# ipConv/Cloud

Software for Universal Protocol Conversion in Cloud Environment and Standard Linux Distributions

ipConv/Cloud **is a software for universal protocol conversion, which enables data transmission between different protocols in cloud environments and standard Linux distributions. Running on existing infrastructure or in a hosted environment,** *ipConv/Cloud* **is suitable for coupling heterogeneous controllers, fieldbus devices, and telecontrol systems.**

Benefits at a Glance

- High performance 64-bit architecture
- Use in cloud-based environments
- Use of existing IT infrastructure
- Reduction of physical devices, i.e. saving operating costs and energy
- Leverage free resources by system consolidation
- Efficient deployment and administration (moving instances, live migration)
- Quick system commissioning
- Lower maintenance expenditure
- Soft license (no hardware dongle required)
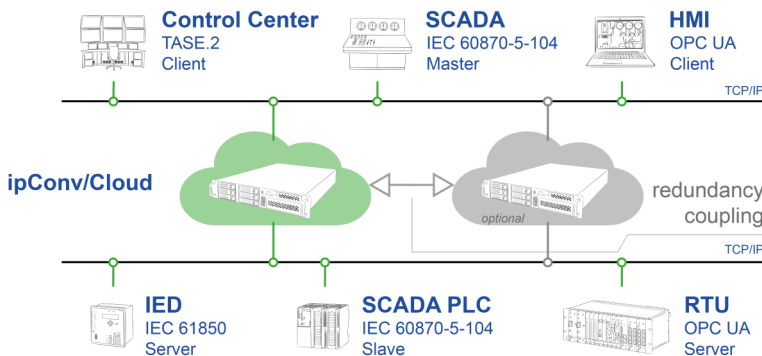
Characteristics

- Security at the highest level (see Cyber Security)
- Communication between multiple data sources
- Simultaneous use of diverse protocols
- Intelligent information processing
- No programming required for configuration (see Configuration)
- Simple control unit connection
- Serial communication via Serial Device Server
- Redundancy

SUPPORTED PROTOCOLS

- OPC UA
- IEC 60870-5-104
- IEC 60870-5-101
- DNP 3.0
- IEC 61850
- TASE.2 / ICCP
- ELCOM-90
- Modbus RTU/TCP

- Simatic Fetch/Write
- S7 Protocol Client
- MQTT
- Database Client
- SNMP
- BACnet
- REST

Further protocols on request!

FUNCTIONAL RANGE

- **Configuration**
  Configuration and maintenance of the software is conducted through the integrated web interface, which provides central access to all settings and services. Microsoft® Excel templates are provided to simplify data point configuration. In addition, the web interface enables the import of files and updates, such as

  - Software (application)
  - Excel configuration spreadsheet (data point table)
  - X.509 certificates
  - License files

- **Cyber Security**
  - Secure access to all administrative services (HTTPS, SSH, SFTP)
  - Role-based access protection with login and password
  - User administration for local users
  - Two factor authentication (TOTP, WebAuthn)
  - Central user administration via Active Directory (LDAP) and/or RADIUS
  - Crypto Store for certificate management
  - Creation of self-signed certificates and Certificate Signing Requests (CSRs)
  - Import and export of certificates

- **Data Processing**
  - All data is broken down into individual information (single indications, measured values, counter values, etc.) and processed accordingly. A quality identifier and - if necessary - a time stamp is associated with each information item.
  - Namespace and data model can be changed as desired.
  - Powerful functions for data processing, such as type conversion, scaling, grouping, etc.
  - Data reduction / regulation of bandwidth, required on secondary side, via update intervals, threshold values, old/new comparison, collective messages, selection of data points, etc.

DEPLOYMENT

ipConv/Cloud is a software solution which consists of two archive files and can be installed on Linux-based devices which meet the defined minimum system requirements. The application will operate as a systemd service within the Linux environment.

Hosting on a standard Linux distribution gives you full control over the operating system, enabling you to take full advantage of the powerful tools to run and manage the operating system/host environment. Maintenance and updating of the host system are up to the operator.

LICENSING

No USB dongle is needed to license an *ipConv/Cloud* instance: We provide you with a specific license in form of a license file which is linked to the operating environment. Thus, the license is preserved when the operating environment is moved or migrated. By cloning or copying the host environment, the imported license becomes invalid and must be requested again.

SYSTEM REQUIREMENTS

The Linux-based environment must meet the following requirements:
- x86 64-bit architecture
- systemd environment
- OpenSSL library, libcrypto*
- NCurses library, libncurses*
- Crypto library, libxcrypt*
- admin and regular user groups
- open port 22 for SSH access
- open port 443 for web-based configuration tool

  (* Current version see website)

The resources required for an instance depend on the size of the project:
- 4 CPU | 8 GB RAM | 4 GB mass storage
  (standard instance for normal and larger projects)
- 1 CPU | 256 MB RAM | 4 GB mass storage
  (minimum requirement for two protocol stacks and one thousand data points)

INDIVIDUAL INQUIRIES

Make use of our Product Wizard for enquiries in order to consider your individual project requirements. The adjoining QR code leads to a sample offer for *ipConv/Cloud* including the protocol stacks IEC 60870-5-104 Master and OPC UA Server.
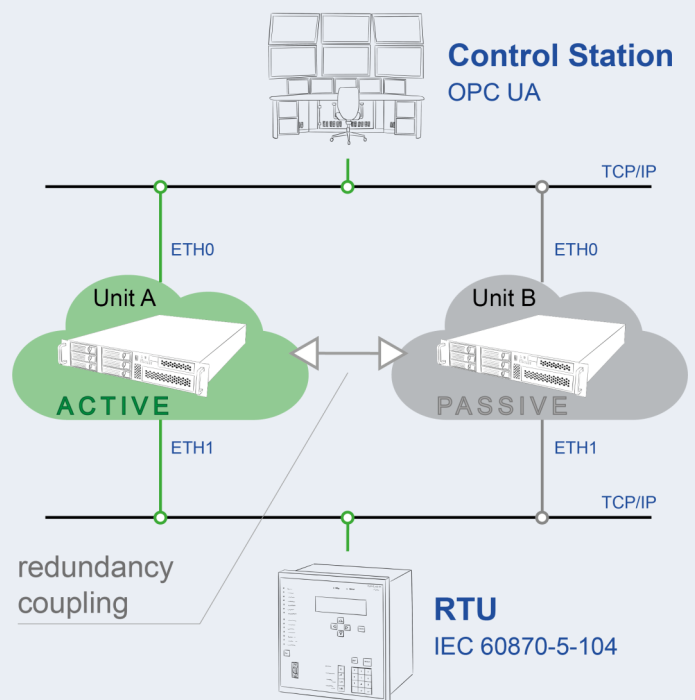
REDUNDANCY

To meet even increased security requirements, *ipConv/Cloud* is fully capable of redundancy in combination with a second instance.

- Line redundancy
- Information redundancy
- Device redundancy (hot-standby, parallel operation)

With redundant protocol converters, reliability can be ensured, based on the "hot standby" principle. At any one time, only one instance assumes the active role, while the passive instance monitors the active one and takes the initiative should it fail.

This minimizes downtime due to maintenance work or component and interface outages, for example.

The redundancy coupling is performed via Ethernet.

Example of an Ethernet-based redundancy coupling.