

OT/IT Unidirectional Replicator Agents



What is OWA Replicator Software Agents

OWA Replicator Software Agents (OWA-RA-SFW) **OT Edition** is an industrial-grade Software Suite designed to enable seamless, reliable data synchronization across OT and IT systems.

Unlike traditional replication tools that rely on end-to-end network connectivity, the OWA Replicator Agents implement a full application-level protocol break upstream of the optical Data Diode. Industrial and enterprise protocols are terminated at Layers 4 to 7, deconstructed into application-level data objects, and then safely reconstructed on the receiving side. This approach allows SCADA systems, historians, databases and OT applications to be replicated deterministically across strictly separated network domains. Working in close coordination with **OWA hardware unidirectional gateways**, the Replicator Agents complement the physical unidirectionality enforced at Layers 1 to 3 by the optical Data Diode with protocol-aware replication logic.

The result is a scalable, ecosystem-native replication layer that supports real-time and near-real-time unidirectional transfer of process data, alarms, events and historical archives, while preserving operational continuity and architectural separation.

DATASHEET OT EDITION

KEY CHARACTERISTICS

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Protocol-Aware Replication
 Native, application-level replication for SCADA, DCS, historians and industrial control systems
- 
Deterministic Data Delivery
 Reliable and deterministic transfer of time-series data, alarms, events and historical archives
- 
Real-time and Batch
 Supports continuous streaming and large-volume batch replication for operational and analytical workloads
- 
OT Ecosystem Connectivity
 Pre-built connectors for leading industrial systems and data sources, with no impact on existing architectures
- 
Edge-to-Enterprise Sync
 Replicates data from edge devices and controllers to enterprise and analytics platforms
- 
Store-and-Forward Resilience
 Built-in buffering, retry and replay mechanisms ensure continuity during downstream unavailability
- 
Modular Deployment Model
 Flexible agent deployment across OT, IT or alongside OWA core components
- 
High Availability Support
 Designed for high-availability and failover configurations in industrial environments ⁽¹⁾

(1) Not available for all Agents. Requires an additional OWA Replicator Agent Licence and a dual deployment.

Technical Specs

HARDWARE APPLIANCE

Ordering SKU	OWA-3U-1G or OWA-3U-10G
Mounting	19" Rack Mounting, Rack kit included, Sliding rails. 2U Rack Space for the two proxies +1U for the Optical Data Diode option
Dimensions & Weight	1G: H 42.8 mm W 482 mm D 548.13 mm 13.23 Kg / 29,17 Lb
By proxy server (x2) Without Data Diode	10G: H 42.8 mm W 482 mm D 816.92 mm 17.53 Kg / 38,64 Lb
Operating T°	5 °C to 45 °C (41 °F to 113 °F) with no direct sunlight on the equipment
MTBF	> 50 000 hr

NETWORK / CONNECTIVITY

Port / Interfaces	1G: 4x 1/10 Gbps (SFP+), 2x 1 Gbps (Copper)
By proxy server	10G: 4x 1/10 Gbps (SFP+), 2x 25 Gbps (SFP+)
USB / Other	2x USB-port - by proxy
By proxy server (x2)	1x VGA-port - by proxy
Max end-to-end Throughput	1 Gbps or 10 Gbps (depending on the chosen version) - True deliverable capacity
File Sending Benchmark	Above 1000 files of 125 KB sent /sec at 1 Gbps
Latency	0.6ms TCP, 0.7ms UDP, subject to

ELECTRICAL

Power	100-240 V AC
Power Supply	1G: 2x 600 W PSU (two per proxy)
By proxy server (x2)	10G: 2x 800 W PSU (two per proxy)
Avg Consumption	250 W

