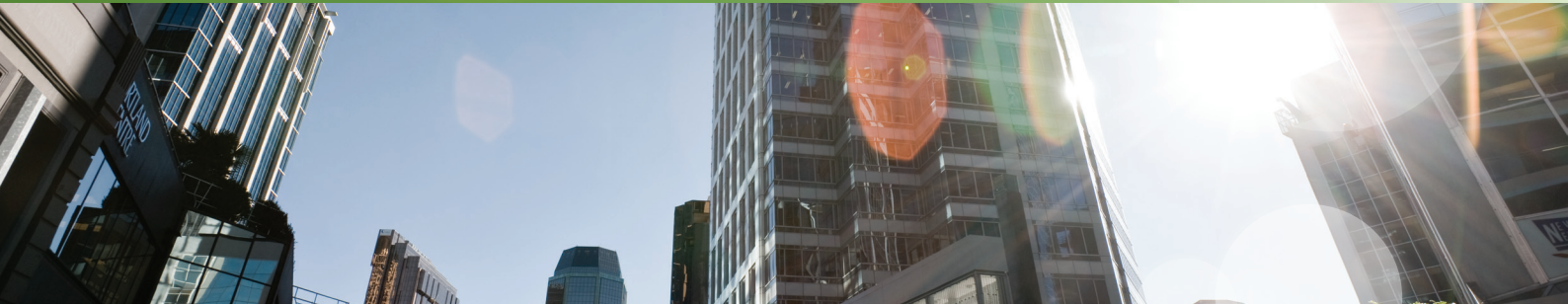


# MetroEthernet Flex

High performance network for critical applications and bandwidth efficiency



VectorFibre MetroEthernet Flex gives you the flexibility to manage different types of traffic on a single Ethernet Virtual Connection (EVC) by prioritising the traffic according to your specified preferences. This ensures that the applications that require performance are not affected by low-priority traffic such as Internet, so you get the maximum performance for your critical applications at all times. Underpinning this is the assurance that VectorFibre MetroEthernet is the first suite of connectivity services in New Zealand to achieve certification by the MetroEthernet Forum (MEF), the international standardisation body for Ethernet. You also get additional options for bandwidth, service availability, service configuration and tagging.

## How it works

MetroEthernet Flex is a Layer 2 data service that uses Ethernet Virtual Connection (EVC) with a committed bandwidth profile that supports Class of Service (CoS). It provides fully symmetrical, low-latency connectivity between your sites. Any traffic within the contracted bandwidth rate is prioritised and carried over the VectorFibre network according to your CoS marking. This ensures that your critical applications perform consistently.

Your services can be provisioned in a point-to-point or multipoint-to-multipoint configuration, allowing you to easily establish the particular connectivity relationships that you require between sites.



This service is internationally certified for performance and reliability by the Metro Ethernet Forum.

## Business benefits

### Traffic management control

With six classes of service categories for your applications, you get the flexibility to manage performance of the different applications you run without compromising quality.

### Internationally certified service

MEF certification gives you consistent quality. Our MetroEthernet network supports all features of carrier grade Ethernet solutions.

### Flexibility

You get services that closely match your requirements with multiple configuration and service options to choose from, enabling you to manage your costs and performance effectively.

### Ease and simplicity

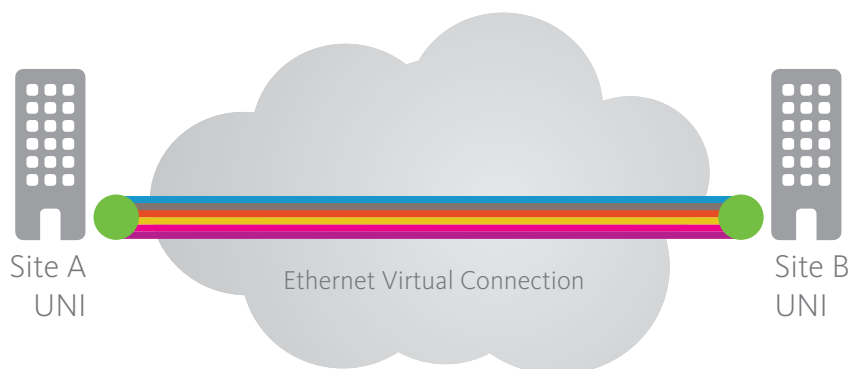
There is a standard fixed monthly charge regardless of the geographic location of your customer (within a metro area). The end-to-end service construct makes it easy to manage moves adds and changes.

### Highly scalable

No more complex service charges as you can move between 10Mbit/s to 10Gbit/s with the same service characteristics.

