# Japan's Collaborative Endeavor to overcome IPv4 Address Exhaustion

MAEMURA Akinori（前村 昌紀）

JPNIC,

Task Force on IPv4 Address Exhaustion, Japan

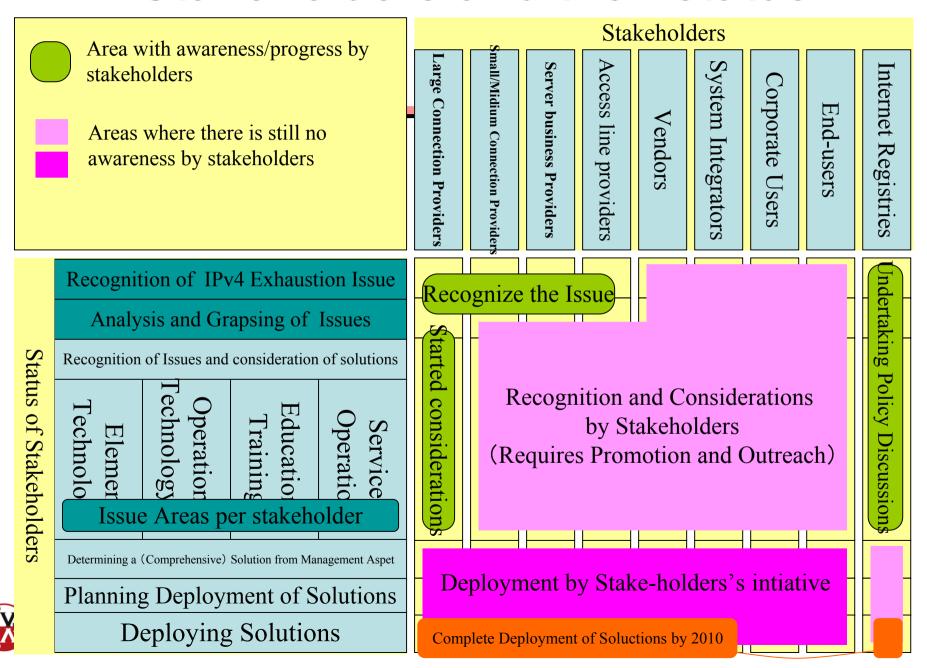http://kokatsu.jp/en/

March 2010
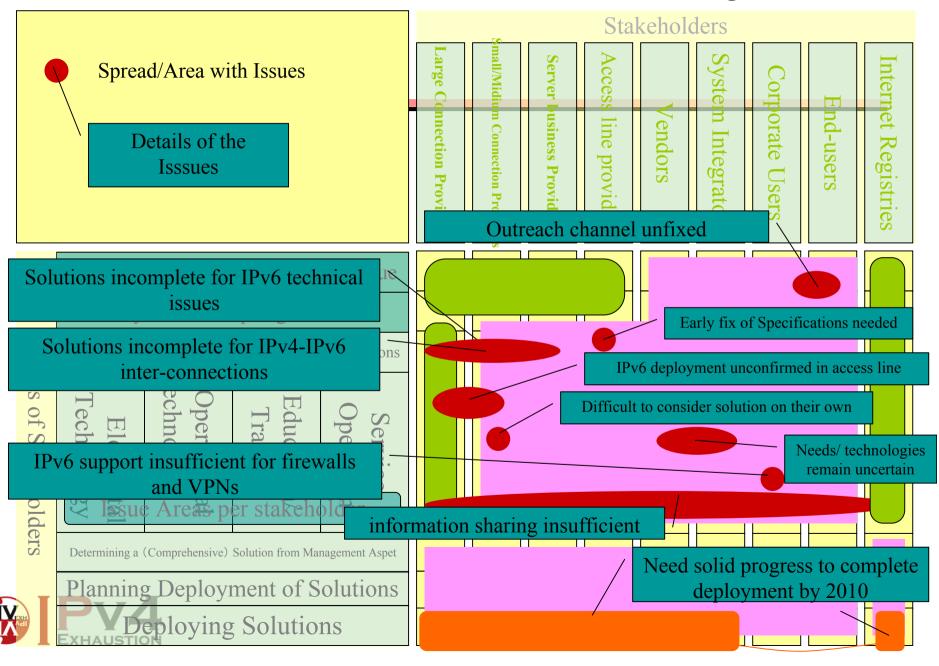
# To summarize…
## The last slide first

