



FSP 150 ConnectGuard™ Ethernet

Lowest latency and highest throughput for secure Ethernet connections

With more and more data and applications moving into the cloud, enterprises are becoming increasingly concerned about the privacy and integrity of the connectivity network. Communication over untrusted networks is no longer an option. With ConnectGuard™ Ethernet encryption, connections can be secured without impacting performance and latency.

What is ConnectGuard™ Ethernet encryption?

Specified by IEEE, 802.1AE MACsec is a method for protecting the confidentiality and integrity of Ethernet connections. This standard specifies a technique for securing links between nodes, decrypting incoming and encrypting outgoing traffic. This hop-by-hop mode provides an efficient solution for greenfield deployments but does not allow a seamless roll-out of secure Ethernet connections over existing networks. ConnectGuard™ Ethernet, an extension of MACsec, resolves this shortcoming by adding a solution for end-to-end security over legacy Ethernet networks. It performs IEEE 802.1AE standard-based frame format with optional VLAN tag bypass.

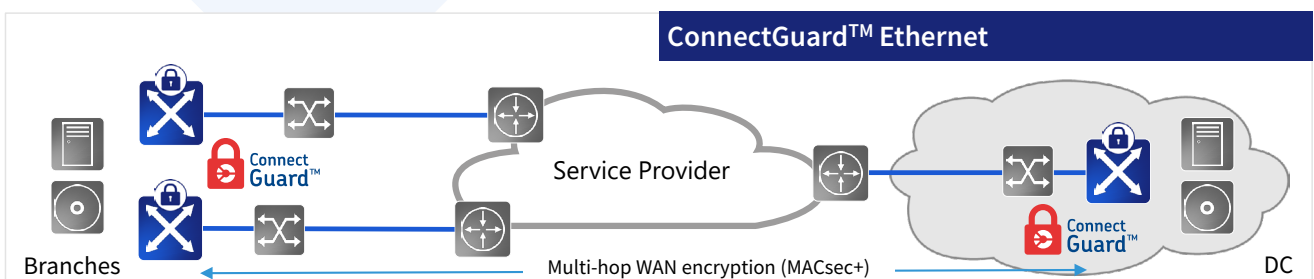
ADVA ConnectGuard™ solution suite

Our innovative ConnectGuard™ security solutions provide protection at any network layer. Our ConnectGuard™ Optical encrypts high-bitrate optical traffic at line-rate. With ConnectGuard™ Cloud, a server-hosted security solution can be easily introduced on virtualized networks. While ConnectGuard™ Ethernet secures Ethernet P2P and Ethernet LAN connections with best performance and lowest latency.

ADVA ConnectGuard™ makes any network connection secure. With our common FSP Network Manager management suite including CryptoManager, security associations and credentials can easily be managed even in heterogeneous scenarios.

Your benefits

- ✘ **Confidentiality and integrity**
Protecting Carrier Ethernet services such as MEF EVCs with highly secure AES 256 encryption
- ✘ **Highest performance and lowest latency**
Encryption of Ethernet traffic with line-rate performance for highest throughput
- ✘ **End-to-end protection**
Applicable on individual links as well as securing end-to-end connections
- ✘ **Ease of use**
Automated, secure authentication of devices eliminates need for manual configuration
- ✘ **Full integration into standard public key infrastructure (PKI)**
SCEP-based automated certificate handling for highest security avoiding manual interaction
- ✘ **CryptoManager™**
Strictly separated encryption domain manager common to any ConnectGuard™ solution



Responding to cyber security risk

In our globally connected world, cyberattacks have become an ever-increasing risk for service providers, enterprises and governments. Data transported over public networks must be protected to meet privacy and integrity requirements and to ensure compliance with existing and emerging regulation.

When mission-critical and personal data is transported over untrusted networks, security breaches can be extremely harmful. The damage caused includes not only lost revenues, liabilities and fines but also the intangible cost of stolen intellectual property or ruined credibility. This amounts to far more than the investment required to secure connectivity networks.

Our FSP 150 ConnectGuard™ Ethernet provides a secure and robust solution to protect data transported over untrusted networks. It can be applied in point-to-point as well as in multi-point scenarios. As standard Carrier Ethernet interface technologies are applied, the security solution can easily be rolled out over legacy networks.

Our FSP 150 ConnectGuard™ Ethernet solution is developed in compliance with most stringent security standards, such as the US Federal Information Processing Standard (FIPS) 140-2, issued by the National Institute of Standards and Technology (NIST).

Full integration into PKI

Public key infrastructure (PKI) reduces security risks associated with business processes. It safeguards electronic data in strategic areas, such as healthcare, finance or national security. Just like our ConnectGuard™ Optical, our FSP 150 ConnectGuard™ Ethernet technology has been engineered to work in this environment, where an efficient and secure interworking with third-party solutions is required. Automated processes for complex and time-consuming tasks such as mutual authentication, key rotation or service provisioning, make the operation of our FSP 150 encrypted connectivity simple. This significantly reduces complexity and minimizes operational costs.



“ConnectGuard™ encryption turns an untrusted network into a secure platform for your mission-critical communication”

High-level specifications

- ✘ Hardware-based MACsec encryption with IEEE 802.1AE standard-based frame format and optional VLAN tag bypass
- ✘ Peer-to-peer Ethernet connection encryption over MACsec-agnostic networks
- ✘ Physical device security for secure storage of key materials with tamper detection and response circuitry
- ✘ Minimum overhead (24 bytes) to maximize throughput and minimize delay
- ✘ Secure 1GE and 10Gbit interfaces with demarcation devices and edge compute nodes
- ✘ Password-authenticated Diffie-Hellman key exchange protocol securing against man-in-the-middle attacks
- ✘ Advanced encryption standard IEEE 802.1AE-2006-compliant GCM-AES-128 and IEEE 802.1AEbn-2011-compliant GCM-AES-256 NIST-approved cyphers
- ✘ FIPS 140-2 L2-compliant design with certification process in progress

Making Ethernet secure

Ethernet is the most widely used interface and switching technology in public and private networks. In recent years, a huge amount of investment has gone in to building those networks. However, security has not been designed into most current installations.

ConnectGuard™ Ethernet leverages this installed base and adds security in the most cost-efficient way. On a per-connection basis, a service provider can decide to offer connectivity as a conventional or higher-value secured bandwidth service. FSP 150 ConnectGuard™ Ethernet is applied with our demarcation and edge aggregation products as well as our edge compute nodes responding to the specific security needs of virtual networks.

Our FSP 150 ConnectGuard™ Ethernet has been successfully applied with major communication service providers as well as operators of critical infrastructures.