DELTAV™

DeltaV Enterprise Historian

Frequently Asked Questions

Audit Trail
Event History
DeltaV Continuous Historian
Configuration Data

This document answers questions about the integration of an OSIsoft® PI Server with the DeltaV™ system.

DELTAV™

EMERSON™
Process Management

1. Introduction

Terminology

This whitepaper answers questions about the integration of an OSIsoft PI Server with the DeltaV system. In this document, the following terminology is used.

PI Server: the real-time data collection, archiving, and distribution engine that powers the PI System™; sold and supported by OSIsoft.

Embedded Enterprise Historian: a PI Server installed on a DeltaV Application Station and configured for use as the DeltaV system historian.

Integrated Enterprise Historian: a PI Server installed on a non-DeltaV PC and configured for use as the DeltaV system historian.

Enterprise Historian: this term is used when the question or answer is applicable to both the Embedded and Integrated Enterprise Historian.

Site PI Server: a PI Server installed on a non-DeltaV PC, at a network level above the control system, used to collect data from multiple and various data sources and distribute this data to process engineers and business users; sold and supported by OSIsoft.

Legacy Historian: the real-time process data system historian on all new DeltaV systems from v3.3 through v7.3, which was based on PI Server technology. It was possible to keep the Legacy Historian on the Application Station during DeltaV system upgrades up to and including DeltaV system v11.3.1.

DeltaV Continuous Historian: the real-time process data system historian on all new DeltaV systems from v7.4 to the present, developed by Emerson and installed on every DeltaV workstation.

Advanced Continuous Historian: a real-time process data system historian powered by OSIsoft technology, available as an optional historian on DeltaV Application Stations in DeltaV system v12.3.1 and later versions.

1.1. What is the Embedded Enterprise Historian?

The embedded Enterprise Historian is a DeltaV system v10.3 and later deliverable that provides the option to install a PI Server on a DeltaV Application Station to function as the DeltaV system historian, capable of being configured using DeltaV engineeering tools and providing data to DeltaV client applications.

1.2. What is the Integrated Enterprise Historian?

The integrated Enterprise Historian is a DeltaV v12.3 and later deliverable that provides the option to install a site PI Server on a non-DeltaV computer located on network level above the DeltaV system to function as the DeltaV system historian, capable of being configured using DeltaV engineering tools and providing data to DeltaV client applications.

1.3. What is the difference between the Embedded and the Integrated Enterprise Historian?

The difference between the Embedded Enterprise Historian and Integrated Enterprise Historian is the location of the PI Server. In the Embedded Enterprise Historian architecture, the PI Server is located on a DeltaV Application Station. In the Integrated Enterprise Historian architecture, the PI Server is located on a non-DeltaV PC in a higher level network. Aside from the location of the PI Server, the two options are identical.

1.4. Why was the Embedded Enterprise Historian developed?

DeltaV v7.3 was the last available release that included PI functionality in the form of the legacy historian ("Legacy PI"). All new DeltaV systems sold after v7.3 (i.e. v7.4 and later) include the DeltaV Continuous Historian. Many customers that have large investments in the PI system have asked if they could continue using PI Server functionality on new DeltaV systems. The Enterprise Historian projects address the need to have PI Server functionality in a control system historian. The intent of the embedded Enterprise Historian is to replace the functionality of the legacy historian and not necessarily function as a standalone enterprise historian.

1.5. Why was the Integrated Enterprise Historian developed?

The integrated Enterprise Historian was developed to give Emerson customers an additional option for their system historian and added flexibility for where to locate the PI Server. In addition, many DeltaV system customers are also PI System users and it was a natural progression in the development of the Embedded Enterprise Historian to allow these customers to use their existing site PI Servers as their DeltaV system historian.

1.6. Who developed the Enterprise Historian?

The Enterprise Historian is a standard PI Server developed and provided by OSIsoft. The integration of the PI Server with the DeltaV system was a joint development project between Emerson Process Management (Emerson) and OSIsoft.

1.7. Does the Enterprise Historian replace the DeltaV Continuous Historian?

The DeltaV Continuous Historian remains the preferred continuous historian in the DeltaV system and will continue to be installed on each DeltaV workstation. The Enterprise Historian is an option which may be used in place of or in addition to the DeltaV Continuous Historian.

1.8. How is the Enterprise Historian different from using a site PI Server in my system today?

The Enterprise Historian is integrated into in the DeltaV system; in much the same way as the DeltaV Continuous Historian (or the Legacy Historian before it) is integrated into the DeltaV system. The Enterprise Historian functions as a full featured DeltaV system historian. Once the Enterprise Historian is installed, it is configured using the DeltaV engineering tools and used by the DeltaV historian client applications. If you are using a site PI Server in your system today, you have to configure the site PI Server using OSIsoft configuration tools and maintain separate interfaces to collect data from the DeltaV system. The DeltaV historian client applications may or may not be able to view history data in the PI Server depending upon the PI tag syntax and the PI Server licenses available. The Enterprise Historian eliminates the need to use non-native DeltaV engineering tools to configure history collection and ensures that the DeltaV historian client applications can view history data.

