



SIEMENS

SIMATIC WINCC OPEN ARCHITECTURE V3.18

Visualization made easy

From efficient plant to effective operational design:
Welcome to the optimized future with SIMATIC WinCC Open
Architecture V3.18 - with the integrated dashboard on the way to
unprecedented possibilities.

[siemens.com/wincc-open-architecture](https://www.siemens.com/wincc-open-architecture)

VISUALIZATION MADE EASY

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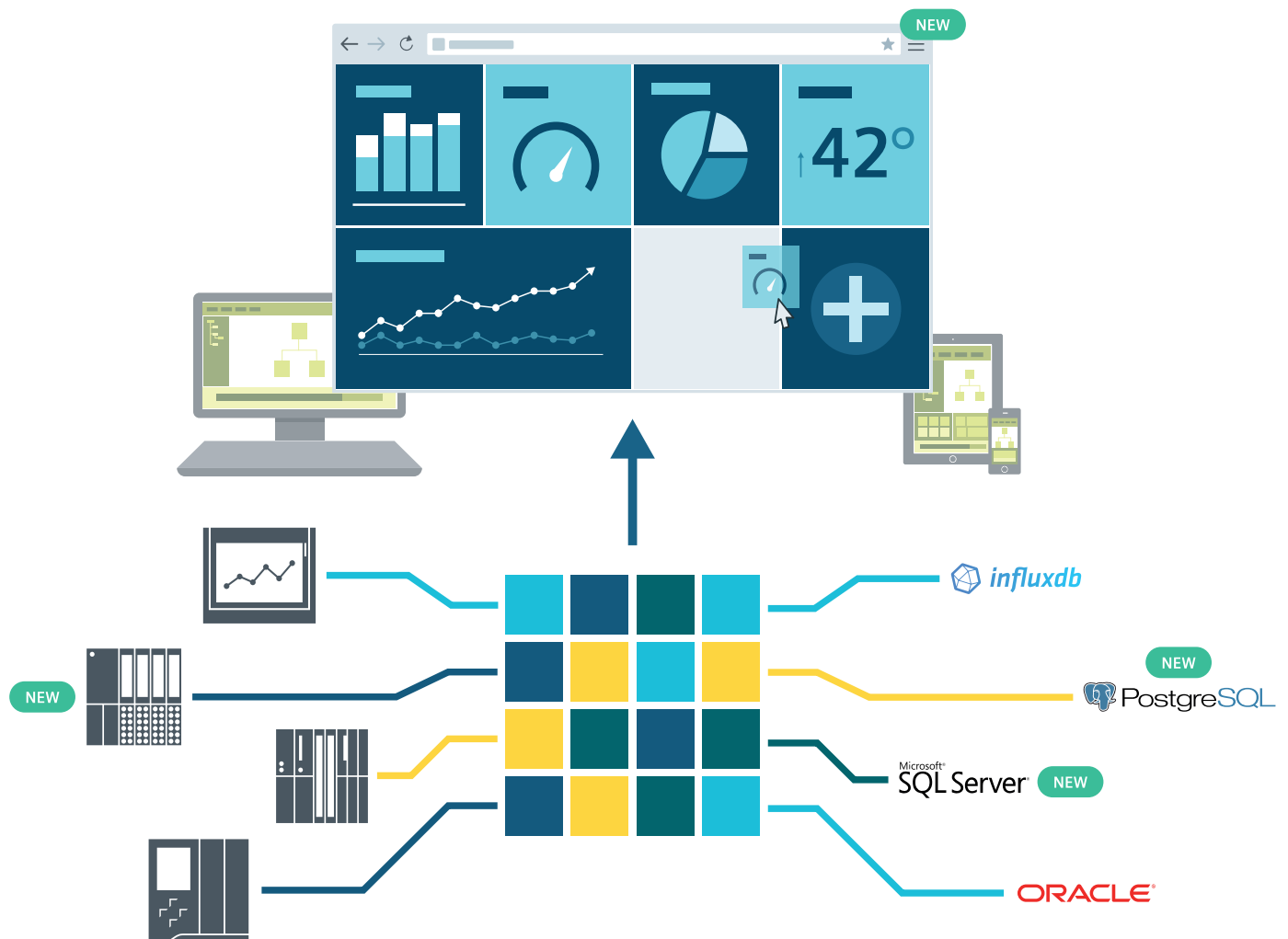
SIMATIC WinCC Open Architecture forms part of the SIMATIC product family and is designed for use in applications requiring a high degree of client-specific adaptability, large and/or complex applications and projects that require specific system functions. As a SIMATIC SCADA system it is well-prepared to connect to SIEMENS PLCs and to handle huge amounts of data even on smaller hardware solutions.

