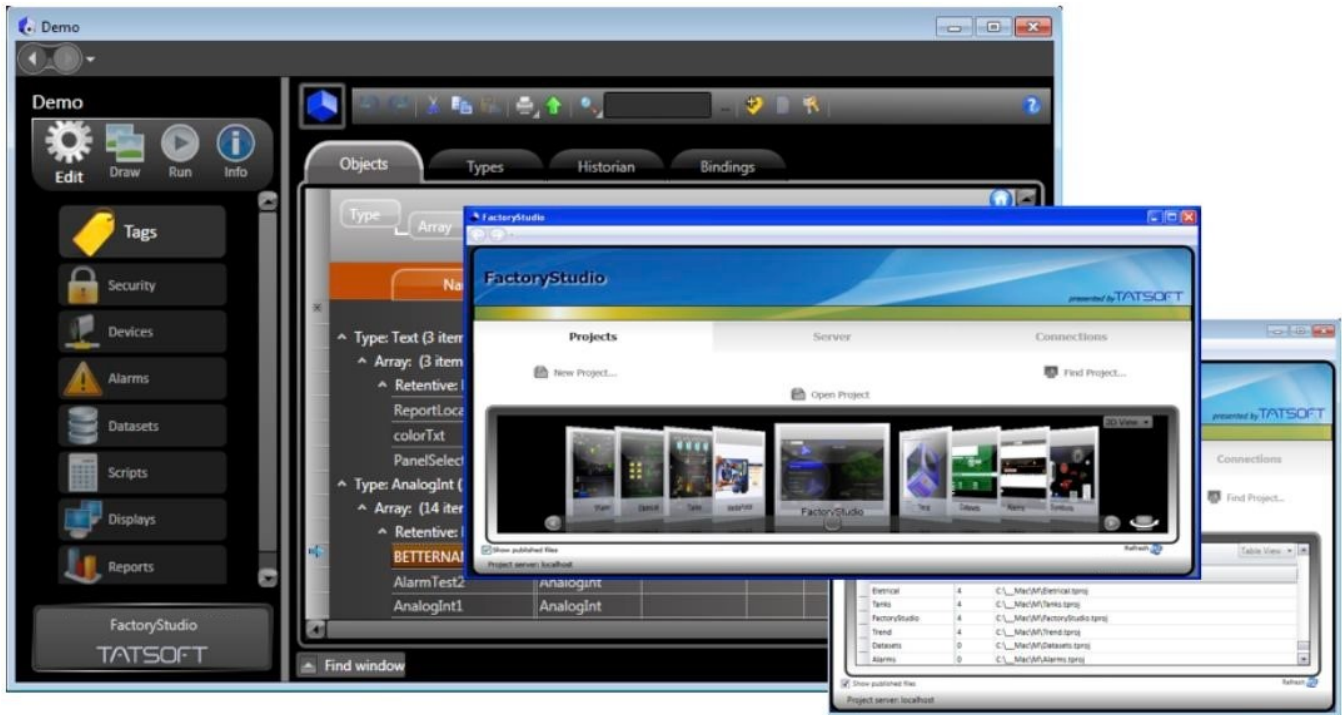


Integrated Modules

Unified Environment and Modular Configuration

FactoryStudio is a friendly, collaborative environment that uses multi-user and multi-project organization to edit and run multiple projects simultaneously. All modules, from tag editing to display designer, are combined in a simple unified user interface.



Project Management Features:

FactoryStudio allows easy accessing and editing of your projects.

Easy Project File Management

FactoryStudio projects are stored in an embedded-encrypted SQL database file, which is included with **FactoryStudio** at no additional cost. The SQL engine provides more security plus easier maintenance and deployment. By contrast, legacy systems have configuration files spread across multiple folders and files.

Access Projects from Anywhere

Providing flexibility to meet your design and execution requirements, **FactoryStudio** can be configured to store and run projects from a USB stick, a local hard drive, a network server, or a cloud server.

