

Adresy sprzętowe

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MAC

Medium Access Control

MAC

MAC-48

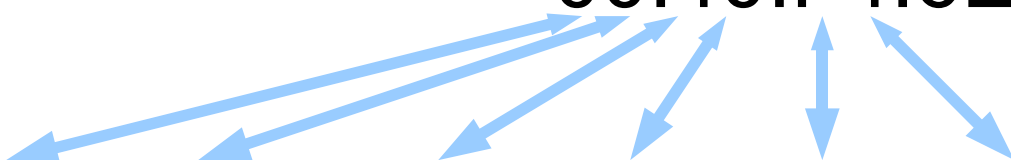
00:40:F4:6E:0E:BD

MAC-48

00:40:F4:6E:0E:BD

0000 0000 : 0100 0000 : 1111 0100 :

0110 1110 : 0000 0110 : 1011 1101



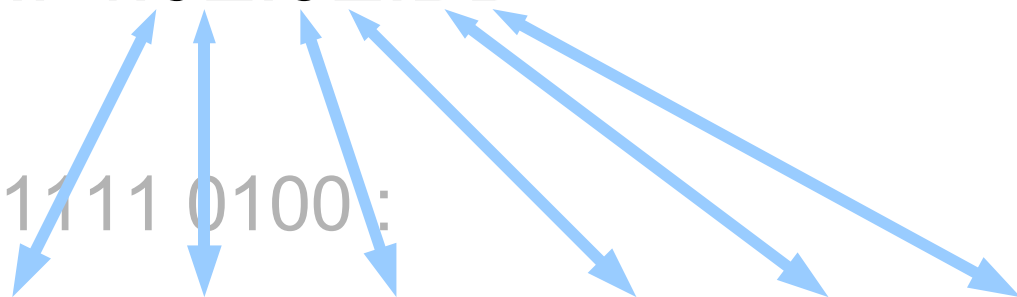
MAC

MAC-48

00:40:F4:6E:0E:BD

0000 0000 : 0100 0000 : 1111 0100 :

0110 1110 : 0000 0110 : 1011 1101



MAC

00-05-5D (hex) D-Link Systems, Inc.
00055D (base 16) D-Link Systems, Inc.
53 Discovery Dr.
Irvine CA 92618
UNITED STATES

00-05-5E (hex) Cisco Systems, Inc.
00055E (base 16) Cisco Systems, Inc.
170 West Tasman Dr.
San Jose CA 95134
UNITED STATES

00-05-5F (hex) Cisco Systems, Inc.
00055F (base 16) Cisco Systems, Inc.
170 West Tasman Dr.
San Jose CA 95134
UNITED STATES

MAC-48: 48 bitów, sprzęt sieciowy

EUI-48: Inny sprzęt, ten sam system

EUI-64: 64 bity

MAC-48: Ethernet (IPv4)

Wifi = IEEE 802.11

Bluetooth

Token Ring = IEE 802.5

FDDI

ATM

Fibre Channel

EUI-64: Firewire

(IPv6)

Osobiste sieci bezprzewodowe

Adresowanie w sieciach typu Ethernet IPv4

IPv4

Internet Protocol wersja 4

aaa . bbb . ccc . ddd

IPv4

Internet Protocol wersja 4

aaa . bbb . ccc . ddd

0-255 . 0-255 . 0-255 . 0-255

0000 0000 . 0000 0000 . 0000 0000 . 0000 0000
1111 1111 . 1111 1111 . 1111 1111 . 1111 1111

IPv4

Internet Protocol wersja 4

aaa . bbb . ccc . ddd

0-255 . 0-255 . 0-255 . 0-255

0000 0000 . 0000 0000 . 0000 0000 . 0000 0000
1111 1111 . 1111 1111 . 1111 1111 . 1111 1111

