

Access Technology & Resilience

This fact sheet provides information on the different internet access technology types. An overview of service resilience is also provided - this is a complex area so a discussion with the Globalinternet team is always recommended before making decisions on resilience / separacy / diversity. It is part of a series of 9 documents that give a full overview of products and services available from Globalinternet.

Access Options	DIA	Broadband
Copper - EFM	Yes	N/A
Fibre - dedicated	Yes	N/A
Wireless - fixed	Yes	N/A
VSAT	N/A	Yes
Copper - SDSL	Yes	Yes
Copper - ADSL	No	Yes
Copper - VDSL	No	Yes
Cable	No	Yes
Fibre - shared	No	Yes
Wireless - mobile	No	Yes
Diversity / separacy	Optional extra	See datasheet
Routing details	Limited availability	N/A

Wired access

There are many types of wired of network connection: copper telephone networks, cable internet access and multiple types of fibre-optics. Local telephone networks often form the basis for wired communications that are used by both residential and business customers. Networks today are evolving more and more towards reliance on fibre-optic technology as the means of providing clear, reliable & non-distant dependant connections.

Name	Technology	Type	Bandwidth down*	Bandwidth up*
ADSL	Copper telephone line	Broadband	0.5-16M	0.1-2M
VDSL	Fibre to cabinet, copper to customer site	Broadband	20-500M	5-50M
SDSL	Copper telephone line	DIA	0.5-2M	0.5-2M
EoC / EFM	Multiple (bonded) copper lines	DIA	1-24M	1-24M
DOCSIS	Cable - copper/coax	Broadband	50-300M	5-50M
FTTH / FTTB	Fibre PON - shared fibre	Broadband	100M-1G	50-300M
Ethernet Leased Line	Fibre - dedicated	DIA	2M-10G	2M-10G
Optical	Fibre - dedicated	DIA	10G-100G	10G-100G

Wireless Access

Wired access is normally the preferred option for internet access for optimal cost and performance. Wireless technologies play a key role in providing coverage to areas not served by wired services - and to provide

backup or resilience options. Mobile access also has a key role to play in providing rapid solutions for urgent needs as it can be deployed in hours or days.

Name	Technology	Type	Bandwidth down*	Bandwidth up*
Fixed wireless	Microwave point-point	DIA	1-500M	1-500M
VSAT	Satellite – small dish	Broadband	Up to 1G	Up to 10M
4G Mobile	LTE	Broadband	Up to 40M	Up to 10M
5G Mobile	NR FR1 & FR2	Broadband	Up to 1G	Up to 500M

Access Resilience

With businesses now critically dependent on their internet lines to be able to function, resilience has become a key topic. Resilience means how resistant the service is to disconnection or disruption. Virtually all core networks for broadband and DIA are built with resilience by providers – meaning the connection from the provider’s node to the wider internet is generally

protected and resistant to outages from single equipment or line failures. The connection from the provider node to the customer site however is not normally protected – meaning that to achieve resilience multiple services are required.

The key types of resilience are outlined in the table below – this is a complex area however and a full discussion with the Globalinternet team is recommended.

Primary connection	Secondary connection	Use case
Broadband	Mobile broadband	Where always on-connectivity is key for a limited subset of applications
	Fixed broadband – same technology	General lowest cost option. Will not protect against major local cable cuts but many faults in copper lines are specific to the individual line itself. Note that selecting multiple local providers does not materially improve the resilience achieved due to shared infrastructure
	Fixed broadband – different technology	Good option where multiple broadband access types are available. Routing of copper telephone lines vs coax cable lines is likely to be different so provides a reasonable (but not guaranteed) level of protection.
Fibre DIA	Broadband	Where always on-connectivity is key for a limited subset of applications
	Copper DIA	Where primary is fibre, copper secondary can be a good choice.

	Fibre DIA without separacy to primary	Not usually recommended as any failures are likely to be at the cable level so are likely to affect primary and secondary – note that selecting a different local provider does not guarantee separacy.
	Fibre DIA with separacy	Through dialogue with local providers it is often possible to achieve various levels of separacy that will protect critical connections and avoid simultaneous primary/secondary failures.
	Fibre DIA with separacy & protection	Some local providers offer a managed protected service which offers guaranteed separacy end to end and resilient NTE connections – these are the best options when available but command a significant price premium.

Access Routing

In addition to resilience or separacy, some customers request details of routing of services – either to assure that the required resilience ordered is being achieved or to assure diversity from a service procured from another provider.

For broadband this is never available.

For DIA this is sometimes available but often not – many providers have a policy not to share this data publicly as it is perceived to do so increases the risk through malicious attack.

Let's Talk!

At Globalinternet, we want to help you to take full control over your internet without having to deal with the complexity of sourcing multiple Internet Service Providers.

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