Synchronization and Import Tools

You can copy/paste any configuration table directly into Excel. Configuration from Rockwell ITC's, OSIsoft™ PI Systems, CSV files, XML files, or DLL .NET assemblies can be easily mapped into projects with **FactoryStudio**'s simple synchronization tools.

Concurrent Product Versions

Never again will you need to manage virtual machines or different computers with different versions of development software. **FactoryStudio** automatically enables the latest edited version of your engineering environment. This prevents you from building something into an old version of your project that is no longer supported by the runtime environment.

Intellisense

Tags and all application objects are presented to the user, with full context validation, as the user types, which makes the configuration process much faster and more reliable.

Manage Project Releases

Multiple project versions are easily managed thanks to the metadata information and the built-in management tools. **FactoryStudio** automatically tracks configuration changes, builds, and project releases.

 [Learn more about Project Management here.](#)

Multi-user and multi-project

Multiple users can work on the same project simultaneously.

Tags and Templates

TAT and Real-time Elements

Tags, Assets, and Templates are the core components to real-time data modes and are the power of **FactoryStudio**. Our company name (**Tatso ft**) has even Tags, Assets, and Templates built into it. The **FactoryStudio** system has a built-in, real-time, event driven, in-memory database, that manages tags, assets, and events.

Real-time Tag Types

A typical HMI-SCADA system has only basic tag types, such as numeric and message tags. As **FactoryStudio** aims IT and MES systems, it goes far beyond basic tag types and supports real-time entities that match every SQL type and many **.NET Framework** entities, including Images and a complete DataTable in a single real-time tag.

Dynamic Arrays and References

FactoryStudio was the one and only real-time system with built-in support for tri-dimensional dynamic arrays, lists, and type-safe reference tags with dynamic assignments. This creates reusable components on displays, symbols, reports, calculation, and in any part of your project.



Assets and Categories

Organize your project with categories and assets. An asset is composed of tags and other application objects connected to your process hierarchy. **FactoryStudio** allows implementation of **ISA 95** modeling specifications, which can be essential in large systems.

Templates

Templates are user-defined structures, similar to .NET classes, that allow composition and hierarchy. Besides the built-in basic types, real-time tags can be created based on templates that reflect physical assets, which speed up and simplify the application development.

Import and Synchronize

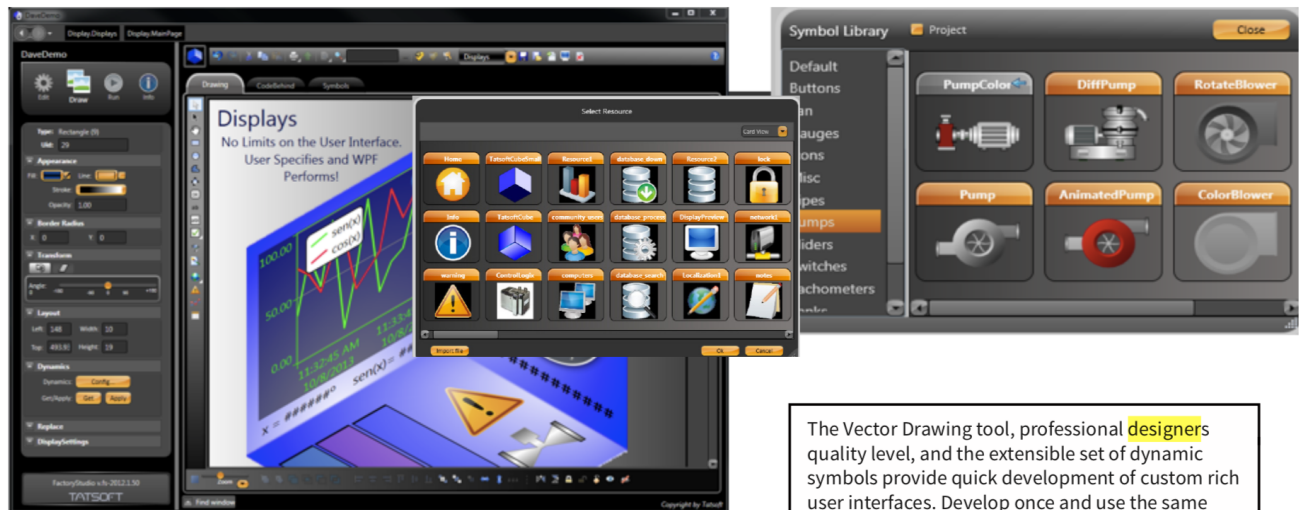
Tags and templates can be imported and automatically synchronized from various data sources including: XML and CSV files, OSIsoft™ PI System™ and PI AFTM, Rockwell™ ControlLogix program files, and OPC servers.

