JetBlue Airways

JetBlue Airways is an American low-cost airline that carries 35 million customers a year to 95 cities in the U.S., Caribbean, and Latin America with approximately 1,000 daily flights. The airline uses numerous applications in different platforms including Java, HTML, and .Net to run its business.

Overview

Founded in 2000 with the mission to bring humanity back to air travel, JetBlue continues to grow and thrive through a commitment to outstanding customer service. In one recent year alone, JetBlue increased its daily flights by 20% and increased its cities served by 10%. JetBlue originally used LoadRunner in a physical hardware environment for performance testing. However, managing the test artifacts and physical hardware became a challenge as the airline grew. Additionally, JetBlue was concerned about the cost of buying new hardware to deploy additional load. The company aimed to minimize hardware and maintenance costs and effort, and to centralize all the testing effort and

activity for better accessibility by team members—including offshore testers in India and Mexico as well as those at corporate offices in the New York, Florida, and Salt Lake City areas.

Challenge

The applications include web-based apps that enable customers to book flights and check in online; administrative applications; applications enabling crew members to serve customers; and back-end resources including SAP, Microsoft SQL, and MongoDB databases. To increase efficiency while meeting JetBlue's high standards for application performance and availability, the airline's Quality Center of Excellence (QCoE) team leveraged Micro Focus solution to "shift left"—test earlier in the project lifecycle to catch and fix bugs early. As a result, JetBlue now has a global test model that is centralized with reduced cycle time and operational cost. Next, as JetBlue continues to enhance customer experience of highly available and responsive products and services, the airline looks to Micro Focus for ongoing innovation.

"We wanted a solution that would enable our 'shift left' journey with centralized testing," says Angie Woodruff, General Manager of Quality at JetBlue. "This lowers costs and enhances the productivity of our global testing teams while increasing the quality of the applications that keep this business in flight."

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At a Glance

■ **Industry**
Hospitality and Travel

■ **Location**
New York, USA

■ **Challenge**
Align Quality CoE team with JetBlue DevOps model, by including performance testing and functional feedback in early development phase, and improve the testing process.

■ **Products and Services**
Application Lifecycle Management
Quality Center
Performance Center
Unified Functional Testing
Network Virtualization

■ **Results**
+ Reduce testing hardware and maintenance costs by 60%
+ Deliver 35-45 projects a month—from rapid deployment to production
+ Accelerate testing cycles and reduce post-production application failures
+ Create scenarios and reusable monitoring profiles, plan and execute tests across global teams—enhancing employee productivity

"Implementation of reporting capabilities will allow us to provide pertinent information with the press of a button. In addition, centralized performance testing improves accessibility by global team members, which enables us to outsource to offshore vendors in India and Mexico."

MOHAMMED S. MAHMUD
Senior Performance Engineer
JetBlue

Solution

The answer was to deploy Application Lifecycle Management (ALM), Quality Center (QC), Unified Functional Testing (UFT), and Performance Center (PC) in a virtual environment for test management and execution. Micro Focus ALM is an application management solution that helps enterprises define, build, test, and deliver applications fast and with confidence across the software development lifecycle. Micro Focus PC is performance engineering software designed to facilitate standardization, centralization, global collaboration, and management of a performance engineering center of excellence. JetBlue's virtualization platform is VMware, and the company uses Micro Focus Network Virtualization (NV) to virtualize real-world network conditions in its software testing environment. The solution gives them the ability to simulate the user load from different geographical locations (origin and destination airports) to understand the user experience from the end-user perspective. Micro Focus Network Virtualization is the only Micro Focus-certified solution specifically designed to accelerate and optimize application performance testing across WAN, web, mobile, and cloud networks. JetBlue's performance engineering team generates load in the Application Under Test (AUT) locally as well as globally, and uses Micro Focus SiteScope for monitoring.

"We've transformed from costly manual testing to an automated framework using consistent, repeatable processes," Woodruff says. "Our engineers can more easily coordinate and execute tests, track defects, and analyze test results."

Results

By implementing a complete virtualized ALM and PC environment, JetBlue reduced testing hardware and maintenance costs by 60% and centralized testing resources for streamlined access by team members. The company creates scenarios and reusable monitoring profiles, and can plan and execute performance tests across global projects. The Performance Application Lifecycle (PAL) functionality of Performance Center enables JetBlue to design its testing platform to reflect actual user behavior. Processes also are faster. PC with Quality Center reduces the time it takes to generate reports on testing status—projects delivered, resource usage, and time. "Implementation of reporting capabilities will allow us to provide pertinent information with the press of a button," says Mohammed S. Mahmud, Senior Performance Engineer at JetBlue and an active member of the Performance Center Early Validation Program and the Micro Focus Advisory Board. "In addition, centralized performance testing improves accessibility by global team members, which enables us to outsource to offshore vendors in India and Mexico."

With these combined advantages, JetBlue is able to deliver 35 to 45 projects every month. For example, automation accelerated JetBlue's testing cycles of its new backend platform for online reservations by 40% and reduced post-production failures by 80%. Faster testing means the ability to perform more tests, which reduces downstream production and helpdesk costs.

JetBlue purchases software licenses through the software elite partner Sky I.T. Group. Woodruff and her team have worked closely with Sky I.T. for many years, and reached out to the company for insight into Micro Focus resources when first planning to build the virtual environment. Next, JetBlue sought to enhance its customers' experience through better real-time mobile and self-service applications. Sky I.T. assisted with a demonstration of Mobile Center software and AppPulse Mobile for testing mobile application functionality and performance across real-world network conditions on real mobile devices. JetBlue is also working on implementing Application Lifecycle Intelligence (ALI) for JIRA integration with Micro Focus Quality Center using sync manager. ALI integrates widely used development tools with ALM and surfaces analytics-based insights to deliver apps faster.

"We want to give JetBlue customers a premium experience of highly available, responsive applications," Mahmud says. "Micro Focus enables us to do this while enhancing employee productivity and reducing costs."

Benefits

- Monitor application testing tools to give customers a premium experience of highly available and responsive service
- Accelerate testing cycles and reduce post-production application failures
- Accelerates time it takes to generate performance testing status reports by 55%—facilitating strategic corporate decision-making
- Support business expansion (approximately 20% increase in daily flights in one year, 10% increase in cities served)
- Test automation reduced post production failures by 80%

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