Secure and flexible: license management for industrial controllers

Software licenses for the PLCnext Control automation platform from Phoenix Contact are to be securely distributed and rolled out. Industrial-grade memory cards from Swissbit meet Phoenix Contact's special security and flexibility requirements.

In 2020, Phoenix Contact unveiled its latest innovation with the launch of the PLCnext Technology automation platform. The associated control platform, PLCnext Control, includes programmable logic controllers (PLCs) in a range of different performance classes as well as the PLC programming software: PLCnext Engineer. In addition to pre-installed software tools, system integrators and machine manufacturers can integrate further software applications (apps) requiring a license into their PLCs to increase the range of functions.

The Challenge

- Secure distribution & rollout of software licenses via removable storage media
- Usage even in harsh industrial environments

The Solution

- Secure SD memory card PS-46 DP
- AES 256 bit encryption
- Industrial temperature range from –40°C to 85 °C

The Benefits

- Portable license protection solution
- Time saving during rollout & commissioning
- Flexible transfer of licenses possible
- Future-proof with options to add additional functions

The Challenge

For the creation and distribution of licenses for its paid apps in the PLCnext Store Phoenix Contact was looking for a removable storage medium that had to meet all requirements in terms of security and durability – but at the same time serve as a hardware security anchor for the licenses. The SD card form factor was chosen because it has been established in the field of PLCs for years due to its compactness. It is also used in the PLCnext Control models.

Further criteria for the storage medium included reliable operation at all times, even in harsh industrial environments, with characteristics such as insensitivity to temperature fluctuations and the long-term availability of the product.

The Solution

The core of the new solution is Swissbit's SD memory card PS-46 DP Data Protection Edition. It functions as a secure license container and at the same time accelerates the roll-out and commissioning process for Phoenix Contact customers. In contrast to other solutions, the required licenses in regard to PLCnext Control are already stored on the SD card when the PLC is ordered.

The necessary security is ensured by a dual-stage procedure that uniquely links the relevant license file with the corresponding memory card. Among other things, the unique and unchangeable identification number (Unique ID) of the SD card mapped in the hardware is used, which is supplemented by a serial number generated by Phoenix Contact. In addition, a checksum is

The Benefits

For machine manufacturers and system integrators, the portable license protection solution achieves a considerable time advantage when rolling out and commissioning a PLC from the PLCnext Control platform. In the ordering and purchasing process, customers select the apps requiring a license for their applications for the free PLCnext Engineer software.

Subsequently, the SD card functions simultaneously as a storage medium and as a license dongle, enabling customers to program the PLC according to their requirements and to configure it for use in a facility. In this way, inconvenient constraints where licenses first have to be activated individually via a computer at the integrator's facility or at the end customer's site are eliminated.

> **"**
> The convenient roll-out and rapid commissioning of a PLC, including the required app licenses, is an essential requirement of our customers. The solution designed in partnership with Swissbit fulfils this exact requirement and at the same time offers the greatest possible protection for our software licenses.**"**
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> **Rudolf Braun**, Product Management Control Systems, Phoenix Contact

stored in an access- and copy-protected memory area (hidden memory) of the SD card. In this way, the license(s) and SD card are firmly connected and protected without impairing portability. The card will be offered by Phoenix Contact in the future, with memory capacities of 8 GB and 32 GB as part of the PLCnext Control portfolio.

About Phoenix Contact

- Global market leader for components, systems and solutions in the fields of electrical engineering, electronics and automation
- Founded in Essen, Germany, in 1923
- 17,600 employees in more than 100 countries

Customer: PHOENIX CONTACT Deutschland GmbH

Solution: Industrial Automation

Application: IP & License Protection