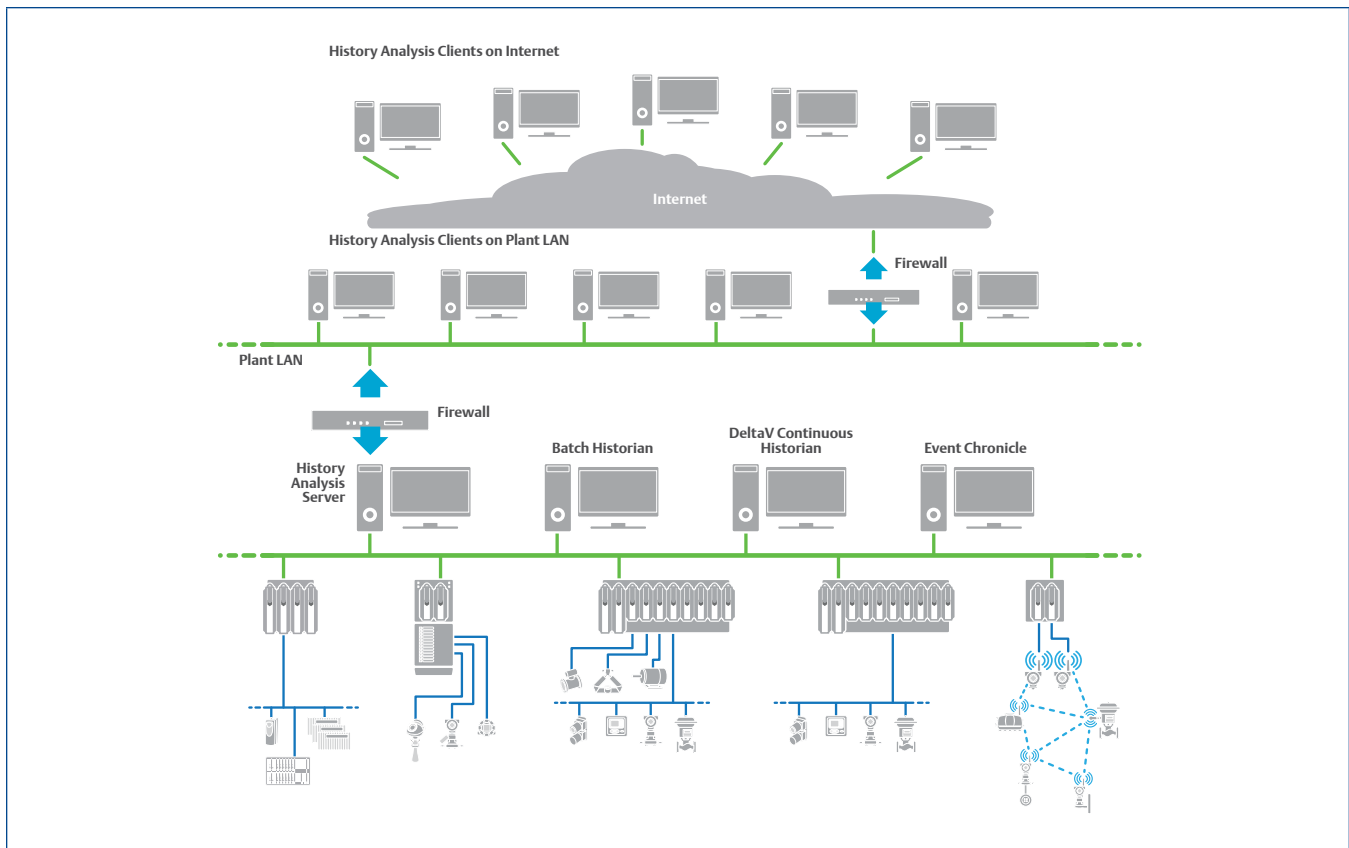# DeltaV™ History Analysis



*DeltaV History Analysis provides web-based viewing of DeltaV historical data.*

- DeltaV history data available anywhere

- Integrated batch, continuous and event data

- Easy-to-use data search engine

- Improved data viewing and analysiswith detailed diagnostics via AMS Suite software

## Introduction

The DeltaV system provides well integrated client applications for viewing history data collected by the system. The DeltaV history client applications are available on any DeltaV workstation and can access DeltaV historical data located on any other DeltaV workstation. But how do you view this same history data if you are not located on a DeltaV workstation?

