

NTT WEST's Approach to IPv6 Networking

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Agenda

- 1. Current Trends in IP System Services
- 2. Current Issues in NTT WEST's Regional IP Network and an Outline of the New IP Network
- 3. NTT WEST's Regional IPv6 Network and its Future Plans

<u>**1. Current Trends in IP</u>** <u>System Services</u></u>

Broadband Access Penetration in Japan

Spread of broadband access in Japan has been steadily increasing.♦About 17.6 million Broadband subscribers in Japan. (September, 2004)



Recent Trends in IP-based Services

Various Services Boosted Boomedare Using Inexpensive, High-Speed Broadband Access.

- IP Broadcasting Service
 - Broadband Content Distribution using Dedicated Appliances (STB)
 - VoD and real-time IP Broadcasting services by Multicast (ex.) 4th MEDIA Service (Plala Networks)
- HIKARI-phone (optical phone) Service
 - fixed-line quality VoIP service

(ex.)IP Phone services for apartment (NTT WEST/EAST)

Home Appliances

- Support for bi-directional, real-time communication between appliances via the Internet
- (ex.) Validation experiment of Home Appliance connection management (NTT Communications)



2. Current Issues in NTT WEST's Regional IP Network and an Outline of the New IP Network

Transition of the Number of *FLET'S* Subscribers (NTT-West)



Various FLET'S Services on the Regional IP Network



Current Issues in the Regional IP Network



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Expectations for the Regional IP Network (1/2)

- Application Aspect
 - •Effective transfer of massive data
 - •Versatile form of communications
 - Improvement in security
 - Provide plug-n-play functionality for easy use
 - Support variety of users and variety of terminals

Expectations for the Regional IP Network (2/2)

Technical Aspect

- Fixed IP address allocation
- Utilize IPv6's broad address space
- Optimal routing for P2P communication (not by tunneling)
- •IP Multicasting support
- •QoS support
 - (priority queuing and fair queuing)

<u>3. NTT-WEST's Regional IPv6</u> <u>Network and its Future Plans</u>

Current Services on the Regional IPv6 Network



Technology used in the Regional IPv6 Network(1/3)

Internet Connection



Technology used in the Regional IPv6 Network(2/3)

QoS: Fairness control among users



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Technology used in the Regional IPv6 Network(3/3)

Multicast



♦ FLET'S v6 CAST

Provides a contents distribution platform, IPv6 multicast-enabled
Content providers connect distribution servers and provide services



Overview of FLET'S HIKARI Premium

Features

Internet Connection
High Quality Video-phone
Security Features *FLET'S v6 CAST*

(multicast content distribution)

Note: Acceptance of subscription began from December 24, 2004 (Fri), for users in service areas. Service planned from March, 2005.

High Quality Video phone

Video phone

•Low delay, high quality communications by pure IPv6.

File transfer and Instant Message

Supports exchange of large files or instant messages directly between users

Answering machine

leaveing voice/video messages when absent



Security Features

- Installs security tools (software) in user PCs.
- Updates (virus pattern files, etc.) performed automatically from the Regional IPv6 Network
- Virus protection, illegal access/harmful site/spam mail blocking and privacy protection
- Provided for both IPv4 and IPv6 communication.



Bandwidth design of FLET'S HIKARI Premium

Subscriber optical line is shared by multiple users

Maximum speed: 100Mbps (bidirectional)

Optical section planned to upgrade to 1Gbps (1000Mbps).



Providing IPv6 Applications to Current FLET'S Access

FLET'S v6 Appli

- Optional service of B FLET'S and FLET'S ADSL
- Add IPv6 connectivity to the current FLET'S access line services
- Same application provided as FLET'S HIKARI Premium
- Service started in limited areas from December 24, 2004



Future of NTT WEST's Regional IPv6 Network

Reliable, Safe, Trustworthy Expansion of new network services

- As a carrier, we take a proactive approach in realizing a genuine wide area IPv6 network
 - Scalability, Security, and Wide Bandwidth
- Provide various services such as content streaming, video communication and IP phones, utilizing the QoS control functions

End-to-End quality control

 Obtain a secure communication environment for company and home networks using IPv6 technology



Appendix:QoS-enabled Content Streaming Experiment







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Thank you for your kind attention.