log a particular WITS tag but not include it in WITSML push?**

A: Not at this time.

Q: **What WITSML versions are supported?**

A: RDS supports version 1.3.1.1 and 1.4.1.1. Please be aware that 1.4.1.1 is not all that common and for most WITSML servers that implements 1.4.1.1, full compliance is yet to be test. RDS data push software will automatically pick the highest available version. However, it is possible to override and use a lower version, if the WITSML server supports it.