

Network Management Office

Network Management Office (NMO) has been established on April 2009 by the merging of the former Network working group in Department of Simulation Science and the LHD LAN management group.

The information network is fundamental for the research activity. The advanced NIFS campus information network named “NIFS-LAN” is the information infrastructure which contributes to the development of nuclear fusion research. NIFS has 300 staffs and the number of their PC is near 3,000. “Network Working Group” (NWG) provides 100Mbps / 1Gbps bandwidth to users. NIFS-LAN consists of three autonomous clusters which have their own purposes and usages as follows;

1. *Research Information Cluster* is the network of general use, and covers the campus whole region.
2. *LHD Experiment Cluster* is provided for LHD experiment, and covers the building relevant to LHD experiment.
3. *Large-scale Computer Simulation Research Cluster* is provided in order to support the large-scale computer simulation research efficiently.

NIFS-LAN is connected to Science Information Network 3 (SINET3), managed by National Institute of Informatics. The block diagram of NIFS-LAN is shown in Fig. 1.

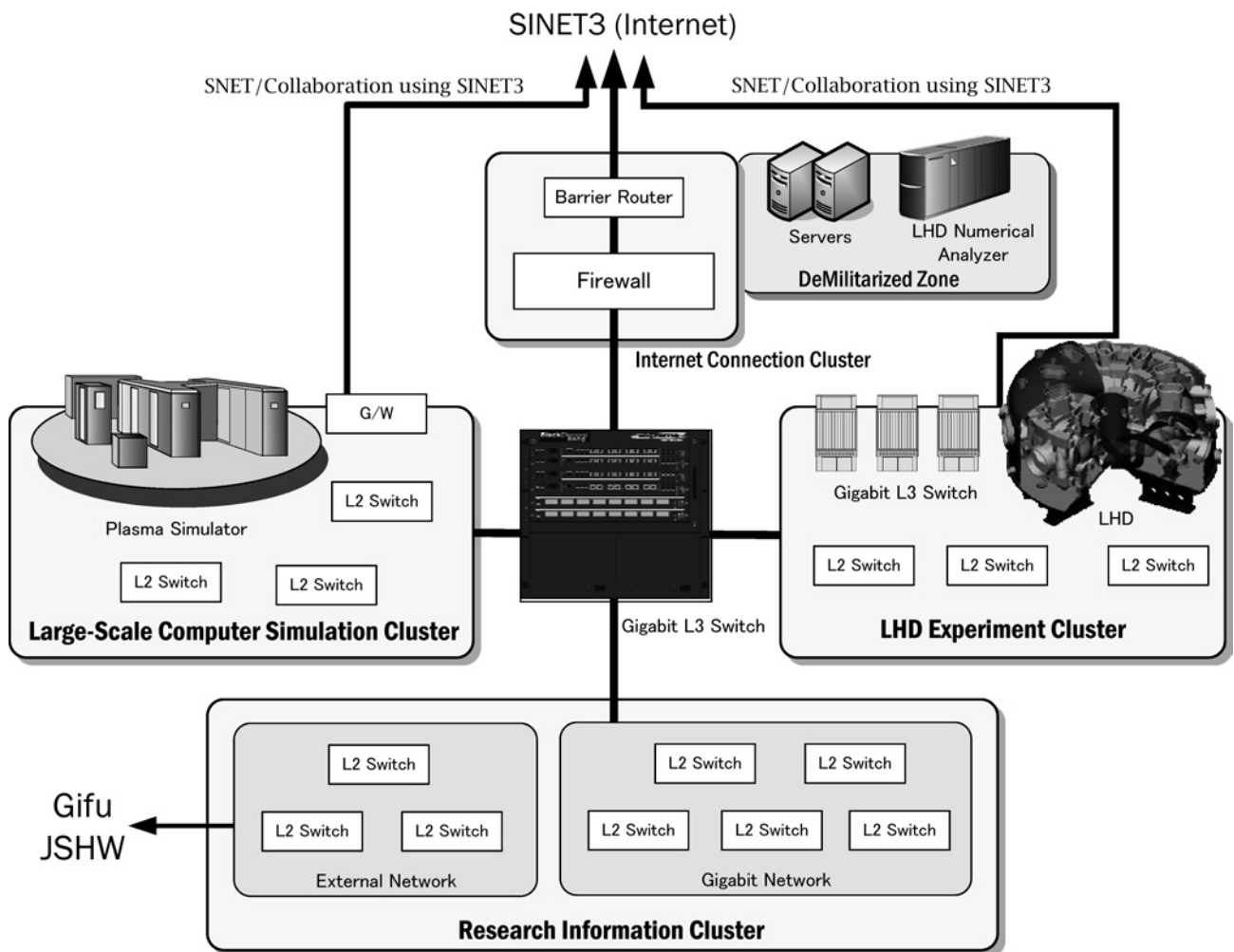


Fig.1. Block Diagram of NIFS Campus Information Network (NIFS-LAN)

NMO has performed following three activities in FY2009.

1) Operations and administrations of information network

a) The e-mail is a basic communication tool for the research activities. NGW has operated the mail server for NIFS to realize the effective communication. 56 news accounts (e-mail address) were created and 42 accounts were deleted in FY 2008. The mailing list service has also provided. 74 lists were created and 92 lists were deleted in FY 2009.

b) To manage the network, NMO has administrated the following information system;

- * Mail, SSL-VPN, DNS and DHCP servers

- * Router and Layer 2 / Layer 3 switch.

For example, 151 hosts were added to DNS server and 147 hosts were deleted in FY 2009. NGW also guides the staff of NIFS on network and information systems.

2) Security improvements

To keep the high-level security, NIFS-LAN has introduced the firewall and other security equipments. In FY 2009, the following activities were performed to maintain the network security.

a) Owners of PCs who bring them from outside of NIFS are requested to make a security check before connecting them to NIFS network. The quarantine network room was offered for such a security check and supports of quarantine processing to be sanity. This room was used more than 211 times in FY 2009.

