SOLUTION BRIEF

Securing the Maritime Industry

Fortinet cybersecurity enables and protects Maritime 4.0

Maritime 4.0 Challenges

The digital transformation initiative propelling Maritime 4.0 forward is revolutionizing the shipping industry. This digital revolution can make all the difference in ensuring a shipping company's future viability and competitive edge by way of optimizing ship operations and voyages, improving ship system efficiency, lowering its environmental footprint and reducing fuel consumption and costs.

However, what does digital transformation actually entail for the maritime industry?

- Increased networking and connectivity (e.g. ship-to shore communications, IT-OT connectivity, remote control of offshore and onboard operations, cloud applications, etc.)
- Ship bridges as automation control centers (e.g. navigation, cargo information or declaration, administrative data, etc.)
- Smart ships and intelligent fleets (e.g. route planning, unmanned shipping, the EU Sea Traffic Management initiative seeking to synchronize shipping operations using communications, networking and Big Data)
- Intelligent and linked sub-systems using industrial automation (e.g. ballast water system, alarm and monitoring systems, etc.)
- Unifying network technology for advanced ship systems (e.g. in the case of reefers, allocating ship costs according to the source rather than uniformly distributed).

Nonetheless, as shipping companies execute their digital transformation strategy, their business and systems naturally become more open and connected. As a result, the attack surface expands increasing their vulnerability to cyber threats. Furthermore, the complex and distributed nature of a shipping company's network environment, with each area having its own unique set of IT requirements, introduces security gaps favoring the proliferation of cyberattacks. Moreover, the critical control systems that ensure the safety and smooth running of operations aboard a ship are increasingly under attack. Because of their connectivity to IT environments, OT systems have become visible to hackers allowing them to exploit the security vulnerabilities within their environment.

