Communication protocols

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Communication occurs in many forms and environments

Each situation has its corresponding expected behaviors and styles

Before beginning to communicate with each other, we establish rules or agreements to govern the conversation those segments are:

**- what method of communication should we use?**

**- what language should we use?**

**- do we need to confirm that our messages are received?**

These rules or protocols must be followed in order for the message to be successfully delivered and understood.

Among the protocols that govern successful human communication are these:

An identified sender and receiver

Agreed upon method of communicating

Common language and grammar

Speed and timing of delivery

Confirmation or acknowledgment requirements

Why protocols matter

Just like humans, computers use rules, or protocols, in order to communicate

**Protocols are required for computers to properly communicate across the network.**

**Both LAN and WLAN is defined as an area where all hosts must “speak the same language”**

**Which in computer terms means they must “share a common protocol”**

If everyone in the same room spoke a different language they would not be able to understand each other, likewise if devices in a local network did not use the same protocols, they would not be able to communicate

Networking protocols define many aspects of communication over the local netwrok, these include message format, message size, timing, encoding, encapsulation, and sessage patterns

***PROTOCOL***  ***DESCRIPTION***

***CHARACTERISTIC***

- **When a message is sent, it must use a specific format or structure**

Message format - **Msg formt depend on the type of message and the channel that is used to deliver the message**

- **rules that govern the size of the pieces communicated across the**

Message size **network are very strict**

- also can be different depending on the channel in use  
 - segmentation

- many network communication functions are dependent on timing

Timing - it d**etermines the speed at which the bits are transmitted on network**

- also **affects when an individual can send data and the total amount of data in one transmission**

- **when a msg is send, before hand its converted into bits**

Encoding - **each bit is encoded into a pattern of sounds, light waves, or electrical impulses depending on the network media that is used**

- the destination PC receives and decodes the signals and interprets the msg

- each msg transmitted on network **must include a header that contains**

**addressing info that identifies the source and destination hosts**

Encapsulation - it’s the process of adding this information to the pieces of data that make up the msg

- in addition to addressing, there may be other info in the header that ensurer that the msg is delivered to the correct application

- some msg require an acknowledgment before the next msg can be sent

Message pattern - this type of pattern is a common aspect of many network protocols

- but there are other types of msges that may be **simply streamed across the network**, without concern as to whether they reach their destination