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Part 1

1. What is the difference between a public and private IP address?

The differences between a public and private IP address are that public IP addresses are unique, publicly registered, used externally, assigned by an ISP, not free, and not secure, while private IP addresses are non-unique, not publicly registered, used internally, assigned by a router, free, and are more secure.

Part 2

1. What is the purpose of ARP?

The purpose of ARP is to resolve IP addresses to MAC addresses.

1. What is the purpose of the MAC address?

The MAC address is a device's physical address used for communication over a network.

1. What is the purpose of the ARP cache?

The ARP cache's purpose is to store known devices' MAC addresses. ARP cache is used to make a network more efficient.

1. What is a dynamic ARP entry?

A dynamic ARP entry is created automatically when a device sends a broadcast message to the network. Dynamic entries are not permanent, and they are flushed periodically.

1. What is a static ARP entry?

A static ARP entry is a manually entered IP to MAC address association using the ARP command line utility.

1. Why would you want to use static APR entries?

Static ARP entries are used to reduce unnecessary ARP broadcast traffic on a network.

Part 3

1. What are the two parts of the MAC address?

The first three bytes identify the manufacturer of the NIC, and the last three are unique numbers that identify each network device.

1. How is the IP address like a mailing address?

The IP address is like a mailing address by saying exactly where the networking device is located, but it doesn’t say who the device is.

1. How is a name like a MAC address?

A MAC address is a public identifier of a device like a name is a public identifier of a person.

Sources:

Public and Private IP Address, PowerCert Animated Videos, February 2022

Address Resolution Protocol (ARP), PowerCert Animated Videos, June 2018

MAC Address Explained, PowerCert Animated Videos, PowerCert Animated Videos, January 2022