

128 TECHNOLOGY AND PALO ALTO NETWORKS

Building a Zero Trust Network With Secure Session Smart Routing for Hybrid Cloud Deployments and FIPS-Certified, Tunnel-Free SD-WAN

Benefits of Secure Session Smart Routing

- FIPS certification improves data protection.
- Tunnel-free SD-WAN eliminates tunnel overhead.
- Secure hybrid cloud deployment enables seamless migration between cloud providers.
- Zero Trust supports session-based network segmentation.

Challenge

Organizations and service providers face inevitable challenges when transforming their networks, including:

- Migrating from expensive, MPLS-based WANs to supporting SD-WANs and providing policy-based routing over multiple WAN transports, including MPLS, broadband, cable, Wi-Fi, LTE, and SATCOM.
- Migrating to multi-cloud/hybrid cloud deployments and supporting software-as-a-service applications.
- Protecting internal networks from insider threats as well as attacks coming from the public domain.

Session Smart by 128 Technology

The 128T Session Smart Router is a software-oriented, distributed router based on the innovative Session Smart™ technology and [Secure Routing \(SVR\) capabilities](#) developed by 128 Technology. The 128T Router is a key piece of the 128T Networking Platform that, together with the 128T Conductor, allows organizations and service providers to build service-centric fabrics that enable new levels of simplicity, agility, security, performance, and savings.

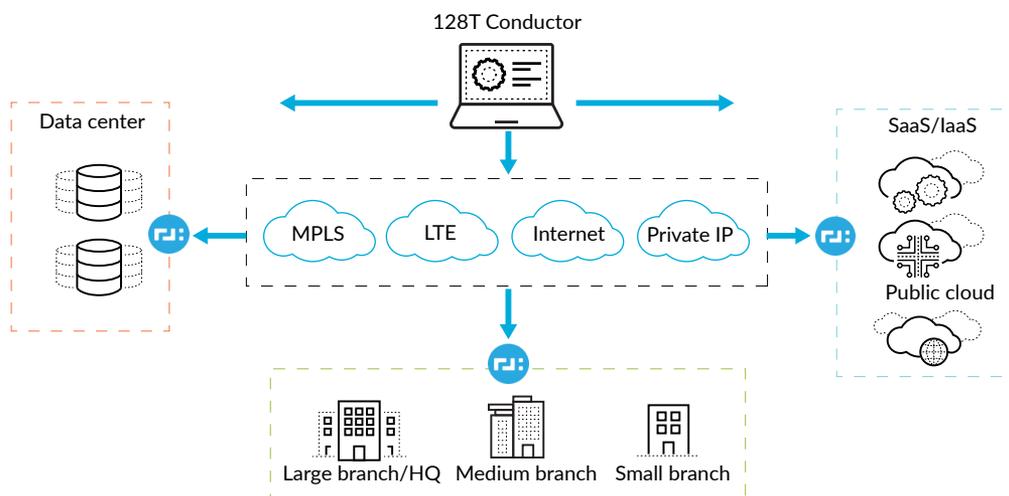


Figure 1: 128 Technology Secure Routing Fabric

Palo Alto Networks Security Operating Platform

The Palo Alto Networks Security Operating Platform prevents cyberattacks through intelligent automation. By combining network and endpoint security with threat intelligence and precise analytics, the platform helps streamline routine tasks, automate protection, and mitigate security threats. Tight integration across the platform and with ecosystem partners delivers consistent security across clouds, networks, and mobile devices to provide the right capabilities, at the right time, across all stages of the attack lifecycle.

Built from the ground up with breach prevention in mind, the platform shares important threat information across security functions system-wide and is architected to operate in modern networks with new technology, such as cloud and mobility. Customers enjoy better security and lower total cost of ownership than legacy or point security products can provide.

Palo Alto Networks and 128 Technology

A joint offering that combines Secure Session Smart Routing from 128 Technology and the Palo Alto Networks Security Operating Platform uniquely addresses the following two use cases.

FIPS 140-2 Certified, Tunnel-Free Secure SD-WAN

Challenge

Existing SD-WAN offerings repackage legacy technologies along with abstraction, segmentation, analytics, and orchestration. Although this eases deployment and results in undetermined savings, it does not solve the issues associated with the underlying networks. All SD-WAN offerings use two or more WAN transport networks by building an overlay network using encapsulation, such as GRE, VX-LAN, IPsec, DMVPN, or proprietary tunneling technology. Overlays and tunnels attempt to mask network weaknesses and inflexibility by introducing wrappers that increase complexity and overhead, prevent end-to-end networking, and add costs.

Answer

A FIPS 140-2 certified, tunnel-free secure SD-WAN based on the 128T Router and Palo Alto Networks GlobalProtect™ cloud service uses a service-centric, session-oriented routing paradigm to build context-aware networks. This enables centralized control, simplifies deployment, introduces intelligent service routing with in-band signaling, and provides fine-grained micro-segmentation with infused security based on the Zero Trust model.

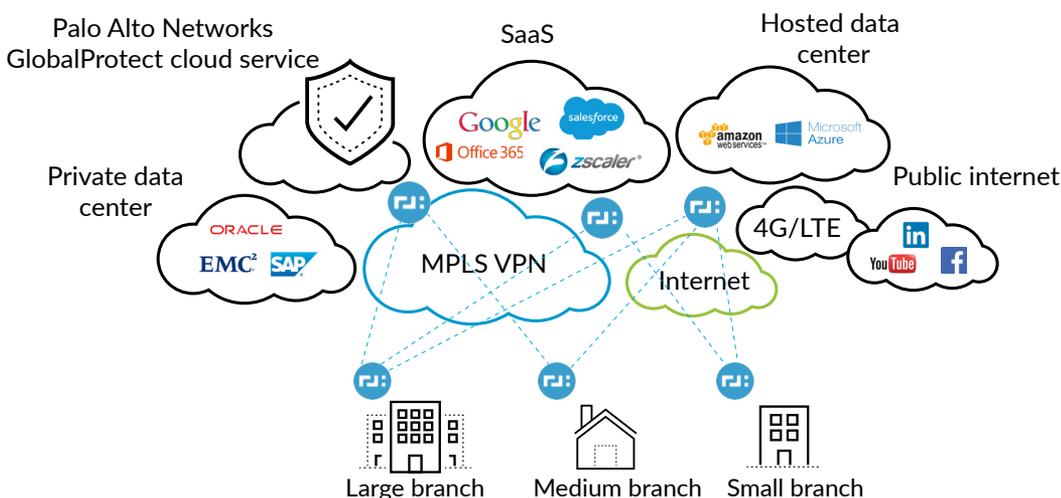


Figure 2: FIPS 140-2 certified, tunnel-free secure SD-WAN

The 128T Networking Platform eliminates the need for overlays and tunnels. It also supports federation of services, tenancy, and policy information, removing the need for automation tools while easing complexity, improving visibility, and maximizing savings.

When it encounters applications and services that require next-generation firewall treatment, the context-aware Networking Platform dynamically routes them to GlobalProtect cloud service.

Benefits

- **Session-centric IP routing** creates symmetrical bi-flows that enable intelligent packet routing, session control, and proactive traffic analysis. The 128T Session Smart Router can monitor network and session performance to proactively route traffic along paths that meet applications' service-level agreement (SLA) requirements.

- **High programmability** enables networks to be stretched and sliced end-to-end as single routing schemes for use in any combination of private and public networks. Location-independent routing ensures integrated load balancing and workload/device mobility for dynamic workload elasticity.
- **Private-public-private internetworking** offers end-to-end segmentation without tunnels or overlays. This eliminates complex stitching operations and removes the need to mask complexity with orchestration.
- **Zero Trust security** ensures each flow is encrypted and authenticated based on associated security policies. Large organizations can have secure, micro-segmented connections or individualized VPNs across different lines of business.
- **Dynamic session and application awareness** provides load balancing and traffic steering based on the session policies and status of the network.

Secure Hybrid Cloud Deployment

Challenge

It's a multi-cloud world. Private, public, hybrid, and community clouds all are in use today, depending on each organization's requirements, scale, and confidence. As organizations move to the cloud, they must be able to switch from one cloud strategy to another as needed, but deploying consistent security and policies across different cloud infrastructures is difficult. Taking a multi-cloud approach subjects organizations to new demands, such as:

- **Consistent security:** The variations in cloud deployments across different providers and connectivity options necessitate consistent security. Identity and access management, logging capabilities, and DevOps tools are needed to secure data that moves between multiple platforms.
- **Superior agility:** As more applications move to the cloud, there is a need to provide differentiated, dynamic services to those applications.
- **Exclusive performance:** To be able to run, migrate, scale, and spin up instances on demand, the networking products in use need to provide superior failover and performance.
- **Lower costs:** Cloud providers charge based on usage, resource consumptions, bandwidth, and speeds, making cost management more challenging.

