SIMATIC WINCC OPEN ARCHITECTURE

Certified WinCC OA Extended Developer Workshop

This one-week instructor led workshop provides experienced participants with expert knowledge as well as with the necessary skills needed to use the WinCC OA API toolkit. The participants learn to create/compile/set up specific CTRL-enhancements (DLLs), managers and drivers. A particular focus lies on the creation/compilation/setting up of a driver / manager with increased requirements for the productive operation, eg. multiple connections, redundancy, protocol-specific address data, debug flag / report handling.

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SIEMENS

Prerequisites

- Solid C++ programming skills
- Profound know-how concerning memory programmable devices and networks
- Completed „Certified WinCC OA Basic Training"
- Suitable laptop according to requirement list
- Installed WinCC OA version (version used must be communicated in advance)
- Development environment according to requirement list
- Completed „Certified WinCC OA Engineer Workshop" is recommended
- A precise use case for the driver development must be defined by the customer and communicated in advance
- A suitable test system (real device or protocol simulator, etc.) should be provided by the customer
- Participation is limited to one customer per workshop (several participants of one customer possible and preferred)

Training objectives

After completion of this workshop, the participant is able to create/compile/set up specific CTRL-enhancements (DLLs), managers and drivers in order to enhance the already existing functionalities of WinCC OA.

Content

- Introduction of WinCC OA API
- *Creation/Compilation/Setting up* of a basic Ctrl-enhancement
  (new functions in CTRL, Wait-Conditions, Callbacks)
- *Creation/Compilation/Setting up* of a basic manager
  (Message-Handling, access to datapoints/system model, DP queries)
- *Creation/Compilation/Setting up* of a basic driver
  (usage of a driver framework, single connection to a software-PLC, internal datapoints, address-config, read / write of values)
- Driver / Manager enhancement for the productive operation
  - Requirement analysis
  - Design of drivers / managers
  - Conceptual analysis and refactoring
    (multiple connections to software-PLCs, usage of framework functionalities, protocol-specific address data)
  - Optimization of the driver / manager
    (own HW object and pollgroup-handling)
  - Handling of WinCC OA redundancy
  - Debug Flag / Report handling
  - Creation of a prototype

Please note

WinCC OA only supports 64bit-operating systems! Hardware and software, except for WinCC OA, are not provided and must be brought by the participant. The minimum hardware and software requirements are as follows:

- Processor   Intel Core i3 / i5 / i7 with 2.2 GHz or similar
- RAM   4 GB
- HDD   5GB free disk space
- Graphic   1280 x 1024
- Input   Keyboard, mouse and USB-port (required)
- Operating system   Windows 10 CB Version 20H2, LTSC Version 2019, Windows Server 2019,

  RedHat Enterprise Linux 8 64bit, Oracle® Linux 8.3, SIMATIC Industrial OS 2.2,

  Docker-Version 20.10.3 with Debian 10 Buster
- Optional   VMware Cluster (HA) ESXi 7.0 Update 1*

  (supported by all operating systems which are mentioned above)
- Optional software   Microsoft Excel 2016, Excel 365 1912

  (Only 32bit Excel versions can be used for the WinCC OA Excel-report.)

Development environment for WinCC OA 3.18:

- Windows   Visual C++ / Visual Studio 2019 Compiler Version for x64
- Linux   Red Hat Enterprise Linux mit GCC Version 8.2.1

  SUSE Linux Enterprise mit GCC Version 7.4.1

Duration

One week non-residential

*…The use of a virtualization is optional and not required for the installation of WinCC OA!