



Important Product Information

Historian Version 7.0 SP5

GE Digital

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Important Product Information

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What's New in Historian 7.0?

What's New in Historian?

Historian 7.0 SP5 Features

Historian 7.0 SP5 is a full product install that includes all previously released features and functions in Historian 7.0 and the following new capabilities:

OSI PI Collector	The Historian OSI PI Collector will use PI AF SDK henceforth, to communicate with PI Server (instead of using PI SDK). The OSI PI AF SDK must be installed on the collector as it is required for the OSI PI Collector installation. However, the OSI PI AF SDK does not ship with Historian. If the OSI PI AF SDK is not installed, the OSI PI Collector will not start. If you install the OSI PI Collector on a machine that does not contain your PI Server, be sure to install the OSI PI AF SDK on the machine with the OSI PI Collector.
UAA LDAP Integration Configuration	The UAA LDAP Integration Configuration tool is a GUI based tool that helps users easily configure or reconfigure the various aspects of LDAP integration with UAA after Historian has been installed.

Historian 7.0 SP4 Features

Historian 7.0 SP4 is a full product install that includes all previously released features and functions in Historian 7.0 and the following new capabilities:

UAA Configuration Tool	The <code>uaa_config_tool</code> is a command-line utility that you can use to add, remove, or modify users on the Web Trend and Web Admin Clients. See the <i>Getting Started Guide</i> for more information.
Auto Refresh (live chart) toggle switch added to Trend Charts in the Web Trend Client	There a new toggle switch in the Trend Chart in the Web Trend Client. Select this switch to receive live updates as new data comes into Historian. The Auto Refresh option supports drag and drop operation for any tag or a set of tags when your mode is set to either Lab or Calculated mode. Other options are limited. See <i>Web Trend Help</i> for more information.
Windows Server 2016 support	You can now run your Historian application on Windows Server 2016. Other operating systems are still supported. See Software Requirements on page 29.
Additional configuration capabilities for GE Data Collector for Wonderware	The Historian Administrator has been updated to provide more configuration options for the GE Data Collector for Wonderware, including recovery time and throttling. Throttling allows you to pick the tag polling frequency and limit the impact to your source Wonderware server. See <i>Historian Help</i> for more details on this topic.
Enhancement to REST API to allow for pagination on large data set returns	When retrieving large tag lists from Historian using the REST API <code>GET</code> command, you can paginate the return, allowing you to get the next page, go the end, and go back on page and to the beginning. This helps with

memory management. See *REST API Reference Manual* for more information.

Updated and Improved Documentation

We have modified the *Getting Started Guide* and the *Important Product Information (IPI)* docs:

- Removed “What’s New in Historian” from the Getting Started Guide (this is now located only in the IPI.)
- Reorganized content and grouped common topics together (Overview, Installation, Configuration, Mirroring, iFIX, etc.)

If you have any feedback on this process change, please contact us at doc@ge.com.

Historian 7.0 SP3 Features

Historian 7.0 SP3 is a full product install that includes all previously released features and functions in Historian 7.0 SP2, along with 7.0 SP2 SIM1 additions and the following new capabilities:

Single Server Install Option

The Historian 7.0 SP3 installer has been upgraded to provide a Single Server Install. Use this option to achieve the highest performance and if you don’t plan on deploying a mirrored Historian system. See [Installing a Single Server Historian](#).

Ability to Move Favorites

Historian 7.0 SP3 provides the capability to share Favorites from one Historian machine to another through an export/import function added to the Trend Client. The output of the export function is a JSON file that can be modified using an external application such as Notepad. After import, the Historian tag names must match before the Favorite can be used.



Note: The maximum supported number of Favorites is 100.

Combined Security Model

With Historian 7.0 SP3, we have combined the UAA/LDAP security model with the existing Historian security model, providing consistency in experience for users in the Web Admin and Trend Client where you have implemented Security groups.

Standard Licensing Change

With Historian 7.0 SP3, all Standard licenses will now support 10 Data Stores, including a SCADA Buffer. This is an upgrade from all previous version of Historian where 5 Data Stores were on a Standard license, including one for the SCADA Buffer.

Documentation Changes

With this release of Historian, we have modified the way we deliver our *Important Product Information (IPI)*. After Historian 7.0 SP2, we will no longer update the existing CHM file, instead, we will be providing a PDF. We will continue to provide the existing CHM file If you need to refer to versions of Historian older than 7.0 SP3. If you have any feedback on this process change, please contact us at doc@ge.com

Historian 7.0 SP2 Features

Historian 7.0 SP2 is a full product install that includes all previously released features and functions in Historian 7.0 SP1, along with 7.0 SP1 SIM1 additions and the following new capabilities:

Wonderware® Data Collector

Historian 7.0 SP2 provides the GE Data Collector for Wonderware, which collects data from any Wonderware 2014 R2 Server. Written with the Historian Collector toolkit, this Collector supports all Wonderware data types (analog, discrete, and string), and all standard Historian Collector functions, including tag browsing, reconnect functionality, unsolicited tags, and bi-modality selection during install, which means you have the ability to choose Predix Time Series or Historian as the destination. This collector can be installed locally with your Historian or on a remote PC with the ODBC Driver for the SQL Server (not included with Historian) with connectivity to both the Wonderware and Historian servers, and with support for 64-bit computing platforms only (no 32-bit support). Each GE Data Collector for Wonderware consumes a CAL.

Ability to Save and Recall Displays as Favorites

Historian 7.0 SP2 provides the Web Trend Client user with the ability to save and recall displays. This time-saving tool allows you to create a standard way to visualize process data with charts, tables, and text objects, save them as Favorites, and recall them with a single click of the mouse.



Note: The maximum supported number of Favorites is 100.

Improved Performance for Queries returning Current Values

Historian 7.0 SP2 offers tremendous performance improvement in query performance when returning current values for tags, including tags for which Historian has not stored a current value in some time. This is done automatically, requiring no input or configuration by a user. The information about the archive location for a tag's current value is retrieved during system start-up, and stored in memory. Test results have shown a 7000X improvement in query performance under certain conditions over previous releases.

Historian 7.0 SP1 Features

Historian 7.0 SP1 is a full product install that includes all previously released features and functions in Historian 7.0, along with SIM1 additions and the following new capabilities:

OPC HDA Collector

Historian 7.0 SP1 provides the OPC HDA Collector, which collects data from any OPC HDA 1.2 -compliant OPC HDA Server. The OPC HDA Collector automatically determines the capability of the OPC HDA Server to which it is connected, and supports the appropriate features based on this information. The OPC HDA Collector can be found in the directory named Collectors in the Historian software DVD media. The OPC HDA Collector is delivered as a Windows installer. Each OPC HDA Collector consumes a CAL.

OPC UA Data Access (DA) Collector for Windows

Historian 7.0 SP1 provides the OPC UA Data Access (DA) Collector for Microsoft® Windows® systems. The OPC UA DA Collector is used to collect data from any OPC UA 1.0-compliant OPC UA Server. The OPC UA DA Collector automatically determines the capability of the OPC UA Server to which it is connected, and supports the appropriate features based on this information. Each OPC UA DA Collector consumes a CAL.

Single and Simplified Installation Process

All Historian 7.0 capabilities are included in a single installer, and your specific implementation is controlled by the license you have purchased. You can:

- Use the automated install image to install your Historian product in minutes.

- Install Historian on a VM or physical server.
- Start with a fresh install of Historian, or easily upgrade from an existing version.

Transport Layer Security Protocol 1.2 Support

Bi-modal Collectors support the Transport Layer Security (TLS) protocol 1.2. The TLS 1.2 protocol provides communications security over the Internet. The protocol provides privacy and data integrity between communicating applications.

