



MEMBER SERVICES CATALOGUE

REANNZ

ABOUT REANNZ /

REANNZ operates and supports a specialist high-performance digital network that is engineered to meet the unique performance demands of scientists, researchers, innovators and educators.

The network is used by researchers to access, move and share data-intensive research around the country and across the world. Members of REANNZ are able to connect and collaborate with each other and their international research partners. Our mission is to support and enable world-leading data intensive research for the benefit of New Zealand and the world.

We are a not-for-profit Crown-owned company under Schedule 4A of the Public Finance Act 1989. Our Shareholding Ministers are the Minister of Finance and the Associate Minister of Research, Science and Innovation. We are governed by our Board of Directors who are appointed by the Minister of Research, Science and Innovation.

REANNZ teams work closely with our member's technology experts and researchers to support their use and access to the network. REANNZ engineers develop solutions that resolve technical issues, support a member's network infrastructure needs and facilitate the uninterrupted transfer of research data.

REANNZ offers a range of services and products specifically designed to meet the needs of end users operating in these specialist environments. The REANNZ Services Catalogue sets out the products and services bundled into your REANNZ membership, and also details those products that can be added to your membership for an additional cost.

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Seattle
Portland (Oregon)

Sydney

Hawaiki Capacity

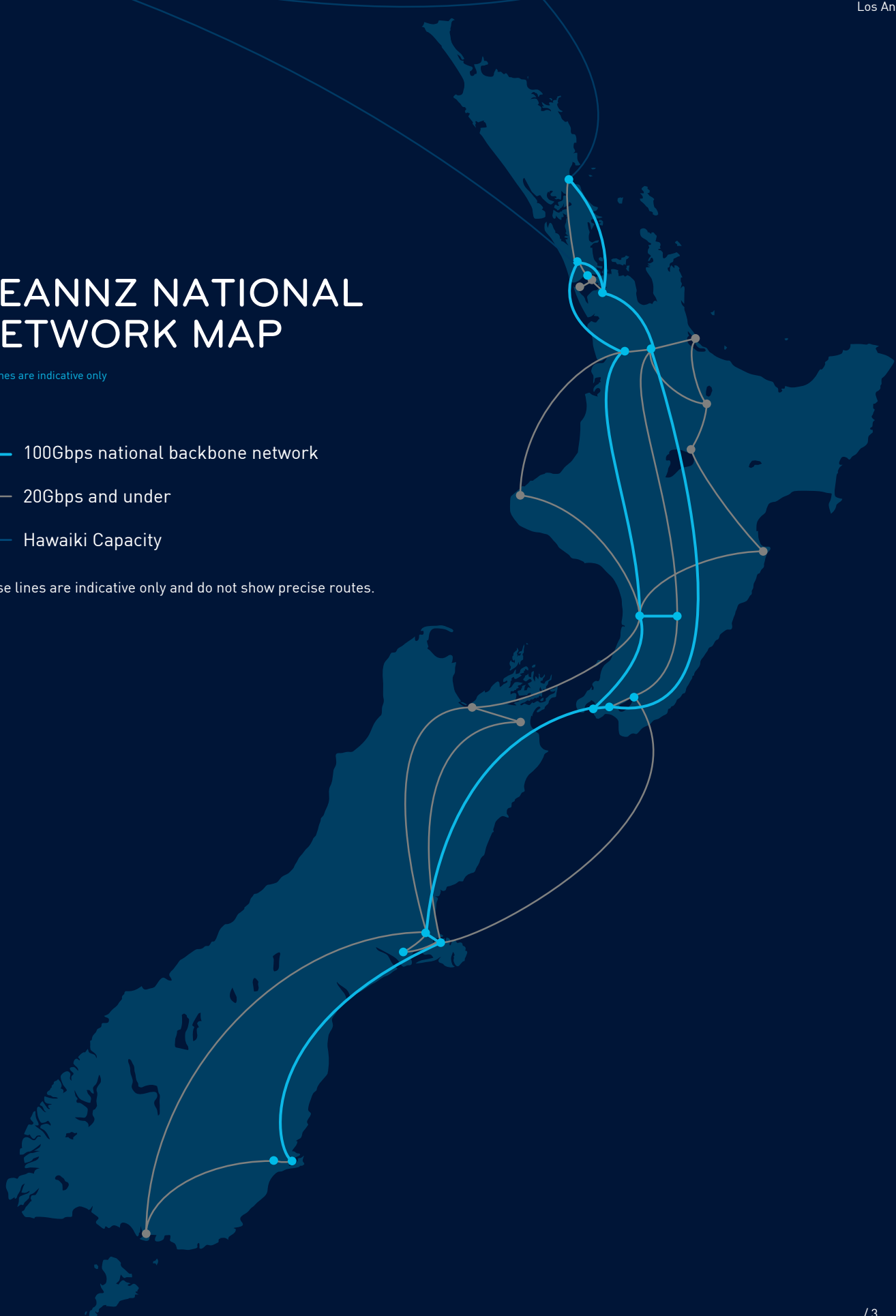
Los Angeles

REANNZ NATIONAL NETWORK MAP

NB lines are indicative only

- 100Gbps national backbone network
- 20Gbps and under
- Hawaiki Capacity

These lines are indicative only and do not show precise routes.





