



# ETHERNET ACCESS

## Tailored connectivity

Many businesses are now opting for Ethernet as their preferred solution for data transmission as it provides reliable wide-area network connectivity, regardless of speed and capacity requirements. Industry-standard Ethernet services are being widely adopted due to their cost-efficiency and the ability to scale to support voice, data and video convergence needs on a unified network.

Our Ethernet Access product can be customised to meet your growing demand, helping you to improve operational efficiencies, decrease time-to-market and build customer loyalty.

### **Ethernet Access Overview**

Ethernet Access allows you to tailor your business access connectivity solutions to better deliver on your customers' needs.

Ethernet Access is a MEF 9 and MEF 14 certified business access service (where it is supplied over fibre optic cables), providing four Classes of Service (CoS) allowing you to prioritise traffic according to end user needs. Coverage is available at more than 2,000 Exchange Service Areas across Australia (a full list detailing the 1700+ Fibre serviced ESA and copper footprint is available from Telstra on request).

Ethernet Access uses proven pseudowire and Virtual Private LAN Service (VPLS) technology in our core network to provide flexible and robust point-to-point and point-to-multipoint (aggregation) services. Copper or fibre optic access cables (tail ends and head ends) provide physical connectivity from each user site, where the Network Terminating Unit (NTU) is located, to the serving Telstra exchanges and the pseudowire/VPLS 'cloud' in our core network.

End-to-end 'logical' service connectivity across these access cables and the cloud is via an Ethernet Virtual Circuit (EVC). This associates two or more User Network Interfaces (UNIs), which are ports on each Network Terminating Unit (NTU) into which the user connects their own equipment, as per fundamental MEF E-Line service constructs.

We also offer an optional customer-managed protection capability via redundant fibre optic access cables to geographically diverse nodes in Telstra exchanges at the 'layer 2 edge' of the cloud.

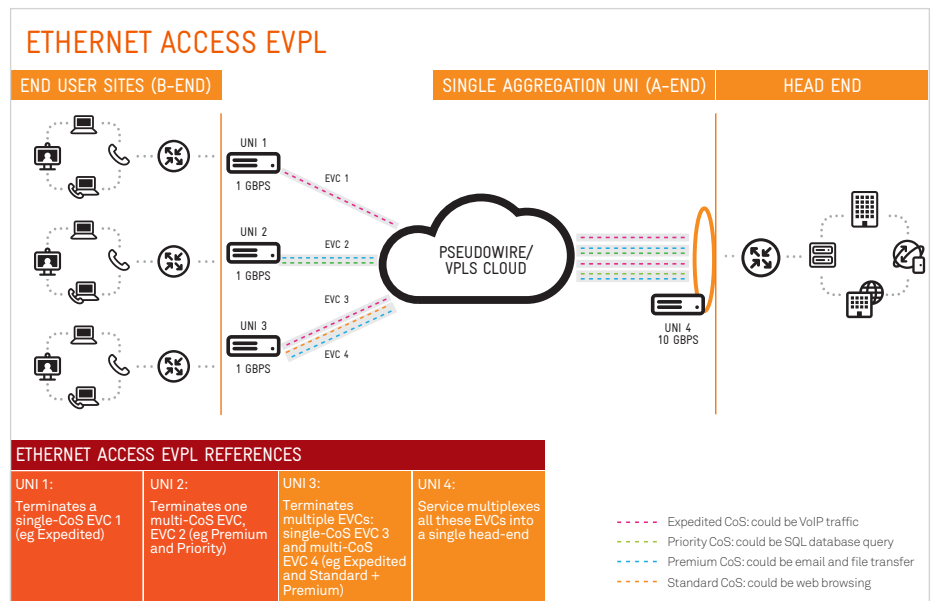
Ethernet Access uses the International Telecommunications Union (ITU) Y.1731 recommendation on Ethernet networks and Operations, Administration, Maintenance (OAM) functionality. This provides comprehensive layer 2 fault management on a per Ethernet Virtual Circuit (EVC) basis and performance monitoring on a per-EVC and per-Class of Service (CoS) basis, enabling rapid fault diagnosis, response and resolution.

