School Managed Network Products

Service Description and Prices

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VERSION ~~2~~3

Contents

1 Overview

The purpose of this is document is to define the Managed Network Services we make available to schools and our Charges for those Services. This document applies to each School using our Managed Network Services, unless we agree otherwise in writing with them.

The Services described in this Service Description are subject to the following contract terms (copies of which are available on our website):
- School General Terms
- School Additional Terms for Managed Network Services

2 Definitions

This document uses the following defined terms, in addition to terms defined in the School General Terms:

CDN means Content Delivery Network.

CIR means Committed Information Rate.

eDMR means Ethernet over Digital Microwave.

EIR means Excess Information Rate.

Incident means:
- any unplanned interruption to any of the Managed Network Services; or
- any reduction in the quality of any of the Managed Network Services.

IP means Internet Protocol.

LAN means Local Area Network.

LFC means Local Fibre Company.

MAC means Moves, Adds and Changes.

Managed Router (also known as a "**CLNE**" or "Customer Located Network Equipment") is the router located on the school's edge of the Managed Network.

Mbps means Megabits per second.

Metro is any location within 30 kilometers of the centres of:
- Whangarei
- Auckland 's commercial centres in Auckland central, Takapuna, Manukau and Waitakere
- Hamilton
- Rotorua
- Tauranga
- Gisborne
- New Plymouth
- Hastings
- Whanganui
- Palmerston North
- Wellington

- Nelson
- Greymouth
- Christchurch
- Dunedin
- Invercargill

Non-Metro means any location that is not Metro.

PKI means Public Key Infrastructure

Priority Level for any Incident means the highest priority level (from "P1" being highest to "P4" being lowest) that is applicable to the Incident, determined by reference to the following table:

Priority Level	School Impact	Examples of Incidents
P1	All Users at multiple Schools	Major Managed Network Service outage. Outage of Provider connectivity affecting multiple Schools.
P2	All Users at a single School	Managed Network Service outage at a single School. Failure of network access to Providers for a single School.
P3	Multiple Users at several Schools	Failure of network access to a Provider for multiple Schools.
P4	One or more Users at one School	Failure of remote access connectivity for a single User.

QoS means Quality of Service.

RBI is the Government's "Rural Broadband Initiative" covering most of the 25% of New Zealanders that live outside of the UFB candidate areas.

RSBI means the Remote Schools Broadband Initiative.

SMTP means Simple Mail Transfer Protocol.

UFB is the Government's "Ultra-Fast Broadband" initiative intended to provide ultra-fast broadband to 75% of New Zealanders, concentrating in the first six years of the initiative on priority broadband users (including schools).

URL is a Uniform Resource Locator, or a web address.

Wholesale Access Service means a wholesale, bit-stream telecommunications service provided under a Government funded initiative, including UFB, RBI, and RSBI.

3   Managed Network Product

3.1   Overview
The Managed Network Product comprises the following components:
- **Managed Network Connection.** A single physical access to the Managed Network of a specified bandwidth (which can be thought of as "the size of the pipe"). Bandwidth allocation is based on your school roll and location (see section 3.3 - Standard Product Allocation below).
- **Safe and Secure Internet.** Access to the internet, with web filtering and security protection.

3.2 Features

The standard features of the Managed Network Connection component are:

- **Bandwidth** consisting of EIR and CIR.
- **Managed Router** to support the allocated bandwidth.
- **IP Address Management** providing a range of fixed IP addresses to the school.
- **Device and Access Management** providing proactive (threshold monitoring, troubleshooting errors) and reactive (device/interface down scenarios) management of the Managed Router to ensure continued operations and availability of services.
- **Bandwidth Management** providing differing individual types of traffic or individual weights using a traffic scheduler and policies within the CIR.
- **Raspberry Pi providing enhanced support capability including proactive support**

The standard features of the Safe and Secure Internet component are:

- **Uncapped national and international internet access** to internet sites that are not directly connected to the Managed Network. Use of the internet is subject to N4L's Managed Network Acceptable Use Policy.
- **DNS Resolution** providing a URL to IP address resolution service.
- **Web Filtering** providing control over all ~~unencrypted~~ internet content and incorporating dynamic internet content classification, URL filtering, file type filters, real-time scanning of search results for all http and https traffic. This service allows schools to alter their filtering rules to determine what categories of web sites are allowed, blocked or filtered.
- **Web Security** providing protection against malware threats and other malicious content through analysis of internet requests.
- **Firewall** providing the ability to filter IP traffic that traverses the firewall, including traffic leaving the school LAN to the internet and from the internet to the school LAN. The traffic filtering is based on source IP address, destination IP address, protocol and ports used by applications and devices.
- **Content Delivery Optimisation** using technologies such as caching and CDNs.

