

Yokogawa Achieves Real-Time Visibility Into DevOps-Driven Application Delivery

YOKOGAWA

Executive summary

A leader in distributed control systems (DCS) and other plant facility-related systems, Tokyo-based Yokogawa Electric Corporation enables automated operation in plants and contributes to the development of a wide range of industries including oil, gas, chemicals, power, electronics and automobiles. As the company embraces the DevOps approach to application development, it faces new challenges that cannot be met with legacy monitoring tools. By deploying Splunk Enterprise, Yokogawa has not only overcome these obstacles but also achieved benefits including:

- Real-time, end-to-end DevOps visibility
- Heightened efficiency due to flexible and customizable use of data
- Enhanced quality and effectiveness by turning data into dynamic insights

Why Splunk

To build a solid DevOps infrastructure, Yokogawa has brought in two practical tools — Chef for process management and Jenkins for test automation. However, it still faced challenges with monitoring and troubleshooting issues in a context where highly distributed and interconnected applications generate an ever-increasing variety, velocity and volume of logging data. It needed real-time DevOps visibility.

After trying a few solutions, however, Yokogawa was still unable to adequately analyze its various types of log data, while spending many man-hours to collect software development information. Developers had to export logs individually to Excel, then run analysis tools on source codes and report results manually, not to mention the inconvenience in sharing reports and insights across the company.

It was not until Yokogawa started using Splunk Enterprise that real change occurred. By integrating the software into its DevOps infrastructure and centralizing log data onto the Splunk platform, Yokogawa has successfully automated its data collection, analysis and reporting procedures, gaining proactive, end-to-end operational visibility on every DevOps process, and turning static data into dynamic insights.

Real-time visibility transforms software development and operations

Splunk Enterprise makes a real difference by generating Operational Intelligence across all stages of application delivery. Deployed on a

Industry

- Manufacturing

Splunk Use Cases

- Application Delivery

Challenges

- Operational inefficiencies due to human-based log management and analysis
- Ineffective workflow due to the lack of DevOps visibility
- Communication silos due to inability to share insights across the company

Business Impact

- Enhanced effectiveness with real-time, end-to-end visibility
- Boosted operational efficiency due to flexible use of data and improved DevOps collaboration
- Heightened DevOps quality thanks to data-driven dynamic insights

Data Sources

- Information from analysis tool
- Developer activity logs
- Changelogs from version management
- DevOps tools such as Chef and Jenkins
- Fault logs

Splunk Products

- Splunk Enterprise

virtual machine instance on Amazon Web Services (AWS), it automatically imports data from the AWS storage, performs statistical analysis on the application development cycle, along with other data sources including developer activity logs, version management logs, DevOps tool logs and fault logs, and generates actionable insights. As a result, developers can quickly find and fix issues during development and testing, and deliver code to production faster.

The ability of Splunk Enterprise to ingest a significant amount of data from different sources also allows Yokogawa to conduct systematized analysis from multiple perspectives.

Flexible data structure meets specific needs

Splunk Enterprise comes with a unique design: a schema is not applied to the data until a user searches it, which allows for flexible schemas for each use case. Users can enter data freely and decide its purpose later, which beats traditional databases that require users to determine the use before designing the structure. Yokogawa has never imagined there could be such a one-size-fits-all solution that can be tailored to meet its needs.

Equally impressive is the Splunk Search Processing Language (SPL), which is easy to learn and use, and enables Yokogawa to run DevOps by trial and error. For users who are not well-trained for statistical analysis, the SPL is user-friendly enough for tracking files that have been changed before an error arises, while spotting other error-prone files and tracing developers' change histories. This enables effective system reviews and multiple perspective analysis - all conducted on an intuitive web interface.

Dynamic insights simplify operations, boost quality and effectiveness

Yokogawa has also derived maximum benefit from Splunk's ability to check indexes dynamically on an as-needed basis. Gone are the days when the DevOps team could only check quality indexes during major events, as they now enjoy full visibility into different indexes such

“While many companies involved in the development of DCS and other critical plant systems still use legacy software and source codes, Splunk enhances our operations with cutting-edge technologies and empowers us to derive unprecedented values from machine data.”

Satoshi Tada, Group Leader, Systems Software Development & Engineering Department, Systems Development Center, IA Systems & Services Division
Yokogawa Electric Corporation

as the quality index and difficulty index, anytime and anywhere. Previously they spent a significant amount of time to collect information for quality assurance, but now the impactful insights generated by Splunk Enterprise save hours of manual work.

Fueling the future with a wide variety of possible applications

Impressed by the results, Yokogawa is planning to extend the use of Splunk Enterprise to other areas. It is preparing to manage operation logs on the Splunk platform tool while using the Splunk dashboard to display alerts after finishing each analysis. It will also bring in artificial intelligence powered by machine learning with the Splunk Machine Learning Toolkit while integrating downstream process data into the Splunk platform.

Splunk has also driven the rise of a “developers’ community” at Yokogawa. With a common data fabric in place for sharing DevOps visibility, developers maintain constant and effective communications, use objective data to make decisions and deliver better code faster, while embracing the complexity of software development and getting optimal answers. Developers are also improving cross-organizational team collaboration on software development, testing and operations.

Download Splunk for free or get started with the **free cloud trial**. Whether cloud, on-premises, or for large or small teams, Splunk has a deployment model that will fit your needs.



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