



# JP Economy Update

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# IPv6 service in Japan

- Many ISPs has started their IPv6 service.
  - Not only for enterprises but for consumers.
    - As of July 2011, 35% of FTTH users in Japan can buy IPv6 service.
    - Many ISPs offer their IPv6 service with no additional fee.
  - One mobile carrier, NTT Docomo started IPv6 service in their LTE/3G network.
    - Their LTE users can access to IPv6 Internet.

# IPv6 service in Japan

ISP Name	Access Technology for IPv6	Status	URL	Service Type
Densan Co, Ltd.	Tunnel, Leased line	Commercial	<a href="http://www.avis.ne.jp/option/ipv6/">http://www.avis.ne.jp/option/ipv6/</a>	Residential, Enterprise
IX-layers, Inc.		Commercial	<a href="http://www.ix-layers.com/services/">http://www.ix-layers.com/services/</a>	Transit
NTT Communications	FTTx, Tunnel, Leased line	Commercial	<a href="http://www.ocn.ne.jp/ipv6/service/index.html">http://www.ocn.ne.jp/ipv6/service/index.html</a>	Residential, Enterprise, Transit
Internet Initiative Japan	FTTx, Tunnel, Leased line	Commercial	<a href="http://www.ij.ad.jp/svcsol/service/internet/index.html">http://www.ij.ad.jp/svcsol/service/internet/index.html</a> , etc.	Residential, Enterprise, Transit
Softbank Telecom Corporation	Leased Line, Tunnel	Commercial	<a href="http://tm.softbank.jp/business/internet/ipv6dual/index.html">http://tm.softbank.jp/business/internet/ipv6dual/index.html</a> , etc	Enterprise
Softbank BB Corporation	Tunnel (with 6rd on FTTx users)	Commercial	<a href="https://ybb.softbank.jp/ipv6/">https://ybb.softbank.jp/ipv6/</a>	Residential
KDDI Corporation	FTTx	Commercial	<a href="http://www.auhikari.jp/news/110418.html">http://www.auhikari.jp/news/110418.html</a>	Residential
NTT Docomo	Mobile (LTE)	Commercial	<a href="http://www.nttdocomo.co.jp/service/data/xi/provider/index.html">http://www.nttdocomo.co.jp/service/data/xi/provider/index.html</a>	Residential, Enterprise
ISPs using NTT East/West Internet accessplatform	FTTx	Commercial	<a href="http://flets.com/next/ipv6_pppoe/isp.html">http://flets.com/next/ipv6_pppoe/isp.html</a> , <a href="http://flets.com/next/ipv6_ipoe/isp.html">http://flets.com/next/ipv6_ipoe/isp.html</a> , <a href="http://flets-w.com/isp/ipv6">http://flets-w.com/isp/ipv6</a>	Residential
DREAM TRAIN INTERNET INC.	FTTx, Tunnel	Commercial	<a href="http://dream.jp/ftth/option/ipv6/index.html">http://dream.jp/ftth/option/ipv6/index.html</a>	Residential
N-plus Internet Services	FTTx, Tunnel	Commercial	<a href="http://www.nplus-net.jp/service/network/IPv6-next.html">http://www.nplus-net.jp/service/network/IPv6-next.html</a>	Residential, Enterprise
SANNET INTERNET SERVICE	FTTx, DSL(Tunnel), Mobile(Dialup)	Commercial	<a href="http://www.sannet.ne.jp/ipv6/ipv6_pppoe.html">http://www.sannet.ne.jp/ipv6/ipv6_pppoe.html</a>	Residential, Enterprise

This table created from information below (as of Jan. 2012):

