ARRCUS
NETWORK DIFFERENT™

SOLUTION BRIEF

ArcOS: SRv6 for Simple, Scalable, and Seamless Layer 3 Overlays

Key Benefits

- **SIMPLE**
  Advertise SIDs in existing protocols. LDP, RSVP-TE, MPLS entropy, and VxLAN not required
- **SCALABLE**
  No switched path state in the core. Convergence time determined by one optimized protocol
- **SEAMLESS**
  SRv6 works transparently over any IPv6 network. Use BGP for advertisement of VPN routes

Solution Overview

Arrcus's **L3VPN over SRv6** is a *standards-based, simple, scalable, and seamless* solution. Built from first principles, the solution enables service providers and enterprises to use these technologies on merchant silicon hardware to build massively scalable multi-tenant networks with more choices than ever before. SRv6 makes source routing possible with the source node selecting a path or function over the network, allowing operators to steer traffic to meet SLAs. Technologies such as TI-LFA and microloop avoidance with SRv6 provide protection to Segment Routing and IP traffic by providing topology-independent per-prefix protection, enabling fast rerouting of traffic and avoiding transient congestion to increase network reliability.

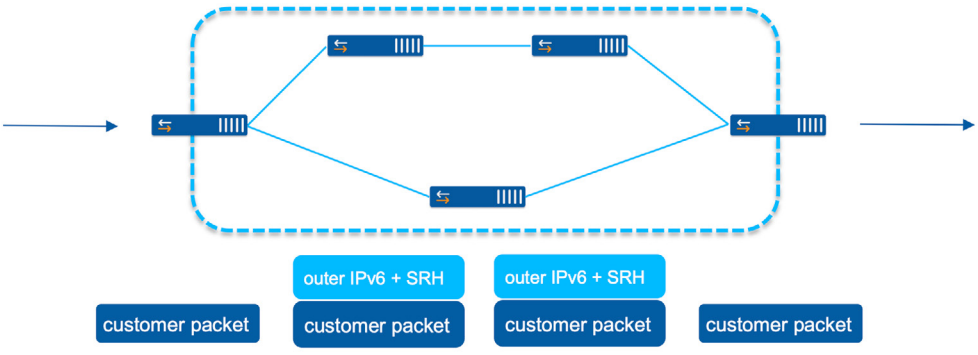

Figure 1 - L3VPN over SRv6

The Arrcus L3VPN over SRv6 Solution Benefits

Deployment ease and flexibility with use of non-proprietary and standards-based technologies

The Arrcus L3VPN over SRv6 solution uses the IPv6 header and the header extension allowing a seamless deployment in a core IPv6 network without using MPLS VPNs. IPv4/IPv6 packets can be transported across an SRv6 ingress node even if the transit routers are not SRv6-capable, alleviating the need to deploy SRv6 across all nodes in an IPv6 network. Dual-stack L3VPN is supported as an overlay along with TI-LFA and ULA to optimize convergence.

Hyper-scalable with uSID support allowing greater control of traffic as it transits

Without any change to the SRv6 dataplane and control-plane, micro-instructions allow for traffic to be controlled with minimum overhead enabling higher throughput. ArcOS supports uSIDs enabling the best MTU efficiency by supporting 6 uSIDs without a SRH. For larger scale environments, up to 18 uSIDs can be supported with a SRH. The simplicity and low overhead of SRv6 micro-instructions allow for line-rate forwarding implementations across several merchant silicon platforms.

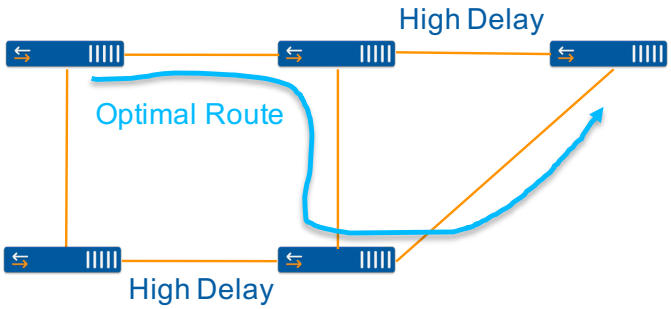

Figure 2 - SRv6-based Optimal Traffic Steering

Simplified architecture yielding improved network resource efficiency

SRv6 eliminates many protocols:

- No LDP - In an SRv6 network, the transit nodes no longer need to maintain per-path information. Thus there is no need for an extra protocol to distribute per path information such as LDP. This allows the network to restore more quickly after a link failure.
- No RSVP-TE - SRv6 supports traffic engineering natively through the use of instructions and SR-TE.
- No MPLS Entropy Labels or VxLAN UDP - Load balancing is supported by SRv6 using the flow label field.

Operational simplicity and consistency through automation

As the SRv6 network scales, the only way to continue to operate at scale is through automation of provisioning, policy, and process. For Day-0, ArcOS supports Zero Touch Provisioning (ZTP), which provides the ability to run a boot script on the first boot of the device. For Day-1 and Day-2, ArcOS provides NETCONF, RESTCONF, ArcAPI (python APIs), SNMP, and Ansible support. The software is OpenConfig compliant allowing operators to use vendor-neutral YANG data models to program devices. Based on Debian Linux, ArcOS is an open system allowing operators the flexibility of installing third-party applications using Debian packages. To learn more about automation with ArcOS, refer here.

Solution Requirements

REQUIREMENTS	DESCRIPTION
ArcOS	v4.3.1 or later
Platforms	Broadcom DNX-based

Learn more

Visit www.arrcus.com to find out how Arrcus can enable your organization to build massively scalable multi-tenant networks using Arrcus's L3VPN over SRv6 solution.

Network Different – with Arrcus

About Arrcus

Arrcus was founded to enrich human experiences by interconnecting people, machines, and data. Our mission is to democratize the networking industry by providing best-in-class software, the most flexible consumption model, and the lowest total cost of ownership (TCO). The Arrcus team consists of world-class technologists who have an unparalleled record in shipping industry-leading networking products, complemented by industry thought leaders, operating executives, and strategic company builders.

The company is headquartered in San Jose, California.

For more information, go to www.arrcus.com or follow @arrcusinc.

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