Skkynet **DataHub®**

Get the most from your industrial data

The DataHub® integrates data from a number of data sources, and provides many ways for you to use the data. There is no system integration product for industrial automation on the market that compares to the DataHub for versatility, power, speed, and ease of use.
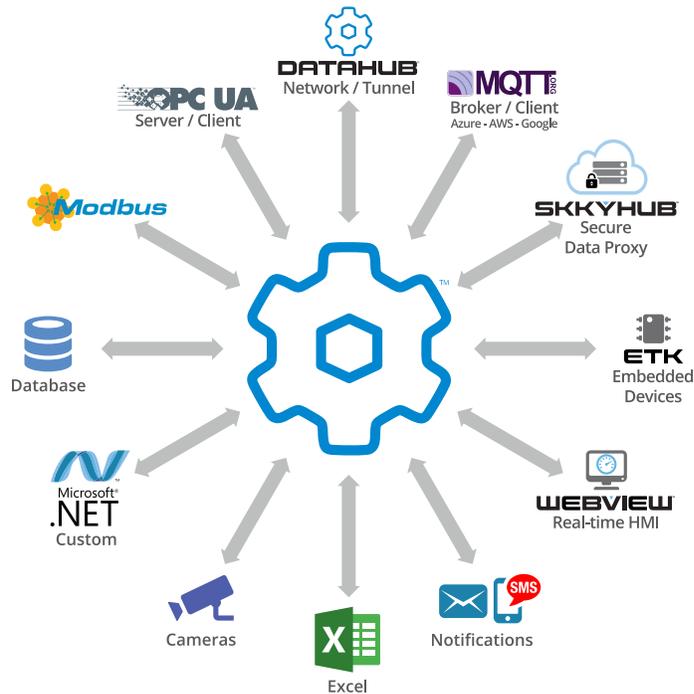
Connect to multiple data sources

Make real-time, bidirectional connections to OPC UA and Classic clients and servers. Connect any SQL database, Modbus slave, Excel spreadsheet, and custom programs, Azure IoT Hub, Google IoT, Amazon IoT Core, any standard MQTT client or broker, and embedded systems.

Integrate all data into a single, unified set

Bring data from all sources and any protocol into a single, unified data set. Any selected subset of this aggregated data can be accessed by clients using a supported protocol: OPC UA, OPC Classic, MQTT, Modbus, DDE, TCP, ODBC, HTTP, XML, and more.

Use your data in any number of ways

- Network OPC servers and clients
- Do monitoring and supervisory control
- Log your data to any SQL database

- Securely connect to any IIoT platform
- Trigger actions based on data changes
- Run real-time analysis in Excel

Why choose the DataHub?

- It's fast – handling 50,000+ data point changes per second
- It's convenient – all features are fully integrated into a single user interface
- It fits in with just about any industrial system
- It saves time and money through easy configuration and robust performance
- Its built-in web HMI (WebView™) lets you to build and view pages in a web browser
- It has a worldwide user base of over 1,600 customers with over 16,000 installations
- Its simple licensing model streamlines system management and deployment
- It connects to SkkyHub™, best-of-breed networking for the Industrial IoT, allowing any combination of in-plant, cloud or hybrid connectivity configuration per dataset
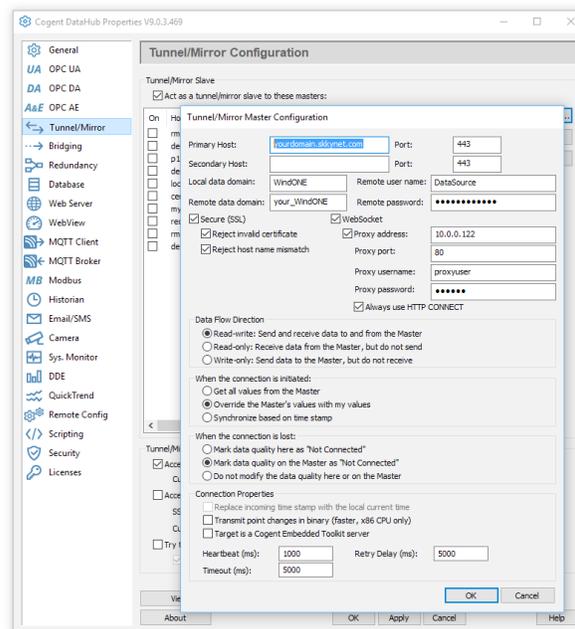
System Information