History Analysis is a web-based historian client application that allows you to view DeltaV historical data from any computer running an appropriate and compatible Microsoft web browser from anywhere in the world. History Analysis has access to DeltaV historical batch, continuous, and event data, and it integrates the DeltaV historical data in a single, easy-to-use client application.

History Analysis also provides an intuitive data search engine to make it easy for DeltaV and non-DeltaV system users to find just the right data. Once the data is found and evaluated, you can save the data view or export the data for further analysis.

## Benefits

**DeltaV history data available anywhere.** Plant personnel have access to DeltaV history data using the DeltaV historian client applications located on DeltaV workstations. But not all plant personnel have access to DeltaV workstations, to say nothing of the corporate engineering staff located at the company headquarters, or the plant engineer working from home. How do these people, spread across your corporate enterprise, gain access to important history data in order to do their jobs more effectively?

History Analysis solves this historical data access question by providing easy access to all DeltaV history data from a web browser. You can view DeltaV historical data, securely and easily, from any computer running an appropriate web browser that has a network path to the DeltaV system. No additional software is required on the client workstation other than the appropriate web browser. Please refer the Prerequisites section of this product data sheet for more details on the supported web browser.

**Integrated batch, continuous and event data.** History Analysis integrates DeltaV batch, continuous, and event history data in a single user interface. You have one consistent look and feel for all historical data, and it is easy to navigate between the batch, continuous and event data views using familiar page navigation tools. The integrated view extends to the data search view where you can search for DeltaV batch, continuous, and event history data using a single interface.

**Easy-to-use search engine.** The corporate engineering staff or other non-DeltaV system users who need access to DeltaV historical data may know the plant processes, but may not necessarily know the specific configuration of the DeltaV system. History Analysis provides an intuitive search engine to allow these users to quickly and easily find the data they need. The History Analysis user does not need to know specific DeltaV historian details, such as DeltaV parameter or control module names, batch IDs, or even in which historian the data resides.

The History Analysis search engine also includes an intelligent wildcard filtering feature, which helps you find the right data, even if you don't know exactly what data you need.

**Improved data viewing and analysis.** History Analysis provides increased data viewing and analysis capabilities for your data-hungry users in your corporate enterprise. You can trend up to 80 DeltaV parameters simultaneously from multiple DeltaV Continuous Historian or Advanced Continuous Historian sources. You can view all plant event data from the DeltaV Event Chronicle, even if the data resides in multiple archives

or multiple workstations. You can compare up to 10 batches, regardless of recipe or equipment, or in which DeltaV Batch Historian the data is located.

History Analysis makes it easy to analyze DeltaV Batch data by automatically synchronizing the batch execution data with the associated continuous process data. When viewing batch data, simply right-click on any batch step to see all related process trend data or process event data, with no additional user intervention.

## Product Description

History Analysis provides access to all of your DeltaV historical data from anywhere in the world, using only a web browser. History Analysis is composed of two components, the History Analysis server and the History Analysis client.

### History Analysis Server

The DeltaV system installation media includes a stand-alone installer for the History Analysis server. The History Analysis server must be installed on a server-class DeltaV Application Station. The History Analysis server uses Microsoft Internet Information Services (IIS) to deliver data to the History Analysis client; therefore, IIS must be enabled on the Application Station.

During installation of the History Analysis server, the History Analysis server will query the DeltaV system for all enabled historians and present a list of each enabled historian. You select the DeltaV historian data sources that the History Analysis server will have access to: DeltaV Batch Historian, DeltaV Continuous Historian, DeltaV Advanced Continuous Historian and DeltaV Event Chronicle.

You may select as many of each type of historian you want to use as data sources for the History Analysis server. These data source selections provide the default data sources for each History Analysis client session; although within each client session the default data source selections may be temporarily adjusted.

After installation of the History Analysis server, the default data sources may be modified by the History Analysis administrator as new data sources become available or existing data sources are no longer required.

When a user requests data from the History Analysis client, the History Analysis server will search through each data source until the requested data is found. Once the requested data is found, the History Analysis server stops searching and returns the search results to the client.

The History Analysis server does not store data locally; it returns data to the History Analysis client directly from the appropriate data source. Doing this means there is no confusion about which data is correct - your enterprise users access exactly the same data at the History Analysis client as your plant operations staff access using the local DeltaV system historian clients such as Process History View and Batch History View.

## Security

During History Analysis server installation, you will be prompted to define the user security group that will have access to the History Analysis server. The members of the security group assigned to the History Analysis server will have read-only access to the History Analysis data sources. Since these members may be corporate personnel, they do not require DeltaV user accounts. It is possible to create a seamless login to the History Analysis server for your corporate users by establishing the appropriate security group.

