

August 12, 2008



IPv6 Status and Update



Hiroshi Esaki, Ph.D.

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 Group Leader, SPARC, JGN2-Plus, NICT
 Executive Director, IPv6 Promotion Council of Japan
 Board member, WIDE Project
 Board of Trustee, ISOC

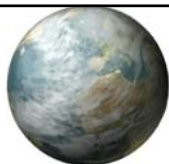


Dr. Masaki HIRABARU
 has passed away on July 29th, 2008.



- Born in 1960 (48 years old)
- The first chair of JPNIC operational committee
- One of founders of WIDE Project
- A lot of contribution to APAN community

Summary / Agenda

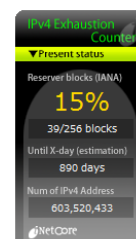


1. **Special Task Force** has been established, to come up with the depletion of IPv4 address resource.
2. Recent Status and Issue of Internet Traffic
P2P Technology may resolve the situation
3. **"Green IT" projects**; Sensor network to contribute to the "Earth" and it's "Environment" using ICT technologies
4. Update of **IPv6 Ready Logo Program** by IPv6 Forum
 - USA has been serious !



No IPv6 Connectivity
 in this arena.....

Ten years ago, on August 10, 1998, the IESG announced the protocol action to make a set of Internet-Drafts into Draft Standards, now RFC 2460 to RFC 2463.



Japanese MIC formed study group

- Mission: "How to achieve smooth IPv6 introduction"
- Some interesting discussion and analysis
 1. There is no free lunch ! All must pay money on IPv6.
 2. Squeezing out the global IPv4 address from existing network looks so hard.... JPNIC had got less than 2% of address space....
 3. IPv4 address exchanging market may generate the company accounting issue, since IPv4 address may become as an asset.
 4. Broadband Internet consumes a lot of global IP(v4) addresses
 5. RIPE is large IPv4 address consumption as well as BRICs area.
 6. The largest sacrifice is business/service deployment for new companies and for legacy companies
 7. Contents provider and system integrator should join
 8. Translator between large clouds will not work..... Put it at the edge, e.g., SOHO router and IDC

Japanese MIC formed study group

- Mission: "How to achieve smooth IPv6 introduction"

6. **The largest sacrifice is business/service deployment for "new" companies and for "legacy" companies**
7. **Contents provider and system integrator should/must join, see the Google's IPv6 site**

translator between large clouds will not work..... Put it at the edge, e.g., SOHO router and IDC

Japanese MIC formed study group

- MIC to achieve smooth IPv6 introduction

New

8. We will need carrier-class NAT boxes in the network.
But, serious technical issue will occur, regarding the number of TCP sessions.....

Translator between large clouds will not work.... Part of life edge, e.g., SOHO router and IDC

IPv6 Glue on the Root

New

- A/F/H/J/K/M have add AAAA record
- February 04, 2008.
 - A.ROOT-SERVERS.NET. 2001:503:ba3e::2:30
 - F.ROOT-SERVERS.NET. 2001:500:2f::f
 - H.ROOT-SERVERS.NET. 2001:500:1::803f:235
 - J.ROOT-SERVERS.NET. 2001:503:c27::2:30
 - K.ROOT-SERVERS.NET. 2001:7fd::1
 - M.ROOT-SERVERS.NET. 2001:dc3::35

2008/6/13

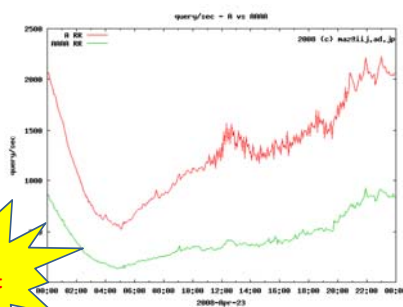
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A vs AAAA

Source; Mr.Y.Matsuzaki of IJ

New



Linier scale, not log-scale

2008/6/13

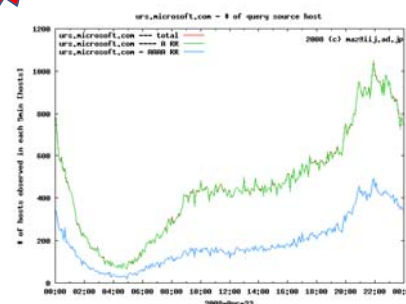
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Number of source node for Queries

