



Do big things with Wholesale Optical

Low latency, high bandwidth connectivity
for business-critical services

March 2024

Wholesale Optical lets you offer dedicated, uncontended high bandwidth, high performance point-to-point and multi-access data connectivity. It uses fibre optic cables to transfer data digitally and can handle higher bandwidths and greater distances than other cabling options.

A technology known as “Dense Wave Division Multiplexing” (DWDM) puts together or multiplexes data signals from different sources to share a single optical fibre connection, while maintaining complete separation of the data streams. These are often referred to as “wavelength” services.

Common uses for Wholesale Optical connectivity

Build and expand your own networks and platforms.

- Creating aggregation or backhaul for internet and cloud services, such as full-fibre broadband networks.
- Building core infrastructure for fixed and mobile communications providers.

Sell-through of high bandwidth private networks for enterprises and public sector organisations, such as banks, government departments and utilities.

Performance-critical applications and traffic including Ultra HD media, TV and real-time transmission.

Network integration, including from both onshore and offshore networks, connecting to key UK datacentre locations.





Key features

National coverage, with a growing number of network nodes. We can offer the service in many regions that other providers cannot reach.

Dedicated, guaranteed and uncontended bandwidth.

Defined routes across our optical network, ensuring the fastest and best performance possible.

Bandwidths up to 400Gbps – beyond the capabilities of other common network connectivity like Ethernet (10Gbps maximum).

The lowest latency and best performance compared with alternative network services like Ethernet or IP VPN.

Scalable by increasing the number of wavelengths and their capacity.

Resilient routing and access are available for handling business-critical connections.

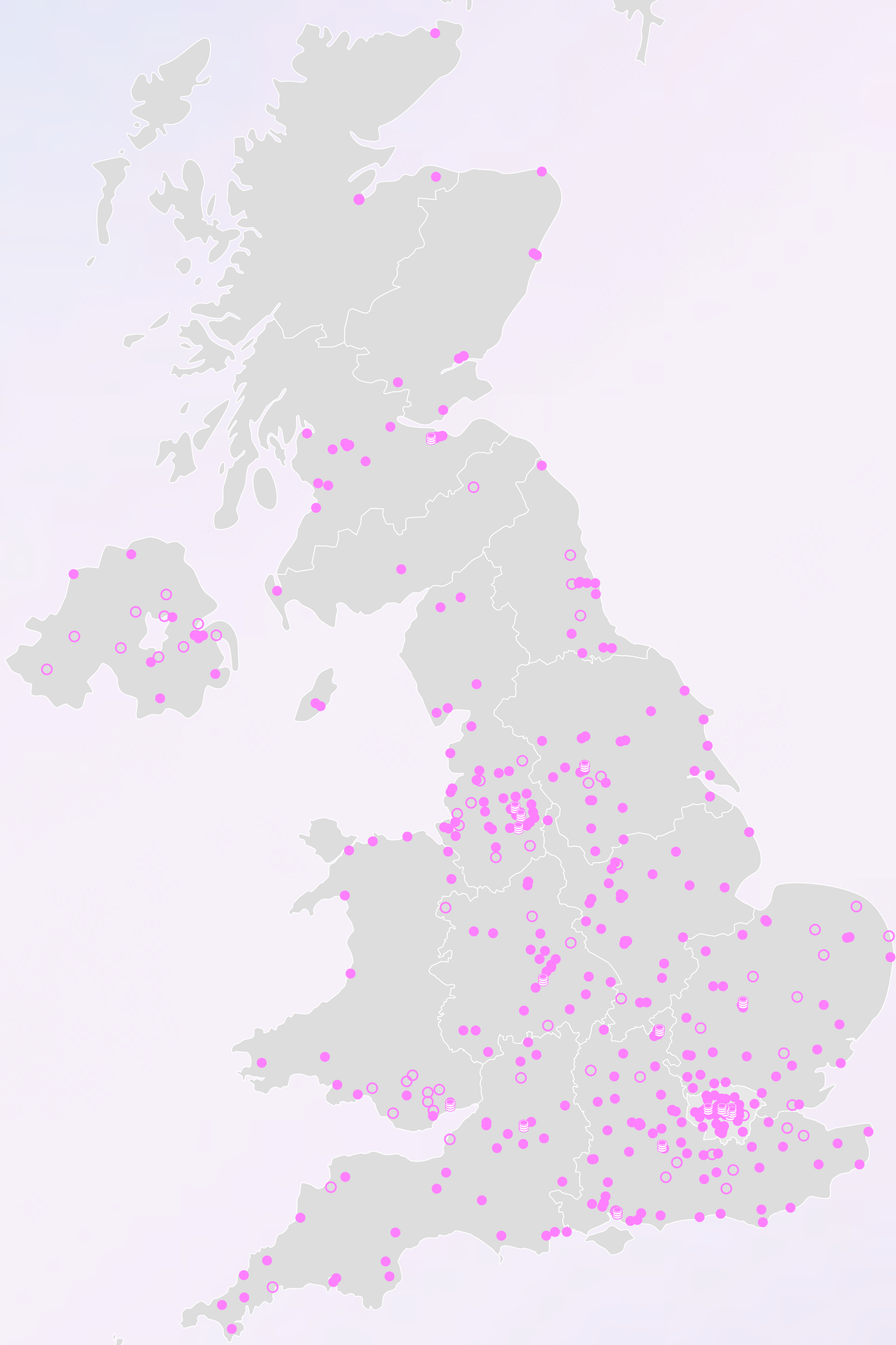
How much does it cost?

