

EarthLink[®] *Enterprise T1/T3* – Frequently Asked Questions

What is EarthLink Enterprise T1/T3?

EarthLink Enterprise T1/T3 is the most reliable high-speed, instant Internet access product designed for small to medium-sized businesses. EarthLink's Enterprise T1/T3 is comprised of fractional and full T1 and T3 circuits available in virtually any location in the continental United States. EarthLink Enterprise T1/T3 comes with a 100% network availability guarantee, EarthLink award-winning 24/7 customer support, and a dedicated account manager.

What is a T1?

T1, or "Trunk Level 1," was developed in 1957 by AT&T's Bell Labs and has become the cornerstone of the Dedicated Data Services. The term "T1" actually refers to the physical equipment used to set up the loop, but after decades of use as the industry standard, T1 has become synonymous with Digital Signal Level, or "DS1" which is the actual service provided across the physical circuit.

The price of an Internet T1 is generally made up of two components: the local-loop price and the port price. The local-loop price relates to the cost incurred by physically connecting your location to EarthLink's POP (Point of Presence). The Internet access port charge is the actual cost of the throughput or data transfer to and from your business location to the Internet. T1s transfer up to 1.5Mbps. These charges often make the cost of a T1 line and service higher than a DSL line; however, T1s offer the highest level of Internet access reliability. Speed is guaranteed regardless of how far your location is from the POP, and there are no distance limitations with regard to the T1 service.

What is a T3?

T3 or "Trunk Level 3" is similar in technology to a T1, but allows greater bandwidth of data to transfer to and from the Internet. Like a T1, T3s are made up of two components: the local loop and the port. Local T3 loops are more expensive than T1 loops because they allow the transfer of larger bandwidths of data. T3s offer between 3Mbps up to 45Mbps of data transfer.

How do T1s and T3s work?

Whereas an ADSL line uses line sharing by running across the same twisted pair as the phone line and SDSL uses one dedicated twisted pair, T1 lines use two dedicated twisted pairs (one to transmit, one to receive) and time division multiplexing (TDM) to combine 24 data channels at 64Kbps each, giving it the ability to support up to 1.54Mbps of traffic symmetrically. A T1 is not restricted to offering digital discrete 64Kbps data streams. Channels may be combined to allocate varying total bandwidths as required. This allows EarthLink to offer "fractional" T1 services. Common fractional T1 services include the 384Kbps and 768Kbps services. Similarly, T3 lines combine 28 DS1 lines to be able to produce between 3Mbps up to 45Mbps of data transmission.

In order for data equipment to transmit data over a T1 or T3 line, it must be multiplexed into the T1/T3 format. The common name for the device responsible for this activity is the CSU/DSU (Channel Service Unit/Data Service Unit). Newer routers often have built in CSU/DSUs that communicate directly with the end device. Older equipment often requires an external CSU/DSU that goes between the ILEC's (Incumbent Local Exchange Carrier) T1/T3 smart jack and the customer's equipment. In addition to the CSU/DSU, data service customers will most likely need a router to switch protocols and route packets.

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What is a Full T1 Connection?

Most carriers will provide you the option of purchasing a full T1 which means that you can get the full 1.544Mbps circuit un-channelized direct into the Internet. This is also known as a clear-channel T1. It is possible to only turn on some of the channels and thus receive a 384Kbps, a 512Kbps, a 768Kbps, or a 1.1Mbps service. Because such a service is using a fraction of the channels available and thereby only a fraction of the circuit available, this service is often referred to as a Fractional T1 or a Frac T1.

What equipment is needed for EarthLink Enterprise T1/T3 service?

EarthLink Enterprise T1/T3 customers must have routers with a CSU/DSU to connect to EarthLink's service.

Does EarthLink provide routers and CSU/DSUs?

Typical routers that are sold with EarthLink T1 service include the Cisco and Netopia brand routers. The Netopia routers come with an internal CSU/DSU. Cisco routers can be sold with both internal and external CSU/DSUs.

What is the general expectation during a T1 installation?

T1 lines/circuits are commonly provisioned using two dedicated specially conditioned unshielded twisted pairs with repeaters positioned every 6,000 feet. A Local Exchange Carrier (local telephone company) for your location provisions this circuit between your premise and EarthLink's POP (Point of Presence). This requires a provisioning period of between 30 to 45 business days. EarthLink's Installation Coordinator will work with you and the Local Exchange Carrier to insure the provisioning of your T1 or T3 circuits happens smoothly and as quickly as possible.

