Tofino Xenon GOOSE Enforcer Loadable Security Module (LSM)

GOOSE Deep Packet Inspection (DPI) Module

The Tofino Xenon Generic Object-Oriented System Events (GOOSE) Enforcer module provides real-time validity checking and content inspection for GOOSE traffic, ensuring your control devices receive only approved commands from authorized sources.

+ **Simplify compliance to safety and security standards** with superior protection against attacks and misconfigurations.

+ **Reduce downtime, maintenance costs and production losses** by managing large deployments of data from a central location.

+ **Improve system reliability and stability** through superior integration capabilities with Tripwire solutions.

Key Features

- Delivers unique DPI technology for all protocols
- Enables control specialist to define a list of allowed GOOSE PDU parameters such as sequence numbers and stream numbers
- Automatically blocks and reports any traffic that does not match established rules
- Performs protocol 'sanity check' to block any GOOSE traffic not conforming to the standard
- Supports multiple master and slave devices
- Leverages new syslog view for holistic network security and simplified maintenance
- Provides the ability to centrally manage Tofino Security solutions along with other network assets using Tripwire

GOOSE Master

GOOSE Slave

Tofino™ GOOSE Enforcer

The Tofino Xenon GOOSE Enforcer LSM offers advanced security features and simplified integration capabilities to bring efficiency and reliability to large-scale deployments, especially in energy and utility markets.

Be certain.
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Your Benefits

Secure and Scalable Communication Across the Network

As industrial networks and devices become more connected to external networks, the potential to expose GOOSE messages and IEC 61850 traffic – a global standard for communication networks and systems within substations – to outside intruders increases exponentially.

The Tofino Xenon GOOSE Enforcer LSM enables DPI capabilities for GOOSE traffic. The enforcer applies multiple security standards and defensive layers to GOOSE messages, including authentication of data transfers through digital protocol validation, prevention of eavesdropping and spoofing and intrusion detection.

These defensive protocols protect networks against harmful attacks, such as ARP, MAC flooding, spanning-tree, multicast brute force and other VLAN-related attacks. The strict latency requirements (sending real-time data transmissions between devices within 4 ms) and DPI capabilities prevent any malicious, malformed or out-of-sequence packet to pass through protected networks.

Applications

With many new capabilities, the Tofino Xenon GOOSE Enforcer LSM is best suited for sectors that require enhanced DPI to prevent malware and Man-in-the-Middle attacks, as well as ones that support large network communication, SCADA Master Station protection and NERC CIP compliance. With improved time-saving features, seamless integration onto existing networks and enhanced security, the solution is ideal for networks that rely on long-distance communication between sending and receiving devices, such as substations and control centers.

Markets

The Tofino Xenon GOOSE Enforcer LSM is designed to protect equipment and systems that use GOOSE messaging, and in particular substation automation and other utility applications. The Tofino Xenon GOOSE Enforcer LSM can be used in conjunction with other Tofino Xenon Enforcers to provide comprehensive protection for a wide range of industrial protocols and devices and to span other applications including the transportation, manufacturing, machine building, food and beverage, and water/wastewater markets.

The Tofino Xenon GOOSE Enforcer LSM makes sure that the only GOOSE commands your control devices receive are approved commands from authorized sources.

Technical Information

Type	Description
Supports Multiple Connections	Multiple master and slave GOOSE devices are supported with a unique set of inspection rules and options for each master/slave connection
Default Filter Policy	Deny by default: any GOOSE Frame with destination MAC address not in the broadcast or multicast range is automatically blocked and reported. Also all GOOSE Frames with source MAC address that is not on the 'allowed' list are automatically blocked and reported.
User-settable Options	The following options may be set on a per-connection basis: • Enable sanity check on PDU data length and field value • Enable system to check if the packet source is remote otherwise the Enforcer treats the packet to be local for deep packet inspection • Enable a sequence check on incoming PDU packets with the same application id.
Configuration Method	Simple configuration using the Tofino Configurator
Throughput	2000 packets per second with full content inspection
Operating Modes	All standard Tofino modes supported: • Test: all traffic allowed; alerts generated as per user rules • Operational: traffic filtered and alerts generated as per user rules
Security Alerts	Reports security alerts to a syslog server and to non-volatile memory on a Tofino Security Appliance
System Requirements	• Tofino Xenon Industrial Security Appliance. This new enforcer cannot be run in older systems. They will work for existing Tofino Xenons in the field • Tofino Firewall/Event Logger LSM • Tofino Configurator version 3.2
Ordering Information	**Part number: LSM: 942-140-008** **Name: Tofino Xenon GOOSE Enforcer LSM** For additional information, visit: www.belden.com/products/industrialnetworking/security/tofino-xenon.cfm

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.belden.com

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