



Infosys

# Infosys Integrated SAP Testing Solution with Micro Focus

For Micro Focus and Alliance Partner use only

# SAP system implementations form the core of many enterprises and execute many business-critical transactions. SAP uptime is essential to a thriving business.

SAP is also one of the most complex applications to install, upgrade, and maintain. Frequent customization adds to this complexity. Strong testing and quality management programs are necessary to ensure that SAP is highly available and maximizes organizational productivity.

Infosys' integrated SAP testing solution is a tailored approach designed to deliver an optimum SAP testing experience to clients using the Micro Focus Application Delivery toolset. This helps ensure re-usability, efficiency, faster time-to-market, and higher productivity. Micro Focus Application Delivery Management (ADM) offers a wide range of solutions to help ensure successful SAP transformation at any scale. The portfolio helps position you for success with lifecycle management, functional testing, and performance engineering.



# The Challenges

SAP transformations are typically a boardroom initiative, having the attention of CXOs and Business Process Leads worldwide. With more than 437,000 customers in more than 180 countries—including 92% of the Forbes Global 2000—investment in SAP is highly visible. SAP constantly innovates, with advances in technologies such as SAP HANA and SAP Fiori. It enables new platforms such as the Internet of Things and the cloud through the SAP Cloud Platform. At the same time, many SAP customers are transitioning to DevOps, which introduces additional challenges. Tying all these challenges together requires unprecedented technological support to maintain business continuity and consistently high levels of quality.

When dealing with a mission-critical application such as SAP, you must start with optimized value streams. Then you can shift to continuous quality and security, accelerated application delivery, increased service availability, and modernized systems of engagements to improve user experience.

SAP is fundamental to most of its customers' business processes and runs across the entire organization. In many cases, it also manages processes for customers, suppliers, or partners. An interruption to any SAP process could potentially have disastrous consequences for everyone involved.\*

## Business challenges for SAP customers



**No 'One Size Fits All' migration path.** There's no single SAP migration blueprint that works for all organizations. Every migration is unique and has its own distinct challenges.



**The show must go on.** Updating SAP often means an in-flight update to business-critical processes. When your business depends on SAP, any downtime can be catastrophic.



**Data security.** Data must be secured and comply with data protection and privacy regulations. You need an expert to understand the regulations and their requirements, and ensure that any changes to the system don't leave the company liable.



**Hard-to-find specialized staff.** It can be difficult to find and hire SAP experts who have been through a similar transformation and who can bring their prior experience to the table.



**Quality must remain high.** Any errors in an SAP system, or in data, can propagate quickly to numerous internal and external systems. Maintaining integrity is paramount, and requires extensive testing.



**Enabling digital.** Winning the race to innovate requires a high-speed approach across multiple systems and various integrations. These require different approaches for development and testing including API, services, and mobile adoption.

## Operational and technical challenges

1

Complex testing of end-to-end testing scenarios across SAP, other enterprise apps, and third-party systems

2

Extensive test cycles for regular product releases and technical upgrades

3

Urgent need to enable DevOps and continuous testing for SAP deployments

4

Limited testing windows for large test and regression inventory

5

Complex process and variants in test data

6

Missing business process coverage

7

Inconsistent test reporting

8

Long QA cycles

\*Source: SAP Company Information: <https://www.sap.com/corporate/en/company.html>

# The Solution

The Infosys-Micro Focus Integrated SAP testing solution provides end-to-end testing for the SAP landscape. Using a comprehensive suite of Infosys' intellectual property and tools built on top of the Micro Focus ADM portfolio enables customers to adopt an accelerated path for their SAP business transformation programs or to simply maintain existing SAP systems. This approach is built on extensive experience managing multiple customers' SAP landscapes and as custodian to ensure quality, velocity and transparency.