PROTOCOLS & OT SYSTEMS COMPATIBILITY

Industrial Protocols	MQTT, OPC UA/DA, Modbus, DNP3, IEC.104
Historians and similar OT systems	AVEVA Pi2Pi Replication AspenTech (InfoPlus21) Bently Nevada (S1) Emerson (AMS Optics) GE (OSM: On-Site Manager) Honeywell (Uniperformance PHD) Yokogawa (Data Historian)
Centralized Monitoring	Cisco Splunk (extended API integration) ArcSight (via SYSLOG) Generic SIEM integration via SYSLOG Generic SNMP Traps Screen view (via HDMI replicator)
Alarms & Events	Hexagon (PAS) Emerson (DeltaV AgileOps)
IT Protocols	UDP, HTTP/S API, SMTP
File Transfer	FTP / SFTP / FTPS MFT (Managed File Transfer), including: Live Folder & File Synchronization Windows File Share SMB, CIFS
Generic Data Transfer for DCS/SCADA applications	MS SQL / Oracle Database Replication (Incremental Backups) SQL Real Time Data Replication (Changes)

MANAGEABILITY, RESILIENCE & STANDARDS

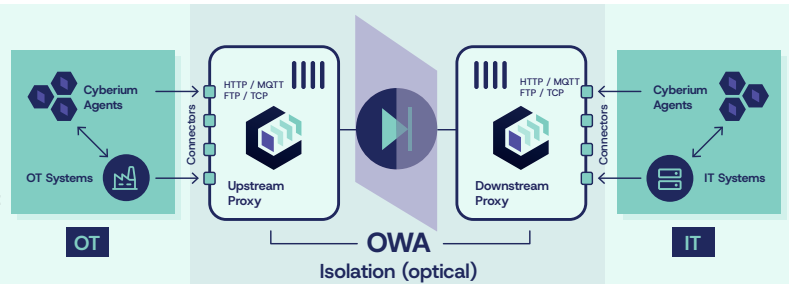
High Availability	Active/Active - automated fail-over with the purchase of a second OWA appliance + High Availability Option
Solution Monitoring	Either through Syslog OR Web GUI central console enables monitoring of traffic, health and performances, downstream of the proxy appliances
Logging	Every configuration change and every traffic is logged
Administration Account	Separated on the upstream and downstream proxies
Standards	Enterprise-Class Mission-Critical Hardware SE Hardened OS based on AlmaLinux

How does it work

OWA-3U-1G/10G is entirely compatible with Cyberium AGENTS, an exclusive Suite of OT/IT Software Replicator Agents⁽¹⁾

OWA / AGENTS combined architecture:

⁽¹⁾See Cyberium OWA AGENTS™ Datasheet for more details



OT Portfolio Overview

See also

OWA-1U-500M	500 Mbps	OWA-1U-1G	1 Gbps
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✓ OWA-3U-1G	1 Gbps	✓ OWA-3U-10G	10 Gbps
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19" Rack Mounting	1U Rack Space Single Power Supply per proxy
Security Isolation in-between proxies	Unidirectional Optical Link
Capacity	2 Concurrent Connectors Up to 1-hour ⁽¹⁾ traffic buffer ⁽²⁾
Industrial Protocols	Off-proxy appliance Replicator Agents
IT to OT WSUS updates	Not recommended as a Reverse Data Diode No Antivirus control available.

2U or 3U Rack Space	Redundant Power Supply per proxy
2U: Unidirectional Optical Link	3U: Optical & Passive (no power) Data Diode option with certification ANSSI qualified (FR) or EAL7+
Unlimited Concurrent Connectors	Up to 1-day ⁽¹⁾ traffic buffer ⁽²⁾ - ext. to 1-week ⁽¹⁾ option
On-proxy appliance Replicator Agents ⁽³⁾	
Recommended as a Reverse Data Diode with Dual Antiviruses option available	

(1) Buffer capacities are calculated based on an average traffic load at 1 Gbps bandwidth.
(2) Buffer enhances network resilience by enabling the automatic replay of past traffic during downstream unavailability, which remains undetected upstream due to the unidirectional link.
(3) Not applicable for all agents. Subject to limitations based on desired performance - please consult a Cyberium representative for more details.

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