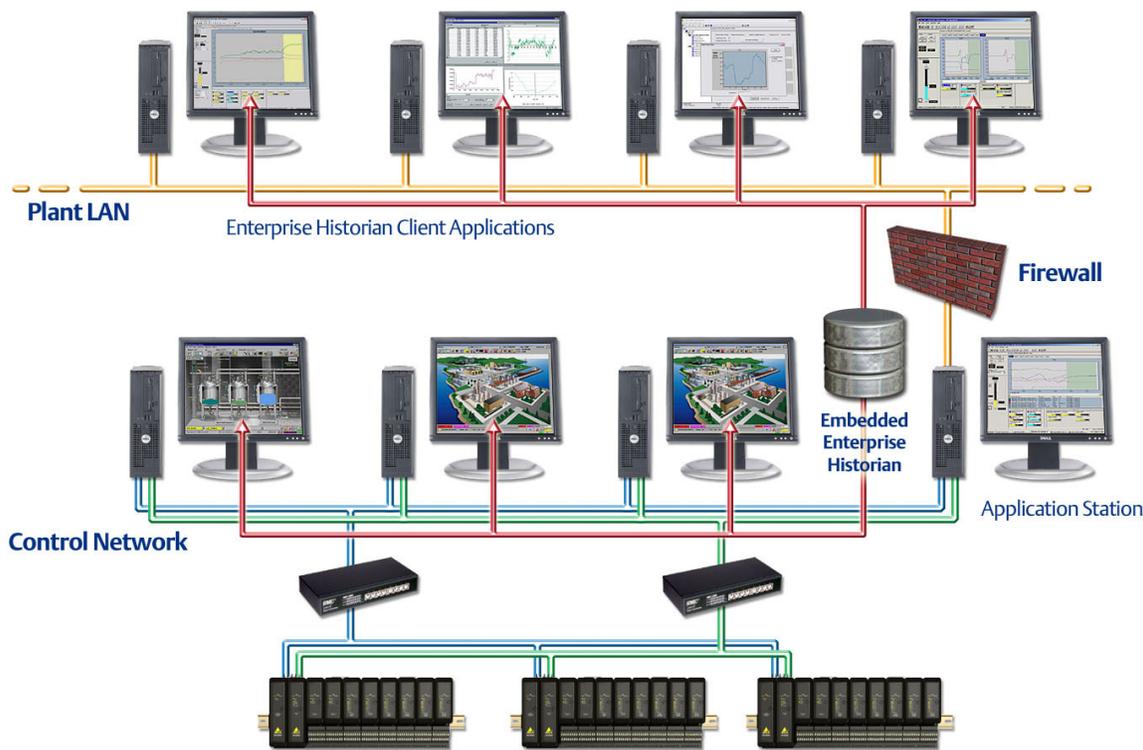# Embedded Enterprise Historian

An enterprise historian may be integrated into the DeltaV™ system.

- Enterprise historian functionality

- Integrated DeltaV system configuration and data collection

- Seamless DeltaV history client connectivity and data viewing

- Seamless enterprise historian client and interface connectivity

Introduction

The DeltaV Continuous Historian collects and stores continuous process data generated by the DeltaV system. The DeltaV Continuous Historian provides all of the historian data collection and viewing functionality required by the DeltaV system.

However, there may be occasions when more historian functionality is required. In these cases, a 3rd party enterprise historian may be integrated into the DeltaV system on a DeltaV Application Station to replace the DeltaV Continuous Historian.

The 3rd party enterprise historian is integrated into the DeltaV system and behaves as a functional equivalent to the DeltaV Continuous Historian, but also provides enterprise historian functionality – an embedded enterprise historian! The Enterprise PI Server from OSIsoft provides the first example of an embedded enterprise historian in the DeltaV system.

Benefits

Enterprise historian functionality. The 3rd party enterprise historian is integrated into the DeltaV system, providing all the functionality of an embedded control system historian. However, the *embedded enterprise historian also provides the functionality of an enterprise historian*. Any enterprise historian functionality available with embedded enterprise historian may be used.