## History Analysis Client

The History Analysis client only requires a web browser be installed on the client computer; no other client software is required. The History Analysis client uses the Edge browser in IE Mode on non-DeltaV PCs to host the History Analysis web pages. Any computer that can run the appropriate web browser is capable of running the History Analysis client. The History Analysis client computer can reside anywhere in the world, providing the computer has a network path to the History Analysis server.

The History Analysis client provides several views for each type of data and an intuitive and easy-to-use data search view to locate the data you need. The page layout is similar for each data view: the Action Pane is on the left-hand side of the page and the Details pane is on the right-hand side. The Action Pane provides navigation between the various data views, as well as specific tasks within each view. The Details pane displays the contents of each data view.

From the data search view you create data requests based on the type of data you need to find. The data search view enables you search for data by Recipe, Batch ID, Procedure, Unit Procedure, Operation, Phase, Unit Module, Module, Trend Tag or Alias. For example, if you are looking for data on a specific batch, you can search by Recipe, Batch ID, or any specific step in the batch. If you are looking for continuous process data, you can search by Module, Trend Tag, or Alias.

Using the specific data type along with the intelligent wildcard filtering allows you to quickly and easily find the data you need.

The data search view also includes the ability to drill down into the data search results to find more details about the specific results, filtered by the preceding search criteria. For example, if you perform a Unit Module search, you can drill down into the Unit Module search results and find all the equipment and control modules that belong to the selected Unit Module. From the resulting Module search results, you can find all the Trend Tags configured for history collection on the selected Module. Once you have found the data you need, you can select a single result or multi-select several results and right-click on the results to call up the appropriate data view. Once the results are selected, you can also use the Action Pane to navigate to the desired view.

The data search also includes an advanced search feature, which allows you to search for data by excluding text from the search and to search for data by specific time ranges.
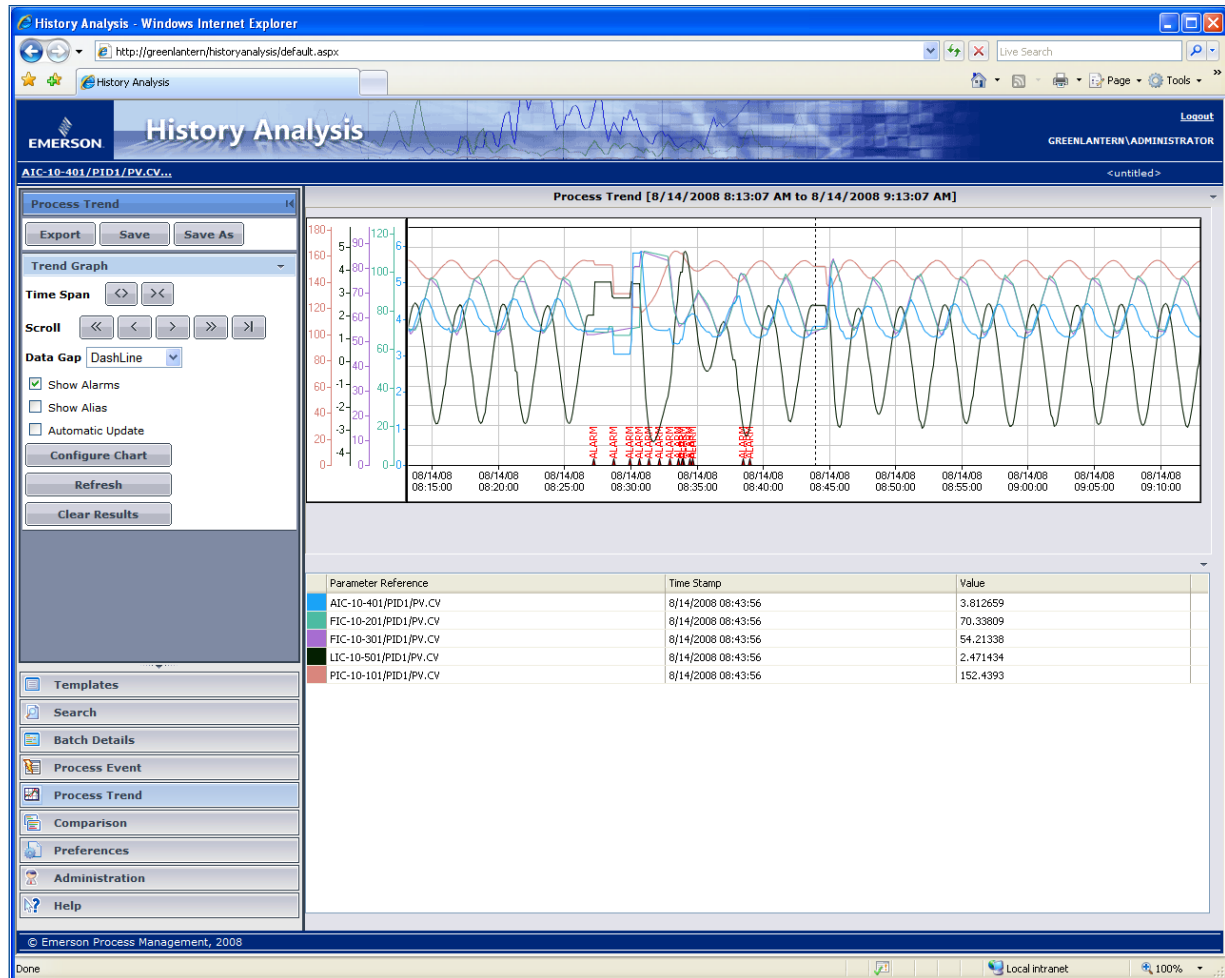
## Process Trend View