## Using Ethernet Access

Ethernet Access connects tail ends and a head end. For example, it could be used to connect an end-user's branch offices its head office or end user premises to a customer's point of presence.

Examples of typical Ethernet Access end-users include:

- **retail stores** – for inventory management systems using Virtual Private Networks (VPN)
- **small and medium businesses** – for corporate Internet, cloud, collaboration, video and VoIP solutions
- **large corporations** – for key components within a complex IP-VPN solution.



## Ethernet Access EVPL

The diagram on the right highlights some of the key features of Ethernet Access:

- high-speed service aggregation (up to 10Gbps) at the User Network Interface (UNI) on the head-end of the service (see UNI 4)
- on services supplied over fibre optic cables, multiple Classes of Service (CoS) can be used to provide specific data traffic priorities for different applications such as VoIP and database queries over a single Ethernet Virtual Circuit (EVC)
- service multiplexing (which allows one UNI to support more than one EVC) on the UNI, as shown on the tail end of the service at UNI 3 as well as at the head-end (UNI 4)
- both single-CoS EVCs and multi-CoS EVCs can be delivered to the same UNI (see UNI 3 and UNI 4)
- bandwidth profiles may be applied on a per-EVC basis (see EVC1 and EVC3), providing rate enforcement of data transmission for the whole EVC
- bandwidth profiles may also be applied on a per-CoS basis on a single EVC (see EVC2 and EVC4), providing more granular rate enforcement of data transmission on each individual CoS within the EVC.

## How Ethernet Access can benefit your business

- Our **national coverage** means a single-supplier footprint, leading to both operational and total cost of ownership benefits.
- **Ethernet aggregation handoff** to customers at User Network Interface (UNI) speeds of up to 10Gbps leads to cost saving, port count and rack space reduction compared to other established technologies or using multiple lower speed Ethernet interfaces.
- **Scalable and granular bandwidth options** on Ethernet Virtual Circuits (EVCs) and Classes of Service (CoS) mean you can connect more flexibly across a range of bandwidths from 256kbps to 10Mbps (over copper cables) and 500kbps to 1Gbps (over fibre optic cables) and you can upgrade bandwidth when you need to.
- **Multiple Classes of Service (CoS)** means that you can prioritise traffic to meet your customers' needs. This can be done using either Layer 2 (802.1p) or Layer 3 (DSCP) mapping and/or VLAN ID.
- **Service multiplexing** allows one User Network Interface (UNI) to support multiple EVCs which lowers equipment costs and reduces space, power and cabling requirements. It also allows new EVCs to be provisioned more efficiently on the same UNI (available on non-copper service only).
- We will implement **end-to-end Connectivity Fault Management (CFM)** that will allow us to quickly diagnose and address connectivity issues. Ethernet Access will also enable tunnelling of selected customer S-OAM frames for end-user Layer 2 diagnosis.
- We will implement **ongoing performance monitoring** on EVCs and on a per CoS basis to give you a high level of confidence in service level assurance (SLA) parameters because we will be able to monitor whether target SLA parameters like frame loss, frame delays and variation will be met.
- You can **choose the access availability options** on each User Network Interface (UNI) of a service to suit the importance and priority of the site and the data passing through the UNI (for example a fully redundant UNI option provides geographic diversity and protection to minimise potential service outages).
- We provide **online access to quoting, ordering and billing** to enable a faster and more efficient pre- and post-sales experience.
- **MEF 9 and MEF 14 certification** on services supplied over fibre optic cables means that you can expect industry best practice.

# WHAT YOU CAN EXPECT WHEN YOU CHOOSE TELSTRA WHOLESALE FOR YOUR ETHERNET ACCESS SERVICE

As always, when you are transitioning on to a new platform or employing a new solution we understand the need for reassurance and certainty.

## Our experienced people

Telstra Wholesale offers an experienced and skilled team of dedicated specialists to help identify the solution that best suits your needs. You will also receive our expert technical and operational support once the service has been delivered.

## Our unrivalled network

We're in the places that you need us, with Ethernet Access boasting national coverage across more than 2,000 exchange service areas (a list of which is available from Telstra Wholesale on request). We pride ourselves on our consistency, service assurance and the cost efficiencies that we can drive from our market-leading position.

