DAY 2

NIC

- A **network interface card** (NIC)
- **hardware component**
- **which is installed on a computer so, it can connect to a network.**

LOOP BACK ADDRESS

- 127.0.0.0 TO 127.255.255.255
- THIS ADDRESS IS USED TO CHECK THE NIC CARD

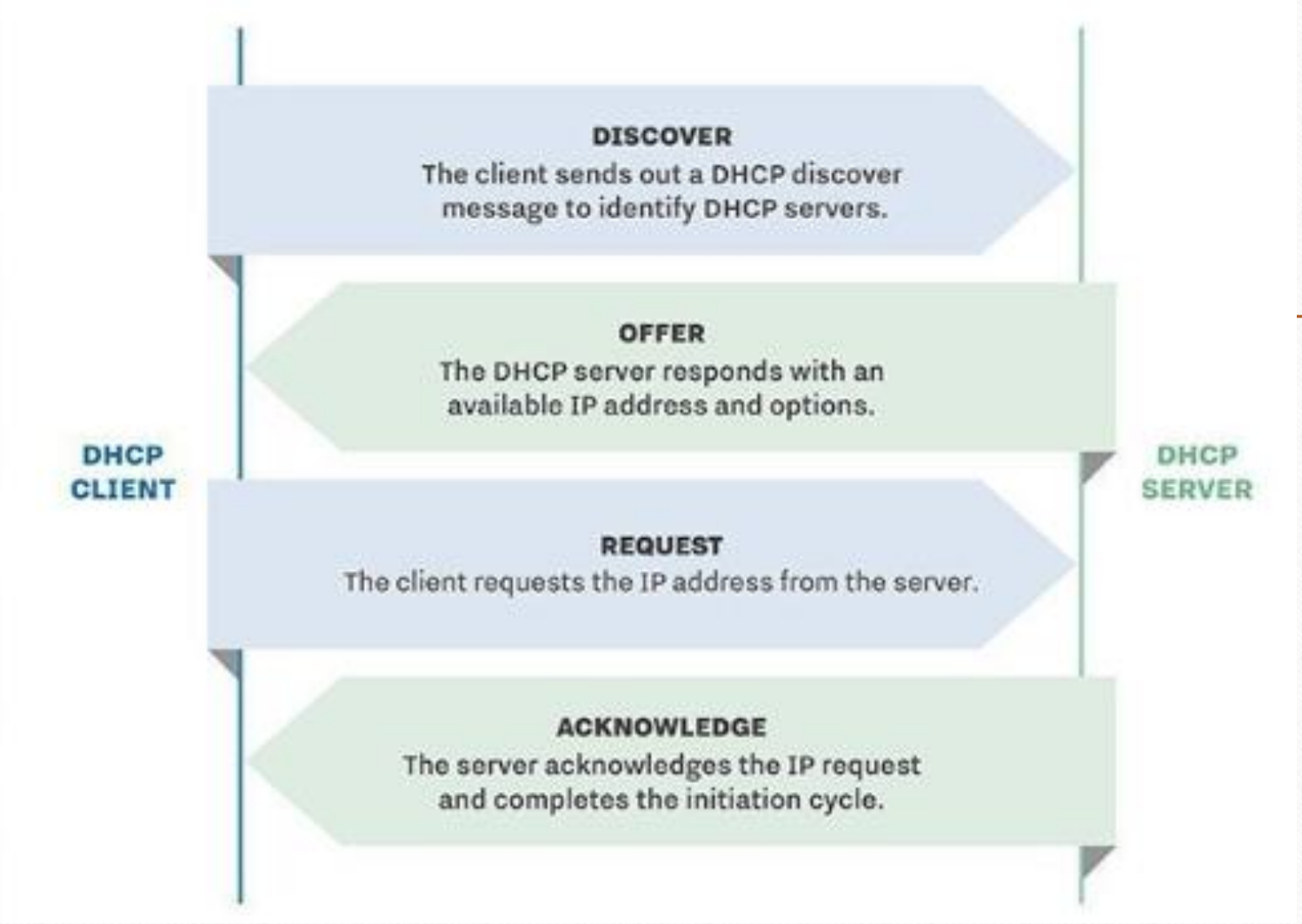
DHCP

- **Dynamic Host Configuration Protocol**

- used to dynamically assign an IP address to any device, or node, on a network so it can communicate using IP

DHCP WORK PROCESS

- DHCP WORKS ON PROCESS CALLED DORA
- D DISCOVER
- O OFFER
- R REQUEST
- A ACKNOLEDGE


DISCOVER
The client sends out a DHCP discover message to identify DHCP servers.
OFFER
The DHCP server responds with an available IP address and options.
DHCP CLIENT
DHCP SERVER
REQUEST
The client requests the IP address from the server.
ACKNOWLEDGE
The server acknowledges the IP request and completes the initiation cycle.

APIPA

- Automatic Private IP Addressing

- WHEN DHCP FAILS TO ASSIGN IP ADDRESS APIPA WILL ASSIGN THE IP ADDRESS AUTOMATICALLY

range **169.254. 0.0 to 169.254. 255.255**

STATIC IP

- HERE WE WILL GOING TO ASSIGN IP ADDRESS TO SYSTEMS MANUALLY

IPv4	IPv6
Deployed 1981	Deployed 1998
32-bit IP address	128-bit IP address
4.3 billion addresses Addresses must be reused and masked	$7.9x10^{28}$ addresses Every device can have a unique address
Numeric dot-decimal notation 192.168.5.18	Alphanumeric hexadecimal notation 50b2:6400:0000:0000:6c3a:b17d:0000:10a9 (Simplified - 50b2:6400::6c3a:b17d:0:10a9)
DHCP or manual configuration	Supports autoconfiguration

MAC ADDRESS

- MAC address is the physical address,
- which uniquely identifies each device on a given network.
- To make communication between two networked devices.
- also known as **Physical address, hardware address, or BIA (Burned In Address).**
- It is represented in a hexadecimal format on each device, such as **00:0a:95:9d:67:16.**

ASSIGNMENTS

- IS IT POSSIBLE ACCESS THE INTERNET BY USING APIPA IP ADDRESS
- WHEN DHCP CLIENT SENDS REQUEST TO DHCP SERVER

  WHAT WILL BE THE IP ADDRESS OF DHCP CLIENT
- DHCP OFFER CONATINS ?
- EXPLAIN BRIEFLY ABOUT MAC ADDRESS

THANK YOU