DataHub supports OPC UA, Classic (DA 3, DA 2, and A&E), as well as Modbus TCP, MQTT, ODBC, DDE, TCP, HTML, and XML. It runs on the following operating systems:

- Windows Server 2016 (64-bit)
- Windows Server 2012 & R2 (64-bit)
- Windows Server 2008 & R2 (64-bit)
- Windows Server 2003 & SP2 (32 & 64-bit)*
- Windows 10 (32 & 64-bit)*
- Windows 8.1 (32 & 64-bit)*
- Windows 7 (32 & 64-bit)*
- Windows XP SP2 (32 & 64-bit)*

* 32-bit operating systems only supported by DataHub versions 7 and 8

**softwaretoolbox.com/cogentdatahub**   **sales@softwaretoolbox.com**   **+1 704 849 2773**

DataHub® IoT Gateway™

CONNECT TO AZURE, GOOGLE, AMAZON, OR ANY MQTT BROKER

Connect to virtually any MQTT IoT service

The DataHub makes it easy to connect your OPC-enabled system to virtually any MES, device cloud, or Big Data analytics platform using MQTT. It comes pre-configured for Azure IoT Hub, Google IoT, and Amazon IoT Core. For any other IoT service, you can customize the DataHub's JSON data format to match that service's MQTT broker.
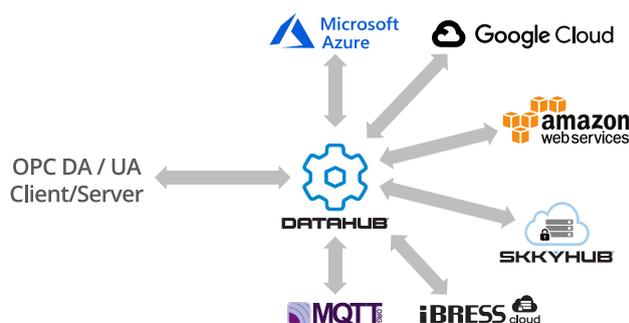
Send plant data securely to the cloud

MQTT's publish/subscribe protocol makes a secure, outbound connection to the IoT cloud service. No need to open any firewall ports, and no need for a VPN. The DataHub IoT Gateway also supports Transport Layer Security (TLS), certificate-based authentication, and username/password authentication.

Integrate real-time OPC data

Leverage OPC UA, the leading Industrie 4.0 and IIoT data protocol—using a secure, real-time connection that maintains the OPC UA data model (which other gateways flatten). You get both OPC UA and DA client and server interfaces, for built-in protocol conversions. The full data hierarchy from the OPC UA server gets faithfully represented in the OPC DA client or MQTT broker.

Optimize MQTT

The DataHub IoT Gateway supports MQTT Version 3.1.1, including publish and subscription methods, as well as Last Will and Testament and Quality of Service message delivery. It also offers these additional benefits:

- No point count restrictions
- Automatically discovers all the points from the server
- Eliminates cache latency and stale data, so you always know the data quality and have the most current value
- Multi-threaded interface means that a slow or non-responsive server will not slow down other connections