- Obvious need for collaborative endeavor to solve *"watching to see what the others will do"* situation

- Task Force on IPv4 address exhaustion, Japan for such a solution

- Information, Information, Information !! – not only IPv6 technologies, but the potential risk and *"what the others do"*

- Exhaustive and substantial endeavors are already on-going

# Stakeholders and their status

**Legend:**
- 🟢 Area with awareness/progress by stakeholders
- 🟪 Areas where there is still no awareness by stakeholders

## Stakeholders
- Large Connection Providers
- Small/Midium Connection Providers
- Server business Providers
- Access line providers
- Vendors
- System Integrators
- Corporate Users
- End-users
- Internet Registries

## Status of Stakeholders

- Recognition of IPv4 Exhaustion Issue
- Analysis and Grapsing of Issues
- Recognition of Issues and consideration of solutions

**Issue Areas per stakeholder**
- Element Technolo...
- Operation Technology
- Education Training
- Service Operatio...

- Determining a（Comprehensive）Solution from Management Aspect
- Planning Deployment of Solutions
- Deploying Solutions

### Status column
- Recognize the Issue
- Started considerations
- Recognition and Considerations by Stakeholders （Requires Promotion and Outreach）
- Undertaking Policy Discussions
- Deployment by Stake-holders's intiative
- Complete Deployment of Soluctions by 2010

# Stakeholders and their remaining issues



Spread/Area with Issues

Details of the Issues

Stakeholders

Large Connection Provi...
Small/Midium Connection Pro...
Server Business Provid...
Access line provid...
Vendors
System Integrato...
Corporate Users
End-users
Internet Registries

Outreach channel unfixed

Solutions incomplete for IPv6 technical issues

Solutions incomplete for IPv4-IPv6 inter-connections

Early fix of Specifications needed

IPv6 deployment unconfirmed in access line

Difficult to consider solution on their own

Needs/ technologies remain uncertain

IPv6 support insufficient for firewalls and VPNs

information sharing insufficient

Need solid progress to complete deployment by 2010

Issue Areas per stakeholder

Determining a (Comprehensive) Solution from Management Aspet

Planning Deployment of Solutions

Deploying Solutions

# Synchronized action toward the the exhaustion

- Set up a TF to make coordinated actions among all stakeholder groups
- <u>Task Force on IPv4 Address Exhaustion, Japan</u> launched in Sept. 2008

    - <u>http://kokatsu.jp/</u>
    - Members: Various associations from Telco and Internet industries, and the Ministry concerned

# Charter of the taskforce

- Formulating a taskforce to synchronize the activities by various associations

- to overcome the crisis of the IPv4 address exhaustion in a coordinated manner

- In four aspects of
  - Solution of the issues – technique, operation and management
  - Enlightenment and publicity
  - Education
  - Progress management

# Members – the taskforce (1/2)

- Internet Associations
  - IPv6 Promotion Council, Japan — http://v6pc.jp/
  - Internet Association of Japan (IAjapan) — http://www.iajapan.org/
  - Distributed IX Project — http://www.distix.net/
  - Japan Internet Providers Association — http://www.jaipa.or.jp/
  - JPCERT Coordination Center — http://www.jpcert.or.jp/
  - Japan Network Information Center (JPNIC) — http://www.nic.ad.jp/
  - Japan Network Operators' Group (JANOG) — http://www.janog.gr.jp/
  - Japan Network Security Association (JNSA) — http://www.jnsa.org/
  - Japan UNIX Users Society (jus) — http://www.jus.or.jp/
  - Japan Registry Services (JPRS) — http://www.jprs.co.jp/
  - WIDE Project — http://www.wide.ad.jp/

- Government
  - Ministry of Internal Affairs and Communications(MIC) — http://www.soumu.go.jp/