Integrated DeltaV system configuration and data collection. The DeltaV parameters required for history collection in the embedded enterprise historian are configured using the familiar DeltaV engineering tools – DeltaV Explorer and/or Control Studio. The embedded enterprise historian is configured in the exact same way as the DeltaV Continuous Historian using the native DeltaV engineering tools. *No 3rd party engineering tools required!*

Seamless DeltaV history client connectivity and data viewing. The DeltaV history client applications will *seamlessly connect to and view data in the embedded enterprise historian*. The DeltaV history clients will seamlessly connect to and view DeltaV historical data in the embedded enterprise historian. The DeltaV history client applications may reside on any DeltaV workstation and access the historical data collected in the embedded enterprise historian.

Seamless enterprise history client and interface connectivity. The enterprise historian's own client applications and interfaces will seamlessly connect to and access DeltaV historical data in the embedded enterprise historian. Use the enterprise historian client applications and interfaces to *provide DeltaV historical data to your users in your corporate enterprise*. The enterprise historian client applications and interfaces may reside on the DeltaV Application Station or 3rd party workstation.
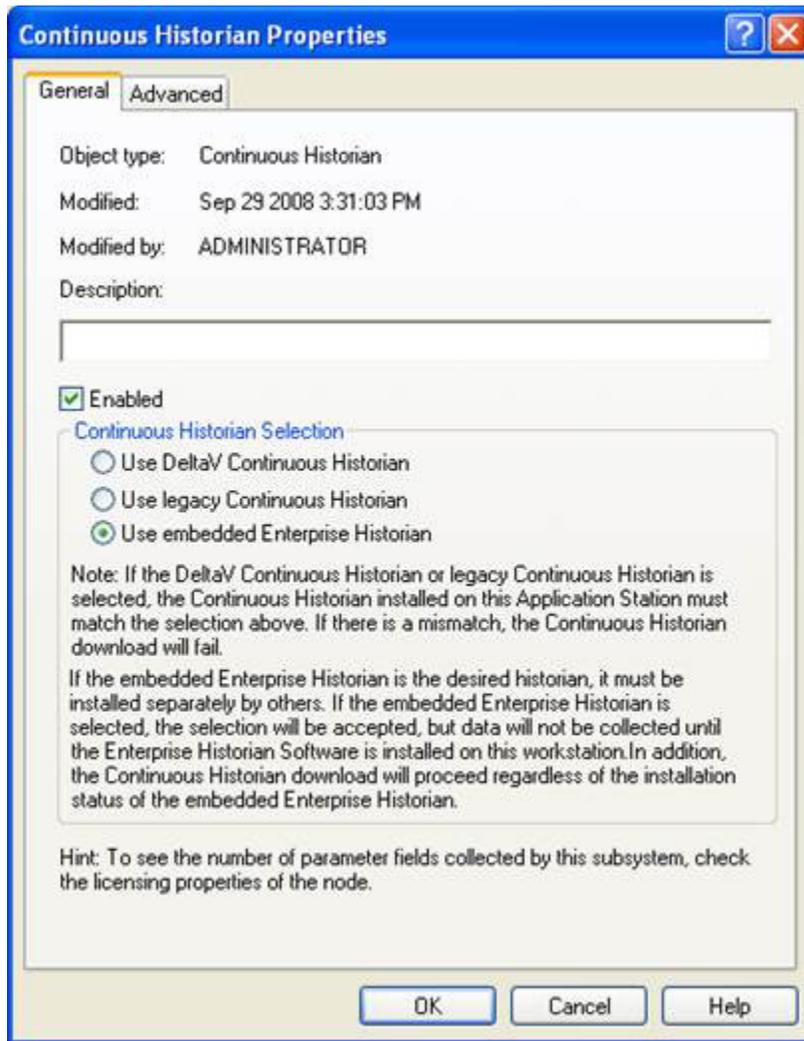
Flexible system architecture. A 3rd party enterprise historian may be integrated into the DeltaV system as an alternative to the DeltaV Continuous Historian. The DeltaV Continuous Historian remains the default historian in the DeltaV system, but the embedded

enterprise historian feature provides an option to using the DeltaV Continuous Historian for users that require enterprise historian functionality. The embedded enterprise historian is integrated into the DeltaV system such that configuration and use of the embedded enterprise historian is no different than the DeltaV Continuous Historian.