SQL Databases and .NET

The built-in tag types allow direct mapping to any SQL database or .NET variables.

 [Learn more about Tags and Templates here.](#)

Graphical Displays



The Vector Drawing tool, professional designers quality level, and the extensible set of dynamic symbols provide quick development of custom rich user interfaces. Develop once and use the same display on desktops, web and mobile clients.

Advanced Graphical Technology

FactoryStudio is the first complete product where all the configuration and execution tools are pure **Windows Presentation Foundation (WPF)**, the latest graphical technology from Microsoft. WPF uses the full potential of the current graphics cards and computers, providing superior quality and performance.

Dynamic 3D Models

Connect real-time tags to control properties in 3D models created with **3DMax** or other systems that supports the **.3DS** extension.

Smart Symbols

Smart Symbols are asset and template based reusable graphical components, with runtime dynamics or static binding and centralized management. The symbols keep a live link with the library, which means you only need to modify the symbol once and it will automatically apply to all displays.

Code Behind and Expressions

Develop code behind using C#, VB.NET, or HTML5/Javascript, expressions on dynamic animations, or client-side event-driven scripts.

Deployment Scenarios

FactoryStudio is based on a unified-package architecture, so the server is always the standard **FactoryStudio** software. However, all **FactoryStudio** modules such as Scripts, Device, Historian, Database, etc. may be placed on different computers, in a distributed system context. The server computers can run in different Operating Systems, which connects many client visualization stations and allows flexible deployment scenarios.

From Standalone to World-Wide

The **FactoryStudio** family of products is uniquely designed to provide the most reliable, flexible, and powerful application development platform. You can build an application to run on a small device with very limited amount of I/O, run on a production line or a commercial building, or you can provide information across the globe to those that need it, on any device, anywhere.



High degree of scalability and performance

The same configuration tool can create applications for desktops, mobile, HTML5, and embedded devices.

Data Aggregation from multiple locations

Touch Panel Applications

Customizable on-screen keyboard, multi-touch support, momentary buttons, and other features deliver rich touch panel systems.

Unique set of Dynamic Animations

Unique new dynamics, such as opacity, shine and skew, combined with move, scale, color change, rotate, and others, applied to any object, provide the most comprehensive set of animations. No more difficult laborious workarounds dealing with drawing tools created on top of legacy graphics systems.

Images, Colors and Transparency

Images are added to the project database for centralized management. Low and hi resolution versions of the image are automatically created, optimizing the project. Transparency, alpha color, image brushes, and all designer tools are available.

Advanced Controls

All Windows controls are included, as well as a web browser, child-displays, doc viewer, and many others. WPF controls, such as scheduler controls, Gantt, or live video cameras, can be added to extend functionality. Legacy Active-X controls can also be used for compatibility.


FactoryStudio is the perfect platform to collect data from multiple locations and access it at a centralized location. Hundreds to thousands of distributed **FactoryStudio** nodes provide data acquisition and publish the collected data to a cloud server or to a corporate office.

Multiple User Security

Users can use **Application Security**, **Windows Authentication** (Active-Directory), or **WS-Federation** concurrently, which all map to the same application server.

 See “[Draw](#)” for more information on graphical displays.

Security and Redundancy

 **Designed to deliver world-class mission-critical applications**

Redundancy switch time and high-volume data was tested to meet rigorous offshore requirements.