SIMATIC WinCC Open Architecture Highlights:

- Object orientation facilitates efficiency in engineering and flexible system expansions
- Possibility to create single server solutions
- End 2 End Redundancy from PLC level to SCADA solution
- Scalable up to networked redundant high-end systems with more than 10 million tags and 2.048 servers
- View and control all servers via a central control center
- A wide range of operating systems or virtual environments
- Hot Standby Redundancy and Disaster Recovery-System guarantee highest reliability and availability
- The perfect match for globally spread solutions
- Platform for customized solutions
- Comprehensive range of drivers and connectivity: SIMATIC S7, PROFISAFE/PROFINET, MQTT, OPC UA, Modbus, IEC 60870-5-101/104, DNP3, IEC 61850, IEC 61400, Ethernet/IP, S-Bus, MindSphere Connector and many more

Supported operating systems

- Windows 2019 Server
- Windows 2019 Server LTSC
- Windows 10 CB Version 20H2
- Windows 10 LTSC 2019
- Red Hat Enterprise Linux 8.2
- Oracle Linux
- SIEMENS Industrial OS 2.x
- Docker – Debian 10
- VMware ESXi 7
- vSphere HA Cluster



Dashboard

New Version

SIMATIC WinCC Open Architecture V3.18

WinCC OA empowers you to follow your own success story: Until now it was most important to do things right – that means efficiency.

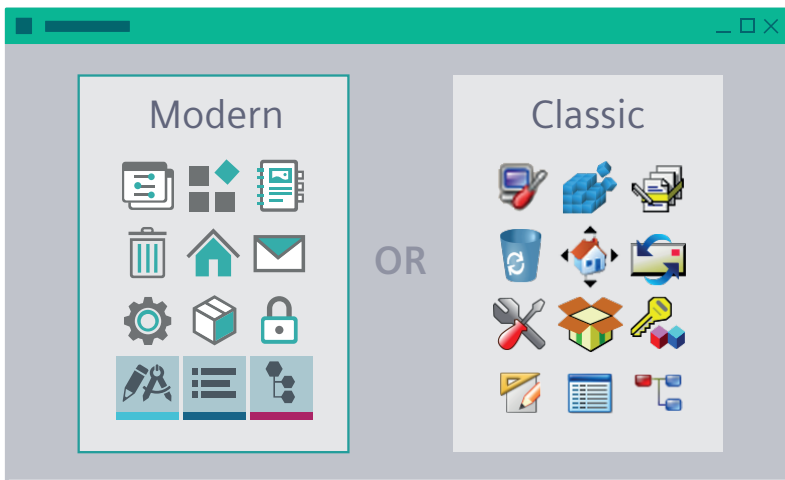
The new trend however leads us to do the right things instead – that means effectiveness. The new product version V.3.18 opens up new ways to do so.

With the web-based dashboard it is possible to parameterize widgets anytime and from anywhere, even during runtime. That easy adaptability offers a simple way for users to visualize their data.

Dashboard

This new function simplifies the creation of web dashboards. With it, it's possible to parametrize widgets anytime and anywhere during runtime. A wizard-guided process makes the widgets easily adaptable to each user's individual data visualization goals.

The dashboard is web-based and supports a large variety of widgets. Dynamic SVGs can also be integrated. To sum up, it is possible to completely customize the dashboard and therefore create user-specific solutions.



Neue Icon Themes

New Icon Themes

As a new design-related feature, a new style set has been introduced which handles the implementation and one-click-switch of icon themes.

Firstly, a new icon theme has been developed and included within the new version.

Secondly, it is now possible to integrate customized icon themes that fully conform to any corporate design requirements.

Similar to other style sheet implementations, it is possible to switch the themes during runtime.

Driver Enhancements

New drivers have been released to connect to OMRON FINS as well as SINUMERIK powerline devices.

SINUMERIK devices can also be added to a project via OPC connection.

