GE
Intelligent Platforms

Proficy Historian 5.5

The foundation of enterprise operations data management, delivering insight through information

Features

- Enhanced SCADA integration with new SCADA buffer
  - True thin-client administration
  - Support for virtualization
- Enterprise Performance
  - Simple, intuitive configuration
  - 64-bit architecture
  - Scales to 20 million data points and over 2000 collectors per server
  - Sub-second sampling
- Open & Layered Compatibility
  - Full 32-bit compatibility
  - Wide range of collectors, including OPC A&E
  - Wide range of data types including digital/ enumerated, arrays, multi-field data
  - Embedded applications support via Microsoft® Windows® XPe
  - Highly compatible with third-party solutions
- Standard Interfaces for Data Access
  - Open access for ERP and MES applications
  - Rich library of application integration options including a full featured SDK, APIs for .net, C/ C++ and Linux, OLE DB for linked queries, and OPC HDA
  - Powerful new Collector Toolkit for dedicated interfacing
- Rich systems diagnostics with new Windows Perf Mon Collector
  - Fault tolerant architecture
  - Support for Microsoft Cluster Server
  - Redundant data collectors
  - Enhanced data security
- Advanced Data Management
  - Powerful data management and systems optimization with industry-leading Data Stores
  - Designed to help customers comply with FDA's 21 CFR Part 11
  - Calculation & server-to-server collection

At the core of GE's Proficy* software suite, Proficy Historian provides a high-performance foundation for enterprise-class solutions.

Proficy Historian from GE Intelligent Platforms is a powerful enterprise-wide data historian that collects, archives, and distributes tremendous volumes of production information at extremely high speeds.

Increase Your Process Visibility

Built specifically for the acquisition, storage and retrieval of industrial process information, Proficy Historian improves visibility, provides context to raw data, and aggregates islands of information–resulting in better and faster decisions, increased productivity and reduced costs across your enterprise.

Proficy Historian offers unique capabilities and benefits for a sustainable competitive advantage:

- Built-in Data Collection
- Fast Read/Write Performance Speeds
- High Data Compression
- Quick Time to Value
- Enhanced Data Security
- Robust Redundancy for High Availability
- Open & Layered Integration

Improve Processes Across Your Business

Proficy Historian ties together islands of automation information without compromising data resolution. It enables an integrated view of your entire operations with accurate, real-time information and instant access to historical data.

With Proficy Historian, you can compare past production runs, analyze the data prior to a downtime event, and plot ideal production runs against in-process runs. You can easily generate reports and share information across your enterprise using standard web browser tools.

Seamless Integration With the Proficy Software Suite

Proficy Historian is part of GE's award-winning Proficy software suite, the world standard in high-performance industrial software solutions. The tightly integrated, comprehensive suite of world-class products and services includes HMI/SCADA, advanced analytics, MES, work process management solutions built on the Proficy SOA platform, and more—addressing a wide range of operations challenges across various industries.

FOCUS FEATURES

1 In an industry-leading breakthrough, Proficy Historian 5.5 preconditions its data to be consumed by Big Data technologies like Hadoop®. This allows customers to apply some of the same powerful analytical tools used by Google®, Facebook®, etc to run queries on extremely large datasets and answer questions that are simply impossible with yesterday's process historian technologies.

2 Data stores are a powerful new concept in Time Series data management, allowing for the partitioning and fit-for-purpose optimization of Proficy Historian. Never before have customers had so much control over how their archiver performs, how data gets managed, and how system resources are allocated to reduce overall cost of ownership, improve performance, and enable compliance.

Proficy Historian 5.5 – The foundation of enterprise operations management

Built-in Data Collection That Leverages OPC and Specific Built-In Drivers to Legacy or Non-Standard Equipment

Proficy Historian includes built-in data collection capabilities and can capture data from multiple sensors and systems. It uses manufacturing standards such as Object Linking and Embedding for Process Control (OPC), which facilitates communications by providing a consistent method of accessing data across devices.

