



THE STORY OF WATERFALL SECURITY & UNIDIRECTIONAL GATEWAY TECHNOLOGY

Innovating cybersecurity for critical infrastructure and industrial sites

 **WATERFALL**[®]
Stronger Than Firewalls



Waterfall's technology has been assessed by the US Idaho National Laboratories, "The physics of the system prevent any data transmission from the low security enclave to the high security enclave."

Privately-owned since 2007, Waterfall Security has focused on protecting critical infrastructure and industrial control systems from online cyberattacks, becoming the leading cybersecurity vendor for industrial control systems (ICS) perimeter security. Waterfall Security's technology enables safe and reliable IT/OT integration, remote monitoring and diagnostics, and advanced cloud services.

Over the course of the last 30 years, connecting industrial control systems to the Internet and IT networks has become an essential part of business operations. This added connectivity provides many advantages to industrial engineers and to businesses overall, enabling real-time visibility into production systems and information.

The emerging wave of the Industrial Internet of Things (IIoT) has taken hold, promising unparalleled growth and performance gains to industrial systems. However, the additional interconnectivity of numerous sensors and devices, greatly increases the potential attack surface for cyber crime, and the vulnerability of every connected industrial site.

In addition, there has been a rapid growth both in the 'class' of attackers, as well as in their motivations to do harm. Modern attacks aim to disrupt production, cause downtime, demand ransomware, damage equipment, trigger environmental incidents, harm a company's brand or target human lives.

*Dale Peterson of Digital Bond,
"Waterfall's gateways stop all inbound attacks, firewalls don't. Full stop."*

Emerging best practices for securing the ICS network perimeter

Waterfall's vision is to make unidirectional technology the standard cybersecurity solution in all industrial control systems and critical infrastructure. Already considered as such by many regulatory and governmental agencies, here are some highlights:

A U.S. Department of Homeland Security (DHS) NCCIC/ICS-CERT report recommended unidirectional gateways for maximum protection from cyberattacks.

The North American Electric Reliability Corporation (NERC) CIP V5 standards encourage the use of unidirectional security gateways by providing exemptions from up to 30 percent of CIP compliance requirements for networks protected by strong, unidirectional perimeters.

France's National Agency for the Security of Information Systems (ANSSI) require hardware-enforced unidirectional security gateways.

Canada's new N290.7-14 standard requires the use of unidirectional gateways to protect the most safety critical Cyber Essential Assets.

The UK's Department of Transport issued guidance stating that signaling systems on rail networks should contain unidirectional gateways.

Traditional cybersecurity fails to provide protection to industrial control systems

While traditional IT security technologies such as firewalls, intrusion-detection and encryption promise protection, these solutions were designed to protect virtual data and information assets, but not physical infrastructure, machinery and the people who operate them. The security provided by these IT security solutions is based on software and logic. All software has bugs; vulnerabilities that can be misused and misconfigured, allowing attackers to gain access into networks and wreak havoc. IT security solutions, and specifically firewalls, fail when used to protect physical assets such as machinery or physical processes against sabotage or remote control attacks.

A Booz Allen Hamilton report, "When necessary for ultimate protection, consider unidirectional technologies for one-way data transfer from sensitive environment to authorized systems."

Unidirectional Security Gateways: The essence of 'Stronger-than-Firewalls'

Waterfall Security's mission is to revolutionize the way industries protect their physical assets and processes from cyber attacks. With patented unidirectional technology embedded in each product of Waterfall's portfolio, our customers are able to balance business and operational needs with their required level of cybersecurity. Business requirements are fulfilled, and operational processes continue in a safer environment without risks of remote attacks and malware propagation from the external connections secured by Waterfall's technology.

Waterfall's flagship product, the Unidirectional Security Gateway, creates an impassable, physical barrier eliminating the possibility of external online attacks from reaching the industrial environment. Through the Unidirectional Security Gateway, real-time access to information from the industrial site is made available, enabling IT/OT integration, operational visibility by headquarters, vendor monitoring, industrial cloud services, and many other advanced and critical business needs. Waterfall's Unidirectional Security Gateway is the enabling technology for all these operational requirements, while keeping the industrial control network out of reach from remote attacks.