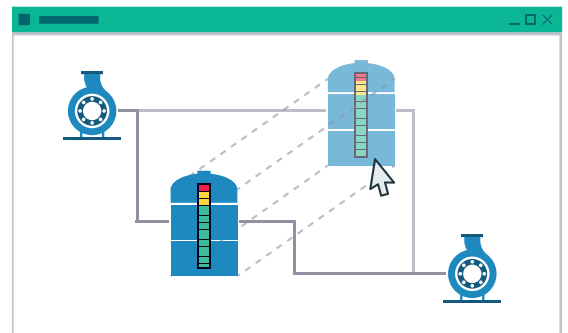
In addition, the S7+ Driver now supports TLS.

New OPC UA security policies have been integrated as well as OPC UA method support, including WinCC OA alarm mapping to OPC UA severities.

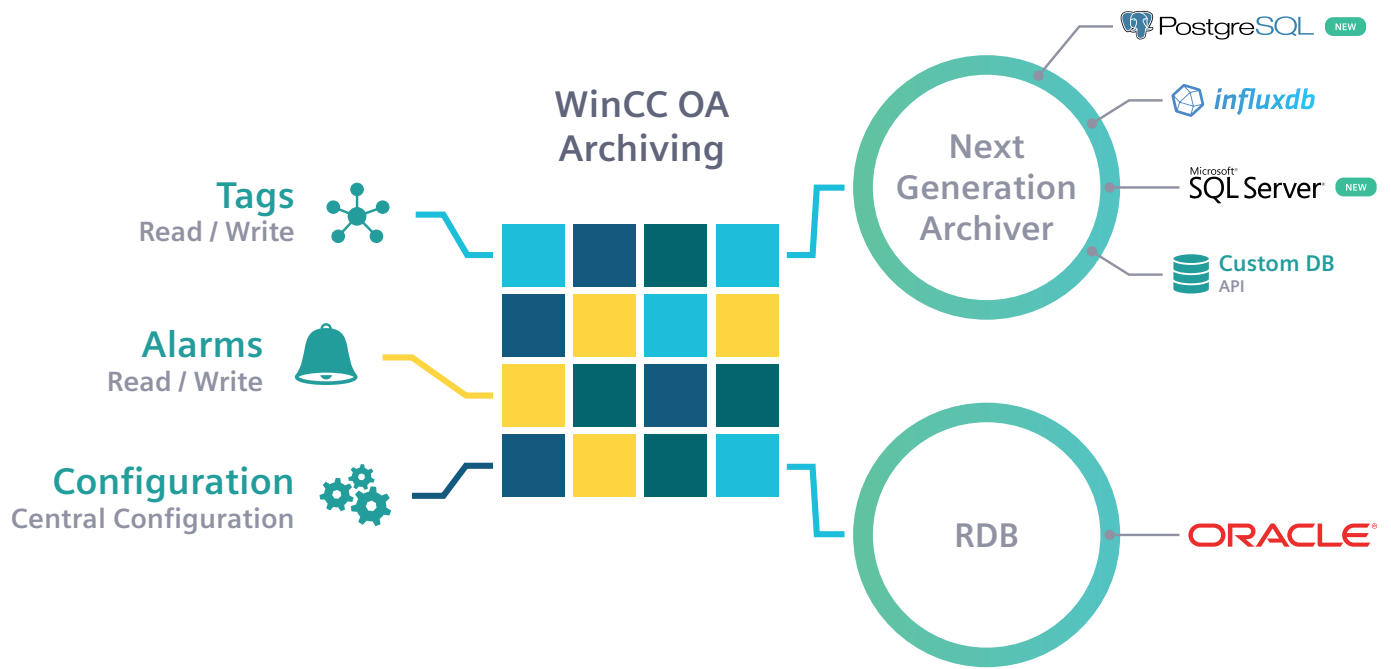
Connector Points

Known from graphical objects used in Powerpoint-Presentations, a useful new connector point function has been introduced to objects for WinCC OA user interfaces.

It is now possible to connect objects via connector points. When the objects are moved, the connections automatically find new paths. It is also possible to connect different types of graphical objects.



