

MANAGED LEASED LINE

Connectivity solutions that meet your specific business requirements

Telstra Wholesale Managed Leased Line (MLL) offers you resilient clear channel, uncontended and reliable connectivity. Its dedicated and scalable capacity lets you choose from bandwidths between 2Mbps and 10Gbps, with Synchronous Digital Hierarchy (SDH) and Ethernet interface options.

Managed Leased Line includes resiliency options combined with optional enhanced assurance options and proactive monitoring aimed at delivering a highly robust and reliable solution.

It allows you to tailor connectivity solutions that meet your specific business requirements. With extensive national coverage, Telstra Wholesale has your backhaul requirements covered now and into the future.

Getting connected

You can order MLL through the standard ordering process, via LinxOnline™ Ordering (LOLO) or LinxOnline Interaction Gateway™ (LOLIG). If you don't have access, ask your Account Manager to get you set up.

MLL uses a simplified pricing structure. Pricing is mainly based on installation and ongoing monthly rental charges. Additional charges may apply for extra work, such as:

- feasibility studies;
- adds, moves and changes (including upgrades, such as adding access interface protection and traffic management, and downgrades);
- network extension into the customer premises;
- enhanced service assurance options; and
- enhanced resiliency options.

You'll have access to our easy to use Telstra Wholesale Quote Tool, which provides a simple, efficient way to access pricing information. This allows you to create quotes based on your contracted rates for MLL services excluding access interface protection. For quotes requiring access interface protection please contact your Account Manager.

Services are billed one month in advance. Each service will have a full national number (FNN) which you'll see on your standard bill.

Features and benefits

Feature	Benefit
National coverage	With Telstra Wholesale's wide geographic reach, we're in more places where you need us.
Scalable and granular bandwidth options (between 2 Mbps and 10 Gbps)	We provide flexible service provisioning across a range of bandwidth steps from 2Mbps to 10Gbps and you can upgrade bandwidth when you need (additional charges apply).
24/7 proactive service monitoring and fault repair by MLL dedicated team at our Global Operations Centre (GOC)	Peace of mind and confidence in your service availability.
Performance backed by Restore Assurance service levels, with rebates payable on failure to meet target restoration times	The security of knowing our promises are backed up by service levels.
Enhanced service level assurance options for faster response and restore times	Get your business re-connected quickly and efficiently to maximise availability.
Multiple SDH and Ethernet interface options delivered in either topologies: <ul style="list-style-type: none"> Point-to-point configured as SDH or Ethernet Private Line (EPL) Point-to-multipoint configuration options available on both Ethernet Virtual Private line (EVPL or Ethernet Aggregation) and SDH via channelised STM1 or 4 	<p>Choose from multiple options and find the best solution for a maximised network and traffic utilisation, catering to your specific business needs.</p> <p>Point to Point and Aggregation service features are ideal where you need robust backhaul connectivity between your Network POIs, or for delivering your National Broadband Network (NBN) traffic, or into Telstra equipment buildings.</p>
Multiple diversity options including Access Interface Protection (AIP)	Choose from a number of core, access and interface diversity options to align the network protection level with your specific business requirements and minimise adverse network impacts due to unexpected or disruptive events. Service availability target ranges from 99.7% (SDH) and 99.9% (Ethernet) and up to 99.99%, depending on the resiliency options chosen.
Configuration options include: <ul style="list-style-type: none"> VLAN bundling Traffic management VLAN tagging Ethertype Load-balanced handoff 	With Ethernet Aggregation, you have the flexibility and control to determine how you would like your traffic mapped across the network, to maximise the effectiveness and usability of your interconnecting service structure. Load Balanced hand-off allows for active protection of interface. Prioritising your traffic can maximise service availability for your most valued traffic and/or customers.



Operations and maintenance

The standard service assurance level for MLL is one hour for response and 12 hours for restore when located in urban areas (defined based on a population of more than 10000).

We also offer additional service assurance levels up to Express 4. Please ask your Telstra Wholesale account manager for further details. All protected MLL services are backed up by service restoration rebates.