The Waterfall Unidirectional Security Gateway replaces firewalls in the industrial network perimeter. The Unidirectional Security Gateway is physically incapable of propagating any virus, DOS attack, human error or any information at all into the industrial network. The Waterfall software agents, installed on each "side" of the gateway, gather data in real time from operations servers inside the industrial network. This data is then sent through the unidirectional medium to the external network, where it populates replica servers. The replication process creates fully updated, fully functional "mirror copies" of the operational system, accessible by external recipients to access the data or query the external replica servers.



Power



Oil & Gas



Water



Pharma



Transportation



Manufacturing

Immeasurable business benefits

Based on a wide array of Unidirectional Security Gateway products, Waterfall offers a comprehensive cybersecurity solution portfolio for a variety of business and operational requirements in many industries. Each solution enables business and operational processes to continue without risk of remote attacks, and does so cost effectively. Having eliminated interactive remote control attacks, industrial sites benefit from cost reductions at many levels.

Protection from remote attacks significantly lowers the risks of damage to a company's brand, operations, human life or the environment. Maintenance costs of the Waterfall technology are dramatically lower than any alternative. In addition, using Waterfall's technology reduces the costs and facilitates compliance with various governmental regulations and best-practice recommendations such as NERC CIP, NRC, NIST, CFATS, ANSSI and others.

Waterfall's gateway products are provided 'off-the-shelf', with integral support of the market's widest array of industrial systems, including the OSIsoft PI™ Historian, Schneider Electric's ClearSCADA, AspenTech IP.21, the GE Proficy™ iHistorian, Siemens SIMATIC™/Spectrum™ solutions, GE OSM™ remote monitoring platforms, as well as OPC, Modbus, DNP3, ICCP and other industrial and IT protocols.

Customers and strategic partners

Waterfall's global list of customers include national infrastructure, industrial sites and manufacturing plants, and covers most industrial segments including nuclear and conventional power plants, on/off-shore platforms, refineries, manufacturing plants, water and wastewater facilities and many other industries that require the highest level of security available.

Waterfall's strategic partnerships with vendors, multinational conglomerates and systems integrators in manufacturing, automation and other parallel industries dramatically widens the company's coverage of additional regions and industries.

The company's headquarters are in Israel with sales and support offices located in North America.

A spectrum of products to fulfill a variety of needs

Every Waterfall product is embedded with unidirectional technology for ultimate cybersecurity protection from remote online attacks:



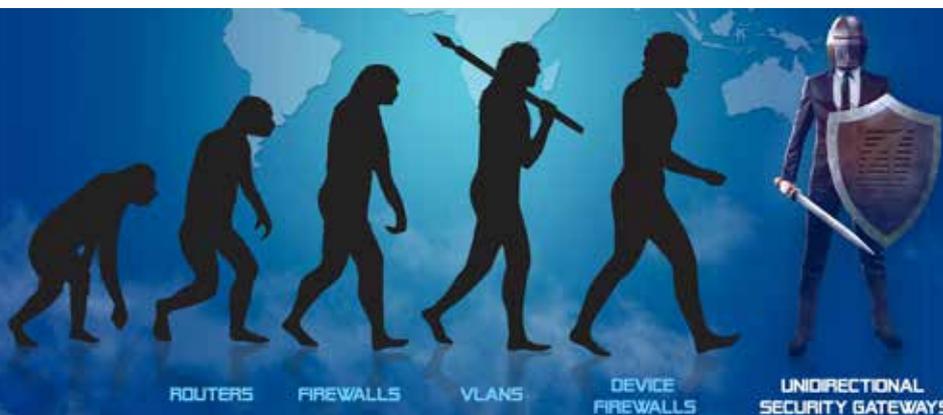
Unidirectional Security Gateway™

FLIP®

Secure Bypass

Unidirectional CloudConnect™

Waterfall BlackBox™



For more information:

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