§7. Activities of Network Working Group

Yamamoto, T., Okamura, S., Takayama, A., Den, M.,
Nakamura, O., Morita, Y., Inoue, N.,
Onji, K. (INTEC Solution Power Inc.),
Network Working Group

Network Working Group (NWG) has been established on April 2007, one of the successor to "Computer & Information Network Center". NWG provides the various network services for steady and secure condition.

1) Operations and administrations of information network

a) The e-mail is a foundation not only the research area but also the human community. NGW has operated the mail server for NIFS to realize the effective activity. 68 accounts (e-mail address) were created and 77 accounts were deleted in FY 2007.

b) To manage the network, NGW administrates the following information system;

* Mail, SSL-VPN, DNS and DHCP servers
* Router and HUB (L2 / L3 switch).

NGW also consults the staff of NIFS on network / information systems.

2) Security improvements

To keep the high-level security, NIFS-LAN is introduced the firewall and other security equipments. In FY 2007, the following activities were performed to maintain the network security.

a) The security information, such as Windows Update for Microsoft OS and virus information, and the advices were provided by e-mail and the web. Eight mails were announced from NWG to the staff of NIFS in FY 2007.

b) The quarantine network room was offered for security check of their PC and the supports of quarantine processing were provided to the user including visitors. The room was used more than 250 times in FY 2007.

c) 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. The user is needed to use the One-Time Password (OTP) token as the authentication. 17 accounts are created and one account is removed in FY 2007.

3) New activity in FY 2007

a) Special mail delivery system has started

To suppress the work on out of office hours, the special mail system was developed. This system prevents the *inner* delivering which was sent from NIFS staff to NIFS staff and the time is out of office hours. The tags for forcing delivery used in the *subject line* were prepared to emergency situation. This system was constructed with the mail appliance server and UNIX server. The system was started on May 2007.

b) Backup system for mail server has installed.

On October 2007, the RAID system of the mail server was broken and the mail service was stopped for two working days. The mail data of users was eventually recovered, however the user should changed the password. For keeping the damage to a minimum, NGW has installed the data backup system for the mail server on March 2007. This system automatically makes a backup of the mail data and the system configurations which is including the user's password.

c) UPS for the network device was exchanged.

The network device in the Research Building, Administration Building and so on has the uninterruptible power supply (UPS) system to avoid the damage from the short power failure. NGW exchanged the expired battery of 17 UPS systems for a new one to keep the continuous operation.

d) Upgrade the network switch in Helicon Club.

The network switch (HUB) on Helicon Club, the guest house of NIFS, supported only 10BASE-T (10 Mbps) and located in the hard to access. This HUB was exchanged for layer 2 switches which support 100BASE-Tx (100 Mbps) and the new one is settled in administration room.

e) Supports the connection between Gifu JSHW and SINET3

NIFS-LAN is connected to SINET3 for the general purpose and Gifu Joho Super Highway (Gifu JSHW) for visitor's network which is called "external network". Gifu JSHW is a metro network in Gifu prefecture and connects more than 300 organizations.

The Gifu Prefectural Research Institutes is the one of the user of Gifu JSHW and has connected to SINET3 in the SINET3 node room in NIFS on March 2007. The bandwidth of upstream is increased from under 100 Mbps to 1 Gbps. NGW supported this connection work and configured the relative network device.