![NETWORK INNOVATIONS]

![peplink]

Fiber • Cable
Fiber • DSL
MPLS • LTE
SpeedFusion • LTE
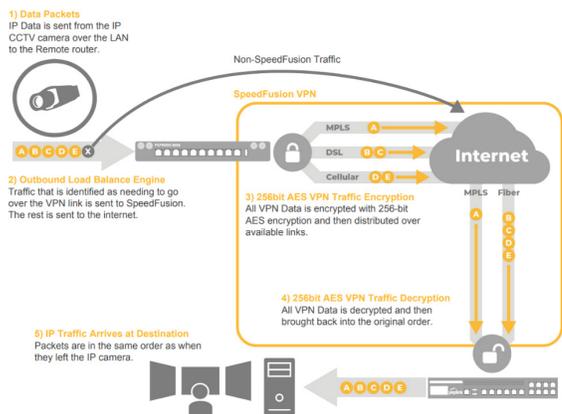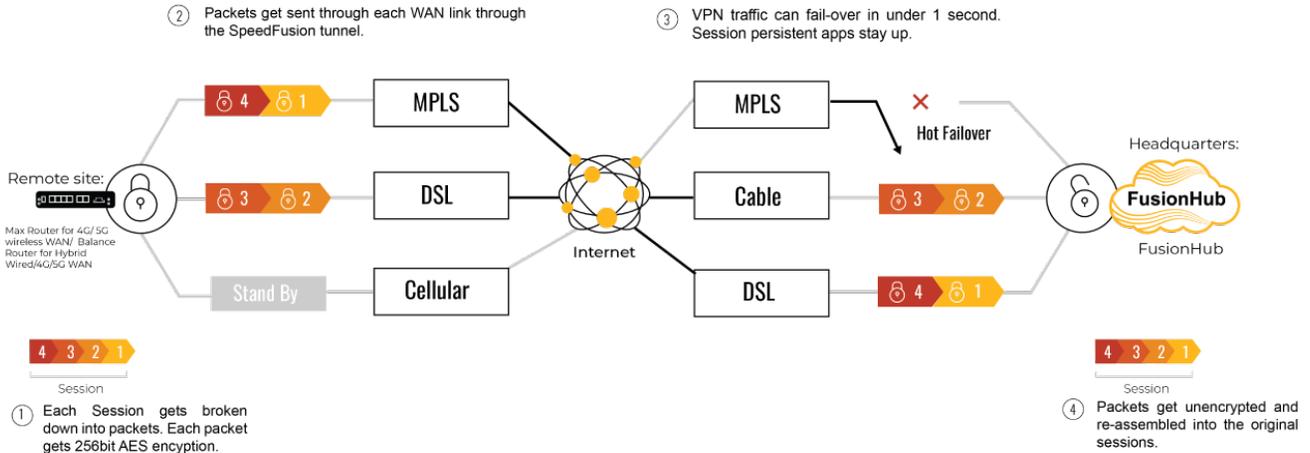Headquarters • Remote Site
VPN

Peplink SpeedFusion™

Peplink's patented SpeedFusion technology powers enterprise VPNs that tap into the bandwidth of multiple low-cost cable, DSL, 3G/4G/LTE, and other links connected anywhere on your corporate or institutional WAN. Whether you're transferring a few documents or driving real-time POS data, video feeds, and VoIP conversations, SpeedFusion pumps all your data down a single bonded data-pipe that's budget-friendly, ultra-fast, and easily configurable to suit any networking environment.

How Does it Work?

Once the bandwidth bonded SpeedFusion tunnel is formed, sessions are broken down and the resulting packets are sent separately across as available WAN-to-WAN connections. Because each WAN-to-WAN connection is encrypted separately, potential hackers would need to obtain the key to every WAN-to-WAN connection before they stand a chance of accessing the data contained within. This makes SpeedFusion SD-WAN technology virtually impervious to man-in-the-middle attacks.

② Packets get sent through each WAN link through the SpeedFusion tunnel.
③ VPN traffic can fail-over in under 1 second. Session persistent apps stay up.
Remote site:
Max Router for 4G/ 5G wireless WAN/ Balance Router for Hybrid Wired/4G/5G WAN
MPLS / DSL / Cellular
Stand By
Internet
MPLS / Cable / DSL
Hot Failover
Headquarters: FusionHub
FusionHub
Session
① Each Session gets broken down into packets. Each packet gets 256bit AES encyption.
Session
④ Packets get unencrypted and re-assembled into the original sessions.