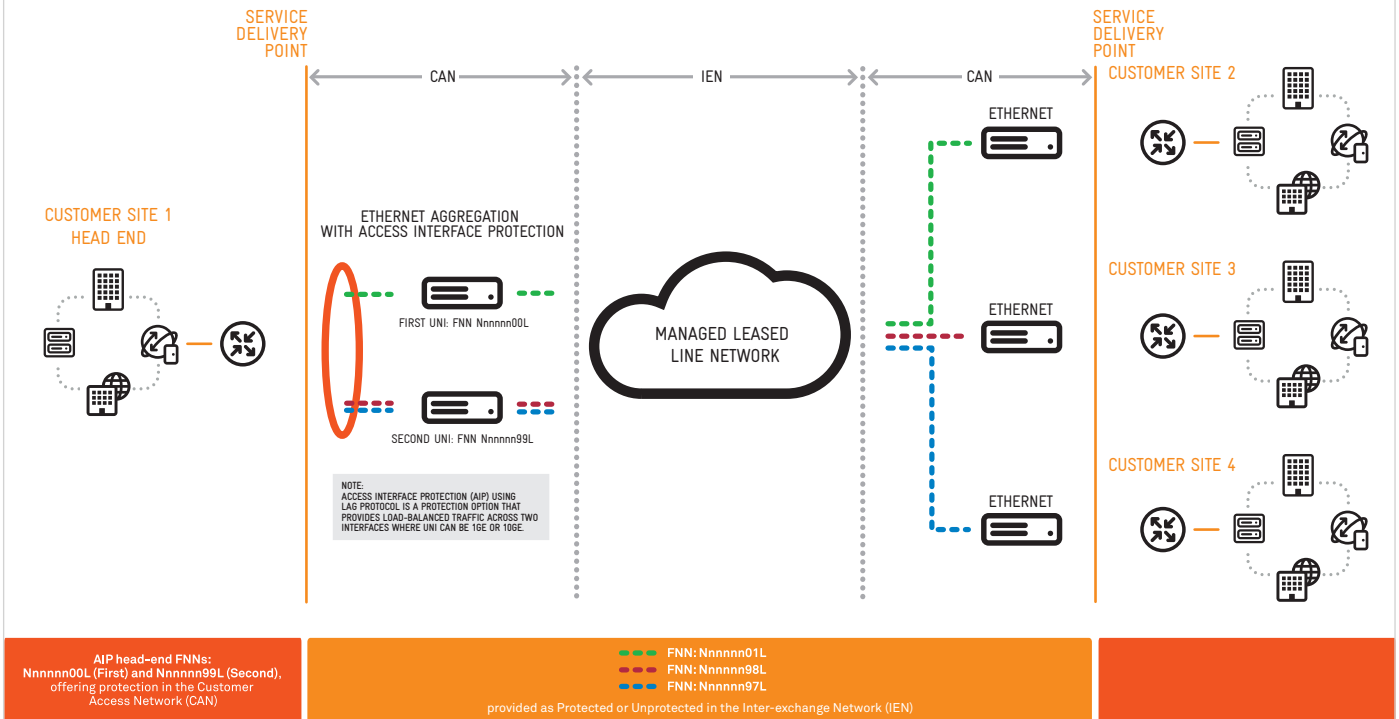
If we identify an issue impacting service our proactive assurance team at the Global Operations Centre will contact you and proactively instigate the restoration process.

Otherwise, any faults should be reported via LinxOnline™ Service (LOLS), or directly with the National Wholesale Service Centre on 1802288 or +61 7 3236 3290 option 1,1.

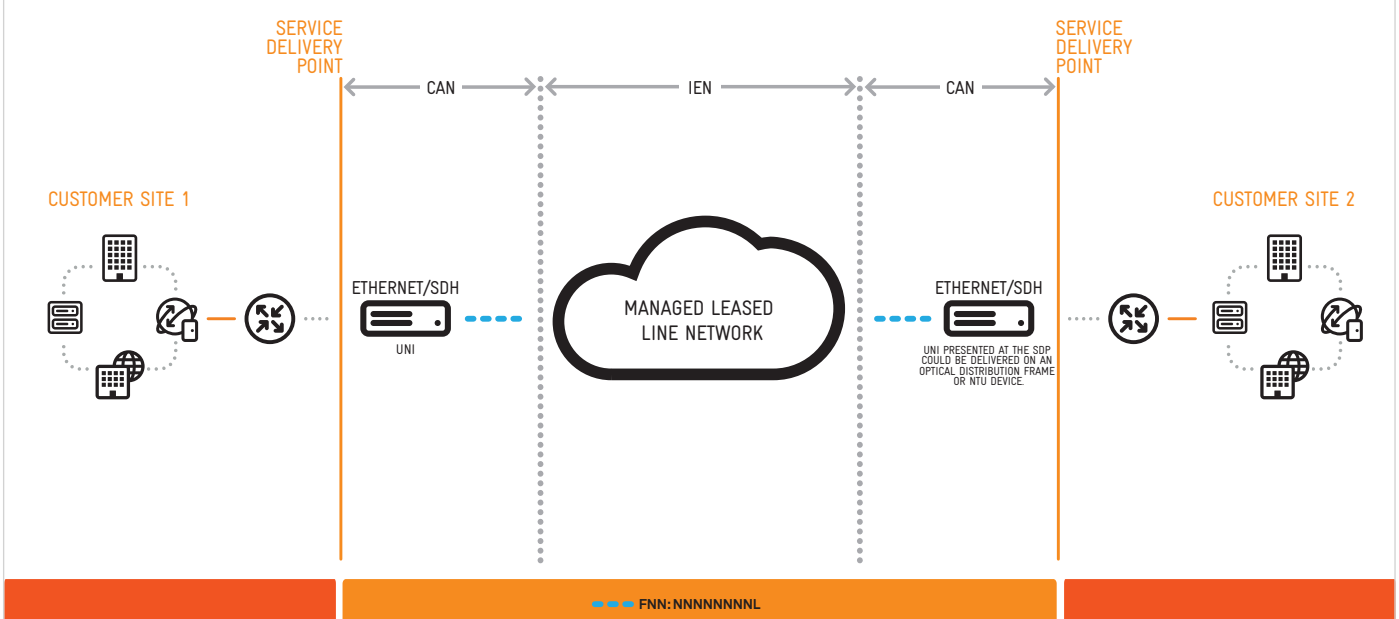
So that we can help you, please ensure the following information is provided:

