

# Technote 24 – Data Collection from the AcquiSuite and AcquiLite

Author: Stephen Herzog, Michael Hewitt

Now that you have installed your Obvius Data Acquisition Server (DAS) and configured it to gather data from your meters and sensors, you will want to collect the data from the DAS. This document provides details on some ways of collecting that data. Most common method is the recommended default, which is HTTP/Post to a server.

*Note: Upload features listed here are available on the AcquiSuite EMB A8810, AcquiSuite A8812, and AcquiLite EMB A7810 (not all features are present in the AcquiLite A7801).*

*Note: processing the data for billing reports, summaries, and other data processing concepts are beyond the scope of this document.*

DAS data collection can be divided into Push (recommended) or Pull methods:

- | <i>Push</i>   | <i>Pull</i>   |
|---|---|
| <ul style="list-style-type: none"><li>• HTTP/Post to BMO</li><li>• HTTPS/Post to BMO</li><li>• HTTP/Post directly to your server</li><li>• HTTPS/Post directly to your server</li><li>• XML push directly to your server</li><li>• FTP push directly to your server</li></ul> | <ul style="list-style-type: none"><li>• HTTP/browser directly viewed from DAS</li><li>• EnertraxDL export to your PC</li><li>• HTTP/browser data log Export from DAS</li><li>• FTP manually into DAS, pull to your PC</li><li>• FTP automatically into DAS, pull to your PC</li><li>• XML manual queries of live (only) device data</li></ul> |

Once data has been extracted from the DAS, the destination server provides its own analysis or features, such as Export from the BMO website. See the *Data Format* notes in TN60 for information on the specific file format.

## ***HTTP/Post or HTTPS/Post to BMO***

- DAS sends data to the BMO website. Once configured, this is automatic.
- HTTP post is recommended as more robust than any Pull method or the other Push methods.
- The BMO Website stores the data in a SQL database.
- Quick reporting from our website.
- Includes remote DAS configuration service.
- Includes alarm notification by email.
- Data available for download in CSV/Tab-delimited format upon your request.
- *For pricing and to sign up for service, contact Sales at Obvius.*

## ***HTTP/Post or HTTPS/Post directly to your server***

- HTTP post is best and more robust than any Pull method or the other Push methods because:
  - XML push validation requires additional server coding.
  - XML push and FTP push do not use log file checksums, making forensic analysis difficult.
  - XML push does not retain the log file format, making forensic analysis difficult.
  - No pull method uses log file checksums, making forensic analysis difficult.
  - FTP push -- interruption (such as a reboot during an FTP push) could lose a log file.

## ***HTTP/Post, HTTPS/Post, or XML push directly to your server***

- DAS uploads data directly to your webserver or database server; automatic once configured.
- You must supply a script to process the incoming data. Sample script for Linux/PHP or ASP is available upon request.
- Requires Webserver, CGI Scripting and database (such as SQL) knowledge.
- Alarm processing available by processing data on your server when data is uploaded.
- Designed for integration with existing energy reporting systems.

## ***FTP push directly to your server***

- DAS uploads data directly to your FTP webserver without additional scripting; automatic once configured.
- Note that to use the log files, you must supply some method such as a spreadsheet editor or custom database manager which would require coding.

## ***FTP pull or EnertraxDL (pull)***

- DAS continues to hold device data when you collect it, reducing free space on the DAS. \*
- Requires some database knowledge.
- No checksum verification of log data after transfer is available.
- Alarm processing is possible, but will be delayed. Data uploads are not alarm-event driven.
- If data is not collected/removed, oldest log files are purged when the DAS flash memory is full.
- DAS does not schedule device data log transfers; any scheduling handled by OS, if possible.
- EnertraxDL
  - Optionally remove logs once transferred.
  - Not practical in all circumstances.
  - *see site page Products / Software and Accessories.*
- FTP
  - Your computer must call each DAS to collect the data.
  - DAS option to allow FTP must be enabled.
  - At any time, a user can log in and disable FTP connections.
  - Not practical for DAS configured as only Dialout. Dialin and LAN connections work.
  - No sample script available, however *wget* command line tool is easy to use.
  - *see TN61 regarding command prompt ftp and automated ftp*

## ***Limited XML Manual Queries of Live Device Data***

In the same way that a web browser can show the current information of a device, the DAS can also accept properly-formatted XML queries to show some of the same data. These queries can include user name and password.

- DAS provides new data often, and query can capture the latest new data - like each page refresh of a browser - when you collect it. Your computer must call each DAS to collect the data.
- Depending on the log cycle, a push method may be more efficient.
- Log files created by the DAS remain on the DAS, so the DAS continues to hold device data when you collect it, reducing free space on the DAS
- The XML queries can only access "live" data, such as appears on page of a device selected from the Device List page. **The XML queries cannot access older log files.**
- The XML queries cannot do complex filtration of the data.
- Each query is distinct per-device; unlike a single upload session of multiple log files.
- Requires knowledge of device Modbus addresses, which can be gathered by another query.

Example queries

`http://192.168.40.50/setup/devicexml.cgi?ADDRESS=006&TYPE=DATA`

`http://user:password@192.168.40.50/setup/devicexml.cgi?ADDRESS=006&TYPE=DATA`

`http://user:password@192.168.40.50/setup/devlist.cgi?GATEWAY=127.0.0.1&SETUP=XML`

## ***HTTP/browser direct from the DAS***

- DAS continues to hold device data when you collect it, reducing free space on the DAS

The DAS has the ability to export log file data to a web browser directly from the setup web pages. To use this feature, log into the DAS with your web browser. Select the "Log File Export" page from the Log File Data menu on the left side of the page.

For each device, a separate log file will be saved. Select the device from the dropdown list provided. Specify Comma- or Tab-delimited data, and indicate if column headers are required. Click the download button to download the data.

## ***Note Regarding Import of Log Files***

Watch for any data fields which contain Tabs or Commas. For example, in device Function names (kWH, Amps, etc) when exporting with the column headers. Ensure that the destination application, such as a spreadsheet editor, is capable of interpreting quoted strings. Otherwise, consider using the alternate delimiter type. For example, if the meter data has a field named "Volts, Average" - note the comma - then consider exporting the logs as Tab-delimited if the spreadsheet editor mismanages data. Mismanaged data can appear as missing or extra sections, along with misaligned rows and columns, but symptoms can vary greatly according to the data and spreadsheet editors.

