Go2Group

BEYOND SIMPLE AUTOMATION — THE IMPACT TESTING HAS ON DEVOPS

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EXECUTIVE SUMMARY

Today's business landscape is going through tremendous change, iteration, and disruptions. IT organizations are under pressure to meet the needs of a growing audience and to deliver better software faster — 'better' in meeting user's expectations, beyond user's requirements.

User expectations don't stop at receiving a working product; it is also about advanced usability experience. To meet these expectations, IT organizations have recognized the value DevOps practices add to accelerate time to market and improve overall customer experience. Adopting DevOps practices requires a cultural shift in terms of people, processes, and technologies involved in development, testing and operations; it drives the need to have advanced automation and tooling support to achieve DevOps goals of continuous delivery.

Most IT organizations are struggling to keep up with the growing demand for increased testing for fast-paced and complex development initiatives. Ad hoc and unstructured testing has become an inhibitor to accelerate development, and increases the risk of quality issues impacting the business. The need of the hour is a management approach to testing that provides visibility, traceability, and collaboration.

This white paper discusses how test management tools are imperative to the success of an IT organization's software testing for high-quality software, faster pace of delivery and improved efficiency; how to meet the specialized needs of test management inside the developer's tool (like Atlassian Jira); and how to integrate other software management tools while meeting enterprise-level governance needs.

INTRODUCTION

Generally, delivering software is hard. It is complicated because the user can't tell us what they really need or want. They can only tell us what they don't want, which they generally do when we deliver the software to them.

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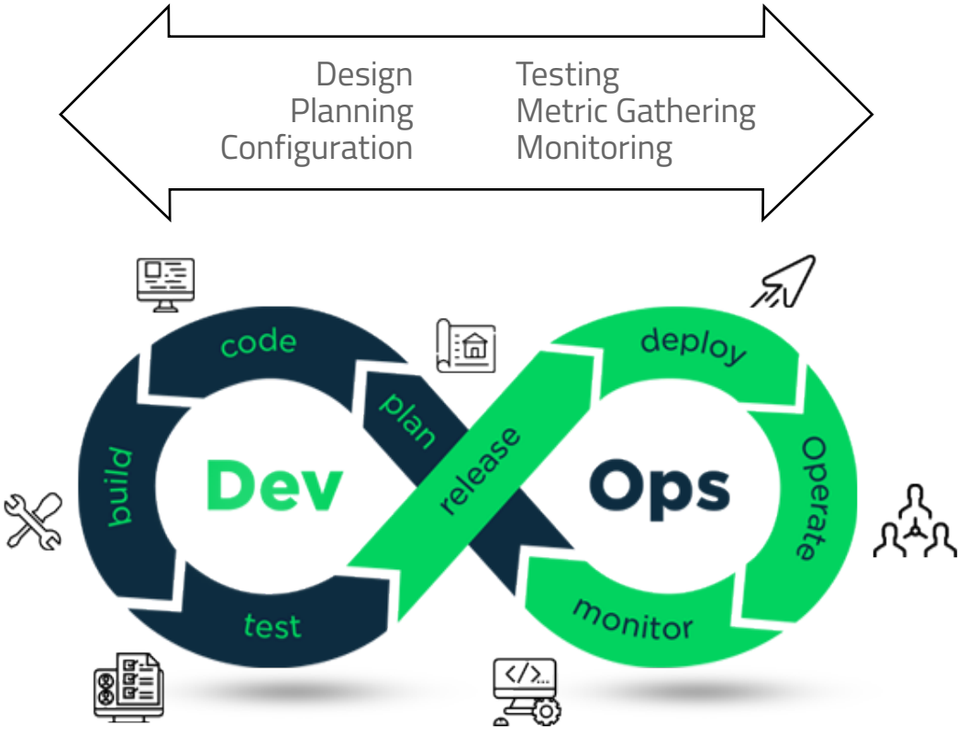
Today, as businesses transform to become digital, IT organizations are under pressure to support fast-evolving digital business scenarios. They recognize the demand for new applications and features delivered in an increasingly faster pace with high level of software quality. These demands are driving IT organizations to adopt DevOps, resulting in the need for increased levels of automation and tooling support. However, organizations rarely envision a massive enterprise deployment; instead, they seek to solve specific problems.

