



SIMATIC WINCC OPEN ARCHITECTURE V3.19

Performance like never before

From efficient plant to effective operational design: Welcome to the optimized future with SIMATIC WinCC Open Architecture V3.19 – Unprecedented performance, connectivity, and adaptability for your IT/OT integration.

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

SIEMENS

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SIMATIC WinCC Open Architecture as part of the SIMATIC product family 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. WinCC Open Architecture as an open system can connect a broad range of PLCs but as a SIMATIC SCADA system, it is especially 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-to-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 systems via a central control center
- A wide range of operating systems and 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/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 2022 Server
- Windows 10 CB Version 21H2
- Windows 10 LTSC 2021
- Windows 11 CB Version
- RHEL/Oracle Linux 9
- Industrial OS 3.2
- Docker – Debian 11
- VMware Cluster (HA) ESXi

New Version

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In our modern times, SCADA systems are increasingly facing newly emerging challenges, most of all the trend towards IT and OT integration. These trends are moving from purely efficiency-based thinking towards a more effectiveness-based approach – that means doing the right things, as opposed to just doing things right. WinCC Open Architecture is committed to doing both – and doing them with unprecedented speed.

Our new product version 3.19 performs faster than ever, while the newly added connectivity and third-party integration options provide an environment for your projects to run smoothly and cost-efficiently.



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Special functions

Performance

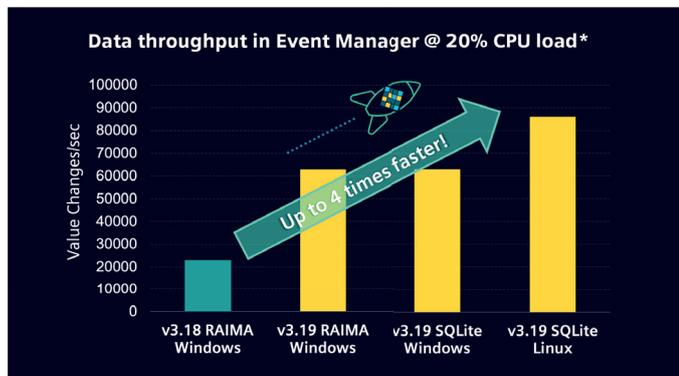
WinCC Open Architecture has always had a high-performing core – and now it is faster than ever before! With its data throughput increased by up to 4 times, system operation at only a quarter CPU load as before is now possible in version 3.19. With this increase in value changes per second, system reactivity rises and more performance reserves on existing and new projects are made available. The customer can integrate more business logic into existing projects, allowing them to grow without the need for more hardware costs. Risk of failure is reduced by the added performance buffer.

Additionally, our NextGen Archiver has been further optimized, so WinCC OA’s future-proof archiving solution now meets all the top requirements for our customer base’s investment.

Future-proof technology

The year 2038 problem – a well-known time-formatting bug inherent to all systems which measure Unix time – might still seem far away right now, but for our customers starting up new, long-running projects, preventing catastrophic system failure in the future is very much a present-day concern.

WinCC OA is committed to solving our customers’ future problems today. By replacing our configuration database (RAIMA) with SQLite, a new and improved relational database solution, WinCC OA has been made year 2038 ready well ahead of the curve. Including zero voltage safety, a better performance as well as a smaller footprint, SQLite offers our customers many configuration options and last value storage. An importer for historical data is going to be added in an upcoming patch for v3.19, making it possible to migrate existing RAIMA-based projects as well.



Dashboard – Video & ULC UX Widgets

The WinCC OA Dashboard has been improved with increased functionality and additional widgets. First, the new Video widget allows implementation of video streams into the Dashboard. Preexisting panels can be integrated via the ULC UX widget, saving time and effort of redrawing them. It has even been made possible now for customers to add their own widgets.

The further enhancements made to some of our existing widgets, such as the SVG, Line Chart and Alarm View widgets, lets the customer enjoy even more functionality and optimization.



OPC UA enhancements

The OPC UA feature range has been widened considerably for this version. Especially the fact that WinCC OA now supports companion specs (PackML) and methods (server and client) broadens our software's field of application immensely and significantly reduces our customers' engineering efforts.

Improvements have also been made on the OPC UA client side, such as the reading and writing of individual array elements or ranges for one-dimensional arrays and enabling the use of structured data as a possible parameter for method calls.

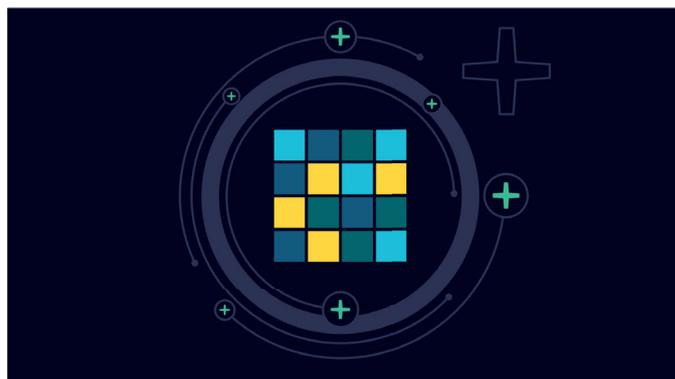


In addition, WinCC OA has successfully been re-certified by the OPC foundation, now including Alarms & Conditions in the certificate. With this, we can guarantee our customers that the highest standards can be met in their implementations.