The Process Trend view enables viewing of up to 80 DeltaV parameters in a single trend chart. The trend chart can display historical data for any DeltaV parameter in the system that has been configured for history collection, regardless of where the historical data is collected. Any parameter from any DeltaV Continuous Historian or Advanced Continuous Historian selected as a History Analysis data source can be trended on the same chart.

From the trend chart, you have full control over the presentation of the trend data. You can page forward, page backward, zoom in, zoom out, change the time scale, add pens, delete pens, etc. In the Process Trend view you can also optionally display process alarms associated with the DeltaV parameters being trended. By dragging the mouse over the alarm indicators, you can find more details about each alarm.

## Process Event View

The Process Event view enables viewing of all DeltaV system alarms and events. The process event display will show alarms and events from all DeltaV Event Chronicle databases selected as History Analysis data sources during History Analysis server installation. When you select the Event Chronicle data sources, you have the option to access events from just the main Event Chronicle database or from the main and archive databases within each Event Chronicle.

The Process Event view displays all of the data available in the Event Chronicle. The columns include Date/Time, Event Type, Category, Area, Node, Unit, Module, Module Description, Parameter, State, Level, Desc 1 and Desc 2.

*History Analysis Process Trend View.*

From the Process Event view, you have full control over the presentation of the event data. You can filter the event data by absolute or relative time, you can filter the event data by module, you can re-order the event data in each column in order to group similar alarms and events, or you can hide unwanted columns.

## Batch Details View

The Batch Details view enables you to view all the details of your batch execution. The Batch Details view includes a Gantt chart display of the batch execution steps along with summary data for each batch step. From the Batch Details display you have quick and easy access to the Batch Events view, the Batch Trend view and the Process Events view, in context to any step in the batch, by right-clicking on the step and selecting the view from the context menu. You can also select the Batch Events or Batch Trends view from hyperlinks on the Action Pane.

Batch execution data is automatically linked to the associated process data for all batches. The automatic linking of the batch execution data with the associated process data occurs without user intervention. When the DeltaV Batch Executive is downloaded, the DeltaV equipment model is sent to the DeltaV Batch Historian. The History Analysis server uses the equipment model to automatically associate the batch and process data. Each version of the equipment model is tracked in the Batch Historian database, so no matter what batch you are viewing or what time the batch executed, you have an accurate, automatic linking of the batch and process data.

*History Analysis Process Event View.*

The Batch Events view provides details on the execution of the batch. All of the events generated during execution of the batch are available in the Batch Events view. You can change the content of the Batch Events view by selecting different steps in the Gantt chart in the Batch Details view and selecting Batch Events. The Batch Events view will update and show only those events associated with the selected batch step.

The Batch Trend view enables visualization of the process trend data associated with the execution of the batch. You can select any step in the Gantt chart in the Batch Details view and automatically trend the process parameters related to the batch step, filtered by time and equipment. The trend chart displays only those parameters associated with the execution of the selected batch step and only for the duration of the step. You can change the contents of the Batch Trend view by selecting different steps in the Gantt chart in the Batch Details view and selecting Batch Trends. The Batch Trend view will update and show only those trends associated with the selected batch step.