1.9. How is the Enterprise Historian different from the Advanced Continuous Historian?

The Enterprise Historian is a full featured PI Server with enterprise historian capability and connectivity to all PI client applications. The Enterprise Historian can be installed on a DeltaV Application Station as the Embedded Enterprise Historian or installed on a non-DeltaV PC as the integrated Enterprise Historian. The Advanced Continuous Historian is based on OSIsoft technology and has the features and capabilities required for a DeltaV system historian. However the Advanced Continuous Historian allows a limited set of PI client applications and is only available on an Application Station. Both the Enterprise Historian and Advanced Continuous Historian are well integrated into the DeltaV system and are available as optional historian platforms in the DeltaV system; the primary differences are the features, functionality, and price of each platform. For more details on the Advanced Continuous Historian, refer to the Advanced Continuous Historian product data sheet and the Advanced Continuous Historian FAQ white paper available on the Emerson DeltaV website.

1.10. What is the maximum size of the Embedded Enterprise Historian?

A PI Server can be purchased with up to a 500,000 PI tag capacity. However, in the recommended DeltaV Embedded Enterprise Historian architecture, only 30,000 PI tags can be configured for DeltaV real-time data collection, which represents the maximum number of OPC data values that the DeltaV OPC Data Access (DA) Server can transfer to the Embedded Enterprise Historian. Any additional PI tag capacity in the Embedded Enterprise Historian can be used to collect real-time data from other DeltaV systems or non-DeltaV data sources, though the intent of the Embedded Enterprise Historian is to provide history collection for a single DeltaV system.

1.11. What is the maximum size of the Integrated Enterprise Historian?

A PI Server can be purchased with up to a 500,000 PI tag capacity. An Integrated Enterprise Historian can be connected to multiple DeltaV Application Stations, each serving up to 30,000 OPC data values to the Integrated Enterprise Historian. In addition, a single Integrated Enterprise Historian can collect data from multiple DeltaV systems. The large tag capacity and network architecture of the Integrated Enterprise Historian means you can collect a very large amount of real-time data from a single DeltaV system, a large amount of real-time data from multiple DeltaV systems, a large amount of non-DeltaV data, or any combination of DeltaV and non-DeltaV data. The intent of the Integrated Enterprise Historian is to provide history collection for one or more DeltaV systems and non-DeltaV system data, as needed.

1.12. Does the Enterprise Historian provide all the functionality of the Legacy Historian?

Yes. More details on the Enterprise Historian functionality may be found later in this document.

1.13. Which DeltaV versions support the Embedded Enterprise Historian?

The Embedded Enterprise Historian is supported with the DeltaV v10.3 and later releases.

1.14. Which DeltaV versions support the Integrated Enterprise Historian?

The Integrated Enterprise Historian is supported with the DeltaV v12.3 and later releases.

1.15. Which versions of the PI Server are supported?

PI Server version 3.4.375.80 and later versions are supported for use as the Enterprise Historian.

1.16. What licenses are required for the Enterprise Historian?

The Enterprise Historian requires a DeltaV OPC DA Server license and the Enterprise Historian Configuration Interface license from Emerson for each DeltaV Application Station hosting the Embedded Enterprise Historian or connected to the Integrated Enterprise Historian. The DeltaV OPC DA Server license should be sized to include at least as many OPC data values as DeltaV parameters configured for history collection in the Enterprise Historian. The Enterprise Historian Configuration Interface license will work with any size Enterprise Historian (i.e. there is no size component to this license). Also required are the PI Server license and the DeltaV Smart Connector license available from OSIsoft or Emerson reseller. The PI Server license should be sized to include at least as many tags as DeltaV parameters configured for history collection. The DeltaV Smart Connector license will work with any size Embedded Enterprise Historian (i.e. there is no size component to this license).

1.17. If I have two DeltaV Application Stations sending data to an Integrated Enterprise Historian, do I need licenses for both Application Stations?

Yes. The Integrated Enterprise Historian requires a DeltaV OPC DA Server license and Enterprise Historian Configuration Interface license from Emerson for each DeltaV Application Station providing data to the Integrated Enterprise Historian. In addition, you will need a DeltaV Smart Connector license for each Application Station. Note, however, you will only need one PI Server.

1.18. Do I need a DeltaV Continuous Historian or Legacy Historian license to use the Enterprise Historian?

No. The Enterprise Historian is licensed separately from the DeltaV Continuous Historian and Legacy Historian.

1.19. How do I get the PI Server software?

The PI Server and the DeltaV Smart Connector software are available for purchase from OSIsoft directly or from Emerson via Emerson's Value Added Reseller agreement with OSIsoft. The PI Server and DeltaV Smart Connector software are not available as standard DeltaV products.

1.20. What is the total cost of the Enterprise Historian option?

The total cost of the Enterprise Historian option depends on the size of the PI Server and the size of the DeltaV OPC DA Server. For more information on license costs, contact your local OSIsoft and/or Emerson sales office.

1.21. Who can I speak with to get more information on the Enterprise Historian options?

If you need to speak with someone regarding the Enterprise Historian options, you can find the appropriate Emerson sales and/or support contacts for your world area at this website: **http://www.emersonprocess.com/systems/support/ratecard.htm** or the appropriate OSI sales and/or support contacts at this website: **http://www.osisoft.com/contactus/keycontacts**. In addition, you can email OSIsoft with technical questions at **PITechSupport@OSIsoft.com** or commercial questions at **Emerson@OSIsoft.com**.

