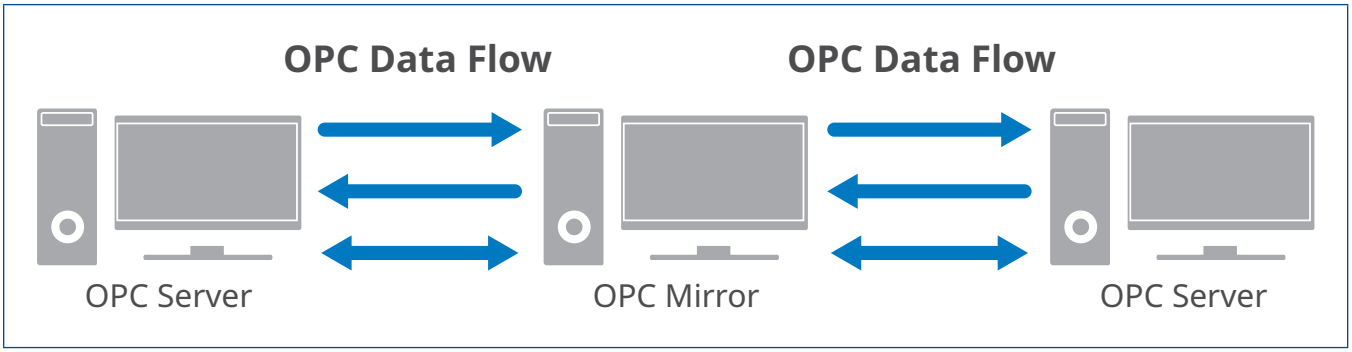
OPC Mirror



Redundant OPC Data Access servers provide highly reliable data transfer.

- Bi-directional data flow
- Easy configuration
- Fast data transfer
- OPC Data Access compliant
- Runs anywhere
- Redundant operation

Introduction

OPC Mirror is an OPC Data Access compliant software application that enables two or more OPC Data Access servers to communicate with each other. The OPC standard is based on client-server architecture; OPC clients send and receive data from OPC servers. OPC Mirror enables OPC server to server communication, acting as a bi-directional client to OPC servers.

The OPC Mirror application enables easy, secure and reliable data transfer between different control systems using OPC communications. To support this data transfer, the control system need only support the OPC Data Access standard. OPC Data Access is an industry standard and every major control system supports this standard.

OPC Mirror configuration is quick and easy. Simply drag-and-drop OPC items from one OPC server to another and download the changes to begin data transfer. With OPC Mirror your OPC communications will be up and running in no time.

Once configured, OPC Mirror runs in the background, transferring data from server to server. OPC Mirror is optimized to handle your biggest integration tasks, so throughput is never a problem.

Benefits

Bi-directional data flow. OPC Mirror *can send data to and receive data from OPC servers.* Data flow can also be one way, from one server into another server.

Easy configuration. OPC Mirror is configuring using *easy drag-and-drop techniques* – simply select an OPC item from one OPC server and drag it to an OPC item in the other OPC server. That's it! For bulk editing, you can export the OPC Mirror configuration and edit it in a spreadsheet, then import the changes back into the OPC Mirror. Easy!