Standard Features

- **MQTT Client** – connect to any MQTT Broker
- **OPC DA Support** – connect to OPC DA servers and clients
- **OPC UA Support** – connect to OPC UA servers and clients
- **Data aggregation** – merge data from multiple sources into a common data set
- **Secure Remote Configuration** – configure multiple DataHub installations from one location
- **QuickTrend** – view live, real-time trends for selected data
- **Scripting** – program custom solutions to meet your specific needs
- **Security** – control access and set permissions for users and groups
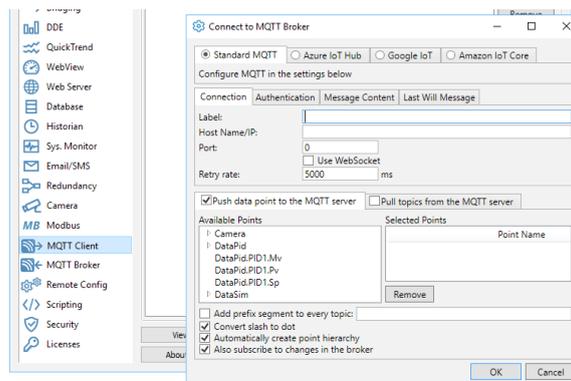
Popular Add-on Features

- **MQTT broker** – in-house IoT Hub
- **WebView** – build and display private cloud-based web pages
- **Data bridging** – connect two or more data sources to share data in real time
- **OPC A&E** – connect to OPC A&E servers and clients
- **Modbus** – connect to Modbus TCP slave devices
- **Database** – read and write data to/from any ODBC database

System Information

DataHub supports OPC UA, Classic (DA 3, DA 2, and A&E), as well as Modbus TCP, ODBC, DDE, TCP, HTML, and XML. It runs on the following operating systems:

- Windows Server 2016 (64-bit)
- Windows Server 2012 & R2 (64-bit)
- Windows Server 2008 & R2 (64-bit)

- Windows 10 (64-bit)
- Windows 8.1 (64-bit)
- Windows 7 (64-bit)

Ordering Information

Product	Code	Description
DataHub IoT Gateway	41290219-N	DataHub Core features with OPC UA, OPC DA, MQTT client, tunnel/mirror

SKKYNET   softwaretoolbox.com/**cogent**datahub   sales@**softwaretoolbox**.com   +1 **704-849-2773**

DataHub® OPC Tunneller

Robust OPC networking with no DCOM

Now you can network the connection between your OPC DA servers and clients without the hassles of configuring DCOM. Instead, connect one Cogent DataHub to your OPC server, and another Cogent DataHub to your OPC client, and configure tunnelling connection between them. Your data tunnels securely through firewalls, reverse proxies and across the network over TCP, using SSL if needed.

Never blocks OPC or drops the OPC connection

If the network goes down for any reason, the DataHub OPC Tunneller at each end of the tunnel maintains the connection to the server and client. All tags maintain their most recent values until the network is restored, when the data is then automatically synchronized again between the server and client.

Quick reconnects after network failures

Other tunnelling software requires network timeout parameters to be carefully tuned to minimize lengthy delays and false reports of network failure. The DataHub uses a more sophisticated model to detect network failures which avoids false timeouts and blocking, and allows for quick reconnects.

Benefits and Features

- No DCOM configuration hassles
- Easy to configure, just point and click
- Thousands of data updates per second
- Supports reverse proxies
- Industrie 4.0 ready

- Enhanced security options using SSL
- Maximize throughput for multiple tunnels
- Optimize low-bandwidth connections
- Securely Network to any cloud service with SkkyHub

Cogent DataHub

Other tunnelling products

The Cogent DataHub keeps all OPC transactions local to the computer, thus fully protecting the client programs from any network irregularities.

Other products expose OPC transactions to network irregularities, making client programs subject to timeouts, delays, and blocking behaviour.

The Cogent DataHub mirrors data across the network, so that both sides maintain a complete set of all the data. This shields the clients from network breaks as it lets them continue to work with the last known values from the server. When the connection is re-established, both sides synchronize the data set.

Other products pass data across the network on a point by point basis and maintain no knowledge of the current state of the points in the system. A network break leaves the client applications stuck with no data to work with.

A single tunnel can be shared by multiple client applications. This significantly reduces network bandwidth and means the customer can reduce licensing costs as all clients (or servers) on the same computer share a single tunnel connection.

Other tunnelling products require a separate network connection for each client-server connection. This increases the load on the system, the load on the network and increases licensing costs.

