

Telecommunication WAN

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❖ Intro

- **WAN - Interconnect LAN's physically or logically over a large area**
- **WAN - Funded by DoD and use TCP/IP**
- **WAN - Basically it is everything outside the LAN**
- **WAN protocols are rules for communicating between computers on a WAN**
- **WAN types**
 - **Internet**
 - The term Internet was used to refer to
 - The internet can be used by public or private networks (VPN)
 - Refer to Advanced Projects Agency Network (ARPANET)
 - Refer to Department of Defence Research Projects Agency Network (DARPANET)
 - Refer to Defense Data Network (DDN)
 - **Intranet**
 - Is an internet-like logical network that uses your internal company infrastructure
 - Provide more security and control than public posting on the internet
 - **Extranet**
 - Like an intranet it is a private network that uses Internet protocol
 - It can be accessed by users outside of the company (Partners, vendors, etc)
 - It CANNOT be accessed by the public
- **CSU/DSU**
 - **CSU/DSU - is used when a LAN device needs to communicate with WAN devices**
 - **It ensure that the necessary electrical signaling and format is used**
 - **It interface between DTC and DCE**
 - **DSU - Data Service Unit**
 - **CSU - Channel Service Unit**

❖ Remote Access Technologies

- **Remote Access Types**
 - **Dial-up**
 - **ISDN**
 - **XDSL**
 - Types
 - ◆ ADSL
 - ◆ SDSL
 - ◆ HDSL
 - ◆ VDSL
 - **Cable Modem**
 - Provides high speed access
 - All cable modem share a single COAX line to the internet

- The throughput varies according to how many users are currently using the service
- It is one of the most UNSECURE remote access
- **Wireless Technology**
 - Fastest growing area
 - Susceptible to interception
 - Susceptible to EavesDropping
- **Remote Access Security Methods**
 - **Restricted Address**
 - Filters out unauthorized users based on their source protocol
 - Enables incoming calls only from specific addresses on an approved list
 - The procedure authenticate the node not the user
 - **Caller ID**
 - Checks the incoming phone number against an approved phone list
 - This is the most common security methods
 - Dis-advantage hard to administer for traveling users
 - **Call Back**
 - The user supplies a password or some type of identification
 - The access server then hangs up and calls the user back at a predetermined #
 - Dis-advantage hard to administer for traveling users