CASE STUDY · OCTOBER 2026

ISP Routing Recovery & VXLAN EVPN Modernization

A regional broadband provider in the Northeastern United States | Anonymized engineering case study. Collaborative routing recovery and modernization, with performance validation still open.



Conceptual illustration only; not the customer’s production environment.

Executive summary

A regional broadband provider encountered a routing disruption that exposed legacy static-route dependencies. Massive IT partnered with its internal network team to diagnose the issue, implement routing corrections, and modernize its network using BGP EVPN and VXLAN.

Engineers isolated the interaction between stale static routing and OSPF advertisements and supported a risk-aware stabilization strategy. The engagement expanded into OSPF cleanup, BGP routing adjustments, and a VXLAN EVPN overlay across multiple core routers. At the final documented update, routing changes

and the EVPN control plane were implemented, while traffic-performance anomalies and MTU validation remained open.

Customer environment and challenge

The provider operated a multi-site routed core with upstream Internet connectivity and a mixture of OSPF, BGP, and historical static routes. A failed inter-site path forced traffic onto alternate routes. A stale route to a remote loopback directed traffic toward a device that forwarded it back, producing a loop. An OSPF advertisement used a broader-than-intended loopback mask, further complicating reachability.

The customer needed immediate assistance without introducing additional risk during a separate upstream-carrier issue.

Phase 1 | Incident response and stabilization

The support request was logged at 3:42 p.m. Eastern. Massive IT's engineering working session began at 4:32 p.m., approximately 50 minutes later, and lasted 77 minutes. These are documented engineering milestones, not SLA commitments.

Working collaboratively, engineers traced the alternate default path, identified the stale static route and incorrect loopback advertisement, and evaluated corrective changes. Disruptive corrections were deferred to a coordinated maintenance window while temporary connectivity was maintained.

Phase 2 | Routing corrections and VXLAN EVPN modernization

During scheduled overnight maintenance, unnecessary static routes were removed and OSPF network statements and loopback advertisements were corrected to host-specific /32s. Engineers configured VXLAN EVPN on three core routers, including a Layer 2 VNI, distributed anycast gateway, and VRF-based Layer 3 routing.

BGP advertisements and route leaking between the global table and service VRF were adjusted for upstream reachability. Recorded post-change checks confirmed VXLAN tunnel establishment, EVPN route exchange, and MAC/ARP learning. End-to-end application performance had not yet been fully validated.

Phase 3 | Performance investigation and follow-through

A test host achieved Internet access through the new service VRF, but some webpages stalled, throughput was inconsistent, and certain large transfers degraded while other applications functioned normally. A missing leaked default route on one core router was identified and added.

Massive IT identified a plausible MTU issue on core-facing links carrying VXLAN encapsulation and recommended validating larger frames and adjusting MTU consistently on both ends of relevant links. Engineers also noted equal-cost VRF defaults toward two upstream providers that could bypass normal BGP preference and introduce traffic asymmetry. These remained hypotheses or recommendations until further testing, not confirmed fixes.

Business and technical outcomes

The engagement combined specialist escalation, disciplined change management, and ongoing collaboration with the customer's internal engineering team. Confirmed outcomes included diagnosis of a legacy routing loop, removal of unneeded static routes, correction of OSPF loopback advertisements, implemented VXLAN EVPN configuration, established overlay control-plane exchange, and a targeted VRF default-route correction.

The work created a clearer architectural foundation for future service delivery. No numerical uptime improvement, validated throughput gain, or completed end-to-end failover result is claimed.

Final documented status

Operational network with outstanding traffic-performance issues.

Completed and confirmed	Outstanding validation
Routing diagnosis and static-route cleanup	Coordinated MTU review with the equipment vendor
OSPF corrections and BGP/VRF adjustments	Large-packet and application testing
VXLAN EVPN configuration and control-plane validation	Upstream default-route preference and traffic-symmetry review
Missing leaked VRF default route corrected	End-to-end data-plane performance confirmation

Massive IT continued providing engineering guidance alongside the customer's team.

Plan your next network engineering engagement

Schedule a Network Engineering Consultation to discuss routing recovery, core-network design, or a coordinated modernization project.

Explore Enterprise Network Design.