System Information

The Cogent DataHub supports OPC DA 3 and DA 2 server and client connections as well as the ODBC protocol. It runs on the following operating systems:

- Windows 10 (32-bit & 64-bit)
- Windows 8 (32-bit & 64-bit)
- Windows Embedded 8 (32-bit & 64-bit)
- Windows 7 (32-bit & 64-bit)
- Windows Server 2012 (64-bit)

- Windows Server 2008 R2 (64-bit)
- Windows Server 2008 (32-bit & 64-bit)
- Windows Server 2003 SP2 (32-bit & 64-bit)
- Windows Vista (32-bit & 64-bit)
- Windows XP SP2 (32-bit & 64-bit)

Ordering Information

PRODUCT	CODE	DESCRIPTION
DataHub OPC Tunneller	DHTUN	DataHub Core features with OPC DA and Tunnelling

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DataHub® OPC Bridge

OPC server to OPC server connectivity

Have you been looking for a way to connect OPC servers? Do you need to allow one piece of equipment to communicate directly to another? Now, with just a few clicks of the mouse in the DataHub OPC Bridge, you can link OPC servers with each other in a single cohesive group.
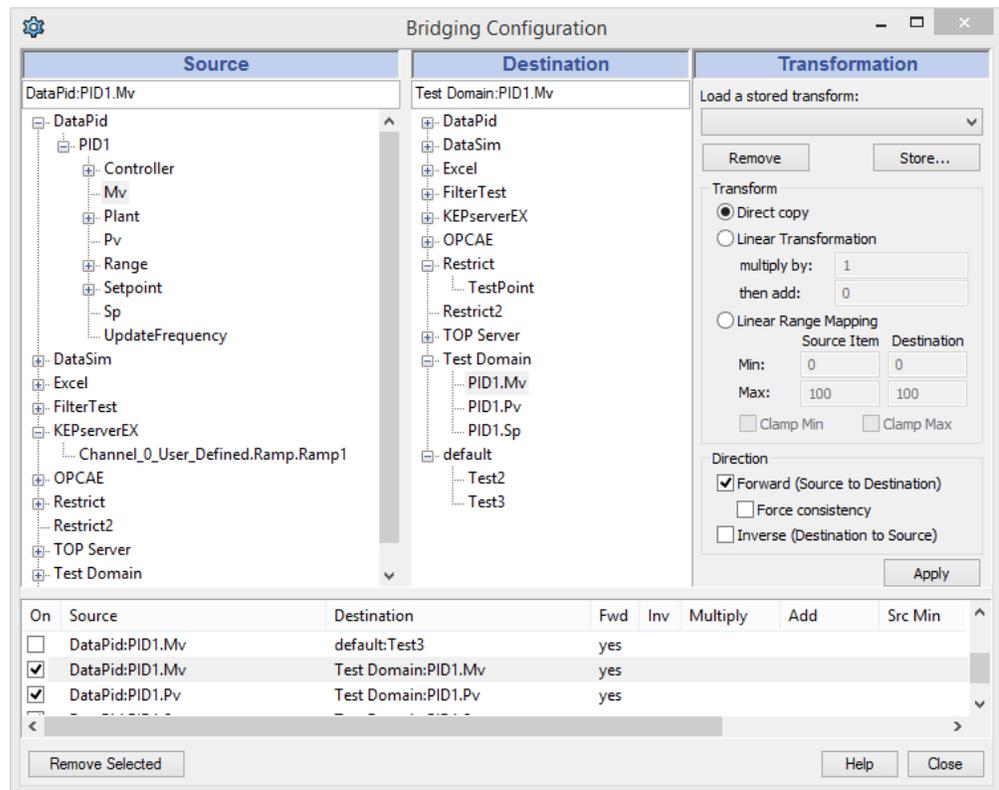
Scale or modify your data

Convert temperatures, volumes, pressures, or perform any other type of linear transformation. Or you can make more complex data modifications using a powerful built-in scripting language.

