

# APNIC 52

## IPv6 Deployment session

### About the game & entertainment network connectivity issue study WG

**Noboru Matsumoto**

Japan Internet Providers Association(JAIPA)  
Director

# Introduce Noboru



## Noboru Matsumoto

Japan Internet Providers Association (JAIPA)  
Director



Matsumoto has more than 35 years of experience in the ICT industry and has been involved in the business of proposing various solutions necessary for mobile networks to mobile operators for more than 20 years. He is the Director of JAIPA and was also instrumental in launching the Games and Entertainment Network Connectivity Issues study WG.

Noboru Matsumoto is speaking at the following sessions

- [IPv6 Deployment](#)

# Japan Internet Providers Association

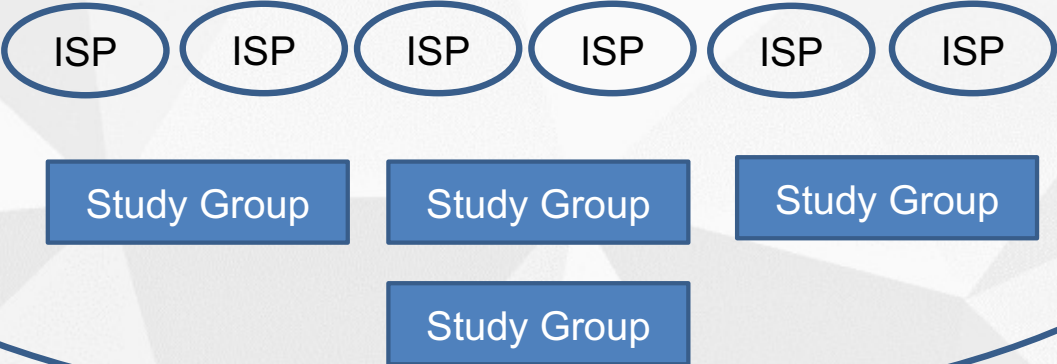


- Established 1999
- Head Office Tokyo.
- Members About 150 companies.
- Activities
  - ✓ Relationship between member ISP.
  - ✓ Relationship between national agencies and ISP.
  - ✓ Relationship between telecommunications carriers and other telecommunications-related associations.
  - ✓ Information exchanges and study sessions. Study sessions are laws, mobile businesses, cloud businesses, regional areas, etc.

# Japan Internet Providers Association



## JAIPA



Other  
Telecommunication  
Associations

National Agencies  
MIC, METI,  
Cabinet office

Mega carrier,  
MNOs

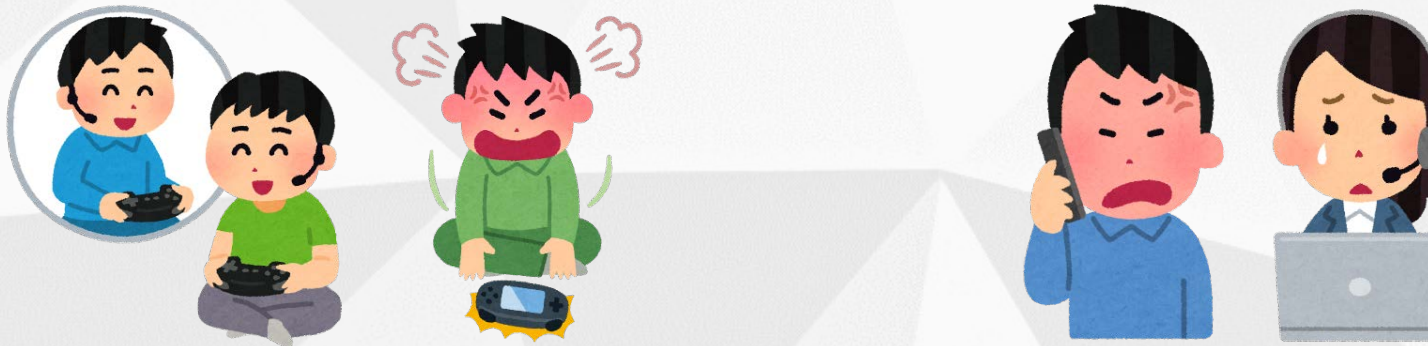
# Today's contents



- The reason for establishing the work group.
- IPv6 deployment status in Japan.
- What is happening on online game network in Japan?
- What is happening on the stake holders?
- Our discussions.
- What to do in the future? ( Our Goal )

# Game & Entertainment Network Connectivity Issue Study WG

## The reason for establishing the WG



- ✓ "cannot play games" , "frequently disconnect"
- ✓ difficult for the ISP operator to solve it company alone.

