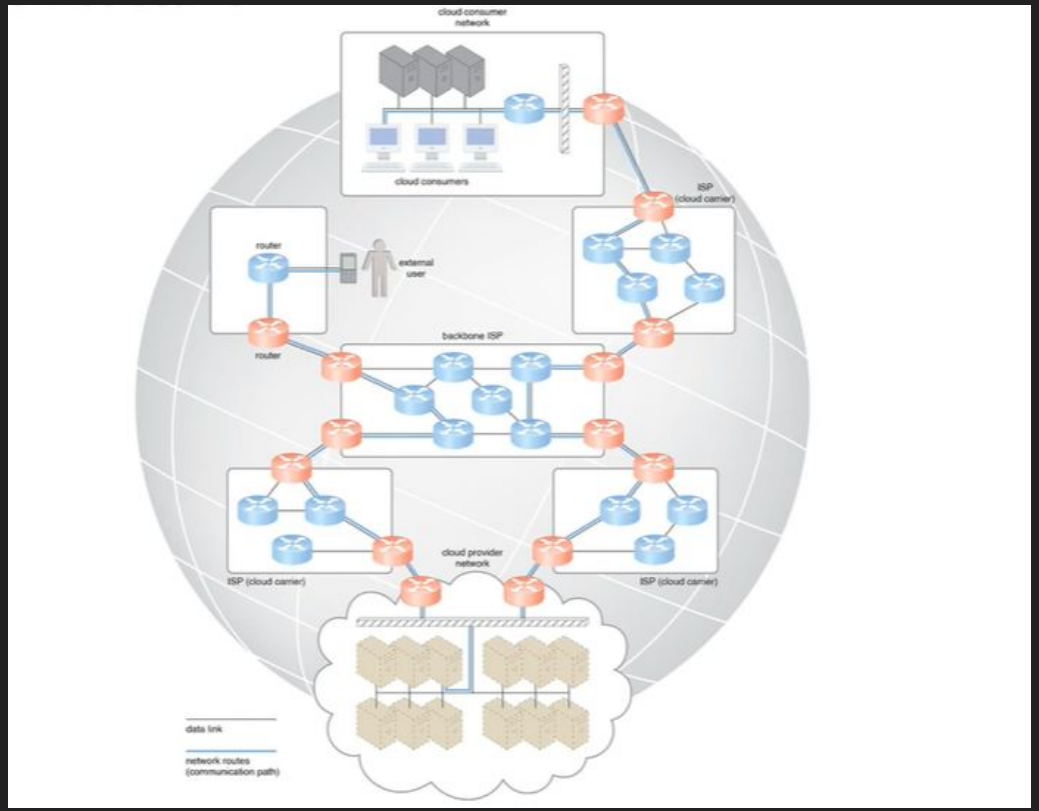
CCNA

tutorial

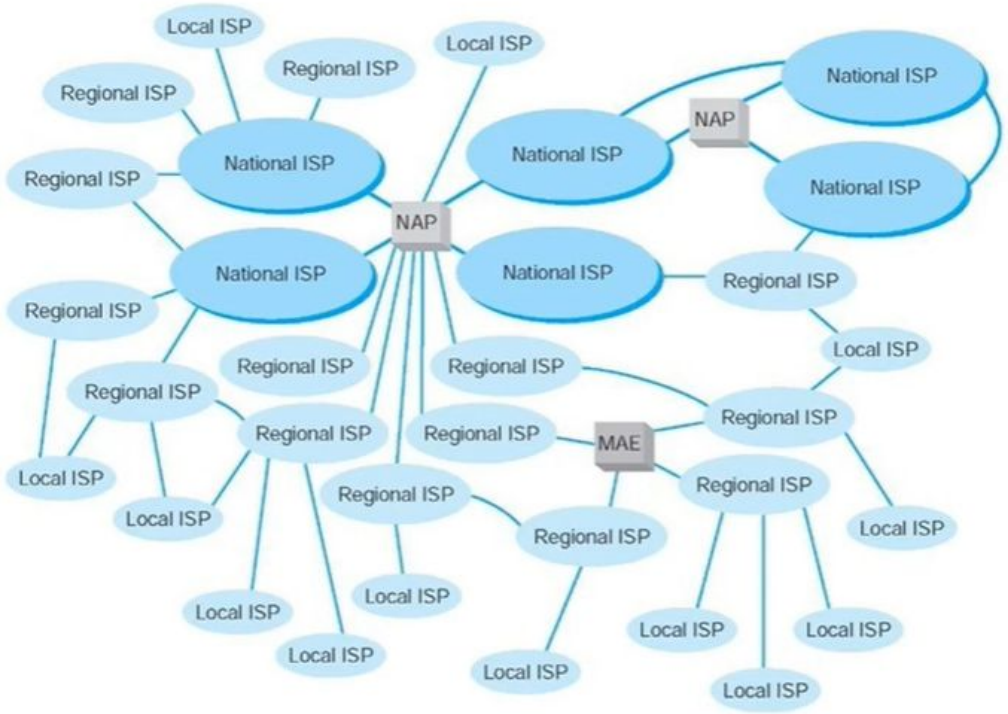
Chapter 1 - The Basic

Internet Architecture

Internet Architecture



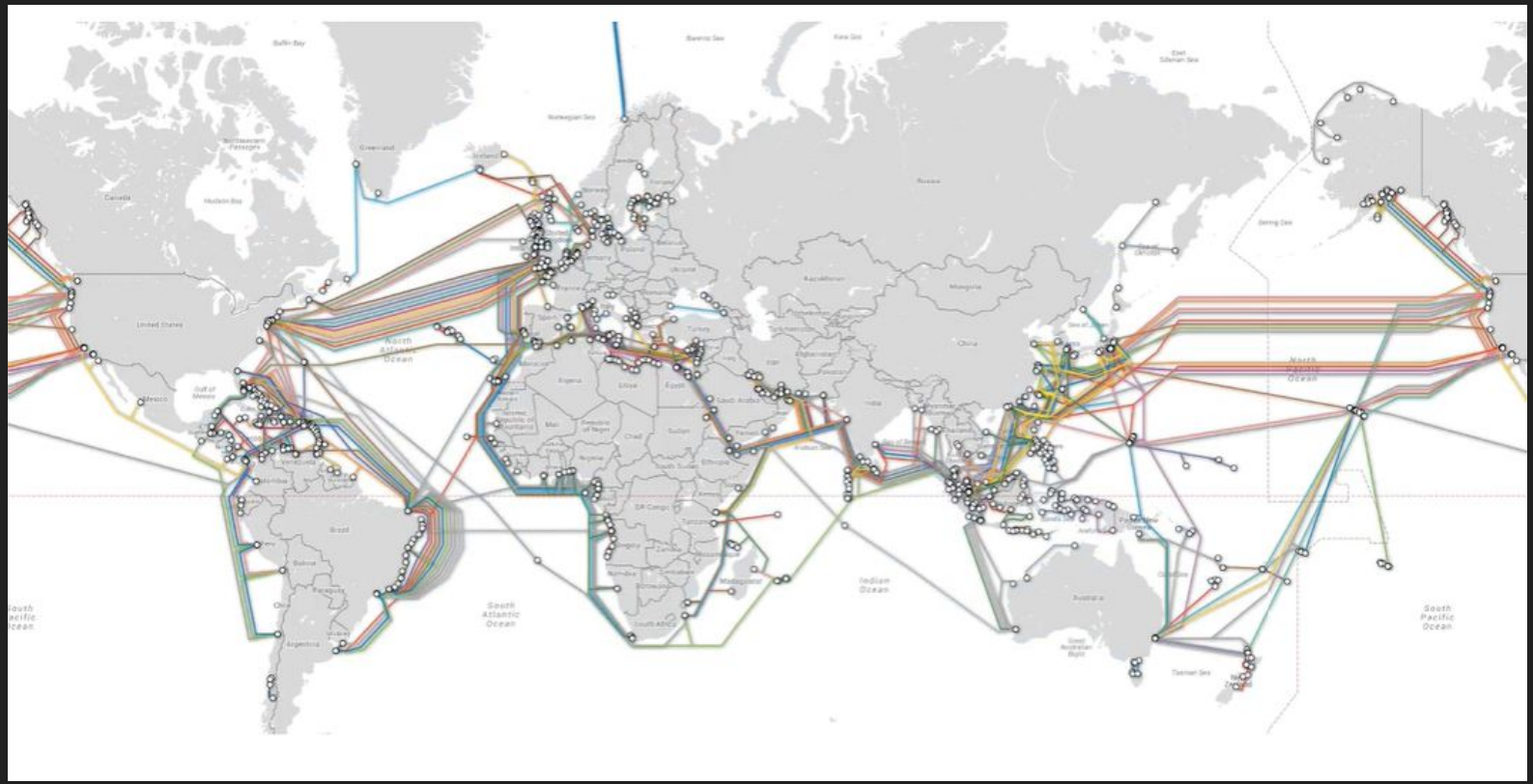
Internet Architecture



