

# WAN Connection Options



- Multiple options are available for connecting geographically dispersed offices together.
- Not all options are available in all locations.
- What is commonly used in one region may be considered legacy in another.
- Different providers may use different terminology. I'll use the terminology used by Cisco for the CCNA exam.

# Primary WAN Connectivity Options

- Leased Line
  - MPLS Multi Protocol Label Switching
  - Satellite
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- The service provider will typically provide an SLA (Service Level Agreement) with guarantees for uptime and traffic delay and loss on the link.

# Primary WAN Connectivity Options

- Leased lines and Satellite can be used for connectivity to the Internet, for direct connectivity between offices, and/or connectivity between offices over VPN.
- MPLS uses a shared core infrastructure at the service provider. It can be used for connectivity to the Internet and/or connectivity between offices over VPN.

# WAN Backup and Small Office Solutions

- Less expensive options often aimed at home user Internet access can be used as Internet VPN WAN backup options in corporate environments
- There will typically be no corporate level SLA with these services
- These can be used as the primary WAN connection method to the corporate network from smaller offices and for home users
  - DSL Digital Subscriber Line
  - Cable
  - Wireless eg 4G

# Legacy WAN Connectivity Options



- PSTN Public Switched Telephone Network
- ISDN Integrated Services Digital Network
- Frame Relay
- ATM Asynchronous Transfer Mode
- X.25

# Interface Cards



- Routers will typically come with on-board Ethernet ports. Additional Ethernet interface cards can be added
- Ethernet is often used for WAN connections today
- Other WAN interfaces are modular and fit into a spare slot on the router
- There are many different types of WAN interface card
- Part numbers for different cards can be very similar
- Different cards are compatible with different router platforms
- Be careful when selecting your card!

# Interface Card Examples



WIC-2T Serial  
1700 and 2600



HWIC-2T Serial  
1800, 1900, 2800,  
2900, 3800, 3900 ISR



NIM-2MFT-T1/E1  
4000 ISR  
TDM Data & Voice



NIM-VAB-A  
4000 ISR  
DSL