**DIFFERENCES BETWEEN IPV4 AND IPV6**

| **BASIS OF COMPARISON** | **IPV4** | **IPV6** |
| --- | --- | --- |
| Address Configuration | Supports Manual and DHCP configuration. | Supports Auto-configuration and renumbering |
| End-to-end connection integrity | Unachievable | Achievable |
| Address Space | It can generate 4.29 x 109 addresses. | It can produce quite a large number of addresses, i.e., 3.4 x 1038. |
| Security features | Security is dependent on application | IPSEC is inbuilt in the IPv6 protocol |
| Address length | 32 bits (4 bytes) | 128 bits (16 bytes) |
| Address Representation | In decimal | In hexadecimal |
| Fragmentation performed by | Sender and forwarding routers | Only by the sender |
| Packet flow identification | Not available | Available and uses flow label field in the header |
| Checksum Field | Available | Not available |
| Message Transmission Scheme | Broadcasting | Multicasting and Anycasting |
| Encryption and Authentication | Not Provided | Provided |

**DIFFERENCES BETWEEN PROXY AND VPN**

| **BASIS FOR COMPARISON** | **VPN** | **PROXY** |
| --- | --- | --- |
| Security | Provides encryption, authentication and integrity protection to the traffic. | It does not provide any type of security. |
| Works on | Firewall | Browsers |
| Tunnel creation | A secure link is created between the end users. | Tunnel formation does not take place. |
| Protocols used | PTTP, L2TP, IPsec, etc. | HTTP, TELNET, SMTP, and FTP. |