

## Managing MAC Address Table:

- o MAC is abbreviation which stands for Media Access Control (MAC).
- o Every LAN card has a unique 48 Bits Address called MAC Address.
- o Media Access Control address represented in Hexadecimal Format.
- o Media Access Control address used for Layer 2 Datalink Layer communication.
- o Media Access Control Address (MAC) used for Switching (Cisco Switches).
- o MAC Addresses is 12-Digit number used to identifiers the devices unequally.
- o It has two Parts, OUI (Organisation Unique Identifier) and Serial Number.
- o MAC Address is total 48 Bits, 24 Bits OUI and 24 Bits is Company Serial Number.
- o MAC Address also called Hardware, Physical, Fixed, BIA (Burn In Address), 48 Bit.
- o NIC, Ethernet, Data link Layer, Layer 2, Manufacturer & Adapter Card Addresses.
- o Switch manage & use MAC address table to forward traffic from one interface to another.
- o Address table is combination of VLAN ID, MAC Address, Address Type and Port number.
- o MAC address table are two types, these are dynamic address and static address.
- o Dynamic MAC address is the address that the switch learns dynamically.
- o Dynamic MAC address is that the switch learns & then ages when it is not in use.
- o Static MAC address is the address that manually put by the administrator.
- o Static address is no aging time and will not be removed if switch rebooted.
- o If frame receives & destination MAC address is not found, it flooded to all ports.
- o When the destination replies, the switch adds that source MAC address to the table.
- o Cisco Switches default-aging time is 300 seconds or five mints, which can be, modify.
- o Aging timer is used to remove inactive Media Access Control addresses from the table.

Managing MAC Address Table	
SW1(config)# mac address-table aging-time seconds	
SW1(config)# mac address-table static mac-address vlan vlan-id interface	
SW1(config)# no mac address-table static mac-address vlan vlan-id interface	

SW1#**show mac address-table ?**

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address      Address to lookup in the table
aging-time   MAC address table aging parameters
count        Number of MAC addresses in the table
dynamic      List dynamic MAC addresses
interface    List MAC addresses on a specific interface
multicast    List multicast MAC addresses
secure       List secure MAC addresses
static       List static MAC addresses
vlan         List MAC addresses on a specific vlan
|            Output modifiers
<cr>
```

Command	Description
<b>Address</b>	Displays information about a specific MAC address.
<b>Aging-Time</b>	Displays information about the time-out values for the MAC address table.
<b>Count</b>	Displays the number of entries currently in the MAC address table.
<b>Dynamic</b>	Displays information about the dynamic MAC address table entries only.
<b>Interface</b>	Specifies the interface. The interface can be either Ethernet or EtherChannel.
<b>Multicast</b>	Displays information about the multicast MAC address table entries only.
<b>Static</b>	Displays information about the static MAC address table entries only.
<b>VLAN</b>	Displays information for a specific VLAN, VLAN ID range is from 1 to 4094.

Device Configuration
R1(config)#interface f0/0 R1(config-if)#mac-address aaaa.aaaa.1111 R1(config-if)#ip address 1.1.1.1 255.0.0.0 R1(config-if)#no shutdown
R2(config)#interface f0/0 R2(config-if)#mac-address aaaa.aaaa.2222 R2(config-if)#ip address 1.1.1.2 255.0.0.0 R2(config-if)#no shutdown
R3(config)#interface f0/0 R3(config-if)#mac-address aaaa.aaaa.3333 R3(config-if)#ip address 1.1.1.3 255.0.0.0 R3(config-if)#no shutdown

