Overview
Founded in 1888, McGraw-Hill is a learning science company and one of the ‘big-three’ educational publishers, providing customized educational content, software and services for pre-kindergarten to post-graduate education. The company also provides reference and trade publications for the medical, business and engineering professions. Headquartered in New York City, McGraw-Hill operates in 28 countries, has more than 5,000 employees and offers its products and services in over 135 countries and 60 languages.

Its online tutoring and assessment program, ALEKS, is supported by 14,000 authors and educators. It attracted 4.4m unique users in 2018 and has clocked up 8.7bn interactions since 2010, answering 6.8bn questions. McGraw-Hill’s web-based assignment and assessment platform, Connected, currently has 8.6m unique users, dealt with 3.9m paid activations in 2018 and has answered 11.8bn questions since 2009.

Challenge
Since McGraw-Hill’s market position relies on quality service, effective IT testing is of paramount importance and because its online applications can face up to 30,000 concurrent users at peak times, efficient load testing is a vital element.

“We used to have a lot of issues in terms of managing our test assets and load generators,” says performance engineering manager, Vivek Koul, based on Columbus, Ohio. “They were very time-consuming tasks and because there were issues and errors, obtaining the test results would take a lot of time. This was impacting our whole team because we often had to re-do the tests, so we needed to sort it out and introduce as much automation as possible into our testing suites.”

Solution
McGraw-Hill was already using Micro Focus LoadRunner Enterprise and Micro Focus LoadRunner Professional so it decided to try out the

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VIVEK KOUL
Performance Engineering Manager
McGraw-Hill

At a Glance

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<th>Printing and Publishing</th>
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<td>Location</td>
<td>New York City, USA</td>
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<tr>
<td>Challenge</td>
<td>Managing test assets and load generators was a time-consuming operation where issues and errors caused unacceptable delays.</td>
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<td>Products and Services</td>
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<td>Results</td>
<td>Testing and result generation are automated to speed up processes and reduce time to market. Performance testing durations are reduced by eliminating the need to re-do work. Staff are freed from routine tasks to conduct more creative engineering work and personal development. Test levels can be increased to improve application quality and boost the company’s reputation.</td>
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cloud-based (SaaS) load and performance testing tool, Micro Focus LoadRunner Cloud and it worked well.

The company now uses LoadRunner Enterprise for in-house applications that are not related to the internet and LoadRunner Cloud is used for online applications and interfaces where the loads are seasonal, peaking during the back to school season in August, September and October.

"As part of our LoadRunner Cloud testing we went as high as 50,000 concurrent users so we have now moved some of our bigger test suites onto LoadRunner Cloud," says Koul.

Results
"The most important added value we see is that we don\'t have to manage our load generation mechanism now. All we need to do is just clear the scripts, upload them and we are good to go. That relieves us from having to consider the time it takes to create or maintain the hardware load generation."

Running loads from LoadRunner Cloud also makes tests more accurate because the virtual users are being initiated from remote locations, just like real users. Other benefits of using LoadRunner Cloud are automation and integration with various other Micro Focus tools and also Jenkins, using the plug-in provided.

"In terms of the overall performance of the application, we\'re able to test more frequently and get the integration results out pretty fast. Automation has really helped us to catch performance issues early in the development cycle and that is a primary improvement. It gives more lead time to developers and more time to test the defects," adds Koul.

McGraw-Hill has multiple teams of testers in many locations. Most of them are using LoadRunner Cloud and a major advantage is the ability to scale out tests. With sufficient licenses, the tool can cope with hundreds of thousands of users. The teams have also found that Micro Focus is very responsive to new product feature suggestions and support requests.

Next steps for McGraw-Hill will be to integrate test execution into Slack so it can execute tests just by interacting with its chat client. It is also looking at developing a self-service model where developers could create their own scripts, upload them and then run the tests themselves.

"We are 100% Agile and one of the key benefits of using Micro Focus LoadRunner Cloud is that we can automate both testing and result generation. We are able to save time through automation and that leaves us free to concentrate on other areas," says Koul. "We have now automated our whole testing suite and that makes our lives easier. Our performance engineers spend less time on testing and more time on things like engineering work. It gives them more time on personal development which is really great."

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