Answer

The 128T Networking Platform, alongside Palo Alto Networks next-generation firewalls, provides a seamless method for deploying consistent security in multi-cloud environments while bringing organizations unparalleled savings. The joint offering achieves this goal by providing:

- Zero Trust security and hyper-segmentation
- Load balancing and global policy definitions
- Sub-second failover and application-specific SLAs
- Bandwidth savings and infinite scaling

For branch offices and data centers, the 128T can be deployed on a service function chaining, commercial off-the-shelf platform with Palo Alto Networks Next-Generation Firewall. It can also be deployed as a virtual machine running on VMware ESXi™, KVM or Microsoft Hyper-V® hypervisors in a service function chain (SFC) with a Palo Alto Networks VM-Series virtualized next-generation firewall.

Benefits

The 128T Networking Platform meets the demands of multi-cloud environments by utilizing Session Smart technology, which provides:

- **Easy cloud migration:** The innovative data model of the 128T Router migrates workloads between clouds simply and painlessly.
- **Bandwidth and cost savings:** The 128T Router's tunnel-free security reduces cloud deployment costs by 30 to 50 percent compared to standard virtual private clouds, which are based on two IPsec tunnels per VPC.

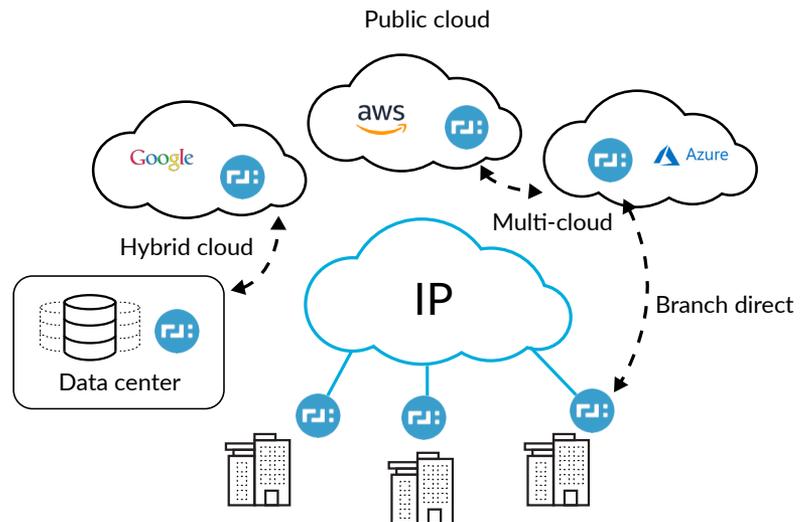


Figure 3: Security for diverse cloud deployments

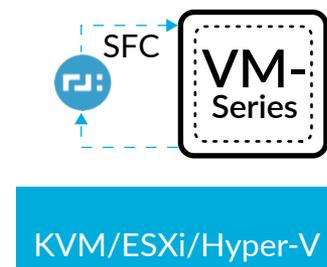


Figure 4: SFC deployment options

Easily deployed in private clouds as well as public clouds like Google Cloud Platform, Amazon Web Services, and Microsoft Azure®, the 128T Networking Platform securely interconnects different clouds and branches. Zero Trust security and hyper-segmentation provide confidential data transfer, access control, and compliance. Dynamic load balancing and global policy definitions allow applications to scale in different locations as necessary, providing a superior end-user experience. Sub-second failover and application-specific SLAs keep application traffic on the paths that offer optimal performance to effectively meet SLA requirements. Bandwidth savings and infinite scaling eliminate bandwidth tax from tunnels.

About 128 Technology

128 Technology makes your network do what your business needs, by changing the way networks work. Our professional grade software teaches routers the language of applications and services, letting them understand the requirements of individual services and segments, and adapt the network dynamically to deliver what the business needs, when and where it needs it. We make routers Session Smart™, enabling enterprise customers and service providers to create a service-centric fabric that's more simple, agile, and secure, delivering better performance at a lower cost. To learn more about 128 Technology, visit www.128technology.com.

About Palo Alto Networks

We are the global cybersecurity leader, known for always challenging the security status quo. Our mission is to protect our way of life in the digital age by preventing successful cyberattacks. This has given us the privilege of safely enabling tens of thousands of organizations and their customers. Our pioneering Security Operating Platform emboldens their digital transformation with continuous innovation that seizes the latest breakthroughs in security, automation, and analytics. By delivering a true platform and empowering a growing ecosystem of change-makers like us, we provide highly effective and innovative cybersecurity across clouds, networks, and mobile devices. Find out more at www.paloaltonetworks.com.



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