Coonector Points



Next Generation
Archiver (NGA)

Next Generation Archiver (NGA)

Enhancements

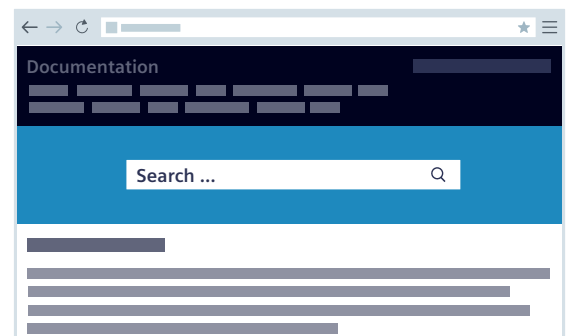
While the last version of WinCC OA already enabled a connection to InfluxDB, the version 3.18 offers a broader range of supported databases. It is now possible to connect to PostgreSQL as well as MS SQL database. Furthermore, data handling has been optimized which leads to increased performance and a higher flexibility in engineering.

On top of that, the NGA adds value to your solution by offering an open interface to connect to customer implementations. The NGA can be used in parallel with the existing value-based archiving system, as well as Oracle database. It is even possible to combine these three archiving systems.

Online Documentation is Available

Until now, it was always necessary to download the WinCC OA software package in order to receive documentation regarding features.

Starting with Version 3.18, an online version of the documentation will be available, offering a quick way to look up information no matter where you are. No installation is required to learn more about WinCC OA. This online help will be available in English as well as in German.



Online Documentation

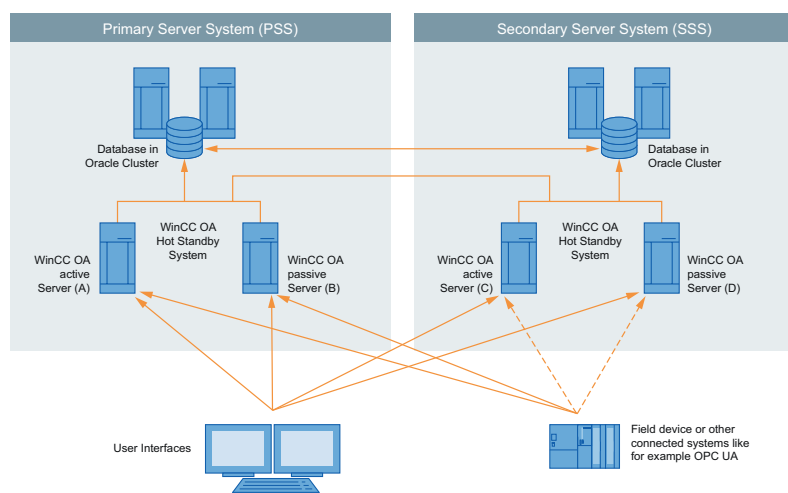
SPECIAL FUNCTIONS

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Object Orientation

- Referencing of symbols and objects
- Inheritance of structured data point types
- Object hierarchy
- Direct mapping of data point types to objects
- Flexible plant model - different views on the datamodel realizable



Disaster Recovery
System

Redundancy

- Hot Standby
- Disaster Recovery System (2x2 Redundancy)
The aim of this feature is to extend the WinCC OA redundancy concept through a second Hot Standby System. Thus, the data loss and the idle time are kept as low as possible.
- Automatic client switch-over
- Automatic recovery
- Automatic process image and history synchronization
- Automatic synchronization of project data
- Redundant networks (LAN)
- Redundant peripheral component support
- (SIMATIC S7)
- Split mode operation for updates and testing

Parallel Archiving

The parallel archiving in different data bases has been updated, based on the list of supported data bases in NGA, and enables the storage of data into the local historical database and into the chosen second data base. The Next Generation Archiver can archive locally and centrally by itself. Both archiving methods

(Oracle and NGA) are compatible with the Disaster Recovery System, historical queries and archive compressions.

Security

- IIEC 62443-4-2 certification
- Blocking via IP-Blacklist
- System stability due to intrinsic safety
- Autonomic systems
- Communication (Standard: SSL encryption, Option: Secure)
- New standard project with highest security setting SSL encryption of managers based on specific certificates
- Encryption of panels, scripts and libraries
- Enhanced security developments for specific drivers
- TLS gateway now supports encryption

Integration of Maps

Full integration of state-of-the-art cartographic information into WinCC OA, including Open-StreetMap. Possible integration of Web Map Service (WMS) and Google Maps (requires separate license from Google) and GIS solutions.

