IPv6 activities in Japan

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sTLA (2001/02/06)

- **APNIC**
  - **Allocated: 24 (KR 6, JP 12)**
  - **Announced: 17 (71%)**
- **ARIN**
  - **Allocated: 13**
  - **Announced: 8 (61%)**
- **RIPE**
  - **Allocated: 26**
  - **Announced: 18 (69%)**

ISPs in Japan (1)

- IPv6 tunneling services
  - IIJ
    - http://www.iij.ad.jp/IPv6/ndex-e.html
  - OCN
    - http://www.v6.ntt.net/english.html
  - JENS
    - http://www.jens.co.jp/news/20001030.html (JP)
  - DION
    - http://www.v6.kddi.com/ (JP)
  - ODN
    - http://www.v6.japan-telecom.co.jp/
  - BIGLOBE
    - http://biz.biglobe.ne.jp/service/IPv6/ (JP)

ISPs in Japan (2)

- IPv6 native services
  - IIJ
    - http://www.iij.ad.jp/IPv6/ndex-e.html
  - JENS
    - http://www.jens.co.jp/news/20001030.html (JP)

IPv6 products

- Routers
  - IIJ SEIL
    - http://www.seil-t1.com/ (JP)
  - Fujitsu Geo Stream R940
    - http://www.fujitsu.co.jp/jp/cover/network3/products_1.html (JP)
  - Fujitsu NetVehicle
  - Hitachi GR2000
    - http://www.hitachi.co.jp/Prod/comp/network/index.htm
  - MGCS SJ6
  - NEC IX5000
    - http://www.nec.co.jp/japanese/product/kiban/den/ix5k7k/ (JP)
  - NEC CX5210
  - NEC IP8800/700
  - Yamaha RT300i/RT105i/RTA52i/RT60w
    - http://www.rtpro.yamaha.co.jp/ (JP)

IPv6 products

- Translators
  - YDC TTB
    - http://www.ydc.co.jp/IT/ip/TTB/index-j.html (JP)
- Embedded stack
  - Access ave-TCP 6.0
    - http://www.access.co.jp/press/001016.html (JP)
- Mail readers
  - OrangeSoft Winbiff
    - http://www.orangesoft.co.jp/e/index.html

The KAME project (1)

- High quality code for BSD variants
  - Reference code
    - One of the keys to deploy IPv6
  - IPv6, IPsec, Mobile IP and advanced networking
  - Provided "AS IS" like BSD
    - Free and no warranty
    - Commercial use is OK
- Organization
  - April 1998 - March 2002
  - 9 core members from 8 Japanese companies
    - Fujitsu, Hitachi, IIJ, NEC, Toshiba, YDC, Yokogawa
    - MGCS (new!)

The KAME project (2)

- The basic spec has been implemented
  - IPv6
    - Basic specifications
    - Routing: RIPng, OSPFv3, BGP4+, PIM-DM, PIM-SM
    - Translator: TCP-relay and protocol translator
  - IPsec, IKE, Mobile IP
  - Many IPv6 applications
    - DNS, SMTP, POP, HTTP, FTP, TELNET, SSH...
  - Adopted
    - BSD/OS 4.2, FreeBSD 4.2, NetBSD 1.5, OpenBSD 2.8,
    - IIJ SEIL T1, Hitachi GR2000, Fujitsu NetVehicle

The KAME project (3)

- Release
  - Snapshot every Monday
  - Stable is obsoleted
- Obtaining the KAME software
  - http://www.kame.net/
- Mailing-lists
  - snap-users@kame.net
    - Questions and announcements
  - core@kame.net
    - The core members
  - secretary@kame.net
    - Questions about license policy, etc.

The USAGI project (1)

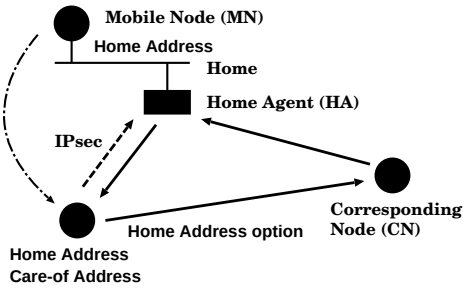
- High quality code for Linux distributions
  - Like KAME
  - GPL2
  - IPv6, IPsec, Mobile IP
- Organization
  - November 2000 -
  - 6 core members
    - IIJ, NTT soft, Kyushu Univ, Keio Univ, Tokyo Univ,
    - Toshiba, Hitachi, MIND, Yokogawa, CRL
- Collaboration
  - IPsec
    - FreeS/WAN (http://www.freeswan.org/)
  - Mobile IP
    - Helsinki University and Nokia (http://www.mipl.mediapoli.com/)

The USAGI project (2)

- Release
  - Snapshot
    - Every other week
    - Source patches (kernel, glibc, commands)
    - Binary package for Debian GNU/Linux
  - Stable
    - Binary package for Debian GNU/Linux, Rad Hat Linux,
    - Turbo Linux, Kondara MNU/Linux
- Obtaining the USAGI software
  - http://www.linux-ipv6.org/
- Mailing-lists
  - usagi-users@linux-ipv6.org
    - Questions and announcements
  - usagi-core@linux-ipv6.org
    - The core members

MIP6 (1)

- Mobile IPv6



MIP6 (2)

- MIP6 (Mobile IPv6)
  - WG last call (in IETF)
  - Nokia adopted MIP6 for cellular phone
    - http://press.nokia.com/PR/200101/806305_5.html
- For KAME (BSD)
  - Ericsson
    - Delivered with KAME snapshots (MIP6 macro)
  - Keio Univ. (SFC)
    - Not announced yet
  - NEC
    - Not announced yet
- For USAGI (Linux)
  - Helsinki (Nokia)
    - http://www.mipl.mediapoli.com/

MIP6 (3)

- Two inter-operability test envets
- Results
  - W/o IPsec auth, inter-operability is pretty good
    - But the spec requires authentication b/w MN and HA
  - W/ IPsec auth, inter-operability is poor
  - KAME can act as CN by default
    - Even if MIP6 is disabled, KAME can communicate with MN
    - Understand the home address option
    - First step to merge three code
- Plan
  - More inter-operability test events
  - Merging three code to one on KAME
    - Ericsson, Keio, NEC