Computing and network environment at the RIKEN Nishina Center

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We are operating Linux cluster systems[1] at the RIKEN Nishina Center (RNC).

Figure 1 shows the current configuration of the Linux servers at the RNC. The host *RIBF.RIKEN.JP* is used as the mail server, the NFS server of the user home directory, and the NIS master server. This is the core server for the RIBF Linux cluster.

The hosts *RIBFSMTP1/2* are the mail gateways, which are used for tagging spam mails and isolating virus-infected mails. The latest version of Sophos Email Protection-Advanced (PMX) has been installed. Figure 2 shows the mail trends in 2018. Approximately 50% of the incoming mails were blocked by the PMX ip-blocker.

In order to improve the reliability of mails, we have installed OpenDKIM and OpenDMARK software in the mail server and mail gateway. DomainKeys Identified Mail (DKIM)[2] is an email authentication method designed to detect forged sender addresses in emails (email spoofing), a technique often used in phishing and email spam. DMARC (Domain-based Message Authentication, Reporting and Conformance)[3] is an email-validation system designed to detect and prevent email spoofing, the use of forged sender addresses often used in phishing and email spam. It is expected that combining DKIM and DMARC will reduce phishing and email spam.

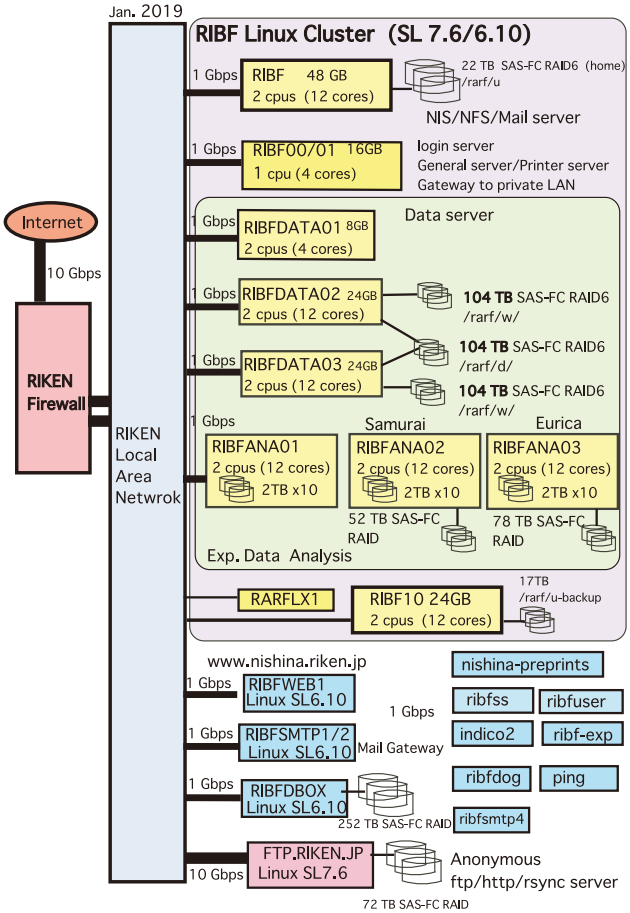

Fig. 1. Configuration of the RIBF Linux cluster.

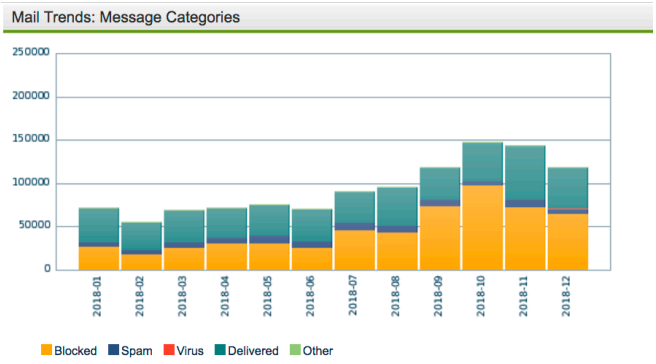

Fig. 2. Mail trends:message categories in 2018.

The Integrated Digital Conference (INDICO) software[4] has been operated at *INDICO2.RIKEN.JP* since 2007. We replaced the hardware and software of this server in March 2018. HP DL-320G8 was installed for the new indico server. The indico software was updated from indico 0.99 to 2.1.5. The new indico software uses PostgreSQL database, while the previous indico used Zope Object DataBase (ZODB) written in Python. The migration of the database from ZODB to PostgreSQL has been carried out.

Electric Log (ELOG)[5] and MoinMoin Wiki[6] for the RIBF experiments were installed in the server *RIBF-EXP.RIKEN.JP* in 2007. We have updated the ELOG software from elog 2.1.4 to elog 3.1.4 and Wiki software from MoinMoin 1.5.7 to MoinMoin 1.9.10 in January 2019. HP ProLiant DL-20G9 was installed for the new ELOG and Wiki server.

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.

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References

1) T. Ichihara *et al.*, RIKEN Accel. Prog. Rep. **51**, 287 (2018).
2) `https://en.wikipedia.org/wiki/DKIM` .
3) `https://en.wikipedia.org/wiki/DMARC` .
4) `https://docs.getindico.io/` .
5) `https://elog.psi.ch/elog/` .
6) `https://moinmo.in/` .