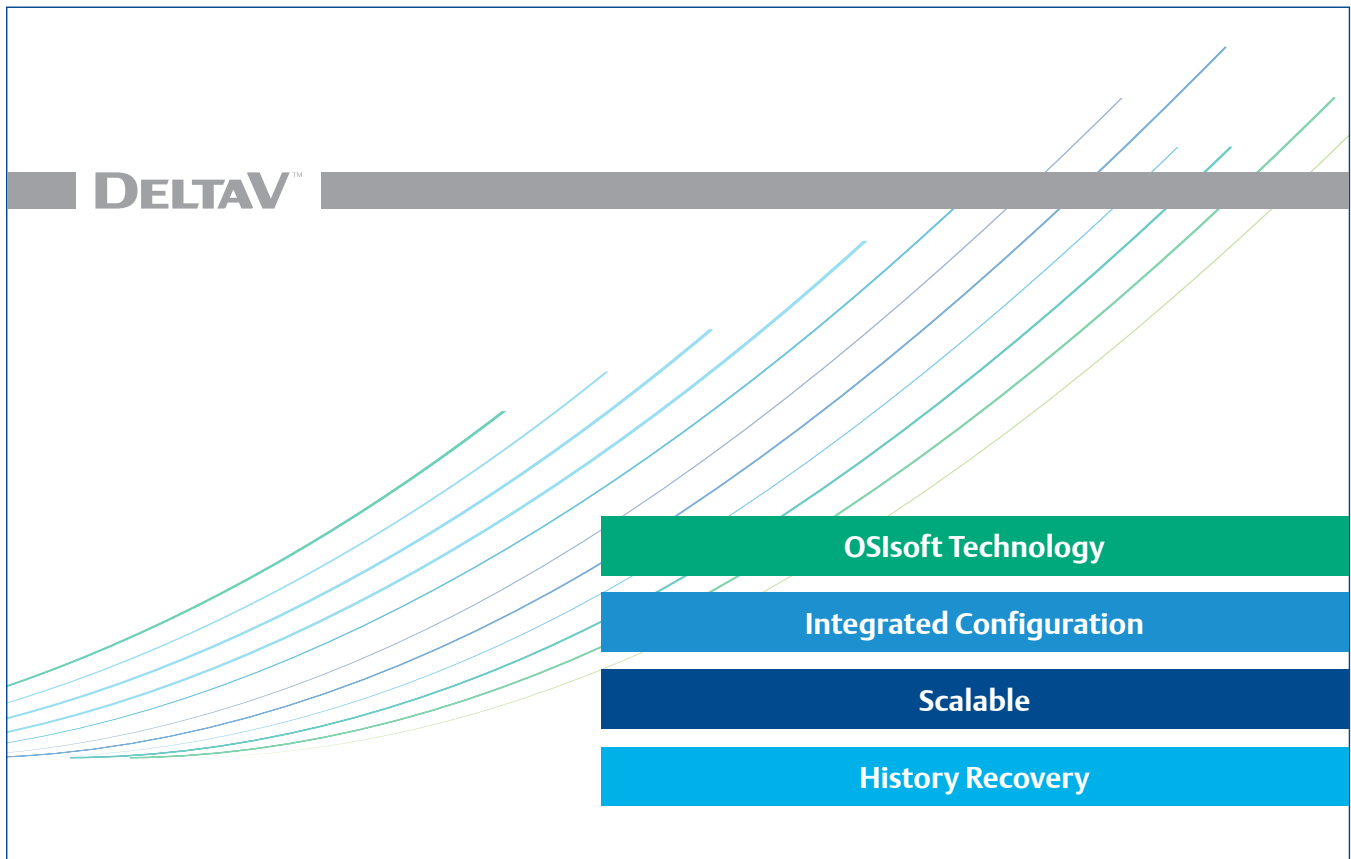


# Advanced Continuous Historian



Continuous process data is collected by the Advanced Continuous Historian powered by OSIssoft technology.

