Connectivity

DigiLink
Business Inter•*net*•working

Connectivity Solutions – What's the Difference?

Dial on Demand

ISDN is a dial on demand service, as opposed to a dedicated, always on circuit. With ISDN, a digital phone call is placed by the router to another router, and once the circuit is established (which usually takes just a second or two—much faster than the 30 seconds or so an analog modem typically takes to establish a connection) digital data is transmitted across the circuit. An ISDN BRI ("Basic Rate Interface", the most common type of ISDN) consists of two 64 kilobit per second ("kbps") digital circuits, which can be used independently, or together to achieve 128 kbps of throughput. Because the circuit goes up and down as required, the service can be billed on a per minute basis, although flat rate packages are becoming more common. ISDN is most appropriate when the connectivity is sporadic, and bandwidth requirements are not high.

Dedicated Circuits

Cloud Based

A **DSL** circuit involves the transmission of a digital signal across an existing analog, copper, phone line between your premises and the CO. The quality and reliability of the circuit can be impacted by the distance from the CO as well as the quality of the phone line that is employed. From the CO, the data is passed across a cloud to our core network, which can, as outlined above, have a negative impact on throughput, depending upon the traffic moving through the cloud at any given instant in time. DSL is often deployed asymmetrically—meaning that the bandwidth *upstream* (from your network to ours) and *downstream* (from our network to yours) is not the same. Typically the downstream bandwidth is greater than the upstream bandwidth. This makes the most sense for residential users, "web surfing" environments, or other scenarios where the bulk of the data is being downloaded from Internet, with a relatively small amount of data being transmitted or uploaded to the Internet. If the circuit has low upstream bandwidth, or the circuit suffers performance degradation from the cloud, it will certainly not be the most appropriate solution for those who wish to maintain servers on their LAN (to be accessed from the Internet) or those wishing to transmit larger files with any frequency. For those who are able to use a high quality, short distance phone line for DSL service, we are able to offer higher levels of upstream bandwidth, which can mitigate these problems and make DSL a practical and cost effective solution.

Since a Point-to-Point T1 circuit runs directly between your LAN and our core network, a Point to Point T1 delivers higher performance than our **Access T1** service. An Access T1, by contrast, transits traffic through a network "cloud" where the data shares connections with data from other networks on the way to our network. With an Access T1, as the data moves through the cloud, it is subject to reductions in maximum throughput. However, moving the data through the cloud lessens the tight requirements with regard to distance, both from your premises to the CO, as well as from your premises to the locations where DigiLink maintains a point of presence. Therefore, the pricing of the circuit is not distance sensitive, and we are sometimes able to offer an Access T1 in locations where we would not be able to offer a Point-to-Point T1. The amount of maximum throughput reduction varies from moment to moment, depending upon the saturation levels of the telco cloud at that instant in time. Typically throughput levels on an Access T1 rarely drop below 512 kbps, and are often closer to the full 1.5 mbps. For many customers, cloud saturation is not even noticeable, as they very rarely saturate their link with typical usage.
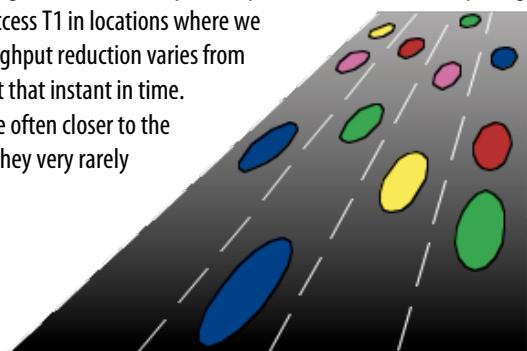
Point to Point

Our Point-to-Point T1 (1.5 mbps) and T3 (45 mbps) circuits are in a class of service that is designed for businesses that are looking for the highest levels of performance and reliability.

With a **Point-to-Point T1**, your data does *not* pass through a cloud, and it is *not* impacted by data from other networks—you are guaranteed to always get 100% throughput across the link. It's like having *your own dedicated lane on the highway*. For demanding customers who anticipate maintaining high levels of saturation across the link, either because of high data transfer requirements for FTP, frequent large attachments via e-mail, or the hosting of one or more servers on the LAN, Point-to-Point technology may be the ideal solution.
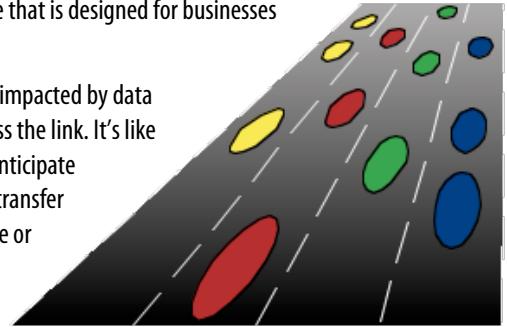
Circuits are available with even greater throughput than our Point-to-Point T1 service. We can provide higher bandwidth by installing additional T1's and aggregating (or "multiplexing") the circuits, adding an additional 1.5 mbps with each additional T1. For yet even greater bandwidth requirements, we offer **T3** service, which delivers 45 mbps. A T3 can also be delivered fractionally, delivering smaller amounts of throughput. And there are even higher bandwidth circuits that we can provide, should your requirements grow to such levels.

In certain limited instances, depending upon where you are located, DigiLink may be able to offer you a circuit over **Fiber**. This point-to-point to circuit is extremely high performance, and can deliver very high bandwidth, from 10 mbps on up.

Availability

The planning process begins with an analysis of the location of your business, and its distance from the closest telco central office (or "CO"). This distance effects the availability and pricing of the circuit. As part of the solution, DigiLink will procure cabling from your local CO to your premises. The physical cabling between the CO and your premises is referred to as the "local loop", and will be provided your local telephone company. DigiLink is an authorized agent of the various local telephone companies throughout the region, and can order and coordinate this part of the solution for you.

Summary

Service	Connected	Architecture	Bandwidth		Availability
			Downstream	Upstream	
ISDN BRI	Dial-on-demand	Point-to-Point	64kbps (1 channel), 128kbps (2 channel)	64kbps (1 channel), 128kbps (2 channel)	Nearly everywhere.
DSL	Constant	Cloud	384-768 kbps 384 kbps 768 kbps 768 kbps 768 kpbs-1.5 mbps 1.5 mbps 1.5 mbps 1.5 mbps-4mbps	384 kbps 384 kbps 128 kbps 768 kbps 256 kbps 128 kbps 384 kbps 384 kbps	Varies by location. Depends upon on your local loop provider is (SBC or Verizon), your distance from the CO, and the quality of the copper wire.
Frame Relay	Constant	Cloud	128 kbps 256 kbps 384 kbps	128 kbps 256 kbps 384 kbps	Nearly everywhere. Available speeds and cost depend on the local loop provider (Verizon or SBC).
T1 (Access)	Constant	Cloud	1.5 mbps max	1.5 mbps max	Nearly everywhere.
T1 (Point-to-Point)	Constant	Point-to-Point	1.5 mbps	1.5 mbps	Nearly everywhere. Cost varies by distance.
T3 (Fractional, Point-to-Point)	Constant	Point-to-Point	1.5 mbps – 45 mbps	1.5 mbps – 4.5 mbps	Nearly everywhere. Cost varies by distance.
T3 (Point-to-Point)	Constant	Point-to-Point	45 mbps	45 mbps	Nearly everywhere. Cost varies by distance.
Fiber	Constant	Point-to-Point	10 mbps+	10 mbps+	Only where DigiLink has a direct building-to-building Fiber link.