Video

Offers the easy possibility to integrate IP-cams, IP-components which fulfill the ONVIF 2.0 standard and complete video management systems into WinCC OA. Due to the integration of SCADA and video management into one system, the interfaces can be reduced. The costs for training, maintenance and operation are also reduced to a minimum. To design a new video solution, you can use our basic package that already includes several useful features. Finalize the planning by simply adding the number of needed cameras to your project. The video feature is available for Linux, as well as for mobile apps; required platforms are minimum iOS 12.3 or Android 6.*

Trending 2.0

Trend widgets for integration into customized screens and a trend application (Var-Trend) as already-to-use trend application. Supports:

- Online and historical values
- Value trend over time or value
- Time comparison trends
- Bar trends 2D and 3D
- Color and filling pattern for trend curves
- Display of invalid values, alarm range and/or value range
- Multiple or shared scales, ruler, automatic legend
- Time resolution in ms, switch during runtime between
- local and UTC-time
- Zoom / Unzoom of trend areas

Enhanced Possibilities:

- Add curves via Drag & Drop
- Trend configuration based on instantiation
- Copy to clip board functionality supported

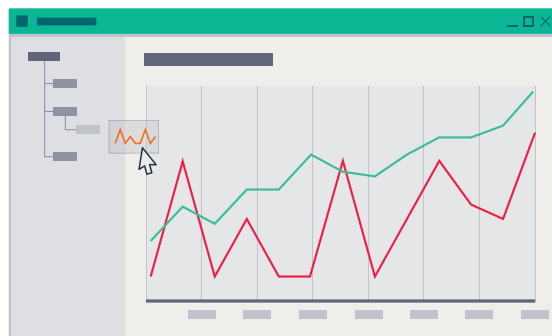
Harmonized Upgrade Services - Software Support Center

Based on customer's requirement and needs given by solution design it might be necessary to think about updates of the software. While granting a lifecycle management, this also includes plannable steps towards integrating new trends and higher standards regarding security.

Based on these thoughts WinCC OA offers agreed ways to provide updates reaching from smaller upgrades during one version to jumping to another version when available. It is up to decide when ordering the new version.

Reporting

- Web-based Reporting Interface (SOAP): Eclipse BIRT, Crystal Reports, SIMATIC Information Server, Microsoft Excel, Several templates for ECLIPSE BIRT and examples for SIMATIC Information Server
- Online values, history
- Compressed data, SQL, alarms
- Diagnostics tools
- Audit trail



Trending 2.0

* Will be available later in a patch

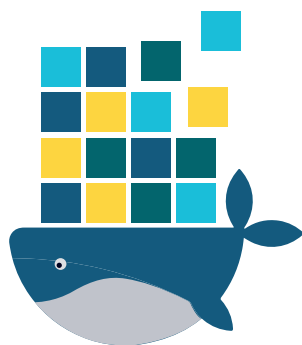
TECHNICAL DATA

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Architecture

- Client-server-system
- Functional separation into several processes (managers)
- Event orientated process
- Load distribution on several computers
- Redundancy (Hot Standby)
- Disaster Recovery System
- Multi-server - distributed systems up to 2048 systems
- Heterogeneous operating systems and versions possible
- Multi-monitor operation
- Multi-login on one workstation
- Multi-user system
- Internal message compression
- Safety functions to increase reliability (overload detection and regulation, query restrictions)
- Support of virtual environments and Docker container



Support of Docker Container

Process Interfaces / Drivers

- Event-driven or cyclic polling
- Several different drivers at the same time on one server
- Periphery time stamps
- TCP/IP: SIMATIC S7, SIMATIC S7 Plus, MQTT, PROFINET/PROFISAFE, TLS Gateway, Modbus, Ethernet/IP, BACnet, OMRON_Fins, SINUMERIK Powerline
- OPC: DA, AE, HDA (Client & Server)
- OPC UA: DA, AC, HA (Client & Server)
- Tele control / RTU: SSI, IEC 60870-5-101, -104, DNP3, SINAUT, IEC 61850/61400
- Over 25 drivers natively supported
- Additional drivers on request or via C++ API

Alarm System

- VDI 3699 / DIN 19235
- Freely definable alarm classes with 255 different priorities and definition of alarm colors (blinking)
- Standard, discrete and multi-instance alarms
- Up to 255 analog alarm ranges
- Summary alarms
- Automatic filtering of alarms (handling of alarm-floods)
- Panel hierarchy summary alarms
- Combined alarm- and event screen, alarm row with definable column set and colors and advanced sorting and filtering
- Storable configurations
- Direct access to the associated process window
- Comments and attended values on alarms
- Split on warning areas and alarm areas
- Online change of alarm classes
- Showing Alarms in the trends

