

WAN Interoperability Overview

BENEFITS

- Integrate seamlessly with any ANY MAN/WAN service—no rip and replace
- Maximize existing WAN infrastructure—enhanced goodput
- Data reachability without moving it across the WAN
- Transfer of data only if absolutely required
- Reduced costs by delaying purchase of additional circuits for traffic growth
- Choice of dedicated L2 or L3 VPNs or internet
- Scalable WAN bandwidth from sub 1Gbps to 100Gbps
- Service level and security typically associated with MPLS but over less expensive network architectures
- No data manipulation
- DataPrizm™—Data obfuscation across multiple disparate paths
 - Leverage existing smaller network connections
 - Avoid man-in-the-middle attack
- Line-rate dual encryption—AES, Simon/Speck

Transforming WAN into a Global LAN

Vcinity's Ultimate X® (ULT X) and Radical X® (RAD X) family of products enable enterprise applications to have real-time access to geo-diverse data regardless of distance, volume, application or network capacity. RAD X enables enterprises to transform a WAN into a global LAN by extending LAN fabrics beyond the four walls of the data center. ULT X uses RAD X as its foundation resulting in an integrated data solution, which allows enterprises to instantly access and operate on data sets over any distance, without copying and with local-like performance.

Vcinity has built RAD X platforms for over a decade, meeting the need for seamless Ethernet and InfiniBand fabric extension across the globe with ultra-high network utilization, ultra-low latency and jitter, and deterministic/lossless transport.

The product portfolio utilizes Vcinity's proprietary packet and transport processing technology along with enhanced buffering and end-to-end flow control to reliably extend native InfiniBand and lossless Ethernet fabrics over campus, metro and wide area networks spanning from just a few miles to thousands of miles. This capability enables IT managers to maintain protocol continuity beyond a single site to virtually anywhere around the globe without the need to modify existing applications or the local InfiniBand or lossless Ethernet network.

Vcinity's next generation RAD X Series builds on the success of the legacy IBEx™ platforms and ushers in a new, more advanced solution for extending high performance fabrics beyond the data center and over virtually any multipoint MAN/WAN configuration.

The RAD X products WAN-facing interfaces leverage standard Ethernet ports that connect to the customer's WAN infrastructure and leverage L2TPv3 tunneling protocol to provide secure transport for customer data. There are no changes required to the existing WAN infrastructure or services. This means that once the RAD X Ethernet ports are connected to the initial WAN Router at each site (for example, a Gateway or Border Router), the WAN path can operate and data can flow across any WAN technology including Ethernet, SONET, OTN, MPLS, ATM and IP networks and any infrastructure services such as Firewalls, WAN Encryption, etc.

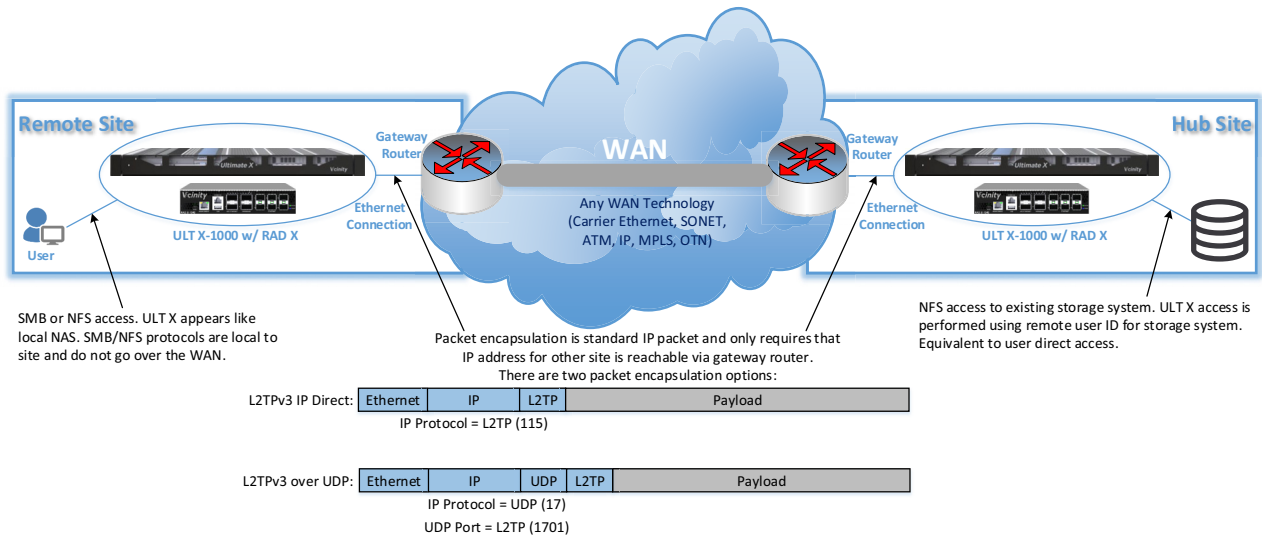


Figure 1. ULT X packet format

RDMA over Anything

Remote Direct Memory Access (RDMA) greatly accelerates application performance by bypassing the CPU and enabling direct access to memory. However, RDMA is available only over InfiniBand and RoCE network interface cards, which limits RDMA to within the data center. Vcinity technology enables RDMA over any network technology, and thus allows RDMA to be extended outside the data center. Vcinity products extend all the advantages of a lossless data center fabric over standard WAN technologies such as carrier Ethernet, SONET, OTN, MPLS, ATM and IP networks. Unlocking the full potential of RDMA by supporting RDMA over Anything.

ANY MAN/WAN Service

RAD X products seamlessly integrate with any MAN/WAN service: point-to-point/point-to-multipoint (E-Line/E-LAN) full-rate or partial rate Ethernet service, Internet, layer 2 Virtual Private Network (L2VPN) service, MPLS-TE service, SD-WAN or dark fiber.