The testing solution caters to a wide range of customers and their SAP journeys:

- ✓ Greenfield SAP S/4 or C/4HANA implementations (cloud or on-premises)
- ✓ SAP ECC to SAP S/4HANA conversions
- ✓ System landscape and consolidation of SAP systems
- ✓ SAP roll-outs across markets and plants
- ✓ SAP maintenance and support across releases
- ✓ HR transformation with SuccessFactors
- ✓ Cloud SAP product implementations such as Ariba and Concur
- ✓ SAP Cloud Platform integration

## What we achieve



Comprehensive E2E test solution for an enterprise with SAP and non-SAP apps



Test automation across software development lifecycle phases



Higher test coverage with reduced scope through impact and risk-based testing



Reduced QA critical path with 20 to 25 percent reduced testing cycle time



Zero defect leakage with no critical or high defects



Optimized test inventory with 25 to 30 percent reduced effort



Accelerated automation by more than 85 percent



Test automation coverage for SAP landscape



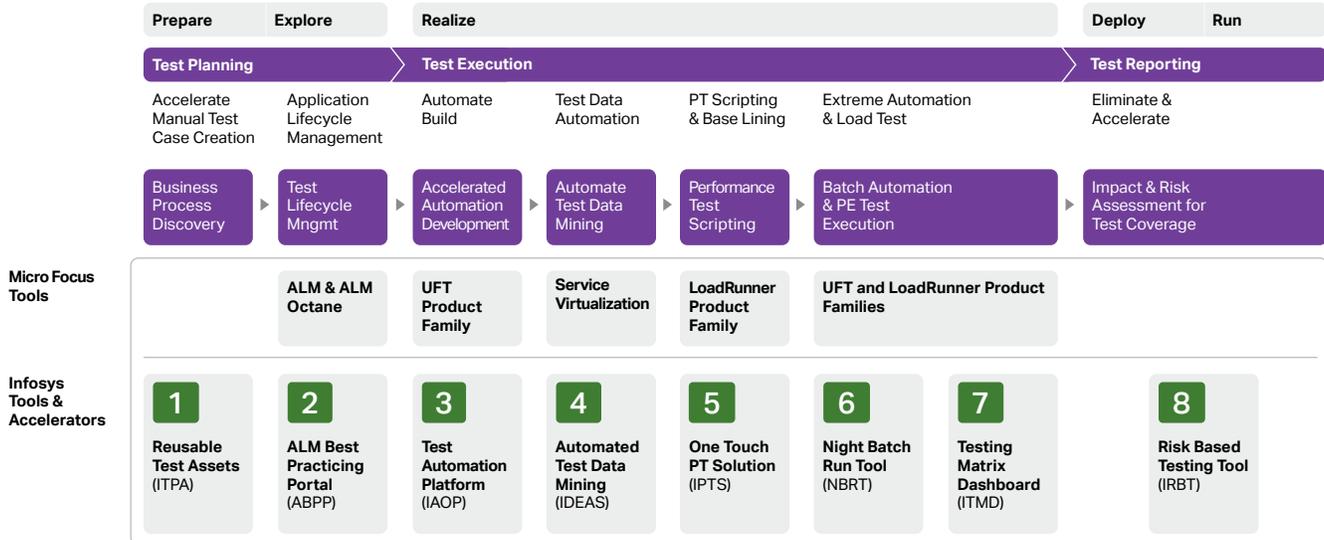
Continuous testing for rapid deployments

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Infosys' intellectual property and Micro Focus' ADM portfolio enable customers to adopt an **accelerated path** for their SAP business transformation.



# Infosys E2E Testing Solution for SAP



## System Components

### 1 Infosys Test Planning Solution (ITPA)

An accelerator pack of more than 2,000 pre-built standard test cases and test scenarios across SAP ecosystem (ECC, S/4 HANA, C/4 HANA, SuccessFactors, ARIBA, Concur, etc.).

**Benefits:** ITPA jump starts test planning with up to 30 percent effort reduction. It is easily imported into Micro Focus Application Lifecycle Management (ALM).

### 2 ALM Best Practices Portal (ABPP)

Exhaustive library of custom workflows and in-house solutions (macros, executables, and adapters) specifically designed for various out-of-the-box ALM requirements based on our broad client experience.

**Benefits:** Ready to use reusable Micro Focus ALM custom components designed to improve productivity on test management activities.

### 3 Infosys Automation Orchestration Platform (IAOP)

Infosys Micro Focus Unified Functional Testing (UFT) automation framework offers automated components for more than 1,500 reusable SAP standard T-codes and more than 100 SAP S/4 HANA Fiori apps, and pre-built components for SuccessFactors, Ariba and Concur.

**Benefits:** IAOP enables faster component stitching to create end-to-end scenarios and automated test data. It saves up to 30% effort of the initial framework build and Micro Focus automation scripting provides a launching platform for extreme automation.

### 4 Infosys Test Data Mining Solution (IDEAS)

IDEAS helps simplify test data needs for your test execution in SAP.