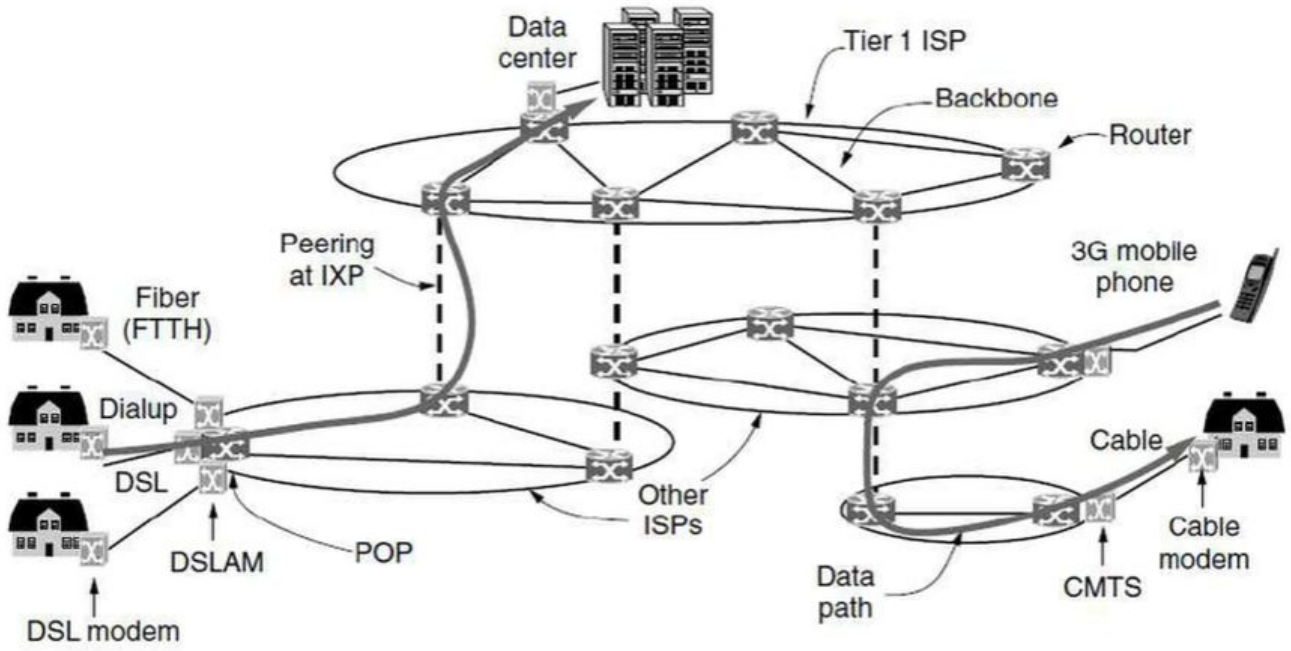
NAP (Network Access Point)

MAE (Metropolitan Area Exchange)

Internet Architecture

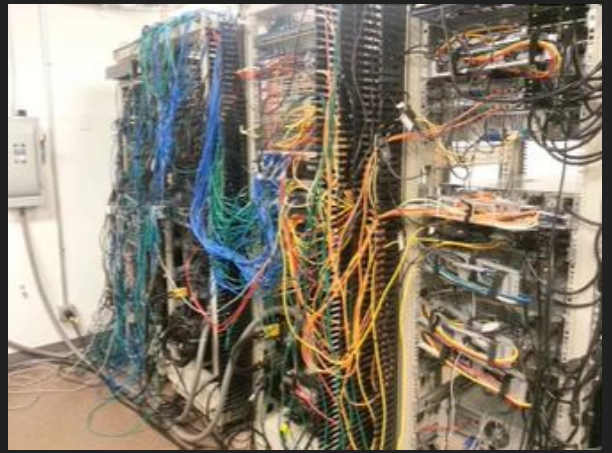


Internet Architecture



IXP (Internet exchange point)

