

Splunk® at Tesco.com

Accelerates Development Through Deep Understanding of Customer Behavior



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Joshua Anderson
Applications Engineer,
Tesco.com

OVERVIEW

INDUSTRY

- Grocery & General Merchandise E-Commerce

SPLUNK USE CASES

- Digital intelligence
- Operational visibility
- Business insight
- Application visibility
- Development cycle acceleration

BUSINESS IMPACT

- Helps improve customer satisfaction by giving developers deep insight into sources of errors and enables them to triage errors to quickly categorize and focus on trends and solutions—cut MTTI/MTTR by 95%
- Enables consolidation and convergence of monitoring and troubleshooting tools and applications across complex environments and multiple geographies
- Tracing live transactions end-to-end across complex infrastructures
- Accelerates Java and .NET application development cycles by up to 30%

The Business

Tesco.com is the e-commerce arm of Tesco PLC, a British multinational grocery and general merchandise retailer that operates in the United Kingdom, Europe, Asia and North America. Introduced in 2000, Tesco.com serves the UK market with grocery shopping from home, general merchandise, clothing, as well as banking and insurance services.

Challenges

Web analytics firm Alexa ranks Tesco.com at 40 among all U.K. sites based on monthly traffic. Tesco customers expect to be able to shop where, when and how they want, blurring the boundary between physical and online shopping.

Tesco developers and business/web analysts and operations teams needed a better understanding of what products and website features customers were engaging and what pathways resulted in the highest lead conversions.

Traditionally a Microsoft shop, including the use of .NET technologies to support its original Tesco.com platform, the company decided several years ago to transition to a Linux and Java platform for the next generation of its direct General Merchandising Online (GMO) website. Supporting both infrastructures led to a large and complex development and production mix, including more than 400 servers across 10 environments in the UK and at its offshore developers in India.

This heterogeneous mix makes it challenging to monitor critical processes and troubleshoot development and production problems. Before Splunk, Tesco relied primarily on custom scripts to capture log data and make it available to developers and IT support teams. The influx of new systems and the need to support multiple groups overwhelmed the firm’s homegrown log monitoring.

“With the major upgrade to our GMO site, we needed a way for multiple developers to securely access logs at various geographic locations and multiple platforms—a way to tie it all together and make sense of errors and other behaviors,” explains Tesco applications engineer Joshua Anderson. “In the meantime, web site escalations were coming from our service team and backing up in our queue—sometimes 250 at a time! Our previous system of harvesting log files and running reports overnight was just too slow and cumbersome.”

Enter Splunk

About two and half years ago, a major Tesco partner recommended Splunk to Tesco’s IT organization. “Once we started rolling Splunk out and looking at some of the information we could extract, it opened up our world—like putting on glasses for the first time,” Anderson relates.

Today, Tesco has a 250GB per day Splunk license and has deployed the system across nearly all of its servers. Over 300 developers, quality assurance, customer support, web site operations and business/Web analysts have Splunk access. The organization uses Splunk to troubleshoot problems, identify drivers for improving user behavior and accelerating development cycle.

OVERVIEW

BUSINESS IMPACT CONT.

- Reduces time spent on troubleshooting and service/support by 30+ hours per week
- Allows developers to focus on development and not troubleshooting production errors
- Reduces escalations by at least 50%

DATA SOURCES

- System logs: Linux/UNIX, Windows, Mac OS X
- Application logs: JMS, JBoss, web events, error logs, stack traces from .NET and J2EE, Direct General Merchandising Online (GMO)
- Web logs: IIS
- Development and test logs
- Logs from 400 servers and 10 environments
- More than 50 unique log source types

Breakthroughs

Performance monitoring and troubleshooting improve customer experience

One of the earliest revelations for the Tesco application management team was how easy it was to use Splunk to correlate log data into events that reveal root causes. “Early on, we were having trouble with checkout flow on the website,” recalls Anderson. “I remember just typing in ‘error’ and ‘payment’ in Splunk and all of a sudden we were able to narrow directly down to timeframes and see that there was a problem with our connectivity and the IP address.”

The Tesco application support team used Splunk to quickly clear the error backlog and establish alerts and dashboards to help speed future problem identification and resolution. They used Splunk to create customer activity tracking dashboards that are continually monitored by support operations centers in the UK and India and help identify and resolve website error trends before they become widespread problems.

In this way, Tesco was able to dramatically improve the experience of website visitors and reduce the incidence of lost revenue due to abandoned shopping carts.

Application visibility enhances business performance

With millions of visits per week to Tesco.com, application process visibility is critical for order tracking accuracy, real-time alerts and site performance. Two Splunk search heads and four indexers track customer activity and provide application visibility. Splunk is used to monitor Java-based messaging queues and bridge the gap between Java/Linux systems and Windows.

“Every dashboard has an associated alert,” Anderson says. “Splunk alerts are integrated with our Microsoft SCOM monitoring and service desk systems. Our business teams also use Google Analytics tools to see what flows through the Tesco website; however, those tools don’t really look at the response from the server. We use Splunk to look at the raw logs to determine, for instance, what’s causing a ‘404’ error.”

Splunk helps the Tesco team better understand the impact on the customer of any site errors. Anderson notes: “We’re able to look at the raw logs and see, firstly, where we are producing ‘404’ errors and what is actually happening to our systems. Splunk allows us to see the percentage of customers who are receiving an error message and resolve those issues quickly before it has an adverse effect on sales or service.”

Development cycle acceleration

Hundreds of Tesco engineering and test team members worldwide now have access to test environment logs via Splunk, which has led to faster, more agile development and shorter development cycles. In this way, collaboration has been enhanced among geographically separated development teams.

“We use Splunk to triage our application errors and cluster them into groups for analysis by our development teams,” Anderson explains. “We can identify issues and resolve them so much faster than ever before, that we’ve been able to adopt a more agile development process and cut development time by about 30% across the board.”

Operational visibility and business insight

Splunk usage is growing beyond its original base to new areas within Tesco PLC. New uses of Splunk expand beyond search and investigate to use in helping understand and optimize web behavior in real time. “As we roll out Splunk to new groups, we are discovering how little visibility there was in the past,” Anderson notes. “By standardizing and consolidating with Splunk, we are assisting areas such as grocery, direct and international businesses in all our regions in mapping process flows and visually representing transactions in dashboards with associated alerts. We are already starting to see similar benefits to what we have experienced in application support and development at Tesco.com.”

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