The tool consists of two major functionalities: extraction of SAP data through pre-defined SQVI queries for various business processes, and validation of the test data in SAP.

**Benefits:** IDEAS helps resolve master data availability and integrity, reduce business subject matter expert dependency by up to 70 percent, and provides up to 20 percent reduction in effort during test execution.



5

### Infosys One Touch Performance Testing Solution (IPTS)

IPTS automates performance test execution, monitoring, and reporting with integration capabilities to enable CI-CD for enterprises.

**Benefits:** Provides scalability and flexibility for efficient testing in short cycles with high quality and coverage.

6

### Infosys Night Batch Run Tool (NBRT)

NBRT enables continuous unattended test execution by managing automated script batch execution remotely.

Features include automatic monitoring and re-start/re-run execution on failure.

Start-stop batch execution through emails supports key stakeholders to monitor and manage the automation in real-time.

**Benefits:** NBRT provides a platform for true unattended automation run with increased execution productivity. It helps test teams achieve faster time to market and seamless batch execution.

7

### Infosys Testing Matrix Dashboard (ITMD)

A comprehensive dashboard to manage program testing across the software delivery lifecycle with transparent reporting.

Real-time synchronization with ALM on requirements, test plans, execution results, and defect status to create an extensive matrix report that showcases Test, Defect progress across applications and phases.

**Benefits:** Fully customizable to client requirements and cuts reporting efforts up to 50 percent. ITMD streamlines the process of matrix reporting for releases.

8

### Infosys Risk-Based Testing Tool (IRBT)

Analyzes impacted programs, functional modules, tables and structures from transports.

Identifies impacted T-codes/objects when changes are made in a release, and maps the list of impacted test cases and non-coverage of test cases.

Impact assessments of objects for every SAP transport moved to production.

**Benefits:** IRBT ensures 100% business process test coverage of impacted objects with reduced effort.

# The Micro Focus Tooling Solution Components

Micro Focus delivers a wide portfolio of solutions that help organizations manage and execute quality SAP transformations at speed. Whether application lifecycle management, functional testing, or performance engineering, thousands of companies around the world use Micro Focus to improve the uptime and reliability of their SAP implementations. Our users include:

- Regulated environments that require end-to-end traceability and governance throughout the software development lifecycle. We help end-to-end development, testing, and management using the Micro Focus portfolio.
- SAP's proprietary technology user interface environments, such as SAP GUI, SAPUI5, and SAP Fiori, SAP Cloud platform. These require deep technical knowledge to test effectively, and are fully supported by Micro Focus tools operated within Infosys Test Service.
- SAP landscape environments including diverse application ecosystems and dependencies to help prevent possible slowdown in development, testing, and integration activities.

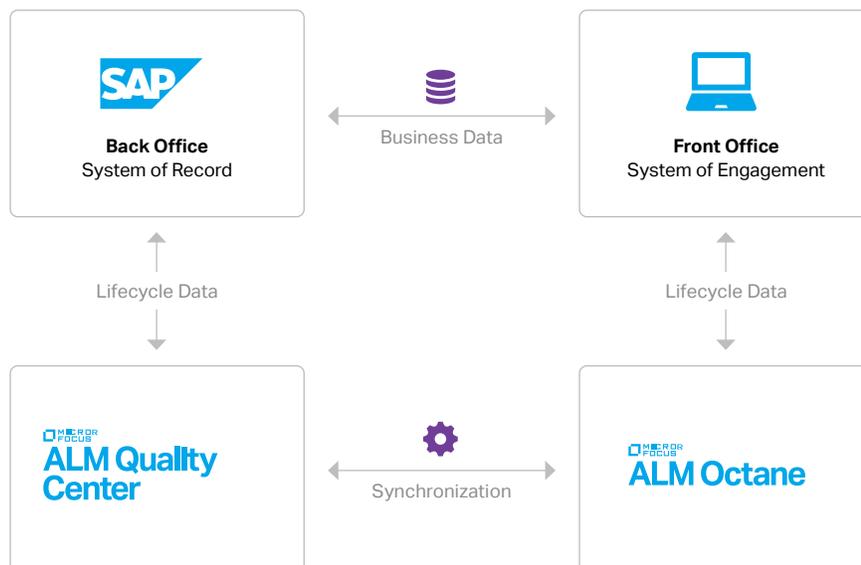
## ALM Octane

Micro Focus ALM Octane is a comprehensive Agile and DevOps management solution that supports modern SAP applications and integrated systems, and supports system of engagement and system of records needs. Micro Focus ALM Octane enables application delivery with high-quality criteria, continuous visibility and delivery across the entire SAP application lifecycle.