Data Center/Server Room



Rack

Switch & Router

Cisco Catalyst 3850 Switch

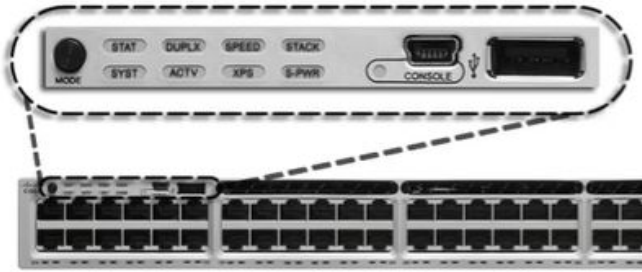
Cisco Nexus 9508 Switch

Cisco ASR 9912

Cisco ISR 1006 Router

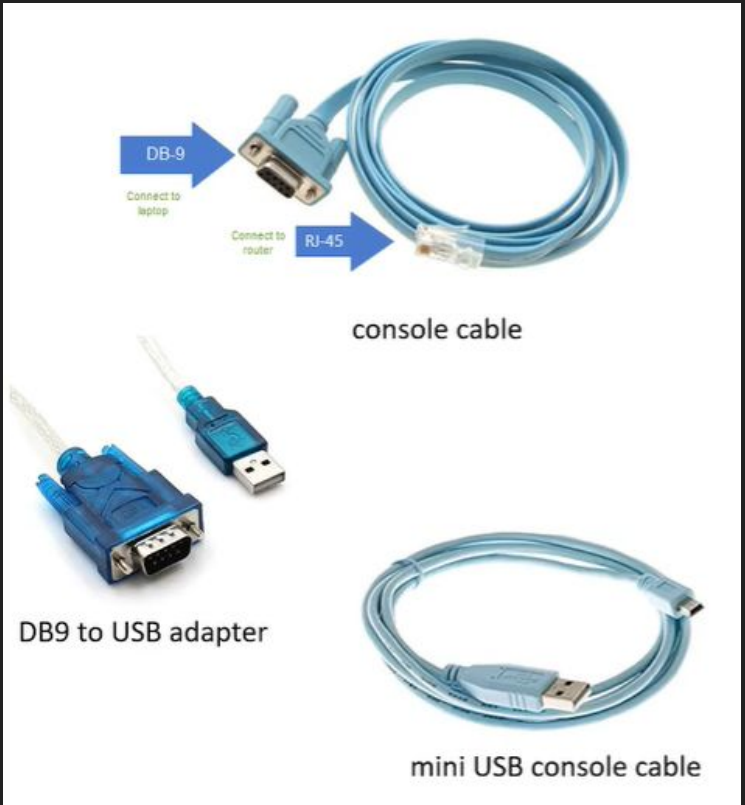
Cisco Catalyst 6509 Switch

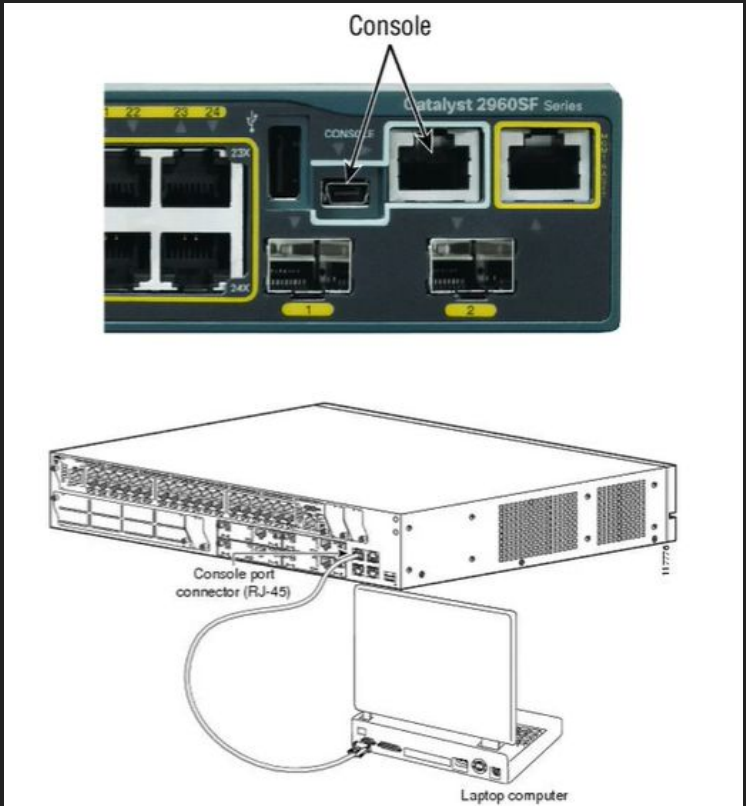
WS-C3850-48T-L



1. Ground connector
2. CONSOLE (RJ-45 console port)
3. StackWise port connector
4. StackPower connector
5. Power supply modules
6. Fan modules
7. MGMT port
8. Reset Button

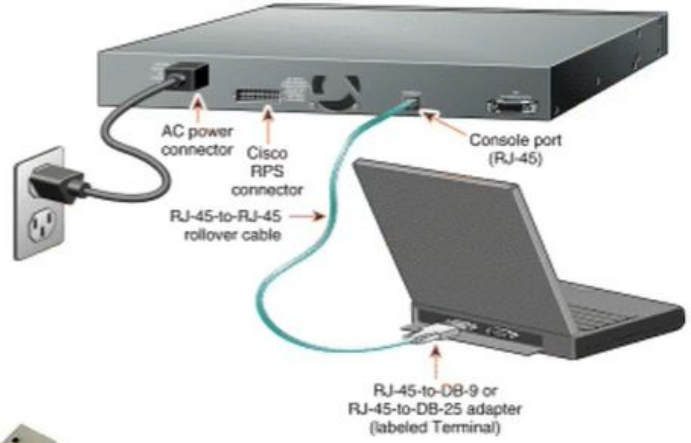
Connect the Device





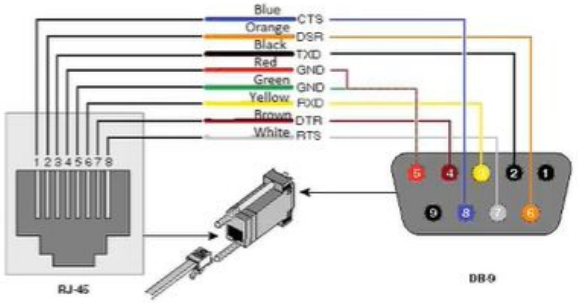
Connect the Device

Network Cable (RJ45)

