Service Offerings

National LambdaRail's (NLR) coast-to-coast, advanced optical network infrastructure offers a range of services and applications, capable of meeting the specific needs of the most demanding network and scientific research projects. Because NLR owns the underlying fiber optic cable and optical circuits, as well as other networking equipment, it can cost-effectively implement multiple, diverse experimental and production networks on its nationwide optical fiber footprint with unprecedented flexibility and responsiveness.

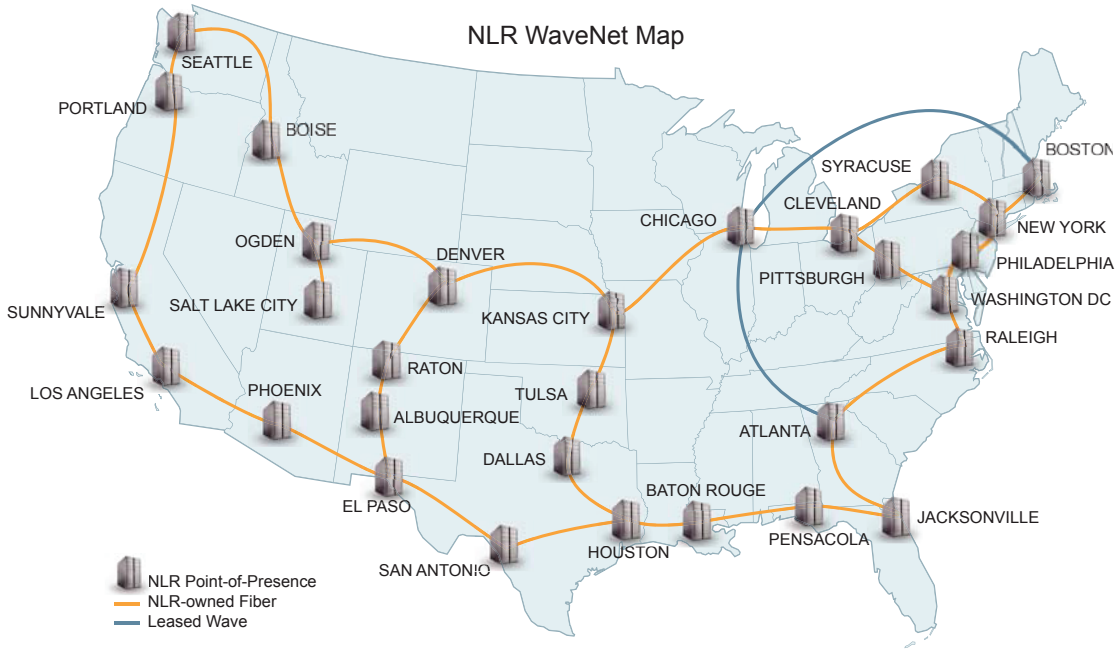
A core set of basic services are available to NLR member organizations and users that are sponsored by a member organization. Variations of the core set of basic services, as well as additional services, are available upon request.

- WaveNet: Lambda-Based Services
- FrameNet: Ethernet-Based Services
- PacketNet: IP-Based Services
- Other Services

WaveNet: Lambda-Based Services

For those who need the flexibility and control from end to end including allocation of pathways and protocols at layer 1

NLR WaveNet offers point-to-point, high-capacity 10-gigabit Ethernet LAN-PHY or OC-192 lambdas between any two nodes on the NLR infrastructure. The NLR WaveNet service is a full-production, unprotected point-to-point wavelength. Users requiring protection may purchase a second wave-length and implement protection switching at their site. NLR may be able to provide diverse routing between the primary and protection circuit.



FrameNet: Ethernet-Based Services

For those who need a fixed high speed pathway (as low as 100 megabits) with protocol flexibility at layer 2

NLR FrameNet offers Ethernet-based transport services over the nationwide NLR optical infrastructure. These services facilitate point-to-point or multipoint Ethernet transport at subgigabit, gigabit and multigigabit data rates. All Ethernet-based services are available from any of the FrameNet-enabled nodes of the NLR infrastructure. Dedicated and nondedicated VLAN services are available as well as a dynamic circuit configuration tool.

*Sherpa VLAN Configuration Too*l

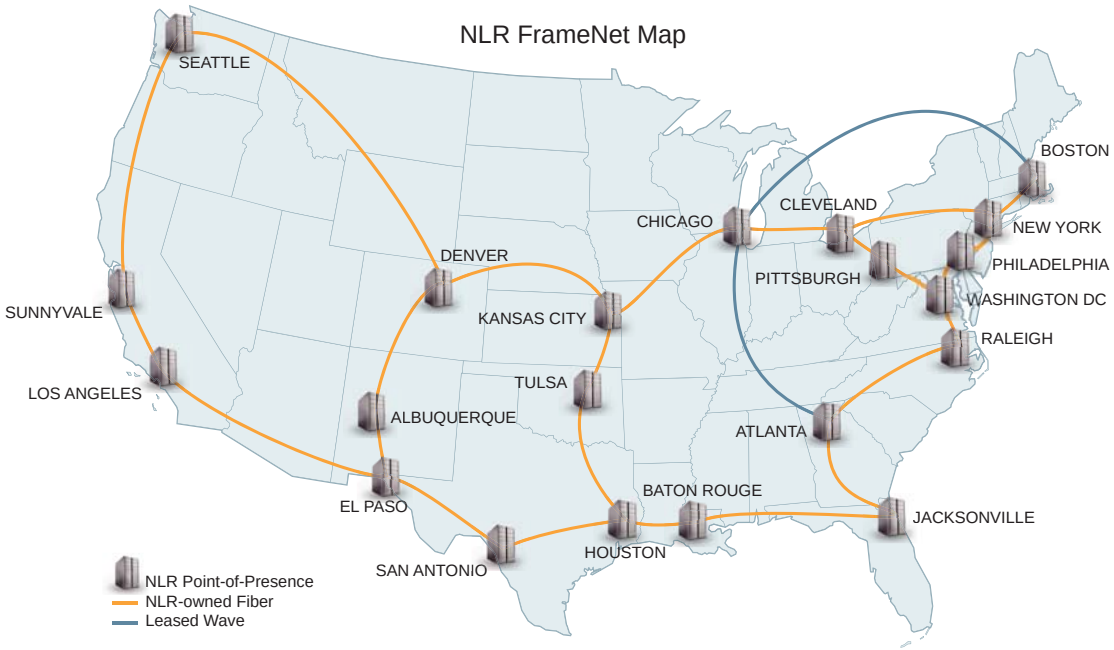
Sherpa provides guided, secure, interactive dynamic circuit configuration. It allows authorized users to provision, modify, enable, and disable dedicated or non-dedicated VLANs on FrameNet in realtime, without requiring intervention from the NLR NOC.

Point-to-Point Ethernet

A dedicated, point-to-point Ethernet link with guaranteed bandwidth. Rates from subgigabit-per second to 10 gigabit-per-second are available. Also, non-dedicated, point-to-point Ethernet or VLANs are also available.

Multipoint Ethernet

A service with no bandwidth guarantees that connects more than two end points specified by the user.



PacketNet: IP-Based Services

For those who need a high-quality managed nationwide backbone service with a high bandwidth entry point at layer 3

NLR PacketNet provides nationwide IP-based services utilizing Cisco CRS-1 routers. A 10-gigabit Ethernet connection to one of the two types of NLR PacketNet services is included as part of most NLR memberships.

Routed IP Service

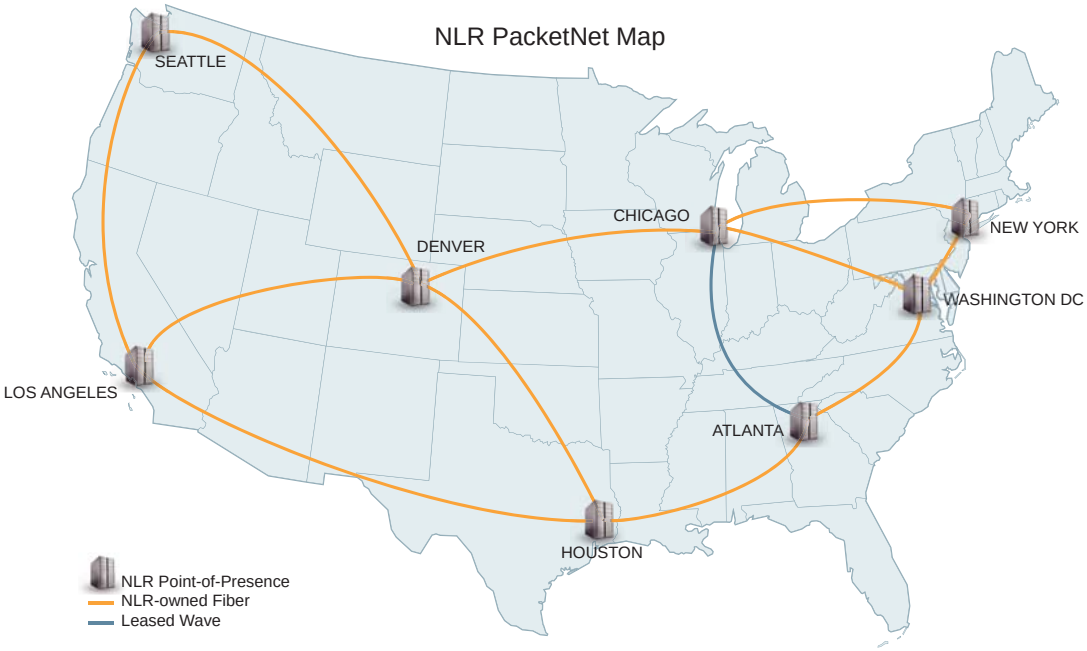
A stable, production-quality, noninterruptible, AUP-free routed IP network on a 10-gigabit Ethernet backbone that provides a range of IP-based services, including IPv4 Unicast, IPv4 Multicast, IPv6 Unicast and IPv6 Multicast. This network connects to and peers with three international peering points: PacificWave, StarLight and Manhattan LAN (MAN LAN). Both 10-gigabit Ethernet and one-gigabit Ethernet connections are available.

Cisco TelePresence-ready

PacketNet is a certified Cisco TelePresence-ready backbone. Call signaling, multipoint conference capabilities, and network management equipment support TelePresence services for NLR members and participants. There are no additional NLR costs to use this service.

IP VPN Service

A stable, production-quality, non-interruptable service using RFC2547 BGP VPNs for projects that require an overlay IP network with separation of traffic, routing, and policy from the Routed IP Service. Available to any number of sites, using new or existing PacketNet 10-gigabit and one-gigabit connections. Projects interested in the IP VPN Service will be evaluated on a case by case basis to determine feasbility of IP VPN Services for the project and any related costs.



Other Services

NLR offers a wide range of other services to support specific needs of the research and education community. For more information please contact Joe DePetro, Director, Business Development, jdepetro@nlr.net or 303.809.5610.