

Waterfall for Modbus

Cyber Security Solution for Modbus Replication



- Secure, unidirectional replication of Modbus protocol
- Information flow towards the industrial network is physically impossible
- Eliminates cyber threats and risks from online attacks and human errors
- 1Gbps options
- Simplified NERC-CIP, NRC, NIST, CFATS and other regulatory compliance
- Supports multiple PLCs, RTUs and controllers
- Enhanced configuration of Modbus replication parameters

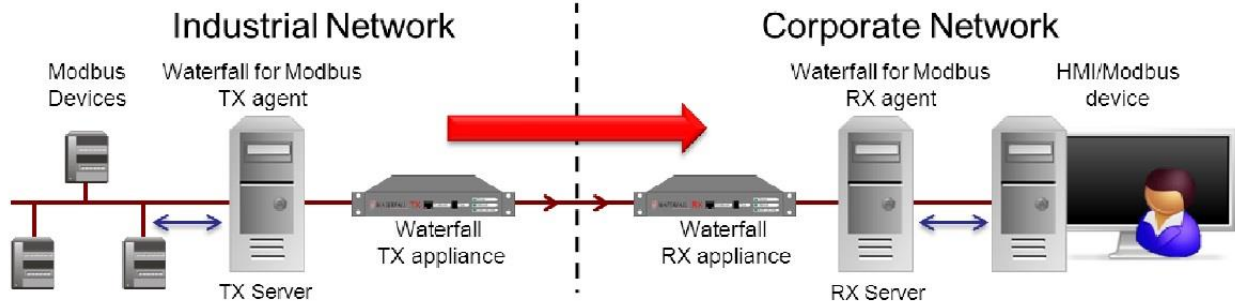
Overview

The Waterfall for Modbus solution comprehensively addresses the industrial need to utilize Modbus data originating from Modbus devices and controllers that are located in the industrial network. In doing so, Waterfall for Modbus maintains air tight cybersecurity of the industrial critical assets while achieving regulatory compliance when relevant.

Modbus Unidirectional Replication

The Waterfall for Modbus solution is based on patented Waterfall Unidirectional Gateway technology. It transfers Modbus data from multiple PLCs, RTUs, controllers and other Modbus devices and replicates that data to HMI stations located in the corporate network. Unidirectional Gateways are a combination of hardware and software. The transmit gateway hardware contains a laser, and the receive gateway hardware contains the photocell. A fiber-optic cable links the two gateways. As a result, the transmit gateway can send data to the receive gateway, but the receive gateway cannot send anything back. There is no laser in the receive gateway that could send any signal, and there is no optical receiver in the transmit gateway that could receive any signal. No online attack originating on an external network can pass back into a protected network through the gateway hardware.

The replication process is fully transparent to the users, and has no effect on any Modbus devices. Waterfall for Modbus supports real time replication of Modbus data from multiple Modbus sources. Therefore, users within the corporate network can efficiently monitor and evaluate operational processes in real time.



How does it work?

Waterfall for Modbus can be configured as a Modbus client or a Modbus server on each side of the Waterfall Gateway, supporting the variety of different Modbus implementation topologies. As a Modbus client, Waterfall for Modbus supports all Modbus Request Types which are required for data replication. As a Modbus server, the Waterfall for Modbus accepts and responds to variety of Modbus Request Commands.

Configuration options offered by Waterfall for Modbus enable full control of the replication process. Users can configure for example, Request Types to determine which messages to replicate. Device polling intervals and related parameters are also available for advanced users.

Installing and monitoring Waterfall for Modbus is done using configuration and monitoring applications allowing for fast and easy installation. Comprehensive diagnostics include real time alarms that alert the user of fault conditions via email, SNMP, log file and the Waterfall's monitoring console.

Highlighted Unique Features

Waterfall for Modbus™ supports a wide variety of features:

- Multiple PLCs, RTUs, controllers and any other Modbus device
- Fully compliant with the official Modbus over TCP/IP standard and the 32 bit extension
- Networks with heavy traffic handling hundreds of thousands of Modbus messages
- 1Gbps option
- All Modbus Request Types required for data replication
- Modbus Alerts Replication
- Server and Client modes on either side of the Waterfall gateway

Regulatory Compliance and Certifications

No misconfiguration of Waterfall for Modbus replication can impair the security provided by the gateway hardware. Installation of the solution results in reduced perimeter operating costs and costs of compliance with NERC-CIP, NRC, CFATS, NIST, ISA-SP99 and other standards, guidance, and regulations.

The Waterfall Unidirectional Gateway is certified Common Criteria EAL4+, and resistant to high attack potential. Waterfall's Unidirectional Gateways are the only unidirectional solution to pass a cyber security assessment by Idaho National Labs.

Specifications

Network Interfaces: 10/100 Base-T or 1000BaseT	Dimensions: 19"/ 482 mm (W), 1U/ 43.5mm (H), 10"/ 253 mm (D)	Temperature: Operating: 32°-122° F / 0°-50° C Storage: 14°-158° F / -10°-70° C	Humidity Range: 0-95% at 113° F/ 45° C, non-condensing
Weight: 3.86 lbs./ 1.75 Kg			

For further information, please contact us or visit our website: www.waterfall-security.com

USA T: +1 (703)-840-5452
F: +1 (703)-840-5401

International T: +972 3-900-3700
F: +972 3-900-3707

Information: info@waterfall-security.com
Sales: sales@waterfall-security.com

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