Cloud Information and Related Configuration Settings for Bi-Modal Collectors

During the installation procedure of a Bi-modal Collector for Cloud connectivity, you are prompted to provide Cloud information and related configuration settings.

New Operations for REST APIs

New operations have been added to the REST API to provide the ability for you to manage tags. These operations include:

- Add (single tag)
- Bulk Add
- Get (single tag properties)
- Update (single tag properties)
- Delete (single tag)

For more information, refer to the Historian REST APIs Reference manual.

Historian 7.0 Features

Updated Security

Historian 7.0 incorporates the use of User Account and Authentication (UAA) tokens into the security model, which includes:

- Retrieving the token from the UAA service.
- Passing the JSON Web Token (JWT) to the REST service.
- Connecting the REST service with Historian Data Archiver, which connects to Windows Active Directory to authenticate the correct user.
- Passing authorization and authentication back to the REST service based on any Historian Security Groups defined (Read/Write/Admin), which allows appropriate access to the user.

Historian's UAA service is based on the Open Standard for Authorization, specifically OAuth2.

Self-contained Historian Web Admin Console

With the release of Historian 7.0, the Historian Web Admin Console operates as a Tomcat Web Server application and uses a PostgreSQL database for tag searching. This capability is included in the installation process. The Web server is on the same machine as the Historian server. As Historian 7.0 is a single node installation and does not currently support a multi-node installation, GE recommends that you use reverse proxy or a load balancing device if access from a DMZ to the Historian 7.0 node is required.

What this means to you: The Historian Web Admin is available as a standard browser-based application, requiring no other infrastructure to operate, where you click on the desktop icon creating during the installation, and bookmark the URL like

any other Web site. At the time of installation, you need to provide an administrator user name and password that is used to log in to the Historian Web Admin tool and the Trend Client. Both the Historian Web Admin and integrated Historian Trend Client leverage secure HTTP (HTTPS) and the UAA token, and fully supports the use of LDAP and Historian Security Groups, so you can easily add users and groups to access either client.

Integrated Web Trend Client

With the release of Historian 7.0, a Web Trend Client is included, and like the Web Admin Console, this client operates as a Tomcat Web server application, using a PostgreSQL database for tag searching.

The Web Trend Client provides many features and capabilities of the Proficy Historian Analysis (PHA) web client. Similar to the Historian Web Admin Console, this runs as a pure browser-based application, with a separate URL from the Web Admin with read-only rights to Historian data. This is an ad-hoc trending application for plant and process engineers for easy access to process and equipment data stored in Historian as tags.

Here is a comparison of the Trend Client and Proficy Historian Analysis Client:

Included in Trend Client and PHA	Available in PHA only*
Same look and feel as PHA today	Expressions
Tag Search	Model
Trend Charts, Current Value Table, Text Objects, Value Cards	Asset Search
Time Selection, Historian Query Modes, Filters	Asset Replacement
Ability to save and recall displays as Favorites	
Ability to share (export/import) Favorites across different Historians	
Export chart data, Print Preview, Stacked and Column Views	
Included with both Standard and Enterprise editions	
Support for export delimiters, and added support for local and regional settings for date and time	

*These capabilities may also be offered in other GE client applications such as Web HMI.

Public REST API

Historian 7.0 includes a fully supported Public REST API with the following features:

- New *Historian REST API Reference* manual with code examples and troubleshooting techniques.

For more information, see the Historian REST API Reference Manual.

- Full exposure to Historian tag functionality.
- API is included in the Installer.
- Retrieval based on all Historian query modes, including calculated modes.
- Support for the UAA token.
- Sample code in cURL.

Bi-modal Collectors and Updated Collector Toolkit

With Historian 7.0, collectors are decoupled from Historian to support cloud connectivity. In addition to having Historian as a destination, the Predix cloud (via a secure Web socket) also can be a destination to support APM, automation, or Brilliant Manufacturing Cloud subscription. The Collector Toolkit is updated as well, so any custom collector created using the toolkit has the same capabilities. As of SIM1 and included in Historian 7.0 SP1, Bi-modal Collectors support up to Transport Layer Security (TLS) 1.2. The initial Collectors that can be configured during installation with a Historian or Web socket destination include:

- Historian Server to Server
- OSI PI
- OPC UA (Linux)
- OPC UA Data Access (Windows) New for SP1
- OPC HDA New for SP1
- Wonderware New for SP2

See the *Historian Data Collectors* e-book for more information.

Cloud Information and Related Configuration Settings (updated for SP1)

During the installation of a Bi-modal Collector for Cloud connectivity, the Cloud Information and Configuration dialog prompts you to provide the following information:

Field	Description	Contact
Cloud Destination Address	The URL of a data streaming endpoint exposed by the Predix Time Series instance to which the data should go. Typically, it starts with "wss://".	Your Predix Time Series administrator can provide this URL.
Identity Issuer	The URL of an authentication endpoint for the collector to authenticate itself and acquire necessary credentials to stream to the Predix Time Series. Typically, it starts with https:// and ends with "/oauth/token".	Your Predix Time Series administrator can provide this URL.
Client ID	This field identifies the collector when interacting with the Predix Time Series. This is equivalent to the "user name" in many authentication schemes. The client must exist in the UAA identified by the Identity Issuer, and the system requires that the timeseries.zones.{ZoneId}.ingest and timeseries.zones.{ZoneId}.query authorities are granted to the client for the Predix Zone ID specified.	Your Predix Time Series administrator can provide this information.
Client Secret	This field stores the secret to authenticate the collector. This is equivalent to "password" in many authentication schemes.	Your Predix Time Series administrator can provide this information.
Zone ID	Because the Predix system hosts many instances of the Time Series service, the Zone ID uniquely identifies the one instance to which the collector will stream data.	Your Predix Time Series administrator

Field	Description	Contact
		can provide this information.
Proxy	If the collector is running on a network where proxy servers are used to access web resources outside of the network, then proxy server settings must be provided. This field identifies the URL of the proxy server to be used for both the authentication process and for streaming data. However, it does not affect the proxy server used by Windows when establishing secure connections. As a result, you should still properly configure the proxy settings for the Windows user account under which the collector service runs.	Your local IT administrator can provide the proxy server information.

1. Enter the information for each field and click **Next**.
2. The **DataPoint Attribute** screen appears. The use of datapoint attributes is optional but can be useful for sending additional metadata to the Predix Time Series.

If you want to use DataPoint attributes, more information is available on the Predix website, <https://www.predix.io/docs>, under **Services > Data Management Services > TimeSeries**.

Otherwise, you can skip this screen and click **Next**.

OPC UA Linux Collector and Collector Toolkit

The following Historian components – System API, Collector Toolkit, and OPC UA Collector – were developed so that they could be supported on a Linux platform. These components and supporting documentation can be found in the directory named Linux in the Historian software media, and are not available with the standard Windows-based installation.

The OPC UA Collector for the Linux operating system is delivered as a self-extracting archive file with a .bsx extension.

The OPCUA Collector collects data from any OPCUA 1.0 compliant OPCUA server. The OPC UA Collector automatically determines the capability of the OPCUA server to which it is connected and supports appropriate features based on this information. This Collector is for x86 systems only. The Toolkit has been compiled and tested on CentOS 7 and Ubuntu 14.

Support for Additional Windows Operating Systems

Support has been added for the Microsoft® Windows 10® operating system. Historian can be installed on the following:

- Microsoft Windows 10
- Microsoft Windows 8.1
- Microsoft Windows 7
- Microsoft Windows Server 2008 R2
- Microsoft Windows Server 2012 R2

Historian Server and 64-bit Support

The updated Historian server operating environment requires a 64-bit computing architecture. Collectors and other clients can still run on 32-bit systems.