The embedded enterprise historian is purchased and installed separately from the DeltaV system software. The embedded enterprise historian, 3rd party data collection interface and any other required 3rd party integration components are installed on a DeltaV Application Station. Once installed on the Application Station, you use DeltaV Explorer to configure the DeltaV system to use the embedded enterprise historian instead of the DeltaV Continuous Historian. The DeltaV parameters required for history collection are configured using the DeltaV system engineering tools – DeltaV Explorer or Control Studio – just like the DeltaV Continuous Historian.

When the DeltaV parameters required for history collection are configured, the Continuous Historian subsystem on the Application Station is downloaded in order to commit the configuration changes to the embedded enterprise historian – just like the DeltaV Continuous Historian. During download of the Continuous Historian subsystem, an enterprise historian configuration file is generated by the DeltaV system which contains the history collection details for the DeltaV parameters. The embedded enterprise historian uses this file to create data tags for the DeltaV parameters in the embedded enterprise historian database and establish data collection for the configured parameters.

The embedded enterprise historian collects real-time data from the DeltaV system for the configured parameters using the DeltaV OPC Data Access (DA) Server. The embedded enterprise historian will use the local DeltaV OPC DA Server to populate real-time data in the enterprise historian database, using the configuration settings defined in the enterprise historian configuration file. The DeltaV OPC DA Server must be sized to accommodate the number of DeltaV parameters configured for history collection in the embedded enterprise historian

Embedded Enterprise Historian

Continuous Historian Properties [?][X]

General | Advanced

Object type: Continuous Historian

Modified: Sep 29 2008 3:31:03 PM

Modified by: ADMINISTRATOR

Description:

[   ]

[✓] Enabled

Continuous Historian Selection
 ○ Use DeltaV Continuous Historian
 ○ Use legacy Continuous Historian
 ⦿ Use embedded Enterprise Historian

Note: If the DeltaV Continuous Historian or legacy Continuous Historian is selected, the Continuous Historian installed on this Application Station must match the selection above. If there is a mismatch, the Continuous Historian download will fail.

If the embedded Enterprise Historian is the desired historian, it must be installed separately by others. If the embedded Enterprise Historian is selected, the selection will be accepted, but data will not be collected until the Enterprise Historian Software is installed on this workstation. In addition, the Continuous Historian download will proceed regardless of the installation status of the embedded Enterprise Historian.

Hint: To see the number of parameter fields collected by this subsystem, check the licensing properties of the node.

[OK] [Cancel] [Help]

Use the DeltaV Continuous Historian Properties dialog to select the embedded enterprise historian.

The standard embedded enterprise historian architecture includes all required components installed and operating on a single DeltaV Application Station. The embedded enterprise historian database, 3rd party data collection interface, and any other required 3rd party integration components as well as the DeltaV OPC DA Server will reside on the same Application Station. In the standard architecture, up to 30,000 DeltaV parameters may be configured for history collection in the embedded enterprise historian at a recommended data collection rate of 3,000 samples per second.

A single DeltaV system may have up to 20 embedded enterprise historians configured for use. You may also use a DeltaV Continuous Historian in the same system as an embedded enterprise historian, but it is not necessary to have a DeltaV Continuous Historian configured in the system if you want to use the embedded enterprise historian. In addition, only one historian (embedded enterprise historian or DeltaV Continuous Historian) may be installed on a single Application Station.