### Technology overview

MetroEthernet Flex service honours different classes of service marked on your traffic. Six classes of services are available for mapping your traffic for prioritisation. Each class of service is carried over a separate traffic queue within the VectorFibre network to ensure the performance of each traffic type. A Committed Information Rate (CIR) bandwidth profile ensures that delivery of your data within the contracted bandwidth will be ensured. All the traffic markings given are maintained so that you can use them elsewhere in your network.



Traffic prioritisation based on class of service

### Additional options

With MetroEthernet Flex, you can choose the specific bandwidth and availability levels you want. You can also decide on the particular service configuration and VLAN tagging for your network. To find out more about these options, visit [www.vectorfibre.co.nz](http://www.vectorfibre.co.nz)

## Service specification

EVC attributes	EPL	EVPL	EP-LAN	EVP-LAN
Bandwidth Profile Type	Committed Information Rate(CIR)	Committed Information Rate(CIR)	Committed Information Rate(CIR)	Committed Information Rate(CIR)
Bandwidth Profile	10, 20, 25, 30, 50, 75, 100, 200, 250, 300, 500, 750 Mbit/s 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 Gbit/s per EVC			
Rate Enforcement	Ingress rate policing with Excess Burst Size of 1500ms			
EVC Maximum Transmission Unit (MTU) size	9000 bytes			
CE-VLAN ID Preservation	Yes			
CE-VLAN CoS Preservation	Yes			
Unicast Frame Delivery	Deliver Unconditionally			
Multicast Frame Delivery	Deliver Unconditionally			
Broadcast Frame Delivery	Deliver Unconditionally			
Layer 2 Control Protocol	Tunnel IEEE 802.3x MAC Control Frames			
	Tunnel IEEE 802.1x Port Authentication			
	Tunnel Generic Attribute Registration Protocol (GARP)			
	Tunnel Spanning Tree Protocol (STP)			
	Tunnel a protocol multicasted to all bridges in a bridged LAN			
	Tunnel Link OAM			
	Tunnel STP (Cisco BDPU)			
	Tunnel CDP			
	Tunnel VTP			
Tunnel* or Peer Link Aggregation Control Protocol (LACP)				

Class of Service	
6 Classes of service	Best Effort Data Transfer Interactive Video Expedited Forwarding Network Control
Traffic Classification	Class of Service
	CoS Marking
	Best Effort (E.g. Internet traffic) Data Transfer (E.g. Application traffic) Interactive (E.g. VoIP call control) Video Expedited Forwarding (E.g. VoIP UDP voice streams) Network Control (E.g. Routing protocols)
	Dot1p 0 & 1 Dot1p 2 Dot1p 3 Dot1p 4 Dot1p 5 Dot1p 6 & 7
Customer CoS Marking	Required Unmarked traffic is classified as Best Effort traffic type by default

UNI Attributes*	EPL	EVPL	EP-LAN	EVP-LAN
UNI Speed	100 Mbit/s, 1Gbit/s, 10Gbit/s			
Physical Medium	100 Mbit/s – IEEE 802.3u 100Base – T* (Copper) 1 Gbit/s – IEEE 802.3ab 1000Base – T* (Copper) 1 Gbit/s – IEEE 802.3z 1000Base – SX 1 Gbit/s – IEEE 802.3z 1000Base – LX 1 Gbit/s – IEEE 802.3z 1000Base – BX-U/D 1 Gbit/s – IEEE 802.3z 1000Base – EX 1 Gbit/s – IEEE 802.3z 1000Base – ZX 10 Gbit/s – IEEE 802.3ae 10GBase – SR* 10 Gbit/s – IEEE 802.3ae 10GBase – LR 10 Gbit/s – IEEE 802.3ae 10GBase – ER			
Mode*	Full Duplex* or Auto			
MAC Layer	IEEE 802.3 - 2005			
Service Frame Format	Untagged, single tag (802.1Q), double tag (802.1AD)			
MAC Address Limit	500 Higher limit may be available on request	500	500	500
UNI MTU Size	2000 bytes for UNI speed of 100 Mbit/s, 9000 bytes for UNI speed of 1 Gbit/s and above.			
Service Multiplexing	No	Supported	No	Supported
Bundling	No	Yes or No	No	Yes or No
All-to-one Bundling	Yes	No	Yes	No

Service Performance	
Availability	99.9%
Frame delay	< 20 ms
Frame jitter	< 10 ms
Frame loss	< 0.1%



To get the full benefit of MEF certified MetroEthernet Flex for your business call Vector Communications on **0800 826 436** or email [contactus@vector.co.nz](mailto:contactus@vector.co.nz)