Historian HD Cloudera Certified Technology with Parquet Extension	Historian HD has been certified as Cloudera Certified Technology with the ability to support MapReduce Extensions that save the output in Parquet format to support open source analytic methods. Historian HD is a native method to move Historian data from a Windows environment to a fault-tolerant, horizontally scalable HDFS platform, allowing complex queries on massive data sets that are often impractical on single server implementations. Historian HD and product components are sold separately from Historian. Please contact your GE Digital sales representative for more information
Updated Important Product Information and Getting Started Guide	The Important Product Information (IPI) and the Getting Started Guide are updated with system requirements, product and feature descriptions, packaging and configuration recommendations, and other information.

Historian 7.0 SP5 Release Notes

About Installing this Release

For information on the installation pre-requisites and step-by-step installation procedures, refer to the *Getting Started Guide* e-book or PDF document that is available in the Additional Documentation link of the Install Launcher in your DVD. If using this product with Proficy Historian Analysis (PHA) or Proficy Knowledge Center (PKC) 6.0/6.1, make sure you install Historian 7.0 after you install PHA/PKC 6.0/6.1.

Historian Installation Limitations

- With a Historian install, you are limited to the Simulation Collector. If you want to install other collectors, use a collectors-only install.
- With a Historian install, you are limited to the Historian Administrator, Historian Web Admin Console, and the Historian Trend Client. If you want to install other clients, use a client-specific install.
- You cannot close your current archive with a Historian Mirror Primary Server and Historian Mirror Node installation. This is because closing the current archive introduces archive synchronization risks in a mirrored environment. The restriction is enforced on all Historians, even those not using mirroring.
- You cannot use size-based archives with a Historian Mirror Primary Server and Historian Mirror Node installation. This is because having archives of different sizes introduces archive synchronization risks in a mirrored environment. The restriction is enforced on all Historians, even those not using mirroring.

Related Documents

For additional information about Historian, see the following documents:

- *Historian Getting Started Guide*
- *Historian Important Product Information (IPI)*
- *Using the Historian Administrator*
- *Historian Data Collectors*
- *Using the Historian Excel Add-In*
- *Historian Alarms and Events*
- *Migrating Advanced and Classic Historian Data*
- *Using the Historian OLE DB Provider*
- *Historian Software Development Kit (SDK) Online Help System*
- *Historian REST APIs Reference Manual*

Known Issues

Historian 7.0 SP5

Defect Number	Area	Description
DE29531	Historian backup option for PreIngestion	Historian backup method for PreIngestion is not supported with Enterprise version of Historian. Workaround: Use VSS backup method for PreIngestion, if using Enterprise version of Historian.
DE35475	Collector properties got overridden when upgraded from PH7.0 SP4 Collector only to PH7.0 SP4 Server	Legacy collectors installed on a machine using Collectors Only install, will be pointing to remote historian server. If you upgrade these collectors with Historian server, they will point to the local Historian server with default values. This behavior is expected till they are ported to CollectorTool Kit and are part of Collectors install bootstrapper.
DE30174	Excel add in	Excel add in about box shows unexpected version
DE37812	Archive subscription	Archive callback function is returning incorrect Archive Status & ChangeType in case of Out of order writes (older data written after current).
DE49579	Historian upgrade on top of PHA.	Historian upgrade does not work on top of PHA. Workaround: Uninstall Historian which is installed on PHA and then do an install of the required Historian for the application to work as expected.

Historian 7.0 SP4

Defect Number	Area	Description
DE34139	Collector install	The collector install can become unresponsive when performing an upgrade install of a collector on a system with Historian 7.0 SIM1. Prior to upgrading the collector, uninstall SIM1.
DE34790	Historian Upgrade	If performing an upgrade install from Historian Mirror Primary Server (prior to SP4 version) to Historian Single Server (SP4), the CLRHost.dll and CLRHost.pdb files are missing from . . . \Proficy\{Proficy Historian\x64\Server directory. Install Client Tools following the upgrade.

Historian 7.0 SP3

Defect Number	Area	Description
PROFHIST-4407	Historian Server	<p>When the Configuration Manager is restarted, the Administrator is taking a long time to connect and displays "Error instantiating Archives" error.</p> <p>If you try to restart a service, the clients will take time to connect back to the server.</p>
PROFHIST-4347	Data Archiver	<p>If you add more than a million tags, the archiver takes a longer time to process and it takes a while for the system to settle down.</p> <p>You must add fewer tags or add tags in smaller chunks.</p>
PROFHIST-4507	Data Mirroring	<p>If you add a mirror node while adding tags, the "Data Node invalid" message appears.</p> <p>You must first add the mirror node and then add tags.</p>
PROFHIST-4599	VMWare	<p>On a Windows 2012 virtual machine using the default e1000e network adapter and running on an ESXi 5.0/5.1 host, you experience data corruption while copying data over the network or after a network file copy event. For more information, see http://www.vmware.com/support/technotes/technotes_lang_en_US.html#kb/GSxendb-2058892.</p>
DE16312	Alarms & Events	<p>Periodically, the Alarm and Events install fails to connect to SQL using the SQL credentials provided.</p> <p>Exit the install and re-run the install again.</p>
DE29531	Backup	<p>Historian backup method for preingestion is not supported with Enterprise version of historian.</p> <p>As a workaround, use VSS backup method for preingestion if using Enterprise version of Historian.</p>
DE27954	Archive Subscriptions	<p>Archive subscriptions are not implemented in Enterprise.</p>
DE28158	Calculation Collector	<p>Polled tags gets 0 bad values if the Data Archiver is not available in an enterprise setup.</p> <p>In Enterprise Historian, the Calc collector never disconnects from the Client Manager if the Data Archiver is unavailable. Therefore, a recalc is never done when the Data Archiver comes back online to correctly backfill data.</p> <p>Workaround: Run a manual recalc to recover data for the duration Data Archiver was not available.</p>
DE27122	Install	<p>Trend Client, Historian Web Admin and VBAAdmin login issues can occur if user installs Historian Single Server or Historian Mirror Primary Server over an existing Mirror node.</p> <p>As a workaround, uninstall the existing Historian Mirror node prior to installing the Single Server or Historian Mirror Primary Server.</p>

Defect Number	Area	Description
DE16579	Time Editor	<p>Time Picker Does Not Allow Specific Value for Min and Sec Using the Keyboard.</p> <p>In the Time Editor, for start and end time, if you enter the value using the keyboard, the new value is not saved. It reverts back to previous value. As a workaround, use the arrows on the popover window when you click the text box to increment and decrement by 15.</p>
DE16662	Web Admin	<p>Historian Web Service Error when Trying to Browse Tags.</p> <p>The maximum number of Tags to browse per node is 5000. As a workaround, use hierarchical browsing rather flat browsing.</p>
DE16745	Historian Web Admin	<p>Time zone Configured in System Config is Not Reflected in Both Historian Admin and Historian Web Admin.</p> <p>The default time zone in the System Config is set to the Local time zone, even if you select UTC time zone. At this point in time, the Historian Web Admin does not have the ability to configure the time zone.</p>
DE16807	Historian Web Admin and Historian Trend Client	<p>After a Clean Install, the First Login to Internet Explorer Does Not Authorize.</p> <p>A message to open or save the URL appears instead. As a workaround, change the Internet Explorer compatibility setting. Go to Compatibility View Settings, and clear the "Display Internet Sites in Compatibility View" check box. Close Internet Explorer, and relaunch Historian Web Admin and Historian Trend Client.</p>
DE16933	Linux OPCUA Collector	<p>Unable to Browse Tags Historian 5.5 Tags Using the Linux OPCUA Collector.</p> <p>This remains a backwards compatibility issue with Historian 7.0.</p>
DE17131	Web Admin	<p>Web Admin Does Not Switch to the Mirror Node When the client Manager is Down on Primary Node.</p> <p>After a full install on the primary, a mirror install on the secondary, and joining the secondary node to the primary node using the Web Admin (making sure you used the DHSNoTrust registry if you are not using the domain), the Web Admin does not switch to the secondary node after a shutdown of the Client Manager on the primary. VB Admin does automatically switch to the primary node.</p>
DE17170	Collectors	<p>Issue Installing 7.0 Collectors on top of Legacy Collectors.</p> <p>Do not install 7.0 Collectors on top of Historian Servers version 6.0 or earlier.</p>
DE17347	Uninstall	<p>If Historian legacy collectors are uninstalled before the Historian Server, Historian Fails to Uninstall</p> <p>As a workaround, uninstall Historian first, and then the Collectors.</p>

