



SAP S/4HANA migration guide: Key steps for faster, safer SAP updates



SAP customers face a major challenge when migrating their businesses to S/4HANA. While upgrading to S/4HANA promises many benefits, it is not without risk. Not only will the migration impact SAP applications, but also the customizations and connected technologies (UIs, APIs, mobile, databases, third-party applications, etc.) that collectively run your business. Poorly planned migrations can lead to cost overruns, system downtimes, security lapses, and other serious business consequences.

And the migration is only the beginning. With S/4HANA, SAP is promising more frequent SAP updates than ever before. To prepare for these updates, organizations need to be confident that their development, testing, and training processes can handle the speed and scope required to implement these updates safely, without risk to the business.

Whether your migration approach is a new implementation (greenfield approach) or system conversion (brownfield or bluefield approach), this guide will show you how to gain certainty in your roadmap to S/4HANA and avoid false starts and unexpected costs along the way.

In this guide, we'll cover the 4 crucial steps to a successful S/4HANA migration:

1. Get a custom S/4HANA migration assessment to identify the technical and business risks involved.
2. Identify the testing needed to address those risks.
3. Optimize your test suite for resilient, risk-based testing.
4. Use a continuous testing platform to automate and accelerate ongoing testing.

1. Get a Custom S/4HANA Migration Assessment

Like a crystal ball, a S/4HANA migration assessment lets you see into the future. It tells you what impact a move to SAP S/4HANA will have on your business from multiple perspectives, such as development, testing, integration, security and training. Armed with this insight, you'll know exactly:

- What custom code will break.
- The impact on other systems that interface with SAP.
- The impact on your roles, authorizations and profiles.
- How to accurately size and safely reduce your data.

Such upfront analysis will help you accurately allocate time, resources and cost, whether you plan to do the upgrade in- house or outsource to systems integrators and consultants.

Tricentis LiveCompare automates S/4HANA migration assessments, performing deep analysis of your "as-is" and "to-be" SAP application environments. Through this analysis, it determines the impact of the migration on

your customizations, configuration, and usage, as well as highlights the business processes that are not yet supported by S/4HANA.

With this assessment, you will understand the exact risks and opportunities involved in your migration to S/4HANA.

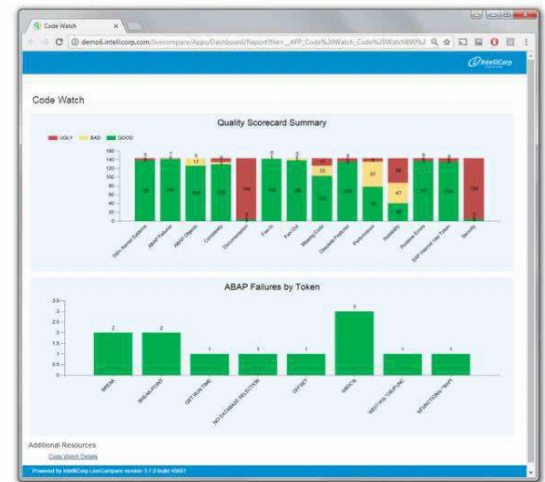
Custom code impacts

Benchmark studies show that 28% of business process functionality depends on custom code. Over time, custom code grows in complexity, making it harder to change, harder to test, and harder to support. Migration to S/4HANA is the perfect time to get a grip on your custom code in order to reduce technical debt moving forward.

During an assessment, LiveCompare analyzes all of your custom ABAP- stack based applications. It identifies what’s incompatible with S/4HANA, and proposes any corrections needed.

It also finds:

- All the custom code that will break;
- All the duplicates to eliminate;
- All the clones that can be returned to standard;
- All the unused objects to retire;
- All the complex custom code to refactor;
- All the unsecure custom code;
- All the slow code; and
- All the out-of-date code.



Custom Code Analysis by Tricentis LiveCompare

If you have a highly customized system, after reviewing your custom code assessment you may decide it makes more sense to do a greenfield implementation. Or perhaps a lot of that code can be returned to standard, making a brownfield implementation the option for you.

Impacted interfaces

It’s critical for your revenue and reputation that impacted interfaces are identified before migrating to S/4HANA. Key questions to answer include:

- What systems integrate with our SAP system? Are we aware of them all?
- Which integration points will break when we migrate to S/4HANA?
- What systems supply data to our SAP applications?

- What custom IDOCs, BAPI, BDCs, ODATA, and Call Transactions will be affected?

LiveCompare answers all of these questions for you automatically as part of its assessment. It does this by connecting to your SAP systems and discovering integration points that use standard SAP interfacing techniques such as IDOC and BDC. Each integration point is analyzed to find what's changed between your as-is and to-be systems. Impacted interfaces are highlighted in the dashboard with full details available to integration specialists.

Security impacts

When making changes to SAP applications, organizations need to know what impact the change will have on their security and governance provisioning. User access to SAP systems has a habit of increasing over time, making it difficult to track roles, profiles, and authorizations. Protecting critical data from unauthorized access and ensuring compliance with rules and regulations is important so that issues can be prevented before becoming production problems.