Source; Mr.Y.Matsuzaki of IJ

New



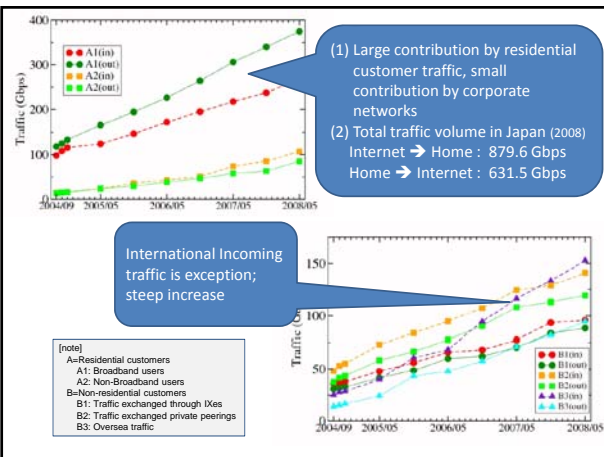
2008/6/13

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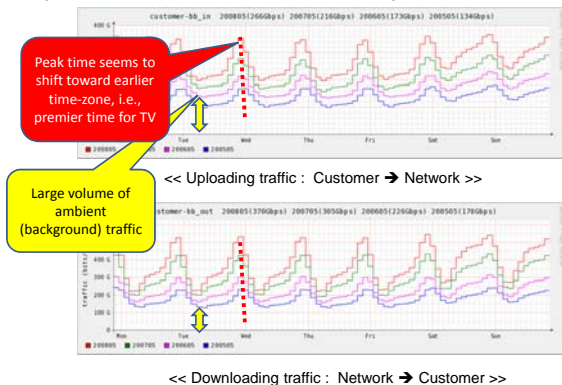
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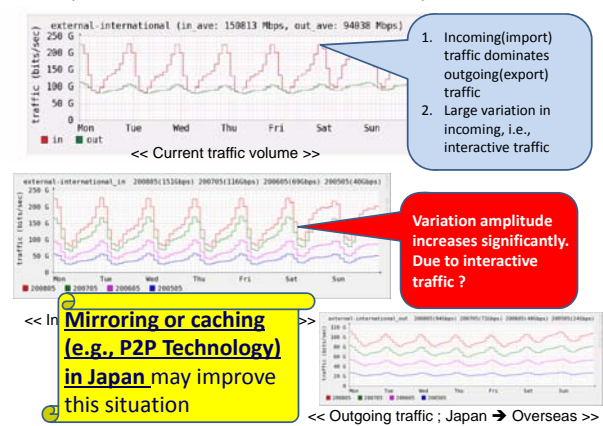
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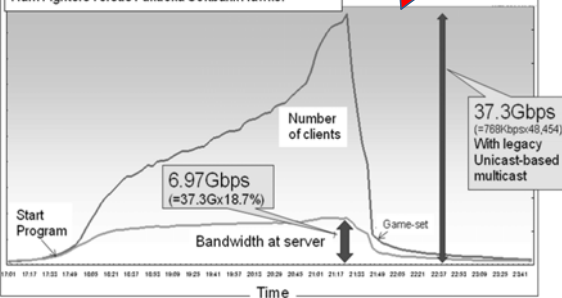
Weekly Broadband customer traffic for three years



Weekly International Traffic Volume for three years



October 11, 2006.
Play-off game of professional baseball, Hokkaido Nihon Ham Fighters versus Fukuoka Softbank Hawks.



Performance of BB Broadcast system (October 11, 2006)

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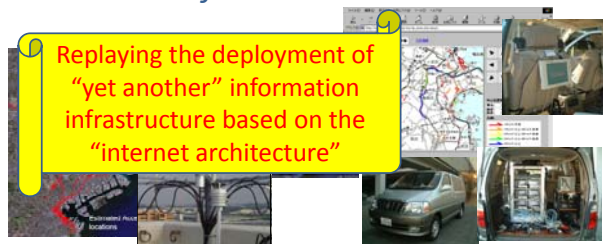
Why we go to new continent ?

- Contribution of revenue by ICT industry in the **GDP is less than 10%.**
- More than **90% revenue** in GDP is come from **non-ICT industries.**
- Almost all the companies, including non-ICT industries, **depends on ICT technology** on their corporate operation.
- How to use the ICT defines the marketing power and operating power of companies.



“Live E!” Project

-- Sensor network for the earth –
Sharing the any information for innovations



How to use the sensor network
e.g., saving energy in building system

- 1. Energy saving and preserving the Earth is now "Global" agenda, while there is an economical benefit and incentive for private companies.
- 2. Integration of separated sub-systems, e.g., Air-conditioning, lightening, security, IT.