You can get simple indicative pricing from our wholesale pricing tool. Firm pricing can be requested via your account manager where network design and routing is completed. Firm quotes remain valid for 30 days.

Additional specs

- Designated as Critical National Infrastructure (CNI), showing our network meets the requirements for integrity and security.
- ISO270001 certified.





Our optical coverage

We continue to invest in the expansion and capabilities of our optical network. We now have:

- Over 300 optical nodes, with plans to expand this to more than 400 over the next year.
- Coverage in many on-net third-party datacentres, exchanges and cable landing/satellite earth stations.
- Continuous expansion of capacity in our network to handle the typical doubling of traffic every 18 months.
- Coverage for even hard-to-reach locations across the UK.

As we continue to grow our network coverage, this brings end user sites closer to nodes, reducing their pricing and complexity of delivery.

For the latest information on our optical network coverage and future expansion plans for each region and across the UK, please see our [interactive coverage maps](#).

Optical vs Ethernet and performance stats



Optical connectivity is different to traditional Ethernet services you may be familiar with. Optical offers dedicated, defined routing across our network via our DWDM core, which gives you the highest speeds and best transmission performance possible, supporting a wide range of requirements.

Ethernet

With our layer 2 and layer 3 Wholesale Ethernet services, the traffic that is routed across our network is intelligently switched and routed, optimising the route to maximise performance as much as possible.

- Access circuit speeds up to 10Gbps
- Network to Network Interfaces (NNI's) available up to 100Gbps in many data centres and exchanges
- Network connection bandwidth (Etherflows) up to 10Gbps maximum

The service carries various network performance targets including:

Network round-trip delay (RTD) latency <16ms.
(for network radial distances of <100km, increasing up to <30ms for the longest distances over 400km).

Maximum jitter of <3ms.

Core network packet loss of <0.01%.

Optical

Optical is routed across our network using dedicated and defined routes. Traffic does not need to be switched or re-routed, and will therefore offer you the most consistent speeds and performance. The service also supports “transparent” traffic, and will transfer whatever data you need to send over it, without restrictions including support for jumbo frames, for example.

- Access circuit speeds up to 400Gbps
- Network connection bandwidth up to 400Gbps available

Where network performance is paramount, our optical network offers:

Network round-trip delay (RTD) latency examples:

- London to Manchester = 2.48ms
- London to Edinburgh = 4.15ms

Packet jitter = 0

Packet loss = 0



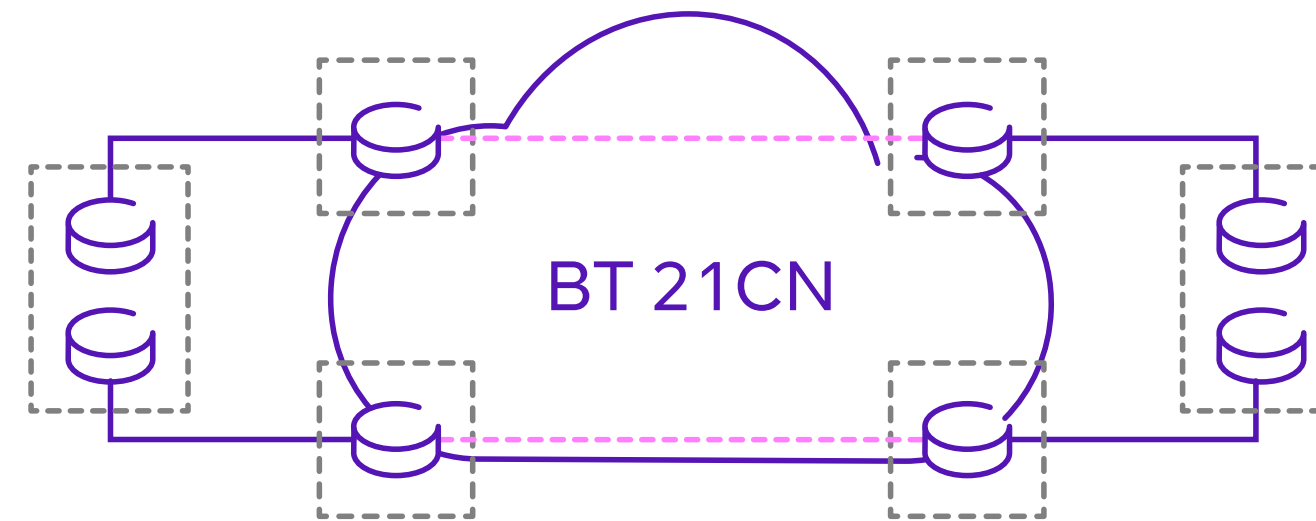
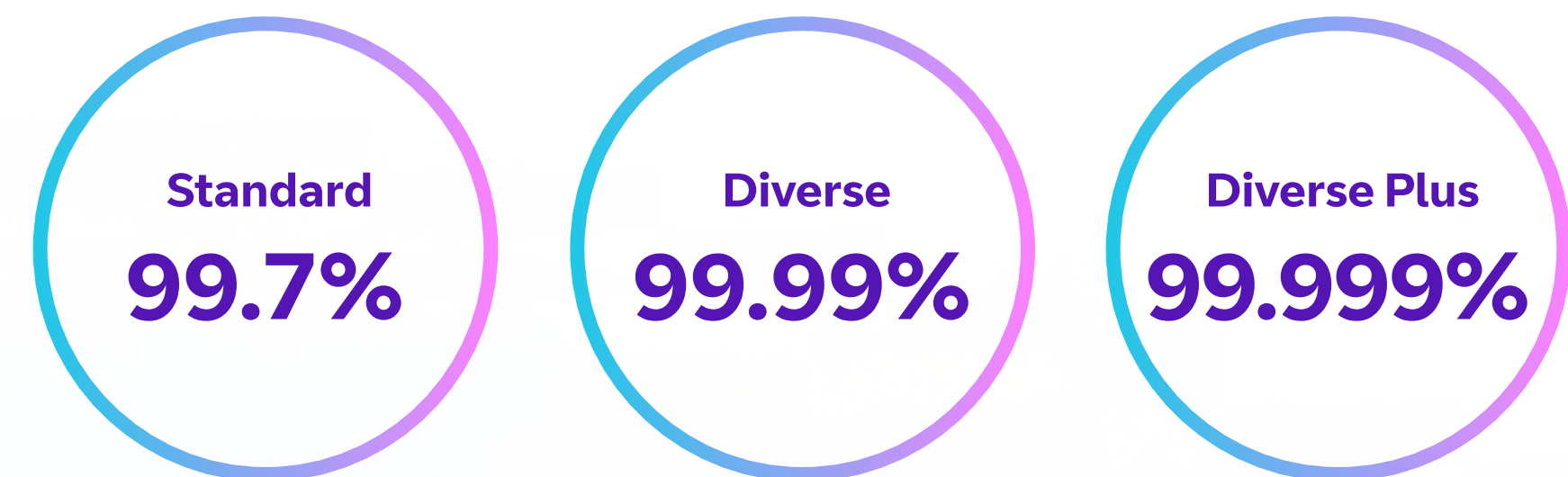