Key questions to answer before migrating to S/4HANA include:

- What roles and profiles are impacted?
- Which authorizations are new or deleted? How are these related to roles and profiles?
- What custom code is a security risk?
- Are there Segregation of Duty violations?
- Are roles synchronized across the landscape?

LiveCompare's automated analysis answers each of these questions and provides a simple way to identify differences across your SAP application landscape. This can help you develop and implement proactive ways to prepare for audits and manage risk and security across your SAP landscape.

User impacts

Upgrading to S/4HANA will change how people use and interact with your SAP applications. To avoid productivity dips, some users will undoubtedly require training to prepare for these changes.

Key questions to ask when assessing your migration include:

- What business areas are impacted?
- What functionality will become obsolete?
- Who will need retraining?

LiveCompare's migration assessment provides upfront visibility into how people will be impacted across your business. It analyzes all of the transactions that will be impacted and cross-references them with the people

who actually use them. This enables trainers to identify who needs re-training ahead of your “go live” date, ensuring zero business disruptions after your move to S/4HANA.

Data impacts

Data sizing is an important part of your migration. Your aim is to reduce the amount of data you have without compromising system performance. LiveCompare assesses your data and understands what you actually need versus what can be retired. This is great for understanding how much memory is required for a move to SAP S/4HANA. Minimizing and optimizing your data will enable you to maintain healthy systems moving forward.

2. Identify Which Tests Address Your Risks

After your migration assessment, you now know the risks your business faces when migrating to S/4HANA. Your next step is to make sure you can properly test against those risks before going to production.

The classic approach to testing SAP applications is to test everything. At best, this means “run all the tests that are documented”, which provides no guarantee that you are testing the impacted functionality.

To properly address the risks of your S/4HANA migration, you need to know:

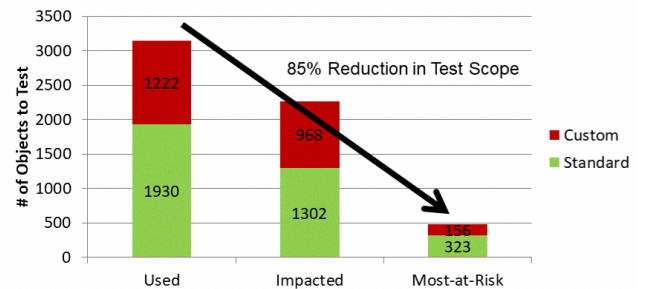
- What to test;
- Why it needs to be tested;
- What end-to-end business transactions *can* be tested;
- Where there are gaps in your tests;
- Who are the best business users to help close those gaps.

These answers require an in-depth understanding of your current SAP usage, your end-to-end landscape, the changes included in S/4HANA, and your testing solution. Without this understanding, your testing is likely to be both inefficient and insufficient.

Through its migration analysis, LiveCompare knows exactly which of your critical business functions will be impacted by the migration to S/4HANA and your actual usage of those functions. (There’s no need to test functionality your business does not use.) This lets you replace the time-wasting “test everything” approach with a risk-based approach to testing that focuses on your most at-risk objects.

Once you understand what objects need to be tested (and why), you next need to know if you even have the ability to test those objects.

To understand which objects can be tested and where there are gaps, LiveCompare integrates with Tricentis Tosca, the most advanced and comprehensive test automation platform for SAP. With support for 150+ technologies, Tricentis Tosca can reach across your entire landscape when testing end-to-end business transactions. By integrating with Tricentis Tosca, LiveCompare can report which test cases are available and what gaps (if any) need to be filled to cover the risks involved in your migration.



Combining risk-based analysis with smart test platform integration lets you test less without compromising system quality. In fact, a recent survey revealed LiveCompare has helped customers reduce their SAP testing by 85%!

3. Optimize Your Test Suite

Once you have identified what needs to be tested, your next step is to optimize your test suite so your organization is ready to test the changes in S/4HANA and beyond.

Many organizations use scripts to automate their testing. However, scripts are brittle and decay over time. (Simply adding a new field to a screen can break a scripted test!) The maintenance burden required to keep scripts up-to-date tends to erode most test automation initiatives, and S/4HANA is sure to include many interface changes that require script maintenance.

In fact, as part of your migration analysis, LiveCompare reports the impact of S/4HANA on your test cases. It tells you:

- Which test cases will break after the migration and need to be fixed;
- Which test cases become obsolete after the migration and should be removed; and
- Which test cases are missing and need to be created to properly test the migration.

To create a resilient, sustainable test automation approach for your SAP S/4HANA migration, consider switching to a model-based test automation (MBTA) approach. Tricentis pioneered the concept of model-based test automation, which requires no coding or special technical skills, enabling anyone from developers to business experts to contribute to testing. It works by scanning your UIs and APIs to create a human-readable model of your applications. When your applications change (e.g., a field is added or removed), you just update the model and the change is automatically propagated to all impacted tests. No further manual intervention is required.