3.3 Standard Product Allocation

Schools will be allocated a particular bandwidth (together with the appropriate Managed Router) in accordance with the following table, based on their roll size (using their roll return for the previous March) and which fibre broadband initiative they are connected to.

Roll Size	Fibre Broadband Initiative	Product Name	Code	Bandwidth	Managed Router
1 – 250	RBI	Rural 50Mbps Standard Connection	RBI50	50 Mbps comprising: • 40 Mbps EIR • 10 Mbps CIR	Cisco 2921
251 – 750	RBI	Rural 100Mbps Standard Connection	RBI100	100 Mbps comprising: • 90 Mbps EIR • 10 Mbps CIR	Cisco 2951
751 – 3200	RBI	Not available at the moment	~~N/A~~	~~N/A~~	~~N/A~~
3200+	RBI	~~Not available at the moment~~	~~N/A~~	~~N/A~~	~~N/A~~
1 – 250	UFB	Urban 50Mbps Standard Connection	UFB50	50 Mbps comprising: • 40 Mbps EIR • 10 Mbps CIR	Cisco ~~2951~~2921
251 – 750	UFB	Urban 100Mbps	UFB100	100 Mbps comprising:	Cisco 2951

Roll	Fibre Broadband Initiative	Product Name	Code	Bandwidth	Managed Router
		Standard Connection		• 90 Mbps EIR • 10 Mbps CIR	
751 – 3200	UFB	Urban 500Mbps Standard Connection	UFB500	500 Mbps comprising: • 490 Mbps EIR • 10 Mbps CIR	Cisco ~~3925~~3925E
3200+	UFB	Urban 1000Mbps Standard~~Not available at the moment~~	~~N/A~~UFB1000	~~N/A~~1000 Mbps comprising: • 990 Mbps EIR • 10 Mbps CIR	~~N/A~~Cisco 3945E
1 – 250	eDMR[1]	eDMR 50Mbps Standard Connection	EDMR50	50 Mbps comprising: • 40 Mbps EIR • 10 Mbps CIR	Cisco 2921
251+	eDMR[1]	eDMR 100Mbps Standard Connection	EDMR100	100 Mbps comprising: • 90 Mbps EIR • 10 Mbps CIR	Cisco 2951
1 - 250	RSBI	RSBI 10Mbps Standard Connection	RSBI10	10 Mbps comprising; Shared EIR and CIR to a total of 10Mbps	Cisco 1941
1 - 250	RSBI[2]	RSBI 20Mbps Standard Connection	RSBI20	20 Mbps comprising; Shared EIR and CIR to a total of 20Mbps	Cisco 1941

[1] eDMR comprises of fibre connection to the school however portion of the connection is delivered over ethernet digital microwave
[2] Only available for schools using Gisborne.net

3.4 Upgrades to Standard Products

At its discretion, N4L may upgrade one or more of the bandwidth, the Managed Router or the CIR of a school's Managed Network Product from the standard product allocation, as set out in the tables below. Such upgrades may be implemented if considered appropriate based on the following considerations:

- a school's allocated bandwidth not being lower than any existing fibre connectivity to that school, where the school's current usage exceeds the standard product allocation;
- ensuring equity of provision for schools with similar needs;
- maintaining quality connectivity for schools to support teaching and learning;
- student needs and the achievement of learning outcomes (and the associated needs of teachers and support staff in schools) not being limited by the product allocated; and
- ensuring efficient service delivery (for example by avoiding the need for a school to be revisited if a school's roll is likely to expand in the short term).

Bandwidth Upgrades:

Fibre Broadband Initiative	Product Name	Code	Bandwidth	Managed Router
RBI	Rural 50Mbps to 100Mbps Upgrade Connection	RBI50 -> ~~100~~RBI100	100 Mbps comprising: • 90 Mbps EIR • 10 Mbps CIR	Cisco 2951
RBI	Rural 100Mbps to 500Mbps Upgrade Connection	Not available at the moment	N/A	N/A
RBI	Rural 500Mbps to 1000Mbps Upgrade	Not available at the moment	N/A	N/A

	Connection			
UFB	Urban 50Mbps to 100Mbps Upgrade Connection	UFB50~~-> 100~~ -> UFB100	100 Mbps comprising: • 90 Mbps EIR • 10 Mbps CIR	Cisco 2951
UFB	Urban 100Mbps to 500Mbps Connection Upgrade	UFB100 -> ~~500~~UFB500	500 Mbps comprising: • 490 Mbps EIR • 10 Mbps CIR	Cisco 3925
UFB	Urban 500Mbps to 1000Mbps Connection Upgrade	UFB500 -> UFB1000~~Not available at the moment~~	N/A	N/A
EDMR	Rural 50Mbps to 100Mbps Upgrade Connection	eDMR50 -> eDMR100	100 Mbps comprising: • 90 Mbps EIR • 10 Mbps CIR	Cisco 2951
RSBI	N/A	N/A	N/A	N/A