2. Architecture

2.1. Where does the Embedded Enterprise Historian reside?

The Embedded Enterprise Historian may be installed on any Application Station of a DeltaV system at version v10.3 and higher. The recommended system architecture is to run all necessary components for the Embedded Enterprise Historian on a single Application Station. The minimum software components required for the Embedded Enterprise Historian are the OSIsoft PI Server, OSIsoft DeltaV Smart Connector and DeltaV OPC DA Server.

2.2. Where does the Integrated Enterprise Historian reside?

The Integrated Enterprise Historian may be installed on any non-DeltaV PC that has network connectivity to the DeltaV Application Station where the OSIsoft PI DeltaV Smart Connector is installed. The recommended system architecture is to install the OSIsoft DeltaV Smart Connector and the DeltaV OPC DA Server on the same Application Station. The PI Server is installed on any non-DeltaV PC that has network connectivity to the DeltaV Application Station.

2.3. How does the Enterprise Historian collect data from the DeltaV system?

The Enterprise Historian is configured from DeltaV Explorer or DeltaV Control Studio just like history collection is configured for the DeltaV Continuous Historian or Legacy Historian. When the Continuous Historian subsystem is downloaded, the DeltaV historian configuration information is read by the DeltaV Asset Connector. The DeltaV Asset Connector creates the appropriate tags in the Enterprise Historian and configures the PI OPC DA interface to retrieve data from the DeltaV OPC DA Server at the appropriate scan rate. The PI OPC DA interface then populates data in the PI tags configured in the Enterprise Historian.

2.4. How many Embedded Enterprise Historians may I have in one DeltaV system?

You may have as many Embedded Enterprise Historian in your DeltaV system as you have DeltaV Application Stations, up to the maximum number of supported Application Stations (for DeltaV system v10.3 and later versions the maximum number of Application Stations is 20).

2.5. How many Integrated Enterprise Historians may I have in one DeltaV system?

You may have as many integrated Enterprise Historian in your DeltaV system as you need, but the expectation is that you will have one Integrated Enterprise Historian per DeltaV system and even one Integrated Enterprise Historian for multiple DeltaV systems.

2.6. Can I have a DeltaV Continuous Historian and an Enterprise Historian in the same DeltaV system?

You may have one or more DeltaV Continuous Historians and one or more Enterprise Historians in your DeltaV system as long as they reside on separate DeltaV workstations. You may not have multiple historians on any one DeltaV workstation.

2.7. Can I have an Embedded Enterprise Historian and an integrated Enterprise Historian in the same DeltaV system?

You may have one or more Embedded Enterprise Historians and one or more Integrated Enterprise Historians in your DeltaV system as long as the Embedded Enterprise Historian and the DeltaV Smart Connector associated with the Integrated Enterprise Historian reside on separate DeltaV Application Stations. You may not have multiple Enterprise Historians on a single Application Station.

2.8. If I use an Enterprise Historian, do I also need to have a DeltaV Continuous Historian in the same system?

Use of the Enterprise Historian does not require a DeltaV Continuous Historian. When the Enterprise Historian is used with the DeltaV system, it is integrated into the Continuous Historian subsystem on the Application Station.

2.9. What is the OSIsoft PI DeltaV Smart Connector?

The OSIsoft PI DeltaV Smart Connector is the set of OSIsoft suppplied software components needed to integrate a PI Server with the DeltaV system. The DeltaV Smart Connector includes the DeltaV Asset Connector and the PI OPC DA interface. These two components are installed with the DeltaV Smart Connector. The main tasks of the DeltaV Smart Connector are to automatically create PI tags in the Enterprise Historian, collect real-time data from the DeltaV system, send this data to the Enterprise Historian, and automatically create PI AF objects (if selected). For more details on the DeltaV Smart Connector, including details on the PI AF components, refer to the "DeltaV 10.3 Smart Connector to the PI System" manual provided by OSIsoft.

2.10. What is the DeltaV Asset Connector?

The DeltaV Asset Connector is an OSIsoft software component that automatically configures the Enterprise Historian and the PI OPC DA interface for collection of DeltaV real-time data. The DeltaV Asset Connector may also create PI AF objects in the Enterprise Historian to represent the DeltaV equipment hierarchy, if this option is selected. When a DeltaV Application Station is configured for use with an Enterprise Historian and the Continuous Historian subsystem on this Application Station is downloaded, the DeltaV system generates an enterprise historian configuration file which is consumed by the DeltaV Asset Connector. The DeltaV Asset Connector uses the enterprise historian configuration file to create the appropriate tags in the Enterprise Historian and configure the PI OPC DA interface to retrieve data from the DeltaV OPC DA Server. Once the DeltaV Asset Connector has configured the PI tags and the PI OPC DA interface, it monitors the DeltaV system waiting for an update to the enterprise historian configuration file. For more details on the DeltaV Asset Connector, refer to the "DeltaV 10.3 Asset Connector to the PI System" manual provided by OSIsoft.

2.11. What is the PI OPC DA interface?

The PI OPC DA interface is an OPC client application that connects to the DeltaV OPC DA Server, retrieves real-time data from the DeltaV system, and writes this data to PI tags configured in the Enterprise Historian. For more details on the PI OPC DA interface, refer to the "OPC Interface to the PI System" manual provided by OSIsoft.

