8 Reasons To Go Tunnel-Free

By adding complexity, fragility, expense, and inefficiency, tunneling protocols like IPsec undermine network expressways and cause application performance to break down.

Tunnels look like a singular network flow to routers, with performance that's tied to a single path for long periods. That means there's no way to route to better pathways when congestion strikes.

To regulate bandwidth-intensive applications, routers drop packets. But when traffic for multiple applications flows through one tunnel, the network tends to slow down the wrong sessions.

Tunnels increase packet size, causing them to split up and reassemble. This is called fragmentation. Fragmentation can lead to network slowness and retransmission (resending data). Also, not all firewalls will allow fragmented packets to traverse them.

Tunnels create bi-directional open doors between networks that sidestep the usual network security protocols, creating provisioning complications and requiring additional actions to manage risks.

Tunnel architectures require a data center hub with branch spokes to backhaul all traffic to a central location. That means, yup, you guessed it, pinch points that increase latency and waste valuable bandwidth.

Long tunnel setup times and slow negotiation for security keys create serious delays after failovers that can cause internal applications to reset.

Tunnels do not support network segmentation, making it difficult to keep each user group separate. To isolate flows, enterprises must create thousands of separate tunnels or use highly complex virtualization techniques.

Tunnels cause about 30% additional bandwidth to be consumed per packet sent, reducing available network capacity and slowing application performance to a crawl.

Tunnels are a one-lane highway.

Tunnels punish the non-speeders.

Tunnels cause application gridlock.

Tunnels create openings in your security.

Lastly, tunnels create bottlenecks.

There’s a smarter way to route without troublesome tunnels. Learn more about Juniper’s tunnel-free Session Smart Router.