**IPv4 and IPv6**

| **IPv4** | **IPv6** |
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| IPv4 has a 32-bit address length | IPv6 has a 128-bit address length |
| It Supports Manual and DHCP address configuration | It supports Auto and renumbering address configuration |
| In IPv4 end to end, connection integrity is Unachievable | In IPv6 end to end, connection integrity is Achievable |
| It can generate 4.29×109 address space | Address space of IPv6 is quite large it can produce 3.4×1038 address space |
| The Security feature is dependent on application | IPSEC is an inbuilt security feature in the IPv6 protocol |
| Address representation of IPv4 is in decimal | Address Representation of IPv6 is in hexadecimal |
| Fragmentation performed by Sender and forwarding routers | In IPv6 fragmentation performed only by the sender |
| In IPv4 Packet flow identification is not available | In IPv6 packet flow identification are Available and uses the flow label field in the header |
| In IPv4 checksum field is available | In IPv6 checksum field is not available |
| It has broadcast Message Transmission Scheme | In IPv6 multicast and any cast message transmission scheme is available |
| In IPv4 Encryption and Authentication facility not provided | In IPv6 Encryption and Authentication are provided |
| IPv4 has a header of 20-60 bytes. | IPv6 has header of 40 bytes fixed |
| IPv4 can be converted to IPv6 | Not all IPv6 can be converted to IPv4 |
| IPv4 consist of 4 fields which are separated by dot (.) | IPv6 consist of 8 fields, which are separated by colon (:) |
| IPv4’s IP addresses are divided into five different classes. Class A , Class B, Class C , Class D , Class E. | IPv6 does not have any classes of IP address. |
| IPv4 supports VLSM (Variable Length subnet mask). | IPv6 does not support VLSM. |
| Example of IPv4:  66.94.29.13 | Example of IPv6: 2001:0000:3238:DFE1:0063:0000:0000:FEFB |