From the Batch Trend view, you have full control over the presentation of the trend data, just like in the Process Trend view. You can page forward, page backward, zoom in, zoom out, change the time scale, add pens, delete pens, etc.
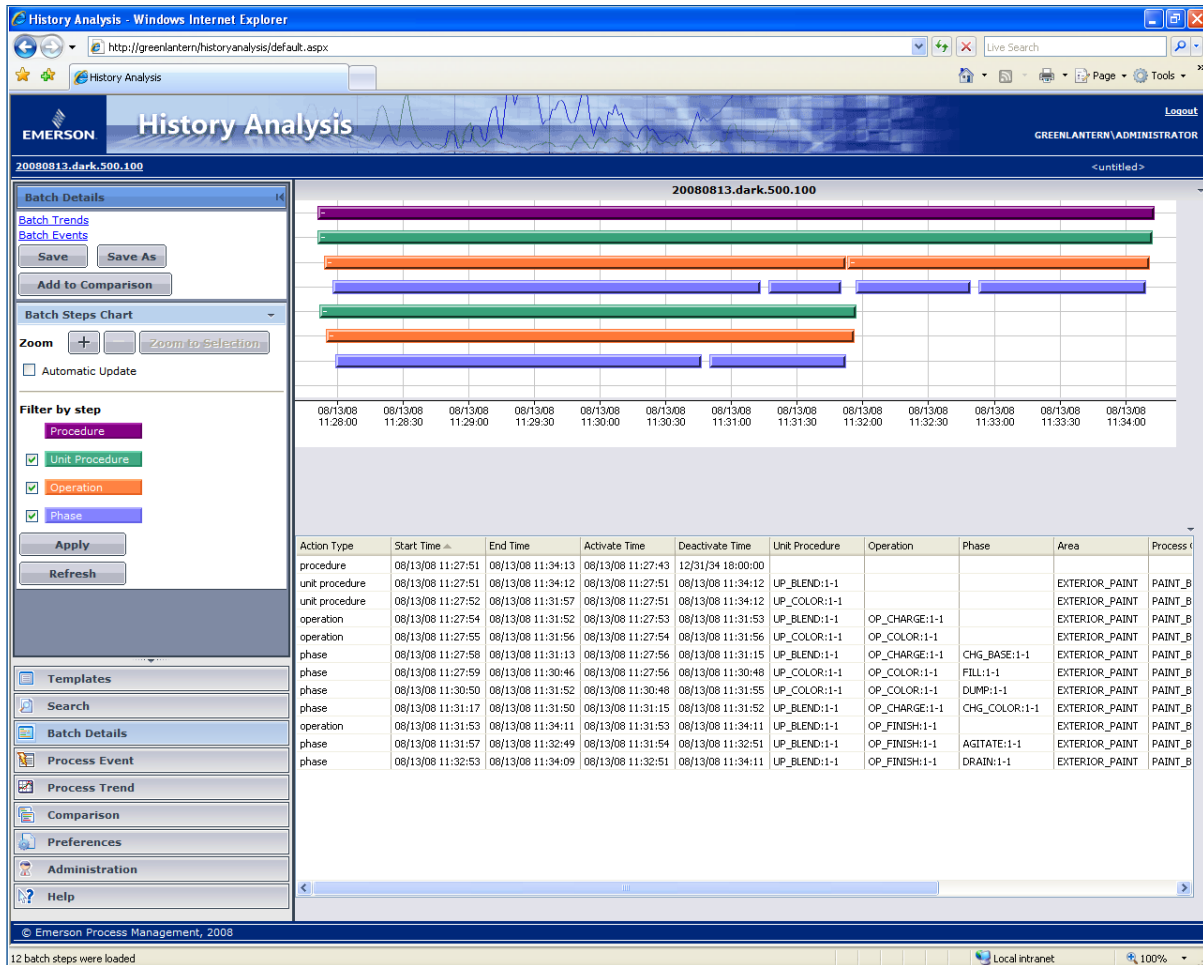
*History Analysis Batch Details View.*

Process events can also be viewed in context to the batch step. You can select any step in the Gantt chart in the Batch Details view and automatically view the process events related to the batch step, filtered by time and equipment. The event view displays only those parameters associated with the execution of the selected batch step and only for the duration of the step. You can change the contents of the Process Event view by selecting different steps in the Gantt chart in the Batch Details view and selecting Process Events. The Process Event view will update and show only those events associated with the selected batch step.

