Table of Contents

Different classes in classful addressing:
1. Class A:
2. Class B:
3. Class C:
4. Class D:
5. Class E:

Classful addressing refers to the original method of IP address allocation in IPv4, which divided the available IP address space into five classes: Class A, Class B, Class C, Class D, and Class E.

Each class had a predefined range of network and host addresses, providing a structure for addressing and routing.

Different classes in classful addressing:

1. Class A:

- Range: 1.0.0.0 to 126.0.0.0
- Network ID: The first octet represents the network ID, and the remaining three octets represent the host ID.
- Hosts per network: Can have up to 16,777,214 hosts per network.
- Example: 10.0.0.0 is a Class A network address.

2. Class B:

- Range: 128.0.0.0 to 191.255.0.0
- Network ID: The first two octets represent the network ID, and the remaining two

octets represent the host ID.
- Hosts per network: Can have up to 65,534 hosts per network.
- Example: 172.16.0.0 is a Class B network address.

3. Class C:

- Range: 192.0.0.0 to 223.255.255.0
- Network ID: The first three octets represent the network ID, and the last octet represents the host ID.
- Hosts per network: Can have up to 254 hosts per network.
- Example: 192.168.0.0 is a Class C network address.

4. Class D:

- Range: 224.0.0.0 to 239.255.255.255
- Purpose: Reserved for multicast addresses used for multicasting applications and services.
- Notation: Starts with the leading bit pattern ‘1110’ in the first octet.

5. Class E:

- Range: 240.0.0.0 to 255.255.255.255
- Purpose: Reserved for experimental or future use.
- Notation: Starts with the leading bit pattern ‘1111’ in the first octet.

Class	Range (First Octet)	Network ID	Host ID	Number of Networks	Number of Hosts per Network
Class A	1.0.0.0 to 126.0.0.0	First Octet	Last Three Octets	126	16,777,214
Class B	128.0.0.0 to 191.255.0.0	First Two Octets	Last Two Octets	16,384	65,534
Class C	192.0.0.0 to 223.255.255.0	First Three Octets	Last Octet	2,097,152	254
Class D	224.0.0.0 to 239.255.255.255	N/A	N/A	N/A	N/A
Class E	240.0.0.0 to 255.255.255.255	N/A	N/A	N/A	N/A

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