



Technical Overview
Service Provider Access (SPA) Service

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1. Abstract

This document specifies Network Tasman Fibre's Service Provide Access (SPA) product.

2. Scope

The specifications contained within this document are not deemed to be a detailed technical specification, rather an overview of the technical requirements and configuration of the product for a Service Provider's knowledge.

3. Introduction

Network Tasman Fibre's SPA product is a layer two service that is required for Service Providers to interconnect with Network Tasman for delivery of their customer connections.

A single SPA can be used to terminate any network Tasman L2 customer access product, and can be oversubscribed at the Service Provider's discretion. Multiple SPA services can be purchased should the service provider require these for geographical, redundancy or capacity reasons. In the case of Multiple SPA connections, the Service Provider will need to inform which SPA connection the ordered customer connection is to be terminated on.

4. Service Provider Physical Requirements

The SPA service is delivered to a Service Provider's location via either a simplex or duplex single mode fibre connection from the nearest Network Tasman Fibre CO. network Tasman fibre will be terminated with a SC connector(s) for connection to the Service Provider's switched network.

4.1. Service Termination Point

The Service Provider is required to provide an appropriate location for this fibre connection to be terminated. It should be clean of any pollutants (dust, dirt etc.) and secure from general public access.

4.2. Physical Access

The service provider must ensure that Network Tasman Fibre staff or approved contractors are provided with physical access to this location upon request and without unnecessary delay.

4.3. Equipment to be Supplied

The Service Provider is responsible for the supply of an appropriate fibre patch lead from the Network Tasman Fibre SC connector to their network switch optic.

5. Service Provider Logical Requirements

Network Tasman Fibre SPA is a layer two Ethernet service for the termination of customer connections onto a Service Providers designated network switch.

5.1. Equipment to be Supplied

The Service Provider is required to provide a switch port on their network with an appropriate optic (refer to specifications table).

6. Service Technical Specifications

6.1. Service Access Options

The Network Tasman Fibre SPA service is available at either 1Gbps or 10Gbps speeds.

6.2. Tagged Interface

The Network Tasman Fibre SPA service an 802.1Q tagged interface where a unique single VLAN tag (SVID) is allocated by Network Tasman Fibre for each customer circuit termination. Service providers who have the appropriate switch features can include a second VLAN tag (CVID) if desired which will be transported through the Network Tasman network to a customer circuit termination for their own purpose such as service separation.

6.3. Frame Type

The default EtherType supported on the Network Tasman Fibre network is 0x8100. On request and negotiation other frame types will be considered.

6.4. Frame Size

A maximum frame size of 9100 bytes will be supported.

6.5. Network Transparency

For the most part, the network carries all unicast and multicast traffic transparently, only processing 802.1Q S-tags as required. However, the Ethernet standards reserve a range of multicast MAC addresses for link protocols, which are normally not passed through bridge-type devices (including switches). This address range is 01-80-c2-00-00-00 through 01-80-c2-00-00-0F, and is used by several link-level protocols, including:

- 802.1D Spanning Tree, 802.1W Rapid Spanning Tree, MSTP etc
- 802.3X Flow Control
- 802.1AX Link Aggregation Control Protocol (LACP)
- 802.1X Access Control
- 802.1AB Link Layer Discovery Protocol (LLDP)

Of these, the following protocols are passed transparently through Network Tasman Fibre Ethernet virtual circuits:

- Spanning Tree family protocols, including RSTP and MSTP (multicast address 01-80-C2-00-00-00);
- 802.1X Access Control (01-80-C2-00-00-03);
- 802.1AB Link Layer Discovery Protocol (01-80-C2-00-00-0E);

Other protocols in the link layer range may be passed, interpreted within the network or dropped. In particular, 802.3X flow control (01-80-C2-00-00-01) and 802.1AX LACP (01-80-C2-00-00-02) will not be passed.

Link-layer protocols outside the reserved range, including GVRP/MVRP, CDP and VRRP are passed transparently.

6.6. Class of Service

To assist in the delivery of latency sensitive traffic such as Voice over Internet Protocol (VoIP) the Network Tasman Fibre network allows customers and Service Providers to mark packets as either high priority or low priority.

Egress packets from a Network Tasman Fibre SPA with an 802.1P tag of 5 will be treated as high priority traffic. All other tags (0,1,2,3,4,6,7) or untagged packets will be treated as low priority.

PCP Tag	Priority
0	Low
1	Low
2	Low
3	Low
4	Low
5	High
6	Low
7	Low

It is the Service Provider's responsibility to ensure that the correct tags are assigned to appropriate packets.

7. Specifications Summary Table

The following table summarises the technical specifications for a Network Tasman Fibre SPA service.

Fibre Type	Single Mode
Fibre Standard	ITU_T G.652.D. G657.A2
Fibre Performance	0.3db loss per KM @1550nm
Bulkhead Connector	SC
Standard Circuit Length	≤10km. NTF reserves the right to review pricing if this distance is exceeded.
Access Speed Options	1Gbps 10Gbps
Tagged Interface	802.1Q
VLAN Range (SVID)	Supplied by NTF
EtherType Default	0x8100
Maximum Frame Size	9100 bytes
Service Provider Required Optics	1Gbps 1000Base-BXU (TX1310nm; RX1550nm) 10Gbps 10GBase-LR (1310nm)

8. Service Level Agreement

Target Availability (24x7)	99.95%
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Proactively Monitored	Yes
Service Desk Availability to Report Faults	24 x 7
Standard Hours of Restoration	8am to 5pm Monday to Friday excluding public and regional holidays.
Time to Respond	Less than 60 minutes
Target Restoration Times	
-Ethernet Faults	Default Service Level <= 12 hours Enhanced Service Level <= 8 hours
-Fibre Infrastructure Faults	Default Service Level <= 48 hours Enhanced Service Level ,= 24 hours