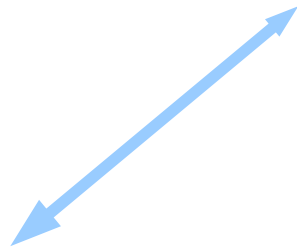
4,294,967,296

149.156.24.42

10010101 . 10011100 . 00011000 . 00101010

149.156.24.42

149.156.24.32 ... 149.156.24.63



Subnet / podsieć

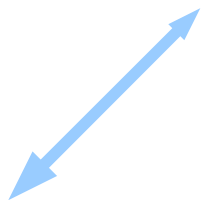
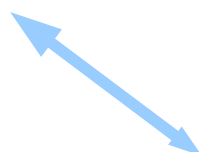
network

broadcast

149.156.24.32 ... 149.156.24.63

149.156.24.33 ... 149.156.24.62

dostępne



network

broadcast

149.156.24.32 ... 149.156.24.63

149.156.24.33 ... 149.156.24.62

255.255.255.224

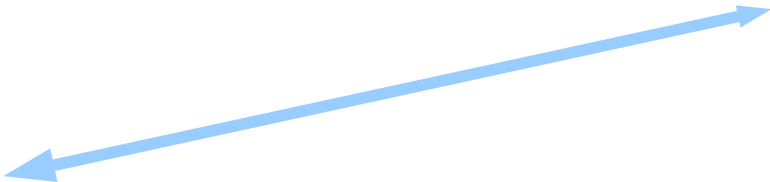
netmask / maska

255.255.255.224

11111111 . 11111111 . 11111111 . 11100000

255.255.255.224

11111111 . 11111111 . 11111111 . 11100000



00000 ... 11111



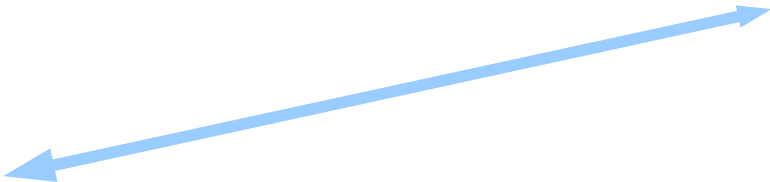
0 ... 31



→ 32

255.255.255.224

11111111 . 11111111 . 11111111 . 11100000



00000 ... 11111



0 ... 31



→ 32

149.156.24.32 ... 149.156.24.63

Początek zakresu: *network* 149.156.24.32
/ sieć

Rozmiar zakresu: *netmask* 255.255.255.224
/ maska

Liczba adresów: $255 - 224 + 1 = 32$

Ostatni adres:
(*broadcast*) $149.156.24.32 + 32 - 1 =$
149.156.24.63

Użyteczne adresy: 149.156.24.33 ... 149.156.24.62

255.255.255.224

11111111 . 11111111 . 11111111 . 11100000
0-31

255.255.255.128

11111111 . 11111111 . 11111111 . 10000000
0-127

255.255.255.0

11111111 . 11111111 . 11111111 . 00000000
0-255

255.0.0.0 *sieć klasy A*
256x256x256

255.255.0.0 *sieć klasy B*
256x256

255.255.255.0 *sieć klasy C*
256

Pełny adres sieci

149.156.24.32 / 255.255.255.224

149.156.24.32 / 255.255.255.224

149.156.24.32 / 27

CIDR

Classless Inter-Domain Routing

149.156.24.32 / 255.255.255.224

149.156.24.32 / 27

11111111.11111111.11111111.11100000

AND

loczyn logiczny

$$\begin{array}{l} 0 \& 0 = 0 \\ 0 \& 1 = 0 \\ 1 \& 0 = 0 \\ 1 \& 1 = 1 \end{array}$$

149.156.24.42
&
255.255.255.224

ARP

Address Resolution Protocol

protokół przyporządkowywania logicznych
adresów IP

fizycznym adresom MAC

w komputerowych sieciach lokalnych typu Ethernet.

00:E0:4C:11:A3:54 = 149.156.24.2

IPv4

DNS

DNS

Domain Name Service

protokół przyporządkowywania adresów IP
adresom 'tekstowym'

www.as.ap.krakow.pl

→ 149.156.24.38

IPv4

DNS

IANA

Internet Assigned Numbers Authority

ICANN

Internet Corporation for Assigned Names and
Numbers

NASK

Naukowa i Akademicka Sieć Komputerowa

MAP OF THE INTERNET

THE IPv4 SPACE, 2006

IPv4

