

# ObjectServer

ObjectServer software version 1.5 allows direct communication to the ControlWave® family of controllers, remote terminal units (RTUs), process logic controllers (PLCs), and flow computers using industry standard OPC (Object linking and embedding for Process Control) data access. ObjectServer is an OPC-compliant OPC server and facilitates communication by converting the protocol used by your field hardware into the OPC protocol. ObjectServer supports communications over serial, multi-drop, remote telemetry, and Ethernet networks. ObjectServer version 1.5 can be installed from the OpenBSI version 5.9 installation media.

## Features

- OPC Data Access 1.0a and 2.05a compatible
- Windows® Server 2008 (32 and 64 bit)
- Windows XP with SP3 and Windows 7 (32 and 64 bit)
- Automatic database creation from ACCOL and ControlWave files
- Integrated real-time data monitor
- Supports OPC Browse interface
- Supports RBE (Report By Exception)
- Phased primary and background polling schemes
- OPC Alarm & Event Server support

Built using OpenEnterprise SCADA technologies, ObjectServer encompasses support for RBE (Report By Exception), polled data collection, and remote alarms. Data is made available to OPC clients through ObjectServer, which supports the OPC Foundation Data Access version 1.0a and version 2.05a standards. ObjectServer also supports version 1.1 of the OPC Foundation Alarm and Event standard.

ObjectServer provides reliable data acquisition from your RTUs even when connected via intermittent, low-bandwidth, or high-latency networks such as radio, satellite, and cellular modems. It is also well suited to systems where multiple OPC clients (usually operator workstations running PC-based Human Machine Interface (HMI) packages) need access to the network concurrently. ObjectServer is also designed for use with third party HMI packages where basic functional requirements do not require or justify the use of the OpenEnterprise SCADA package.

Unlike traditional OPC servers, ObjectServer has been specifically designed to ensure that the RTU network load does not increase as additional PCs or displays are added to the system, as operator activity increases, or as HMI changes are made. A real-time relational database permits network loading to be independent of operator activity. ObjectServer also works well on high-speed networks. For example, the program has the ability to poll over 4500 tag values every second from a single ControlWave controller.

Configuring ObjectServer is easy. After installation, a simple wizard builds the database and configures data collection from the RTU network and program loads. Installation and initial configuration can be achieved in less than 30 minutes for a typical network.

ObjectServer supports data polling, report by exception (RBE), and alarm messaging. A major advantage of ObjectServer is that it is possible to add to or modify the existing configuration without affecting data collection, and the user-configurable data polling minimizes communication bottlenecks.

ObjectServer uses OpenBSI to communicate with networks of RTUs. Real-time and alarm data is collected from the RTU network, and is saved in a high-performance database.

## Browsing

ObjectServer supports the OPC option of tag browsing. This enables OPC clients to review a complete list of tags available in ObjectServer, and allows you to select the tags required for OPC transactions. ObjectServer provides a seamless migration path with support for current and legacy OPC tag formats.

## Data Collection

ObjectServer supports standard polling of RTUs using serial BSAP and BSAP/IP protocols. ObjectServer supports both active polling and background polling. Background polling can be used to ensure that a value is displayed for each tag when you launch a display. The rate at which the tags are updated in an open display can be configured via active polling. You can configure the system to perform a Manual Collection, Periodic Collection, or Rolling Scan polling scheme.

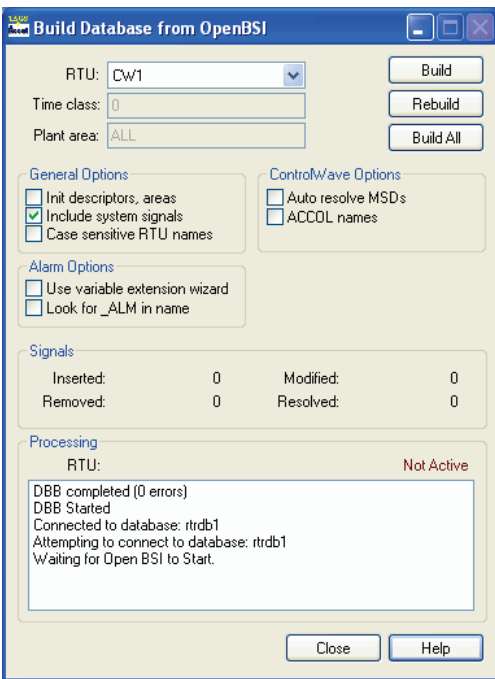
When Active Collection is selected, the system collects current values from the devices at a fast polling rate exclusively for OPC tags that are currently registered.

When Periodic Collection is selected, ObjectServer collects data from the devices based on a user-configured time period. All settings are saved to memory, and the system continues to poll the devices until you manually tell the system to stop.

When Rolling Scan is selected, ObjectServer collects data from the devices as quickly as possible. You can configure a deadband between polling each device that allows other communications to take place.

### Rapid Database Builder

ObjectServer features an easy to use database builder, and supports all ControlWave variables and ACCOL signal attributes. When programming the RTUs (in either Workbench or ControlWave Designer), simply mark the tags you wish to appear in your HMI. The database builder adds the tagged signals to the database for each device in the system. You can add signals to the database for an individual RTU or for all RTUs in the network.