Better Integration into Siemens Portfolio Landscape

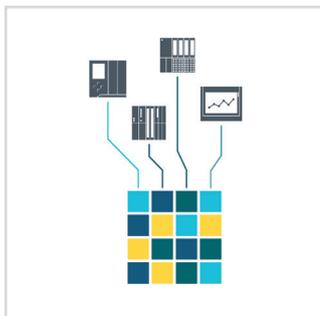
With this new version, WinCC OA will be even closer integrated into the existing Siemens product portfolio. The Siemens Process Management Add Ons (PM Add-On), a modularly expandable solution, is now also accessible for WinCC OA. Tasks such as production process integration, quality control, maintenance and system integration can be simplified through available modules, helping the customer to save costs due to reduced integration effort in existing project environments. WinCC OA currently supports the Add-ons PM-ANALYZE, PM-QUALITY and PM-MAINT Interface.

WinCC Open Architecture provides now an easy integration in projects using OpCenter Execution Core as MES layer. Data can be easily sent and received through the already available REST interface. Through the introduction of the Siemens MES Opcenter Execution Core (V8.9) standardized interfaces help to save integration effort on customer side.



Driver Enhancements

In the driver category, we offer our customers enhanced shopfloor connectivity with the new NTCIP driver for easy control of dynamic traffic signs, as well as usability improvements on IEC 61850 and Modbus client.



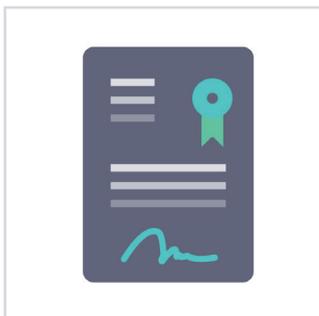
We also put our focus on extending existing features to ensure that security always stays up to date, to lower the risks of system failure. To that end, we have successfully gained re-certification for PROFISafe/PROFINET for version 3.19, the

DNP3-SA driver has been improved with Secure Authentication, and our BACNet driver now features the Advanced Workstation (AWS) level.

In the northbound direction, the use of MQTT Publisher has been implemented, saving engineering effort through easier northbound communication.

Integrated License Management

To manage WinCC OA licenses without the use of any 3rd party tools, License Management has been integrated directly into the software. This not only saves time, but also increases usability during license activation. The customer can now easily handle licenses spread over multiple tickets in one go, mixing and matching the licenses as desired. A license precondition check massively reduces the chances of activation failure.



Script Editor Enhancements

The WinCC OA Script Editor has seen some major improvements as well, in effect making engineering much simpler and more fluid. New features include an extension of the editor's autocompletion behavior, support of multi-tab view, multi-line editing and the ability to scroll via keyboard.

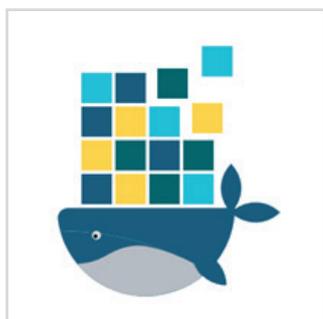


SIMATIC WINCC OPEN ARCHITECTURE V3.19

Technical Data

Architecture:

- Client-server-system
- Functional separation into several processes (Managers)
- Event orientated system
- Load distribution on several computers
- Redundancy (Hot Standby)
- Disaster Recovery System
- Multi-server, distributed systems up to 2,048 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
- Support of redundant PLC as well as redundant network connections
- Periphery time stamps
- TCP/IP: SIMATIC S7, SIMATIC S7 Plus, MQTT, PROFINET/PROFISAFE, TLS Gateway, Modbus, Ethernet/IP, BACnet, OMRON Fins, SINUMERIK Powerline, NTCIP
- 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

Internet/Intranet:

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

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Technical Data

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

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Technical Data

User Access:

- Full user access security optional with integration into Windows Active Directory (Single Sign On)

- Various permission levels

- Command protocol (Audit trail)

- Plugin mechanism for external authentication systems like LDAP

- IEC 62443-4-2 certified

- 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

1. Next Generation Archiver (NGA)
 2. Value archives as flat-file structure (HDB)
 3. ORACLE archiving
-
- Parallel archiving (Oracle, HDB)

 - Data compression

 - Correction values

 - Laboratory values

 - Web-based reporting interface (SOAP)

 - Reporting templates based on Eclipse BIRT

Object Libraries:

- WinCC OA standard object library

- BACnet object library

- Library of Basic Processes (LBP)

- Build up your own libraries and reuse them

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Technical Data

Graphical User Interface:

- Drag & Drop
- 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

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, JSON and REST interface, UART- and TCP-access, WebSockets
- Complete access to attributes of graphical objects
- Know-how protection (Panel-/script encryption)
- Additional Business logic via C++ or C# API
- TIA Importer supporting TIA projects in Versions V15, V16, V17

Certified Standards:

- IEC 62443-4-1/62443-4-2
- IEC 61508 (SIL3)
- IEC 61850/61400 Client (KEMA/DNV GL)
- OPC UA
- PROFINET/PROFISAFE (Client)
- BACnet (B-OVS)



ETM professional control GmbH

A Siemens Company

Marktstrasse 3

7000 Eisenstadt

Austria

Phone: +43-2682-741-0

www.etm.at

info@etm.at

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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>

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