

# Waterfall FLIP<sup>™</sup>

Secure Communications for IT/OT Integration



- Stronger than firewalls - secures connections between IT and OT networks
- Supports continuous unidirectional monitoring and occasional reversal
- Configurable FLIP/unidirectional reversal specifications
- Supports the full suite of Unidirectional Security Gateway server replications
- Highly compatible with existing IT and OT applications

## Overview

Waterfall FLIP securely integrates Information Technology (IT) and Operations Technology (OT) control system networks. Modern enterprises transmit control system information to business networks continuously, and need to send information from business networks into operations networks occasionally – for example when sending control recipes into batch manufacturing systems or when sending anti-virus signatures and other security updates.

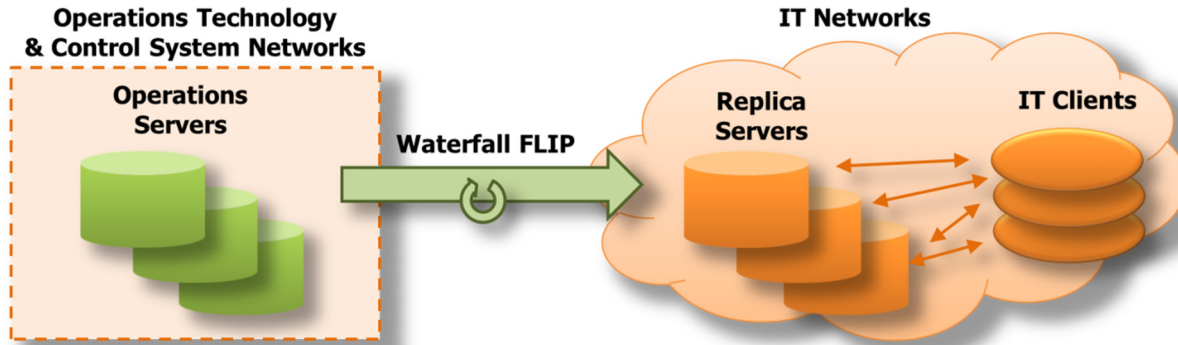
Waterfall FLIP is stronger than firewalls, providing industry-leading assurances for the safety, reliability and security of critical OT networks.

## Waterfall FLIP Concept

Waterfall FLIP<sup>™</sup> is a hardware-enforced Unidirectional Security Gateway whose orientation is reversible. The Waterfall FLIP is “pointed” so that it replicates OT servers to IT networks routinely. By schedule, or by exception, an independent control mechanism inside the protected OT network triggers the FLIP hardware to change orientation, allowing information to flow back into the protected OT network as needed.

## Stronger Than Firewalls

The FLIP is a Unidirectional Security Gateway. The FLIP contains a single TX Module and a single RX Module, connected by a single, short fiber-optic cable. As a result, the FLIP always transfers information unidirectionally – it can never establish a bi-directional connection.



The FLIP includes a governor, which limits the maximum frequency of reversals. The FLIP can never reverse direction quickly enough to support the interactive remote control sessions which are the foundation of modern attack patterns.

The FLIP's trigger mechanism, which reverses the FLIP's orientation, is completely independent of the data streams flowing through the FLIP and so cannot be compromised by any network attack on the FLIP.

The FLIP never forwards messages. As a result, no protocol-level attack, such as a buffer-overflow, or SQL injection or fuzzing attack can pass through the FLIP to compromise operations servers on industrial control networks.

### Highlighted FLIP Features

- Real-time replication of many kinds of IT & OT servers
- All of the features of Unidirectional Security Gateways
- Configurable FLIP conditions
- Compact 1u rack-mount device
- Configurable store-and-forward queues for inbound data
- Configurable payload content filtering
- Scheduled or randomized FLIP programming for software and security updates
- Continuous logging to enterprise SIEMs and log servers
- 1Gbps operation
- Optional High Availability

## Replication Solutions

### Leading Databases/Applications/Historians

- OSIsoft PI, PI AF, GE iHistorian, GE iFIX, AspenTech
- Scientech R\*Time, Instep eDNA, GE OSM
- Siemens WinCC, SINAUT/Spectrum, Emerson Ovation
- Matrikon Alert Mgr, Wonderware Historian, ClearSCADA
- SQLServer, MySQL, Postgres, Oracle, SAP

### Leading IT Monitoring Applications

- Log Transfer, SNMP, SYSLOG CA Unicenter, CA SIM
- HP OpenView, HP ArcSight, McAfee ESM & ePO

### File/Folder Mirroring

- Local folder, tree mirroring, remote folders (CIFS)
- FTP/FTFS/SFTP/TFTP/RCP/Rsync/SMB

### Leading Industrial Protocols

- Modbus, OPC (DA, HDA, A&E, UA)
- DNP3, ICCP, IEC 60870-104

### Remote Access

- Remote Screen View™, Secure Bypass

### Other connectors

- UDP, TCP/IP, NTP, SNTP, Multicast Ethernet
- Video/Audio streams, Netflow, SMTP
- IBM MQ, Tibco, Microsoft MQ, Active MQ
- AV updater, patch (WSUS) updater, OPSWAT
- Remote print server

**For further information and quotes, please contact us or visit our website: [www.waterfall-security.com](http://www.waterfall-security.com)**

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