Connect multiple servers and clients

Data from any number of OPC servers and other data sources is pooled into a single, uniform data set that can be accessed by any number of clients. In addition to OPC (Classic and/or UA), other protocols such as TCP, HTML, XML, ODBC, and DDE are supported, allowing connections to databases, email, spreadsheets, and the web.

Benefits and Features

- Connect any number of OPC servers
- All data from all OPC servers available to any OPC client
- Also works with non-OPC data sources and clients
- Data can be modified using linear transformations
- One-way or two-way data flow
- Lets you create new tags if necessary
- Multi-threading means slow-performing OPC servers will not bog down the system
- Configure bridges across a network using OPC tunneling

OPC DA / UA Server ←→ DATAHUB ←→ **OPC DA / UA Server**

System Information

The Cogent DataHub supports OPC DA 3 and DA 2 server and client connections as well as the ODBC protocol. It runs on the following operating systems:

- Windows 10 (32-bit & 64-bit)
- Windows 8 (32-bit & 64-bit)
- Windows Embedded 8 (32-bit & 64-bit)
- Windows 7 (32-bit & 64-bit)
- Windows Server 2012 (64-bit)
- Windows Server 2008 R2 (64-bit)
- Windows Server 2008 (32-bit & 64-bit)
- Windows Server 2003 SP2 (32-bit & 64-bit)
- Windows Vista (32-bit & 64-bit)
- Windows XP SP2 (32-bit & 64-bit)

Ordering Information

| PRODUCT	CODE	DESCRIPTION
DataHub OPC Bridge	DHBRG	DataHub Core features with OPC DA and Bridging
DataHub OPC UA Bridge	DHBRGUA	DataHub Core features with OPC UA and Bridging

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DataHub® OPC Logger

Any database, any table, any conditions

Finally there's a convenient way to store and access process data from any OPC system, regardless of which database program you need to use, or what table you need to log your data to. As long as you can feed your system data to an OPC (Classic or UA) server, you can use the DataHub OPC Logger to write it to SQL databases, local or remote, using the ODBC protocol. You can log OPC tag data to existing tables in your database, or create a new table from within the DataHub OPC Logger. And data logging triggers are fully configurable.
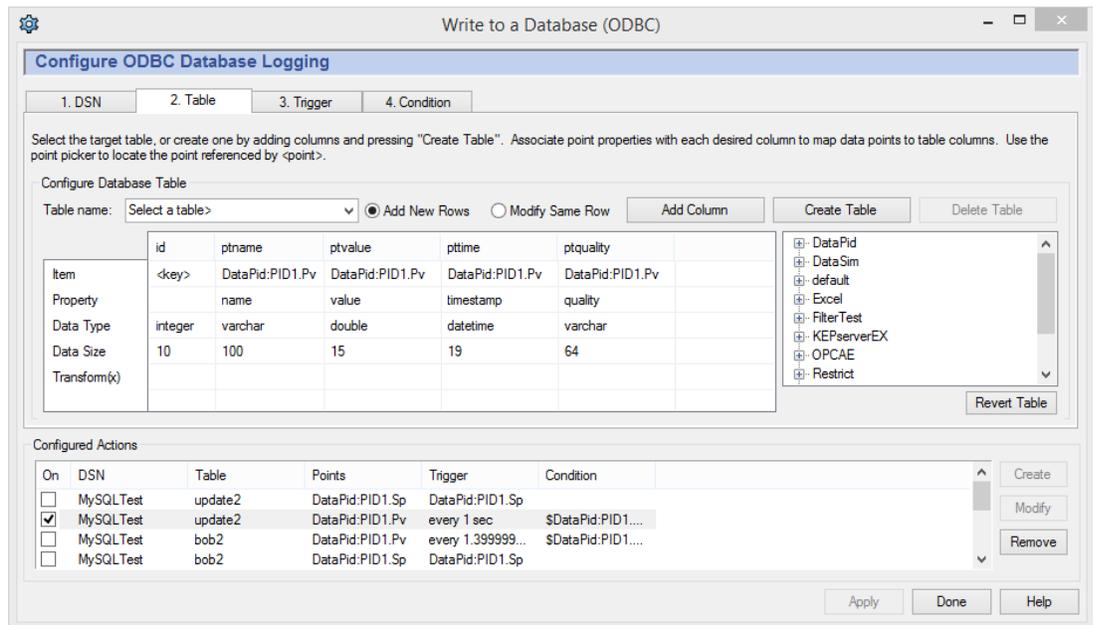
No data gets lost

