

Architecture Audit & Review

Full-spectrum network optimization — Tier-1 backbone to last-mile fiber to AI DC fabric

INFORMATION TECHNOLOGY CONSULTING

Service Overview

The Architecture Audit & Review is a standalone diagnostic health check and optimization engagement for any network environment facing scaling walls, capacity bottlenecks, stability risks, or rising operational expenditures. We serve the full spectrum: Tier-1 global carriers, Tier-2 regional operators, Tier-3 and last-mile fiber providers, large enterprise WAN, and hyperscale/AI data center fabrics. The deliverable is a single, definitive vendor-agnostic Optimization Blueprint.

"From Tier-1 backbone to last-mile fiber ISP to AI DC GPU fabric — we stress-test your entire multi-vendor topology, eliminate protocol bloat, and deliver a blueprint that maximizes throughput, enforces zero-trust security, and slashes OpEx."

Target Network Environments

Service Provider — Full Tier Coverage:

- Tier-1 Global Carriers — backbone MPLS/SR-MPLS/SRv6 migration audit, RSVP-TE debt quantification, PCE/Flex-Algo optimization.
- Tier-2 Regional ISPs — backbone MPLS/SR-MPLS/SRv6 networks experiencing forwarding capacity constraints or backbone instability.
- Tier-3 & Last-Mile Fiber Providers — PON/FTTH aggregation architecture, BNG traffic engineering, DSL-to-fiber migration protocol simplification.

Multi-Vendor Ecosystem Coverage (Incumbent & Disaggregated):

Full support for all incumbent platforms (Cisco IOS-XR/NX-OS, Juniper Junos, Nokia SR OS, Arista EOS, Ciena WaveLogic/MCP, Huawei VRP) and disaggregated hardware/software stacks: white-box switches (Edgecore, UfiSpace, Delta) running Open NOS (SONiC, FRRouting), Arrcus ArcOS disaggregated NOS, and P4-programmable platforms (Intel Tofino, Barefoot).

Diagnostic Scope Vectors

Multi-Vendor Topology Stress Test	End-to-end physical/logical topology review: hardware BOM, chassis forwarding capacity vs. actual traffic matrix, ECMP load distribution efficiency, and failure domain blast radius. Covers Cisco/Juniper/Nokia/Arista/Ciena/Huawei and Edgecore/UfiSpace/SONiC/FRR/Arrcus.
Protocol Bloat Elimination	RSVP-TE LSP sprawl identification and sunset roadmap. LDP flood reduction. Redundant OSPF area flooding, BFD session proliferation audit. SRv6 uSID migration readiness scoring.
DC Fabrics — SRv6 uSID L2/L3 VPN	SRv6 uSID L2/L3 VPN audit with L3-centric model extending DC fabric to host. Elimination of ECMP elephant flow polarization hotspots in general DC and AI DC frontend/backend. AI DC backend: SRv6 Flex-Algo rail isolation for GPU-GPU intra-pod, plus inter-rail all-active static SR-TE paths eliminating hotspots during JCT sync. Locator SID statistics via ODL/ONOS controller for autonomous self-healing SR-TE fabric telemetry.
Zero-Trust Data Plane Security	BGP RPKI ROV enforcement gaps, uRPF deployment coverage, BGP Flowspec DDoS hygiene, MPLS label stack spoofing, SRv6 SID hijacking attack surface. eBPF LSM policy enforcement audit.
Hybrid Cloud — SRv6 uSID Multi-Cloud	SRv6 uSID hybrid/multi-cloud connectivity: AWS Direct Connect, Azure ExpressRoute, GCP Interconnect with SRv6 native workload TE end-to-end to the host fabric. BGP SRv6 VPN policy consistency, routing loop exposure, and cloud on-ramp segment steering audit.
OpEx & Automation	NOC automation coverage (Ansible/Nornir/NetBox), manual provisioning workflows, monitoring tool redundancy, MTTR reduction via streaming telemetry gap analysis.

Optimization Blueprint Deliverable

- Current-state risk register with CVSS-equivalent severity scores for each finding.
- Prioritized remediation roadmap with engineering effort estimates and ROI projections.
- SRv6 uSID migration plan: RSVP-TE sunset, Flex-Algo plane design, SR-TE policy architecture.
- Zero-trust data plane hardening checklist (RPKI, uRPF, Flowspec, SRv6 SID policy).
- DC fabric TE optimization: Flex-Algo rail isolation + static SR-TE inter-rail path design.
- Hybrid cloud SRv6 uSID connectivity architecture with end-to-end host fabric integration.
- Executive summary with financial impact quantification — suitable for board/CTO presentation.

Pricing and Engagement Terms

Component	Description	Fee
Architecture Audit & Blueprint	Full 6-vector diagnostic, complete Blueprint, executive readout	\$20,000 fixed
Implementation Advisory	Optional 60-day post-delivery engineering advisory	\$6,000 / month
Scope	Fixed-fee. NDA prior to data sharing. 4–6 week delivery.	4–6 weeks

Download the Diagnostic SOW PDF to view full engineering parameters. | Connect on LinkedIn to schedule a complimentary 20-minute scoping call.