How does EarthLink Enterprise T1/T3 compare to other dedicated, business Internet services?

EarthLink Enterprise T1/T3 service is the highest-level business-class product available. It is designed to meet the needs of business customers by including features such as static IP addresses, DNS services, router configuration and management, a Service Level Agreement, and a dedicated account manager and installation coordinator.

In the event of a service outage, EarthLink T1 and T3 services are treated as the highest priority service with respect to mean time to repair (MMTR). EarthLink targets a maximum of 4 hours to repair your service.

EarthLink T1 and T3 products are also guaranteed to provide 99.99% uptime, 100% network availability, average packet loss of less than 0.01% and latency of less than 65ms. Please reference your SLA for details.

What are some differences between a DSL connection and an Internet T1 line (DS1)?

Besides the obvious differences in pricing, some of the main differences are listed below. For the purpose of explanation, a full T1 line will be compared to a 1.5Mbps SDSL connection.

- 1) 1 Dedicated Pair vs. 2 Dedicated Pair: SDSL utilizes one insulated twisted pair for its services which it does not share with the telephone line. T1 services utilize two pairs of twisted pair. One pair is used for receiving data while the other is used to transmit the data.
- 2) Oversubscription: One of the primary differences between DSL and a T1 is in the level of oversubscription. The T1 products offer a customer a truly dedicated circuit that does not get multiplexed with other circuits on its path to a PoP and then onto the Internet. DSL technologies offer dedicated circuits to the CO; however, at the CO DSL circuits enter the DSLAM (Digital Subscriber Line Access Multiplexer) which funnels (or multiplexes) several circuits onto a single circuit. This action is called oversubscription.

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T1 & T3 has a 1:1 ratio (no oversubscription)

Extended DSL typically has up to a 5:1 ratio for oversubscription

SDSL typically has up to a 20:1 ratio for oversubscription

ADSL typically has up to a 100:1 ratio for oversubscription

3) T1 can be delivered over fiber as well as copper (4-wire) while SDSL can only be delivered across copper (2-wire).

4) Distance. T1 services are not limited by distance and are engineered to extend tens of miles. T1 services are widely available in the United States. Loop lengths and distance qualifications are usually not a concern. DSL is distance-dependent.

Why does my business need EarthLink Enterprise T1/T3 Service?

EarthLink Enterprise T1/T3 service is ideal for your business if:

1. You are a company with a LAN (Local Area Network) and want a single connection with a router to get your network connected to the Internet. (Usually 25 to 200 total users.)
2. You want to host your own email (SMTP) server for your company's email solution.
 - Requires static IP address
 - Requires DNS (Domain Name Service)
 - Does not require purchasing individual POP mailboxes
 - SMTP = Simple Mail Transfer Protocol
3. You want to host your Web site on your own Web server.
 - Requires static IP address
 - Requires DNS
 - Does not require purchase of hosting account
4. You want to host your own FTP site.
 - Requires static IP address
 - Requires DNS
5. You require a reliable connection to the Internet.
 - Enterprise T1/T3s are backed by EarthLink's Service Level Agreement which provides installation interval and network availability guarantees.
6. You require a set upload speed.
 - T1/T3s offer the same speed for upload and download.
7. You require a set download speed.
 - T1/T3s are highly reliable and offers a choice of speeds.
8. You are participating in a VPN (Virtual Private Network).
 - Usually requires static IP address
9. You can't get Business DSL service because of your location.
 - ***T1/T3s offer serviceability at any distance from your local telephone company's CO (Central Office).***

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How many users will EarthLink Enterprise T1/T3 service support?

Depending on the port speed subscription, EarthLink T1s and T3s can support up to hundreds of users. The higher the speed you subscribe to, the greater the number of users that a single T1 or T3 line can support. Our Sales Consultants will help you pick the best speed for your specific needs.

How do I know which speed is right for me?

Our Sales Consultants will help you determine exactly which speed is best for your needs. Some of the things you should take into account are: number of employees using the connection, if you will host a Web site, email server or FTP server, and if you will be transferring large files or using videoconferencing.

Can I change my speed once the service is up and running?

Yes. Please contact your dedicated account manager at **1-800-380-6645** for more information.

What if I am traveling and need to access the Internet?

Each EarthLink T1 and T3 account comes with complimentary unlimited dial-up access. So, even if you are out of the office, you can still access the Internet. Please request this dial-up account at the time of purchase from your Sales Consultant or from your dedicated account manager.