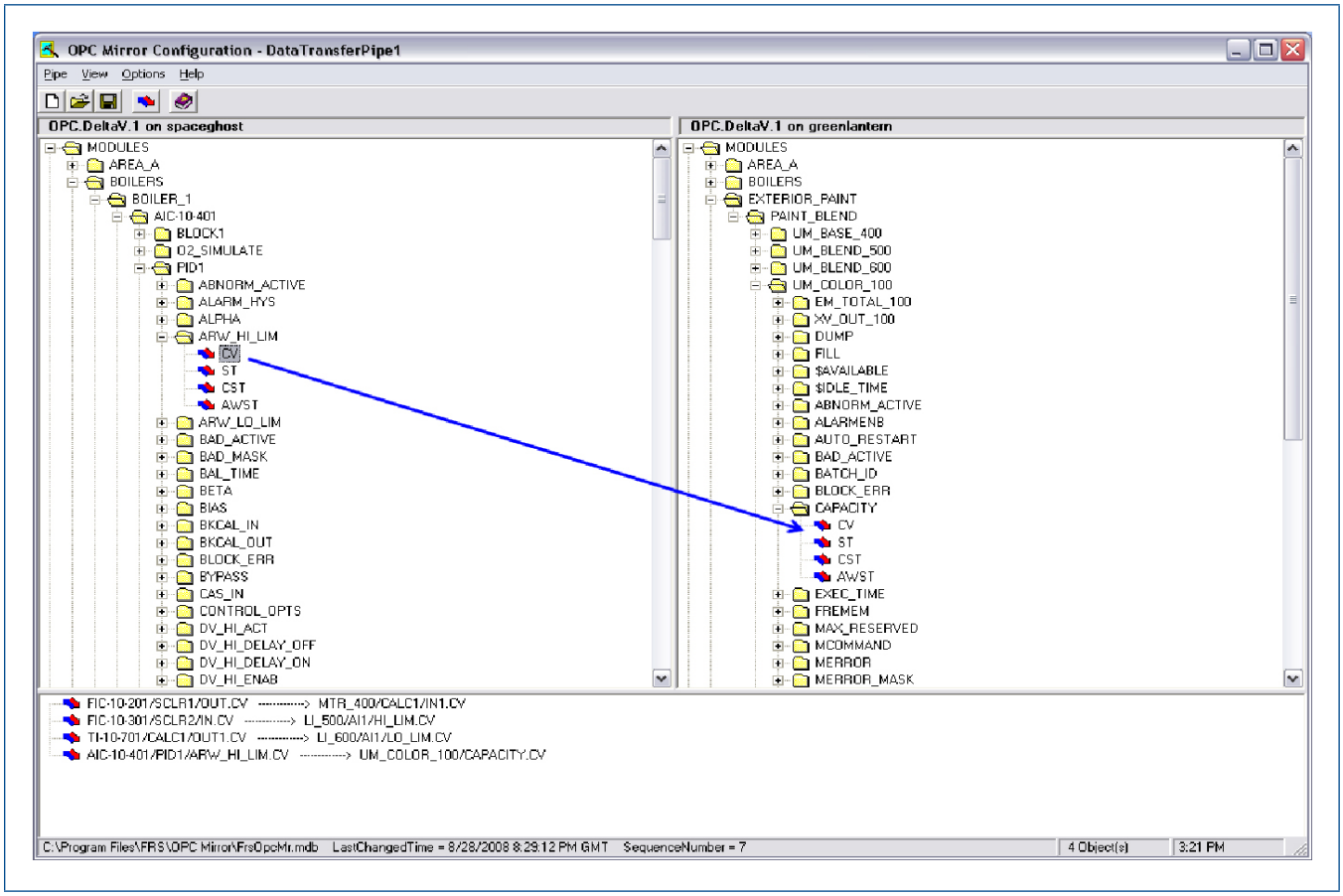
Fast data transfer. OPC Mirror has a *fast and efficient data transfer mechanism.* Up to 50 OPC servers can be configured with OPC Mirror with an unlimited number of OPC items mapped between servers.

OPC-compliant. Since DeltaV software and the OPC Mirror are built to OPC standards, you can connect to any other OPC-compliant system. OPC Mirror supports both *OPC Data Access v1.0 and v2.0 compliant servers.*

Runs anywhere. OPC Mirror *runs on any Windows operating system supported by current DeltaV versions.* DeltaV and on non-DeltaV workstations are supported. It does not matter where you install OPC Mirror, as long as the system it is installed on has connectivity to the OPC servers it needs.

Redundant Operation. For increased availability of your OPC data, OPC Mirror has an *option for redundant operation.* Two instances of OPC Mirror work together on two DeltaV Application Stations in active and standby roles. Failure of the active OPC Mirror or any connected OPC server causes automatic failover to the standby OPC Mirror, ensuring seamless data transfer.

Drag 'n Drop Configuration



OPC Mirror configuration is easy—just drag-and-drop!

Product Description

OPC Mirror connects your OPC server to one or more OPC servers on other systems. OPC Mirror can be used with the DeltaV OPC server or any other OPC compliant 3rd party system. You use the OPC Mirror configuration interface to define the data mapping between OPC servers. Once the data mappings are made, OPC Mirror begins transferring data between the OPC servers at the configured rate - pushing values back and forth between systems.