- System continuous historian powered by OSIssoft technology
- Seamless connectivity to a site PI Server
- Integrated DeltaV history configuration and data collection
- PI and DeltaV client connectivity
- Scalable tag count and on-line data storage
- History Recovery

## Introduction

The Advanced Continuous Historian provides highly scalable storage of continuous process data for a single DeltaV™ DCS, and is designed for easy seamless integration to a standalone site OSIssoft PI Server. The Advanced Continuous Historian is fully integrated into the DeltaV engineering and operations environments. In addition, it provides connectivity to OSIssoft clients for effective data visualization.

## Benefits

### **State-of-the-art historian powered by OSIsoft technology.**

The Advanced Continuous Historian uses embedded historian technology developed by OSIsoft, Emerson's long-standing partner for embedded and enterprise historian functionality.

**Seamless connectivity to a site PI Server.** The Advanced Continuous Historian provides seamless connectivity to a site PI Server with OSIsoft's PI-to-PI connector. This enables native, high performance data transfer between the two historian platforms. Connectivity to a site PI Server opens up an entire suite of enterprise applications available from OSIsoft and their application integration partners as well as connectivity to enterprise business systems.

### **Integrated DeltaV DCS configuration and data collection.**

The DeltaV parameters required for history collection in the Advanced Continuous Historian are configured using the familiar DeltaV engineering tools: DeltaV Explorer and Control Studio. No third-party engineering tools are required!

**PI and DeltaV client connectivity.** A wide range of both PI and DeltaV client applications seamlessly connect and present data collected in the Advanced Continuous Historian. This provides ultimate flexibility for how data can be examined and visualized.

**Scalable tag count and on-line data storage.** The Advanced Continuous Historian parameter count can be scaled up to support large DeltaV systems, from 250 up to a maximum of 30,000 historical data parameters in a DeltaV v12.3.1 system and up to 60,000 in a DeltaV v13.3 or higher system. The Advanced Continuous Historian's highly scalable on-line storage capacity enables you to keep years of operational data available at your fingertips, limited only by the number of configured archives and available disk space.

**History Recovery.** A pair of Advanced Continuous Historians can be configured to backfill history of its partner. This is made possible by using OSIsoft's PI-to-PI connector, which fills in data gaps on a partner historian in the event of a hardware failure or network outage. This makes achieving redundancy much easier than having to manually reconcile data between two historians.

## Product Description

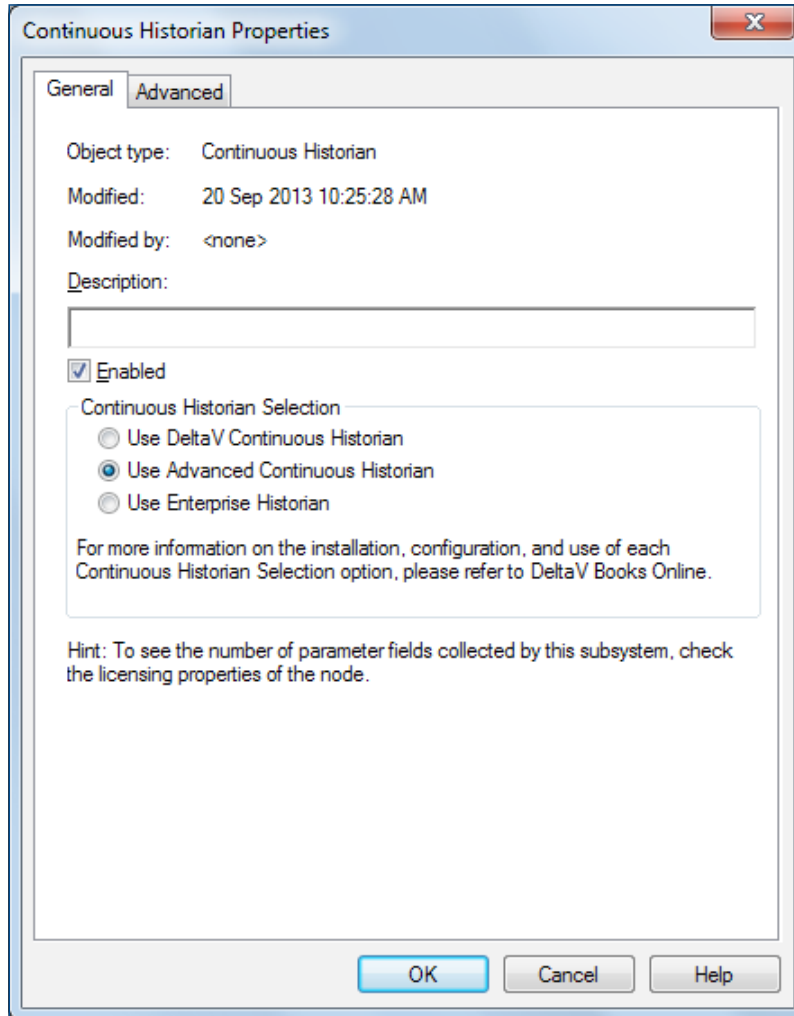
The Advanced Continuous Historian is the result of collaboration between Emerson Automation Solutions and OSIsoft to embed the latest OSIsoft historian technology in the DeltaV DCS. The addition of the Advanced Continuous Historian expands the historian options available to the DeltaV DCS and gives you a choice of historian platforms: the DeltaV Continuous Historian, the Advanced Continuous Historian, or an enterprise historian.

