

Unidirectional Security Gateways

Airtight protection from external network attacks



- Industrial applications and data visible in business networks
- Assists in achieving NERC, NIST, CFATS and other regulatory compliance
- Hardware-enforced: information flow towards the industrial network is physically impossible
- Eliminates cyber threats and risks
- Eliminates firewall audit, configuration, management and documentation costs
- No change to working procedures – external users access high-fidelity replicas
- Partnerships with industrial vendors ensure product support

Overview

Waterfall Unidirectional Security Gateways replace firewalls in industrial network environments, providing absolute protection to control systems and operations networks from attacks originating on external networks. Unidirectional Gateway solutions come in pairs: the TX appliance contains a laser, and the RX appliance contains an optical receiver. The Gateway pair can transmit information out of an operations network, but is incapable of propagating any virus, DOS attack, human error or any information at all back into the protected network.

Waterfall Unidirectional Security Gateways have been deployed at hundreds of sites in all critical infrastructure and industrial sites world-wide. The technology has been verified by Idaho National Labs, who concluded that “the physics of the system prevent any data transmission from the low security enclave to the high security enclave.”

Modern businesses rely on access to real-time operations data for functions ranging from predictive maintenance planning and crew scheduling, to just-in-time inventory management and production visibility for end users. Waterfall’s Unidirectional Security Gateways provide access to real-time data, without introducing threats to operations networks which accompany firewall connections.

Server Replication

Waterfall agent software gathers data in real time from operations servers inside the protected network. The software transmits that data to the external network, and populates replica servers with the data

Waterfall provides out of the box replication capabilities for dozens of industrial applications, including process historians, process databases, control system servers, OPC servers, and low-level devices.

Replication solutions are also available for file servers, mail servers, print servers, SIEM servers and other components essential to the integration of modern operations networks with business networks.

The server-replication process is transparent to external users, and has no effect on the original operations servers. External users access and use the replica servers in the same way they accessed and used the original operations servers, without changing working procedures.

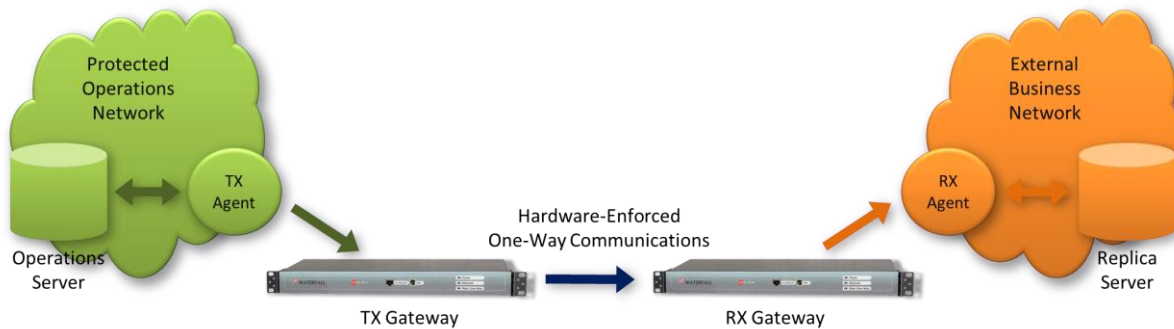
Waterfall has strong technical and commercial relationships with a wide variety of industrial vendors. Waterfall solutions have been tested in these vendors' labs, and the vendors support the use of Unidirectional Gateways with their industrial automation solutions.

Installation and Management

Waterfall's replication agent software can be installed on the Windows or Linux server of the customer's choice. Replication software components are straightforward to configure - each tends to have only a handful of configuration screens, unlike the hundreds of screens used to configure modern firewalls. A real-time monitoring console and alarming solution comes standard with the replication software, providing alarms in a wide variety of formats, including SNMP traps, syslog, Windows logging, email and a variety of control-system-specific formats.

Strong Security Supports Regulations and Saves Money

Waterfall's customers report substantial savings over conventional firewalls. Gateways reduce firewall configuration, auditing, training, and real-time monitoring / logging costs. In addition, customers in regulated industries report dramatic reductions in regulatory documentation costs associated with firewalls and the use of routable protocols.



Sample of Replication Solutions

Leading Industrial Applications/Historians

- OSIsoft PI System®, GE iHistorian, GE iFIX
- Scientech R*Time, Instep eDNA, GE OSM
- Siemens: WinCC, SINAUT/Spectrum
- Emerson Ovation, SQLServer
- Matrikon Alert Manager, Wonderware Historian

Leading IT Monitoring Applications

- Log Transfer, SNMP, SYSLOG
- CA Unicenter, CA SIM, HP OpenView
- Nitro SIEM

File/Folder Mirroring

- Folder, tree mirroring, remote folders (CIFS)
- FTP/FTFP/SFTP/TFPS/RCP

Leading Industrial Protocols

- Modbus, OPC (DA, HDA, A&E)
- DNP3, ICCP

Remote Access

- Remote Screen View™
- Secure Manual Uplink

Other connectors

- UDP, TCP/IP
- NTP, Multicast Ethernet
- Video/Audio stream transfer
- Mail server/mail box replication
- IBM Websphere MQ series
- Antivirus updater, patch (WSUS) updater
- Remote print server

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