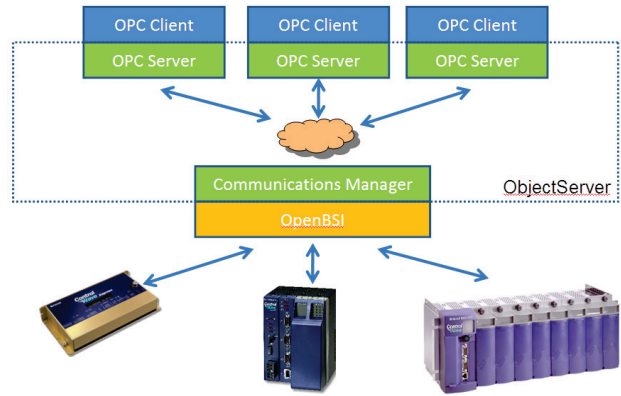


Rapid Database Builder User Interface

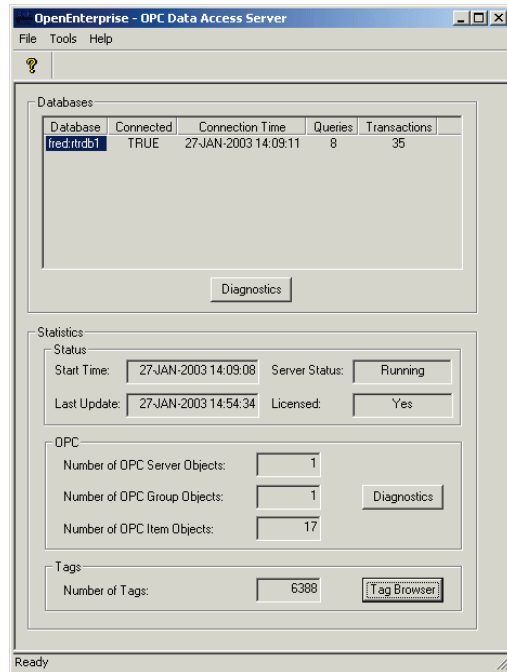
### OPCServer

OPCServer provides access to the data collected by the Communications Manager. The collected data is transferred to any OPC compatible client. OPCServer can be installed locally or on remote platforms as a single or as multiple OPC server instances (with the appropriate licenses). Connectivity between OPCServer and the Communications

Manager is by TCP/IP socket. This method of communication eliminates the inherent security issues that are usually associated with remote OPC DCOM connections. It is recommended that OPCServer is installed on the same platform as the OPC Client.



Network Architecture

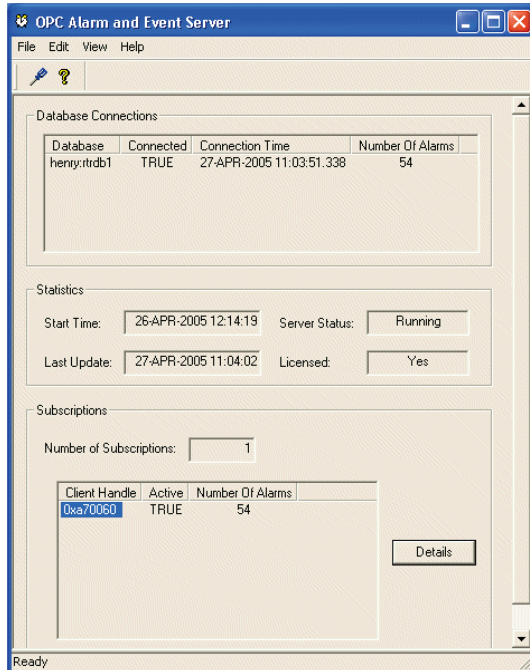


OPC Server User Interface

### OPC Alarm and Event Server

The OPC Alarm and Event Server is software that manages alarm propagation between the ControlWave RTUs and a third party OPC alarm client. The OPC Alarm and Event Server is compliant with the OPC Alarm and Event standard which ensures preservation of time stamps and defines standard operator methods, such as alarm acknowledgements. The OPC Alarm and Event Server stores

alarm data in an alarm buffer. If communications are interrupted, the program transmits the stored data when communications are restored. This ensures that no alarm data is lost.



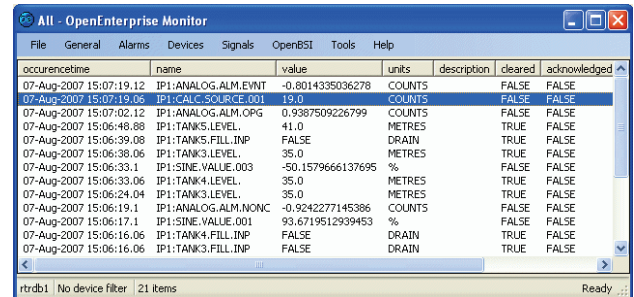
OPC Alarm and Event Server User Interface

## Communications Manager

The ObjectServer Communications Manager uses the OpenBSI Tool suite in order to control communications with Controlwave devices. The Communications Manager provides storage and a backfill facility to service multiple OPC Servers.

## Device and Variable Monitor

This integrated tool monitors the communication status and variables for all RTUs in the database and is useful to confirm communication success and to view live data signal attributes.



Device Variable Monitor

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