| Bi-directional Security Gateway |

Technology Overview

Terafence is proud to offer a unique, secure, and innovative network security appliance – **Terafence Bi-directional Gateway.**

Terafence manufactures Cyber Security hardware products to allow security architects the freedom in protecting their networks as needed.

Terafence **BSG** is designed to provide a better-then-ever security by filtering LAN traffic via Terafence's propriety FPGA.

Terafence **BSG** allows network architects to define traffic patterns through the device with total assurance that any hacking attempts fail due to galvanic separation and super strong appliance architecture.

Terafence **BSG** utilizes 2 proprietary FPGA data diodes by Terafence to create an appliance that is protocol agnostic and yet extremely safe and secure.

Only pre-defined traffic can pass through without allowing direct TCP/IP sessions between client and server filtered by hardware-based traffic filters. Optional Firewalls may add solution hardening

Why choose BSG ?

Key Features:
- Total galvanic network separation
- Terafence proprietary hardware chip (FPGA)
- Totally transparent to network
- TCP/IP Protocol agnostic
- Full TCP/IP bi-directional protocols support
- Total control over passthrough LAN traffic
- Hardware-based Packet filtering and optional
- Firewalls at each device end
- Ability to determine session initiation direction (Client – Server)

Security Features:
- Hardened Linux Operating System on the integrated CPUs
- Core security hardware has no OS, no MAC/IP
- Secure unit access (HTTPS) to GUI with the encryption keys

Technical Specifications:
- **Data Throughput:** 1 Gbps
- **Power Supply:** 12VDC/18Amp MAX 230 Watt
- **Network Ports -** 2xRG-45 CAT5E ports
- **Desktop or Rackmount**
- **Operating temperature –** (0) ~ (+ 60 °C)
- **In-door use only**

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Solution Highlights :

- Total Galvanic, physical network separation, hardware based on Terafence's proprietary chip.
- Solution includes 02 integral CPUs (Linux).
- Invisible to network, simple-to-use, easy configuration using HTTPS GUI.
- 1 Gbps backplane ; Small footprint; No hidden costs.
- All-in-One solution, no additional HW/SW required.
- Stand-alone unit, not interacting with external entities.
- Simple configuration via secure HTTPS internal webservice GUI.
- Hardware Packet filtering and optional Firewalls at each device end.

Technical Specifications

- **Processor -** Intel® i3/i5/i7/i9 CPU
- **Memory –** 8 to 32GB
- **Network -** 2 x Intel® 10/100/1000 Mbps
- **Measurements:** (1U) 44 x 430 x 353 mm
- **Desktop, Rack Mounting**
- **Operating Temperature :** 0 ~ 60 °C (- 40 ~ 185 °F)
- **Storage Temperature :** -20 ~ 80 °C (- 40 ~ 185 °F)
- **Non-condensing Relative Humidity :** 10 %-95 %, 40 °C
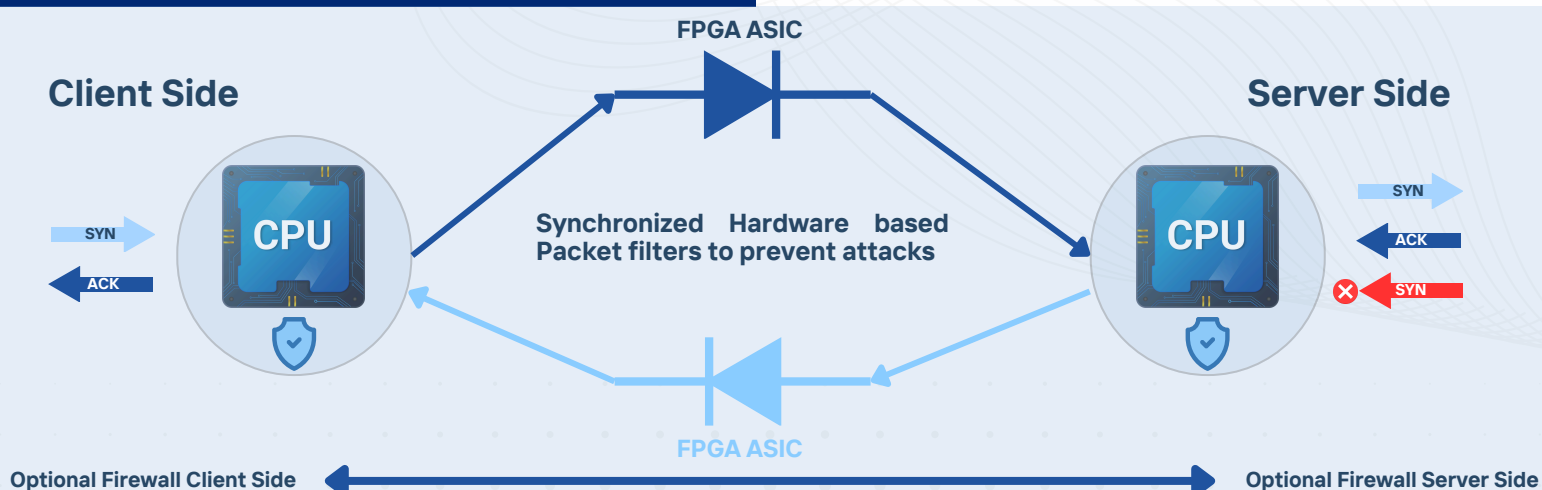- **CE & FCC Class B**

FPGA ASIC

Client Side

Server Side

CPU

CPU

SYN

ACK

SYN

ACK

SYN

Synchronized Hardware based Packet filters to prevent attacks

FPGA ASIC

Optional Firewall Client Side

Optional Firewall Server Side

Figure. BSG Architecture