



Connecting to SABRENet

Frequently Asked Questions

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This document has been prepared to answer some of the questions commonly asked by organisations thinking about connecting to SABRENet.

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What is SABRENet?

The South Australian Broadband Research and Education Network (SABRENet) is an optical fibre telecommunications network constructed in metropolitan Adelaide to link the State's major Research and Education (R&E) sites, including

- university campuses
- research and technology precincts
- teaching hospitals
- schools
- TAFE colleges
- Australian Technical Colleges
- government research laboratories
- Industrial research sites.

SABRENet provides physical optical fibre connections to around 50 research and/or education sites in metropolitan Adelaide.

The basic 'value proposition' of SABRENet is that it allows qualifying research and education organisations to obtain extremely fast broadband connections at a very low recurrent cost.

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How fast?

SABRENet is literally as fast as you need it to be.

The speed of a given SABRENet connection is determined by the equipment connected to the optical fibres at each end of the connection. Most of our customers use SABRENet to obtain data rates of between one and ten gigabits per second, or roughly 50 to 1000 times the speed of a 'fast' ADSL2+ broadband service.

In theory however, a single SABRENet connection can deliver many times this bandwidth using more sophisticated equipment.

What is SABRENet Ltd?

SABRENet Ltd is a non-profit public company formed to oversee the development, management and effective use of SABRENet. The Members of SABRENet Ltd are

- Flinders University,
- the University of Adelaide,
- the University of South Australia, and
- the South Australian Government.

The Defence Science and Technology Organisation (DSTO) is a contractual partner in SABRENet Ltd.

SABRENet Ltd does not compete directly with commercial telecommunications providers.

Whereas commercial providers typically offer a range of 'managed' telecommunications services, SABRENet Ltd currently offers exactly one primary service to its customers, namely physical access to optical fibres connections between sites on the SABRENet network.

SABRENet Ltd does not currently provide Internet access or managed telecommunications services.

Is my organisation eligible to use SABRENet?

In very general terms, not-for-profit organisations that exist to conduct research and/or education may use SABRENet for all their telecommunications needs. Such organisations include universities, public and private schools, TAFE colleges and government research institutions.

Organisations that conduct research and/or education as part of a wider business, including firms and some government departments, may also be eligible to use SABRENet for specific purposes.

The SABRENet Access Policy, which is available on the SABRENet web site, addresses this question in detail.

Does it make sense for my organisation to use SABRENet?

SABRENet is not for everyone.

In order to take advantage of SABRENet your organisation will need to

- be eligible to use it (see above);
- have a need for the very high speed broadband that SABRENet allows. If an ADSL connection meets all of your existing broadband needs and you don't foresee much change, then you probably don't need SABRENet;
- have the ability to make use of a 'dark' fibre connection¹; and
- be prepared to meet the capital cost of connecting SABRENet to your premises (see '*How much will it cost?*' below).

Who uses SABRENet today - and for what?

Our primary customers are the SABRENet members, DSTO and CSIRO.

Each of these organisations uses SABRENet to create very fast connections between sites in the Adelaide metropolitan area. For example, each of the universities interconnects its campuses via SABRENet, while the Department for Further Education Employment and Technology (DFEEST) uses SABRENet to connect large TAFE colleges to a central IT facility in the CBD. In each case, the organisation views SABRENet as an extension of its own wide area network (WAN).

Our customers also use SABRENet to obtain Internet access via, for example, the Australian Academic and Research Network (AARNet).

In the future we expect that our customers will use SABRENet to connect to commercial telecommunications carriers in order to reach sites not directly accessible from SABRENet itself.

How does my organisation connect to SABRENet?

Connecting to SABRENet is not an end in itself, but rather a means of making a very fast connection to somewhere else.

Getting connected normally entails four stages:

1. Enter into an access agreement with SABRENet Ltd.
2. Physically connect your premises to the SABRENet optical fibre network
3. Create optical fibre connections to other sites on the SABRENet network
4. Enable 'active' telecommunications services

Stage 1 - Access Agreement

Every SABRENet customer is required to enter into an agreement with SABRENet Ltd covering fees, fibre allocations and conditions of use.

¹ A dark (as in 'unlit') fibre connection is one that is provided to a customer without any optical (laser-driven) equipment connected to it, and to which the customer is expected to connect its own equipment.