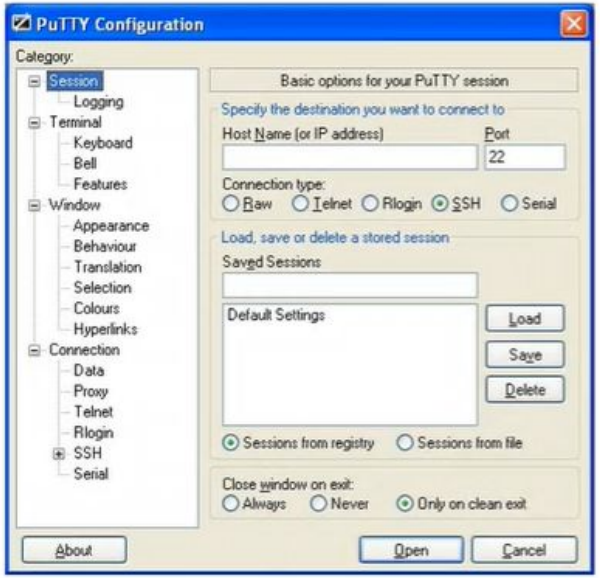


RJ45 to DB9 adapter

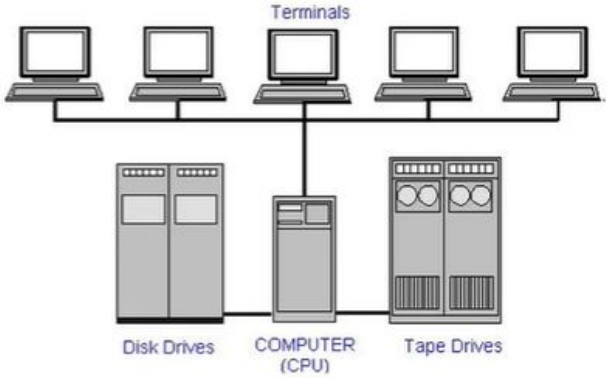
DB9 to USB adapter



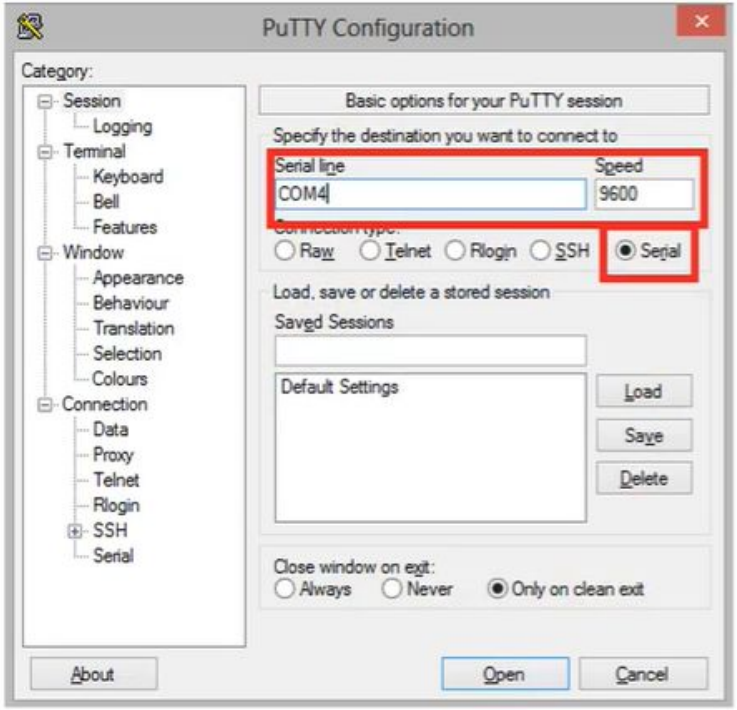
Terminal Emulator

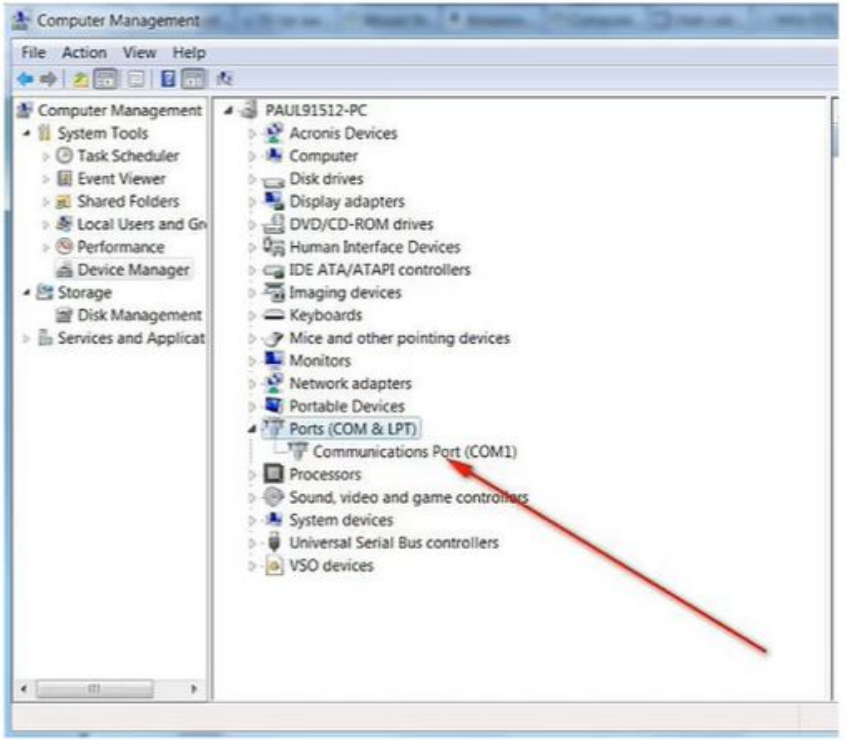


Putty

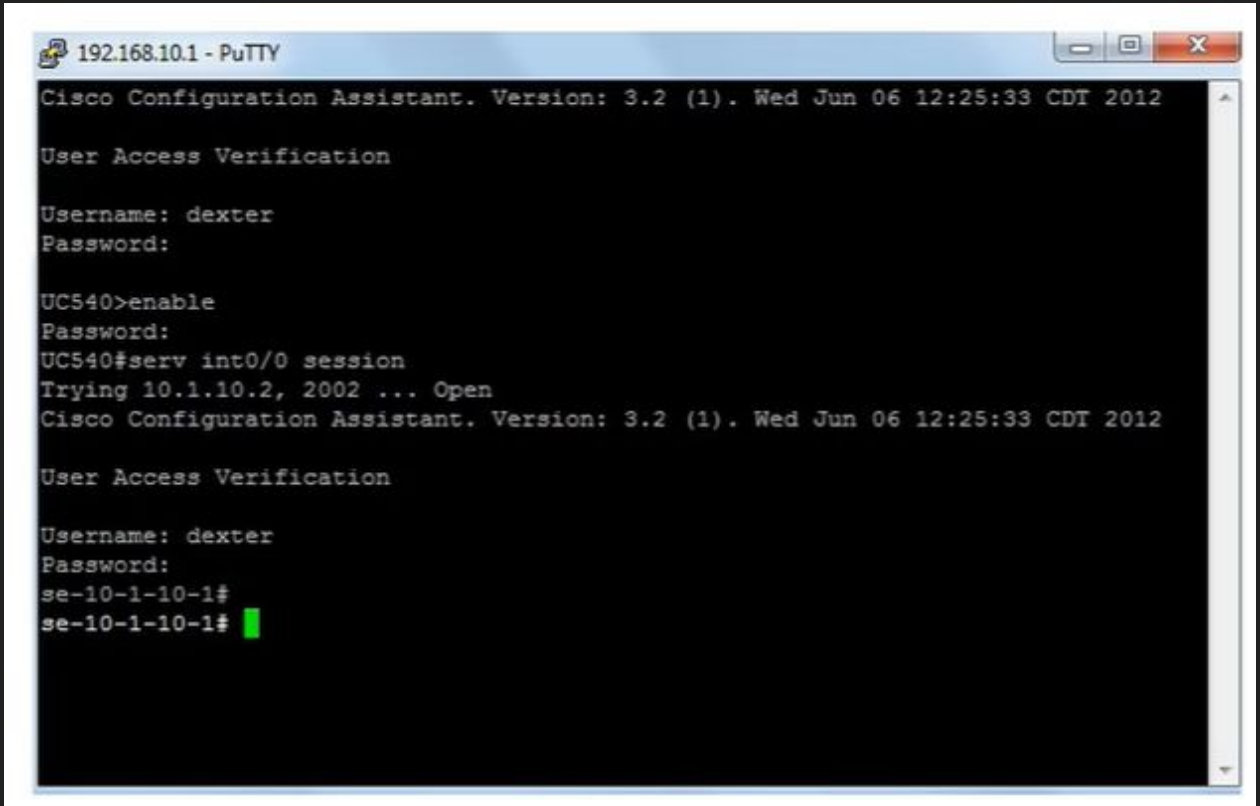


Terminal Emulator





Cisco IOS CLI

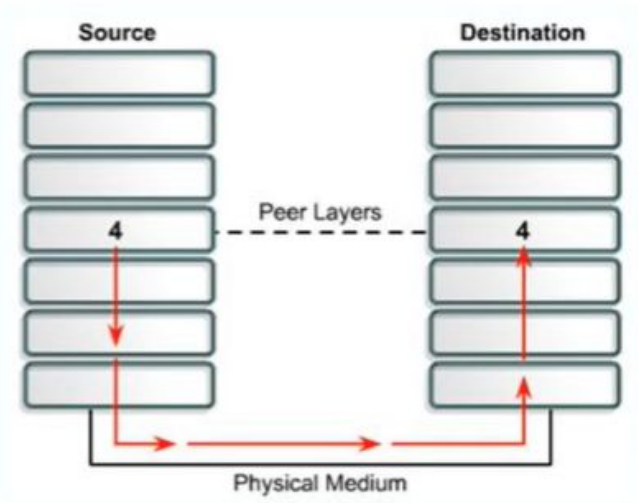


Chapter 2 - TCP/IP Protocol Suite 1

Communication

Protocol - In information technology, a protocol is the special set of rules that end points in a telecommunication connection use when they communicate. Protocols specify interactions between the communicating entities.