1. IPv6 service list in Japan by Task Force on IPv4 AddressExhaustion, Japan.

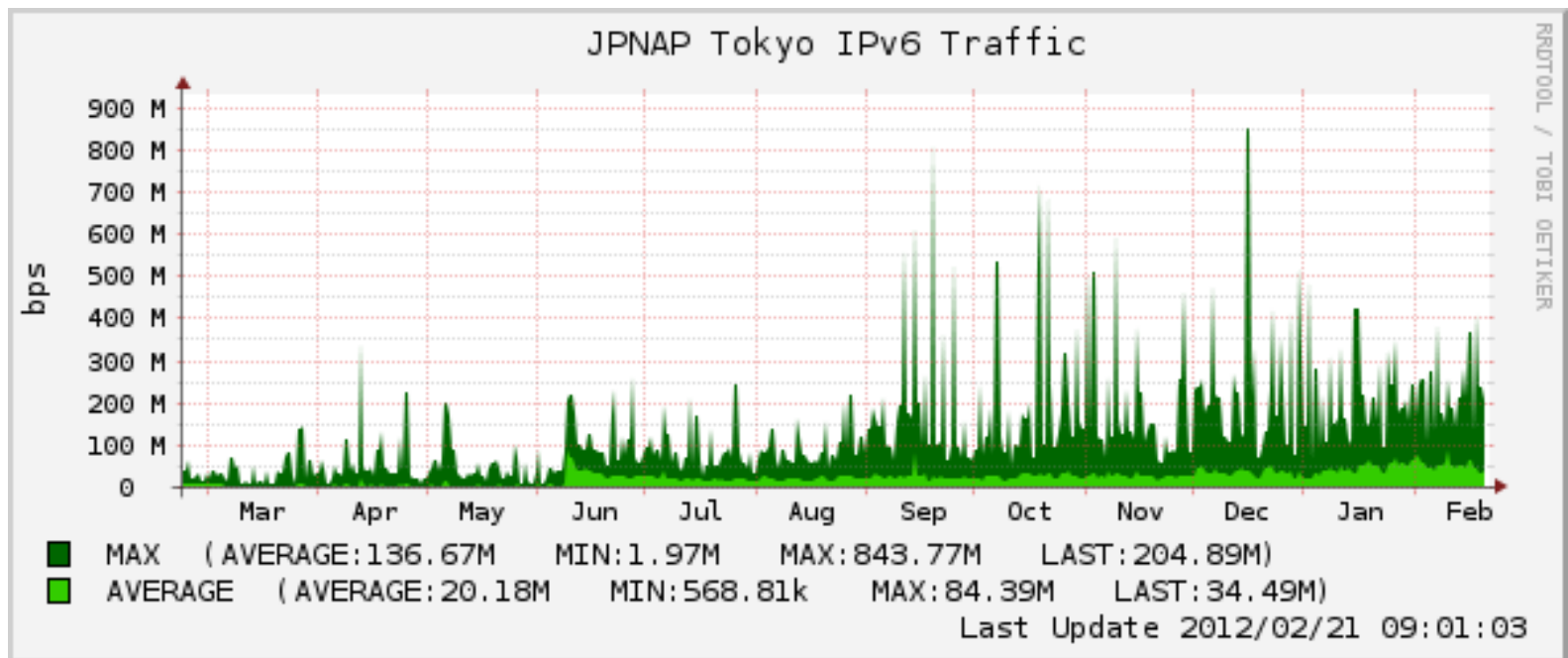
<http://www.kokatsu.jp/blog/ipv4/data/ipv6service-list.html>

2. IPv6 enabled ISP

[http://www.ipv6forum.com/ipv6\\_enabled/isp/approval\\_list.php?start=0](http://www.ipv6forum.com/ipv6_enabled/isp/approval_list.php?start=0)

