

Southern Cross Cable Network

Securely connecting your business to the heart of the internet

Giganet

Ethernet Private Line Solutions

Southern Cross is an independent company capable of offering fully protected capacity solutions between Australia, New Zealand, Fiji, Hawaii and mainland USA .

Ethernet is an increasingly important service for many of today's carriers and service providers with few options to date for high capacity wide area Ethernet connectivity between Australasia and the USA.

Answering the needs of our customers and leveraging the reliability of the Southern Cross network, Southern Cross has introduced a suite of Ethernet private line products. The *Giganet* Ethernet Private Line products provide the security, privacy and dedicated bandwidth of a private line service on Southern Cross' robust ring based network architecture with the flexibility and scalability of Ethernet interfacing.

Flexibility

As part of the *Giganet* portfolio, Southern Cross provides interfacing options at 1GbE (*Giganet*), 10GbE LAN-PHY (*Giganet 10L*), and 10GbE WAN-PHY (*Giganet 10W*).

Availability

Southern Cross uses Generic Framing Protocol (GFP) to transport Ethernet frames over our existing robust SDH backbone.

This allows the inherent and superior network restorative features of SDH technology to be applied to your Ethernet circuits, in a similar fashion to our existing SDH product portfolio. Southern Cross' Protected *Circuit availability* is the envy of other providers *achieving 100%* in 2006, 2007 and 2008.

Features

Utilising Southern Cross existing high performance SDH infrastructure for delivery of Ethernet services, provides the best of both worlds. Features include:

- Low latency connectivity to the USA;
- Protected and N-Drop configurations available;
- Port protection (MSP) available on 10GbE WAN-PHY protected services;
- Scalable bandwidth—from 150Mbps (via *Giganet* service) to 10Gbps (via *Giganet 10L/10W* services);
- Provisioned as physically diverse circuit paths, with SDH protection switching on applicable circuits;
- 24 x 7 proactive monitoring and management;

Configuration	Capacity			Ring		
	1GbE	10GbE LAN-PHY	10GbE WAN-PHY	South	North-South	North
Protected	●	●	●	●	●	●
2 drop	●	●	●	●	●	●
3 drop	●	●	●		●	
4 drop	●	●	●		●	



QUALITY
RELIABILITY
DIVERSITY
SERVICE

flexible solutions for

your business needs

EASE OF OWNERSHIP

Southern Cross capacity *Giganet* products are available as a long term IRUs , with flexible payment terms available.

Capacity is available on each of the three product rings - South, North and North-South and all configurations are based on our diverse cable ring topology.

GIGANET—1GbE

CONFIGURATION

Giganet services are available in protected or N-drop configurations. Unprotected services are not available.

KEY FEATURES

- Single Mode Fibre (1270-1355 nm) Ethernet interface;
- Same IRU terms and payment options available as existing SDH products;
- Minimum initial traffic size of 150M (1 x VC-4), with increments available in 150M (Vc-4) steps to 1Gb;
- Protected Ethernet refers to SDH network side protection. Port (MSP) protection not available on native Ethernet interfaces;
- LCAS functionality support (on Virtual Concatenation);
- Generic Framing Protocol (GFP) used for carriage of Ethernet across SX SDH network;
- O&M applicable as per existing SX products.

GIGANET 10L—10GbE LAN-PHY

CONFIGURATION

Giganet 10L services are available in protected or N-drop configurations. Unprotected services are not available.

KEY FEATURES

- Single Mode Fibre (1530-1565 nm) Ethernet interface;
- Same IRU terms and payment options available as existing SDH products;
- Minimum initial traffic size of 1.2G (8 x VC-4), with increments available in 600M (4 Vc-4) steps;
- Protected Ethernet refers to SDH network side protection. Port (MSP) protection not available on native Ethernet interfaces;
- LCAS functionality support (on Virtual Concatenation);
- Generic Framing Protocol (GFP) used for carriage of Ethernet across SX SDH network;
- 9216 byte Jumbo frame support;
- O&M applicable as per existing SX products.

GIGANET 10W—10GbE WAN-PHY

CONFIGURATION

Giganet 10W services are available in protected or N-drop configurations. Unprotected services are not available.

KEY FEATURES

- Single Mode Fibre (1530-1565 nm) STM-64 SDH interface;
- Same IRU terms and payment options available as existing SDH products;
- Protected Ethernet refers to SDH network side protection. SDH port (MSP) protection available on protected services;
- O&M applicable as per existing SX products.



For more information, please visit our website

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Ethernet Private Line Solutions

- FRAME SIZES** *Giganet* supports frame sizes of: 64, 128, 256, 512, 1024, 1518 & 9216 (Jumbo) bytes
- STANDARDS** IEEE 802.3-2000 Clause 38 (Ethernet); ITU-T G.7041 (GFP); ITU-T G.707 (SDH)
- FIBRE TYPE** 1GbE: Single Mode; 10GbE: Single Mode
- CONNECTORS** Optical: FC/PC (SC/PC at Morro Bay)
- WAVELENGTH** Operating wavelengths: 1GbE: 1270-1355 nm (5 km) ; 10GbE: 1530-1565 nm (40 km)
- SDH MAPPING** VC-4-Xv (X = 1 to 7) for 1GbE;
VC-4-Xv (X= 8 to 64, increments of 4) for 10GbE LAN-PHY
VC-4-Xc (X = 16 or 64) for 10GbE WAN-PHY
- LCAS** Enabled (for Virtual Concatenated circuits). Not applicable for 'protected' configurations.
- BACKHAUL** *Giganet* and *Giganet 10L* services require Ethernet interfaces on connecting backhaul. *Giganet 10W* services require an SDH interface on connecting backhaul.
- THROUGHPUT** *Southern Cross Giganet* Ethernet Private Line (EPL) services are provided as Ethernet over SDH (EOS) services using Generic Framing Protocol (GFP) which allows asynchronous (octet aligned, variable length) payloads such as Ethernet to be carried over octet-synchronous networks. This provides an efficient mechanism to enable the Ethernet packets to be carried over the Southern Cross backbone in a robust and flexible way, and is compliant with ITU-T Recommendation G.7041.
- As part of the GFP procedure, the Ethernet frames (save the 'pre-amble' and 'frame delimiter') are encapsulated within a GFP frame, before being transported as part of the SDH VC-4 payload.
- Actual data throughput is therefore impacted by the efficiency and attributes of the client Ethernet network, particularly frame size.

	Gigawave 1GbE	Gigawave 10L 10GbE LAN-PHY
Line Speed	1,000 mbps	10,000 mbps
MAC Frame Size	Throughput (mbps)	Throughput (mbps)
64	761.9	8,311.7
128	864.8	9,020.8
256	927.5	9294.2
512	962.4	9437.2
1024	980.8	9510.3
1518	987.0	9534.4
9216	997.8	9576.3

The table indicates an estimated maximum *throughput* that will be achieved via a *Giganet* circuit based on client Ethernet frame size selection, and is calculated in line with ITU-T Recommendation G.7041. However, as actual throughput is impacted by a number of client side settings (such as Ethernet frame check sequence), *these should be used as a guide only*.

For more technical information, please visit our website or contact:



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This document presents an overview of current products, terms and conditions for Southern Cross capacity and supersedes all previous information. Southern Cross pricing, products, network arrangements, terms and conditions are subject to change at any time and this document is not intended to constitute an offer.