In 2018, to start discussions.

In August 2019 Officially started as JAIPA workgroup

# Work Group Activity

- WG was held in the conference room from 2019 to early 2020.  
( Picture Image.)
- WG was held online meeting since spring 2020 cause of Covid-19.
- Discussion and information exchange on online community.



# Workgroup members



## Game companies

**Konami Digital  
Entertainment,  
Nintendo,  
Sony Interactive  
Entertainment, SEGA  
etc.**

**NTT, BIGLOBE, IIJ,  
SOFTBANK, Internet Multi FEED,  
etc.**

**ISP, Virtual Network Enabler, MNO,  
MVNO  
Network Operators**

**NEC Platforms,  
F5 Networks, Buffalo,  
etc.**

**CE Router Vendors,  
Carrier grade(NAT)  
device Vendors**



# Workgroup steering members



## <<Chairs>>

Toshi Tateishi                      JAIPA Vice Chairman

Noboru Matsumoto                  JAIPA Director

## <<Vice Chairs>>

Kengo Niwa                              NTT Plala Inc.

Kirihiro Mano                          F5 Networks Inc.

Masanobu Kawashima                NEC Platforms, Ltd.

Motohiko Sato                          Konami Digital Entertainment Co., Ltd.

Shojiro Hirasawa                      BIGLOBE Inc.

# IPv6 deployment status in Japan

- ✓ IPv6 deployment of home access lines has progressed.(over 80%)
- ✓ IPv6 deployment of game content is not progressing.
- ✓ IPv4 address sharing is increasing.

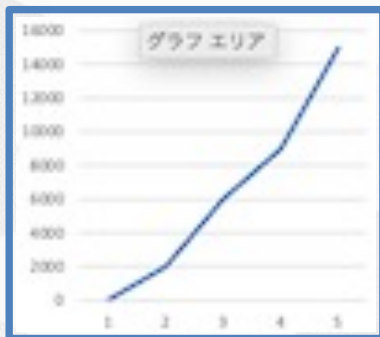
## Home Network



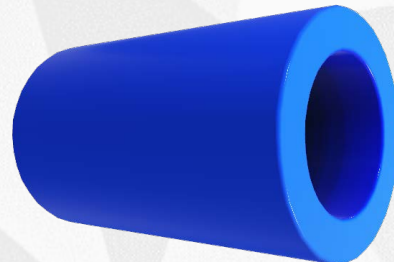
## Internet



## Online games



## IPv4 over IPv6 (IPv4 address sharing)



# What is happening at home ?



- Game player cannot join in play when starting the game.
- Game player encounter the disconnection.
- The player is recognized as a malicious player due to frequent disconnections.
- Bullying and conflict occur between players.
- Players sometimes can't get a clear solution from ISP, game company, router vendor support.

# What is happening at field ?



- Increased cost of customer support for each companies.
  - ISP needs irregular customer support. For example, dedicated IPv4 global address, etc.
- Increasing cost of troubleshooting and software modification for CE router vendors and game companies.

# What is happening on the stakeholders?



## IPv6 deployment is difficult for online game companies.

- It's just a cost for online game company.
- Online game behavior become more complicated.  
(asset download, authentication, player matching system, relay server, P2P fallback system.)
- Need for huge cost and engineer resources for verification of various environment network.
- Need to keep both technologies IPv4 and IPv6.

# Why is it happening ?

**The most important cause is  
“Increased IPv4 Address Sharing”.**

# Our discussions

- Connectivity issues due to NAT traversal in online games.
- Disconnection happens due to running out of port numbers by IPv4 address sharing.
- NAT session timers unmatch between game clients and CEouters.
- ◆ The problem is not a single problem, but a complex combination of various causes.
- ◆ **As a result of discussions, We found out the most important cause is “Increased IPv4 Address Sharing”.**

# What to do in the future ?



## Our goal

### ● Short-term

What can we do right away (soon).

- ✓ In order to avoid any confusion, need to standardize common term for customer supports.
- ✓ Information sharing across industries.

### ● Long-term

Move forward the IPv6 deployment.

We will continue to work, across industries with a common goal of IPv6 deployment.

**Don't forget the customer experience!**



**Thank you.**