Computing and network environment at the RIKEN Nishina Center

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We are operating Linux/Unix NIS/NFS cluster systems[1,2] at the RIKEN Nishina Center (RNC).

Figure 1 shows the current configuration of the Linux/Unix servers at the RNC. We have adopted Scientific Linux (SL), which is a clone of Red Hat Enterprise Linux (RHEL), as the operation system.

The host *RIBF.RIKEN.JP* is used as the mail server, NFS server of the user home directory /rarf/u/, and the NIS master server. This is the core server for the RIBF Linux/Unix cluster with approximately 600 registered user accounts. The hosts *RIBF00/RIBF01* are used as SSH login servers to provide access to external users, and as general-purpose computational servers and gateways to the RIBF intranet.

Fig. 2. Mail Trends:Message categories in Dec. 2016

ment data, except for the large volume of raw data of RIBF experiments, were recorded to this research record server. The 52 TB storage system was divided into two partitions of 26 TB each. One is used for the data storage area of the experiment record and the other is used for the backup of the data.

A new streaming server *RIBFSS* was installed to replace the previous streaming server. Wowza Streaming Engine V4.3 software, which is capable of streaming RTMP protocol, is used for the streaming software. Any web browser plugged in with Adobe flash player is capable of playing the streaming contents.

The hosts *RIBFSMTP1/2* are the mail front-end servers, which are used for tagging spam mails and isolating virus-infected mails. The Sophos Email Protection-Advanced software (PMX) has been updated to the latest version PMX 6.3.0. Figure 2 shows the Mail Trends of the PMX in Dec. 2015. As shown in the figure, 50% of the incoming mails were blocked by the IP blocker. The red bar indicates the virus-infected mails blocked by the PMX. Approximately 0.7 % of the incoming mails were infected by viruses in this month, which is six times the yearly average. We noticed that half of the viruses blocked by the PMX in Dec. 2015 were harmful ransamware[3].

An anonymous ftp server, *FTP.RIKEN.JP*, is managed and operated at the RNC. Major Linux distributions, including Scientific Linux, Ubuntu and CentOS, are mirrored daily for the convenience of their users and for facilitating high-speed access. The average network traffic of this server is 40 MB/s.
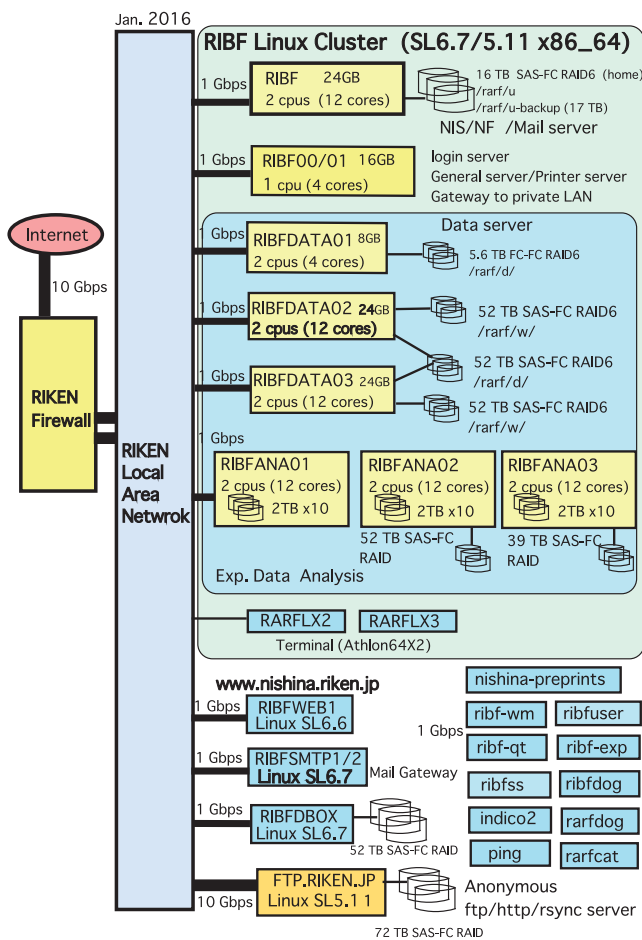

Fig. 1. Configuration of the RIBF Linux cluster.

A research record server *RIBFDBOX* was installed, and is started operation in April 2015. This server consists of an HP DL-320e server, a 52 TB SAS RAID6 system, and Proself 4 software. All of the experi-
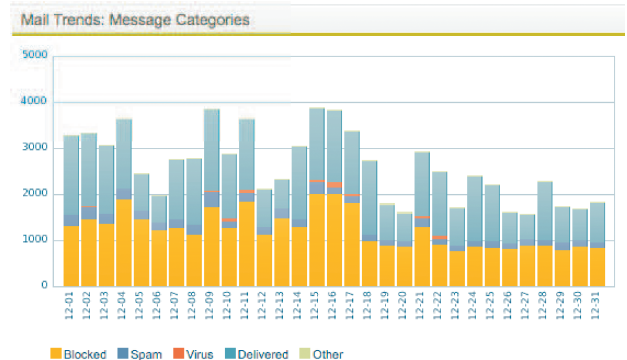
References

1) http://ribf.riken.jp/comp/
2) T. Ichihara et al.: RIKEN Accel. Prog. Rep. 48, 249 (2015).
3) https://en.wikipedia.org/wiki/Ransomware

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