2.12. What is PI AF?

PI AF is a component of a 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. In the context of the Enterprise Historian, you can recreate the DeltaV equipment hierarchy in PI AF to provide the same data structure in the PI Server as exists in the DeltaV system. Thus, the DeltaV historical data collected in the Enterprise Historian is related to its corresponding objects in the DeltaV system (e.g. control modules, units, areas). PI client applications can use PI AF to navigate and find data in the Enterprise Historian in the same manner as DeltaV client applications. For more details on PI AF, refer to the "AF 2.0 User's Guide" provided by OSIsoft.

2.13. What information is contained in the enterprise historian configuration file?

The enterprise historian configuration file contains a list of all the DeltaV parameters that are configured for history collection along with all of the applicable parameter attributes required to configure PI tags in the Enterprise Historian and the PI OPC DA interface, such as zero, span, engineering units, and description.

2.14. Does the Enterprise Historian collect DeltaV parameter status information?

The Enterprise Historian can be configured to collect DeltaV parameter status information, but the status parameter must be configured for history collection separately from the parameter value. The Enterprise Historian does not have the capability to automatically store the parameter status with the data value like the DeltaV Continuous Historian.

2.15. How many DeltaV parameters can I collect in the Embedded Enterprise Historian?

The recommended system architecture for the Embedded Enterprise Historian is to have all DeltaV and PI components installed on one DeltaV Application Station, which means there is a one to one relationship between the DeltaV OPC DA Server and the DeltaV Smart Connector. The DeltaV OPC DA Server has a capacity of 30,000 OPC data values per DeltaV Application Station. Thus, in the recommended system architecture, the Embedded Enterprise Historian can collect up to 30,000 DeltaV parameters.

2.16. How many DeltaV parameters can I collect in the Integrated Enterprise Historian?

The Integrated Enterprise Historian receives data from the DeltaV Smart Connector configured on a DeltaV Application Station. Each DeltaV Application Station and associated DeltaV OPC DA Server has a capacity of 30,000 OPC data values. One or more DeltaV Smart Connectors can be configured per DeltaV system, up to 20 DeltaV Application Stations per system. In addition, the Integrated Enterprise Historian can collect real-time data from multiple DeltaV systems. Thus, the Integrated Enterprise Historian can collect up to 30,000 DeltaV parameters from one or more DeltaV Application Stations in one or more DeltaV systems, up to the total capacity of the Integrated Enterprise Historian of 500,000 PI tags.

2.17. Can I consolidate data from more than one DeltaV system into one Embedded Enterprise Historian?

The intent is for the Embedded Enterprise Historian to be used with a single DeltaV system. If consolidation of data from multiple DeltaV systems is required, the Integrated Enterprise Historian is the preferred solution.

2.18. Can the DeltaV Smart Connector connect to a backup DeltaV OPC DA Server?

The recommended system architecture for the Enterprise Historian is to have a one to one relationship between the DeltaV OPC DA Server and the DeltaV Smart Connector. However, it is technically possible to configure the DeltaV Smart Connector to use a backup DeltaV OPC DA Server on another DeltaV Application Station in addition to the primary DeltaV OPC DA Server that resides locally with the DeltaV Smart Connector. This architecture can provide a measure of redundant data collection. Since this is not the recommend architecture, the technical and commercial details and the feasibility of this alternative architecture must be discussed with your Emerson and OSIsoft project personnel. Any DeltaV OPC DA Server that DeltaV Smart Connector communicates with, including a backup DeltaV OPC DA Server, must have the appropriate DeltaV OPC DA Server license.

2.19. I have an existing Legacy Historian in my DeltaV system. Can I continue to use the Legacy Historian or do I have to upgrade to the Enterprise Historian?

The option to upgrade the DeltaV system and retain the Legacy Historian is available up to and including DeltaV v11.3.1. In DeltaV v12.3, the Legacy Historian option is removed. For those customers using the Legacy Historian and upgrading to DeltaV v12.3, you will have the option to upgrade to the Enterprise Historian or the DeltaV Continuous Historian, as desired. There are system architecture and licensing implications associated with each option which must be considered prior to upgrading to DeltaV v12.3.

Users upgrading to DeltaV version 12.3.1 and higher have another option, to migrate to the Advanced Continuous Historian. For more details refer to the Advanced Continuous Historian FAQ white paper available on the Emerson DeltaV website.

2.20. I have an existing site PI Server on my plant LAN. Can I use this PI Server as my integrated Enterprise historian?

The integrated Enterprise Historian option allows you to use an existing site PI Server as your DeltaV system historian as long as the existing PI Server is version 3.4.375.80 or later.

2.21. I am already using an existing site PI Server and PI OPC DA interface. Can I continue to collect my DeltaV system data in this PI Server?

The existing methods for sending data from a DeltaV system to a site PI Server are still available separately from the Enterprise Historian options. There is no reason you need to change this architecture if you are happy with it.

2.22. What are my options for sending DeltaV data to a site PI Server on my plant LAN?

The options for sending DeltaV data to a site PI Server are: (1) use the PI OPC DA interface with the DeltaV OPC DA Server to send real-time data from DeltaV to the site PI Server; (2) use the PI OPC HDA interface with the DeltaV OPC HDA Server (and corresponding DeltaV Continuous Historian) to send historical data from DeltaV to the site PI Server; (3) convert the site PI Server to an integrated Enterprise Historian to send real-time from the DeltaV OPC DA Server to the PI Server, and (4) use the Advanced Continuous Historian for real-time process data collection (available in DeltaV versions 12.3.1 and above) in combination with a OSIsoft PI to PI interface.

