

EUI-64 (Extended Unique Identifier)

EUI-64 Process

- Uses a client's 48-bit Ethernet MAC address and inserts another 16 bits in the middle of the 46-bit MAC address to create a 64-bit Interface ID.
- Advantage is that the Ethernet MAC address can be used to determine the interface; is easily tracked.

EUI-64 Interface ID is represented in binary and comprises three parts:

- 24-bit OUI from the client MAC address, but the 7th bit (the Universally/Locally bit) is reversed (0 becomes a 1).
- Inserted as a 16-bit value FFFE.
- 24-bit device identifier from the client MAC address.

Example

PC>ipconfig /all

FastEthernet0 Connection:(default port)

Connection-specific DNS Suffix...:

Physical Address.....: 0004.9A93.10B7

Link-local IPv6 Address.....: FE80::204:9AFF:FE93:10B7

IP Address.....: 0.0.0.0

Subnet Mask.....: 0.0.0.0

Default Gateway.....: 0.0.0.0

DNS Servers.....: 0.0.0.0

DHCP Servers.....: 0.0.0.0

DHCPv6 Client DUID.....: 00-01-00-01-1D-02-82-39-00-04-9A-93-10-B7

(MAC address)

0004.9A93.10B7

0004.9A 93.10B7

(0000 0000)

The 7th bit from the left is flipped in the IPv6 link local address.

(IPv6 Link Local Address)

FE80::204:9AFF:FE93:10B7

FE80:0000:0000:0000:0204:9AFF:FE93:10B7

(0000 0010)