

SAP Quality Engineering

Risk-Based Test Automation
for S/4HANA

EY's Agile Business Transformation enabled by SAP technology can help organizations address challenges in the digital era. Our global and local partnership with SAP focuses on more than technology alone. We take a comprehensive, business-first view to address strategy, customer value, user experiences, processes, technology and operational impacts in tandem.

THE NEED

SAP has mandated to all its clients to **migrate to S/4HANA** by 2030 where extended maintenance of the legacy ERP suite will cease

SAP S/4HANA®

Protecting time, cost and quality are paramount for these major transformational programmes



Upgrading to S/4HANA is an involved, complex process, requiring significant transformation beyond simply updating the software

Innovative and highly integrated digital and automated Quality Engineering solutions are critical to a successful transformation journey

BACKGROUND

Moving to SAP S/4HANA presents significant change for organizations using SAP. As with any transformation or replacement programme there is the requirement to provide business assurance and confidence that operations will continue as expected during and after the migration.

Regression testing is a critical component of the S/4HANA migration with a robust yet agile strategy required. Regression testing is a 'must have' in the test strategy and its importance is amplified in platform upgrade, migration or replacement programmes. In the fast-paced digital landscapes where regular upgrades, patches and releases are the norm, automation of regression testing is considered mandatory. Moving to SAP S/4HANA is no exception to this because SAP S/4HANA is aligned with an agile way of development. Continuous delivery and frequent software releases are expected by today's business and their customers.

The regression testing strategy to underpin a seamless and timely transformation or migration must contain the following elements:

RISK-BASED TEST APPROACH

AUTOMATION FRAMEWORK

TOOL SELECTION

Deployed as an integrated solution we can consciously select, prioritise and execute automated regression tests based upon agreed business and technical risk.

OUR APPROACH

01 PRIORITISING CRITICAL PROCESSES USING A RISK-BASED TEST APPROACH

Identification and documentation of business processes is the starting point and the most critical activity to get right. The business processes are a key basis for all testing activities through the delivery lifecycle. In a complex business environment there are potentially hundreds or thousands of processes. Existing documentation may need to be analysed and updated depending on the level of governance and maintenance existing. With an agreed set of business processes, business and technical stakeholders can objectively assess them resulting in a 'risk rating' that enables prioritisation. The highest priority processes agreed critical to business operations will be executed first and with the deepest coverage. As priority reduces so therefore does the urgency and depth of testing.

02 INCREASING TEST COVERAGE THROUGH AN AUTOMATION FRAMEWORK

The risk rating given to a business process will assist the decision making for automation. High priority, business critical processes that will be exposed to frequent change are strong candidates for automation. A framework-based automation approach provides an environment for the automation test scripts to be executed. With the use of a framework, users can efficiently work with the automation test scripts, including development, execution, and reporting. Some of the other advantages include:

SCRIPT REUSABILITY

COVERAGE AND TRACEABILITY

LOW MAINTENANCE COST

MINIMAL MANUAL EFFORT

FREQUENT AND TIMELY REPORTING

Achieving a high percentage of regression automation enables testing performed by humans to focus on detecting deep rooted, potentially harmful defects using techniques like exploratory testing.

03 TOOL SELECTION

The choice of tooling requires careful consideration. The choice of automation tools (it is very common to have a suite of integrated tools) must not prohibit testing and release timelines. The selection must consider existing investments made in tools, licenses and any training. Achieving a harmonised organisational-wide testing tools architecture should be aimed for. This is essentially an agreed set of tools and approaches adopted enterprise-wide and, where possible, by the extended supplier ecosystem of vendors and partners.

04 EMBED DATA AUTOMATION AND MIGRATION

Extending the automation framework to provide coverage for data extraction, transformation and migration increases the return on investment made to automate. Integration of regression tests with prescribed and rich datasets, readily deployable to environments enables a defined and predictable state to run tests against changed or migrated system components. Test errors or script failures due to unmanaged data, delays timelines and incurs unnecessary cost.

SUMMARY

Automated regression testing delivered through a clearly defined strategy is critical to the success of both new and existing business processes continuing to work as expected in the new SAP S/4HANA landscape.

Automation increases execution capacity by running tests in parallel across all environments (dev, test, production) however master data and transactional data must be as close to the production environment as possible. There should be identical conditions between the production environment and the lower environments. This will ensure that tests are performed with real data and predictable results through the release process.

Migrations will need to be completed before 2030, it is vital to start planning now for a quality driven risk-based approach to S/4HANA migration.

For further details on how our SAP Quality Engineering Solutions can assist please contact:



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