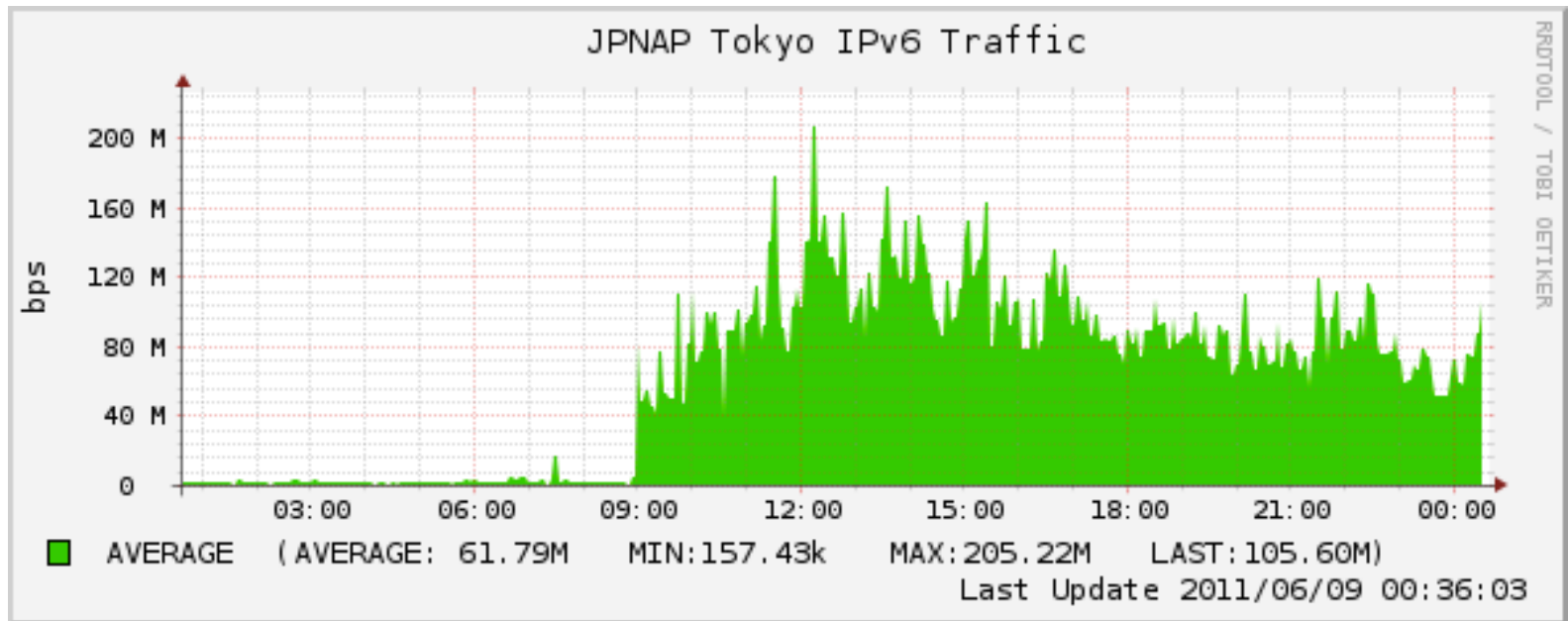
3. Presentation material at Internet Week 2011 by Ruri Hiromi about IPv6 residential service in Japan. (not published now, but will be in a few month)

# IPv6 traffic in IX (JPNAP)



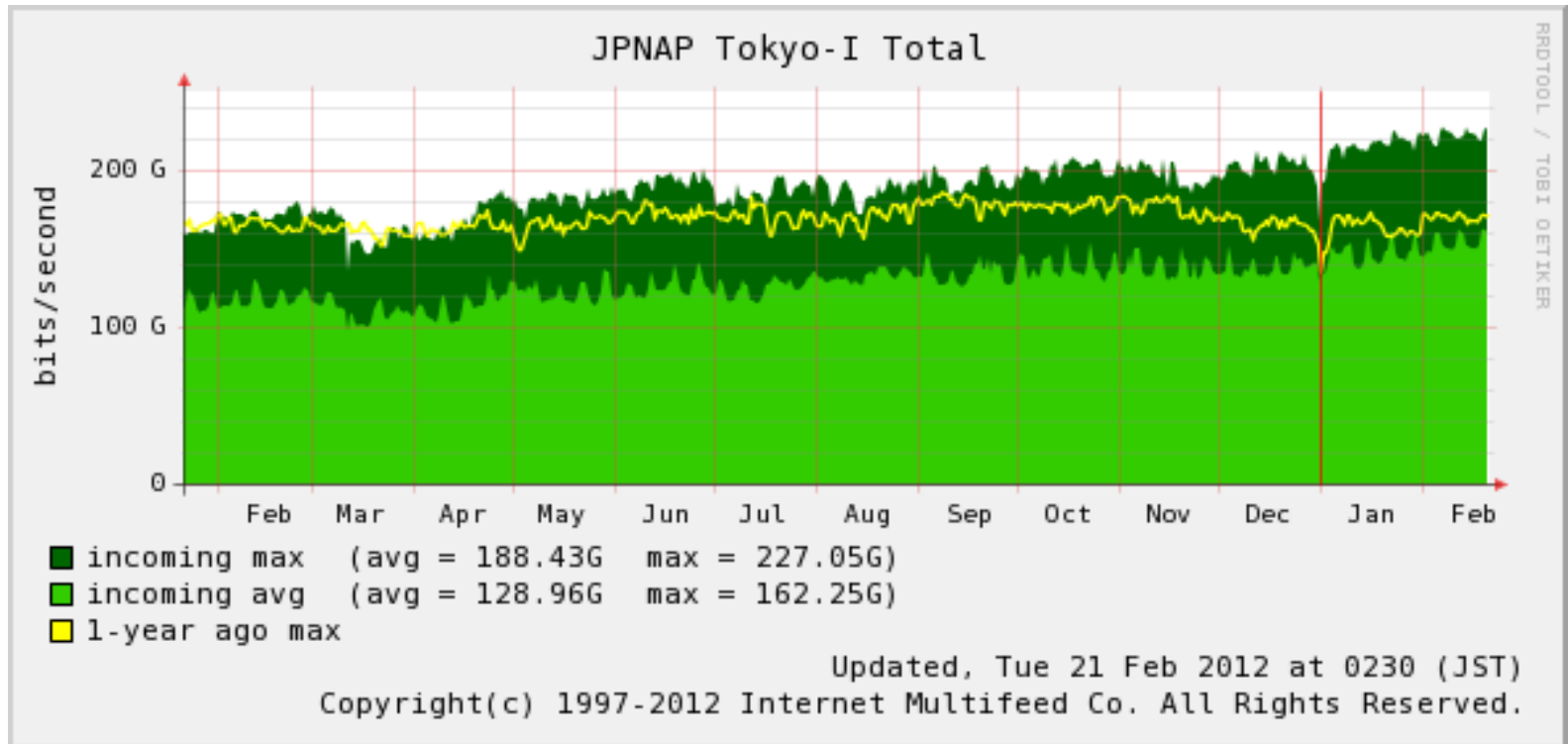
IPv6 Traffic in JPNAP, one of major IXes in Japan since last World IPv6 Day.