Stage 2 – Make the physical connection

This stage typically sees SABRENet Ltd install an optical fibre cable running from a point on your premises (typically a communications room) to the nearest point on the existing SABRENet network. Once outside your building, the cable will run through underground conduits. Depending on your proximity to SABRENet (see [Where does SABRENet go?](#) below) this may entail anything from a few metres to several kilometres of cabling and conduit.

Once the new cable has been installed it will not be connected to anything in the first instance.

Stage 3 – Make optical connections

SABRENet is made up of many lengths of multi-core optical fibre cables installed in underground conduits. The length of these cables varies from a few metres to several kilometres, and may contain anywhere between 12 and 324 individual fibres. In order to produce a working connection between two sites, two fibres (one each to transmit and receive data) in each of the intervening cables must be joined together (or 'spliced') to create a continuous optical path or 'circuit'. For example, to create a connection between Flinders University and the Adelaide CBD may require two fibres in four or five separate cables to be spliced together.

If you need to connect only two locations you need only one optical circuit, although some of our customers use multiple circuits between sites to simplify management of their complex IT systems.

Stage 4 – Active Services

An optical circuit is nothing more than a path along which light can flow. In order to be useful, laser-driven optical communications equipment must be connected to each end and activated, producing an 'active' telecommunications service.

SABRENet Ltd does not supply or manage this equipment. It is up to you to obtain, install and operate your own equipment – or engage an ICT contractor to do it for you.

Some of our customers operate their own equipment, while others engage an expert third party (such as a telecommunications provider or IT systems integrator) to do it for them.

Who owns SABRENet?

SABRENet is owned in common by the SABRENet Members. SABRENet Ltd is a public company limited by guarantee, which means that all of its assets (primarily the SABRENet infrastructure) are jointly owned by the Members. Members do not have individual shareholdings and there is no notion that, for example, the State Government owns one part of SABRENet while the University of Adelaide owns another.

In general, when SABRENet Ltd extends SABRENet to a new location, the ownership of any new infrastructure becomes the property of the Company – that is, in the common ownership of the SABRENet Members.

This policy extends to cables installed on customer premises.

Thus, if you pay SABRENet Ltd to make a connection to your premises it is important to realise that you are not buying physical infrastructure; rather, you are paying SABRENet Ltd to extend its 100+ kilometre network into your premises for the purpose of giving you the benefit of the entire network.

Where does SABRENet go?



Figure 1: SABRENet sites

Figure 1 shows the sites currently connected to SABRENet.

What about Service Levels?

SABRENet Ltd does not itself provide active services (see [Active Services](#) above). Consequently, the service levels we offer are limited to maintaining the integrity the physical fibre infrastructure.

If a cable is cut or damaged, we will fix it in a timely manner, and we do offer service levels relating to cable fault response and repair. If customer reports an apparent failure on a SABRENet optical circuit, then we will conduct an 'end-to-end' optical test on the affected circuit(s), and will make appropriate repairs if we detect a fault in the fibre.

We do not however make any guarantees whatsoever relating to the active equipment and services running on SABRENet fibres, or IT applications that may use those services.

Furthermore, we make the point that SABRENet is a publicly funded infrastructure aimed at supporting research and education, and that it is not intended to be relied on for critical applications in areas such as patient care, emergency services or finance. We require our customers to specifically acknowledge this point in our access agreements.

How much will it cost?

There are five primary components relating to the cost of using SABRENet – however only the first three involve SABRENet Ltd:

1. The one-off cost of physically connecting to the SABRENet optical fibre network. This can range from a few thousand to hundreds of thousands of dollars depending on the your proximity to the existing network. *Very roughly* speaking, new optical fibre infrastructure of the kind used by SABRENet will cost in the order of \$100,000 per kilometre to install in suburban Adelaide, but you should be aware that costs can vary significantly depending on factors such as ground conditions, market conditions, raw materials prices, urban density, main road crossings, building accessibility and so forth.
2. The cost of splicing optical circuits. This is a fairly small labour cost reflecting the time and effort required to splice together and test the requisite fibre pairs.
3. A small annual fee charged on each optical fibre connection. This fees is negotiated separately with each customer based on a standard formula, and will form part of your Access Agreement.
4. Your internal cost of activating SABRENet optical circuits. This will depend on the sophistication of the equipment used and the customer's own IT costs.
5. If the resulting connection is used to to obtain Internet access from an Internet Service Provider, then the you must meet the resulting access charges.

Where can I get more information?

The SABRENet web site (www.sabrenet.edu.au) provides contact details and a broad range of information including policies, information sheets, annual reports and media releases. Alternatively you can contact us at enquiries@sabrenet.edu.au