The DeltaV system historian client applications provide seamless connectivity to the embedded enterprise historian. The DeltaV history client applications may reside on any DeltaV workstation and access the historical data collected in the embedded enterprise historian.
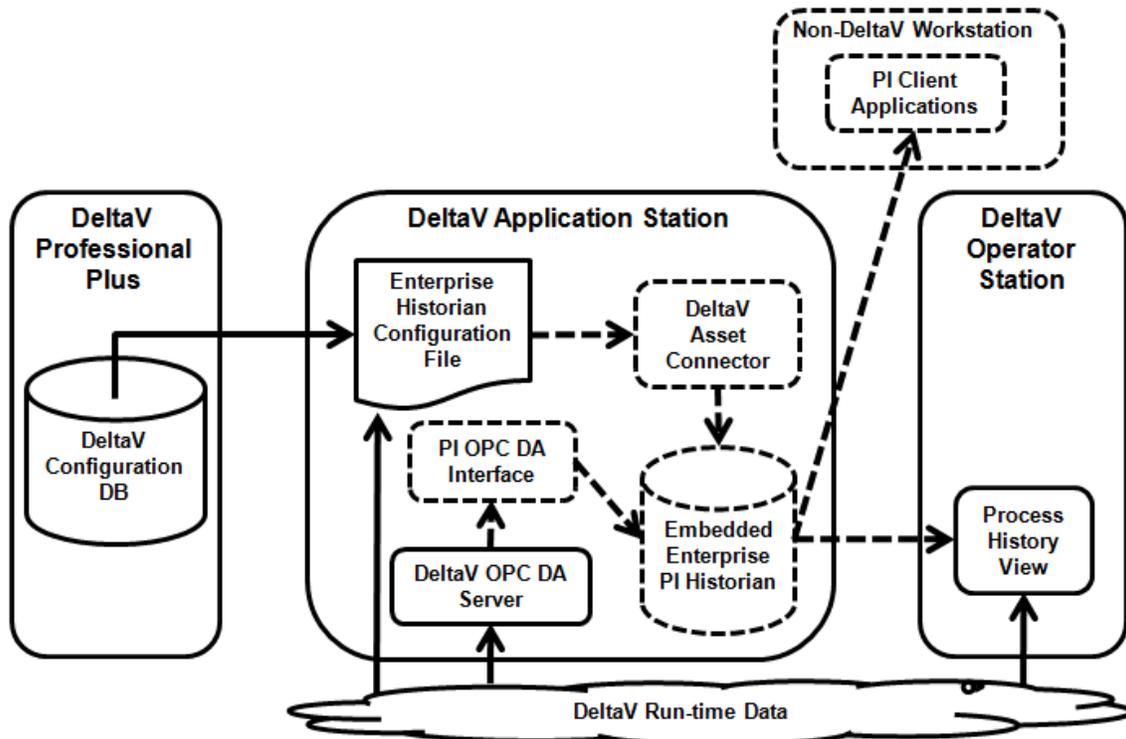
Using the embedded enterprise historian enables you to use any of the enterprise historian client applications natively with the embedded enterprise historian. The enterprise historian client applications may be used on the DeltaV Application Station or any 3rd party workstation that has network connectivity to the embedded enterprise historian.

OSIsoft Enterprise PI Server

The Enterprise PI Server from OSIsoft provides the first example of an embedded enterprise historian available for use in the DeltaV system. The Enterprise PI Server and associated components must be purchased directly from OSIsoft or an Emerson reseller. The Enterprise PI Server and associated components must be installed separately from the DeltaV system software on a DeltaV Application Station. OSIsoft or Emerson can provide assistance with the installation of the Enterprise PI Server and associated components, if necessary.

Integration of the Enterprise PI Server with the DeltaV system is accomplished using the DeltaV Smart Connector developed by OSIsoft. The DeltaV Smart Connector is comprised of the DeltaV Asset Connector and the PI OPC DA interface. The DeltaV Asset Connector is a software component developed by OSIsoft that consumes the enterprise historian configuration file generated when the Continuous Historian subsystem is downloaded. The DeltaV Asset Connector then creates the appropriate tags in the embedded Enterprise PI historian, with the appropriate configuration settings, and starts the PI OPC DA interface. Any time history collection changes are made to the embedded Enterprise PI historian and downloaded, the DeltaV Asset Connector reads the changes from the enterprise historian configuration file and updates the embedded Enterprise PI historian accordingly, ensuring the embedded Enterprise PI historian is always synchronized with the DeltaV system history configuration.

The PI OPC DA interface collects real-time data from the DeltaV system for the configured parameters using the local DeltaV OPC DA Server. The DeltaV OPC DA Server must be sized to accommodate the number of DeltaV parameters configured for history collection in the embedded Enterprise PI historian, one OPC item for each configured parameter.

Architecture details of the Enterprise PI Server used as the embedded enterprise historian

Architecture details of the PI Server as an integrated enterprise historian

The standard architecture for using the embedded Enterprise PI historian requires all components installed and operating on a single DeltaV Application Station. In the standard architecture, up to 30,000 DeltaV parameters may be configured for history collection in the embedded Enterprise PI historian, at a recommended collection rate of 3,000 samples per second. A single DeltaV system may have from one to 20 embedded Enterprise PI historians configured for use.

