

Abbildung 1: Ethernet Header

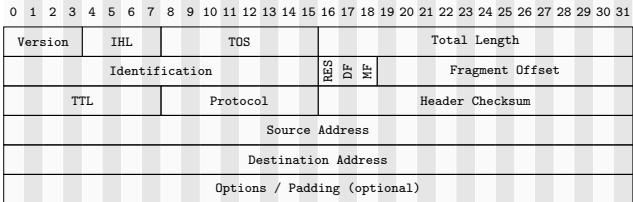


Abbildung 2: IPv4 Header

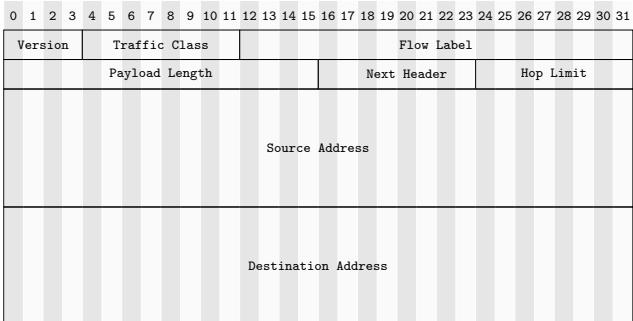


Abbildung 3: IPv6 Header

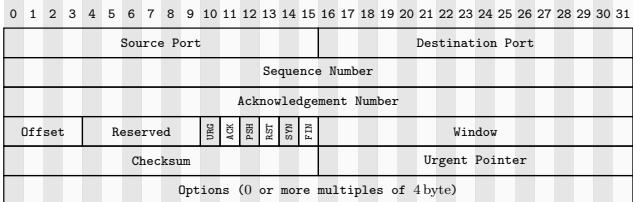


Abbildung 4: TCP Header

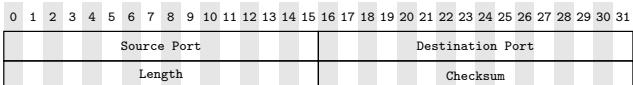


Abbildung 5: UDP Header

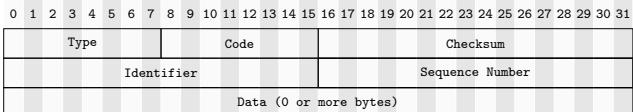


Abbildung 6: ICMP Echo Request/Reply

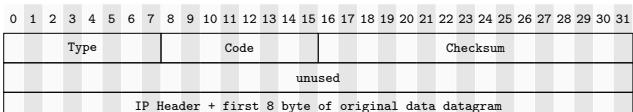


Abbildung 7: ICMP Destination unreachable

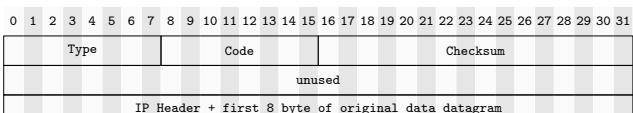


Abbildung 8: ICMP TTL Exceeded

| Ethertype | Keyword | Protocol                            |
|-----------|---------|-------------------------------------|
| 0x0800    | IPv4    | Internet Protocol, Version 4        |
| 0x0806    | ARP     | Address Resolution Protocol         |
| 0x0842    | WoL     | Wake-on-LAN Magic Packet            |
| 0x8035    | RARP    | Reverse Address Resolution Protocol |
| 0x814c    | SNMP    | Simple Network Management Protocol  |
| 0x86dd    | IPv6    | Internet Protocol, Version 6        |

Tabelle 1: Etheratypes

| Protocol / Next Header | Keyword | Protocol                              |
|------------------------|---------|---------------------------------------|
| 0x01                   | ICMP    | Internet Control Message              |
| 0x02                   | IGMP    | Internet Group Management             |
| 0x04                   | IPv4    | IPv4 encapsulation                    |
| 0x06                   | TCP     | Transmission Control                  |
| 0x09                   | EGP     | Exterior Gateway Protocol             |
| 0xa                    | IGP     | any private interior gateway protocol |
| 0x11                   | UDP     | User Datagram                         |
| 0x21                   | IPv6    | IPv6 encapsulation                    |
| 0x2f                   | GRE     | General Routing Encapsulation         |
| 0x32                   | ESP     | Encapsulating Security Payload        |
| 0x84                   | SCTP    | Stream Control Transmission           |