## ALM/Quality Center

Micro Focus ALM/Quality Center provides an integrated quality management platform including test planning and execution across the application lifecycle, to continually improve and deliver high-quality applications, such as SAP and integrated systems, on time and to ensure that business requirements and standards are met.

## System of Record vs. System of Engagement





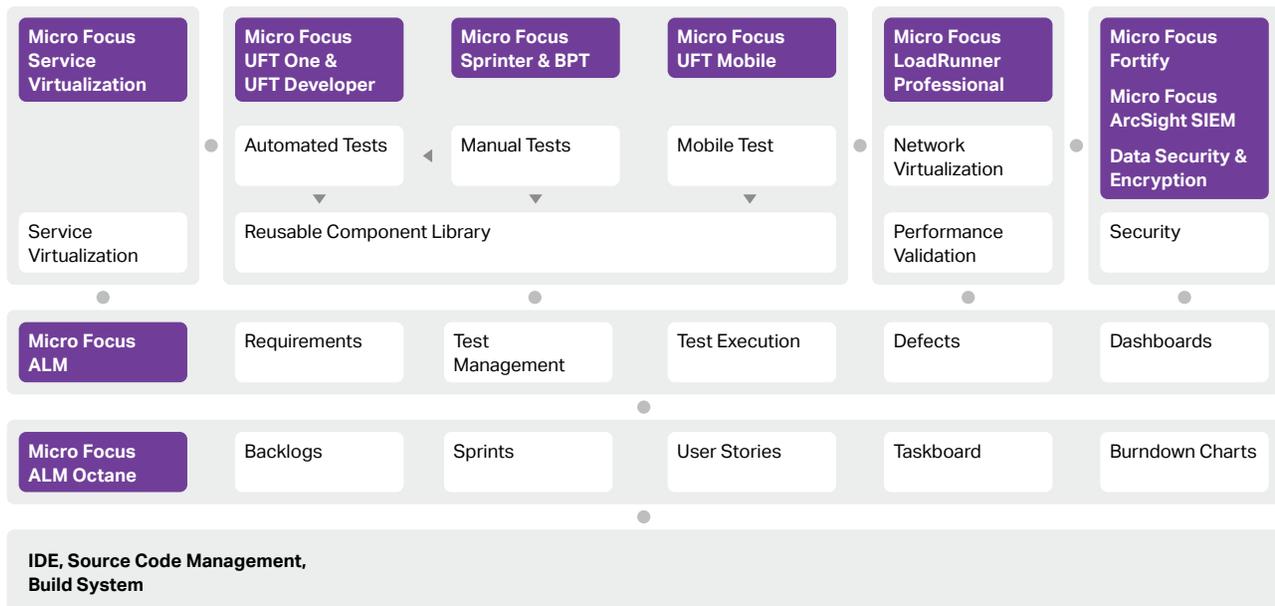
## Functional Testing

Micro Focus UFT Family of solutions provide intelligent multi-platform functional test automation with AI-based capabilities that deliver the speed and resiliency needed for rapid application changes within a continuous delivery pipeline. These solutions support SAP proprietary technologies and allow users to test services and applications through keyword driven capabilities and programming interfaces. The family includes UFT One, UFT Developer, UFT Mobile, Business Process Testing (BPT), and Service Virtualization.

## Integrated Performance Engineering

The Micro LoadRunner Family provides a unified set of enterprise-grade performance engineering solutions spanning developers to performance engineers, incorporating intelligent analytics and supporting extensive integrations with DevOps and application performance monitoring (APM) tools to deliver high-performance apps that surpass customer expectations. This enables SAP customers to engineer software quality early and into the end-user experience. The family includes LoadRunner Professional, LoadRunner Enterprise, LoadRunner Cloud, and LoadRunner Developer.

## Micro Focus ADM Toolset for SAP Customers



# SAP Testing Solution Case Studies

## 1 World-leading premium drinks business company

### Customer snapshot

- Region: EMEA/UK
- SAP Portfolio: SAP ERP (FICO, SD, MM, BW and PLM)

### Engagement scope

- Establish and run a test factory for SAP releases and upgrades.

