



CNDS Research 03

Issued: 8 November 2002
Mode of study: Independent learning
Skills: Research skills

Background

The IP header (IP Ver4) is added to higher-level data (as defined in RFC791). This header contains a 32-bit IP address of the destination node. Unfortunately, the standard 32-bit IP address is not large enough to support the growth in nodes connecting to the Internet. Thus a new standard, IP Version 6 (IP Ver6, aka, IP, The Next Generation, or IPng), has been developed to support a 128-bit address, as well as additional enhancements, such as authentication and data encryption.

Research 3

1. Outline the main advantages of IPv6 over IPv4:

2. RFC (Request For Comment) documents allow standards to be set using material which is published as an RFC specification, such as RFC821 and RFC822 which related to e-mail. Determine the RFC which relates to IPv6 Addressing Architecture and its authors:

3. From this RFC, outline the format of the address, and the usage of the compressed format:

4. In IPv4 the loopback address is 127.0.0.1. What is the loopback address in IPv6:

5. With IPv6, outline how multicast addresses are defined:

6. Identify a practical IPv6 network, and outline its architecture:

7. What is IPv6-in-IPv4 tunnelling, and how it is used in practical networks: