



**Quick Tips:
Using MAC Address To Determine Device Manufacturer**



Organizationally Unique Identifier(OUI)

Ethernet MAC addresses consist of 6 bytes(48 bits) and are generally written out in hexadecimal (in a number of different formats - but don't get me started - that's a rant for another day). Each byte is represented by 2 hexadecimal characters, so each MAC address can be represented by 12 hexadecimal chars:

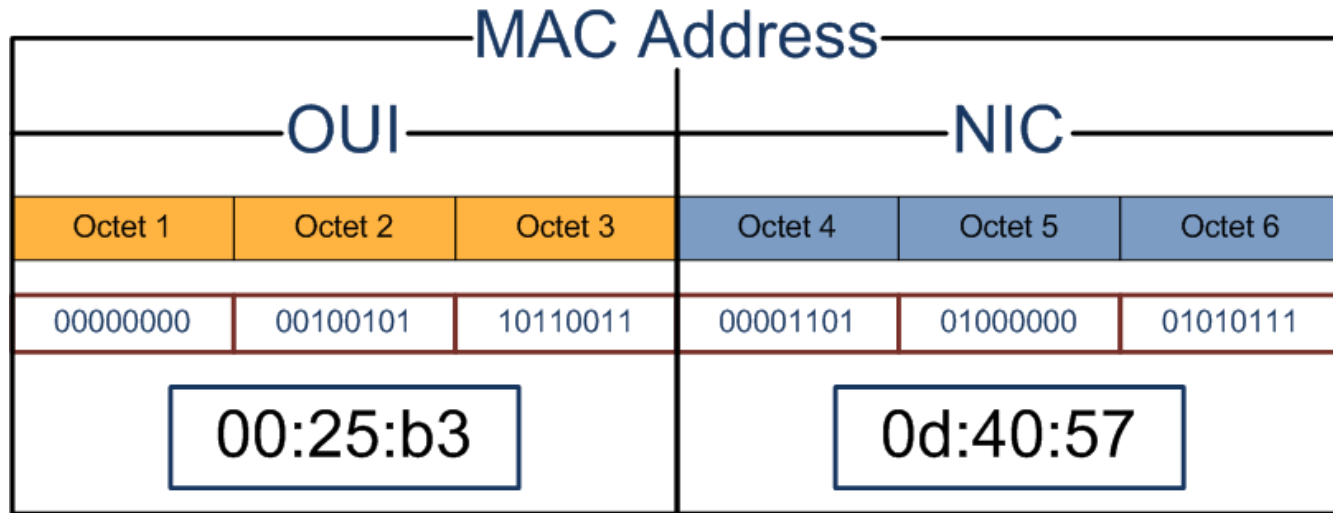
0025.b30d.4057 or 00:25:b3:0d:40:57 or 00-25-b3-0d-40-57

The first 3 bytes of each MAC address is referred to as the Organizationally Unique Identifier or OUI. The IEEE assigns each vendor a unique OUI (many vendors, including Cisco, have multiple OUIs). The remaining 3 bytes are often referred to as the NIC Specific bytes and the vendor can assign any value they wish to these bits. Hopefully, they do the best they can to make sure that they are unique (or at least unique to that particular OUI if they have been assigned multiple OUIs).

This information can come in handy when doing troubleshooting. You can take the first 3 bytes (6 hexadecimal characters) of a MAC address, drop it in a website (or any number of applications) and find out the name of the manufacturer.



MAC Address



00:25:b3:0d:40:57



OUI Lookup

```
sw1#show mac-address-table interface f1/0/1  
      Mac Address Table
```

```
-----  
Vlan      Mac Address          Type      Ports  
----      -  
100      0025.b30d.4057      STATIC    Fa1/0/1  
Total Mac Addresses for this criterion: 1
```

<http://standards.ieee.org/regauth/oui/index.shtml>

00-25-B3 (hex) Hewlett Packard
0025B3 (base 16) Hewlett Packard
11445 Compaq Center Drive
MS 6.3.049
Houston Texas 77070
UNITED STATES



Organizationally Unique Identifier

While this can be helpful for troubleshooting, unfortunately, the OUI does not always match the manufacturer of the device. For example, the NIC in a Dell laptop might be made by 3COM. But many times the NIC manufacture does match the device maker. If your company only has HP PCs and the OUI shows up as Apple, you know that there's probably some monkey business afoot.



Summary

The first 3 bytes of each MAC address is referred to as the Organizationally Unique Identifier or OUI. The IEEE assigns each vendor a unique OUI (many vendors, including Cisco, have multiple OUIs). Many times you can do a lookup (via webpage or application) against the OUI database and find out what type of device is connected to a port in your network. Keep in mind, that in the case of computers, the NIC may be made by a different manufacturer than the PC. Still, this information can often come in handy when troubleshooting network issues.