Instead of having to build custom software for every type of data source as required for other solutions, Proficy Historian does not need to know any of the details regarding the propriety data sources. It can instantly connect to any OPC-enabled solution to collect data, providing flexibility, time savings and reduced costs.

Faster Speeds

In contrast to the modest performance of relational databases for large data sets or associated periods of time, Proficy Historian provides much faster read/write performance and "down to the millisecond" resolution for true real-time data.

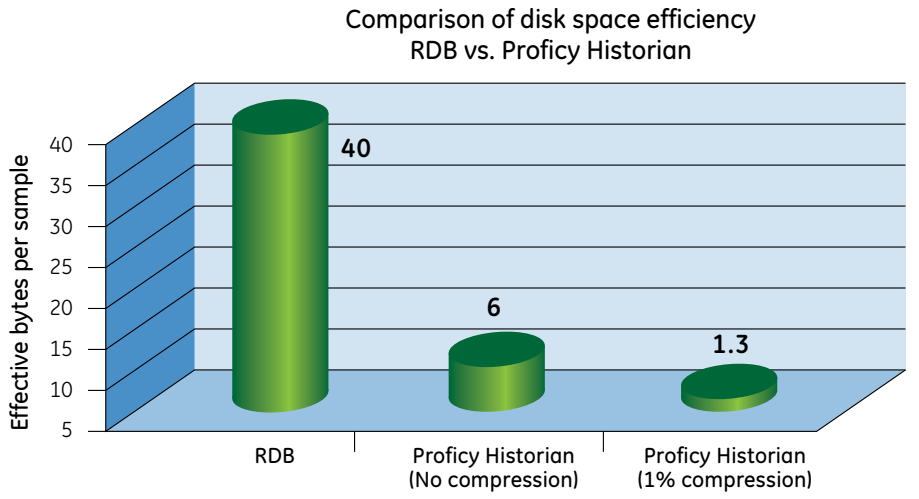
Proficy Historian is built to store, and more importantly, retrieve production/process data in the way you need it. Its aggregation and retrieval methods would be difficult in other database technologies. This capability enables better responsiveness by quickly providing the granularity of data needed to analyze and solve intense process applications.

High Data Compression

Proficy Historian comprises powerful compression algorithms, which enable you to store years of data easily and securely online—enhancing performance, reducing maintenance and lowering costs. For example, you can configure Proficy Historian without the active maintenance and back-up routines that a relational database requires. Archives can be automatically created, backed up, and purged—enabling extended use without the need for a database administrator.

Quick Time to Value

When installing Proficy Historian, you can "normalize" the implementation, using standard interfaces to decrease implementation time by approximately 50%. You don't need to manage or create data "schemas," triggers, stored procedures or views—resulting in quick installation and configuration without custom coding or scripting. Proficy Historian has a pre-built interface to the automation layer, providing a single environment whereby you only have to configure tags once, and you can store process data seamlessly in a secure, central location. Through an intuitive interface and access to powerful configuration and archive management capabilities, you can streamline system administration activities, reducing overall cost of ownership. Importantly, your system can grow efficiently and effectively as your solution scales across the enterprise, allowing for expected changes without loss of information or complex and costly re-mapping of data.



NOTE:
This data represents a specific test on 400,000 samples logged to a standard RDB and Proficy Historian. Results will vary depending on the raw data set used and the RDB schema employed.

With no compression at all, Proficy Historian offers much higher disk space efficiency than an RDB. When using a 1% dead band compression, it delivers even greater efficiency for enhanced performance and reduced maintenance.

Robust Redundancy for High Availability

Proficy Historian offers clustering at the data store much like a relational database, as well as another level of redundancy at the collector function. If there are mission-critical data collection points, the collectors themselves can be configured in a redundant fashion.

The solution also addresses network and server disruptions through a "store and forward" capability, which buffers data at the collector should a disruption occur. The buffers are eventually uploaded when the server comes back online with automatic reconnection—ensuring no data loss.

