splunk>

CUSTOMER SNAPSHOT

Splunk® at RIKEN Advanced Institute for Computational Science

Big Data log management to ensure site uptime

"Splunk provides the easy operability of an RDB, and because it can perform high-speed log searches, I felt it was very convenient. When I want to do a quick examination, it serves as a very useful tool. K is a huge system so we can't predict what might happen, but the introduction of Splunk allows for swift response, which gives us a good sense of security."

Dr. Fumiyoshi Shoji, Deputy Director
Operations & Computer Technologies Division
RIKEN Advanced Institute for Computational Science

OVERVIEW

INDUSTRY
- Research and development

SPLUNK USE CASES
- Big data
- Security
- Monitoring
- Troubleshooting

BUSINESS IMPACT
- Improved visibility and uptime across three separate systems
- Increased efficiency in management of large-scale log event data
- Real-time insights into security issues
- Job schedule optimization

DATA SOURCES
- System availability logs
- K Supercomputer logs
- Network equipment logs
- HPCI server logs
- Database logs
- Data from third-party vendors

WHY SPLUNK
- Agile Reporting, Analytics & Visualization
- Open, Extensible Platform
- Powerful Search / Reporting Language

The Business

Since 2003, RIKEN, The Institute of Physical and Chemical Research, has been an independent administrative corporation under Japan's Ministry of Education, Culture Sports, Science and Technology. RIKEN is Japan's only comprehensive research center for the natural sciences, handling research in a wide range of fields including physics, engineering, chemistry, biology, medicine and more. Establishing the use of computer simulation for predictive science—a scientific view into the future—is a goal for RIKEN's Advanced Institute for Computational Science (AICS), with the use of the K supercomputer one important part of this mission. As one of the world's 500 fastest computer systems, the K computer is used on some 130 projects covering life sciences, weather, disaster prevention and others.

Challenges

A vast amount of machine data is generated at RIKEN's Advanced Institute for Computational Science, via three separate systems comprising the K supercomputer, the network system and the High Performance Computing Infrastructure (HPCI) server group. To operate and manage these three systems and ensure site stability and availability, RIKEN needed to be able to analyze the logs from the disparate systems quickly and efficiently.

Enter Splunk

RIKEN's Advanced Institute for Computational Science deployed Splunk software into the three systems—K, the network system, and the HPCI server group—and immediately began collecting, extracting and analyzing log event data. In addition to internal logs, security-related logs covering external attacks and unauthorized access, logs from network equipment, server loads and temperature management, and K job operational status logs are now managed via Splunk.

According to Senior Technical Scientist Dr. Motoyoshi Kurokawa, "When the flow of logs increases rapidly, Splunk provides a structure for the delivery of an alert, which makes it very convenient for quickly understanding the problem. Also, we can inspect that the outside vendors responsible for network operations are doing the work correctly. If we are in a place where we need to use CUI instead of GUI, we can do this, depending on the REST API."

The introduction of Splunk has enabled RIKEN to do high-speed searches and respond quickly to security and operational challenges. The organization is using the log data to track and analyze network failures in the server system, proactively investigate and address these issues, and improve uptime across the three different systems. In addition to this, RIKEN is using Splunk dashboards to visualize system conditions and optimize job scheduling.

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