Data Model

- Object oriented data model with freely definable and easy configurable structure
- Many standard objects included
- Modeling of technological objects in any hierarchy
- User definable tree structure
- Several different properties definable on elements
- Type-in-type (referencing)
- Inheritance
- Groups
- Generate different views on the data model

Engineering Environment

- Graphical editor
- Project hierarchy editor (panel topology)
- Project editor
- Database editor
- Control programming editor, Script Wizards
- Mass data engineering and ASCII in / out manager
- Integration of external version management tools (CVS, SVN, ...)
- Simple symbols, EWOs, style sheets, color schemes (incl. Day/Night-Switch)
- Framework for engineering & application user interfaces

User Access

- Full user access security optional with integration into Windows Active Directory (Single Sign On)
- Various permission levels
- Command protocol (Audit trail)
- FDA 21 CFR Part 11 compliant
- Plugin mechanism for external authentication systems like LDAP
- IEC 62443-4-2 compliant
- Improved integration of Active Directory user management

Time Zone Handling

WinCC OA uses UTC time zone and allows to spread distributed systems to different time zones. For successful connection to the system the time has to be synchronized between the servers.

Archiving

Comprehensive archiving options

- Next Generation Archiver (NGA)
- Value archives as flat-file structure (HDB)
- ORACLE archiving
- Parallel archiving (Oracle, HDB, NGA)
- Data compression
- Correction values
- Laboratory values
- Web-based reporting interface (SOAP)
- Reporting templates based on Eclipse BIRT and SIMATIC Information Server
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Graphical User Interface

- Drag & Drop
- JavaScript
- Platform neutral application
- Zooming / Panning
- Cluttering / Decluttering
- Root-, child- and embedded panel
- Multi-monitor operation
- True color / synchronous blinking
- Up to 8 picture layers
- Online tool tips (multilingual)
- Configurable panel topology
- GUI navigation objects
- Online switchable multi language support
- Switch of color sets and style sheets during runtime
- Supports the widely used graphical objects and widgets also with comprehensive animation capabilities
- Support of external widgets
- Layout management "Responsive design"
- Multitouch support: zooming, panning, decluttering, safe two-hand operation and custom gestures
- Navigation through panel hierarchy
- Animations: panel transition, object animations, animation groups

Objekt Libraries

- WinCC OA standard object library
- BACnet object library
- Library of Basic Processes (LBP)
- Build up your own libraries and reuse them

Application Programming / Scripting

- Interpreter with C-syntax ("Control" language) and multithreading support
- Object oriented aspects like classes
- Libraries and DLLs for customized extensions of the scripting language
- Debugger / diagnostic tools
- Supports a lot of external interfaces, such as: 'database access, ADO, COM and XML, XML Parser, XML-RPC-Interface, UART- and TCP-access, WebSockets
- Complete access to attributes of graphical objects
- Know-how protection (Panel- / script encryption)
- Additional Businesslogic via C++ or C# API
- TIA Importer supporting TIA projects in Versions V14, V15, V16

Internet / Intranet

- Desktop UI
- Mobile UI for iOS and Android
- Ultralight Client ULX UX (HTML5)
- Dashboard and mobile Dashboard
- Webserver, web alarm screen, diagnostics and reporting
- Supports main security functions (HTTPS, SSL, Kerberos encryption, etc.)

Certified Standards

- IEC 61443-4-1/61443-4-2
- IEC 61508 (SIL3)
- IEC 61850/61400 Client (KEMA/DNV GL)
- OPC UA
- PROFINET/PROFISAFE (Client)
- BACnet (B-OWS)

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Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions only form one element of such a concept.

Customer is responsible to prevent unauthorized access to its plants, systems, machines and networks. Systems, machines and components should only be connected to the enterprise network or the internet if and to the extent necessary and with appropriate security measures (e.g. use of firewalls and network segmentation) in place.

Additionally, Siemens' guidance on appropriate security measures should be taken into account. For more information about industrial security, please visit <http://www.siemens.com/industrialsecurity>.

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends to apply product updates as soon as available and to always use the latest product versions. Use of product versions that are no longer supported, and failure to apply latest updates may increase customer's exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under <http://www.siemens.com/industrialsecurity>.