In addition to storing real-time data from the DeltaV system, the embedded Enterprise PI historian can be configured to store the DeltaV equipment hierarchy in PI AF. PI AF is a component of the Enterprise PI Server that enables you to define a representation of your plant assets and use these assets to easily view and analyze your plant data. By manually exporting the DeltaV equipment hierarchy from DeltaV Explorer, you can recreate the DeltaV equipment hierarchy in PI AF to provide the same data structure in the embedded Enterprise PI historian as exists in the DeltaV system. PI client applications can use PI AF to navigate and find data in the embedded Enterprise PI historian in the same manner as DeltaV client applications.

The DeltaV system historian client applications provide seamless connectivity to the embedded Enterprise PI historian. The DeltaV history client applications may reside on any DeltaV workstation and access the historical data collected in the embedded Enterprise PI historian. The DeltaV historian client applications Process History View, MPC Operate, MPC Operate Pro, Neural, Predict, Predict Pro and Web Server will work with the embedded Enterprise PI historian. A few DeltaV historian client applications will not work with the embedded Enterprise PI historian, notably the embedded historical trend control in DeltaV Operate, DeltaV Reporter and History Analysis. These applications only work with the DeltaV Continuous Historian. In addition, the History Web Service will work with the embedded Enterprise PI historian, but the DeltaV OPC Historical Data Access Server will not work with the Enterprise PI Server (although OSIsoft can provide an OPC Historical Data Access server for the Enterprise PI Server if required).

Any of the OSIsoft PI client applications may also be used with the embedded Enterprise PI historian. The PI client applications may be used on the DeltaV Application Station or any 3rd party workstation that has network connectivity to the embedded Enterprise PI historian.

Use of the Enterprise PI Server as the embedded enterprise historian requires the OSIsoft Enterprise PI Server software and PI Server license and the DeltaV Smart Connector software and Smart Connector license, provided by OSIsoft. Also required are the DeltaV OPC DA Server license and Enterprise Historian Configuration Interface license, provided by Emerson.

Embedded Enterprise Historian

Ordering Information

Description	Model Number
Enterprise Historian Configuration Interface	CE2221

Related DeltaV Products

■ **DeltaV OPC Data Access Server.** Supporting sustained communication rates of up to 30,000 real-time values per second, the DeltaV OPC Data Server delivers fast, secure, reliable communications to client applications anywhere on your network. Scalable on the Application Station from 250 to 30,000 data values.

■ **History View Software Suite.** Monitor your plant's continuous, event and batch data—historically and in real time.

■ **Predict Pro.** Model Predictive Control (MPC) which runs in DeltaV to provide multivariable control and optimization for small and large applications. Includes off-line model identification and simulation, plus on-line MPC with operator interface.

■ **Neural.** On-line calculation of process conditions normally only available from lab analysis. Includes off-line data analysis and model training, and on-line calculation modules.

■ **DeltaV Web Server.** Enables web-based viewing of operator displays and historical data.

■ **DeltaV History Web Service.** Exposes all DeltaV continuous process and batch historical data in XML format using Internet-based Web services technology.

Prerequisites

■ Installation and licensing of the enterprise historian on a DeltaV Application Station or non-DeltaV PC with network connectivity to a DeltaV Application Station.

■ Installation and licensing of any related 3rd party integration components on the same DeltaV Application Station as the embedded enterprise historian.

■ A DeltaV OPC DA Server license sized to meet the data collection requirements of the embedded enterprise historian (e.g. an embedded enterprise historian configured with 10,000 parameters will require a 10,000 item DeltaV OPC DA Server license). The DeltaV OPC DA Server must be licensed for use on the same Application Station as the embedded enterprise historian.

■ If using the Enterprise PI Server as the embedded enterprise historian, the Enterprise PI Server must be installed and licensed on a DeltaV Application Station.

■ The Enterprise Historian Configuration Interface license requires a DeltaV Application Station.

■ The Enterprise Historian Configuration Interface requires DeltaV R5 English or later software.