IPng ADDRESSING ARCHITECTURE

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OVERVIEW

- Text Representations of Addresses
- Address Type Representations
- Unicast Addresses
- Multicast Addresses

TEXT REPRESENTATION OF ADDRESSES

- Basic Format
  FEDC:BA98:7654:3210:FEDC:BA98:7654:3210
  1080:0:0:800:200C:417A
- Compressed Format
  FF01:0:0:0:0:0:0:43
  as
  FF01::43
- IPv4 Format
  0:0:0:0:0:0:0:13.1.68.3
  0:0:0:0:0:0:FFFF:129.144.52.38
  ::13.1.68.3
  ::FFFF.129.144.52.38

ADDRESS TYPES

Allocation	Prefix (binary)	Fraction
Reserved	0000 0000	1/256
Reserved	0000 0001	1/256
NSAP Allocation	0000 001	1/128
IPX Allocation	0000 010	1/128
Reserved	0000 011	1/128
Reserved	0000 1	1/32
Reserved	0001	1/16
Reserved	001	1/8
Provider-Based Unicast	010	1/8
Reserved	011	1/8
Rsvd for Geographic	100	1/8
Reserved	101	1/8
Reserved	110	1/8
Reserved	1110	1/16
Reserved	1111 0	1/32
Reserved	1111 10	1/64
Reserved	1111 110	1/128
Local Use Addresses	1111 1110	1/256
Multicast Addresses	1111 1111	1/256

UNICAST ADDRESSES

- Global Provider Hierarchical Addresses
- Geographical Hierarchical Addresses
- NSAP Addresses
- IPX Addresses
- Cluster Addresses
- Local Use Addresses
- IPv4 Compatibility Addresses

UNICAST EXAMPLES

- **Auto-Configuration Example**

n	m	48
Subscriber Prefix	Subnet ID	Node ID

- **Large Site Example**

n	m	s	128-n-m-s
Subscriber Prefix	Area ID	Subnet ID	Node ID

GLOBAL PROVIDER ADDRESSES

3	n	m	p	125-n-m-p
010	Provider ID	Subscriber ID	Subnet ID	Node ID

NSAP ADDRESSES

7	1	4	12	32	16	48
0000001	G	AFC	IDI	Prefix	Area	Node ID

LOCAL-USE ADDRESSES

8	n	m	120-n-m
11111110	000...000	Subnet ID	Node ID

CLUSTER ADDRESSES

n	128- n
Cluster Prefix	00000000000000000000

LOOP BACK ADDRESS

FE00:0:0:0:0:0:0:1

UNSPECIFIED ADDRESSES

0:0:0:0:0:0:0:0

IPv4 COMPATIBILITY ADDRESSES

IPv4 Compatible IPv6 Address

80	16	32
000....................................000	FFFF	IPv4 Address

IPv4 Mapped Address

80	16	32
000....................................000	0000	IPv4 Address

MULTICAST ADDRESSES

8	4	4	112
11111111	flgs	scop	Group ID

1111 1111 — **Identifies Multicast Address**

flgs

0	0	0	T

First 3 bits reserved

T=0 — **Permanent**

T=1 — **Non-Permanent**

scop — **Defines scope of Multicast**

IPng MAILING LIST

- Documents
  draft-hinden-ipng-addr-00.txt
- Mailing List:
  ipng@sunroof.eng.sun.com
- To join send an email message to:
  majordomo@sunroof.eng.sun.com
  with
  subscribe ipng
  in the body of the message.