## Our superior systems

Our proven, integrated systems capabilities and operational support help you manage your business needs with a range of online tools which help you quote, order, support and review the ongoing performance of your Ethernet Access services.

## Getting connected

You can order Ethernet Access services through the standard ordering process, via LinxOnline™ Ordering (LOLO) or our business to business system LinxOnline Interaction Gateway™ (LOLIG). If you don't have access to LinxOnline™, ask your account manager to get you set up. Provisioning lead times will depend on the details of your order. You'll find indicative lead times and activation processes in our Ordering and Provisioning Manual (OPM), available from your Service Manager.

Our experienced team is happy to work with you to tailor EVC, Class of Service and Bandwidth bundles to meet your needs.

You'll also have access to our enhanced Quote Tool, an online web tool that is usually available 24 hours a day, 7 days a week, to check availability and give you preliminary pricing for prospective services.

We will offer optional per-UNI and per-EVC traffic statistics and performance monitoring and reporting capabilities in the future.

## Charges and billing

Ethernet Access uses zone-based pricing for the recurring charges for both point-to-point and aggregated point-to-multipoint services. Our pricing takes into account Class of Service (Cos) and Ethernet Virtual Circuit (EVC) bandwidths, User Network Interface (UNI) speed, and the service assurance on each EVC, giving you a comprehensive range of options. A minimum term of 12 months applies to each Ethernet Access service. Non-recurring and recurring charges may be eligible for fixed term discounts.

We'll bill your services monthly, itemising the installation charges and recurring charges (plus service assurance charges if applicable).

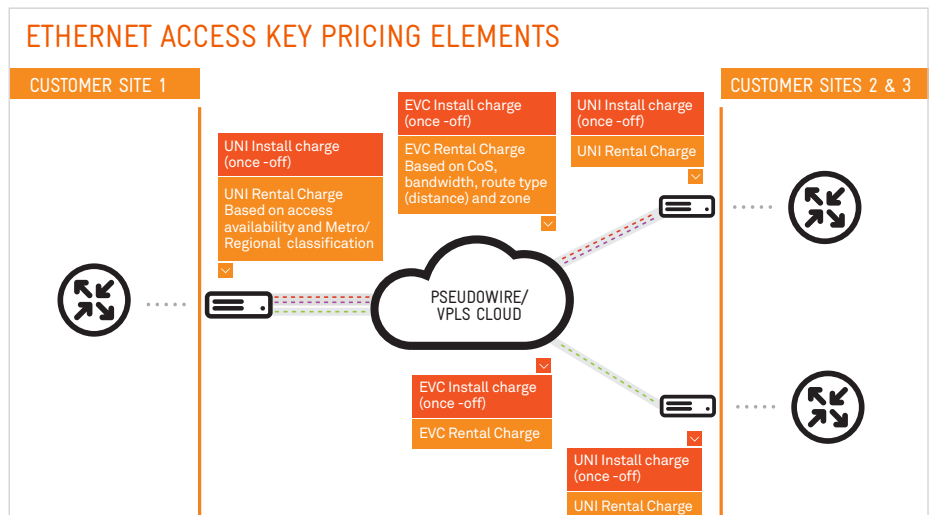
The diagram below conceptually summarises the key pricing elements for Ethernet Access.

## Operations and maintenance

You can report service difficulties 24 hours a day, 7 days a week through our LinxOnline™ Service (LOLS) system or by calling the Telstra fault reporting centre.

## More information

To find out more, contact your Telstra Wholesale account manager or visit [telstrawholesale.com.au](http://telstrawholesale.com.au)



## About Telstra Wholesale

Telstra Wholesale is more committed than ever to helping our customers connect to their full potential. We're delivering new capabilities in all our portfolios – data, mobiles and fixed services. We're continually investing in our business so that we can confidently deliver world class solutions to yours, enabling you to create a competitive advantage.

You can access the value of our superior capabilities and scale by connecting to our high performing networks and platforms. These are fully integrated with our operational capability to deliver value to your business. Our knowledgeable and responsive specialists are dedicated to delivering outstanding service to help your business succeed.