- the FNN of the service
- a description of the fault (including available information regarding the nature of the fault and any end user impacts); and
- contact details.

MANAGED LEASED LINE SERVICE POINT TO MULTIPOINT CONFIGURATION WITH ACCESS INTERFACE PROTECTION



MANAGED LEASED LINE SERVICE POINT-TO-POINT CONFIGURATION



Key Product Features	
Coverage	National
MLL Interfaces	Ethernet SDH
Ethernet Layer	IEEE 802.3-2008
Metro Ethernet Forum service types supported	E-Line EPL (Point to Point) and EVPL (Point to Multipoint)
Service topology	
Point to Point	SDH Ethernet (EPL)
Point-to-Multipoint	SDH Channelised – STM-1 or 4 Ethernet Aggregation (EVPL) – 1GE and 10GE
Bandwidth scaling	
Ethernet	2Mbps to 10Mbps in 2Mbps increments 10Mbps to 100Mbps in 10Mbps increments 100Mbps to 500Mbps in 50Mbps increments 500Mbps to 1Gbps in 100Mbps increments 1Gbps to 2Gbps in 250Mbps increments 2Gbps to 5Gbps in 500Mbps increments 5Gbps to 10Gbps in 1Gbps increments
SDH	2Mbps (E1), 34Mbps (E3), 45Mbps (DS-3), 155Mbps (STM-1), 622Mbps (STM-4), 2.5Gbps(STM-16) and 10Gbps(STM-64) Note: 8Mbps is delivered as 4xE1s and 10Mbps is delivered as 5xE1s
Ethernet EVC (including overhead)	EPL – 2Mbps to 10Gbps EVPL – 2Mbps to 2Gbps
Physical interface presentation	
SDH	Copper – RJ-45 (120 Ω) Coax – BNC (75 Ω) Optical – Angle SC
Ethernet	CAT5/6 – RJ-45 Optical – Angle SC or LC
Interface type	
PDH	ITU-T G.703
SDH	Copper – ITU-T G.703 Optical – ITU-T G.957
Ethernet	100Base-TX, 100Base-FX, 100Base-LX10, 1000Base-T, 1000Base-SX, 1000Base-LX, 1000Base-ZX, 10GBASE-SR, 10GBASE-LR, 10GBASE-ER
Resilience options	
Inter-Exchange Network (IEN)	Protected – Dual paths in the core of the network (Default) Unprotected – Single path in the core of the network
Access Network diversity	Fibre Paths – Choice of single or diverse fibre path(s) between your premises and the Telstra Exchange Building entry points – Optional diverse fibre entry points to your premises Exchange diversity – Ability to have diverse fibre paths connecting to two geographically diverse Telstra Exchanges
Access Interface Protection (AIP) Option	Ethernet: LAG with LACP protocol, Load balancing options: 50/50, 80/80 (requires traffic management capabilities enabled) SDH: Multi-Section Path Protection (MSPP), structure in a Main/Standby configuration
Customer Managed Protection	Protected service in the core (IEN) and selectable access diversity options to fit your specific network requirements. Gives you full control of network traffic management and switching times.
VLAN Bundling	<ul style="list-style-type: none"> One-to-one (one CE-VLAN ID mapped to one EVC at the UNI) Many-to-one (many CE-VLAN IDs mapped to one EVC at the UNI) All-to-one: (All CE-VLAN IDs mapped to one EVC at the UNI, for EPL and B-ends of an EVPL service only).
CE-VLAN ID	Various preservation and discard options are available. Refer to the product technical specification for more information
CE-VLAN CoS	Preserved across the network
EtherType	Both EtherType 0x8100 and 0x88a8 are offered. Refer to the product technical specification for more information.
Traffic Management Option	On failure of one link in a LAG bundle of two links at an Aggregation head-end (where the bundle has been configured as LAG80/80) low priority frames will be discarded based on PCP (802.1p) markings in the event of congestion. Discards occur in the direction egress from the network towards the Telstra Wholesale customer Aggregation head-end.
EVC MTU	Default 1600 bytes Maximum with electrical interface 1900 bytes (Jumbo) Network capability on optical interface 2040 bytes (Jumbo) Up to 9200 bytes (subject to availability)
MEF certification	MEF 9 and MEF 14 compliant