Defect Number	Area	Description
DE16375	Web Admin	<p>"Failed to add node to data storage" message appears when trying to add a Mirror Node without a license.</p> <p>This could mean that you do not have a proper license to join the mirror node. The error also can mean other things too, not just a license issue. You should review the Data Archiver and Configuration Manager for more information.</p>
DE17318	Windows Performance Collector	<p>Windows Performance Collector Issues after Upgrading from Historian 5.0, 5.5, or 6.0 When the Windows Performance Collector and Server are Installed on the same machine.</p> <p>For the 5.0 or 5.5 Windows Performance Collector, when you upgrade the Server to 7.0, new tags added after upgrade do not collect data. The workaround is to restart the DataArchiver service or install the 7.0 Windows Performance Collector. For 6.0, after you upgrade you may find that you cannot browse new tags in the Windows Performance Collector. The workaround is to install the 7.0 Windows Performance Collector.</p>
DE17105	Excel Add-in	<p>Trend2 & Trend2Raw2 Sampling Modes - Results in Wrong Values from Excel Add-in.</p> <p>The workaround is to use the OLEDB client instead, which will provide the correct values.</p>
DE17278	Historian Web Admin	<p>Not Able to Delete Tags that Contain Special Characters in the Tag name, such as: (" / " , " \ ") .</p> <p>As a workaround, you can delete tags from the Windows Historian Administrator.</p>
DE10963	Uninstalling Historian	<p>Uninstalling Historian fails after uninstalling collectors. <<Details</p> <p>An uninstall of Historian fails if performed after uninstalling legacy collectors. As a workaround, you can either mount the ISO during the uninstall of Historian if the uninstall of legacy collectors was done prior, OR perform an uninstall of Historian first, which in turn will uninstall legacy collectors.</p>
00366157	A&E Database Migration	<p>Node, Sourcetag, Electronic Signature, and other properties not alarm migrated.</p> <p>The <code>ihalarms</code> table is missing node, sourcetag, start value, end value and other properties following an A&E database migration.</p>

Fixed Defects

Historian 7.0 SP5

Case #	Description
462145	Possible deadlock during removal of archives – Data Archiver becomes unresponsive.
455981	IncludeBad querymodifier does not apply to samplingmodes only calculationmodes.
460845	LDAP users with chinese character in first or last name cannot connect using web admin (fixed, but needs SP, cant release in SIM).
458785	User defined calc function containing percent crashes calc collector at startup.
441210	Missing OPC Core Components Redistributable (x64) after collector upgrade from 7.0 Base to 7.0 SP3.
445527	IFIX2IH.exe should be shipped in collector install.
449523	Historian Server info in registry is missing mirror details when using DNS server aliases.
450904	Excel Help link from ribbon does not do anything.
00469681/CS0072324	Performance issues with IData.Delete in Client Access API.
466653/CS0071049	Historian 7.0 toolkit collector wizard issue.
466865	Client access api connect fails when server can't resolve client ip.
00470592/CS0072694	Client manager crashes randomly (PRB0041703).
00469676/CS0072322	Collector log is missing tag names for incorrectly configured tags.
406399/465576/459622	Archive Services Required restarting after system stopped.
475069	Historian 7.0 - Data Archiver crashes every time it closes an archive.
NONE	Wonderware collector setting '0' hours for analog tags.
475684	Error Backup Archive file.
00473939/CS0074176	Incorrect error given while trying to convert to Monolithic without the central ihc.
382186	Double quotes removed from source address on dutch excel tag import.
369504	Excel tag import EGU Desc starting with # fails import.
457657	Standby Redundant OPC Collector crashes after the initial read of string tag from the OPC source device that returned a timeout failure.
NONE	File and Calc collector installs ask for "Source Server Name" instead of "Destination Server".
405286	Historian error - Error Retrieving Server Time due to possible deadlock in VSS backup.

Case #	Description
NONE	calctype 0 should list the tags of type 'ihRawTag' but displays all the tags.
NONE	Hybrid queries returning raw data should use raw quality.
461473	Archive Subscriptions not called in sp3 single node.
454696	Excel event query for ESIGNATURE returns more than ESIGNATUREs.
457657	Standby Redundant OPC Collector crashes after the initial read of string tag from the OPC source device that returned a timeout failure.
347934	Alarm migration exe desktop shortcut not there in sp1 sim.
460845	Issues with a user having non-English characters for the login name.
434933/461017	DA crash reading data from client access api when the results spans the timeframe where tag is both variable string and fixed string.
NONE	Historian VBAAdmin Run-time error following a WIX install of File Collector.
NONE	ihArchiveBackup crashes on taking backup when the disk space is full.
NONE	WebAdmin: On adding a tag , the tag doesnot get added to the changed default DataStore.
366157	AEDB migration does not migrate node and sourcetag.
463586/423601	Alarm purge removes alarms in local and UTC time zones.
476090	Sloppy version number work practices.
478590	Getting Started Guide: Server Sizing Recommendations Section update.
342445	Perftag_MemoryUsage is always zero on hist 5.5.
232812	Spike value for a calculation tag.

Historian 7.0 SP4

Case #	Description
00387819	Alarm install to non-default path uses default path.
00388210	Standard install deletes hist security admin group.
00423601	Alarm purge removes alarms in local and utc timezones.
00432596	OLEdb window handle error on 64 bit OS during test connection.
00433281	Server to Server v4.5 to Historian 7.0 Enterprise - lag from server increases.
00436909	Polled calculation tag cannot read tag with colon.
00439989	PI distributor uses incorrect collection interval after source address change.
00442204	Max Query Time should be checked while determining filter ranges.
00443706	Performance degradation of Data Archiver over time.
00444484	Excel tag import changes the end of some tagids.
00445848	Calculation collector cannot read currentvalue of perftag.

Case #	Description
00445990	Error while concurrently querying data from multiple instances of Matrikon OPC HDA Explorer.
00456441	Data Archiver log doesn't show the user/ip that exceeded the Maximum Query Time.
00457025	Upgrading Excel add-in install on SP3 single node will install client and config manager.
00461473	Archive Subscriptions not called in 7.0 SP3 single node.
00461561	File collector only install doesn't install the <code>ih sdk.dll</code> .