Let it with open TCP/IP technology (i.e., IPv6)

- CCRP by United Nation

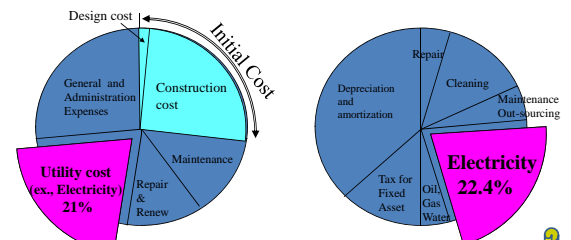
- 10%

Large number of sensors/actuators, and they do not care about the version of IP

Life-time cost in Building System

Life time portfolio
(in office building)

Yearly portfolio
(in office building)



The University of Tokyo pays \$60M/year on Electricity !!!

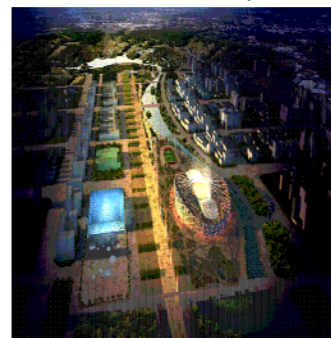
Business in FY2007 and 2008

- 2007
 - Integration with Digital Home Appliances
 - TV set by Panasonic works as window for facility control and management in residential area
 - Live E! WS at APNG Camp (Aug.2007)
- 2008
 - Beijing Olympic Game 2008
 - Live E! WS at APNG Camp (August 14th, 2008)
 - Energy Saving Field Trial in the University of Tokyo



Beijing Olympic 2008 Main Stadium District Lighting System Control by IPv6 Facility Manage & Control

Operated by Matsushita Electric Works (MEW)
<http://www.mew.co.jp/e/corp/index.html>



Lightening Management & Control

- Using IPv6 based Facility Networking
- Area Management System, i.e., not single facility but multiple facilities
- 1.4kmx2.4km with 18,000 lights
- 340 IPv6-based control nodes
- 10% Energy saving

Special Project at the Univ. of Tokyo "Green ICT Building"

- Building No.2, Hongo Campus
 - Targeted reduction;
 - **15%=\$4M USD (in 2012), 50%=\$30M USD (in 2030)**
 - 12 floor high, R&D and R&E activities
 - Established October 2005, Start of Operation in March of 2006
 - More than saving energy
 - Forming R&D consortium



Participants

Kicked-off on June 09, 2008

- 環境IT推進協議会
- インターネット総合研究所
- シムックス株式会社
- ダイダマン株式会社
- T&Y 松本コーポレーション
- 東京都・東京都環境科学研究所
- 特定非営利活動法人LONMARK JAPAN
- 日本AMD 株式会社
- 日本電気 株式会社
- ファシリティー・ネットワーキング相互接続コンソーシアム
- 富士通 株式会社
- 松下電器 産業株式会社
- 松下電工 株式会社
- 三菱商事 株式会社
- 横河電機株式会社
- WIDEプロジェクト
- 渡辺電機工業 株式会社
- 慶應義塾大学
- 東京大学
- シムックス株式会社
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- 横河電機株式会社
- WIDEプロジェクト
- 渡辺電機工業 株式会社

Participants

グリーン 東大工学部 プロジェクト

New 推進協議会 Kicked-off on June 09, 2008

・ 推進協議会 (予定)

・ シムックス株式会社

参加組織リスト

Participants

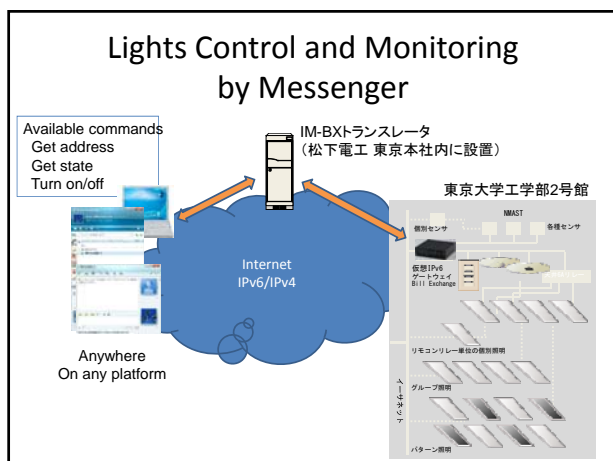
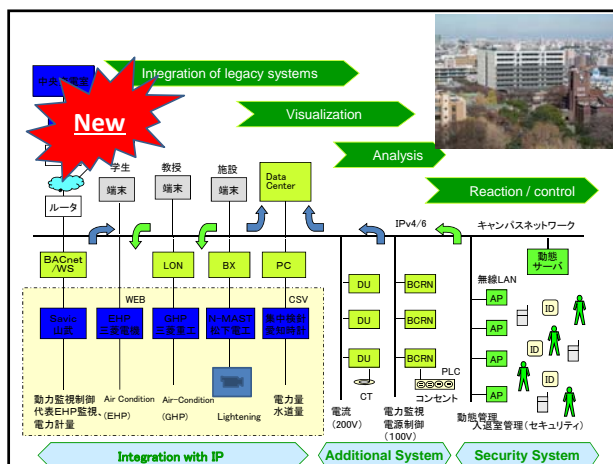
グリーン 東大工学部 プロジェクト

