ES 200
SUPERVISION, CONTROL
AND COMMUNICATION RTU GATEWAY

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SCADA FOR ENERGY SYSTEMS

Rugged Design
Integrated Security
IEC 61850
ES200 is a fourth-generation (Internet of Things) SCADA RTU gateway for control, measurement and supervision in power distribution systems. It is designed to efficiently operate secondary distribution substations, feeders and electrical substations using modern and secure communication and automation standards.

ES200 offers the ability to transform large scale IoT sensor data and perform control functions within the distributed network infrastructure through Cisco Fog Director. With the support of IOx, the distributed IoT network can function as the compute environment for fog applications. Examples of other fog applications in energy distribution include site asset management, energy monitoring and fleet management.

Unlike the traditional SCADA systems, ES200 allows the update and full reconfiguration of the software functions at any given moment during its lifecycle. ES200 can be configured to run and exchange information with other third party applications that run alongside on the Cisco hardware.

ES200 allows backward compatibility with legacy equipment while greatly improving security and automation functionalities. ES200 enables data extraction, concentration and storage. These are critical processes that deliver much value of automation to grid operators.

Key Features
- Integrated Security
- Open Systems/Open Security Platform
- Distributed Architecture
- International Standards Adoption
- Application Management
- Smart Grid Enablement

Overview

Multipurpose use case
ES200 is an open platform and framework, ready to combine deployment of Cisco Partner Ecosystem 3rd party Services alongside our SCADA platform for future development.

State of the art security
ES200 is based on Cisco IOx Security and addresses 4 major components:
- Control plane (SSL/TLS, Industry Standard AAA),
- Data plane (IOS security features such as ACL’s, IPS, Firewall and many more),
- Platform Infrastructure (API Security, Pluggable Auth Modules, App Signature Verification),
- Application Security (cgroups, SMACK, SELinux, USERNS Capabilities).

Proper integration of new technologies with legacy systems in substation automation opens a new and significant value stream for grid operators.

IoT Edge Computing
ES200 is able to run, deploy and operate at the Network Edge, while securely isolating SCADA Microservices from any other process. It enables the Cisco IoT IR809 to combine multiple functions as network connectivity, secure data acquisition & remote control, GPS localization and SCADA gateway.

ES200 is optimized to run in a very small footprint.
ENHANCED CONNECTIVITY AND DEPLOYMENT

Connectivity

- **SIM**: Multiple SIM’s to access in the VPN on 3G/4G
- **Serial**: Serial Ports to connect Smart Meters or other serial equipment
- **GPS**: GPS Timestamp for legacy equipment/protocols
- **LAN**: LAN available to connect TCP/IP equipment

Easy deployment and control system

Open protocols

Standard communication protocols (Modbus, DNP3, IEC 61850, IEC 60870-5-104) allow interoperability with any new or existing third-party equipment (protection relays, power quality devices, IEDs) and SCADA DMS dispatch.

Master/Client communication protocols are available on both Ethernet (TCP/IP) and serial (RS232/485).

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<th>Communication Protocol</th>
<th>Type</th>
<th>Communication mode</th>
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<tbody>
<tr>
<td>DNP 3.0</td>
<td>Master/Client</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>IEC 60870-5-104</td>
<td>Master/Client</td>
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<tr>
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<td>Client</td>
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<tr>
<td>Modbus</td>
<td>Master/Client</td>
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<tr>
<td></td>
<td>Slave/Server</td>
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</table>

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MULTIPURPOSE ENERGY SOLUTION

Key Applications

- Distribution of energy
- Wind and photovoltaic power plants
- Cogeneration, gas turbines
- SmartGrid/IoT platform

ES200 allows advanced substation automation applications such as intelligent bus failover, automatic load restoration, allowing the utilities to integrate relevant information in the condition based asset monitoring. Master/Client communication protocols are available on both Ethernet (TCP/IP) and serial (RS232/485).

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