Subnet Calculator

Calculate IPv4 or IPv6 network boundaries, mask, last address and exact address count. Compressed IPv6 and embedded IPv4 tails are accepted; IPv6 counts remain exact decimal strings.

Formula: size = 2^(address bits-prefix); network = floor(address/size) * size; address bits = 32 or 128

INPUTS AND EXAMPLE VALUES

IPv4 or IPv6 address: 192.168.1.10

Prefix length (IPv4 0-32; IPv6 0-128): 24

CHECK THE DEFAULT EXAMPLE

Network: 192.168.1.0

Subnet mask: 255.255.255.0

Last address: 192.168.1.255

Address count: 256

Usable hosts (RFC 3021 for /31): 254

LIMITS AND CONVENTIONS

IPv4 uses /0-/32, with /31 point-to-point and /32 single-address host-count conventions. IPv6 uses /0-/128 and has no broadcast-address subtraction.

A count does not establish device routability or subnet allocation policy. VLSM planning, zone identifiers, discovery and configuration are outside this tool.

METHOD AND SOURCES

https://azhanmh.com/guides/tools/subnet-calculator

IETF RFC 3021 - /31 prefixes on point-to-point IPv4 links: https://datatracker.ietf.org/doc/html/rfc3021

IETF RFC 4291 - IPv6 addressing architecture: https://datatracker.ietf.org/doc/html/rfc4291

Display precision is for reporting; keep unrounded values for later calculations. Verify units and conventions. This reference does not replace institution, employer or network rules.