Logical Name	Value	Action	Technical Name	Value Range
Create Vehicle Insurance			Vehicle Data	
Enter Vehicle Data			Make	-
Make	Audi	Input	Engine Performance [kW]	-
Engine Performance [kW]	200	Input	Year of Construction	2015;2014;2013;2012
Year of Construction	{Year}	Input	Number of Seats	1;2;3;4;5;6;7;8;9
Number of Seats	5	Input	Fuel	Petrol;Diesel;Gas;Other
Fuel	Petrol	Input	List Price [\$]	-
List Price [\$]	35,000	Input	License Plate Number	-
License Plate Number	B-CD 123	Input	Usage	Private;Commercial
Usage	Private	Input	Annual Mileage	-
Annual Mileage	10,000	Input	Next	{CLICK};{RIGHTCLICK}
Next	{CLICK}	Input	Insurant Data	
Enter Insurant Data			Product Data	
Enter Product Data			Start Date	01/03/2016;01/04/2016
Start Date	01/03/2016	Input	Insurance Sum [\$]	3Mio;7Mio;10Mio;15Mio
Insurance Sum [\$]	7Mio	Input	Payment Option	Yearly;Quarterly;Monthly
Payment Option	Yearly	Input	Next	{CLICK}
Next	{CLICK}	Input	Quote Details	
Verify Quote Details				

A model-based test case in Tricentis Tosca

4. Adopt Continuous Testing

The need for testing does not begin or end with your S/4HANA migration. SAP will continue to issue updates and your business will continue to develop customizations. However, the migration to S/4HANA does present an opportunity (and obligation) for your organization to adopt the continuous testing processes required to achieve the transformational benefits promised by S/4HANA.

As organizations invest significantly to modernize their applications, the reality is that legacy testing tools and outdated testing practices will delay release cycles and ultimately erode the expected business benefits of these investments.

This is particularly the case in the SAP arena, where it's estimated that over 50% of SAP customers currently aren't using any form of advanced test automation solutions, and that 8 out of 10 SAP users are still reliant on manual testing tools as their primary form of testing. Increased testing backlogs confirm that traditional software testing approaches simply can't handle these increased testing demands. This not only causes issues when it comes to IT productivity – it also significantly increases the risk of software failure and blocks business improvement. Introducing this level of business risk is clearly unsustainable and explains why continuous testing is now such a priority.

Continuous testing helps enterprises:

- Modernize testing to reduce the risk of change;
- Reduce risks and delays in S/HANA migrations;
- Accelerate quality processes for Agile speed;
- Ensure flawless performance in the cloud.

Tricentis is the #1 continuous testing platform for SAP

Tricentis is the only continuous testing vendor to achieve unanimous "leader" status. This honor is based on our technical leadership, innovation, and a Global 2000 customer base of 1600+ companies, including global enterprises such as Allianz, ANZ Bank, Cisco, Dolby, Experian, First Data, HSBC, Merck, Office Depot, Samsung, Swiss Re, Starbucks, Telstra, UBS, Vodafone, Whole Foods, and WorldPay. Customers rely on Tricentis to achieve and sustain test automation rates of over 90 percent—increasing risk coverage while accelerating testing to keep pace with Agile and DevOps.

Conclusion

For an SAP S/4HANA migration project to proceed on time and on budget, you need to first be aware of the risks involved. A migration assessment from LiveCompare provides automated migration assessments based on your existing SAP infrastructure, typically within a single day.

A risk-based testing approach can then provide fast feedback on whether your migration to S/4 will succeed or bring your business to a standstill. To be truly effective, this requires extremely high levels of automated testing.

Finally, the need for fast, continuous testing persists well after the migration is complete. If you invest in establishing a resilient, sustainable test automation approach for your SAP S/4HANA migration, you can continue leveraging that investment to quickly identify and remediate any future changes that negatively impact your core business processes.

To ensure a smooth S/4HANA migration, rely on Tricentis: the SAP testing industry leader with a proven track record of guiding enterprises along successful SAP S/4HANA migrations. Organizations who adopt Tricentis test automation not only reduce testing cycles from weeks to minutes—they also catch 50% more defects prior to production.

Free S/4HANA Migration Assessment Offer

For a limited time, Tricentis is offering free migration assessments to help organizations prepare for S/4HANA. To get started, go to the [S/4HANA Migration Assessment](#) page on Tricentis.com.

About Tricentis

Tricentis is the global leader in enterprise continuous testing, widely credited for reinventing software testing and delivery for DevOps and agile environments. The Tricentis AI-based, continuous testing platform provides automated testing and real-time business risk insight across your DevOps pipeline. This enables enterprises to accelerate their digital transformation by dramatically increasing software release speed, reducing costs, and improving software quality. Tricentis has been widely recognized as the leader by all major industry analysts, including being named the leader in Gartner's Magic Quadrant five years in a row. Tricentis has more than 1,800 customers, including the largest brands in the world, such as Accenture, Coca-Cola, Nationwide Insurance, Allianz, Telstra, Dolby, RBS, and Zappos.

Learn more about Tricentis' SAP testing capabilities [on our website](#).