The Advanced Continuous Historian provides access to the historical data using both PI and DeltaV clients. This provides ultimate flexibility to the user for data visualization and analysis. Users can select their client of preference when creating trends for runtime data or extracting data to spreadsheets for detailed analysis in a tabular view. The PI clients that come with the Advanced Continuous Historian are PI DataLink, PI Manual Logger, and PI-to-PI.

Configuring the parameters that need to be collected by the historian is an integral component of a DeltaV control module. Each control module, the fundamental building block of your control strategy, contains the historical configuration information for all module parameters that are being historized. The status of the parameter can be configured for data collection separately and associated with the parameter value for a complete picture of the process.

When a new module is created, either from the module library or an existing module, it includes history configuration, as well as alarms, display information, etc. Conversely, if a module is deleted, the Advanced Continuous Historian is notified, and parameter collection from that module is suspended. Because the Advanced Continuous Historian uses OSIsoft technology, these configuration changes can be natively transferred to a site PI Server, easing your overall history collection configuration effort.

The Advanced Continuous Historian can be sized from 250 to a maximum of 30,000 parameters per Application Station on a DeltaV v12.3.1 system and to a maximum of 60,000 parameters per Application Station on a DeltaV v13.3 or higher system. It can be configured up to a recommended data collection rate of 10,000 samples per second.



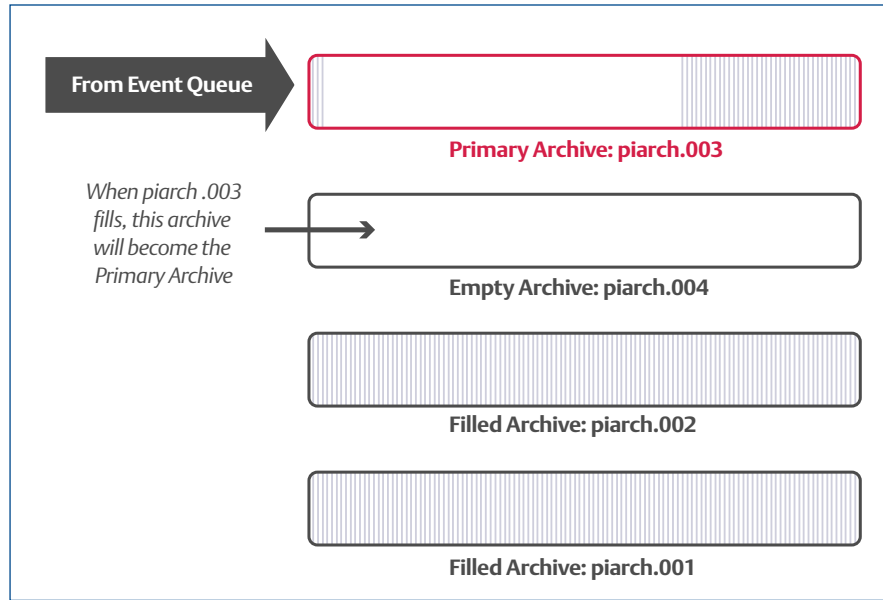
Select the Advanced Continuous Historian in DeltaV Explorer.

