

# Waterfall's WF-500 Modular Architecture

Flexible, Scalable, Field-Serviceable Unidirectional Security



- Expandable: add modules to deployed systems
- Compact: complete system in 1u rack-mount cabinet
- Scalable: supports powerful server-class hardware
- Field Serviceable: easily replace modules, cabinets, and servers
- Secure: supports physical separation between TX and RX components
- Compatible: supports all unidirectional integrations
- Audit Transparency: all inter-module connections are visible on the front panel

## Overview

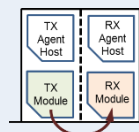
Waterfall Security Solutions' new WF-500 series modular hardware architecture provides unparalleled flexibility and scalability for Unidirectional Security Gateway deployments. The WF-500 series architecture consists of one or more half-depth or full-depth 1u rack-mount Waterfall WF-500 Cabinets, each populated with Waterfall Modules. The full-depth cabinet holds up to four standard Modules, and the half-depth cabinet holds up to two Modules. Waterfall Modules include:

- TX Modules
- RX Modules
- Linux/Windows Agent Host Modules
- 1Gbps Secure Bypass Modules

Each cabinet contains four power supplies, a redundant pair for each side of the cabinet. A physical divider separates the left from right sides of each cabinet, to make it clear that no cabling connections exist between the sides of the cabinet. All connections between Modules are via the front panel.

## Compact

A convenient, all-in-one solution including TX and RX Modules, as well as two Host Modules. The Host Modules run Waterfall software agents. An internal separator ensures that all connections between TX and RX components are clearly visible via the front panel.



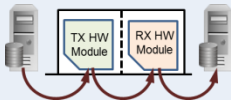
## Compact-Split

A compact solution when physical separation between TX and RX components is needed, including two half-depth cabinets, one containing a TX Module and a TX Host Module, and the other an RX Module and an RX Host Module. The two cabinets can be deployed in different racks or in different rooms.



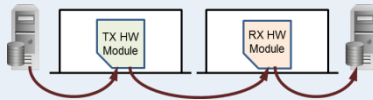
### Standard

A half - depth cabinet containing TX and RX modules only. Waterfall agent software is installed on customer-supplied servers, from the customer's preferred vendor. The servers can be as powerful as customers need, for example to run demanding third-party databases and other components as well as Waterfall agent software.



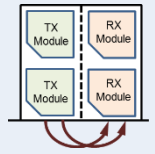
### Standard-Split

The Standard-Split configuration is the powerful, scalable, Standard configuration, split across two half-depth cabinets to support deployment in different racks, different rooms, or even different buildings. This configuration is the WF-500 Modular equivalent to the WF-400 product line.



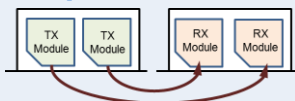
### Standard-HA

The Standard - High - Availability configuration allows customers to deploy Gateway software agents on clustered Windows or Linux servers from the vendor of their choice, of the capacity of their choice. All TX and RX Modules are deployed in a single full-depth 1u cabinet.



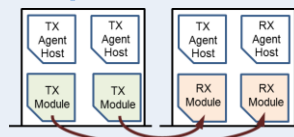
### Standard-Split-HA

The Standard-Split-High-Availability configuration allows customers to deploy Gateway software agents on clustered Windows or Linux servers from the vendor of their choice, of the capacity of their choice. TX and RX Modules are deployed in separate cabinets which can be deployed in different racks, or in different rooms.



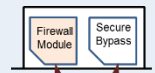
### Compact-Split-HA

A high-availability version of the Compact configuration deploys TX and RX Modules and their associated Host Module clusters in two different full-depth 1u cabinets, able to be deployed in different racks, different rooms, or even different buildings.



### Secure Bypass

When full remote access is needed, such as during plant evacuation emergencies, the Secure Bypass Module provides temporary network connectivity. The bypass is activated by a button or a physical key, and the module automatically disconnects again after a configurable interval. The Secure Bypass module augments Unidirectional Gateway solutions for emergency operations.



## Replication Solutions for the WF-500 Modular Architecture

### 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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