2.23. Can I use an Integrated Enterprise Historian with DeltaV Zones?

You can use the Integrated Enterprise Historian with one or more DeltaV systems, even if the DeltaV systems are part of a DeltaV Zone. You would install the DeltaV Smart Connector and configure enterprise historian data collection on one (or more) DeltaV Application Station(s) in each DeltaV Zone.

2.24. If I use an Integrated Enterprise Historian with multiple DeltaV systems, how can I tell which data is from which DeltaV system?

When you install and configure the DeltaV Smart Connector, you have the option to add a prefix to the PI tag name that is populated by the DeltaV parameter. This PI tag prefix can be used to identify the DeltaV system where the data originated. Note this same PI tag prefix functionality can be used even if the Integrated Enterprise Historian is only collecting data from a single data system, to differentiate plant areas or units, by example.

3. Installation

3.1. Where do I install the Embedded Enterprise Historian?

The Embedded Enterprise Historian may be installed on a DeltaV Application Station, v10.3 or later.

3.2. Where do I install the Integrated Enterprise Historian?

The Integrated Enterprise Historian may be installed on any non-DeltaV PC in the plant LAN as long as the PC has network connectivity to the DeltaV Application Station where the DeltaV Smart Connector is installed.

3.3. Where do I install the DeltaV Smart Connector?

For the Embedded Enterprise Historian option, the DeltaV Smart Connector is installed on the same DeltaV Application Station as the Embedded Enterprise Historian and DeltaV OPC DA Server. For the Integrated Enterprise Historian option, the DeltaV Smart Connector is installed on a DeltaV Application Station that has network connectivity to the Integrated Enterprise Historian.

3.4. Where do I install the DeltaV OPC DA Server?

The DeltaV OPC DA Server is installed with the DeltaV system software. For both Enterprise Historian options, the DeltaV Smart Connector is installed on the same DeltaV Application Station as the DeltaV OPC DA Server that is serving data to the Enterprise Historian.

3.5. Are the Enterprise Historian and DeltaV Smart Connector installed with the DeltaV system software?

The DeltaV system software installation does not install the Enterprise Historian or the DeltaV Smart Connector. The Enterprise Historian and DeltaV Smart Connector must be installed separately using installation media provided by OSIsoft. If you need assistance installing the Enterprise Historian or DeltaV Smart Connector software, contact your local OSIsoft or Emerson sales office.

3.6. When should I install the Enterprise Historian and DeltaV Smart Connector?

The Enterprise Historian and DeltaV Smart Connector may be installed either before the DeltaV system software installation or after the DeltaV system installation, whichever is more convenient.

3.7. What DeltaV PC hardware is required for the Enterprise Historian?

The Enterprise Historian may be used with any server class DeltaV Application Station that is supported with the DeltaV v10.3 or later release. The server class computer used for the Enterprise Historian should include as a minimum a 2.13 GHz dual core CPU, 4 GHz RAM and 160 GB hard disc drive. As with all software applications, greater application performance will be achieved with greater computer hardware components.

3.8. What operating systems does the Enterprise Historian support?

The Enterprise Historian requires the Windows Server operating system. For the Embedded Enterprise Historian, use the appropriate Windows Server operating systems supported with the version of the DeltaV system in use. For the Integrated Enterprise Historian, follow the operating system guidelines provided by OSIsoft.

3.9. Can I run other DeltaV or OSIsoft applications on the same DeltaV Application Station that is running the DeltaV Smart Connector?

It is technically possible to run other applications on the same Application Station that is running the DeltaV Smart Connector, but the recommendation is to dedicate the DeltaV Application Station to the task of enterprise history data collection.

3.10. Is the Enterprise Historian option only available for installation on new DeltaV systems?

The Enterprise Historian options may be used with new or existing DeltaV systems. If the Enterprise Historian option is used with an existing system, ensure that the Application Station meets the PC hardware requirements and the appropriate licenses are obtained from Emerson and OSIsoft.

3.11. If I migrate to the Enterprise Historian from the Legacy Historian or the DeltaV Continuous Historian, can I do this without losing data collection during the DeltaV system upgrade?

When you upgrade your existing DeltaV system to a later version, there will be a period of time when history collection is suspended during the upgrade of the DeltaV Application Station and the migration of the existing historian to the Enterprise Historian. The length of time when history is not being collected depends upon how quickly you can upgrade the DeltaV Application Station and migrate to the Enterprise Historian, but should be a matter of hours and not days.

4. Configuration and Operation

4.1. How do I configure the DeltaV system to use the Enterprise Historian?

The Continuous Historian Properties dialog (launched by right-clicking the Continuous Historian subsystem on the DeltaV Application Station) contains a configuration option to enable use of an Enterprise Historian. Once this option is selected, you configure the Enterprise Historian just like you configure the DeltaV Continuous Historian - drag the desired areas to the Continuous Historian subsystem, configure DeltaV parameters for history collection, and download. Note that this download is only permitted when the Application Station has been assigned a DeltaV Enterprise Historian Configuration Interface license.

4.2. How many DeltaV parameters can I configure for history collection in the Embedded Enterprise Historian?

You can configure up to 30,000 DeltaV parameters for history collection in a single Embedded Enterprise Historian in the standard system architecture where the DeltaV OPC DA Server and Embedded Enterprise Historian are resident on the same DeltaV Application Station. The 30,000 parameter limit is imposed by the local DeltaV OPC DA Server which can be licensed for up to 30,000 OPC data values.