Layered Communication Model



Layered Model

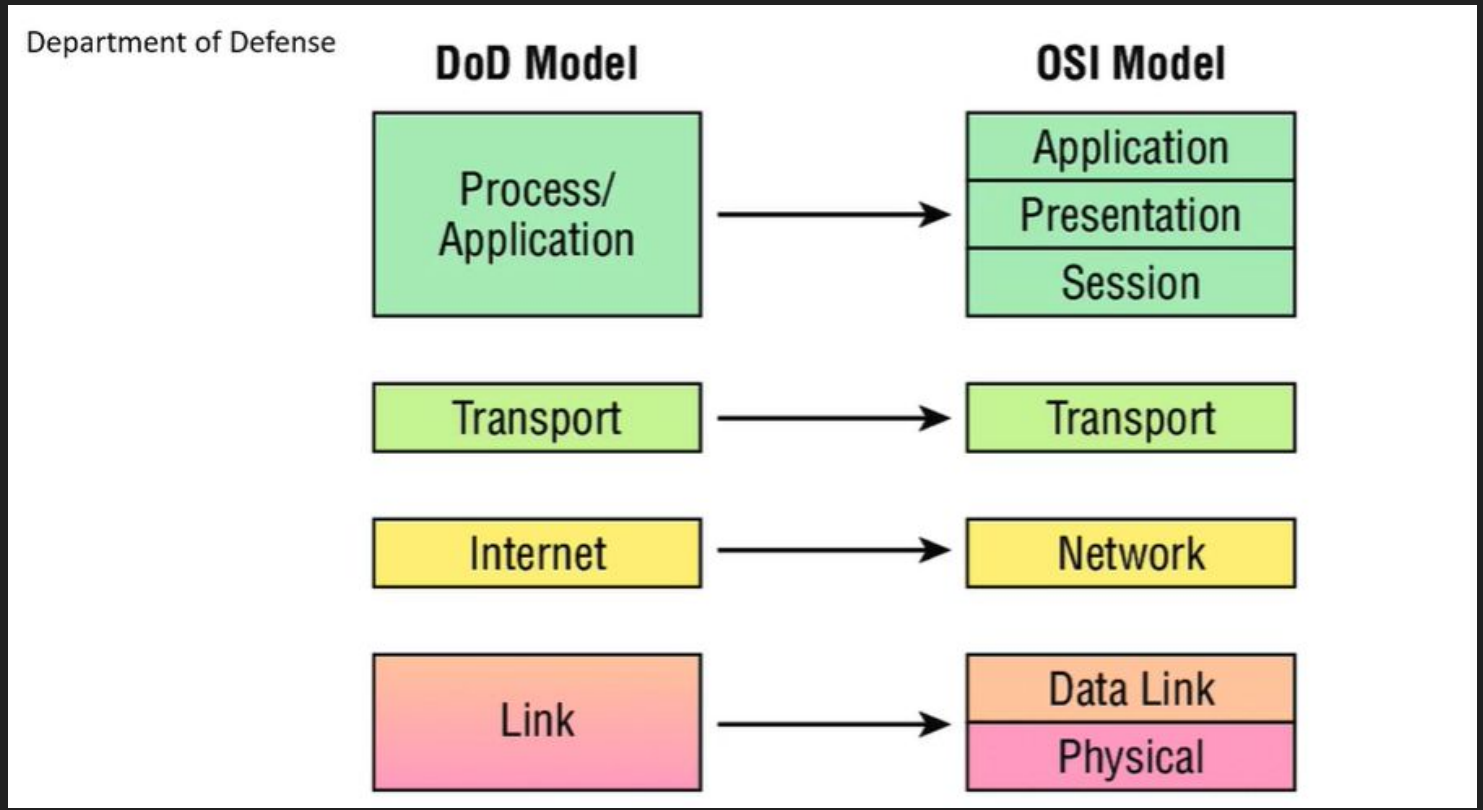
- Products from different vendors can work together
- Provides a common language to describe networking functions and capabilities
- Easy to design protocol
- Prevents technology changes in one layer from affecting other layers above and below

OSI Model

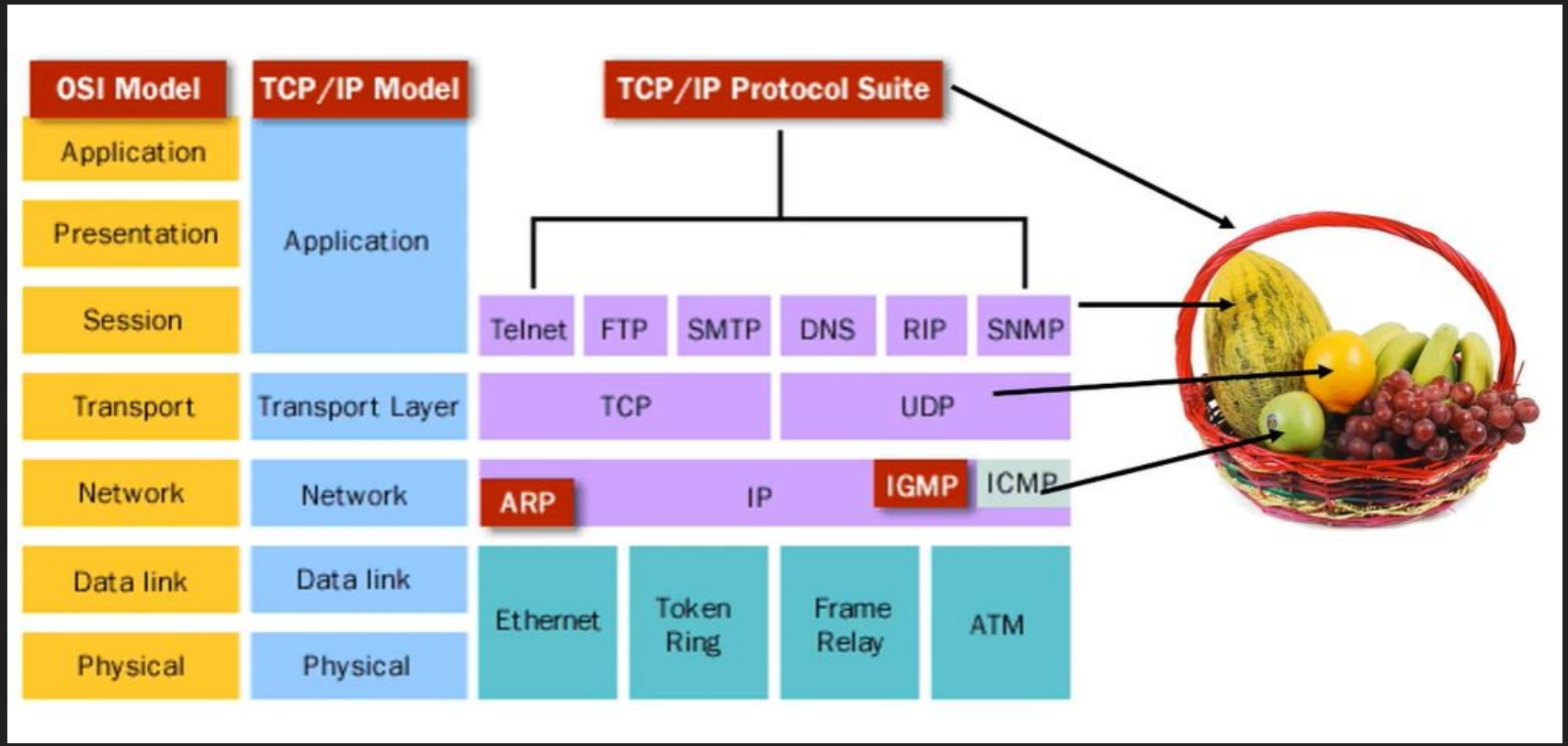
Open Systems Interconnection Basic Reference Model