Multiple Advanced Continuous Historians are supported in a single DeltaV DCS, one per Application Station. History for a specific parameter can be collected in multiple Advanced Continuous Historians, providing a means of historical backup capability. Also, by using the History Recovery feature of the PI-to-PI connector, parameter data can be transferred to a partner historian to fill its data gaps while it was offline.

Configuration of the Advanced Continuous Historian is easy – simply select the Advanced Continuous Historian from the Application Station’s Continuous Historian Properties dialog in DeltaV Explorer, enable, and download.

History collection for the Advanced Continuous Historian is identical to the DeltaV Continuous Historian: in DeltaV Explorer, simply drag and drop plant areas onto any historian to choose where data collection for those areas will occur. Once the workstation is downloaded, communications and history collection will begin automatically.

The DeltaV Version Control and Audit Trail (VCAT) captures all configuration changes made to the Advanced Continuous Historian. The capabilities of VCAT to capture historical collection configuration changes, combined with common industry standard operating procedures allow you to comply with various business regulations, e.g. 21 CFR Part 11.



Advanced Continuous Historian archive management.

**Archive Management.** The Advanced Continuous Historian installation creates three, 256 MB archive files to store DeltaV historical data. The archive receiving current data is called the Primary Archive. When the Primary Archive becomes full, an Archive Shift occurs and the next available Archive becomes the new Primary Archive. If no eligible empty archives are available for an Archive Shift, the Advanced Continuous Historian uses the oldest available filled archive as the new Primary Archive, overwriting the data in the old archive. For example, using the figure above, after the shift from piarch.003 to piarch.004, no empty archives are left. If no new Archives are created, then piarch.001 becomes the next Primary Archive.

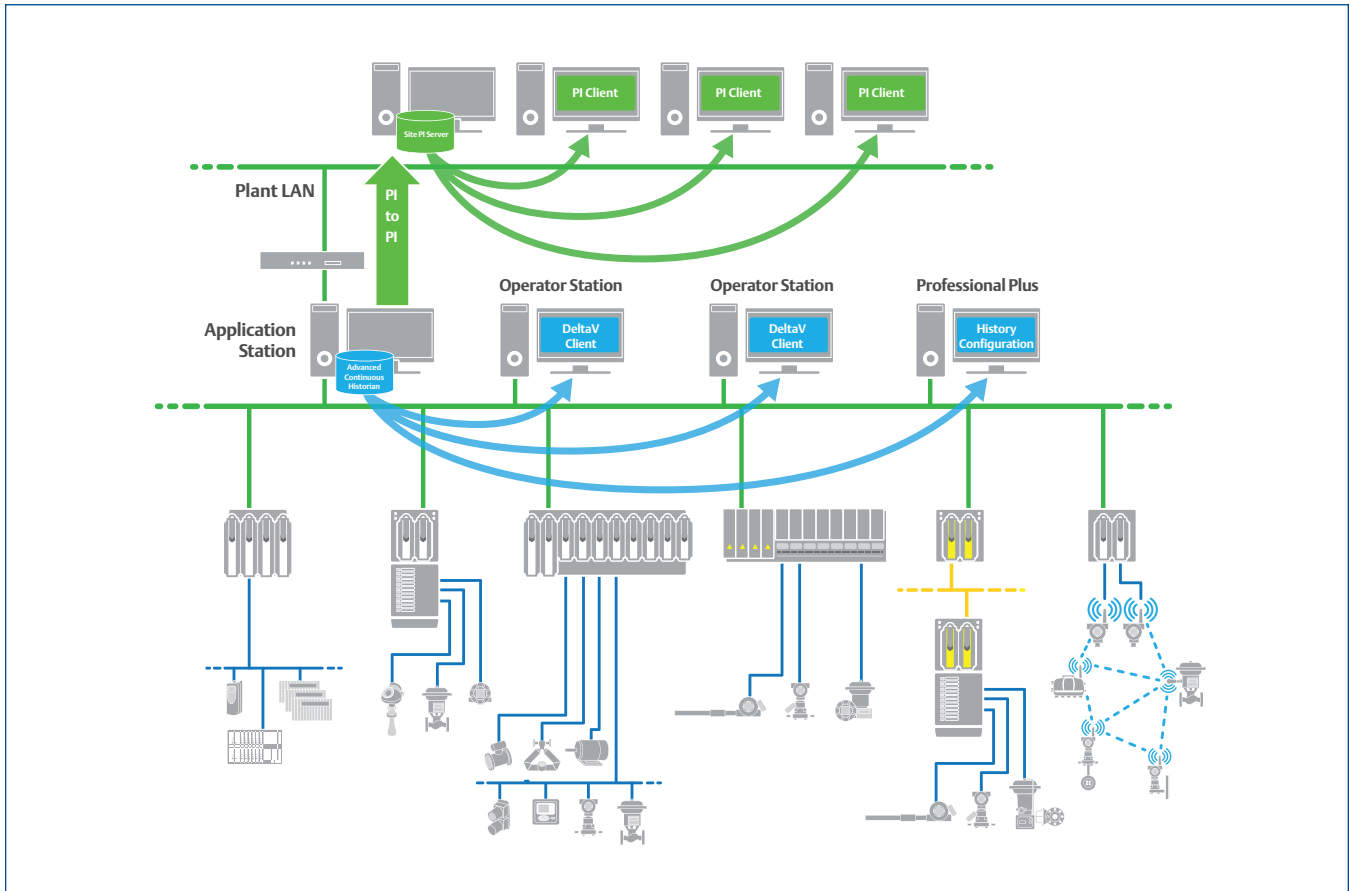
The Advanced Continuous Historian is configured by default to automatically create new archive files when the existing archives are full, preventing inadvertent loss of data. With the automatic creation of archives enabled, you must monitor available disk space for the archives. If there is not enough disk space to create the new archives, the Advanced Continuous Historian overwrites data in the old archives. Alternatively, you can disable this feature and manually create the number of archives required to meet your on-line storage needs. When the initial archives created by the Advanced Continuous Historian installation are full, the manually created archive is used to store new data. The Advanced Continuous Historian provides you with the flexibility to store as little or as much on-line data as available on the PC.

