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Describe network architecture with physical address 22 sends a frame to node has physical address 90

Assuming that the network is using a wired Ethernet protocol, the network architecture can be described as follows:

The physical layer: This layer is responsible for transmitting raw data over the network medium, in this case, electrical signals over a copper Ethernet cable. The signals are encoded using a technique called Manchester encoding, which ensures that the receiver can detect the presence or absence of a signal.

The data link layer: This layer is responsible for framing the raw data into packets, known as frames, and adding a header and trailer to the frame. The header includes the source and destination MAC (Media Access Control) addresses, which are unique physical addresses assigned to each network interface card (NIC) in the network. In this case, the frame sent by physical address 22 will include its MAC address as the source address, and the MAC address of the node with physical address 90 as the destination address.

The network layer: This layer is responsible for routing packets between different networks, and is not relevant for a network that operates entirely within a single subnet.

The transport layer: This layer is responsible for ensuring that data is delivered reliably between applications running on different nodes in the network. In this case, the transport layer is not relevant since we are only concerned with the physical transmission of the frame.

The application layer: This layer includes the applications that generate and consume the data being transmitted over the network. In this case, the application generating the frame is not relevant, since we are only concerned with the physical transmission of the frame.

When physical address 22 sends a frame to the node with physical address 90, the frame will be transmitted from the sender's NIC to the nearest network switch, which will forward the frame to the switch port connected to the destination node. The destination node will then receive the frame, check the destination MAC address in the frame header, and accept the frame if the destination address matches its own MAC address. If the destination MAC address does not match the node's own MAC address, the node will discard the frame.