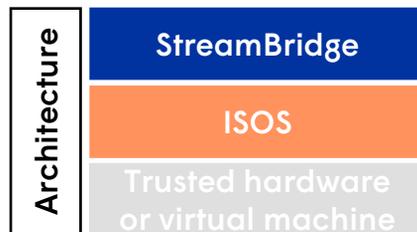
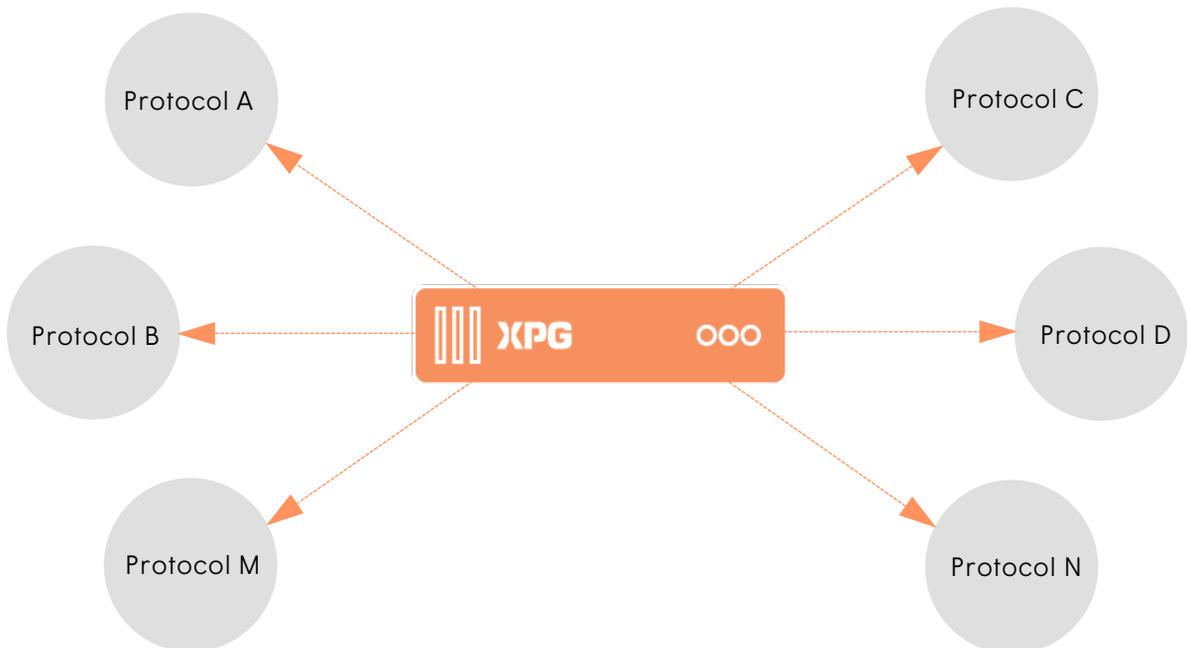


XPG

XPG (Secure StreamX Protocol Gateway) is a product line based on StreamBridge, a modular multi-protocol communication gateway, ISOS (Industrial Secure Operating System) and chosen hardware which is used for all communication applications, data processing and protocol conversion.



How does XPG work?



StreamBridge Gateway software module

StreamBridge is a secure multi-protocol communication gateway which allows to exchange information securely between a wide range of devices such as IEDs, remote control systems, RTUs or PLCs.

It runs on the operating system ISOS developed by Elvexys on various industrial PCs that are ISOS certified.

Benefits

- Allow communication between equipment of various kinds
- Data acquisitions, routing data to control command applications or local and/or remote control centres
- Secure data flows between multiple partners
- Wide range of products starting from an ultra-compact industrial PC (e.g. for remote acquisition like on smart grids) to rackmount servers or virtual appliances
- Process of a small to a large volume of signals
- High performance
- Full control of the Infrastructure
- Engineering optimisation of projects
- NTP Server
- Redundancy mode (hot-hot, hot-standby)
- Logging (circular memory, local storage available)
- Can be installed as software on an existing PC in your infrastructure

Protocols / Standard

- IEC 61850 Client
- IEC 61850 Server
- IEC 61850 File Transfer
- IEC 60870-5-104 Client
- IEC 60870-5-104 Server
- IEC 60870-5-104 File Transfer
- IEC 60870-5-104/IEC 62351-5 Security (Master/Slave)
- IEC 60870-5-101 Master
- IEC 60870-5-101 Slave
- IEC 60870-5-101 File Transfer
- IEC 60870-5-103 Master
- DNP3 TCP Client
- ICCP TASE.2 Client
- ICCP TASE.2 Server
- OPC UA Client
- OPC UA Server
- Modbus TCP Client
- Modbus TCP Server
- Modbus RTU Master (serial)
- Modbus RTU Slave (serial)
- EtherCAT Client
- Siemens S7 ISO TCP Client
- SAIA S-Bus Serial Master
- SAIA S-Bus TCP Client
- WAGO K-Bus Client
- Telegyr 065 Master
- Telegyr 8xx Master
- Telegyr 8xx Slave
- Tetraèdre TRMC Client SOAP
- MQTT Publisher/Subscriber
- REST API Client
- REST API Server

Technologies/IT Integration

- 3G/4G/5G
- HTTP(S) Server
- SSH Server
- LDAP-S Client
- Radius
- SFTP Client/Server
- SNMP Agent (v2c,v3)
- SNMP Client (v2c, v3)
- Syslog Client
- LoRaWAN[®] interface to NS
- VPN (OpenVPN, IPsec)
- NTP Client/Server

Configuration tools

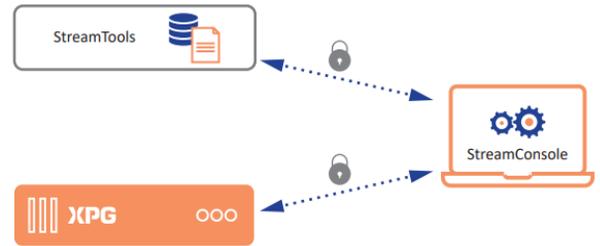
StreamTools, the gateway configuration tool, is based on client-server concept. It hosts the configuration of the gateway and can be accessed from any workstation through a web browser.

