How Dsl Works Essay, Research Paper

How a Digital Subscriber Line works?

Asynchronous Digital Subscriber Line (ADSL) uses two pieces of equipment, one on the customer end, and one at the Internet Service Provider, Telephone Company or other provider of Digital Subscriber Line (DSL) services. At the customer’s location there is a DSL transceiver, which may also provide other services. The DSL service provider has a DSL Access Multiplexer, or DSLAM to receive customer connections.

Most residential customers will call their DSL transceiver a “DSL modem.” The engineers at the Telephone Company or ISP will call it an ATU-R. Regardless of what it’s called, it’s the point where data from the user’s computer or network is connected to the DSL line. The transceiver can connect to a customer’s equipment in several ways, though most residential installation uses USB or 10-baseT Ethernet connections. While most of the ADSL transceivers sold by ISPs and telephone companies are simply transceivers, the devices used by businesses may combine network routers, network switches or other networking equipment in the same platform.

The DSLAM at the access provider is the equipment that really allows DSL to happen. A DSLAM takes connections from many customers and aggregates them onto a single, high-capacity connection to the Internet. DSLAMs are generally flexible and able to support multiple types of DSL in a single central office and different varieties of protocol and modulation. In addition, the DSLAM may provide additional functions including routing or dynamic IP address assignment for the customers.

The DSLAM provides one of the main differences between user service through ADSL and through cable modems. Because cable modem users generally share a network loop that runs through a neighborhood, additional users mean lowered performance in many instances. ADSL provides a dedicated connection from each user back to the DSLAM, meaning that users won’t see a performance decrease as new users are added–until the total number of users begin to saturate the single, high-speed connection to the Internet. At that point, an upgrade by the service provider can provide additional performance for all the users connected to the DSLAM.