Group and User Permissions

Total flexibility to define privileges based on groups or specific users. Permissions can be global or tied to a specific display, object, or input action.

Runtime Users

Dynamically create users and store credentials in SQL databases. Get users from Active-Directory or third-party system for integrated security or unified login.

User Policies

Identification policies, session duration, control, automated logoff, e-sign, audit-trail, and a complete set of user management features are available.

FDA and NERC Regulated Applications

FactoryStudio allows delivering applications in compliance with Title 21 CFR Part 11, and it was designed following the applicable recommendations from NERC, such as the CIP-007-1-Cyber Security-System Management.

Security at the Core Level

Security must be implemented at the core, not applied externally. **FactoryStudio** modules have built-in security related components designed from the core.

Hot-standby Fault-tolerant Servers

FactoryStudio automatically initializes and continues to synchronize the primary and secondary server. The Device communication channels are also easily setup for redundant physical networks and redundant PLC nodes.

Database Redundancy

The Alarm and Historian database can be assigned to a third-party external cluster or replicated automatically when running on the **FactoryStudio** servers.

Project Configuration Synchronization

Engineering tools provide features to simplify configuration and updates in redundant scenarios.

Hot-swapping

Redundant or stand-alone servers allow dynamic switching of project versions, without interrupting service for connected clients and keeping the real-time database loaded.

Redundancy at the Core Level

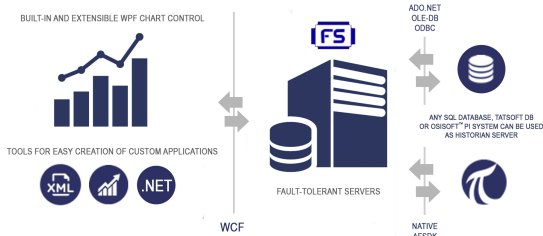
Real-Time tags, Devices, Alarms, Historian, Scripts, Clients, all **FactoryStudio**'s modules, were designed from the ground up to meet redundancy and hot-swapping requirements.

 Learn more about Security and Redundancy [here](#).

Trend and Historian

FactoryStudio offers a complete solution for plotting data, using historian information, displaying trend charts, and more. This module includes:

- Storage and Replication
- Store and Forward
- Universal Time and Daylight Saving



- Process Analysis and Batch Systems
- Vertical and XY plots available
- Annotations and Alarms Overlay
- Real-time Online Charts
- Customize and Save at Runtime
- Snapshots, Tables, and Reports of all trend charts
- OSIsoft™ PI System Database
- Data Quality and Timestamp

 [Learn more about Trend and Historian here.](#)

Device and Interfaces



Infrastructure designed from the Core

FactoryStudio performs real-time optimization, blocking addresses to maximize the use of the communication channel.

Native Communication Drivers

Connectivity is a key **FactoryStudio** feature. We include a wide variety of industry standard protocols, and we enable built-in communications with PLCs, historians, databases, and other devices. New drivers are continuously being added, and our SDK makes it easy to add any additional drivers that may not already be included.

OPC Client and Server Support

FactoryStudio is in full compliance with the OPC Server and Client specifications. For any protocol not included with the product, the OPC client provides all the necessary integration.

Remote Data Servers

Drivers, native or OPC, and data acquisition can run on remote computers to do things like retrieving data from RS-232 devices or eliminating the requirement for DCOM OPC configuration.

OPC Data Server FactoryStudio Station

FactoryStudio can be deployed as a stand-alone OPC Data Server that uses native protocols and provides data to other systems through its OPC Server interface.

Automatic Synchronization

A Tag Import Wizard and automatic definition synchronization is provided for OPC Servers, Rockwell ControlLogix L5K files, CSV files, Beckhoff TwinCAT, OSIsoft™ PI System, and PI AFTM; new wizards are continuously being added.

Process Isolation and Multi-threading

Data communication runs in its own .NET domain, with a WCF layer to isolate the drivers from the main real-time database. For maximum performance, multiple threads are created for each protocol and device node.