- Centralised configuration repository for your organisation
- Automatic project versioning
- Easy to use
- Secure access
- No maintenance or backup required
- Backup of the appliance on field
- Configuration by file import (signal list)
- Point to point configuration
- Validation of the configuration

Management tools

StreamConsole, the gateway management tool which provides a client the monitor to configure the gateway.

- Manage StreamBridge and ISOS
- Update configuration
- Update firmware
- Manage log files
- Start / stop of services



Hardware

		Mounting	IEC 61850-3 certified	Cellular Mode	IO integrated
	CX9020	DIN-rail			✓
	IG2	DIN-rail		✓	✓
	APU4DR	DIN-rail		✓	
	APU419	19"1U		✓	
	DA681C	19"1U	✓		
	DA820C	19"3U	✓		
	VM	Virtual Machine			

ISOS

Industrial Secure Opening System (ISOS) is a Linux-based OS built by our security experts embedding the minimum number packages to make it top secure, robust, fast, with a small footprint.

ISOS is designed specifically to run industrial communication gateway software like StreamBridge, a product developed by Elvexys which supports more than 20 protocols (IEC61850, IEC 60870-5-104, IEC 60870-5-101, etc.). More than 10 different hardwares, x86 or ARM, are currently ISOS certified.

Benefits

- Providing advanced hardware and system management, such as configuration of the network adapters, serial or USB interfaces
- Robust update mechanism allowing easy and reliable system updates over the network
- Comprehensive backup and restore solution offering a complete and reliable appliance recovery within a few minutes
- The cyber security is the heart of the design, i.e. read-only system core, encryption of the entire hard drive, IT-administration based only on secure protocols
- Seamlessly integration with any IT environment, whether through user management via LDAP or Radius, log management via syslog or system access via SSH
- Compatibility with X86 architecture, 32bit and 64bit, as well as ARM. ISOS has been certified on 10 platforms, ranging from the low-power on-board card to the multi-core virtual server and the 19" Industrial rack

Firmware history

State	Version	Timestamp	Description
1	Fallback		
2	ISOS v1.93	28.02.2017 01:12:33	Initial setup with USB key
3	Running, Active		
4	ISOS v1.94	06.10.2017 14:46:13	
5	PW 1.94		
6	Empty		

Network configuration

Name	Card	Slot	OS Status	Link Status	Configuration	Address	Subnet Mask
lan1	Intel Q10	Internal	Up	Up	Static	192.168.159.179	255.255.255.0

Name	Card	Slot	OS Status	Link Status	Configuration	Address	Subnet Mask	
bond0	Virtual		Bonding	Down	Down	Static	192.168.159.180	255.255.255.0
lan2	Intel Q10	Internal	Down	Down	BondingSlave			
lan3	Intel Q10	Internal	Down	Down	BondingSlave			
bond0.3	Virtual	VLAN	Unknown	Down	DHCP			

Time: Message

- 6/15/2018 10:33:38 AM SSH connection established
- 6/15/2018 10:33:38 AM Authentication succeeded
- 6/15/2018 10:33:37 AM Connecting to 192.168.159.179...

Specifications

Compatible hardware	X86 hardware: Lanner LEC-3031, MOXA DA- 681A, MOXA DA-720, MOXA DA-820, PC Engines APU2 ARM hardware: Beckhoff CX9020, MOXA UC-8100, Wago PFC100, Wago PFC200 Virtual appliance: OVA /OVF containers
Deployment	Easy initial deployment by USB key
Distribution kit	Create configuration template per-project specific for OS configuration
Software management	Remote access via graphical user interface through secure channel Remote command line interface via SSH Centralised multi-appliance management software available
User & Role	Local or LDAP/Radius directory user and group management Permission of privileged tasks
Network configuration	IP / DNS / Route / VLAN configuration Link aggregation management PRP Networking management (*Additional license)
VPN management IPsec & OpenVPN client integrated	IPsec & OpenVPN client integrated
Cellular management (*on supported models)	3G/4G Modem management Connectivity watchdog SMS handling
USB port management	Configuration of the activation / deactivation mode
Serial port management	Serial port configuration of the activation / deactivation mode
Log system	Logfile available sending events to one or more third-party syslog servers
Firewall	Integrated state-of-the-art firewall with logging feature Advanced functions of the network filters guarantee a high level of security
Safe firmware update process	Several slots maintain various firmware) configurations and allows reliable system update
Easy Backup / Restore	Zip archive backup file (system and firmware allows to resolve the whole equipment
NTP Server	ISOS can act as a time server synchronised itself via IEC protocols or GPS / Cellular
SNMP	SNMP SNMPv2c and SNMPv3 (traps too)