Layer	Function	Example
Application (7)	Services that are used with end user applications	SMTP,
Presentation (6)	Formats the data so that it can be viewed by the user Encrypt and decrypt	JPG, GIF, HTTPS, SSL, TLS
Session (5)	Establishes/ends connections between two hosts	NetBIOS, PPTP
Transport (4)	Responsible for the transport protocol and error handling	TCP, UDP
Network (3)	Reads the IP address form the packet.	Routers, Layer 3 Switches
Data Link (2)	Reads the MAC address from the data packet	Switches
Physical (1)	Send data on to the physical wire.	Hubs, NICS, Cable

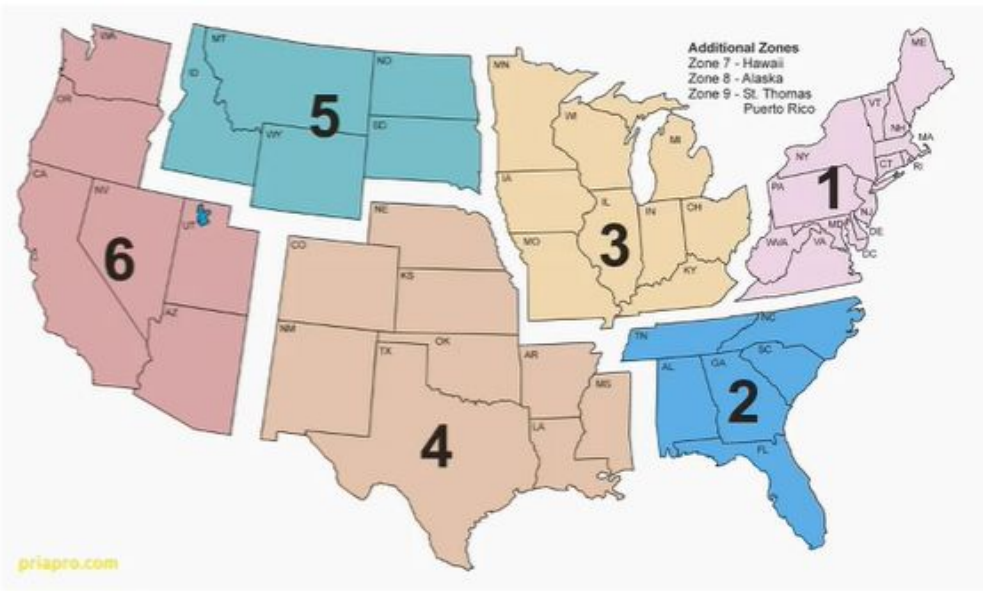
DoD Model


Department of Defense
DoD Model
OSI Model
Process/
Application
Application
Presentation
Session
Transport
Transport
Internet
Network
Link
Data Link
Physical

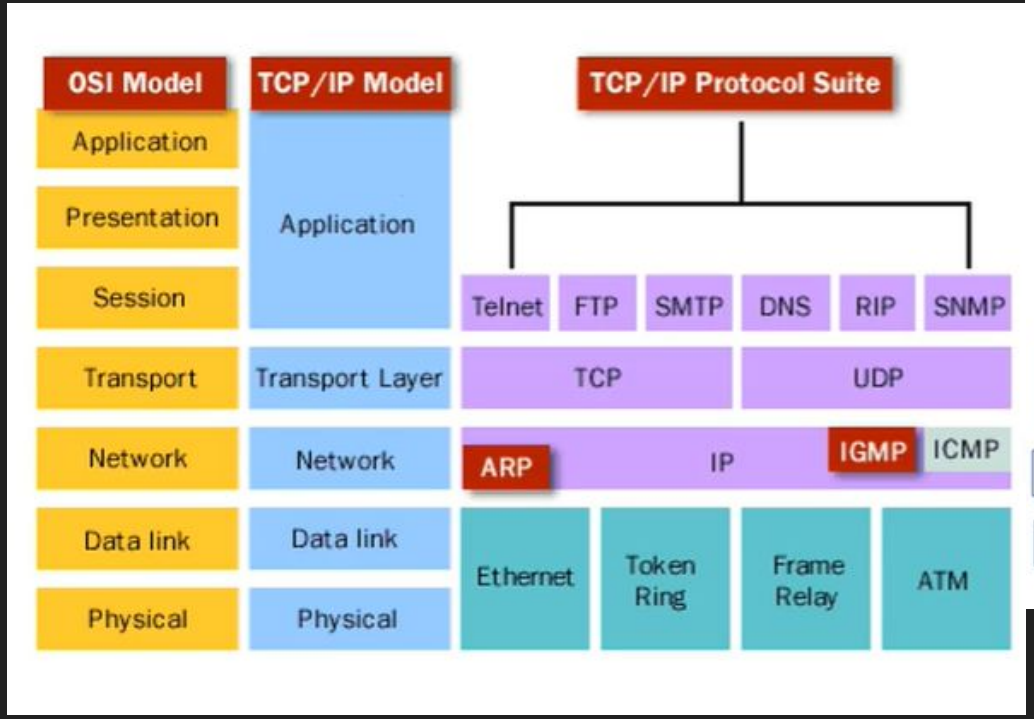
TCP/IP Model (Protocol Suite)