Open & Layered Philosophy

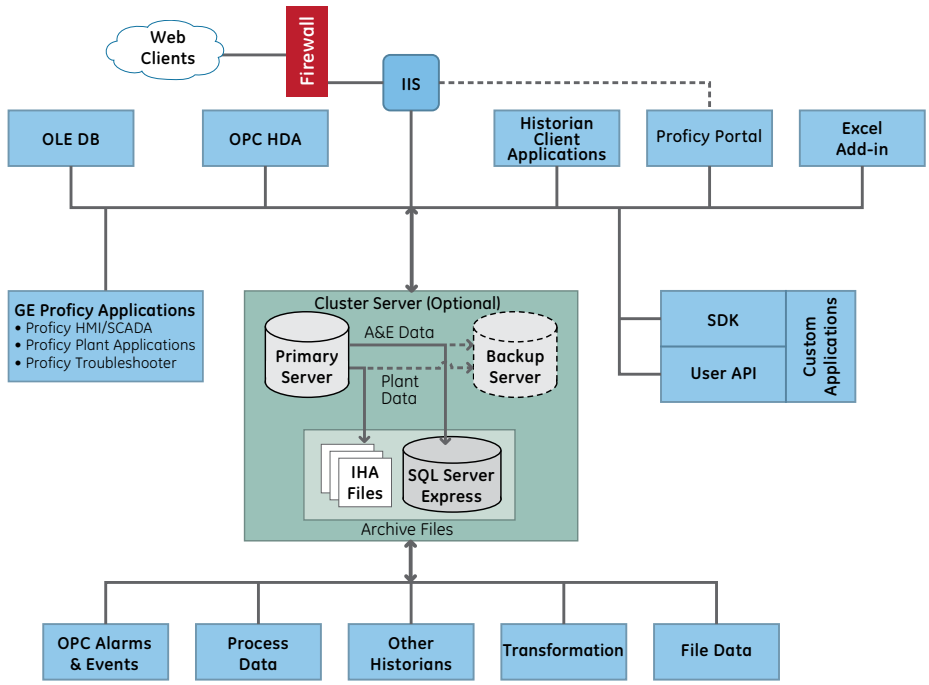
We recognize the significant investments that manufacturing companies have made in automation, information, and supervisory control systems.

That's why Proficy's open and layered approach provides an advantage—enabling interoperability with third-party solutions for faster time to value. There's no need for expensive interfaces and customized code.

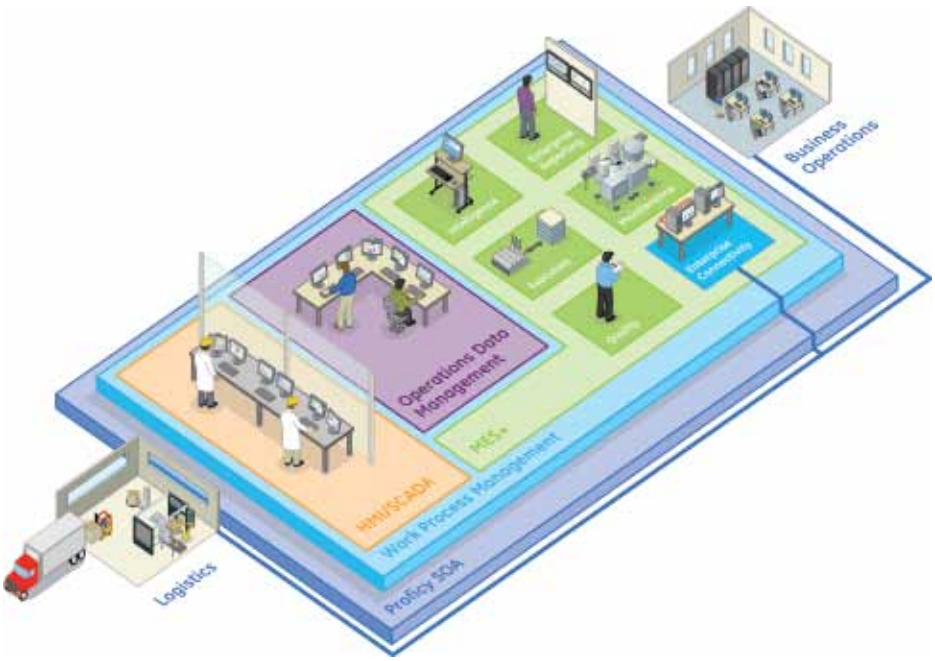
Proficy Historian can layer on many different manufacturers' controls and HMI/SCADA platforms, and can even support embedded applications—unlocking value and providing the foundation toward a full operations management solution.