CIR Upgrades:

Product Name	Product Code	CIR
Rural CIR 10Mbps ~~Enhancement~~upgrade	RCIR10	10Mbps
Urban CIR 10Mbps ~~Enhancement~~upgrade	UCIR10	10Mbps
eDMR CIR upgrade	Not available at the moment	
RSBI CIR upgrade	Not available at the moment	

CLNE Upgrades:

Product Name	Product Code	Managed Router
Cisco 1941 to 2921 ~~to 2951~~ Upgrade	~~2921 -> 2951~~C1941 -> C2921	Cisco ~~2951~~2921
Cisco 2921 to ~~3925~~2951 Upgrade	~~2921 -> 3925~~C2921 -> C2951	Cisco ~~3925~~2951
Cisco 2951 to ~~3925~~3925E Upgrade	~~2951 -> 3925~~C2951 -> C3925	Cisco 3925
~~Cisco 2951 to 3945e Upgrade~~	~~2951 -> 3945e~~	~~Cisco 3945e~~
Cisco ~~3925~~3925E to ~~3945e~~3945E Upgrade	~~3925 -> 3945e~~C3925 ->	Cisco 3945e

3.5 Product Boundary

The boundary of the Managed Network Product ends at the Managed Router on the school's premises. That is to say, the Managed Network Product doesn't extend into the school's LAN infrastructure, end user devices or other ICT infrastructure.

3.6 Options

The optional features of this product are:
- Remove Web Filtering (not recommended).
- Remove Web Filtering and Web Security (not recommended).
- Remove Firewall (not recommended).
- Add SMTP Mail Relay (including Email filtering, spam filtering and malware protection).
- Add Remote Access

3.7 Pre-Requisites

The pre-requisites for this product are:
- A UFB or RBI fibre connection, or other connection method acceptable to N4L, available in the school server

room.
- A suitable location for housing the Managed Router.

3.8 Ordering

This product may be ordered as follows:
- New product – via an N4L Order Form.
- Moves, Adds or Changes – via:
  - manual order form (where available); or
  - call toor email the N4L Helpdesk.

3.9 Term

The term of each Managed Network Connection:
- commences on completion of its provisioning; and
- continues until terminated by us or the school, on at least one month's written notice to the other.

If the School terminates the Service as above, N4L may invoice the following additional Charges to the extent they are payable by N4L to its suppliers in relation to that termination:
- a $195 termination charge;
- any early termination charges from the Wholesale Access Service provider; and
- a pro-rata proportion of a $300 plus GST network connection provisioning charge that was waived by N4L's network supplier, in respect of the period following termination and calculated over the first two years of the term.

3.10 Service Level Targets

N4L will use reasonable endeavours to meet the following service level targets for this Managed Network Product:

Name	Measurement	Target[1]
Availability	The proportion of time the Managed Network Product is: • functioning; and • available to schools, • without the existence of any P1 or P2 Incidents. Calculated by: $$\frac{Uptime \times 100}{Uptime + Downtime}$$ Where: Uptime is the total time in the period in which the product is operating as defined above. Downtime is the total time in the period that is not Uptime.	Over a rolling 12 months: • >99.863% Metro • >99.817% Non-Metro
Latency (Managed Router to Internet Gateway – One way)	The time taken between a test IP packet being transmitted, and it being received at its destination. Measured at 5-minute intervals, between a school's router and the designated monitoring	Average over a month: • 200 byte packets: <215ms • 1472 byte packets: <215ms

[1] Excluding all RSBI schools with an availability target of 99.5%

Note these service level targets are measured on a global basis across all schools receiving this Managed Network Product.

If a target described above is not met due to:

- any maintenance on or in relation to the Managed Network carried out within a planned maintenance window;
- any UFB, RBI or RSBI outage;
- any breach by a school of its agreement with N4L; or
- any event or circumstances outside the reasonable control of N4L or its subcontractors (including a failure of or within a school's LAN infrastructure, end user devices or other ICT infrastructure),

then N4L will be deemed not to have failed the applicable service level.

4   Remote Access Product (Optional)

4.1   Overview
Remote access allows any user approved by the school to connect over an internet connection to the school's LAN and in-house resources using a VPN service.

