Computing and network environment at the RIKEN Nishina Center

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

Figure 1 shows the current configuration of the Linux servers at the RNC.

We adopted the Scientific Linux (SL), which is a clone of Red Hat Enterprise Linux (RHEL), as the operating system. Since the support of SL 6 was scheduled to be terminated in November 2020,[2] the SL 6 OSes installed in some servers were replaced with SL 7 or CentOS 8. The host *RIBF.RIKEN.JP* is used as the mail server, NFS server of the user home directory, and NIS master server. This is the core server for the RIBF Linux cluster. Mailing list services are also supported.

The hosts *RIBFSMTP1/2* are the mail gateways used for tagging spam mails and isolating virus-infected mails. Since the OSes of *RIBFSMTP1/2* were SL 6, we replaced them by SL 7 in September. The latest version of Sophos Email Protection-Advanced (PMX 6.4.9) was reinstalled. Figure 2 shows the mail trends in December 2020. Approximately 50% of the incoming mails were blocked by the PMX ip-blocker.

A research record server *RIBFDBOX* was installed, and it started operation in April 2015. Since five years have passed, we replaced the research record server *RIBFDBOX* by an HP-DL20G9 server in February 2020. At the same time, the OS and application software were upgraded to CentOS 8.2 and Proself 5, respectively.

The streaming server *RIBFSS* started operation in 2015 with the Wowza Streaming Engine V4.3 software, which can stream Real Time Messaging Protocol (RTMP) protocol. To play streaming videos of the RTMP protocol, the Adobe flash player should be installed in the PC. Since the support of the Adobe flash player for Windows OS and macOS was discontinued at the end of 2020, the operation of the streaming server *RIBFSS* was terminated at the same time.

The data analysis servers *RIBFDATA02/03* are mostly used to store and analyze the experimental data at RIBF. We have replaced the two RAID units (104 TB each) for /rarf/w file system by new ones. Further, the OSes of the *RIBFDATA02/03* were upgraded from SL 6 by SL 7 in September.

We have been operating approximately 70 units of wireless LAN access points in RNC. Almost the entire radiation-controlled area of the East Area of RIKEN Wako campus is covered by wireless LAN for the convenience of experiments and daily work. Six units of new wireless LAN access points (WAPM1266R) were installed in 2020.[3]

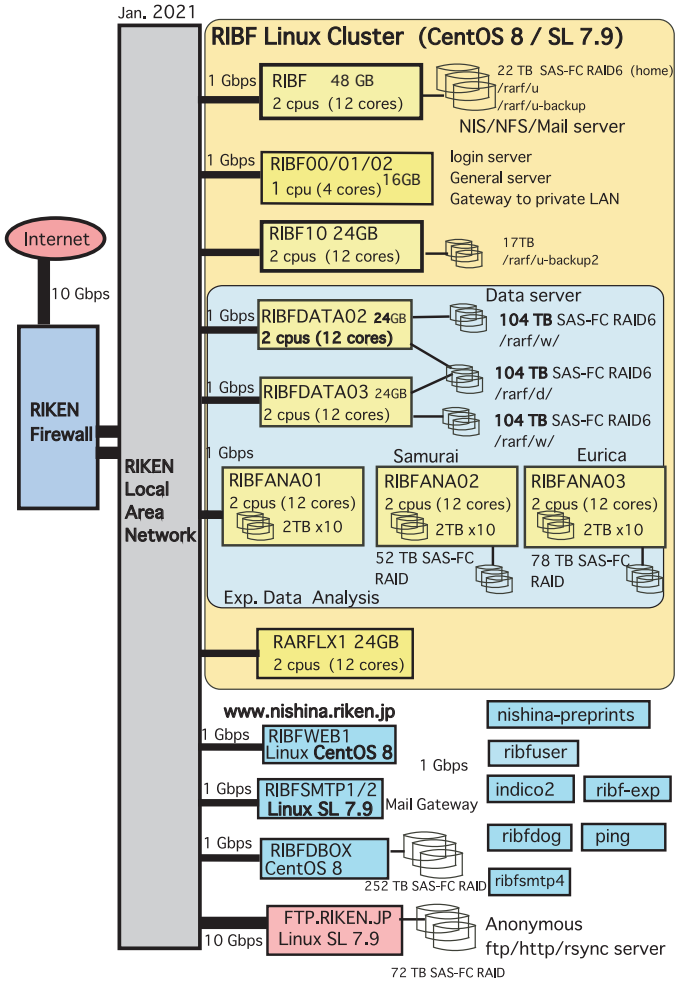

Fig. 1. Configuration of the RIBF Linux cluster.

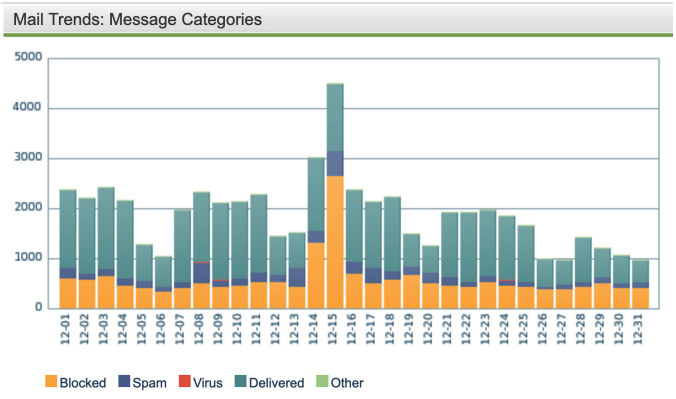

Fig. 2. Mail trends: message categories in December 2020.

References

1) T. Ichihara *et al.*, RIKEN Accel. Prog. Rep. **53**, 136 (2020).
2) `https://scientificlinux.org/downloads/sl-versions/sl6/`.
3) `https://ribf.riken.jp/comp/net/wireless.html`.

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