QUALITY: THE HEART OF DEVOPS INITIATIVE

DevOps brings testing into the mainstream of development processes. The practices around DevOps are designed to focus on quality from a user's perspective and not on putting things off until later. Testing is not a stage in DevOps but an integral DevOps activity that exists in various forms through all areas. Integrating testing into a life cycle means that it isn't about testers versus developers, and it isn't a game of tests, but a drive to deliver customer value.



Testers play a key role in defining and delivering value to users, and developers play a key role in testing the software. Every activity is designed around preventing defects as early and as soon as possible, rather that removing them after the fact.

In a typical scenario:

- Before integrating code to the trunk, developers 'pre-flight' test their code to make sure it doesn't blow up the trunk
- During the continuous integration (CI) and code commits from multiple developers, integration testing is used to verify merges
- During the continuous testing phase where nightly and weekend regression runs are scheduled and automated for trunk and release branches, it is testing that does the job of finding problems before the software release
- During the development process, the verdict trends from testing are a primary measure of progress
- During the release deployment phase, more testing verifies if the release packages are ready for release

DevOps avoids the problems created by having a 'big-bang' testing right from the start to the end of the cycle, such as release delays and quality issues.

TESTING MATURITY IS A KEY DIFFERENTIATOR

Testing maturity is a key differentiator of overall DevOps infrastructure maturity. Many organizations can automate their builds, integrations, and delivery processes but still have trouble with the subtleness of test orchestration and automation. Testing architects and testing teams play a vital role as they offer their expertise for test design, test case development, and test automation with DevOps.

Whether the organization is using a model-based testing or behaviour-based test creation, testing is a vital part of the overall DevOps process – not only to ensure code changes work and integrate well, but also to ensure the changes do not blow up the product.

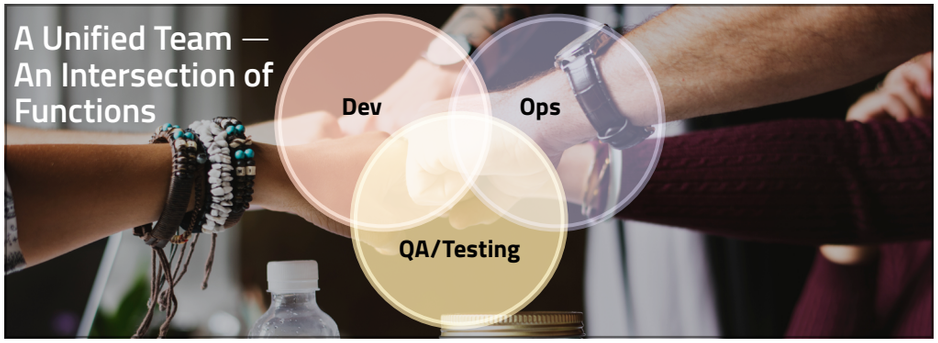
MANAGING TESTS IN DEVOPS

Test management is a long-established and accepted discipline in application development and maintenance projects. With established processes and tools to support, it guarantees a well-defined level of software quality. Test management tools provide the core capability to support basic testing process requirements, which is usually the initial important step, before attempting to take efficiency to the next level with test automation.