The Batch Details view enables viewing of all batch execution data for a single batch. The Batch Details view will show batch data from all DeltaV Batch Historian databases selected as History Analysis data sources. When you select the Batch Historian data sources during History Analysis server installation, you have the option to access batch data from just the main Batch Historian database or from the main and archive databases within each Batch Historian.

## Batch Comparison View

The Batch Comparison view enables you to compare up to 10 batches simultaneously in a Gantt chart view. Within the Batch Comparison view you can select individual steps in a batch and compare them with similar steps in other batches. History Analysis will automatically highlight similar steps in other batches to ease comparison. Once specific batch steps are identified, you can compare just the selected batch steps against each other.

From the Batch Comparison Gantt chart view, you can quickly and easily compare the associated process trend data, filtered by time and equipment, just as with the Batch Details view. The process trends are plotted in relative time, beginning at "00:00:00", to facilitate detailed comparison and analysis. The pens within the batch trend comparison are color coded, with like parameters run on different batches using the same pen color, to ease comparison.
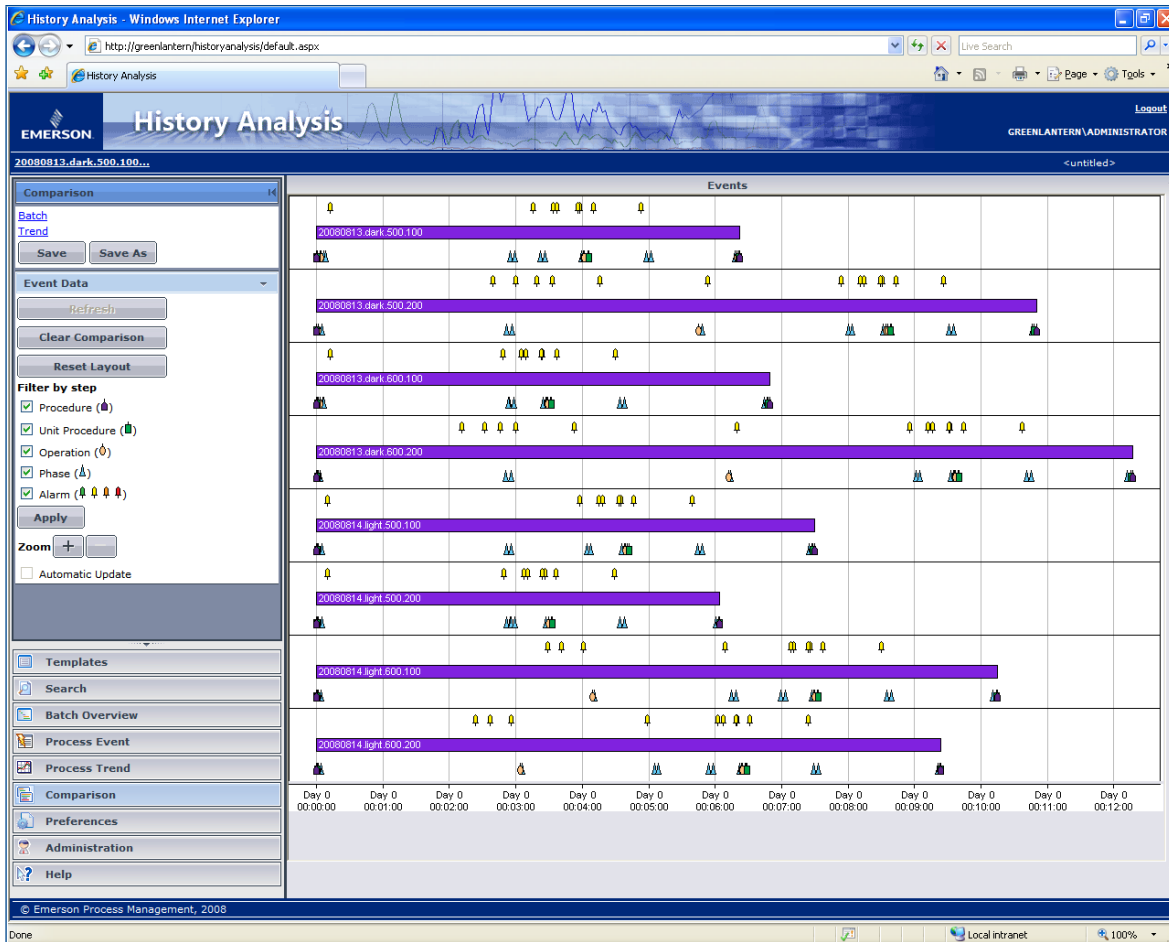
*History Analysis Batch Comparison View.*

From the Batch Comparison Gantt chart view, you can also quickly and easily compare the associated batch and process event data, filtered by time and equipment, just as with the Batch Details view. The batch and process events are compressed into a single view for ease of data representation and analysis when multiple batches are selected. For each batch, a single Gantt chart bar is used to represent the entire batch, with the batch step start and end events shown below the Gantt chart bar and the process events shown above the bar for each batch. Dragging the cursor over the batch step or alarm indicators provides a tool tip with more information about each step or alarm.

## Automatic Update

Each History Analysis client view has an optional automatic update feature. Typically, the History Analysis client will be used to view and analyze historical data for a specific time range occurring in the past, but with the optional automatic updates selection enabled, the selected view will update the display with the most recent data, on a five-minute refresh cycle.

## History Analysis Alias

History Analysis provides a quick and easy means for users to find, view and analyze DeltaV historical data. The History Analysis search engine with its intelligent wildcard filtering and drill-down features make finding the data you need a snap. In order to make it even easier for users to find the right data, History Analysis aliases are available for use. History Analysis aliases enable you to create aliases for DeltaV parameters collected in history, then search for these parameters by alias name.

The History Analysis aliases are configured on a unit module class, similar to batch phase logic aliases, but the History Analysis aliases resolve to a specific DeltaV parameter configured for history collection. You resolve the History Analysis alias at the unit class instance. The Process Trend and Batch Trend views are able to optionally display the History Analysis alias along with the specific DeltaV parameter.
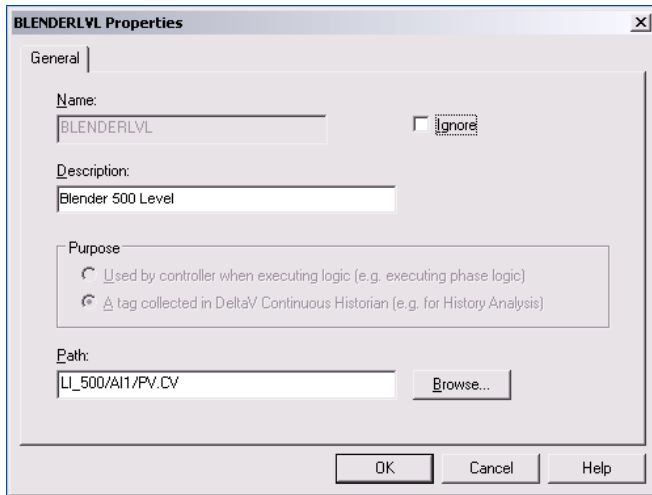
*History Analysis aliases provide user-friendly parameter names.*

For example, you create a unit class called *BLENDER* with a History Analysis alias for the blender tank level called *BLENDERLVL*. When you instantiate the *BLENDER* unit class, you resolve the *BLENDERLVL* alias to the DeltaV parameter that represents the blender tank level for the specific blender instance. You will do this for each instance of the unit class. Then, in the History Analysis client, you can use an alias search to find all the DeltaV parameters aliased by *BLENDERLVL*. Your non-DeltaV-knowledgeable users did not need to know the specific DeltaV parameter names or even the specific unit names. Easy!