# Members – the taskforce (2/2)

- Telecommunications Associations
  - Telecom Services Association http://www.telesa.or.jp/
  - Telecommunications Carriers Association http://www.tca.or.jp/
  - Japan Cable and Telecommunications Association http://www.catv-jcta.jp/
  - Japan Data Communications Association (JADAC) http://www.dekyo.or.jp/
  - Japan Cable Laboratories (JLABS) http://www.jlabs.or.jp/
  - Japan Approval Institute for Telecommunications Equipment (JATE) http://www.jate.or.jp/
- Reach for Local Governments and Communities
  - The Association for Promotion of Public Local Information and Communication (APPLIC) http://www.applic.or.jp/
- Vendors Associations
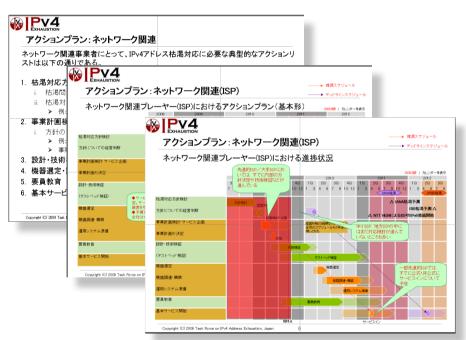  - Communications and Information network Association of Japan (CIAJ) http://www.ciaj.or.jp/

# Working Groups within the TF

| WG | In charge of | lead | members |
|---|---|---|---|
| Publicity | Assistance for events/conferences of member associations, Regular press conferences Planning of outreach | JPNIC | IAJapan、Telesa, JAIPA、v6PC |
| Education and Testbed | Education programs, negotiation with certification providers, planning the testbed | v6PC | JPNIC、JATE、JAIPA、JCTA/JCL、JANOG、jus、WIDE、DISTIX |
| Action planning support | Supporting the action planning by every stakeholder | v6PC | IAJapan, Telesa, JAIPA、JPNIC |
| Applications | Enlightening the SIers, | v6PC | JUS、JISA |
| Access Network | Negotiation with Access Network providers | JAIPA | TBD |
| Ready Logo | Planning IPv6 Ready Logo for ISPs and Web sites | JATE | v6PC |
| Secretariat | | v6PC | JPNIC |

# Want to know what the exhaustion is?

## Consult http://kokatsu.jp/ for information

- Milestones, survey result, FAQs, etc…



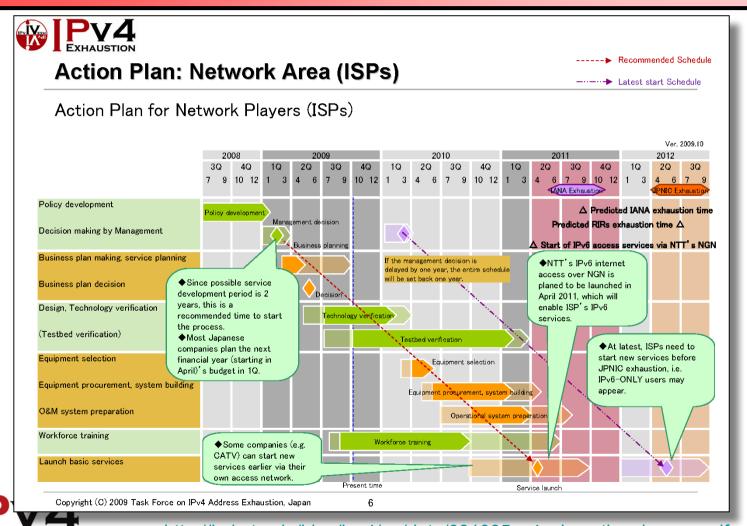Action Plan and Milestone Ver 2009-10

http://kokatsu.jp/

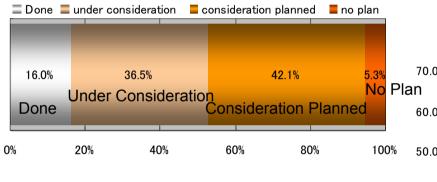# Need help to plan the preparation?
## "Action Plan and Milestone" for your reference