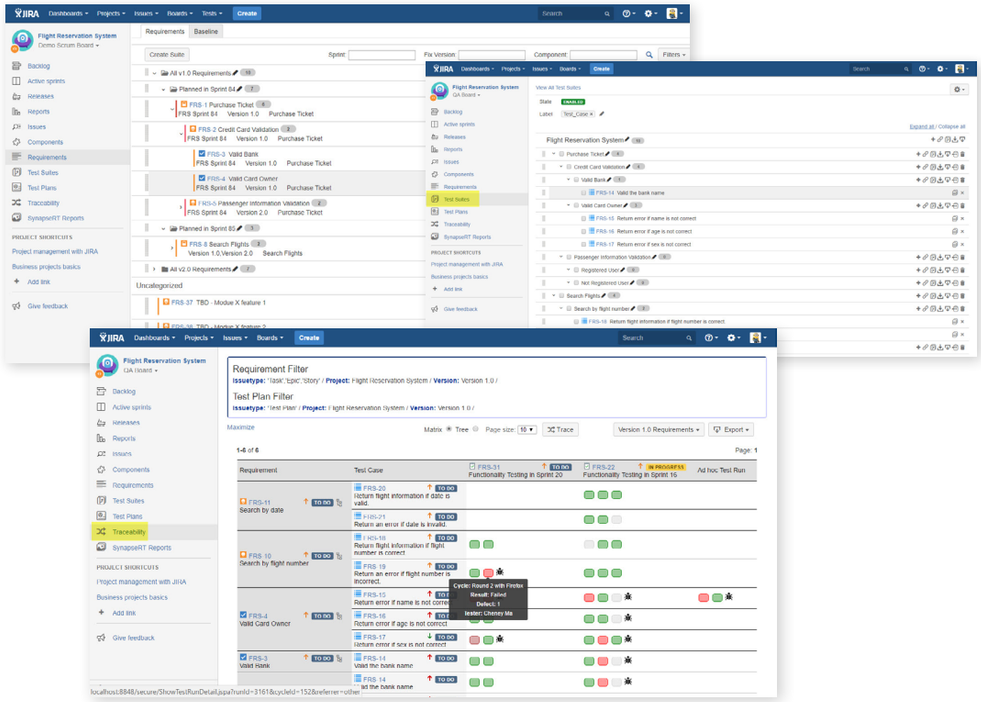
In re-examining all testing activities, the indication is that IT organizations struggle to keep up with rapid changes, varying complexity, and diversification of business and technology. For example, in web and mobile development initiatives, testing across browsers, platform and devices is becoming increasingly complex. Large or small, we still see organizations using traditional tools such as spreadsheets and word processors to manage their testing efforts.

Driven by demands to improve productivity, users are in need to have improved function to manage such complexities in testing. They also recognize the benefit from tools that work together, as well as from integrated solutions that bridge the silos with workflows and reporting. Moreover, in DevOps, the critical component is the need to improve communication and collaboration between IT team disciplines.

Therefore, test management tools nowadays have more added capabilities and specific integration elements to supplement fundamental test management capabilities as part of an agile planning. A notable example is having test management capabilities integrated into one of the most popular developer tools — Atlassian Jira.



TESTING INSIDE JIRA



Jira is an issue and project tracking software from Atlassian. According to recent surveys, Jira is the number one software development tool used by agile development teams. Many teams are using it as well for test case management so that development and testing can stay in one system. However, Jira wasn't designed for test case management and using it for this purpose imposed many constraints and limitations.

To address these limitations, many vendors have offered test management solutions within Jira. Whether it is Altassian Jira hosted in the cloud or on their own servers, organizations can extend their use of Jira to include test management capabilities using a test management app. synpaseRT is one example of this solution. With this kind of app, users can create, plan and execute tests in their familiar Jira environment, which leads to high level of collaboration and visibility into their work.

TESTING AS PART OF END-TO-END DEVOPS PROCESS

Because DevOps promotes collaboration between development, quality assurance, and operations, there is not a single product that can be considered as the definitive DevOps tool. Often a collection of tools from a variety of vendors, are used in one or more stages of the DevOps toolchain. As organizations strive to develop a toolchain to support DevOps practices to speed up the movement of releases through the toolchain, they have to deal with many issues including tool integration and implementing automation across the DevOps pipeline.