4.3. How many DeltaV parameters can I configure for history collection in the Integrated Enterprise Historian?

You can configure up to 30,000 DeltaV parameters for history collection on each Application Station in one or more DeltaV systems where the DeltaV Smart Connector is installed. The DeltaV Smart Connector and the DeltaV OPC DA Server are resident on the same DeltaV Application Station and the DeltaV Smart Connector can access up to 30,000 parameters from the local DeltaV OPC DA Server on each Application Station.

4.4. What is the maximum number of samples per second I can configure for collection in the Enterprise Historian?

The recommended limit is 5,000 samples per second. For example, if you have a historian configuration that contains 5,000 or less DeltaV parameters, you can configure all parameters for 1 second history collection (note 1 second is the fastest history collection rate configurable from the DeltaV system). If you have a historian configuration that contains more than 5,000 parameters, you must balance the history collection rate for all parameters to average 5,000 samples per second to stay within the recommended limit.

4.5. When I add/delete/modify a history tag in the DeltaV system, are the changes updated in the Enterprise Historian?

When you add/delete/modify a history tag from DeltaV Explorer or Control Studio, you simply download the changes to the Continuous Historian. The download generates a new enterprise historian configuration file that the DeltaV Asset Connector consumes and uses to update the Enterprise Historian. The process for modifying history tags is the same with the Enterprise Historian as it is with the DeltaV Continuous Historian.

4.6. Is there somewhere I can see more details on what points have been added/deleted/modified in the Enterprise Historian?

OSIsoft provides a log file (pipc.log) that records all transactions with the Enterprise Historian. The pipc.log file can be found in the C:\Program Files\pipc\dat directory on the DeltaV Application Station where the DeltaV Smart Connector is installed. In addition, an OSIsoft utility called PI System Management Tool (PI SMT) can be used to provide more information on the Enterprise Historian.

4.7. How do I configure PI AF?

During installation of the DeltaV Smart Connector, you will be prompted to add the location of the PI AF Server and PI AF database. You will also define the directory location where the DeltaV equipment hierarchy file will be located. The DeltaV equipment hierarchy file is created by selecting Export | Equipment Hierarchy from the DeltaV Explorer file menu. When you export the DeltaV equipment hierarchy file, you will be prompted for a file location. Ensure this file location is consistent with the file location identified during the DeltaV Smart Connector installation. When the DeltaV equipment hierarchy file is placed in the appropriate file location, the DeltaV Asset Connector will automatically update PI AF with the DeltaV equipment hierarchy information. Subsequent changes to the DeltaV equipment hierarchy will require the equipment hierarchy file to be exported again. The DeltaV Asset Connector will automatically pick up any changes in the equipment hierarchy file and update PI AF.

4.8. Which DeltaV historian client applications work with the Enterprise Historian?

The DeltaV historian client applications that were developed during the time the Legacy Historian served as the Continuous Historian will work with the Enterprise Historian. The DeltaV historian client applications that will work with the Enterprise Historian include the DeltaV operator applications Process History View (with the exception of the parameter status handling features implemented in DeltaV v9.3), MPC Operate and MPC Operate Pro and the advanced control applications DeltaV Neural, DeltaV Predict and DeltaV Predict Pro (with the exception of the parameter status handling features implemented in DeltaV v9.3). Beginning with DeltaV version 13.3, the DeltaV application History Analysis and embedded trend objects in DeltaV Operate are also supported. The DeltaV historian client applications that will not work with the Enterprise Historian include the DeltaV Reporter (released in DeltaV v7.4) and History Web Service (released in DeltaV v10.3).

4.9. When I use the DeltaV historian client applications with the Enterprise Historian, is there extra work involved to make this work?

Once the DeltaV historian client application is configured to connect to a specific workstation, the application will automatically detect and connect to the historian without user intervention. Thus, any DeltaV historian client application that is compatible with the Enterprise Historian will automatically connect to the Enterprise Historian once the client application is configured with the Enterprise Historian workstation name. In a system with a Legacy Historian, a DeltaV Continuous Historian and/or an Enterprise Historian, the same DeltaV historian client application can be used to view data from all historian databases (although data can only be viewed from one historian at a time).

4.10. What should I do if I want historical data trends in my operator graphics and Enterprise Historian functionality in my DeltaV system?

Beginning with DeltaV release 13.3, embedded trend controls in operator graphics (i.e. in DeltaV Operate) are supported by the Enterprise Historian.

In prior DeltaV versions, to have both historical data trends in operator displays and Enterprise Historian functionality in your DeltaV system, you will need to have both the DeltaV Continuous Historian and the Enterprise Historian in use in your system, as the historical trend control in DeltaV Operate will only read data from the DeltaV Continuous Historian. The DeltaV Continuous Historian is available on the Professional Plus, Operator Station or Application Station, whereas the Enterprise Historian is only available on the Application Station or non-DeltaV PC. Thus, you could configure the historical data trends in your operator displays to use the DeltaV Continuous Historian on your Professional Plus or Operator Stations and install the embedded Enterprise Historian on an Application Station. In addition, you could use the DeltaV Continuous Historian on a second Application Station, which gives you the ability to increase the historian tag count above the 250 tag limit of the Professional Plus and Operator Station. Note that in addition to historical trends in DeltaV Operate, any time you want to use DeltaV Reporter, the parameter status viewing and analysis enhancements available in Process History View, Predict and Neural or the Web based History Analysis application, plus also want PI Server functionality, you will need to have both a DeltaV Continuous Historian and Enterprise Historian in your system.