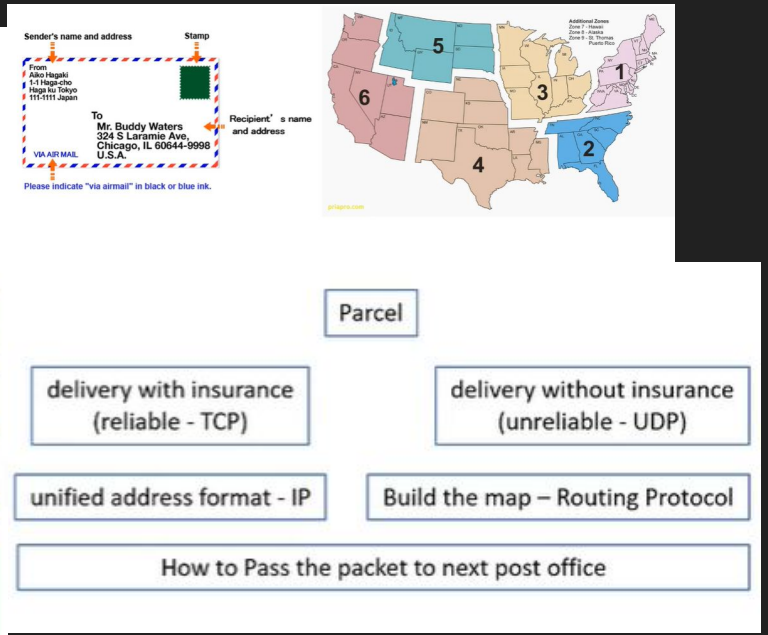


Mailing System



TCP/IP Model & Protocol Suite





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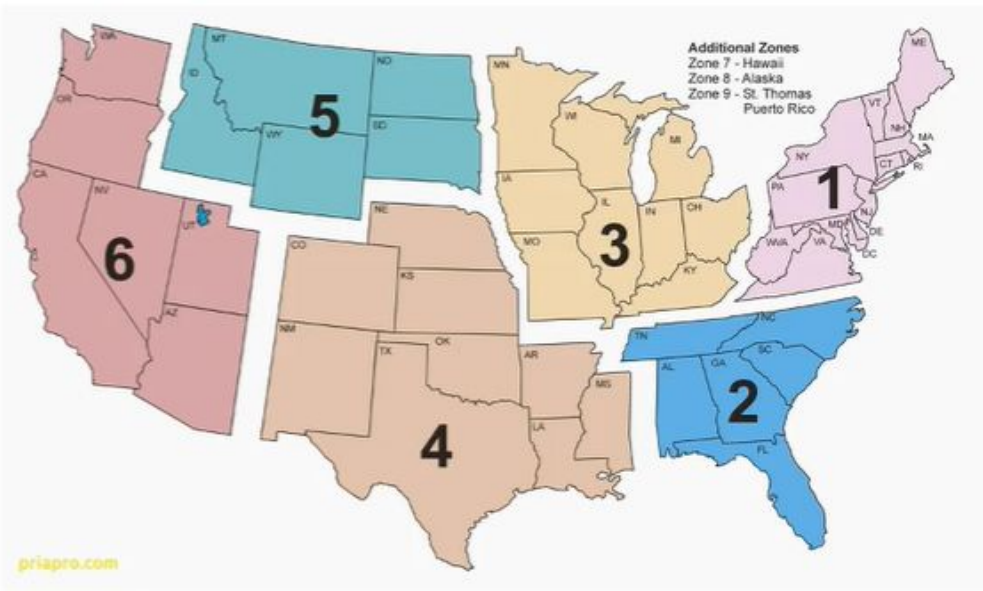
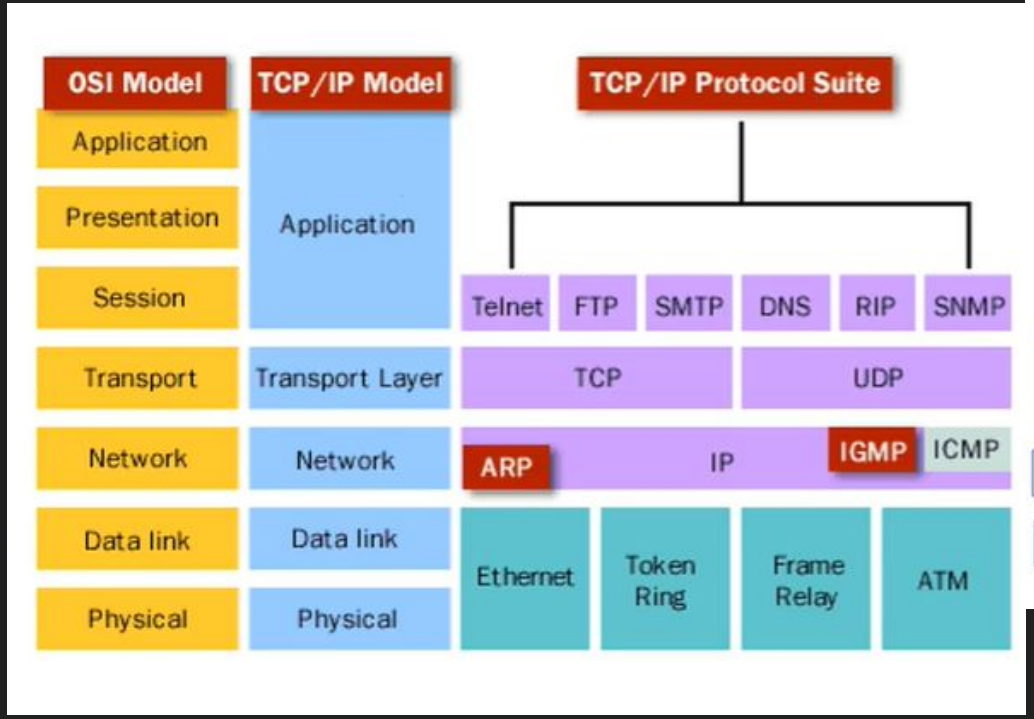
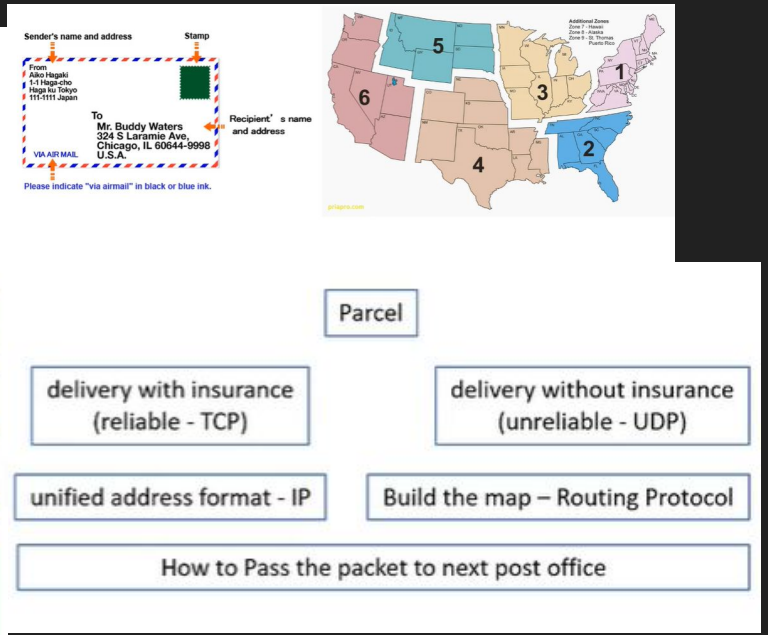


