



| IPv6 Header  |   |  |  |
|--|---|--|--|
| IPv4 Header 20 bytes   | IPv6 Header, 40 bytes fixed             |  |  |
| Version IHL Type of Service Total Length   | Version Traffic Class Flow Label        |  |  |
| Identification Flags Fragment<br>Offset  | Payload Length Next<br>Header Hop Limit |  |  |
| Time to Live Protocol Header Checksum  |   |  |  |
| Source Address   | Courses Address                         |  |  |
| Destination Address Options Padding  | Source Address                          |  |  |
| <ul> <li>- field's name kept from IPv4 to IPv6</li> <li>- fields not kept in IPv6</li> <li>- Name &amp; position changed in IPv6</li> <li>- New field in IPv6</li> </ul> | Destination Address                     |  |  |







































| IPv6 TRANSITION TIMELINE   |                              |                |               |                 |                                     |
|--|------------------------------|----------------|---------------|-----------------|-------------------------------------|
|  | Fed                          | eral IT Techno | ology Refresh | Cycle           |                                     |
| -  | IPv6 Security Products       |                |               |                 |                                     |
| 191  | DNS/DHCPv6/DDNS Products     |                |               |                 |                                     |
| IPv6-Ca  | IPv6-Capable Vendor Products |                |               |                 |                                     |
| Transition Planning IPv6 Constraints   |                              |                |               | Pv6 Constraints |                                     |
| 2006   | 2007                         | 2008           | 2009          | 2010            | 2011                                |
| Contraction of the local division of the loc |                              |                |               |                 | IPv6 Drivers                        |
| IPv4 Address Depletion   |                              |                |               |                 |                                     |
| Microsoft Vista Deployment   |                              |                |               |                 |                                     |
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| NE   | EXT GEI<br>ACK         | NERATIO                      | N TCP/IP  |
|--|------------------------|------------------------------|---|
|  |                        | Windows Sockets applications |   |
|  |                        | Windows Sockets              | liser   |
| 7  | WSK clients            | AFD                          | NetBT and other TDI clients     Kemel       TDI     TDX |
|  | :                      | Next Generation              | ТСРЛР Stack (Tcpip.sys)                                 |
| 12   | Transport<br>Layer TC  | UDP                          | Raw ST  |
| and the second sec | Network<br>Layer       | IPv4 IF                      | AP  |
|  | Framing<br>Layer 802.3 | PPP 802.11 Loopbac           | k IPv4<br>tunnel  |
|  |                        | NDIS                         |   |
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| ſ  | COMPARING IPV6 FEATURES |                                     |  |  |  |
|--|-------------------------|-------------------------------------|--|--|--|
|  |                         | Microsoft<br>Windows <sup>xp</sup>  | Windows Vista                            | Windows Server.<br>Code Name "Longhorm"  |  |
| 1  | DHCPv6                  | No DHCPv6<br>Dibbler                | DHCPv6 integrated                        | DHCPv6 Server                            |  |
|  | Collaboration           | ConferenceXP or<br>NetMeeting       | Meeting Space                            | Windows Media<br>Server                  |  |
|  | Dual Stack              | IPv4 with Optional<br>IPv6 protocol | Dual-IP Stack –<br>IPv6 on by<br>default | Dual-IP Stack –<br>IPv6 on by<br>default |  |
|  | IPSec for IPv6          | Limited                             | Integrated IPSec                         | Integrated IPSec -<br>SDI                |  |
|  | Firewall                | Basic IPv6                          | Full IPv6 in & out                       | Full IPv6 in & out                       |  |
| GLOBAL   | IPv6 File<br>Sharing    | No                                  | Yes                                      | IPv6 File Server                         |  |
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| ſ   | VISTA NE  | TWORK                | TYPES | 6   |  |
|---|---|----------------------|-------|-----|--|
| 1   | <ul> <li>Teredo will be enabled by default but not active</li> <li>Teredo is disabled on domain-joined Vista computers</li> <li>When not domain-joined then all IPv6 addresses are privacy addresses</li> </ul> |                      |       |     |  |
|   | Domain Public Private   |                      |       |     |  |
|   | Windows Firewall  | On<br>(group policy) | On    | On  |  |
|   | Network discovery   | Off                  | Off   | On  |  |
|   | File/Printer Sharing  | Off                  | Off   | Off |  |
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