4.11. Are all PI Server features available for use in the Enterprise Historian?

When you purchase a PI Server from OSIsoft (or Emerson reseller) to use as the Enterprise Historian, you are purchasing a full featured PI Server. Emerson or OSIsoft do not limit the functionality available in the PI Server when used as the Enterprise Historian. Emerson has not tested the operation of all PI Server features that are outside the scope of the Enterprise Historian (i.e. Emerson has only tested those features necessary for use as a control system historian), but whatever features you license for use with the PI Server are available for use with the Enterprise Historian.

4.12. Are the PI client applications like PI DataLink, PI ProcessBook, and PI to PI available for use with the Enterprise Historian?

Any PI client application, interface, or feature purchased and/or licensed from OSIsoft (or Emerson reseller) are available for use with the Enterprise Historian. This includes PI DataLink, PI ProcessBook, PI to PI and any other PI client application that is compatible with the PI Server version 3.4.375.80 or later.

4.13. Do I need the PI Protocol Converter to use the PI client applications with the Enterprise Historian?

You may use any of the appropriately licensed PI client applications directly with the Enterprise Historian. The PI Protocol Converter is only required if you want to connect a PI client application to the DeltaV Continuous Historian and is only available up to and including DeltaV system v10.3.1.

4.14. Are the PI client applications like PI DataLink, PI ProcessBook supported for use on DeltaV Operator Stations?

Emerson has not fully tested the use of the PI client applications on a DeltaV Operator Stations and thus does not support the use of these applications on an Operator Station. The PI client applications can be used on a DeltaV Application Station on non-DeltaV PC. Support for these PI client applications on an Application Station is the same as it has been in the past and is true for any 3rd party applications – these applications may be installed and used on an Application Station but support for the application is provided by OSIsoft.

4.15. Can I bring 3rd party data directly into the Enterprise Historian?

With the appropriate interface licenses from OSIsoft, you may bring in as much 3rd party data directly into the Enterprise Historian as your PI Server license allows. The DeltaV system does not place any restrictions on how much non-DeltaV data can reside in the Enterprise Historian.

4.16. Can I use other OPC DA client applications with the DeltaV OPC DA Server configured for use with the DeltaV Smart Connector?

It is recommended that the DeltaV OPC DA Server is dedicated to serving data to the Enterprise Historian. The DeltaV OPC DA Server may be licensed for up to 30,000 OPC data values. If the Enterprise Historian is configured to collect less than 30,000 DeltaV parameters, then the remainder of the 30,000 OPC data values available on the DeltaV OPC DA Server may be used by other OPC DA client applications. You must ensure that the DeltaV OPC DA Server is licensed with enough OPC data values to accommodate all OPC client applications, including the PI OPC DA interface, used to collect data for the Enterprise Historian. In addition, you should determine if the Application Station hardware can handle the load applied by the PI OPC DA interfaces and any additional OPC client applications.

4.17. How do I backup and restore the Enterprise Historian data?

The Enterprise Historian may be backed up and restored using the data management utilities provided by OSIsoft or may be integrated into the Emerson Backup and Recovery application. For example, the Enterprise Historian may be backed up using backup scripts, similar to the backup scripts used with the legacy historian. Note the DeltaV Continuous Historian Administration utility cannot be used to backup or restore the Enterprise Historian; the Historian Administrator utility is only available for use with the DeltaV Continuous Historian and will not be available on the Enterprise Historian workstation.

4.18. Who provides support for the Enterprise Historian?

The DeltaV OPC DA Server and Enterprise Historian Configuration Interface are supported by Emerson. The PI Server and DeltaV Smart Connector (i.e. DeltaV Asset Connector and PI OPC DA interface) are supported by OSIsoft. If you have a technical support question about the Enterprise Historian, call the Emerson Global Support Center (GSC). If the question is related to the operation of the PI Server, DeltaV Asset Connector and/or PI OPC DA interface, your question may be transferred to OSIsoft Technical Support. You must have an OSIsoft Software Reliance Program ("SRP") agreement in place for the PI components to receive technical support for your PI products.

5. Migration

5.1. Can I upgrade my existing Legacy Historian to an Enterprise Historian?

If you have a Legacy Historian running on a DeltaV Application Station you can upgrade the Legacy Historian to an Enterprise Historian. You will need to purchase a PI Server version 3.4.375.80 (or later) and DeltaV Smart Connector from OSIsoft (or Emerson reseller) and then manually upgrade the Legacy Historian using the upgrade procedure provided by OSIsoft. You will also need to reconfigure the Continuous Historian subsystem to use the Enterprise Historian instead of the Legacy Historian. For more details, refer to the Continuous Historian Upgrade Planning Guide found on the DeltaV whitepaper website.

5.2. If I upgrade my existing Legacy Historian to an Enterprise Historian, will I lose my existing historical data?

If you want to upgrade the Legacy Historian to an Enterprise Historian and preserve your historical data, you can manually migrate the legacy historian archive files using the legacy historian upgrade procedure provided by OSIsoft.