10

# Progress? Or Problem?
## Survey to identify "To Whom" "What" and "How"
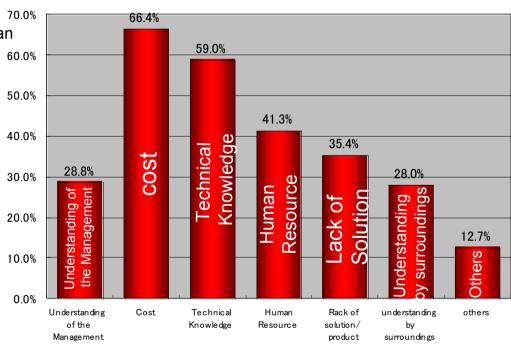
### consideration for countermeasure

Legend: Done | under consideration | consideration planned | no plan

| 16.0% | 36.5% | 42.1% | 5.3% |
|---|---|---|---|
| Done | Under Consideration | Consideration Planned | No Plan |

0%   20%   40%   60%   80%   100%

### What is the problem for deploying the countermeasure

| | | 66.4% | | | | |
|---|---|---|---|---|---|---|
| | | | 59.0% | | | |
| | | | | 41.3% | | |
| | | | | | 35.4% | |
| 28.8% | | | | | | 28.0% |
| | | | | | | | 12.7% |

cost

Technical Knowledge

Human Resource

Understanding of the Management

Lack of Solution

Understanding by surroundings

Others

70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%

Understanding of the Management | Cost | Technical Knowledge | Human Resource | Rack of solution/ product | understanding by surroundings | others

### IPv6 service deployment

Legend: In service | Experimental | under preparation | to be considered

| 8.70% | 22.30% | 35.00% | 34.00% |
|---|---|---|---|
| In Service | Experimental | Under Preparation | To be Considered |

0%   20%   40%   60%   80%   100%

IPv4 EXHAUSTION

**Excerpt from 1st survey result in March 2009. 2nd is already done and to be analyzed**

# Let them know and try

- ## Let them know they need to prepare for it!
  - Approaching communities of the other enablers of the Internet Services
  - Conferences of embedded devices, Open Source Developers Community, etc.

- ## Let them try their IPv6 products and services!
  - Testbed is prepared and already available for those who suffer from the lack of IPv6 environment

# Display your readiness!
## Put on "IPv6 Enabled Logo" for your Web and Network

- Allow IPv6-ready ISPs and Web sites to *"differentiate from others"*
  - Apply and extend the strategy of "IPv6 Ready Logo" for equipments to services like ISPs and Web sites

- Had domestic and Intra-TF discussion, then synchronize it to *"IPv6 Embedded Program"* of *IPv6 Forum* – launched in June 2009
  - Why don't you get the logo at:
    - http://www.ipv6forum.com/ipv6_enabled/ipv6_enable.php !!

Status: IPv6-IN
Last: 2009-07-03

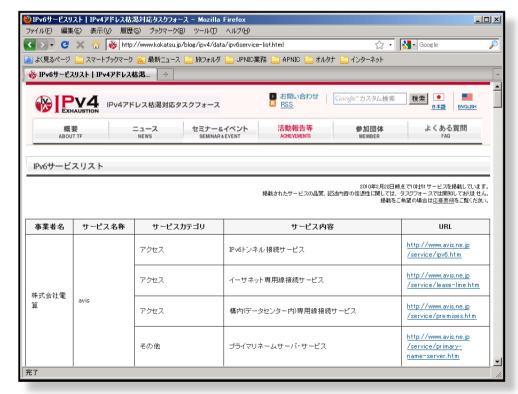Kokatsu.jp has already put on the logo, of course!

# IPv6 services available for users?

- "IPv6 Services List" recently launched
  - A provider can put the name of its IPv6 service on the list

# To summarize…
## The last slide again

- Obvious need for collaborative endeavor to solve *"watching to see what the others will do"* situation

  お見合い    서로 눈치만 살핀다

- Task Force on IPv4 address exhaustion, Japan for such a solution

- Information, Information, Information !! – not only IPv6 technologies, but the potential risk and *"what the others do"*

- Exhaustive and substantial endeavors are already on-going

# Thank you very much
# ありがとうございました

- Visit
  - http://kokatsu.jp/ for Japanese Full version
  - http://kokatsu.jp/en/ for English version
- E-mail us to
  - Info@kokatsu.jp for any inquiries on any of your interests