Security. To ensure secure operations with the DeltaV system, all OPC Mirror requests for DeltaV data go through standard DeltaV security mechanisms. OPC Mirror maintains the same level of security that you establish for the rest of your system.

Diagnostics. OPC Mirror comes with its own diagnostics application to give you quick access to OPC Mirror and the status of the OPC communications. View this data from the OPC Mirror Diagnostics tool or save it to a log file for future analysis. If one of the control systems is a DeltaV system, further diagnostic information is included in DeltaV Diagnostics Explorer.

Redundancy. When you cannot afford to lose OPC communications, OPC Mirror can be made redundant. Working in conjunction with the redundant DeltaV OPC Data Access servers, OPC Mirror can provide a very high level of OPC data communication reliability and availability. There is no additional configuration required to use OPC Mirror redundancy – you simply select DeltaV OPC Data Access and OPC Mirror redundancy and configure the active OPC Mirror. The OPC Mirror redundancy scheme automatically synchronizes the active and standby instances of OPC Mirror. For more details on OPC Mirror redundancy, refer to the OPC Mirror Redundancy Product Data Sheet.

Configuration. Configure your data-mappings with point-and-click ease between any OPC servers. To configure OPC Mirror, you select the source item, then drag and drop it onto the destination item, as shown below. OPC Mirror does the rest.

There is no need to worry if the data in one system is not the same as the data in the other system, because OPC Mirror has tools to configure individual item scaling or scaling of an entire range of data. You can also check the validity of each item mapped between servers to ensure that the data communications will be valid when the connection is active.

After the OPC server connections are active, configuration changes may be made to individual "pipes" (aka OPC groups or server-to-server connections) on-line, without affecting the operation of other pipes.

Not only does the OPC Mirror connect servers in a flexible fashion, but also the application may connect more than two OPC servers at one time—*with no programming!* Up to fifty OPC servers may be connected by merely dragging and dropping between server configurations.

Installation and Licensing. OPC Mirror may be installed in any way to fit your system architecture requirements. OPC servers may be located on the same machine as the OPC Mirror or on remote machines. OPC Mirror may also be loaded on a machine without an OPC server. The only requirement is that there is a continuous TCP/IP connection between the OPC servers. If OPC Mirror is to be used with a DeltaV system and installed on a DeltaV node, OPC Mirror should be licensed with the DeltaV system. If OPC Mirror is not used with a DeltaV system or installed on a non-DeltaV node, then OPC Mirror should be licensed using the independent licensing scheme.

Intended Use

The OPC Mirror enables bi-directional OPC communications between OPC servers on multiple control system platforms. The OPC communications can be between one or more DeltaV OPC servers, PROVOX OPC servers, 3rd party OPC servers, or any other OPC server combination necessary. Up to 50 OPC servers may be connected through a single instance of OPC Mirror.

The intended use for OPC Mirror is to pass supervisory control and data acquisition information from one OPC server to another. The protocols used by OPC are inherently non-deterministic, meaning that an OPC application does not know if data has successfully reached its destination. Because of this, OPC applications must build in the intelligence to detect when data transmission fails. This is especially true if OPC is used to pass mission-critical data, such as control loop set points, tuning parameters, or safety interlocks. If communication of secure data is required, OPC Mirror has built-in OPC server monitoring tools to make the OPC communications more secure by alerting the operator on the loss of a server or failure of data communications. OPC Mirror will even re-connect to a failed server when it becomes available.

In addition, it is recommended that watchdog timers be added to each control system strategy for use in monitoring the health of each control system's OPC connection through OPC Mirror. The watchdog timers provide a "heartbeat" for each connection to confirm that the servers are connected and available for data transfer. Receipt of the heartbeat does not ensure the integrity of the data transfer; however, the presence of the heartbeat indicates that the servers are communicating and the server connection is available. A watchdog timer control strategy for the DeltaV system is provided for use with OPC Mirror. For non-DeltaV systems, the watchdog timer control strategy will need to be developed.