Historian 7.0 SP3

Case #	Description
00428981	Excel tag export of description starting with equal sign and more than 65k tags fails.
00431219	Wonderware collector shows the password in Admin UI.
00434697	Indexing service error 7 inserting tags.
00424884	Data Archiver memory leak reading data when not a security admin.
00428981	Excel tag export of description starting with equal sign and more than 65k tags fails.
00444997,00438295	User cannot import alarms older than 30 days.
00433564	Web admin banners are wrong after IHC rename.
00378019	Tag change audit trail has no decimals.
00428517	Collector unable to connect after Data Archiver loses connection to disk.
00433331	Server to Server v4.5 to Historian 7.0 SP2 server - collectors do not reconnect automatically.
00433281	Server to Server v4.5 to Historian 7.0 SP2 server - lag from server increases.
00442148	Each OPC UA Collector consuming the one user license.
00427615	Cannot log into Web Admin or Trend client with non Admin users
00419830	Web Admin and Trend Client behavior with iH Security Groups.
00439763	Data is not returned when "next to replace" performed on raw sample.
00371875	Archive subscriptions sent even after un-subscribe and also for wrong data store.
00419466	Calculation collector reading tagname with question mark was affecting other calculation tags.
00292818; 00302135	User should be able to create server to server distributor tags via Excel import or File Collector import.
00349782	Description gets put into the wrong column of a multi tag iTrend OLEDB query.
00407173	iFIX collector memory leak collecting tags that don't exist and you have multiple collection intervals.
00423961	WinCC OPC AE Serve and A&E collector does not deliver any alarms.

Case #	Description
00446356	Server to server (s2s) Auto-recovery uses maximum recovery time, when connection is lost during recalc operation.
00409345	Unsolicited tags with compression timeout produce out-of-order data during Server to Server recalculation.
00407483	Server to server (s2s) not reconnecting to destination due to sent queue full.
00406625	Any query with end time in the future will get good quality intervals from the current time to the archive end time when using time based archives.
00431538	Audit trail messages not working after converting enterprise to standard.
00420441	Config Manager deadlock on tag browse and tag subscribe at startup in large tag count system.
00430906	Client Manager Crash on AddRef after looking up datastore.
00425055	User cannot restore archives on enterprise historian with electronic signatures enabled.
00434933	Data Archiver crash when reading data for an enumerated set tag via Client Access API
00425948	Renamed Tags pointing to new collector are being written by both the old and new collector.
00436723	PI Distributor crashes at startup when you leave Tag property space 1 blank so you don't have the name of the PI tag to write to.
00399906	User cannot create Perfmon collector tags of different collection intervals.
00399329	Restoring an archive from backup was creating an additional IHA file with _1 in filename.

Setting Up the Historian Environment

Setting Up the Historian Environment

Before you start setting up your Historian environment, identify the computers that will function as your clients, data collectors, administration workstations, and archiver.

1. Set up each computer.
See [Hardware Requirements](#) on page 23 , and refer to the user manual that accompanies each component for detailed setup information.
2. Use a login account with administrator rights so that you can install Historian later.
See [Software Requirements](#) on page 29, and refer to the user manual that accompanies each software product for more detailed setup information
3. Activate the License Key on your Historian Server node. Additional licenses may be required on other nodes (such as mirroring and collector nodes) depending on your configuration requirements. See [Historian Licenses](#) on page 21.
4. Disable the Guest account in Windows security if you want to limit authentication to known Windows users only.

Historian Licenses

Historian Product License Management

Advantage Licensing is the software system for activating and managing product licenses. Using the tools in Licensing and our Customer Center web site you can view, activate, and manage licenses at your site.

With Advantage Licensing you can:

- View current licenses for the products residing on a computer
- Choose a licensing method (Internet, local intranet, or file-based)
- Change licenses (Activate, Return, Refresh)



Note: If you received an email containing an activation code, you must migrate to Advantage Licensing. Get the newest licensing software at <http://digitalsupport.ge.com>.

If you did not receive an activation code, follow the instructions about M4 keys at <http://digitalsupport.ge.com>.

Historian License Editions

Historian is available in three license types: Essentials, Standard, and Enterprise. The Essentials edition is included as the on-board Historian with the purchase of some iFIX and CIMPLICITY licenses, and cannot be licensed or sold outside of those packages. Essentials edition customers who require options available in the Standard or Enterprise editions or require more than a 1000 tags must purchase either a Standard or Enterprise License with the appropriate tag count.

You can install all components using the single install media, but the use of specific components and functionality are controlled by the GE license you purchase and install.

The Historian components and functionality supported by each license type are shown in the table below:

Component	Essentials	Standard	Enterprise
Allow Data Modification	X	X	X
Digital / Enumerated / Array Tags	X	X	X
Excel Add-in	X	X	X
Fault Tolerant Computer Support	X	X	X
Historian Server	X	X	X
iFIX Collector	X	X	X
ME Collector	X	X	X
OLE DB Provider	X	X	X
OPC DA Collector	X	X	X
OPC HDA Server	X	X	X
SCADA Buffer (2500 tags, 200 days)	X	X	X
Server to Server Distributer	X	X	X
Windows Admin Console	X	X	X
Cluster Support		X	X
Collector Redundancy		X	X
Collector Toolkit SDK		X	X
GE Data Collector for CygNet w/Cloud Option		X	X
GE Data Collector for OPC HDA w/Cloud Option		X	X
GE Data Collector for OPC UA (DA) w/Cloud Option		X	X
GE Data Collector for OPC UA Linux (x86) w/Cloud Option		X	X
GE Data Collector for OSI PI w/Cloud Option		X	X
GE Data Collector for Wonderware w/Cloud Option		X	X
Microsecond Support		X	X
Multiple Data Stores		X	X
User Defined Multi-Field Tags		X	X
Web Admin Console		X	X
Web Trend Client		X	X
Windows PerMon Collector		X	X
Calculation Collector		Optional	X

Component	Essentials	Standard	Enterprise
OPC Alarms		Optional	X
Server to Server Collector w/Cloud Option		Optional	X
Data Mirroring - up to 3 (Primary +2)			X
Expression Support			X
Electronic Signatures		Optional	Optional
Maximum Data Stores (200)			Optional
Historian Client Access Licenses (CALs)	2	5	5
Data Stores	5	10	20
Max Historical Tags	1,000	50,000	20,000,000



Note: Historian HD is a separately sold and licensed component from Historian. Historian HD provides the Historian user a standard method to move Historian tag configuration and historical archive data from a Windows environment to a Hadoop Distributed File System (HDFS). HDFS is the primary distribution storage used by Hadoop applications.

A component that is used only by the Historian HD license is installed with your Historian installation: the Historian Archive Ingestion Service. This service is reserved for use only with the Historian HD big data analytics platform and is listed as "Manual" under Startup Type. Stopping this service does not impact Historian functionality. Unless you are licensed to use Historian HD, do not attempt to start or monitor this service, as it may impact the ability to run the Historian Data Archiver service.

For more information regarding Historian HD, please visit <http://www.ge-ip.com/products/proficy-historian-hd/p3714>.

Hardware Requirements

This topic describes the Historian hardware requirements.

Historian Server

For Historian Servers, the minimum hardware requirements are:

- A 2.4 GHz clock-speed Intel Core i3 or i5 or i7 CPU or equivalent AMD Phenom CPU with 8 GB RAM for a 64-bit Historian Server.
- A DVD-ROM drive.
- 80 GB free hard-drive space for the data archives, message files, buffer files, and log files used by the system.
- 100 Mbps TCP/IP-compatible network interface adapter for network communication and certain I/O drivers.

Data Collector Node

For Data Collector nodes, the recommended minimum hardware requirements are:

- A 2.0 GHz clock-speed Intel Core i3 or i5 or i7 CPU or equivalent AMD Phenom CPU with 2 GB RAM.

- 40 GB of free hard-drive space to store buffered data.
- A DVD-ROM drive.
- TCP/IP-compatible network interface adapter for network communication and certain I/O drivers.

Microsoft Windows Server

Many desktop-class computers are not certified to run Windows Server. Check the Microsoft web site and your computer hardware vendor web site for possible conflicts between your hardware and Windows Server 2008 R2 SP1. These specifications are sufficient to meet the needs of a small pilot application. However, production system requirements may be significantly different depending on many application-specific factors. Please contact the Product Manager to review the requirements of your application.

