

## **Definition - What does Internet Backbone mean?**

An Internet backbone refers to one of the principal data routes between large, strategically interconnected networks and core routers on the Internet. An Internet backbone is a very high-speed data transmission line that provides networking facilities to relatively small but high-speed Internet service providers all around the world.

Internet backbones are the largest data connections on the Internet. They require high-speed bandwidth connections and high-performance servers/routers. Backbone networks are primarily owned by commercial, educational, government and military entities because they provide a consistent way for Internet service providers (ISPs) to keep and maintain online information in a secure manner.

## **Explanation**

Some of the largest companies running different parts of the Internet backbone include UUNET, AT&T, GTE Corp. and Sprint Nextel Corp. Their routers are connected with high-speed links and support different range options like T1, T3, OC1, OC3 or OC48.

A few key features of an Internet backbones include:

- ISPs are either connected directly to their contingency backbones or to some larger ISP that is connected to its backbone.
- The smaller networks are interlinked to support the multiversatile backup that is required to keep the Internet services intact in case of failure. This is done through transit agreements and peering processes.
- The transit agreement is a monetary contract between several larger and smaller ISPs. It is initiated to share traffic loads or to handle data traffic in case of a partial failure of some networks. In peering, several ISPs also share features and traffic burden.

The first Internet backbone was named NSFNET. It was funded by the U.S. government and introduced by the National Science Foundation (NSF) in 1987. It was a T1 line that consisted of approximately 170 smaller networks operated at 1.544 Mbps. The backbone was a combination of fiber-optic trunk lines, each of which had several fiber-optic cables wired together to increase capacity.