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Tools of Tomorrow

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Testing Talk

Anthea Whelan asks Andreas Golze, passionate fan of DevOps, about the enhancements that accompany embracing this approach.

Integrating the complete non-functional testing phases into the overall process is seen as a core best-practice.

Who should be interested in embracing DevOps?

Large enterprises, in particular, but any business that requires faster releases, with good feedback – those that are struggling to implement effective communication and collaborations between their IT and business teams.

By emphasising "people and culture", DevOps instigates a cultural shift that requires a balance between the current market perception of an organization and how the business is envisioned in the future.

That sounds like a challenging leap for some companies to make. What's stopping them?

As more and more companies are seeking to provide digital offerings as part of their product suites, speed of deployment becomes a correspondingly important factor. Businesses born in the cloud era are automatic adopters of DevOps, a culture of practices that matches their DNA. Older businesses, with their more siloed practices, have more legacy systems they depend upon, some of them extremely complex, isolated and bound to their own protocols. Coupled with long-defined development, operations and testing processes and practices, it can be difficult to meet the varied needs of modern enterprises.

What would you advise as a good first step, for those wishing to make the leap?

Continuous Testing (CT) should be adopted without delay. It provides continuous feedback that drives software delivery through the entire development cycle. Automated feedback at each checkpoint works like a feeding mechanism for the

next process in the delivery chain, if the feedback says to move forward.

If the feedback does not say to move forward, then the entire process can be immediately halted so corrective measures can be taken.

Also, the automation code base should be treated just like an application code base – it should reside in its own version control repository. The automation suite must be integrated with the build deployment tool. This enables centralised execution and reporting.

If the automation suite is then categorised into layers of automated tests – build test runs; health checks; smoke tests; full-scale regression tests – then regression execution can be carried out overnight, depending on how frequently you want to put out a build, or during the weekend if you find that the CT setup is becoming less effective due to longer feedback cycles.

That all sounds just a little too easy! Automate everything and it will all work out?

No, of course not! There are always challenges. Some tests built on commercial tools can often slow down over time due to tool architecture. Also, automation is often built using different tools – one for user interfaces; one for APIs and mobile coverage, for example.

There are workarounds, however. Existing automation and migration tests should be executed using more open source tools, such as Selenium, which automates web browsers across many platforms. This helps to further enhance the effectiveness of DevOps and ensure it is more integrated with development tools.

What about non-functional testing?

There are known challenges for integrating non-functional tests into the CT process. Load testing, for instance, raises the issues of non-availability of dedicated servers to generate the desired user load, or capacity constraints impacting the ability to scale the CT environment and sustain the size of load tests, or a lack of on-demand tools to identify the bottlenecks.

Again, cloud-based infrastructures allow organizations to make effective use of available resources and establish the capability to run these load tests on-demand, plus tools such as Apache JMeter are quickly emerging as invaluable for performance testing by organizations using DevOps practices.

It is the core philosophy of CT processes to test every single change made to the application, as early as possible. If non-functional tests are not included in the overall CT process, the organization is only solving part of the puzzle. If these issues are not tested for and identified as early as possible, it may affect improvements in functionality, and those may not be reversible. You could put your entire release schedule in jeopardy. Integrating the complete non-functional testing phases into the overall process is seen as a core best-practice.

What are the DevOps habits of the most effective businesses?

Agility in the ability to execute tests is the key to successful CT. New techniques in test data management and service virtualisation are emerging all the time and can only enhance the effectiveness of DevOps. Automated processes which are also providing meaningful metrics.

Enhancing an existing DevOps set-up by driving automation through open source tools, or by using a flexible commercial tool that integrates well with both upstream and downstream activities. Some have found the “Monday to Friday – Weekend” model quite effective, where teams focus on continuous quality via greater automation during the weekday build and test phases, while running automated regression tests for the final QA tests over the weekend.

A well-implemented DevOps strategy complemented by an intelligent test automation framework puts businesses in a strong position to benefit from the effective colla-boration between all of their information technology professionals ■

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