Diagnostics Tools

A complete set of testing, deployment, and diagnostics tools provides fast and reliable application development and installation.

Built-in Performance Monitoring

Statistics are generated to help with troubleshooting and the fine tuning of high-performance applications. Some of the performance related statistics gathered include system messages, success and error messages, dynamic block creation, and cycle time and execution time on each block.

Dynamic Addressing

Everything in the driver configuration, from the station node IP to address and tag mapping, can be changed online using the project script. Standard applications can be created that have the runtime setup to specific conditions for where it is being deployed.



Partial list of supported manufacturers and protocols

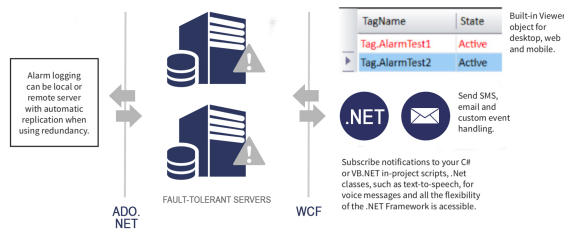
ABB,
Altus,
BACnet,
DNP 3.0,
Ecom
/KOYO,
Fatek
/Facon,
GE,
IEC-61850,
IEC-870-5-
101 and
104,
Matsushita,
Mitsubishi,
Modbuss,
MQTT,
National
Instruments
Omron,
Reliance,
Rockwell,
Siemens,
Simatic/TI
505,
Smar,
SNMP,
TwinCAT
/Beckhoff,
Unity Pro,
WITS,
and more.



[Learn more about Devices here.](#)

Alarms and Events

- Real-time Alarm Processing
- Audit Trail and Alarm Areas
- Multi-platform Alarm Visualization Component
- Notification Subscription
- Store and Forward
- Automated translations
- Storage and Replication in local and remote databases
- OSIsoft™ PI EFTM Event Frames
- Universal Time and Daylight Saving always considered for accurate time-stamps



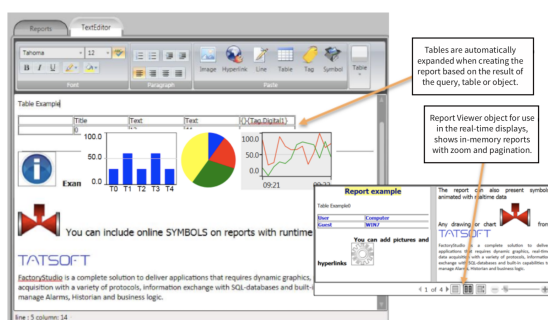
[Learn more about Alarms here.](#)

Reporting and Data Access



Built-in tools and open interfaces for custom solutions

Reports can be saved in multiple formats: Text (ASCII or Unicode), HTML, XPS, and PDF!



FactoryStudio includes a user-friendly, simple report layout editor integrated within the engineering workspace. The rich text format uses underlying XAML flow document technology from WPF that enables the inclusion of graphics and flexible formatting.

Runtime Display Snapshots

Runtime displays can be opened in the background or saved to image files, allowing you to create rich graphic snapshot reports. Current displays and layouts can be printed or saved as an image to a disk.

Report Append and Text Data Logging

The report generator's ability to append files, based on the project configuration and real-time tags, can be used to create CSV and text logging files for scenarios that require information to be created as time goes by, such as batch reports and shift reports.

Dynamic Graphical Symbols

Any symbol from real-time displays can be included in a Report. The dynamic behavior of a symbol, such as color, text output, and rotation, are all updated using current tag values when generating a report. User controls, like Trend and Bar charts, can be added as well.

Tables and Queries

The content of database tables and queries can be added to reports. Query and report generation are executed in isolated processes; they do not interfere with real-time processing.

Data Access Toolkit

A complete .NET Data Access library is available for the creation of custom reporting solutions or for integration with **Microsoft Office**, SQL server reporting services, or other vendor tools. A COM model API is also available for use from **Excel** VBA and JavaScript applications.



[Learn more about Reports here.](#)