

Access Ethernet Private Line (EPL) Service: Secure, Reliable, High-Speed Multi-Site Connectivity

OVERVIEW

Ethernet Access (E-Access) service types leverage IFNs Carrier Class MPLS and Ethernet infrastructure to provide Ethernet OVC (Operator Virtual Connection) circuits to carrier customers. Any Ethernet service that is based on an OVC that associates at least one OVC End Point at an ENNI, is designated as an E-Access Service Type. Access Ethernet Private Line (EPL) is the E-Access type.

An Access Ethernet Private Line (EPL) service uses a Point-to-Point OVC to associate one OVC End Point at a UNI and one OVC End Point at an ENNI. One UNI can support only a single instance of the Access EPL service.

Key Highlights of EPL:

- **Private and Secure:** All data travels within the security of a Layer 2 dedicated, high-capacity, one-to-many connection at native Ethernet speeds.
- **Cost Savings:** Enables customers to connect their locations using a lower cost Ethernet interface.

Service Description

IFN E-Access service provides a MEF compliant 1Gbps or 10Gbps external network-to-network interface (ENNI), giving carriers, application, data center, and solution providers a single point of access into IFN's Ethernet footprint. IFN E-Access includes a set of advanced features to deliver a reliable Ethernet interconnection scalable up to 1,000 Ethernet connections, with options for IFN E-Access, EVPL, and EPL from the same hub port.

- Access EPL service uses a Point-to-Point OVC to associate one OVC End Point at a UNI and one OVC End Point at an ENNI.
- One UNI can support only a single instance of the Access EPL service.
- Bandwidth profile per OVC, bandwidth not shared between OVC circuits.
- Fixed CIR Bandwidth (no EIR burst option).
- CE-VLAN CoS ID and Layer 3 DSCP values will be preserved.

TECHNICAL SPECIFICATIONS

Ethernet User-to-Network Interface:

There is no need for coordination between the Subscriber and Service Provider on a detailed CE-VLAN ID/EVC Map for each UNI because all Service Frames at the UNI are mapped to a single OVC End Point, as indicated by the OVC End Point Map attribute. However, the Service Provider and the Access Provider need to coordinate the value of the S-VLAN ID at the ENNI and other service attributes.

The CE is expected to shape traffic to the Ingress Bandwidth Profile of the service such that all of its traffic, including certain L2CPs that require delivery for proper operation, is accepted by the service.

Maximum Frame Size:

Access EPL can provide a high degree of transparency for Frames between the EIs it interconnects such that the Frame's header and payload upon ingress at the UNI is delivered unchanged to the ENNI, with the addition of an S-VLAN tag. The Frame's header and payload upon ingress at the ENNI is delivered unchanged to the UNI except for the removal of the S-VLAN tag.

The Access EPL service only supports a single OVC per UNI interface, as such all service frames are mapped to a single OVC. With the Access EPL service, a single service bandwidth profile is provisioned and all of the customer Frame will share the same bandwidth profile.

Destination MAC Address	Layer 2 Control Protocol	Options	L2CP Frame Behavior
01-80-C2-00-00-00	STP, RSTP, MSTP	Option #1 Option #2	Peer or Discard (all UNIs) Tunnel (all UNIs)
01-80-C2-00-00-01	PAUSE	Option #1 Option #2	Discard (all UNIs) Discard (all UNIs)
01-80-C2-00-00-02	LACP, LAMP	Option #1 Option #2	Peer or Discard (disposition specified per UNI) Tunnel (all UNIs)
01-80-C2-00-00-02	Link OAM	Option #1 Option #2	Peer or Discard (disposition specified per UNI) Tunnel (all UNIs)
01-80-C2-00-00-03	Port Authentication	Option #1 Option #2	Peer or Discard (disposition specified per UNI) Tunnel (all UNIs)
01-80-C2-00-00-07	E-LMI	Option #1 Option #2	Peer or Discard (disposition specified per UNI) Tunnel (all UNIs)
01-80-C2-00-00-0E	LLDP	Option #1 Option #2	Discard or Tunnel (all UNIs) Tunnel (all UNIs)
01-80-C2-00-00-20 through 01-80-C2-00-00-2F	GARP, MRP Block	Option #1 Option #2	Tunnel (all UNIs) Tunnel (all UNIs)

Figure 5: L2CP Frame Behaviors

More advanced technical information can be found in the appendix »