

# ipConv/VM



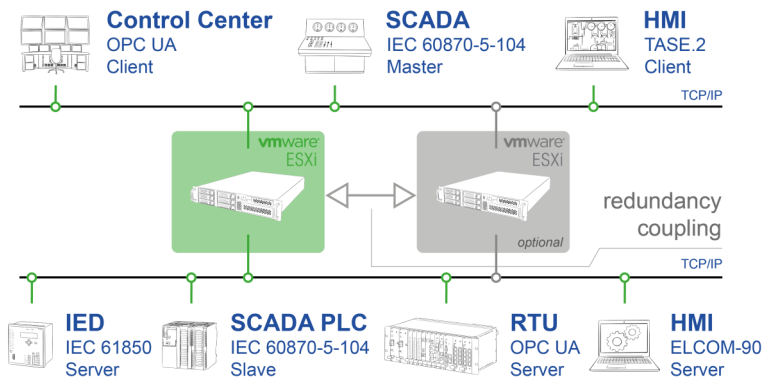
## Universal Protocol Conversion for VMware Workstation and VMware ESXi

*ipConv/VM* is a system for universal protocol conversion in virtual machines and enables data transmission between different protocols.

As a Virtual Appliance, *ipConv/VM* is suitable for coupling heterogeneous controllers, fieldbuses, and telecontrol systems.

### Benefits at a Glance

- Use of existing IT infrastructure
- Leverage free resources through system consolidation
- Efficient provisioning and administration of virtual machines (moving VM 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
- Redundancy

## SUPPORTED PROTOCOLS

- OPC UA
- IEC 60870-5-104
- DNP 3.0
- IEC 61850
- TASE.2 / ICCP
- ELCOM-90
- Modbus TCP
- OPC DAXML Server
- Simatic Fetch/Write
- S7 Protocol Client
- MQTT Client
- Database Client
- SNMP

Further protocols on request!

## FUNCTIONAL RANGE

### • Configuration

Configuration and maintenance of the system 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

- Firmware (application and operating system)
- Excel configuration spreadsheet (signal 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
- 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
- Configuration of VPN tunnels (OpenVPN and IPsec)
- Firewall
- Safeguarded real-time Linux operating system

### • 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.





## NETWORK FEATURES

- Assignment of multiple IP addresses to one physical Ethernet interface
- Network management using an integrated SNMP agent
- NTP based clock synchronization
- HTTPS/SSH/SFTP access
- DHCP
- Bonding
- PRP
- VLAN

## PROVISIONING

The virtual machine is provided as a downloadable OVA template (Open Virtualization Appliance), which can be opened or imported by supported hypervisors to create new VM instances.

To run the virtual appliance *ipConv/VM*, a VMware Workstation (version 11.x or later) or a VMware ESXi host system (version 6.0 or later) is required. For evaluation purposes, *ipConv/VM* can also be set up with the VMware Workstation Player.

## LICENSING

No USB dongle is needed to license a virtual machine: We provide you with a VM-specific license in form of a license file. Thus, the license is preserved when the VM is moved or migrated. By cloning or copying the VM, the imported license becomes invalid and must be requested again.

## SCOPE OF SUPPLY

In addition to the bundled software for protocol conversion, *ipConv/VM*, the OVA template comes with our proprietary open source Linux distribution *ipLinux*, which is preconfigured for optimal interoperability with virtual machines.

## 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/VM* including the protocol stacks IEC 60870-5-104 Master and OPC UA Server.

## REDUNDANCY

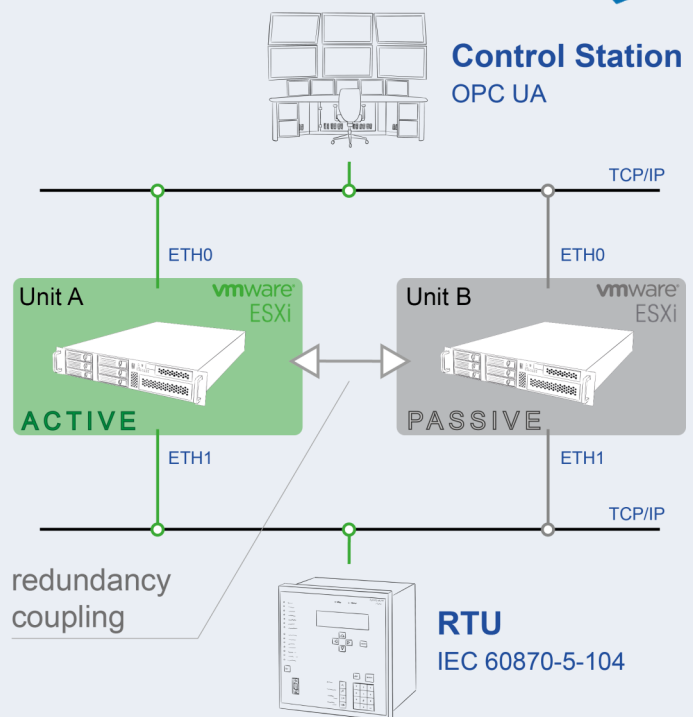
To meet even increased security requirements, *ipConv/VM* is fully capable of redundancy in combination with a second instance.

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

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

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

The redundancy coupling is done via Ethernet.



Example of an Ethernet-based redundancy coupling.



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