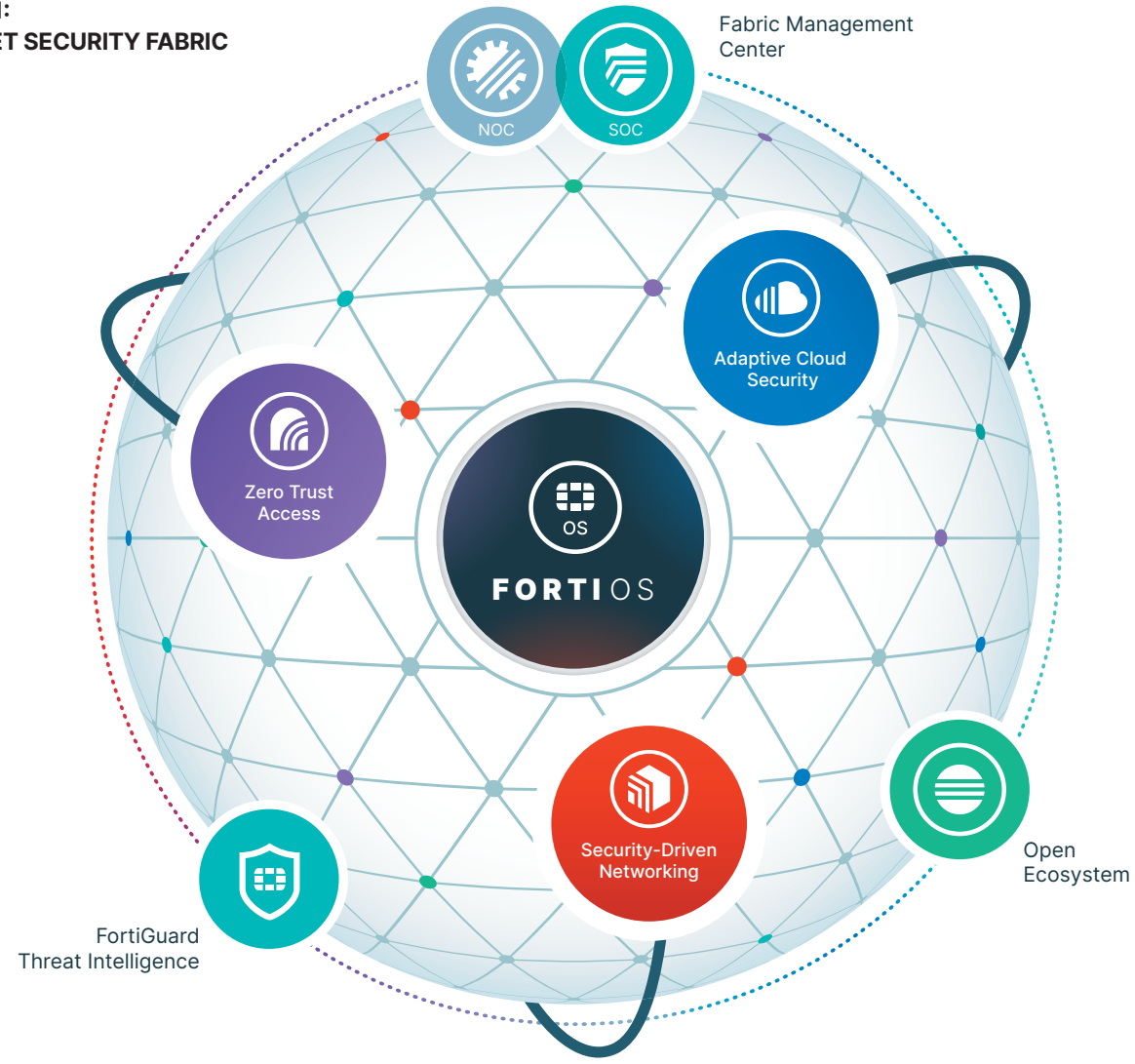
Transforming Cybersecurity

In order to support these new technologies and securely adopt them, the maritime industry needs to rethink its security posture and move towards a seamless and comprehensive cybersecurity strategy. As shipping companies adapt their IT and OT infrastructure to account for digital transformation, they must also undergo a security transformation to protect against the evolving cyber threat – the biggest risk to digital transformation. Fortinet provides companies in the maritime industry with a proactive and transformative approach to cybersecurity, the Fortinet Security Fabric (Figure 1) which promises security that is Broad, Integrated, and Automated.

Highlights

- Comprehensive and Unified Security Solution
- Robust Visibility & Protection
- Unified Management
- Simplified Deployment
- AI-Driven Threat Intelligence
- Intelligent Network Segmentation
- Secure SD-WAN
- Safeguard Critical Infrastructure & OT/IT Connectivity

FIGURE 1:
FORTINET SECURITY FABRIC



Broad

Visibility and protection of the entire digital attack surface to better manage risk.

Integrated

Solution that reduces management complexity and shares threat intelligence.

Automated

Self-healing networks with AI-driven security for fast and efficient operations.

The Fortinet Security Fabric in Action for the Maritime Industry

From secure SD-WAN access to intelligent network segmentation, the Fortinet Security Fabric ensures that critical resources and data are protected, business activities are uninterrupted, and operational costs optimized.

Single Box Solution

FortiGate firewall solutions are compact, cost-effective, all-in-one security appliances ideal for shipping networks. They include highperformance firewall, Virtual Private Network (VPN) functionality, Intrusion Prevention System (IPS), application control, URL filtering, antivirus, antispam and integrated wired and wireless capabilities — and are easily managed via a single console.

Ease of Deployment

Fortinet's solution for the maritime industry addresses one of the major issues in a shipping company's environment- easily deploying technology to multiple remote ships within a fleet with no on-site expertise. Through the use of FortiDeploy, Fortinet's cloud based deployment and management solution, remote ships within a fleet can be easily configured centrally. Once shipped to the remote location all that is required is to plug in the cables and power it on.

Intelligent Network Segmentation

With Fortinet's solution, segmenting the network and devices is about assigning policies and managing risk:

Identify Risk: With Fortinet's intelligent segmentation, users, data, devices, locations, and a host of other criteria can be used to identify categories and assess risk.

Manage Policies & Devices: The Fortinet solution can provide the granularity to see all device activity and set policies appropriately. It also has the flexibility to set policies by type of device or by users and traffic type.

Exert Control: The Fortinet solution can secure critical network zones and grant device privileges, based on the risk profile, without compromising other segments of the network.

Unified Management

Day to day management of the Fortinet solution is simplified by a single pane of glass management capability. Regardless of the mix of products or configuration at an individual site, all aspects of control and configuration are handled centrally to reduce complexity and improve day to day operations.

Secure SD-Wan

Fortinet makes it easy to deploy and manage the right security in all the right places with our secure Software-defined WAN (SD-WAN) solution. The solution links network and security paths across the world through the Internet, 3G/4G, or SATCOM links, making it a truly borderless infrastructure. It provides application visibility for encrypted traffic and smart load balancing which helps to reduce WAN cost without impacting the SLA for business applications.

Real-Time Actionable AI-Driven Threat Intelligence

Powered by FortiGuard, Fortinet's solution for the maritime industry receives tailored threat intelligence data to mitigate malicious activities. The consolidated architecture enables fast reaction times to security incidents. With each Fortinet appliance receiving security updates from FortiGuard, elements can rapidly exchange threat intelligence ensuring that end-to-end; seamless security and coordinated actions are maintained for an automated response to threats. The power of FortiGuard is the culmination of people, in house and patented technology and experience.

Safeguarding Critical Infrastructure

The Fortinet solution unifies the best of current IT network security capabilities with an extensive understanding of the OT world and its processes and protocols by providing:

- Secure Physical to Digital Transformation
- Top-rated, industrial-control-specific protection from advanced threats
- Broad Visibility
- Integrated Detection
- Automated Response

Fortinet for the Maritime Industry

Fortinet solutions are designed for zero touch deployments and seamless integration of multiple technologies with the operational efficiency that is critical for day-to-day shipping operations. Connectivity is at the heart of the shipping environment – wireless and wired networks must be secure, reliable, and easy to deploy and manage. Extending onshore security policies to the vessel is a critical part of protecting against advanced threats and must be an inherent part of a shipping company's network architecture.

Summary

Fortinet's solutions allow shipping companies to ensure that the vessel's systems enable operations and do not impact everyday activities. Once in place, these solutions provide a platform for future growth with minimum disruption. Securing Maritime 4.0 is more than just securing a ship against cyberattacks; it also entails crew safety and the operational safety of the ship.

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