Microsoft Cluster Service

For the Microsoft Cluster service, the minimum hardware requirements are:

- A 2.6 GHz clock-speed Intel Core i3 or i5 or i7 or Xeon or equivalent AMD Opteron CPU with minimum 8 GB RAM.
- 80 GB of local, free hard-drive space.
- 40 GB shared SCSI hard-drive (RAID preferred).
- Two 100Mbit TCP/IP-compatible network interface adapters for network communication and certain I/O drivers (One for public network, another for private network).



Note: The configuration of each server added to the cluster must be identical to the other servers in the cluster.

Data Mirroring and Redundancy Service

For the Data Mirroring and Redundancy service, the minimum hardware requirements are:

- Minimum 8 GB RAM.
- Dual Core Processor.
- 64-Bit Operating System.



Note: If you are using single node setup, then it is recommended to use 32 GB RAM.

Ensure that you are using the same hardware requirement for the mirror node as well.

Network Speed

For a large Enterprise Historian setup, it is recommended that network speed is 1 GBPS.

Notes

- If you are using single node setup, then it is recommended to use 32 GB RAM.
- Ensure that you are using the same hardware requirement for the mirror node as well.
- You must have a minimum of 10 GB free space available for the Data Archiver to start.
- Many Desktop-class computers are not certified to run Windows Server. Check the Microsoft web site and your computer hardware vendor web site for possible conflicts between your hardware and Windows Server 2008 R2 SP1. These specifications are sufficient to meet the needs of a small pilot application. However, production system requirements may be significantly different depending on many application-specific factors. Please contact the Product Manager to review the requirements of your application.

Historian Server Sizing Recommendations

You determine the size of an Historian Server as a function of the number of tags from which data is collected, the rate of alarm and event collection, and how often you intend to collect the data and how much data you want to keep online. The number of tags is an indicator of the number of concurrent users likely to access the system. The primary factor is server memory requirements; CPU load is a secondary factor. If the number of concurrent users is significantly different from the suggested guidelines, adjust server memory size accordingly.

The following recommended configurations may vary based on years of data online, update rate, data compression setting, and other tag configuration parameters.

Notes

- Historian Server runs only on 64-bit versions of Windows.
- When possible, for performance reasons, consider using computers with multiple disk drives so that archives and buffers can be given their own drive. Or, multiple data stores can each have their own drive.
- Sustained event rate is 18 million per minute.
- Historian supports Intel Core i3, i5, i7 Duo based processors as long as they are compatible with the operating system.
- Historian does not support Itanium processors.

The recommended configurations may vary based on years of data online, update rate, data compression setting, and other tag configuration parameters.

- [Recommended Historian Standard Edition Server with <10K Tags](#) on page 25
- [Recommended Historian Standard Edition Server with 10K - 50K Tags](#) on page 26
- [Recommended Historian Standard Edition Server with 100K to 1 Million Tags](#) on page 26
- [Recommended Historian Standard Edition Server with 1 Million to 2 Million Tags](#) on page 26
- [Recommended Historian Standard Edition Server with 2 Million to 5 Million Tags](#) on page 27

Recommended Historian Standard Edition Server with <10K Tags

Tags	<10K
RAM (GB)	8 GB/16GB (recommended for Single node setup)
Disk Size Required	100 GB/250 GB (recommended)
Processor Type	Intel Core-i5, i7 family, or equivalent
CPU	Dual/Quad cores
CPU Speed (GHz)	2.8
Recommended CPU clock in Giga Hz	2.8
Operating System	Windows 7 (64-bit) or Windows Server 2008 (64-bit) or Windows 2012 Server R2 or Windows 2016 Server.
Storage Type	SAS SSD with RAID Level 0 Configured
Years of data online	1 year

Recommended Historian Standard Edition Server with 10K - 50K Tags

Tags	10K to 50K
RAM (GB)	16 GB / 32 GB (recommended)
Disk Size Required	250 GB
Processor Type	Intel Core-i5, i7 family, or equivalent
CPU	Dual/Quad cores
CPU Speed (GHz)	2.8
Recommended CPU clock in Giga Hz	2.8
Operating System	Windows 7 (64-bit) or Windows Server 2008 (64-bit) or Windows 2012 Server R2 or Windows 2016 Server.
Storage Type	SAS SSD with RAID Level 0 Configured
Years of data online	1 year

Recommended Historian Standard Edition Server with 100K to 1 Million Tags

Tags	100K to 1 Million
RAM (GB)	16 GB / 32 GB (recommended)
Disk Size Required	250 GB
Processor Type	Intel Xeon (56xx, E5 family or AMD Opteron 42xx/62xx family)
CPU	Dual/Quad cores
CPU Speed (GHz)	2.8
Recommended CPU clock in Giga Hz	2.8
Operating System	Windows Server 2008 R2 or Windows 2012 standard (64-bit) or Windows 2012 Server R2 or Windows 2016 Server .
Storage Type	Direct attached or shared storage with SAS enterprise class drives. Hardware RAID controller with cache memory. SAN recommended over NAS
Years of data online	1 year

Recommended Historian Standard Edition Server with 1 Million to 2 Million Tags

Tags	1 Million to 2 Million
RAM (GB)	16 GB / 32 GB (recommended)
Disk Size Required	500 GB
Processor Type	Intel Xeon (56xx, E5 family or AMD Opteron 42xx/62xx family)
CPU	2-Socket

CPU Speed (GHz)	2.6
Recommended CPU clock in Giga Hz	2.6
Operating System	Windows Server 2008 R2 or Windows 2012 standard (64-bit) or Windows 2012 Server R2 or Windows 2016 Server.
Storage Type	Direct attached or shared storage with SAS enterprise class drives. Hardware RAID controller with cache memory. SAN recommended over NAS
Years of data online	1 year

Recommended Historian Standard Edition Server with 2 Million to 5 Million Tags

Tags	2 Million to 5 Million
RAM (GB)	32 GB / 64GB
Disk Size Required	500 GB
Processor Type	Intel Xeon (56xx, E5 family or AMD Opteron 42xx/62xx family)
CPU	2-socket or 4-socket
CPU Speed (GHz)	2.6
Recommended CPU clock in Giga Hz	2.6
Operating System	Windows Server 2008 R2 or Windows 2012 standard (64-bit) or Windows 2012 Server R2 or Windows 2016 Server.
Storage Type	High speed shared storage with SAS or SSD drive types. Hardware RAID controller with cache memory. SAN recommended over NAS.
Years of data online	1 year

Sustained Event Rate Example System

System performance may vary depending on the hardware specifications, operating system, and tuning parameters. These hardware specifications are provided as a reference only.

Specification	Medium Size Server	Large Size Server
Processor Type	Intel Xeon 5540	Intel Xeon E5-2670 or E5-4650
CPU	Dual socket	Dual socket or quad-socket
CPU Speed (GHz)	2.5	2.7
RAM (GB)	64	256

Historian Collector Configuration Recommendations

Configuration Item	Recommendation
---------------------------	-----------------------

RAM (GB)	8 GB
Disk Size required	80 GB
Historian Collectors	32-bit or 64-bit (GE Data Collector for Wonderware support 64-bit only)
Operating System	<ul style="list-style-type: none"> • Microsoft® Windows® 7 Professional (32-bit or 64-bit) • Microsoft® Windows® 8.1 Professional (32-bit or 64-bit) • Microsoft® Windows® 10 • Microsoft® Windows® Server 2012 Standard (64-bit) • Microsoft® Windows® Server 2008 R2 (64-bit) • Microsoft® Windows® Server 2008 R2 • Microsoft® Windows® Server 2012 R2

Notes

- Historian Collectors work as 32-bit applications on a 64-bit Windows operating systems using WoW64 mode (Windows-on-Windows 64-bit). However, you can read and write data from a 64-bit Historian Server.
- RAM and Disk Size required may vary based on the collectors available on the system.
- Recommended number of tags per collector is 20 to 30K.
- For iFIX systems, count each Node.Tag.Field (NTF) as a separate tag when you determine the size of the system. For example, FIX.FIC101.F_CV and FIX.FIC101.B_CUALM (current alarm) both count as tags, even though they are derived from the same iFIX tag.