While the test management capabilities of apps like synapseRT are inherently integrated with Jira, it does not mean that it is integrated to other systems being used to develop and deliver applications. For example:

- Other testers or developers are using other tools for work, test and defect management (such as HPE ALM/QC, Microsoft TFS, IBM RTC, CA Agile Central, or others)
- Teams using Jira would like their work to participate in the broader, connected application lifecycle (by connecting with requirements management, PPM, test automation, or DevOps tools)

Most modern integrations are being done at an API level (for example, RESTful APIs). But in some scenarios, deeper integration may be required to ensure that specific parameters and data can be exchanged or shared cohesively.

ConnectALL is an example of a modern integration technology platform that can support such integration scenarios. ConnectALL can synchronize artefacts in Jira, including those enabled by synapseRT, to artefacts in other systems. For example, ConnectALL can be used to synchronize:

- User stories and epics from Jira to other tools that manage requirements
- Defects in Jira to other tools managing defects and issues
- Test executions and their results from the Jira/synapseRT combination to tools managing test cases and their results

CONCLUSION

It is important to understand the specific demands of the organization and the objectives it is trying to achieve, which much account for aspects such as:

- Variations in the development approaches and processes that must be supported (DevOps, agile, waterfall, or mixed)
- Planned scale of deployment (such as the roles involved, number of people, locations, breadth of project types to cover, multiple sites, and multiple vendors)
- Support for complex and regulated processes
- Support for incumbent or anticipated development or planning related toolset, including the need for integration

Use the information collected above to supplement the evaluation of the potential support and optimization that the test management tool can provide. The test management tool should be able to map specific requirements for the testing process.

Lastly, put in place a plan for acquiring the tool that considers these aspects:

- Integration capabilities
- Options for embedding the test management tool in the overall application delivery life cycle
- Learning curve and the costs involved in using the tool
- Licensing and maintenance cost of the tool
- Services offered by the vendor
- Cost involved in creating test cases or migrating existing test cases

The right test management tool for DevOps is one that enables teams to work collaboratively in different areas — automated build, automated testing, and automated provisioning of infrastructure for deployment — in order to speed up the release of high-quality software.

Doing that effectively means it should be able to integrate with other project management, issue tracking and automation tools in your DevOps toolchain. It also should have live reporting features since you need to maintain real-time visibility into the products in your DevOps pipeline. This is important so that information about bugs, inefficiencies or other issues can be shared and acted on in real-time.

Consider test management solutions like synapseRT that can help you ship software faster without compromising quality and therefore successfully enabling a DevOps element of continuous delivery. For more information,

visit https://www.go2group.com/synapsert/

or contact us at sales@go2group.com.

ABOUT synapseRT

synapseRT, developed by Go2Group, is a powerful test management tool integrated with Atlassian Jira, which not only provides rich features and ensures substantial cost benefit, but also offers flexibility and ease-of-use across different users, streamlines tracking capabilities, enables real-time reporting and automation integration, and has collaborative capabilities and scalability across development processes.

ABOUT ConnectALL

ConnectALL is a hybrid self-service application integration solution that connects multiple tools and applications, enabling a company's development and management teams to collaborate efficiently and flawlessly across multiple development platforms. Easy-to-buy, easy-to-install, and easy-to-use, ConnectALL meets strict enterprise governance requirements. It leverages commercial Enterprise Service Bus (ESB) technology to achieve an enterprise-grade infrastructure with clustering, multi-tenancy architecture, multiple server support both in the cloud and on-premise, traceability, and audit trails.

ABOUT Go2Group

Go2Group is a global provider of IT delivery solutions that help enterprises achieve businesses agility. Founded in 2002, the company provides products and services for ALM (Application Lifecycle Management), DevOps, cloud, and agile practices. It specializes in complex integration projects involving multiple platforms and multiple teams.

Learn more about the test management and integration solutions.

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