The Advanced Continuous Historian includes a copy of the PI System Management Tools (SMT) utility for managing the Advanced Continuous Historian and its archives. PI SMT is a set of easy-to-use tools that allow you to perform the necessary Advanced Continuous Historian administration tasks, such as view, configure, backup, restore, and move archives. The Advanced Continuous Historian can be configured to perform automatic backups of its archive files to prevent data loss or the Advanced Continuous Historian can be integrated into your overall DeltaV DCS backup scheme using the Emerson Backup and Recovery application or your preferred non-Emerson backup solution.

**DeltaV Clients.** The DeltaV DCS historian client applications provide seamless connectivity with the Advanced Continuous Historian. The DeltaV history client applications may reside on any DeltaV workstation and access the historical data collected in the Advanced Continuous Historian. The DeltaV historian client applications supported in the DeltaV v13 release and higher include Adapt, Batch Analytics, embedded trend objects in DeltaV Operate, Executive Portal, History Analysis, MPC Diagnostics, MPC Operate, MPC OperatePro, MPC Simulate, MPC SimulatePro, Neural, Predict, PredictPro , InSight (with the exception of its reporting features), and Process History View.

DeltaV Reporter, DeltaV History Web Service, DeltaV Web Server, and the DeltaV OPC Historical Data Access Server are specific to the DeltaV Continuous Historian and will not work with the Advanced Continuous Historian. You can however use PI DataLink (described below) in place of DeltaV Reporter.

The Batch Analytics and Executive Portal clients use an OPC interface to display historical data. If these applications are used, the PI OPC Server must be installed on the Advanced Continuous Historian. In addition, any Emerson Alliance Partner application that needs an OPC interface to the historical data requires an install of the PI OPC Server on the Advanced Continuous Historian. The PI OPC Server is purchased separately from OSIsoft.



Advanced Continuous Historian typical architecture with a site PI Server.

**PI System.** Since the Advanced Continuous Historian is based on OSIsoft technology, it provides seamless connectivity to a site PI Server. A site PI Server is not required, but if you do have a site PI Server in your enterprise, you can easily transfer configuration and data values from the Advanced Continuous Historian to a site PI Server using the PI-to-PI interface.

