

IPv6 Network in N+I 2000 Tokyo



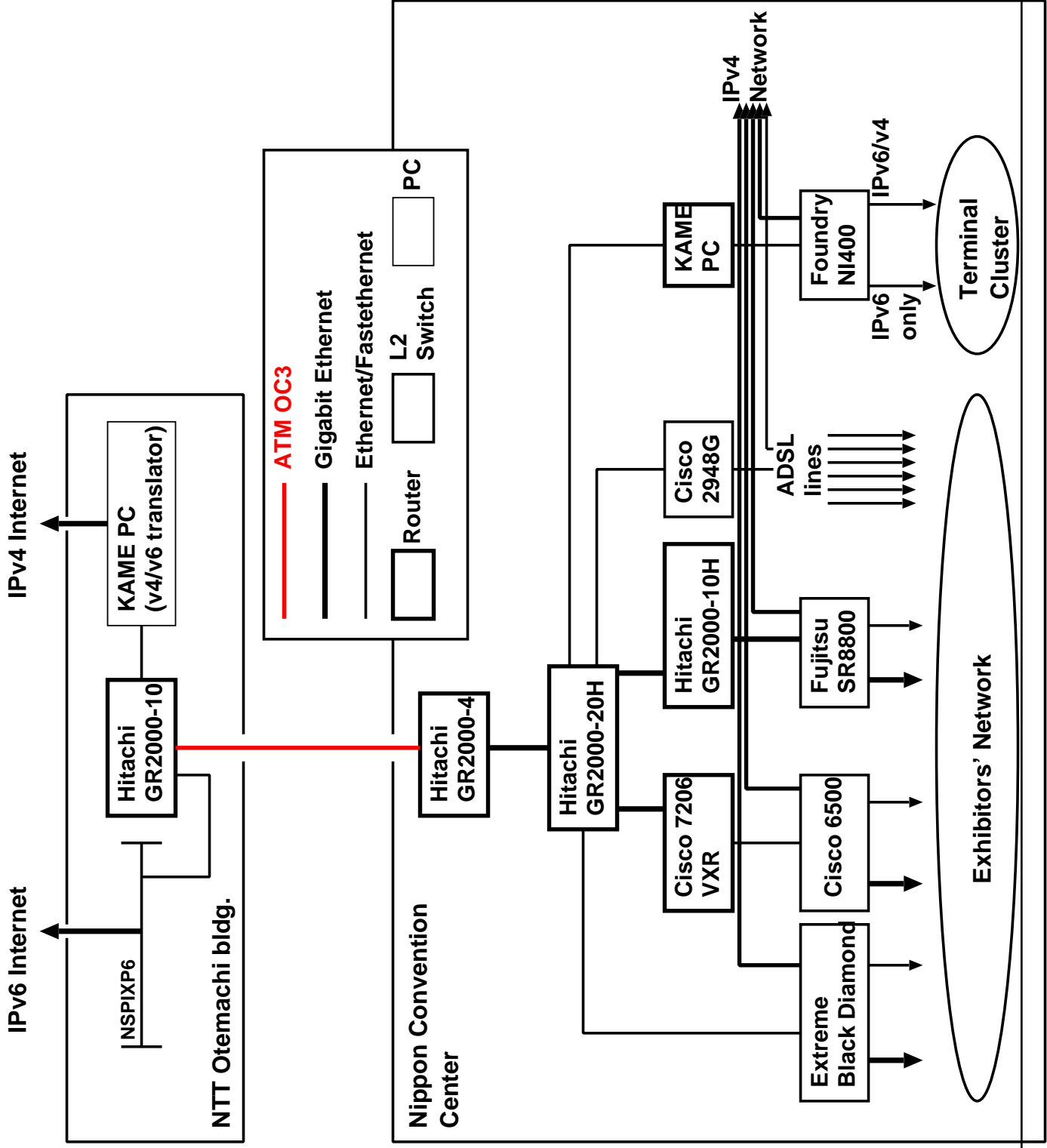
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N+I (Networld + Interop) 2000 Tokyo

- 2000.6.7-9, Nippon Convention Center (Makuhari Messe)
 - The largest exhibition event of network in Japan

- Fully supported IPv6 backbone
 - IPv6 was available everywhere in the convention center.
 - IPv6 native network based on commercial products.
 - ▷ no tunnels
 - ▷ separate network from the IPv4 backbone
 - Terminal Cluster
 - ▷ An IPv6-ready web browser was installed on every desktop PC.
 - ▷ Some parts of the cluster were "IPv6 only" (no IPv4 connectivity).
 - Translation (TCP relay) service to access the IPv4 Internet.

N+I 2000 Tokyo IPv6 Network topology



Highlights of the network

- IPv4 layer 3 switches were also used as IPv6 layer 2 switches.
 - configure a special VLAN for the IPv6 segments.
 - IPv4 and IPv6 LANs can coexist via a single switch.
- The IPv6->IPv4 translator was located outside the backbone.
 - -> the IPv6 backbone could be used as backup for IPv4 connectivity.
- Dual stack DNS forwarder
 - for IPv6 capable systems that do not support IPv6 transfer of DNS queries and responses.
 - served as a DHCPv4 server, too.

```
<===== IPv4 and IPv6 =====> <===== IPv6 only =====>
---(1)AAAA qry/IPv4---> ---(2)AAAA qry/IPv6--->
HOST      Forwarder      DNS server
<--(4)AAAA rep/IPv4-- <--(3)AAAA rep/IPv6----
-----> (5) data/IPv6 ----->
```

Statistics About IPv6-IPv4 Translation

- number of connections per protocol

Protocol	# of connections
http	16132
pop3	570
ssh	390
ftp	189
telnet	31
smtp	25
cvsserver	20
rshell	6

- 267 IPv4 destinations
- 68 IPv6 sources
 - TC (v6 only): 26 hosts, total 11254 conn.
 - IPv6 showcase: 5 hosts, total 3489 conn.
 - exhibitors: 11 hosts, 1544 conn.
 - TC (v4 and v6): 7 hosts, total 70 conn.
 - NOC segment: 3 hosts, total 30 conn.