# IPv6 traffic in IX (JPNAP)



IPv6 Traffic in JPNAP, one of major IXes in Japan on last World IPv6 Day (8<sup>th</sup> June 2011 in JST).

# IPv6 traffic in IX (JPNAP)



Total IP Traffic in JPNAP recent 1 year.

# 'IPv6 deployment issues' material

IPv6 fix working group in IPv6 Promotion Council Japan created 'IPv6 deployment issues' document

- <http://www.v6pc.jp/jp/wg/coexistenceWVG/v6fix-swg.phtml> (in Japanese)

Translated version:

- <http://wiki.nttv6.net/cgi-bin/wiki.cgi>

***Please give us comments and suggestions on this document !!***

# ToC of 'IPv6 fix' document 1/2

- 5. IPv6 Deployment Issues: Fallback, Rouge RA, and Path MTU
- 6. Other Issues Associated with Deployment of IPv6
  - 6.1. Problems Relating to the Domain Name System (DNS) when IPv6 is Deployed
  - 6.2. Captive Portal and DNS Problems (IPv6 Uninstall at Hotels)
  - 6.3. Poor Quality Tunnels, Transition Technology Related Issues (Teredo, 6to4)
  - 6.4. Different QoS at Dual-Stack Sites, Different QoS of IPv4 and IPv6
  - 6.6. Problems with False Recognition and IPv6-Ready Routers that Only Support IPv6 Bridge Functions (IPv6 Pass-Through Functions)
  - 6.7. Problems with Bridge Filters in IPv6-Ready Routers
  - 6.8. DNS Registration Issues ("DNS Registration, Reverse Lookup, Forward Lookup, DDNS")
  - 6.9. Security and Filtering Issues (ICMP Filtering Problems, etc.)
  - 6.10. IPv6-Ready Mail System Issues (Sending and Receiving Mail)
    - 6.10.1. Issues Involved in Sending and Receiving Mail
  - 6.11. IPv6-Ready Mail System Issues (Anti-Spam Techniques)
  - 6.12. Blacklist Database Service (DNSBL) Issues



# ToC of 'IPv6 fix' document 2/2

- 6.13. Localizing Problems on Access Lines: Troubleshooting When Multiple Providers are Involved in Providing Service
- 6.14. Presence of Unsupported L2 Multicast Equipment
- 6.15. Adverse Effects of IPv6 Multicast on Home Communications
- 6.16. IPv6 Address Notation
- 6.17. Implementations That Do Not Meet Minimum Specifications
- 6.18. IPv6 Privacy Address (RFC 4941) Issues
- 6.19. IPv6 Address Traceability (Privacy) Issues
- 6.20. CGN, Translation Issues
- 6.21. Expressions Subject to Misunderstanding, Problems from Sharing
- 6.22. IPv6 Impact on Multiple IPv4 Subnets
- 6.23. IPv6 Impact on Large-Scale L2 Networks
- 6.24. Problems that Cannot be Resolved Within CPEs Own Domain
- 6.25. IRR Registration Issues
- 6.26. Number of DNS Records and OS Operation
- 6.27. Problems Regarding How Sites are Viewed

# Next Step

- Promote IPv6 more and more
  - Some ISPs enable their IPv6 service without notification to users, but some cannot.
    - Depend on access environment