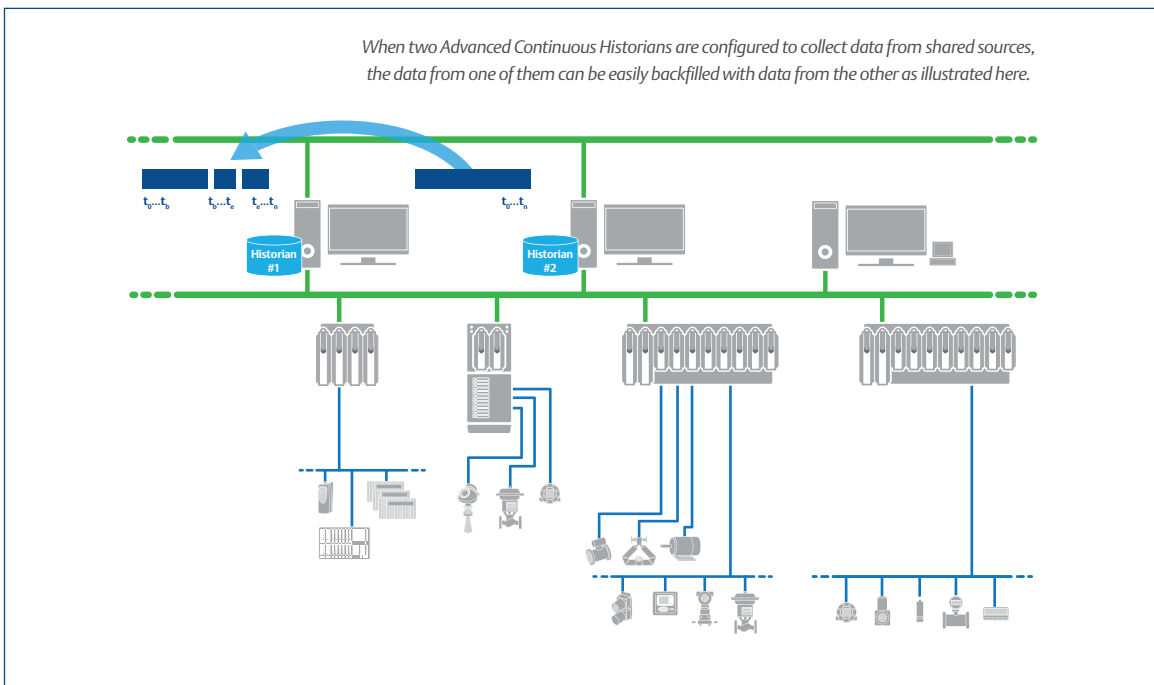
In addition to storing real-time data from the DeltaV DCS, the Advanced Continuous Historian can be configured to store the DeltaV equipment hierarchy in the PI AF database provided with the Advanced Continuous Historian. Once in the Advanced Continuous Historian AF database, the DeltaV equipment hierarchy can be transferred to the site PI AF database, enabling you to define a representation of your DeltaV controlled plant assets and use these assets to easily view and analyze your plant data with your PI Client applications.

**PI Clients.** The Advanced Continuous Historian provides connectivity to several popular PI Clients: PI DataLink, PI Manual Logger, and PI ProcessBook. PI DataLink provides viewing and analysis of historical data in a Microsoft Excel spreadsheet. The Advanced Continuous Historian includes ten (10) copies of PI DataLink for use on DeltaV workstations within the DeltaV DCS domain.

PI Manual Logger is used to insert post-dated, manually collected data into the Advanced Continuous Historian. The Advanced Continuous Historian includes two (2) copies of PI Manual Logger for use on DeltaV workstations within the DeltaV DCS domain.

PI ProcessBook provides an easy-to-use interface to create graphical displays with charts, trends, and processing information. Up to ten (10) PI ProcessBook clients may connect to the Advanced Continuous Historian; however, PI ProcessBook licenses must be purchased separately – they are not included with the Advanced Continuous Historian.