New 推進協議会

- ・ 慶應義塾大学
- ・ 東京大学

Stakeholders on Facility Business;

- Developer, e.g., landlord
- General Contractor/Con's tractor
- System Integrator
- System Designer
- ICT Vendor
- Component vendor, e.g., sensor
- Standardization Body
- R&D organization, e.g., University
- Local government, e.g., Tokyo



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IPv6 Forum IPv6 Ready Logo Program Phase-2 Update



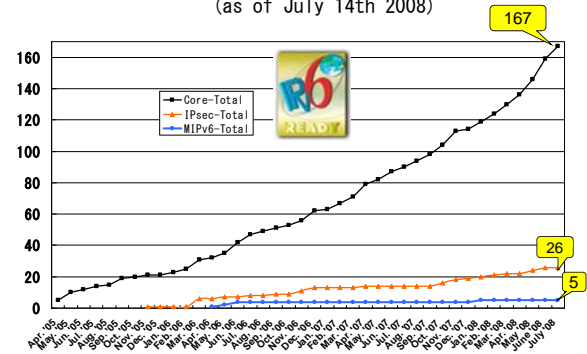
Good News ☺



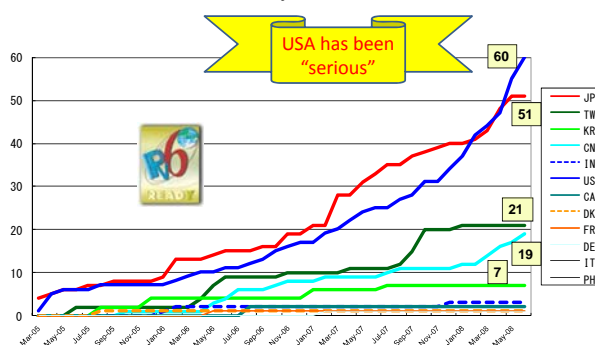
- JATE has joined to IPv6 Forum IPv6 Ready Logo Program.
– LoI (Letter of Intension) has been signed up between IPv6 Forum and JATE on Nov.19(Mon), 2007 at Canberra, Australia
- NIST(USA) and IPv6 Ready Logo Committee has been signed up the MoU for collaborative operation



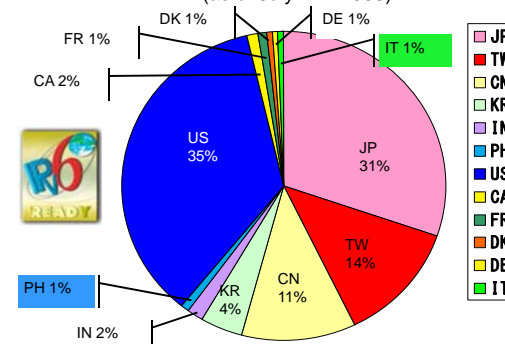
Phase-2 Logo Approved Devices (as of July 14th 2008)



Phase-2 Logo trend by nation (core) (as of July 14th, 2008)



Phase-2 Logo ratio by nation (as of July 14h 2008)



Are you interested in ?

- IPv6 Ready Logo Program Laboratory
 - BII of China has established IPv6 Ready Logo Laboratory in Beijing.
 - Nav6 of Malaysia is interested in to establish the IPv6 Ready Logo and Testing Laboratory.
- SIP/IMS Interoperability testing
 - SIPit in the Spring of 2009
- IETF meeting in Japan
 - November 9-13, 2009, at Hiroshima

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www.wide.ad.jp

Thank you



IPv6 Promotion Council of Japan:
<http://www.v6pc.jp/en/index.html>
 e-mail: info@v6pc.jp



Live E! Project
<http://www.live-e.org/>
 e-mail: live-e-info@mri.co.jp

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