TCP/IP Model & Protocol Suite





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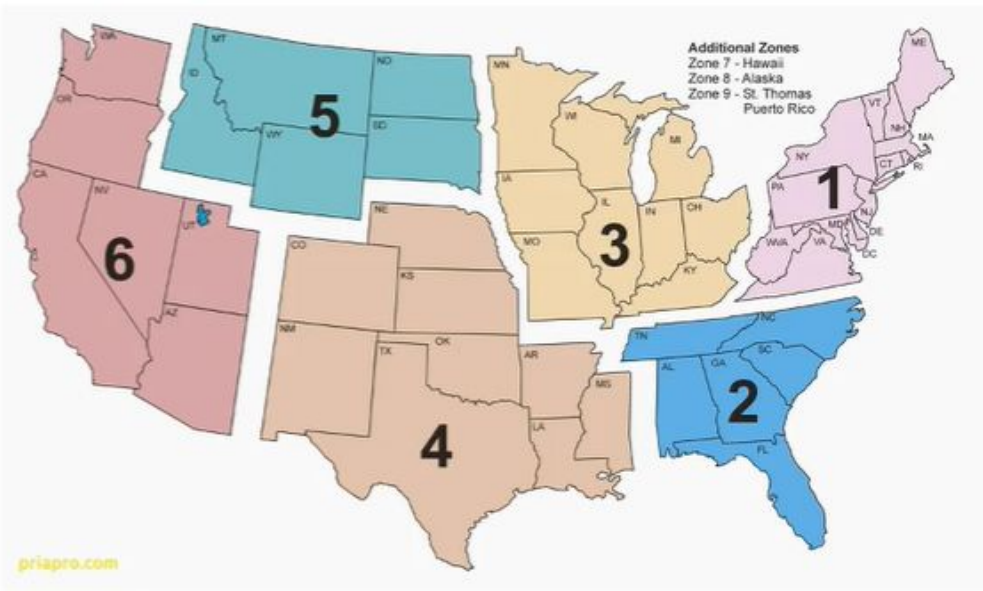
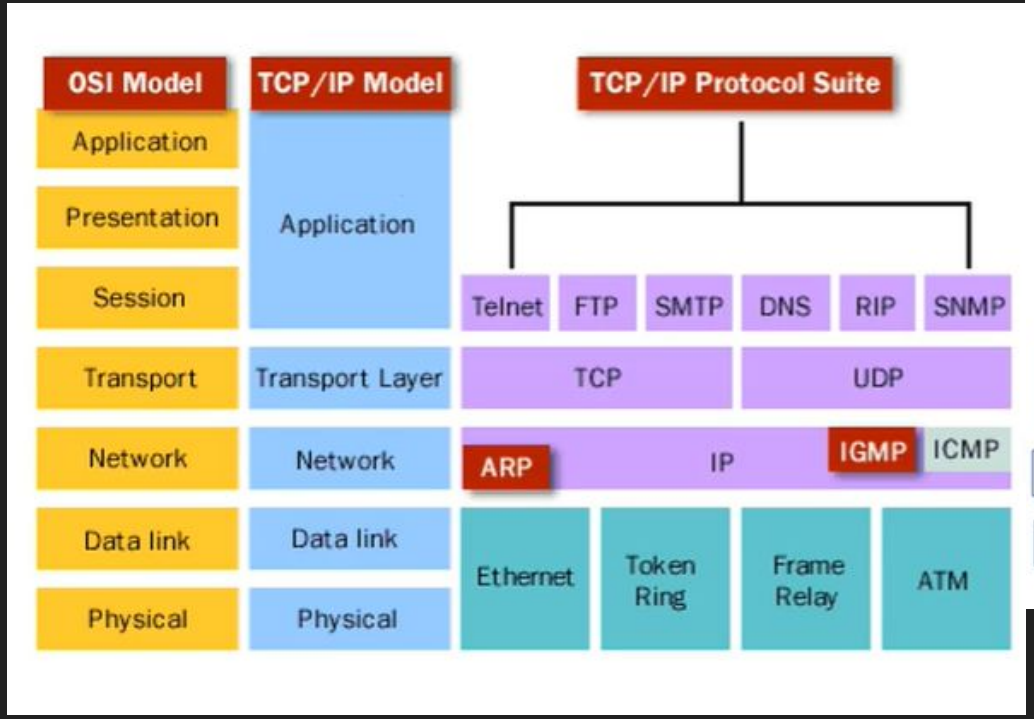
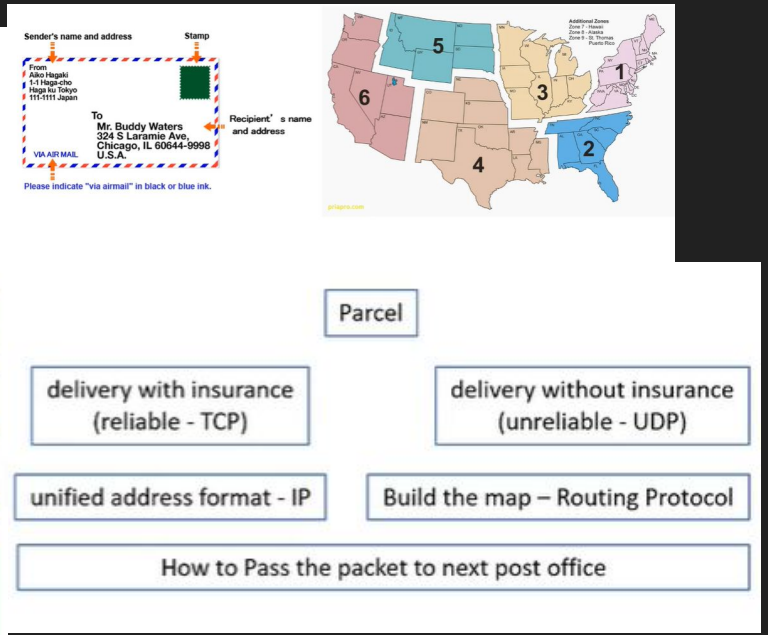
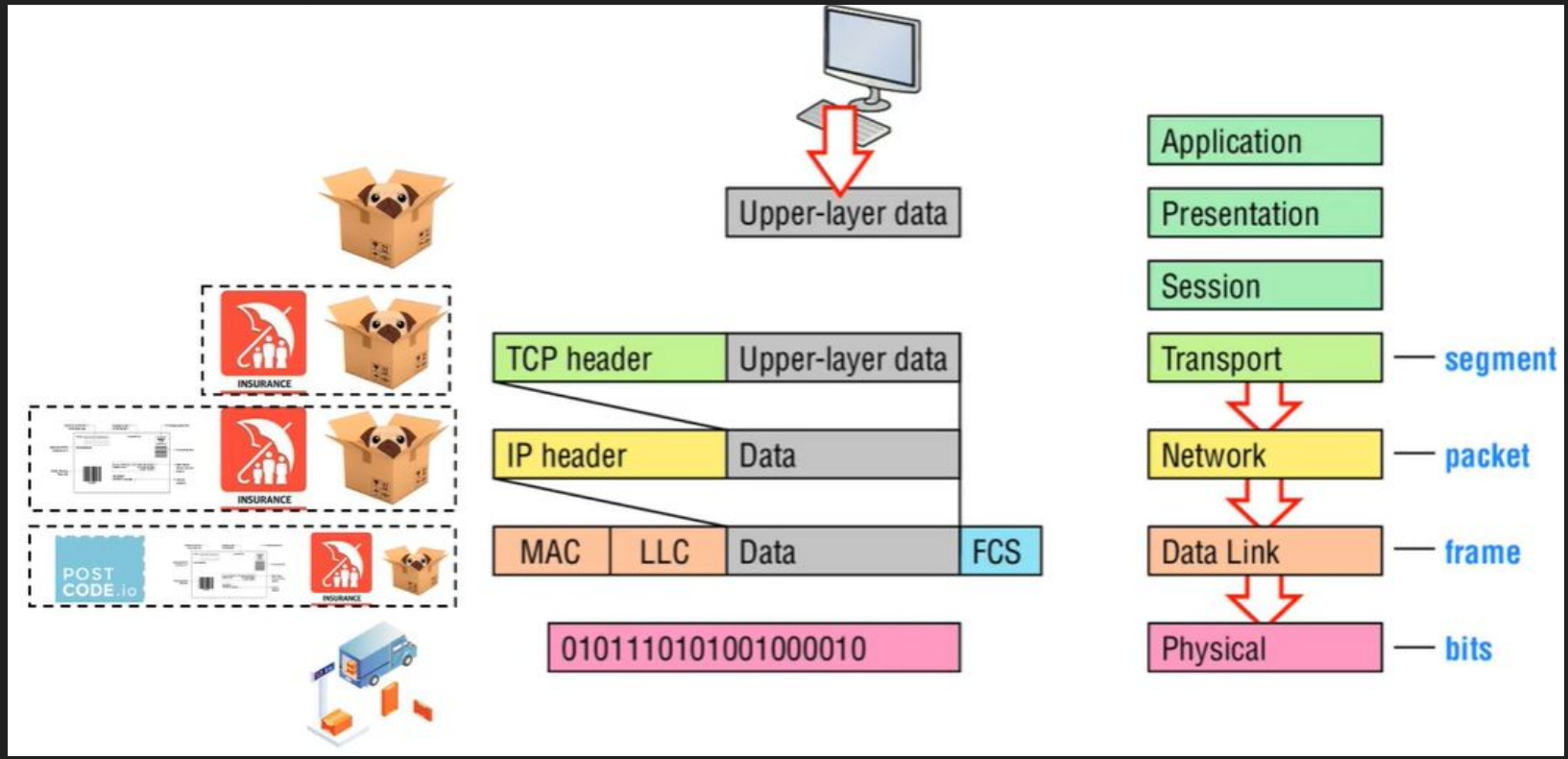


TCP/IP Model & Protocol Suite





Data Encapsulation



History of TCP/IP Protocol Suite