|  |  |
| --- | --- |
| Special IPv4 Addresses | |
|  |  |
| Local Host | 127.0.0.0 – 127.255.255.255 |
| APIPA | 169.254.0.0 – 169.254.255.255 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Classification of IP Addresses** | Range | **Number of Blocks** | **Representation in the subnet mask** |
| **Class A** | 0.0.0.0-127.255.255.255 | 128 | 255.0.0.0/8 |
| **Class B** | 128.0.0.0-191.255.255.255 | 16,384 | 255.255.0.0/16 |
| **Class C** | 192.0.0.0-223.255.255.255 | 2,097,152 | 255.255.255.0/24 |
| **Class D** | 224.0.0.0-239.255.255.255 | n/a | n/a |
| **Class E** | 240.0.0.0-255.255.255.255 | n/a | n/a |

|  |  |
| --- | --- |
| **Reserved IP Addresses** | |
|  |  |
| 0.0.0.0/8 | This network |
| 10.0.0.0/8 | Private IPv4 Address Block |
| 100.64.0.0/10 | Carrier-grade NAT |
| 127.0.0.0/8 | Loopback |
| 127.0.53.53 | Name collision occurrence |
| 169.254.0.0/16 | Link local |
| 172.16.0.0/12 | Private IPv4 Address Block |
| 192.0.0.0/24 | IETF protocol assignments |
| 192.0.2.0/24 | TEST-NET-1 |
| 192.168.0.0/16 | Private IPv4 Address Block |
| 198.18.0.0/15 | Network benchmark testing |
| 198.51.100.0/24 | TEST-NET-2 |

## Bogon IPv4 Addresses

|  |  |
| --- | --- |
| Bogon IPv4 Address Range | Description |
|  |  |
| 0.0.0.0/8 | Reserved address space |
| 10.0.0.0/8 | Private network (RFC 1918) |
| 100.64.0.0/10 | Shared address space (CGN) |
| 127.0.0.0/8 | Loopback address |
| 169.254.0.0/16 | Link-local address (Autoconfiguration) |
| 172.16.0.0/12 | Private network (RFC 1918) |
| 192.0.0.0/24 | Reserved address space used for documentation |
| 192.0.2.0/24 | Reserved address space used for documentation |
| 192.168.0.0/16 | Private network (RFC 1918) |
| 198.51.100.0/24 | Reserved address space used for documentation |
| 203.0.113.0/24 | Reserved address space used for documentation |
| 240.0.0.0/4 | Reserved for future use or experimental purposes |

**IPv4 Subnets (w/ Wildcard Mask Values)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CIDR** | SUBNET MASK | **WILDCARD MASK** | **# OF IP ADDRESSES** | # OF USABLE IP ADDRESSES |
|  |  |  |  |  |
| **/32** | **255.255.255.255** | **0.0.0.0** | **1** | 1 |
| **/31** | **255.255.255.254** | **0.0.0.1** | **2** | 2\* |
| **/30** | **255.255.255.252** | **0.0.0.3** | **4** | 2 |
| **/29** | **255.255.255.248** | **0.0.0.7** | **8** | 6 |
| **/28** | **255.255.255.240** | **0.0.0.15** | **16** | 14 |
| **/27** | **255.255.255.224** | **0.0.0.31** | **32** | 30 |
| **/26** | **255.255.255.192** | **0.0.0.63** | **64** | 62 |
| **/25** | **255.255.255.128** | **0.0.0.127** | **128** | 126 |
| **/24** | **255.255.255.0** | **0.0.0.255** | **256** | 254 |
| **/23** | **255.255.254.0** | **0.0.1.255** | **512** | 510 |
| **/22** | **255.255.252.0** | **0.0.3.255** | **1024** | 1022 |
| **/21** | **255.255.248.0** | **0.0.7.255** | **2048** | 2046 |
| **/20** | **255.255.240.0** | **0.0.15.255** | **4096** | 4094 |
| **/19** | **255.255.224.0** | **0.0.31.255** | **8192** | 8190 |
| **/18** | **255.255.192.0** | **0.0.63.255** | **16,384** | 16382 |
| **/17** | **255.255.128.0** | **0.0.127.255** | **32,768** | 32766 |
| **/16** | **255.255.0.0** | **0.0.255.255** | **65,536** | 65534 |
| **/15** | **255.254.0.0** | **0.1.255.255** | **131,072** | 131070 |
| **/14** | **255.252.0.0** | **0.3.255.255** | **262,144** | 262,142 |
| **/13** | **255.248.0.0** | **0.7.255.255** | **524,288** | 524,286 |
| **/12** | **255.240.0.0** | **0.15.255.255** | **1,048,576** | 1,048,574 |
| **/11** | **255.224.0.0** | **0.31.255.255** | **2,097,152** | 2,097,150 |
| **/10** | **255.192.0.0** | **0.63.255.255** | **4,194,304** | 4,194,302 |
| **/9** | **255.128.0.0** | **0.127.255.255** | **8,388,608** | 8,388,606 |
| **/8** | **255.0.0.0** | **0.255.255.255** | **16,777,216** | 16,777,214 |
| **/7** | **254.0.0.0** | **1.255.255.255** | **33,554,432** | 33,554,430 |
| **/6** | **252.0.0.0** | **3.255.255.255** | **67,108,864** | 67,108,862 |
| **/5** | **248.0.0.0** | **7.255.255.255** | **134,217,728** | 134,217,726 |
| **/4** | **240.0.0.0** | **15.255.255.255** | **268,435,456** | 268,435,454 |
| **/3** | **224.0.0.0** | **31.255.255.255** | **536,870,912** | 536,870,910 |
| **/2** | **192.0.0.0** | **63.255.255.255** | **1,073,741,824** | 1,073,741,822 |
| **/1** | **128.0.0.0** | **127.255.255.255** | **2,147,483,648** | 2,147,483,646 |