Tabelle 2: IP Protocol Numbers

| Port Number | Service Name  | Description                      |
|-------------|---------------|----------------------------------|
| 22          | ssh           | The Secure Shell (SSH) Protocol  |
| 23          | telnet        | Telnet                           |
| 25          | smtp          | Simple Mail Transfer             |
| 53          | domain        | Domain Name Server               |
| 67          | bootps        | Bootstrap Protocol Server (DHCP) |
| 68          | bootpc        | Bootstrap Protocol Client (DHCP) |
| 80          | http          | World Wide Web HTTP              |
| 110         | pop3          | Post Office Protocol - Version 3 |
| 443         | https         | http over TLS/SSL                |
| 546         | dhcpv6-client | DHCPv6 Client                    |
| 547         | dhcpv6-server | DHCPv6 Server                    |

Tabelle 3: Well Known Port Numbers

| Type                        | Code     | Description                               |
|-----------------------------|----------|---|
| 0 -- Echo Reply             | 0        | Echo reply                                |
| 1 and 2                     | Reserved |   |
|                             | 0        | Destination network unreachable           |
|                             | 1        | Destination host unreachable              |
|                             | 2        | Destination protocol unreachable          |
|                             | 3        | Destination port unreachable              |
|                             | 4        | Fragmentation required, and DF flag set   |
|                             | 5        | Source route failed                       |
|                             | 6        | Destination network unknown               |
|                             | 7        | Destination host unknown                  |
|                             | 8        | Source host isolated                      |
|                             | 9        | Host administratively prohibited          |
|                             | 10       | Host administratively prohibited          |
|                             | 11       | Network unreachable for TOS               |
|                             | 12       | Host unreachable for TOS                  |
|                             | 13       | Communication administratively prohibited |
|                             | 14       | Host Precedence Violation                 |
|                             | 15       | Precedence cutoff in effect               |
| 3 - Desintation Unreachable | 0        | Source quench (congestion control)        |
|                             | 0        | Redirect Datagram for the Network         |
|                             | 1        | Redirect Datagram for the Host            |
|                             | 2        | Redirect Datagram for the TOS & network   |
|                             | 3        | Redirect Datagram for the TOS & host      |
| 4 - Source Quench           | 0        | Alternate Host Address                    |
|                             | 7        | Reserved                                  |
| 5 - Redirect Message        | 0        | Echo request                              |
|                             | 1        | Router advertisement                      |
|                             | 2        | Router solicitation                       |
|                             | 3        | Router discovery/selection/solicitation   |
| 6                           | 0        | TTL expired in transit                    |
|                             | 1        | Fragment Reassembly Time Exceeded         |
|                             | 0        | Pointer indicates the error               |
| 12 - Parameter Problem      | 1        | Missing a required option                 |
|                             | 2        | Bad length                                |
| 13 - Timestamp              | 0        | Timestamp                                 |
|                             | 0        | Timestamp reply                           |
| 14 - Timestamp Reply        | 0        | Information request                       |
|                             | 0        | Information reply                         |
| 15 - Information Request    | 0        | Address Mask Request                      |
|                             | 0        | Address Mask Reply                        |
| 18 - Address Mask Reply     | 0        | Reserved                                  |
|                             | 0        | Information Request                       |
| 30 - Traceroute             | 0        | Datagram Conversion Error                 |
|                             | 31       | Mobile Host Redirect                      |
|                             | 33       | Where-Are-You (originally meant for IPv6) |
|                             | 34       | Here-I-Am (originally meant for IPv6)     |
|                             | 35       | Mobile Registration Request               |
|                             | 36       | Mobile Registration Reply                 |
|                             | 37       | Domain Name Request                       |
|                             | 38       | Domain Name Reply                         |
|                             | 39       | SKIP Algorithm Discovery Protocol         |
|                             | 40       | Photuris, Security failures               |
|                             | 41       | ICMP for experimental mobility protocols  |
|                             | 42 - 255 | Reserved                                  |

Tabelle 4: ICMP Types/Codes