4.2   Features
Remote Access includes the following:
- A hosted VPN infrastructure to terminate client based remote user VPN connections.
- End user VPN client software to be installed on end user devices (a list of approved devices, mobile phones, operating systems and patch levels capable of using this product will be provided by N4L).
- Web based (SSLvpn) that can be accessed through a standard web browser

4.3   Product Boundary
The N4L Managed Network

4.4   Options
None available

4.5   Pre-Requisites
Pre-requisites for this product are:
- Managed Network Product; 2.user devices that:
  - are compatible with the approved versions on the VPN client software; and
  - can access the hosted VPN infrastructure; and
- acceptance by the end users of any applicable VPN client software licence terms.

4.6   Ordering
This product may be ordered as follows:
- New product – via an N4L Order Form.
- Moves, Adds or Changes – via:
  - manual order form (where available); or
  - call or email to the N4L Helpdesk.

4.7   Term
The term of each Managed Network Connection:
- commences on completion of its provisioning; and
- continues until terminated by us or the school, on at least one month's written notice to the other.

There is no termination charge if the Service is terminated as above.

4.8   Service Level Targets
N4L will use reasonable endeavours to meet the following service level target for this Remote Access Product:

Name	Measurement	Target
Availability	The proportion of time the centralised VPN service platform is: • functioning; and • available to schools, • without the existence of any P1 or P2 Incidents. Calculated by: $$\frac{Uptime \times 100}{Uptime + Downtime}$$ Where: Uptime is the total time in the period in which the product is operating as defined above. Downtime is the total time in the period that is not Uptime.	99.7% over a rolling 12 months

Note this service level target is measured on a global basis across all schools receiving this Remote Access Product.

If the target described above is not met due to:
- any maintenance on or in relation to the Managed Network and/or the VPN infrastructure carried out within a planned maintenance window;
- any outage pertaining to UFB, RBI or, RSBI outageor any other connectivity method accepted by N4L;
- any breach by a school of its agreement with N4L; or
- any event or circumstances outside the reasonable control of N4L or its subcontractors,

then N4L will be deemed not to have failed the applicable service level.

5 Support

Support for all N4L products described in this Service Description is available 8:00am – 5:00pm business days (ie any day other than a Saturday, Sunday or public holiday that is observed nationally throughout New Zealand).

Support calls must be made to the N4L Helpdesk.

6 Moves, Adds and Changes (MACs)

N4L will perform, or (as the case may be) will enable a school to perform, the following MACs:

6.1 Managed Network Connection

MAC Transaction	MAC Type	Description
Managed Router upgrade / downgrade	Onsite MAC	Upgrade or downgrade of a Managed Router
Access speed upgrade / downgrade	Complex Remote MAC	Change to the access speed within profiles and within the capability of the Managed Router
CIR upgrade / downgrade	Complex Remote MAC	Change to the CIR within profiles and within the capability of the Managed Router
IP Address add / remove / change	Complex Remote MAC	Changes to IP Addressing

IPsec VPN add / remove / change	Complex Remote MAC	Change to a VPN defined within the network
VLAN add / remove / change	Complex Remote MAC	Change to a VLAN defined within the network
Security zone add / remove / change	Complex Remote MAC	Change to a security zone defined within the network
QoS traffic add / remove / change	Simple MAC	Change to the QoS traffic classification
Pre-approved Firewall rule add / remove / change	Simple MAC	Change to a pre-approved firewall rule on the Managed Router of a school
Customised Firewall rule add / remove / change	Complex Remote MAC	Change to any other firewall rule on the Manager Router of a school
DHCP add / remove / change	Complex Remote MAC	Change to the DHCP settings on the Managed Router
Relinquish Product	Onsite MAC	Relinquishment of a Managed Network Product at a school

6.2 Safe and Secure Internet

MAC Transaction	MAC Type	Description
Web Filtering rule change	Simple MAC	Change to a filter rule within the "Web Filtering" Service

6.3 Remote Access

MAC Transaction	MAC Type	Description
Remote VPN add / remove / change	Complex remote MAC	Change remote VPN access
Remote access user add / remove / change	Simple remote MAC	Change remote access for a user
Site to site VPN add / remove / change	Complex remote MAC	Change to site to site VPN routing for a school

7 Pricing

The Managed Network and Remote Access Products (as set out in sections 3 and 4, above) are fully funded by the Ministry of Education for State, State Integrated and Partnership schools.

Costs associated with implementing Moves, Adds and Changes (as set out in section 6, above) will also be funded by the Ministry of Education; however N4L will monitor the volume of MAC requests being made by schools and will work with schools to ensure that the efficiency of the MAC request process is optimised.