REANNZ INTERNATIONAL NETWORK

NB lines are indicative only, they do not show precise routes and includes committed services.

As New Zealand's designated National Research and Education Network (NREN), we are an active member of the global community of over 120 national and regional research and education networks. These NRENs have long-established working relationships, and have developed shared practices and protocols that enable them to facilitate the transfer of huge data sets on a global scale.



Our seat at the table enables REANNZ to connect our members to exclusive services that are designed to meet the needs of their research, science and innovation communities. These services include eduroam (education roaming: the secure, worldwide roaming access service developed for the international research and education community) and eduGAIN (the global federated identity management system), both of which are available to REANNZ members as part of their bundled membership.

OUR MEMBERS /

REANNZ is a membership organisation, funded by our members and the MBIE Strategic Science Investment Fund (SSIF). REANNZ's members include New Zealand's Universities and Crown Research Institutes, Institutes of Technology and Polytechnics, Wānanga, Independent Research Organisations, and other research and education organisations.

Our purpose is to provide pathways and connections to global research partners and institutions that work with New Zealand's scientists, researchers and academic institutions.

In order to help facilitate its mission, REANNZ also connects organisations that provide services of benefit to the membership base, such as providers of cloud services, cloud-based applications and data storage facilities.

This decreases the cost to members to access relevant content by delivering it across the REANNZ network instead of over commercial carriers, and improves the quality of their user experience by ensuring it is accessible through a high capacity, quality network.

In addition, REANNZ connects innovative businesses to the network, allowing them to work directly with the science and research institutions that are assisting with product development or commercialisation.



PRODUCTS & SERVICES /

The below products and services are available to you as part of your REANNZ membership



Managed Access and Edge

Connecting member's local network with the REANNZ network.

Managed Access and Edge connectivity offers the greatest level of flexibility and support required to support research and data-intensive traffic.

It is widely accepted in the global NREN community that dark fibre access is the preferred access technology that can deliver outcomes such as consistency of experience, transparency of the network and predictability of performance.

Edge devices, including switches and routers, connect a member's local network with the REANNZ network, enabling members to transfer data. Members use either a REANNZ managed edge device or manage this entry point themselves.

REANNZ managed edge devices are engineered and configured for high performance, and where required high availability, to meet the specialist needs of the research community when transferring large volumes of data.

Members can connect to the REANNZ network with 1G, 10G or 100G ports; the team at engagement@reannz.co.nz are on hand to discuss your specific requirements.



MAE Lite

Connecting smaller or remote research sites to the REANNZ network.

Managed Access and Edge Lite (MAE Lite) enables connectivity and collaboration at a scale that was not previously available, expensive or difficult to acquire.

It enables members to **connect research sites that are geographically remote or smaller in size** to REANNZ's high speed network at a significantly lower cost, providing an effective solution for research and science grade connectivity for difficult to connect locations.

While largely similar to Managed Access and Edge, MAE Lite does not require dedicated dark fibre which can be difficult to access in remote locations. This service is suitable for small branch sites that have lower network demands.

MAE Lite is a product that can be added to your REANNZ membership as required at an additional cost; the Engagement team are on hand to discuss your specific requirements.



Science DMZ

A scalable network design model to optimise science data transfers.

It's crucial that research and science traffic moves quickly from desk to destination. ESnet, the Energy Sciences Network based in the US, created the Science DMZ to make this happen.

Here at REANNZ we think of the Science DMZ as the on-ramp to the superhighway. It's a different path, just for this particular type of traffic, to get data from the source - for instance, a researcher's desk - across buildings, campuses and countries to anywhere in the world without slowing down.

Science DMZ provides a **lightweight and high performing path from your internal network to the REANNZ network**. It creates a dedicated route that facilitates the transfer of large volumes of data, from multi-gigabyte to petabytes and terabytes, all while retaining the integrity of the data. Science DMZ is built at or near the campus or laboratory's local network perimeter and is designed so that the equipment, configuration, and security policies are optimised for high-performance scientific applications, rather than for general-purpose business systems or "enterprise" traffic.

This on-ramp was installed at the University of Otago. They had been struggling to get data out of their front door any faster than a few hundred megabits per second. The University of Otago and REANNZ worked together to come up with the best solution for their needs. We installed a managed edge switch, so that everyday internet traffic would be directed down the normal path with all of the gates, while research data would go down a different, faster path, which bypassed all of the gates it didn't need to go through. The university now has a clear, high-speed research data path to and from the REANNZ network. On top of that, REANNZ manages the switch, so if changes or upgrades need to be made in the future REANNZ can make them, meaning less work for the university.