b) Secure Socket Layer-Virtual Private Network (SSL-VPN) is a kind of VPN, which uses web browser as a client's software. The SSL-VPN in the NIFS has also the function to check the security level of the client before VPN connection is established. User is needed to use the One-Time Password (OTP) token as the authentication. 29 accounts were newly created, 88 accounts were renewed, and two accounts were removed in FY 2009. The number of accounts for NIFS is 88 and the number of accounts for research collaborator is 26.

3) Notable activities in FY 2009

a) Review of security policy

A part of NMO staff join the Information Security Committee. The committee had reviewed the information security policy and its guideline, which was established on March 2004. It contains "Information Security Policy" and essential information guidelines such as "the Network Usage Guideline", "the Information Technology Guideline", and "the Crisis Management Guideline". The revised policy and guidelines has been released to the staff of NIFS via interior groupware *Cybose* since October 2009.

b) Lecture for MAC address registrar

Four lecture classes on the subject of the campus network of NIFS, information security and how to register the MAC address were delivered in 2009 and 143 staffs joined. Only the attendance of this lecture can be the MAC address registrar (149 members) and can register MAC address of PC to DHCP system.

c) Preparation for use of Windows 7

Microsoft Corporation released Windows 7, new operation system for personal computer, on October 2009. As the security items, such as anti-virus and SSL-VPN server, had not been compatible to the new OS, the use of Windows 7 was restricted on PC in NIFS at that time. NGW checked the new version of anti-virus for Windows 7. After the preparation of the online distribution of the anti-virus to the staff of NIFS, Windows 7 could be used to PC on NIFS-LAN on December 2009. SSL-VPN changed to compatible to Windows 7 by the upgrade of its firmware on March 2010.

d) Supports for the connection between Gifu JSHW and SINET3

NIFS-LAN is connected to SINET3 for the general purpose and to Gifu Joho Super Highway (Gifu JSHW) for visitor's network which is called "external network". Gifu JSHW is a metro network in Gifu prefecture.

Institute of Advanced Media Arts and Sciences has been newly connected to SINET3 through Gifu JSHW on March 2010. NGW supported this connection at SINET node room on NIFS.

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