Optimizing Virtual Memory

Through the use of paging files, Windows allocates space on your hard drive for use as if it were actually memory. This space is known as virtual memory. Be sure to optimize the virtual memory on the Historian archiver computer.



Note:

If the paging file is set to grow dynamically, your system may experience severe performance problems during run time. To ensure optimal performance, be sure that the Initial Size and Maximum Size of the paging file are the same so that the paging file does not grow dynamically. For more information on creation and sizing of Windows paging files, refer to the Microsoft Windows Help.

To optimize the virtual memory paging file for Historian in Windows:

1. Double-click the System icon in the Windows Control Panel.
2. Open the **Performance Options** dialog box:
 - a) On Windows 7, or Windows 8, or Windows Server 2008, click **Advanced System Settings** in the left pane.
 - b) In the **Advanced** tab, under **Performance**, click **Settings**.
 - c) In the **Performance Options** dialog box, click the **Advanced** tab.
3. In the **Virtual Memory** group box, select **Change**.
4. In the **Initial Size** field, enter a value equal to three times your physical memory.
5. In the **Maximum Size** field, enter a value equal to three times your physical memory.
6. Select **Set**.

7. Click **OK**.

Software Requirements

This topic describes the minimum Historian software requirements.

Microsoft® Windows® Operating Systems

Historian requires one of the following operating systems, with latest service packs or revisions:

- Microsoft® Windows® Server 2016 (64-bit)
- Microsoft® Windows® Server 2012 R2 (64-bit)
- Microsoft® Windows® Server 2008 R2 (64-bit)
- Microsoft® Windows® 7 Professional (32-bit or 64-bit)
- Microsoft® Windows® 8.1 Professional (32-bit or 64-bit)
- Microsoft® Windows® 10 (32-bit or 64-bit)



Note: Historian 7.0 32-bit components such as Collectors, Excel Add-in 32-bit, Interactive SQL 32-bit, APIs, and Non-Web Administrator work as 32-bit application on 64-bit Windows operating systems using WoW64 mode (Windows-on-Windows 64-bit). However, you can read and write data from a 64-bit Historian Server.

If you use Historian 6.0 or later on Windows Server 2008 (32-bit or 64-bit) or Windows Server 2008 R2, you must go for a Full Installation and not Core Installation of Windows.

Network Interface Software

The TCP/IP network protocol is required.

Microsoft® .NET Framework 4.5

The installation of .NET 4.5 is a prerequisite to the Historian install. You can install it manually or you will be prompted to download and install it via the Historian install. In order to have .NET 4.5 downloaded and installed as part of the Historian install, your Proxy must be configured for internet access.

Microsoft® SQL Server®

One of the following 32-bit or 64-bit SQL Server systems to configure alarm and event archiving or to use Historian as a linked server:

- Microsoft® SQL Server® 2008 R2 SP2, Standard, or Enterprise Edition
- Microsoft® SQL Server® 2008 Express
- Microsoft® SQL Server 2008 R2
- Microsoft® SQL Server® 2012 SP3
- Microsoft® SQL Server® 2014 SP1 Express, Standard, or Professional
- Microsoft® SQL Server® 2016 Express, Standard, or Professional



Note: The collation for your Alarm and Event database needs to match the collation of your SQL Server. This happens automatically by default but can become different if the Alarm and Event Database is moved to another SQL Server.

Microsoft® Excel®

The Historian Excel Add-In requires one of the following

- Excel 2007
- Excel 2010
- Excel 2013
- Excel 2016

Web Server

Web server requirements are as follows.

- Microsoft® .NET Framework 4.5.2
- Microsoft® Internet Information Services (IIS) 7.5 or 8.0
- Historian Client Tools 7.0 or greater
- OLE DB, User API, and Historian Client Access Assembly

Historian Server

- Microsoft® Windows® Server 2016 (64-bit)
- Microsoft® Windows® Server 2012 R2 (64-bit)
- Microsoft® Windows® Server 2008 R2 SP2 (64-bit)
- Microsoft® Windows® 10 (32-bit or 64-bit)
- Microsoft® Windows® 8.1 Professional (32-bit or 64-bit)
- Microsoft® Windows® 7 Professional (32-bit or 64-bit)
- Microsoft® .NET Framework 3.5

Historian and Microsoft® Windows®

Optimizing Server Settings

If you are running Historian on a Windows computer, do not set your File and Printer Sharing for the Server optimization options to **Maximum Data Throughput for File Sharing**. The **Maximize Data Throughput for File Sharing** setting in **File and Printer Sharing for Microsoft Networks Properties** controls the system cache size and allows the cache to grow very large. This could cause excessive paging when dealing with large files and might interfere with applications like Historian.

It is recommended that you select the **Maximum Data Throughput for Network Applications** option.

To view or change your Server Optimization settings on Windows servers:

1. Open the **Control Panel**.
2. Double-click the **Network and Dial-Up Connections** icon.
The **Network and Dial-up Connections** dialog box appears.
3. Right-click the **Local Area Connection Properties** icon and select **Properties**.
4. Select the **File and Printer Sharing for Microsoft Networks** component and click the **Properties** button.
5. Ensure that the **Maximize Data Throughput for Network Applications** option is selected.
6. Click **OK**.

For more information on changing the Server Service properties, refer to the Microsoft Knowledge Base article Q228766.

Archiver Obtaining List of Domain Controllers

If the archiver is configured to use domain group security, the data archiver obtains the list of primary and backup domain controllers at archiver startup. If a domain controller is not available at that time or if you add new domain controllers, they are not seen by the archiver until the next time the archiver is restarted. For example, if your backup domain controller was not available on archiver startup, the archiver will not fail over to the backup domain controller for user authentication.

For more information, refer to the *Working with Security* section in Online Help.

Windows Firewall Enabled by Default

Windows Firewall is enabled by default in Vista, Server 2003, Server 2008, and Server 2012.

If you install Historian on any of the given systems, you will be prompted to allow Historian to reconfigure the Windows Firewall. If you answer **Yes**, Historian is added to the firewall's exception list and set to **Enabled**. If you answer **No**, Historian is added to the list and set to **Disabled**. You can change this setting through the Windows Firewall control panel at any time.

VMWare Support

Historian provides support for VMware ESXi Server version 5.0 and above. The virtualization capability provided by VMware lets you run multiple virtual machines on a single physical machine, with each virtual machine sharing the resources of that one physical computer. Please be aware that while we have tested VMware ESXi 5.0 and above, issues with the VMware software or the virtualized environment are outside the scope of GE Digital's responsibility. You must use VMware Compatibility Hardware and Software before installing Historian 7.0 or greater Data Archiver on a Virtual Machine. For the current release, the only supported type of Proficy licensing for use with VMware is keyless (software) licensing.



Note: VMware Player is not supported.



Important: Advanced features of ESXi Server (such as VMotion, High Availability, and Clustering support) have not been tested with Historian.

For information regarding VMware compatibility and its supported software and hardware environments, please visit: <http://www.vmware.com/resources/guides.html>

VMWare Best Practices and Limitations

Disk Growth

To prevent disk growth during run time, make sure you pre-allocate the hard disk in your VMware image.