Science DMZ may be a suitable option for your organisation; the REANNZ Engagement and Networks team can discuss your specific network requirements.



Cloud Connect

Leverage off your REANNZ network to connect with your cloud service provider.

REANNZ Cloud Connect Service enables members to use their existing high-performance REANNZ network connection to connect with the cloud service provider of their choice.

Our direct links result in considerable cost savings and efficiencies for our members. Cloud Connect creates a connection from one or more virtual routers in the cloud service provider's domain, to one or more member handover ports on the REANNZ network.

Both AWS Direct Connect and Microsoft Azure ExpressRoute are available, however connections to other cloud providers can be investigated; the Engagement team are on hand to discuss your specific requirements and the associated costs.



DC Connect

Direct connectivity into New Zealand data centres

Data Centre Connect (DC Connect) is a service that REANNZ can provide at selected Data Centre sites around the country, allowing for high bandwidth, cost effective connectivity into the REANNZ network.

This is an alternative option to our Managed Access and Edge service that requires a dedicated Fibre from the Data Centre to the nearest REANNZ Point of Presence (PoP). This service uses preinstalled equipment and diverse connectivity at the Data Centre, bringing the edge of the REANNZ Network into the facility which allows us to deliver new services quickly and ensure high uptime and availability. DC Connect uses shared REANNZ infrastructure to then connect into the wider REANNZ Network.

We are currently able to provide multiple 10G services with full diversity to meet your bandwidth requirements and have this service deployed into several Data Centres, with more likely to follow in the future.

If you would like to hear more about which Data Centres we can connect you to, our Engagement team are on hand to discuss your options.



Tuakiri

Federated identity management.

Tuakiri provides trusted and secure federated identity and access management that enables access to online content for New Zealand's research, science, innovation and education sectors. It is seamless - users have single sign-on access to online content, services, subscriptions and resources for the research and education community, including CloudStor, Elsevier, Nature, Research Professional and the NZ ORCID Hub.

Tuakiri reduces the number of accounts that users and their IT support teams have to manage, saving costs and reducing complexity and security risks. Identity authentication is managed by your organisation, using your own directory and registration processes. No identity data is shared with us — it is shared securely and directly between you and the service providers.

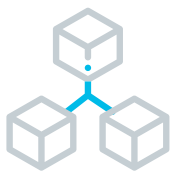


Tuakiri Hosted IdP

Simplified access to Tuakiri through a scalable solution.

Tuakiri allows an end-user to consume services, access resources, and otherwise collaborate within New Zealand while using their home institution's identity. However, a barrier to joining Tuakiri for some organisations has been the requirement to run an Identity Provider (IdP) server.

Tuakiri Hosted IdP is the option to have REANNZ host the Tuakiri IdP on behalf of the member, simply by connecting to the organisation's own Identity Management System. Using the Tuakiri Hosted IdP service also simplifies access to eduGAIN, providing easy access to thousands more resources that are designed to support the research and education community.



eduGAIN

Simplified access to content, services and resources for the global research and education community.

The same capability in Tuakiri is recreated in many nations around the world, each operating their own equivalent service. These national level services can be linked together using eduGAIN, enabling that same simplified workflow across the globe.

eduGAIN interconnects identity federations such as Tuakiri around the world, simplifying access to content, services and resources for the global research and education community. eduGAIN coordinates the necessary elements of a federations' technical infrastructure and provides a policy framework for controlling the exchange of this information between Identity federations. Online services are crucial for research and education, and the importance of accessing these services is growing due to the impacts of the current COVID-19 pandemic. Students, teachers, researchers and institution staff can utilise these services for e-learning, teaching and conferencing, analysing and sharing data, as well as accessing journals and libraries.





eduroam

A secure, world-wide roaming wifi service.

eduroam stands for **education roaming**. It offers users from participating academic institutions secure Internet access at any other eduroam participating location in New Zealand, and worldwide.

eduroam provides researchers, staff and students from participating institutions with wifi across campus and when visiting other participating institutions by simply opening their laptop, or turning on their phone.

Today, over 30 New Zealand institutions are using and providing eduroam. It is also available in 106 countries and over 10,000 hotspots around the world. eduroam was developed and is maintained by GÉANT (the pan-Europe research and education network) for the international research and education community and is available worldwide in 106 territories.



eduVPN

An easy to deploy VPN solution designed for and by the research and education community

With more people working from home or working remotely in other locations, organisations have an increased need for their researchers to access the internal network at their home institution. While eduroam is a secure environment with authenticated access to the internet and local encryption, many public WiFi services can be insecure.

A VPN extends a private network across a public network and enables users to send and receive data across shared or public networks as if their computing devices were directly connected to the private network. Applications running on a device across a VPN may therefore benefit from the functionality, security, and management of the private network.

eduVPN is an easy to deploy VPN solution designed for and by the research and education community. It meets the needs of smaller organisations by connecting them to their network, without the burden of managing a VPN solution inhouse.



TELL US HOW WE CAN HELP /

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