Service you can count on

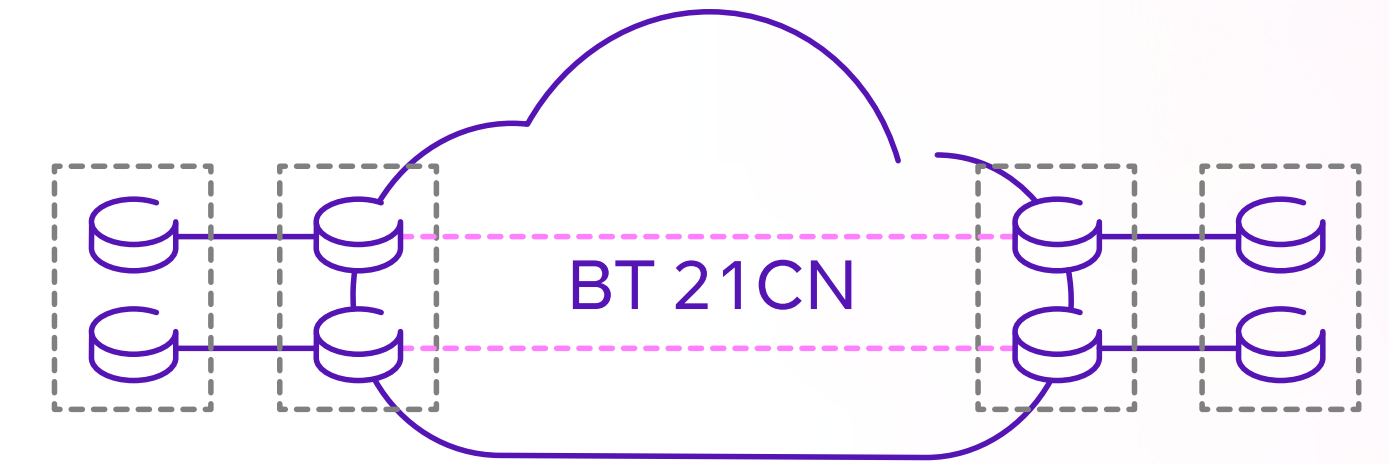
Wholesale Optical is delivered across our 21C network backbone, offering a network availability target of 99.999%. It's also backed by our five-hour fix SLA.

Our core network handles up to 27Tbps of peak traffic. And our optical DWDM network uses equipment from Ciena, a leading supplier of optical infrastructure and equipment.

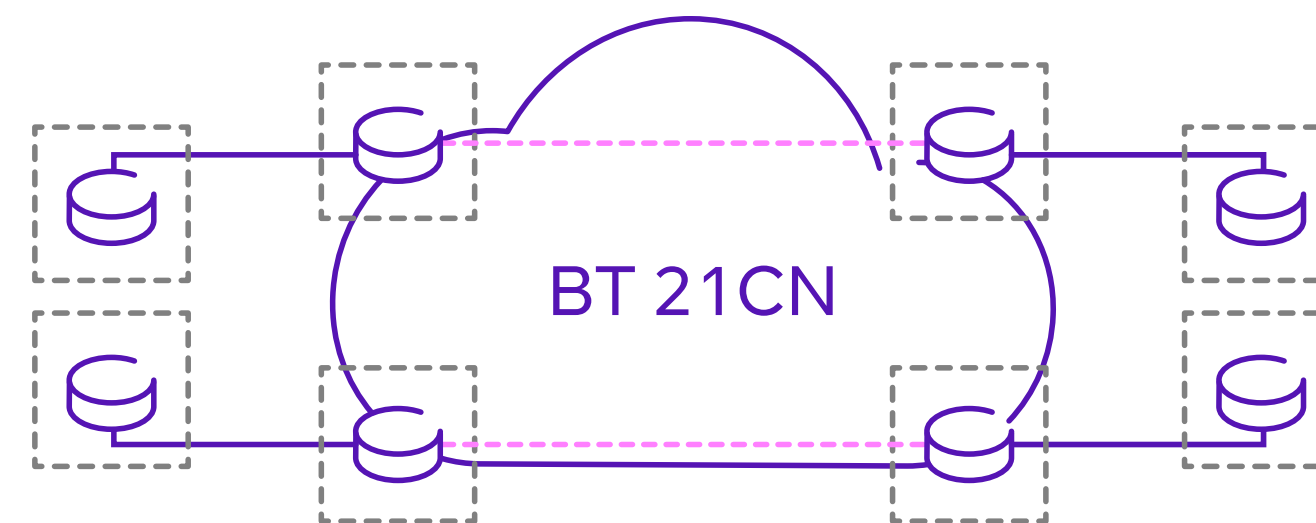
Where an end user site needs to be connected to our network using fibre (EAD, OSA), we can also offer a range of resilience packages, delivering diverse routing, cabling and node options. This includes end-to-end separacy and resilience, often referred to as "R02". The end-to-end service availability targets are:



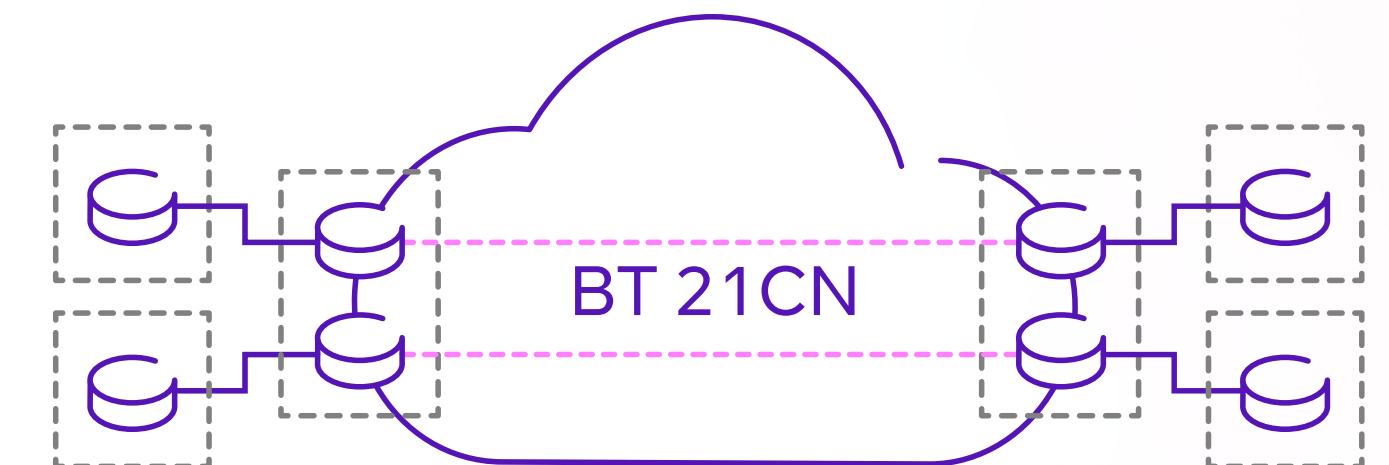
Optical Diverse Plus



Optical Diverse



Optical Diverse Plus - Split Site



Optical Diverse - Split Site

A range of access options

A wide range of high bandwidth access options can be used when you need to connect from an end-user site to our network. The choice of access technology depends on your bandwidth requirements, location and distance to an optical node. These technologies include:

- Fibre (EAD), up to 10Gbps and up to 20km radial distance. EAD fibre is generally the simplest and most cost-effective access option, assuming it can meet your bandwidth requirements.
- Fibre (OSA), up to 100Gbps and distances greater than 20km.
- Fibre (OSEA), up to 400Gbps. Also used for lower bandwidths where distances are beyond the limits of Fibre (OSA) delivery.

Where you have a presence in one of our enabled exchanges (optical nodes) or in an enabled third-party UK datacentre, we can provide on-net handover, offering the lowest costs and quicker delivery times as there is no need for a new access circuit to be delivered.



Get in touch

If you have customers with large bandwidth demands, Wholesale Optical could be the solution you're looking for.

For more information, visit btwholesale.com/optical.

To arrange a discussion with one of our network specialists, email clientreception@bt.com or speak to your account manager.

Offices Worldwide

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