## Data Export

History Analysis provides tools to find, view, and analyze your DeltaV history data. However, you might have your own specialized applications for analyzing your DeltaV historical data. History Analysis can help! You use the History Analysis search view to find the data you need and then you view the data in the applicable History Analysis views. You can further refine the data within the view by modifying the display options within each view, e.g. change time scale in the Process Trend view or filter events in the Process Event view. Once you have the data view just how you want it, you can export the data to an XML file for use by your favorite 3rd party data analysis package. Use the "Export" feature in the Process Trend, Process Event or Batch Event Action Pane to export the data contained in the view. The export file is stored on the History Analysis server, but you can download the file to your History Analysis client computer, if necessary.
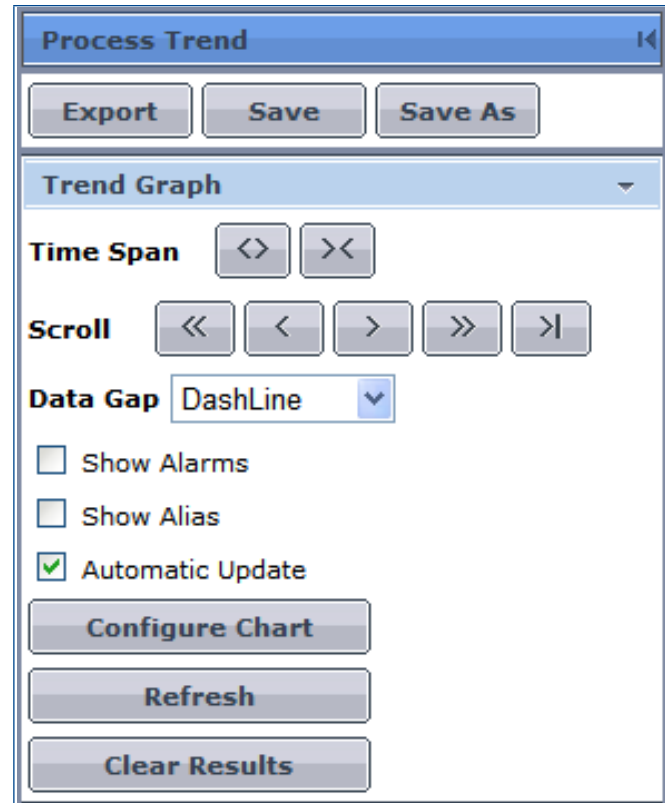


*Export History Analysis data for further analysis.*

## Templates

After you use the History Analysis search view to find the data you need and then view the data in the applicable History Analysis view, you might want to share this data view with others. Using the History Analysis Template feature, you can save the data view on the History Analysis server for display on any History Analysis client computer. The Template may be stored for Public use, meaning any other History Analysis user can access and view the Template. The Template may also be stored for Private use, meaning only the Template author can access and view the Template. Use the "Save" or "Save As" feature in the Process Trend, Process Event, Batch Details, Batch Trend or Batch Event views to save the data view as a Template. You access the stored Templates by selecting the Templates button in the Action Pane. The Templates are stored on the History Analysis server and will remain there until manually deleted by the user.

## Ordering Information

| Description | Model Number |
|---|---|
| History Analysis, 5 concurrent client connections | VE2226S005 |
| History Analysis, 10 concurrent client connections | VE2226S010 |
| History Analysis, 25 concurrent client connections | VE2226S025 |
| History Analysis, 50 concurrent client connections | VE2226S050 |
| History Analysis, 5 concurrent client connection scale up | VE22UPS047 |

*Note: DeltaV History Analysis must be installed on a Local Application Station.*

## Related Products

- **DeltaV Continuous Historian.** Captures up to 250 analog, discrete and text parameters along with their status and stores them for future analysis. Optionally scalable to 30, 250 parameters on the Application Station.

- **Advanced Continuous Historian.** Captures analog, discrete and text parameters and stores them for future analysis. It runs on an Application Station, can collect data for up to 60,000 parameters and is based on embedded OSIsoft technology to enable seamless integration with an OSIsoft PI Server.

- **DeltaV Event Chronicle.** Captures process, system and user alarms and events and stores them in a Microsoft SQL Server database.

- **DeltaV Advanced Batch.** Batch Software Suite that includes the Batch Executive, Batch Historian and Soft Phase Server products.

- **DeltaV Professional Batch.** Batch Software Suite that includes the Batch Executive, Batch Historian, Soft Phase Server, Campaign Manager and Recipe Exchange products.

## Prerequisites

- History Analysis requires DeltaV v10.3 or later.

- The History Analysis server requires an Application Station running the appropriate version of the Windows Server OS for the DeltaV software release.

- The History Analysis client requires a version of Internet Explorer approved for use with the DeltaV software release; IE7 is approved for DeltaV 10.3.X.

- IE8 is approved for DeltaV v11.3.X. IE9 (32 bit) is approved for DeltaV v12.3.X. IE11 (32 bit) is approved for DeltaV v12.3.1 and higher.

- The History Analysis client is supported on Microsoft Edge browser in Internet Explorer (IE) Mode on non-DeltaV PCs for use with DeltaV v13.3.1, v13.3.2, v14.LTS, v14.FP1, V14.FP2 and v14.FP3.

- History Analysis requires the DeltaV Continuous Historian to provide historical data to the Process Trend and Batch Trend views. The DeltaV Advanced Continuous Historian may also be used to provide this data in DeltaV v13.3 and higher releases.

- History Analysis requires the DeltaV Event Chronicle to provide historical data to the Process Event view.

- History Analysis requires the DeltaV Batch Historian to provide historical data to the Batch Details, Batch Event and Batch Comparison views.

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