With Proficy Historian, you have access to an extensive portfolio of performance and execution applications:

- Advanced visualization and powerful analytical tools
- Broad range of industry- and application-specific solutions
- Seamless integration with the full Proficy platform to truly empower the enterprise



Proficy Historian system architecture



Proficy Historian is the foundation for optimized production and process operations. It offers seamless integration with a wide range of performance and execution applications within the Proficy software suite.

Proficy Historian 5.5 - The foundation of enterprise operations management

Specifications

Historian Servers

- An Intel Core 2.4 GHz or equivalent AMD CPU with minimum 2 GB RAM for a 32-bit Historian Server and 4 GB RAM for a 64-bit Historian Server
- A DVD-ROM drive
- 100 MBit TCP/IP-compatible network interface adapter
- 80 GB free hard drive space, for the data archives, message files, buffer files, and log files used by the system

Data Collector nodes

- An Intel Core 2.0 GHz or better computer with 1 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 Cluster service

- An Intel Core or Xeon 3GHz (or 2GHz Core Duo) or equal AMD CPU with minimum 4 GB RAM
- 80 GB of local free hard drive space
- 40 GB shared storage - SCSI hard drive with RAID preferred
- Two 100 Mbit TCP/IP-compatible network interface adapters for network communication and certain I/O drivers (one for public network, another for cluster heartbeat network)

NOTE: The configuration of each server added to the cluster must be identical to the other servers in the cluster. For more information refer to Microsoft® Windows® Cluster documentation.

Software Requirements

- One of the following operating systems, with latest service packs or revisions:
  - Windows Server 2012, Windows 8
  - Windows Server 2008 R2
  - Windows Server 2008 (32-bit or 64-bit)
  - Windows Server 2003 (32-bit or 64-bit)
  - Windows Server 2003 R2
  - Windows 7 Professional (32-bit or 64-bit)
  - Windows Vista Professional (32-bit or 64-bit)
  - Windows XP Professional SP3 (32-bit or 64- bit)
  - Windows XP Embedded (32-bit)

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

- Network interface software for network communication. The TCP/IP network protocol required.
- One of the following 32 bit or 64 bit SQL Server systems to configure alarm and event archiving:
  - Microsoft SQL Server 2012 Standard edition
  - Microsoft SQL Server 2008 Standard, Professional, or Enterprise Edition
  - Microsoft SQL Server 2005 Standard SP2, Professional SP2, or Enterprise Edition SP2
  - Microsoft SQL Server Express
- One of the following 32 bit versions of SQL Server to use Historian as a linked server:
  - Microsoft SQL Server 2012 Standard edition
  - Microsoft SQL Server 2008 Standard, Professional, or Enterprise Edition
  - Microsoft SQL Server 2005 Standard SP2, Professional SP2, or Enterprise Edition SP2
  - Microsoft SQL Server Express
- The Historian Excel Add-In requires installation of Microsoft Office XP, Microsoft Office 2003, or Microsoft Office 2007 or Microsoft Office 2010 (32-bit/64-bit).

For more information, visit www.ge-ip.com/historian

About GE Intelligent Platforms

GE Intelligent Platforms is a division of GE that offers software, control systems, services, and expertise in automation and embedded computing. We offer a unique foundation of agile and reliable technology providing customers a sustainable competitive advantage in the industries they serve, including energy, water, consumer packaged goods, oil and gas, government and defense, and telecommunications. GE Intelligent Platforms is headquartered in Charlottesville, VA. For more information, visit www.ge-ip.com.

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