Other PI Client applications not available on the Advanced Continuous Historian, such as PI Coresight, may be used with a site PI Server. In this case the recommended architecture is to connect the Advanced Continuous Historian to a Site PI Server and use the desired PI clients at the Site PI Server.



*History Recovery with Advanced Continuous Historian.*

**History Recovery.** The Advanced Continuous Historian makes redundant data history collection easy. Redundant data collection is achieved by installing two Advanced Continuous Historians configured to capture the same parameters. In the event that one of the historians goes offline due to a hardware failure or network outage, the data gap left behind in the historian can be quickly and easily filled with data from the other historian.

There is no need to spend hours manually gathering, formatting, and importing the data into the affected historian. The process for backfilling data is accomplished using the OSIsoft PI-to-PI connector supplied with the Advanced Continuous Historian, which can be installed on the same Application Station as the Advanced Continuous Historian.

## Ordering Information

Description	Model Number
Advanced Continuous Historian Scale-Up, 250 Parameters	VE22UPS078
Advanced Continuous Historian Scale-Up, 1,000 Parameters	VE22UPS079
Advanced Continuous Historian Scale-Up, 5,000 Parameters	VE22UPS080
Advanced Continuous Historian Scale-Up, 10,000 Parameters	VE22UPS081
Advanced Continuous Historian Scale-Up, 20,000 Parameters	VE22UPS082*
Advanced Continuous Historian Version Upgrade, 250 Parameters**	VE21UPG011
Advanced Continuous Historian Version Upgrade, 1,000 Parameters**	VE21UPG012
Advanced Continuous Historian Version Upgrade, 5,000 Parameters**	VE21UPG013
Advanced Continuous Historian Version Upgrade, 10,000 Parameters**	VE21UPG014

\* For a 60,000-parameter Advanced Continuous Historian, purchase three (3) 20,000-parameter scale-up licenses. For a 50,000-parameter Advanced Continuous Historian, purchase three (3) licenses: Two (2) 20,000-parameter scale-up and one (1) 10,000-parameter scale-up.

\*\* The Advanced Continuous Historian upgrade licenses can only be used to replace existing legacy Historian and / or DeltaV Continuous Historian licenses and only up to the size of the existing legacy historian or DeltaV Continuous Historian. For example, to upgrade a 5,250 parameter legacy historian to the Advanced Continuous Historian, you would purchase one 250 parameter version upgrade license (VE21UPG011) and one 5,000 parameter version upgrade license (VE21UPG013).

## Related DeltaV Products

- **History View Software Suite.** Monitors the DeltaV Continuous Historian, Batch Historian, and real-time data.
- **Backup and Recovery.** Provides data backup and disaster recovery for DeltaV DCS and associated process control data.
- **DeltaV Continuous Historian.** Fully integrated, native, DeltaV historian for easy access, retrieval, installation, and visualization.
- **Enterprise Historian.** OSIsoft PI Server used as the DeltaV system historian, providing enterprise historian functionality while fully integrated into the DeltaV DCS engineering and operator functions.

## Related OSIsoft Products

- **PI DataLink.** A Microsoft Excel based historical data reporting and analysis tool provided by OSIsoft for use with the Advanced Continuous Historian. Requires a copy of Microsoft Excel 2010 or 2013 provided by others.
- **PI Manual Logger.** An application used for inserting post-dated, manually collected data into Advanced Continuous Historian.

- **PI ProcessBook.** An application for creating and using interactive graphical displays that are populated with live process data.
- **PI-to-PI.** An interface used for transferring historical data natively between the Advanced Continuous Historian and a site PI Server.
- **PI OPC Server.** Allows data access to historical PI tag data. This is used as the interface for clients that do not have direct access to the Advanced Continuous Historian.

## Prerequisites

- The DeltaV Application Station software suite.
- Either a DeltaV v12.3.1 system where the Application Station resides on a server class PC running a Windows Server 2008 SP2 32-bit or Server 2008 R2 SP1 64-bit operating system, or a DeltaV v13.3 or higher system where the Application Station resides on a server class PC running a Windows Server 2008 R2 SP1 64-bit operating system or a DeltaV v13.3.1 system where the Application station resides on a server class PC running Windows Server 2016 for Embedded Systems Standard (64-bit).

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