1) Data Packets
IP Data is sent from the IP CCTV camera over the LAN to the Remote router.
Non-SpeedFusion Traffic
SpeedFusion VPN
MPLS / DSL / Cellular
Internet
2) Outbound Load Balance Engine
Traffic that is identified as needing to go over the VPN link is sent to SpeedFusion. The rest is sent to the internet.
3) 256bit AES VPN Traffic Encryption
All VPN Data is encrypted with 256-bit AES encryption and then distributed over available links.
4) 256bit AES VPN Traffic Decryption
All VPN Data is decrypted and then brought back into the original order.
5) IP Traffic Arrives at Destination
Packets are in the same order as when they left the IP camera.
MPLS / Fiber

Bandwidth Bonding

Bandwidth bonding combines data at the packet level, enabling you to combine the speed of multiple connections. This is useful for situations where bandwidth is scarce, such as at a remote site, or in a moving vehicle. This technology also enables branch offices to connect to the head office at greater connection speeds.

One of SpeedFusion's most powerful features is that it can use multiple WAN links to create a single logical VPN tunnel between devices.
This allows SpeedFusion bonding to provide two key functions: bandwidth aggregation and VPN reliability. All WAN links connected to a SpeedFusion- enabled device can simultaneously work together as a single logical VPN connection. If a link fails, SpeedFusion can detect this failure and seamlessly redirect traffic, at a packet level, across other available links. This WAN link failure detection at the packet level allows Bandwidth Bonding to provide VPNs with highly reliable and resilient site-to-site connectivity.

Peplink SpeedFusion™

WAN Smoothing

WAN Smoothing utilizes intelligent algorithms to fill in connectivity gaps, trading bandwidth for greater connection resiliency. WAN Smoothing minimizes latency and reduces the impact of packet loss. For instance, when live broadcasts are jittery due to packet loss, WAN Smoothing sends redundant packets through multiple network channels simultaneously, instantly filling in the gaps in data and eliminating the effects of packet loss.
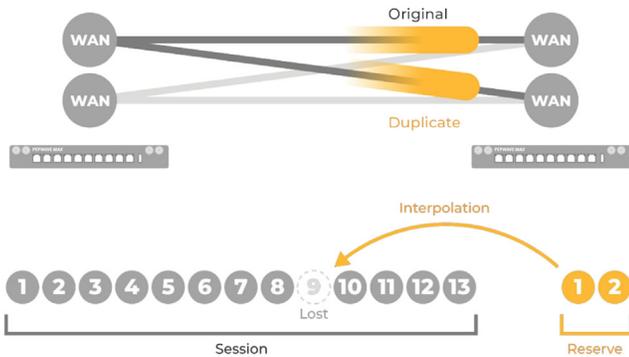
- **Consistency:** WAN Smoothing consumes more bandwidth than Bandwidth Bonding, but increases connection consistency. Use it when you need consistent delivery of time-sensitive traffic.

- **Adjust Smoothing Strength:** Adjust the amount of extra bandwidth to use for improving your connection consistency, striking your perfect balance between fast uploads and smooth streaming.

- **Configure WAN Priority:** Determine the priority of each WAN connection in the SpeedFusion Tunnel. This enables you to dedicate specific links, such as cellular, for backup.

Forward Error Correction

This technology has been developed to provide packet loss protection while minimizing bandwidth consumption. While WAN Smoothing duplicates actual packets, Forward Error Correction (FEC) sends additional reserve packets which could be used to mitigate the effects of packet loss via interpolation.

SpeedFusion Traffic Steering

Modern networks carry a variety of traffic such as video streams, ERP sessions, HTTP sessions, and more. Depending on your deployment, you may need to give priority to certain kinds of traffic while throttling or even blocking others. SpeedFusion gives you granular control of how different kinds of traffic travels within your network.

Bandwidth on Demand

Bandwidth on Demand allows you to use improvised cellular WAN connections whenever, wherever. No longer will there be a need to predict your next location and be tied down to huge data costs or lengthy contract periods. SpeedFusion will provide you with the ultimate solution, a perfect match for you.

Bandwidth Overflow

Bandwidth Overflow monitors network bandwidth usage and switches to the most suitable connection as bandwidth usage changes. This allows network users to access high bandwidth connections when needed or switch to less costly connections when bandwidth usage is low. The result is a more optimized connection.

SpeedFusion Security

In SpeedFusion connection, a secure WAN-to-WAN link is established through Diffie-Hellman key exchange protocol that uses public key cryptography. Perfect forward secrecy is guaranteed by using DH exchanged master keys to derive keys for use in data encryption, and renegotiation of keys at random intervals. With the keys at hand, data passing through the WAN-to-WAN links are protected by AES cryptographic algorithm to provide 256-bit security level.

NETWORK INNOVATIONS

Meeting Your Mission. With Passion.