Important: If the VMware disk needs to grow at runtime because of IHA growth or creation, the Data Archiver will be slowed. If there is not enough disk space on the host machine to grow the VMware disk, the archiver may lose data.


Suspended Images/Power Metered Images

ESXi servers have power meter functions and options as well as the ability to suspend images to conserve power. We do not recommend or support these functions due to the potential effects on the Guest operating system, specifically in regards to polling I/O and timely updates.

I/O Devices and Connections and VMware	There are a multitude of devices and methods of communications on the market. These devices may be used if you can successfully connect them from the virtual machine through the physical HOST, but we do not support the setup of that connection. Be aware that device drivers used to write to proprietary cards for the ESXi HOSTS as part of virtual device setup can cause issues.
USB Controller Limitations	<p>The USB controller has these limitations when using Historian and VMware:</p> <ul style="list-style-type: none"> • Minimum virtual hardware version 7 is required. • Only one USB controller of each type can be added to a virtual machine. • The USB arbitrator can monitor a maximum of 15 USB controllers. If your system includes an additional number of controllers and you connect USB devices to these controllers, the devices are not available to be passed through to a virtual machine. • You must add a USB controller to a virtual machine before you can add a USB device. • You must remove all USB devices from a virtual machine before you can remove the controller
USB Device Limitations	<p>USB devices have these limitations when using Historian and VMware:</p> <ul style="list-style-type: none"> • A virtual machine may have up to 20 USB devices attached to it; however, each unique USB device can only be attached to one virtual machine at a time. • Unsupported USB devices may not interact as expected with other ESXi features.
Additional VMware Notes	<p>GE Digital cannot guarantee the performance of the Historian software in a virtualized environment due to the wide range of parameters associated with the hardware, configuration, memory settings, third-party software installations, and the number of virtual machines running; all of which can affect performance. Therefore, GE Digital cannot provide support related to the performance of the Historian software running on a virtual machine if it is determined that the issue is related to the virtual environment. Also, GE Digital does not provide support or troubleshoot a customer's virtual machine infrastructure.</p> <p>It is the responsibility of you, the customer, to ensure that the performance of the Historian software and any third-party applications (especially those not recommended by GE Digital) are adequate to meet the needs of your run mode environment. GE Digital does not support issues related to functionality that is not available as a result of running in a virtual machine infrastructure. Examples include the functionality of card level drivers such as those for the Genius® family of drivers, the Allen-Bradley® DH/DH+ drivers, the Cyberlogic's MBX® Driver for the SA85 card, as well as functions requiring direct video access. Check with the vendor of your third-party application for support statements regarding that third-party product's ability to run in a virtualized environment.</p> <p>For more detailed information regarding VMware specifications and requirements, visit the VMware web site: http://www.vmware.com/resources/compatibility/search.php.</p>

Compatibility with Other GE Products

Several GE products work with Historian. The following is a general set of required versions to work with Historian 7.0.

 **Important:** If you want to enable the Strict Authentication feature in Historian 7.0, be aware that you will need to apply the latest SIMs that support this feature for all Proficy clients that connect to the Archiver, including the ones listed in this table. In addition, there may be SIMs to allow pre-5.0 collectors and client applications such as Excel Add-In to connect. Refer to the SIM download page for update for Historian and other Proficy products.

Product	Minimum Required Version
Proficy Portal	3.5 SP2, 3.5 SP3
Machine Edition View	9.0
CIMPLICITY	9.0 R2, 9.5
iFIX	5.8 SP1* or greater
Plant Apps	6.2, 6.3**
Smart Signal	6.0
CSense	6.0
Proficy Historian Analysis	6.0 SP1 SIM5 or greater
Proficy Knowledge Center	6.0 SP1 SIM5 or greater

* For customers using iFIX, there was a change in the HKEY_CURRENT_USER registry values for WebSpace and it will no longer work with the existing SIM. Ensure that you get the latest iFIX SIMs. The following article provides additional instructions:

https://ge-ip.force.com/communities/en_US/Article/iFIX-WebSpace-Strict-Historian-Authentication

* For customers using iFIX 5.1 and 5.0 with Historian 7.0, there was a change in the registry entry that has to be updated. [This article](#) provides additional instructions.

** For Plant Apps customers using the 'Historian Type = 'GE Proficy - Historian 3.0'' to connect to Historian 7.0, both the Enabled and Disabled options for Enforce Strict Client Authentication selection are supported.

** For Plant Apps customers using the 'Historian Type = 'GE Proficy - Historian' to connect to Proficy Historian 7.0, only the Disabled option for Enforce Strict Client Authentication selection is supported.

In Historian 5.0, the Historian HKEY_CURRENT_USER registry key values were changed. The programs accessing the server collection through the SDK are unaffected. Any program or script that directly accesses the registry keys or any Terminal Server login scripts that try to configure a list of servers by importing registry keys directly will no longer work. Such programs need to access the server collection via SDK calls, not directly.

Additional Setup Information

See the topics below for additional setup information.

Regional Settings Support

Historian supports the following regional settings available in the Windows Control Panel:

- Decimal symbol - one character
- Digit grouping symbol
- List separator - one character
- Time style
- Time separator
- Short date style
- Date separator

Time and Date Formatting

Avoid changing the time style or short date style in regional settings to values that are outside of the standard styles provided. Changing these values to non-standard styles may result in improperly formatted times and dates.

Historian supports the following short date formats, some of which may not be available in certain language versions of Windows:

- dd/mm/yy
- dd/yy/mm
- mm/dd/yy
- mm/yy/dd
- yy/dd/mm
- yy/mm/dd

Datatype Support

The following table lists the supported Historian data types and their sizes:

Data Type	Size
Single Float	4 bytes
Double Float	8 bytes
Single Integer	2 bytes
Double Integer	4 bytes
Quad Integer	8 bytes
Unsigned Quad Integer	8 bytes
Unsigned Single Integer	2 bytes
Unsigned Double Integer	4 bytes

Data Type	Size
Byte	1 byte
Boolean	1 byte
Fixed String	Configured by user.
Variable String	No fixed size.
Binary Object	No fixed size. Historian does not support the use of the Binary Object data type with the Data Collectors. Refer to the SDK online Help for more information on working with BLOB data types.
Scaled	2 bytes

Enabling Trust for a Self-signed Certificate on Chrome

At install time, a self-signed certificate is generated that you use with Historian web applications. A self-signed certificate is a certificate that is signed by itself rather than signed by a trusted authority. Therefore, a warning in the browser appears when connecting to a server that uses a self-signed certificate until it is permanently stored in your certificate store.

1. In the Google Chrome browser go the site to which you want to connect.
A warning box appears to inform you that that the certificate is not trusted by the computer or browser.
Click the gray lock to the left of the URL, and then select the **Details** link. The **Security Overview** screen appears.
2. Click the gray lock to the left of the URL, and then select the **Details** link.
The **Security Overview** dialog appears.
3. Click the **View certificate** button.
The **Certificate** window appears with three tabs: **General**, **Details**, and **Certification Path**.
4. Select the **Details** tab and click the **Copy to Files** button.
5. Follow the wizard to save the certificate to a local file.
Use the default format: DER encoded binary X.509 (.CER).
6. Right-click the .CER file, and select **Install Certificate**.
7. Select **Trusted Root Certificate Authorities** and click **OK**.



Note: Do not let the wizard select the store for you.

A **Security Warning** dialog may appear. If it does, disregard this dialog by clicking the **Yes** button to install the certificate.

8. Restart the browser and connect to the server.
9. Open the URL authenticated by the certificate.
If error messages do not appear, the certificate was successfully imported.