If the connection to the database goes down for any reason, the DataHub OPC Logger stores all the values, and sends them along when the connection is restored. Each data value change is stored with its timestamp, and gets written to the database in the sequential order that it occurred.

Read database entries back into your OPC server

You can also use the DataHub OPC Logger to make queries and send the results back to your OPC server or client application. This is useful for supervisory control, changing set points, sending recipes, and so on. Queries can be triggered based on a tag value changes, time of day, or repeat timers.

Benefits and Features

- Easy to configure using point and click interface.
- Start and stop logging or queries using fully customizable trigger events and conditions.
- Trigger logging or queries based on repeat timers, time of day, data value changes, or custom scripts.
- Works with your existing database tables, or easily create new ones.
- Store and forward feature ensures that all data gets logged in time-sequential order.
- Works on a local machine or over a network.
- Log to multiple databases, or combine data from multiple database sources and have them appear as a single unified data set within the DataHub

Fully integrated

Data logging and queries are often part of a larger system. The DataHub OPC Logger works with any OPC UA or DA server or client. Optional data-integration features include OPC tunnelling, redundancy, DDE connectivity, the ability to send email and SMS messages, as well as a web-based HMI, DataHub® WebView™, which allows you to view data from your database in numerical and tabular formats.

OPC DA / UA Client/Server ⟷ DATAHUB ⟷ SQL Database
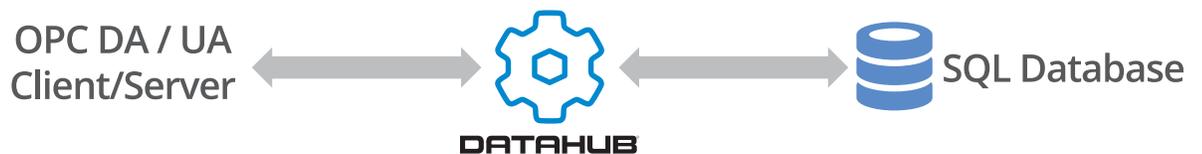
Supported Databases

- Microsoft Access
- Oracle Database
- Sybase
- Microsoft SQL Server
- FileMaker
- TimesTen
- MySQL Sesrver
- Any other ODBC compliant database

System Information

The Cogent DataHub supports OPC DA 3 and DA 2 server and client connections as well as the ODBC protocol. It runs on the following operating systems:

- Windows 10 (32-bit & 64-bit)
- Windows 8 (32-bit & 64-bit)
- Windows Embedded 8 (32-bit & 64-bit)
- Windows 7 (32-bit & 64-bit)
- Windows Server 2012 (64-bit)
- Windows Server 2008 R2 (64-bit)
- Windows Server 2008 (32-bit & 64-bit)
- Windows Server 2003 SP2 (32-bit & 64-bit)
- Windows Vista (32-bit & 64-bit)
- Windows XP SP2 (32-bit & 64-bit)

Ordering Information

PRODUCT	CODE	DESCRIPTION
DataHub OPC Logger	DHLOG	DataHub Core features with OPC DA and Logging
DataHub OPC UA Logger	DHLOGUA	DataHub Core features with OPC UA and Logging