Ordering Information

The OPC Mirror is distributed on the DeltaV system software media. OPC Mirror may be licensed using DeltaV system licensing or an independent licensing scheme (CrypKey) depending upon whether OPC Mirror is installed on a DeltaV workstation or non-DeltaV workstation. If OPC Mirror is installed on a DeltaV workstation, use the DeltaV license (VE2212 series). If OPC Mirror is installed on a non-DeltaV workstation, use the CrypKey license (VF1001 series).

Note: OPC Mirror redundancy is only available if used on a DeltaV Application Station pair and licensed with DeltaV system licensing.

Description	CrypKey License Model Number	DeltaV License Model Number
OPC Mirror, xx[1] servers (DeltaV system licensing)	N/A	VE2212S0xx
OPC Mirror, 1 Server Level Upgrade[2] (DeltaV system licensing)	N/A	VE22UPS038
OPC Mirror, 5 Server Level Upgrade[3] (DeltaV system licensing)	N/A	VE22UPS039
OPC Mirror, xx[1] servers (CrypKey licensing)	VF1001SxxM0	N/A
OPC Mirror, X[4] to Y[4] Server Scaleup (CrypKey licensing)	VF1001UPXY	N/A

NOTES:

1. "xx" represents the number of OPC server connections required, from 2 to 50 (in increments of 1 from 2 to 5 servers, increments of 5 from 5 to 25 servers, and a 50 server license). For example, if you want to a 2 server connection license, you will need one VE2212S002 license if using DeltaV system licensing or VF1001S02M0 if using CrypKey licensing.
2. A "1 Server Level Upgrade" is a step from N servers to N+1 (VE22UPS038) servers. For example, if you want to upgrade from 2 to 3 server connections, you will need one 1-Server Level Upgrade license. If you want to upgrade from 3 to 5 server connections, you will need two 1-Server Level Upgrade licenses.
3. A "5 Server Level Upgrade" is a step from N servers to N+5 (VE22UPS039) servers. For example, if you want to upgrade from 5 to 10 server conenctions, you will need one, 5-Server Level Upgrade license. If you want to upgrade from 5 to 15 server connections, you will need two, 5-Server Level Upgrade licenses.
4. "X" represents the number of existing OPC server connections, from 2 to 25 servers (2, 3, 4, 5, 10, 15, 20, 25) and "Y" represents the number of OPC server conenctions required, from 3 to 50 (3, 4, 5, 10, 15, 20, 25, 50). For example, if you want to upgrade from 2 to 3 server connections, you will need one VF1001UP203 Server Scaleup license. If you want to upgrade from 3 to 5 server connections, you will need one VF1001UP305 Server Scaleup license. If you want to upgrade from 5 to 10 server connections, you will need one VF1001UP510 Server Scaleup license. If you want to upgrade from 10 to 15 server connections, you will need one VF1001UP115 Server Scaleup license.

Related Products

- **OPC Mirror Redundancy.** Enables redundant OPC server to server communications.
- **DeltaV Application Station.** The DeltaV workstation used for OPC communications. The DeltaV OPC Data Access server is available from 250 to 30,000 OPC items per Application Station.
- **DeltaV OPC Data Access Server Redundancy.** Enables redundant DeltaV OPC server communications.
- **Backup and Recovery.** Provides data backup and disaster recovery for DeltaV system and associated process control data.
- **OPC UA.** The different OPC UA servers and clients in the DeltaV system allows data reads and writes to and from 3rd party application in an easy, reliable and secure way.

Prerequisites

- OPC Mirror is available for any Windows operating system supported by the current DeltaV versions.
- If you're using OPC Mirror to connect to a DeltaV OPC Data Access server, then a license for the DeltaV OPC Data Access Server is required.
  - If less than 250 OPC items are required to read data from and/or write data to the DeltaV system, the DeltaV OPC Server may be licensed on the Professional PLUS Station or the Application Station.
  - If more than 250 OPC items are required to read data from and/or write data to the DeltaV system, the DeltaV OPC server must be licensed on an Application Station The Application Station is sized based on the size of the OPC Server required, from 250 to 30,000 OPC items.
- If you're using OPC Mirror with non-DeltaV OPC servers, then you should follow the instructions provided by the 3rd OPC server suppliers when setting up the 3rd party OPC servers.

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