5.3. If I upgrade my existing Legacy Historian to an Enterprise Historian, will I need to reconfigure the DeltaV parameters for history collection?

In terms of historian configuration, when you upgrade the Legacy Historian to an Enterprise Historian you will only need to reconfigure the Continuous Historian subsystem on the DeltaV Application Station to use the Enterprise Historian instead of the Legacy Historian and download the subsystem. Your existing history collection will be "transferred" to the Enterprise Historian via the DeltaV Asset Connector.

5.4. If I upgrade my existing Legacy Historian to an Enterprise Historian, will I still have to purchase an Enterprise Historian license?

The Enterprise Historian option is licensed separately from the Legacy Historian and the Legacy Historian licenses are not transferable to the Enterprise Historian. However, if you upgrade your Legacy Historian to an Enterprise Historian, OSIsoft will work with you on the license price of the PI Server and DeltaV Smart Connector. You will also require the DeltaV OPC DA Server license and the Enterprise Historian Configuration Interface license from Emerson as discussed in Section 1.

5.5. Are there additional costs associated with migrating data from my existing Legacy Historian to an Enterprise Historian?

When you purchase the PI Server for use as the Enterprise Historian, you will be able to upgrade your Legacy Historian and convert the data at no additional cost. If you require assistance to perform the legacy historian upgrade, support can be provided by Emerson and/or OSIsoft at additional cost.

5.6. Can I replace my existing DeltaV Continuous Historian with an Enterprise Historian?

Yes. If you have a DeltaV Continuous Historian running on a DeltaV Application Station you can replace it with an Enterprise Historian if you need PI functionality. You will need to purchase the PI Server version 3.4.375.80 and DeltaV Smart Connector from OSIsoft (or Emerson reseller) and then reconfigure the Continuous Historian subsystem to use the Enterprise Historian instead of the DeltaV Continuous Historian.

5.7. If I replace my existing DeltaV Continuous Historian with an Enterprise Historian, will I lose my existing historical data?

If you want to replace the DeltaV Continuous Historian with an Enterprise Historian and preserve your historical data, you can use the PI OPC HDA interface to move the historical data from the DeltaV Continuous Historian (via the DeltaV OPC HDA Server) to the Enterprise Historian. For more details, refer to the Continuous Historian Upgrade Planning Guide found on the DeltaV whitepaper website.

5.8. If I replace my existing DeltaV Continuous Historian with an Enterprise Historian, will I need to reconfigure the DeltaV parameters for history collection?

In terms of historian configuration, when you replace the DeltaV Continuous Historian with an Enterprise Historian you will only need to reconfigure the Continuous Historian subsystem on the DeltaV Application Station to use the Enterprise Historian instead of the DeltaV Continuous Historian and download the subsystem. Your existing history collection will be "transferred" to the Enterprise Historian via the DeltaV Asset Connector. Note that once you have reconfigured and downloaded the Continuous Historian subsystem to use the Enterprise Historian, the DeltaV Continuous Historian processes continue to run but are no longer collecting data. On the next reboot of the Application Station, the DeltaV Continuous Historian processes will not start.

5.9. If I replace my existing DeltaV Continuous Historian with an Enterprise Historian, will I still have to purchase a PI Server license?

The Enterprise Historian option is licensed separately from the DeltaV Continuous Historian and the DeltaV Continuous Historian licenses are not transferable to the Enterprise Historian. You will still need to purchase a PI Server license and DeltaV Smart Connector license from OSIsoft (or Emerson reseller). You will also require the DeltaV OPC DA Server license and the Enterprise Historian Configuration Interface license from Emerson as discussed in Section 1.

5.10. Are there additional costs associated with migrating data from my existing DeltaV Continuous Historian to an Enterprise Historian?

Migration of your DeltaV Continuous Historian data to the Enterprise Historian requires the DeltaV OPC HDA Server and the PI OPC HDA interface. You will need a license for the PI OPC HDA interface which may be purchased from OSIsoft (or Emerson reseller). Contact your local OSIsoft or Emerson sales office for more details. If you require assistance to perform the legacy historian upgrade, support can be provided by Emerson and/or OSIsoft at additional cost.

5.11. If I replace my existing DeltaV Continuous Historian with an Enterprise Historian, can I switch back to the DeltaV Continuous Historian?

If you replace your existing DeltaV Continuous Historian with an Enterprise Historian (or install the Enterprise Historian on a new DeltaV system), and you want to revert back to the DeltaV Continuous Historian, you can do this by simply reconfiguring the Application Station to use the DeltaV Continuous Historian and downloading the Continuous Historian subsystem. The DeltaV Continuous Historian will be configured and the historian data collection processes will begin collecting data in the DeltaV Continuous Historian. To collect more than 250 parameters, the Application Station will need a DeltaV Continuous Historian scale up license. The Enterprise Historian will stop collecting data but will remain available for use by PI client applications. The DeltaV historian client applications, like Process History View, can be configured to start using the DeltaV Continuous Historian. If the Enterprise Historian is no longer needed, it must be manually uninstalled.

Emerson Process Management
Asia Pacific: 65.6777.8211
Europe, Middle East: 41.41.768.6111
North America, Latin America:
    +1 800.833.8314 or
    +1 512.832.3774
www.emersonprocess.com/deltav

DELTAV™

EMERSON
Process Management