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DataHub® Scripting

Expand the reach of off-the shelf software

Every system integration project is different. By design, off-the-shelf software meets most needs, but it cannot be everything to everyone. When you need to log an unexpected value or flip a bit based on a particular event, when you need to access your data in a way that the SCADA designer hadn't thought of, or perhaps read in the contents of an external file, monitor a network connection, or make custom changes to the data flowing through your system, you can use DataHub scripting.
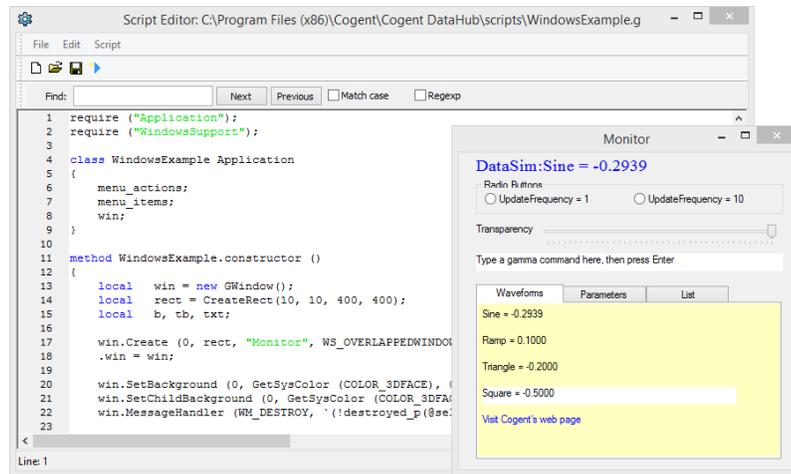
Connect to and customize virtually any system

Connect to OPC servers, SCADA systems, HMIs, databases, spreadsheets and custom programs using OPC, DDE, XML, TCP, ODBC, or the DataHub API. Pull in live process data, take input from Excel, access recipes or set points from any SQL database, and integrate values from CSV or other text files. Gain better control over OPC connections, optimize your legacy systems, and leverage the value of your process data.

Work at the level of the data

With your data flowing through the Cogent DataHub, every point is available in a script, in real time. Perform linear transformations, break up OPC arrays, convert data types, adjust polling rates, create monitoring points, track connections, read in lists of OPC tags, and automatically calculate formulas based on data points.

DataHub Scripting in the nick of time:

"With three weeks to go, they told us there was no solution in sight," said the SCADA engineer of a large wind farm facing months of shut-down due to bat migration cycles during the night. The company needed to raise cut-in speeds at night when the bats flew, and lower them during the day. The turbine manufacturer did not offer a solution, and it looked like they would need to reconfigure every turbine manually, twice a day.

"I thought there must be a better way," the project manager continued. "We'd been using the Cogent DataHub for years, and knew the potential was there to leverage this asset further. I gave Cogent a call, and told them what we were up against. They delivered by helping us to develop a very efficient program using DataHub scripting. The code runs right on the SCADA interface of the OEM system – so it's as reliable as you can get." Read more: http://skkynet.com/wind-turbine-farm-usa/.

A Complete Programming Language

The DataHub scripting language is a dynamically-typed interpreted programming language specifically designed to allow rapid development of control and user interface applications. It has a syntax similar to C and C++, with a range of built-in features that make it a far better language for developing sophisticated real-time systems. It offers fully documented functions for classes and methods, data type conversions, lists, arrays, strings, buffers, I/O, file system, event and callbacks, as well as ODBC connectivity and the ability to create menus and Windows.

Sample Scripts

A number of sample scripts come with the Cogent DataHub that can be used immediately, or modified to meet your needs. Some of the more popular ones allow you to:
- Automatically calculate formulas based on data points
- Perform linear transformation functions on points
- Convert integer data into a set of single-bit points
- Make arrays from individual points, or break arrays into points
- Read data from CSV or XML files
- Write data to CSV or text files
- Disconnect or reconnect to OPC servers, or reload data with no disconnect
- Inform the system when a connection is made or broken
- Track the quality of OPC tags

System Information

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- Windows Server 2008 R2 (64-bit)
- Windows Server 2008 (32-bit & 64-bit)
- Windows Server 2003 SP2 (32-bit & 64-bit)
- Windows Vista (32-bit & 64-bit)
- Windows XP SP2 (32-bit & 64-bit)

Ordering Information

DataHub Scripting comes as a standard feature with any DataHub Product Pack.

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