

Cerner Corporation Achieves Real-Time Operational Visibility Into Complex Healthcare Transactions



Executive summary

Cerner Corporation is one of the world's largest healthcare software IT companies. Cerner's health information technologies connect people and systems at more than 18,000 facilities worldwide. With more than 180 million transactions annually between thousands of disparate parties and systems, Cerner needed a way to quickly detect and correct errors and thereby reduce resubmissions and denied claims. Since deploying Splunk Enterprise and Splunk DB Connect, the company has seen benefits including:

- Improved efficiencies across the eligibility business process
- Reduced resubmissions and denied claims
- Improved service delivery and accelerated reimbursement

Why Splunk

Cerner solutions are offered on the unified Cerner *Millennium*[®] architecture and on the *HealthIntent*[™] cloud-based platform. Cerner *Millennium* enables end-users to validate a patient's insurance information using real-time eligibility processing. However, an error during the eligibility process could result in a rejected transaction, delaying healthcare delivery and impacting revenue cycle processes. To investigate errors, Cerner's operations team relies on metadata from transactions, which is stored in a relational database.

The complexity of transactions across multiple systems and platforms made error analyses challenging. Operations team members wrote SQL queries to extract relevant data and exported it to Excel for manual analysis, a time-consuming, cumbersome and error-prone task. In addition, Cerner has a large WebSphere environment that was laborious to scrutinize. The company needed a versatile solution that could deliver real-time, end-to-end operational visibility into these critical business processes.

Cerner already had a large Splunk Enterprise deployment comprised of 600 developers who use the software to enhance application development and management. In addition, Cerner also deployed the Splunk DB Connect application to enable the indexing of metadata from *Millennium* transactions.

Industry

- Healthcare
- Technology

Splunk Use Cases

- Business analytics
- IT operations

Challenges

- Ease analysis of error rates and root causes across multiple platforms
- Reduce need to write SQL queries to extract relevant data
- Eliminate need to export data to Excel for manual analyses
- Improve alerting and troubleshooting of WebSphere environment

Business Impact

- Improves efficiencies across the eligibility business process
- Ensures timely patient access to healthcare services
- Rapidly detects and corrects transaction errors to reduce resubmissions and denied claims
- Proactively addresses data submission errors to lower cost and increase clean claims rates
- Improves service delivery and accelerated reimbursement
- Increases internal access to data-driven intelligence

Data Sources

- Application servers
- Relational databases
- WebSphere environment
- Metadata from Millennium transactions

Splunk Products

- Splunk Enterprise
- Splunk DB Connect
- Splunk App for WebSphere Application Server

Deep insight streamlines healthcare access

Splunk DB Connect is empowering Cerner's operations team to monitor patient eligibility business processes in near real time. The team now has views and analytics into data transactions between providers and insurers—enabling them to optimize eligibility verifications, ultimately leading to faster claims processing and payment. Engineers monitor data streams via Splunk dashboards, viewing metrics such as transaction volumes, partner response rates and transaction errors.

Engineers are now alerted in real time when error rates exceed certain thresholds, enabling them to quickly query the data to identify the failed transactions, determine the root cause and take remedial action.

"Thanks to the business analytics offered by Splunk software, we're processing eligibility transactions more efficiently," says Tom Twait, the EDI services manager for Cerner. "Even though Cerner handles millions of transactions with thousands of clients, we now have the Operational Intelligence to find and eliminate issues. This is critical because real-time eligibility ensures patients get timely access to healthcare services."

Data-driven analytics helps improve services

Splunk DB Connect also provides Cerner with visibility into structured EDI data, which the operations team uses to proactively reduce error rates. Splunk DB Connect links to any database or data source and performs scheduled or ad hoc queries. "Rather than just reacting to issues, we're using Splunk software's data-driven analytics to prevent them from occurring," explains Chris Hogan, the EDI services senior solution architect for Cerner. "We're reducing real-time eligibility process error rates."

Splunk users at Cerner can log in and access a configurable operational dashboard to view

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and correlate data from any client or payer. They can display data historically to detect trends and patterns, and perform their own analyses. "Splunk software is so flexible and easy to use that anyone from executives to business analysts can look and learn from the data," says Twait. "With the Splunk platform, data becomes an accessible source of both operational and business intelligence."

Prior to the Splunk deployment, Cerner examined its WebSphere logs and servers manually, which Hogan compared to "looking for a needle in a haystack." The operations team installed the Splunk App for WebSphere Application Server to enable the Splunk platform to aggregate logs, including performance and configuration data, from the WebSphere environment for indexing. The team now receives automated email alerts when potential issues emerge.

Ensuring a healthy future

"The flexibility of the Splunk platform allows us to apply it to multiple use cases. Our engineers can address problems before they escalate, thereby proactively preventing system outages," concludes Hogan. "They now have the operational visibility and intelligence to improve our transaction processing. Going forward, we're going to use our Splunk platform to look at more and more of our data."

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