### Tools and accelerators

- Micro Focus ALM
- Micro Focus UFT One
- Micro Focus LoadRunner Professional
- Infosys Accelerator Packs (ITPA, IDEAS, IAOP, ITMD ABPP)

### Key program asks/challenges

- Setup SAP TCoE to deliver lower testing costs, improved TCO and standardized testing processes
- Identification, setup, and administration of the tool set per program needs
- Scope coverage from refinement of test cases for all minor releases, major releases, and production validation activities

### Our solution components

- Standardization of processes and testing tools for usage across program
- Optimize and enhance test library for functional and end-to-end business process coverage and increased reuse
- Centralized test data management
- Improved release efficiencies through risk-based testing and greater than 70 percent automation

### Quantifiable benefits delivered to customer

- Optimized test repository increased reuse and resulted in 50 percent effort reduction during test planning
- Automation of 70 percent of regression tests reduced testing costs by 40 percent
- Efficient impact assessment and quality tracking through TCoE governance resulted in less than 1 percent defect leakage
- Improved test maturity within first year of service (TMMi Level 3 to 5)

### Best practices followed and applied

- Simplified, predictable, scalable service catalogue-based estimation model with industry-leading pricing
- Online reporting dashboard to get all the reports in a single place
- Tailored lead time based on the demand size and complexity to bring value in time to market and test duration



## 2 Leading pharmaceutical company

### Customer snapshot

- Region: EMEA/Israel
- SAP Portfolio: SAP FICO, MM, SD, APO, MDM, QM, SCM and PP/PI

### Engagement scope

- Set up a Managed Testing Services Organization for their Enterprise SAP Program and future rollouts

### Tools and accelerators

- Micro Focus UFT One
- Micro Focus ALM
- Micro Focus LoadRunner Professional
- Infosys Accelerator Packs (ITPA, IDEAS, IAOP, NBRT, ABPP)

### Key program asks/challenges

- Improve quality and coverage of existing FUT, FIT and end-to-end test libraries
- Reduce defect slippage
- Reduce cost of quality

- Setup quality framework

### Our solution components

- Setup quality assurance framework with a ready-to-use check list for auditing, coverage
- Regulatory compliance checks through IT Audit tool - GxP, 21CFR Assessment
- Implement automation plan for regression test suite and future rollouts using UFT One and IAOP framework
- Review test suites and bridge gaps in test coverage

### Quantifiable benefits delivered to customer

- Improved quality of existing FDS/FUT by more than 15 percent
- Improved code quality by 30 percent
- Automated coverage to approximately 85 percent
- Identified more than 170 defects through automated execution across four regression cycles

### Best practices followed and applied

- Automation coverage was extended to 85 percent (manual execution efforts) for end-to-end test scenarios
- Zero touch automation using Infosys Night Batch Tool
- Created Standards and Review Checklist documents
- Automated the pre-requisite for test data requirements, i.e. transactional data such as creating sales orders, materials document, etc.
- Automated macros used for reports, documentation, RC status



### 3 One of the largest railroad operators

#### Customer snapshot

- Region: North America
- SAP Portfolio: SAP FICO, MM, EAM and HR

#### Engagement scope

- Provide testing Services for SAP and legacy application landscape

#### Tools and accelerators

- Micro Focus UFT One
- SAP TAO/BPT
- Micro Focus ALM
- SAP BPCA
- Infosys Accelerator Packs (ITPA)

#### Key program asks/challenges

- Improve testing process inefficiencies
- Reduce higher QA cost and missed deadlines

- Optimize tool costs

#### Our solution components

- Assessment and refinement of redundant test cases
- Ensure end-to-end business process test cases in the test suite
- Implement BPCA for impact assessment and risk-based testing
- Automate regression suite

#### Quantifiable benefits delivered to customer

- 40 percent reduction in test execution effort through automation (around 60 percent)
- More than 50 percent reduction of testing efforts during SAP upgrades using BPCA impact assessment
- More than 98 percent assured test coverage during every release with accurate assessment using tools and increased business confidence
- Near zero production defects during SAP upgrades
- Outperformed SLA's for schedule, effort, and quality

#### Best practices followed and applied

- Integration of SAP TAO framework with UFT Framework to handle Netweaver automation
- End-to-end automation of payroll and LSO scenarios
- Creation of scripting standards and review checklist documents
- Adaptation of dynamic TBOM generation for BPCA



## 4 Leading automobile manufacturer

### Customer snapshot

- Region: North America
- SAP Portfolio: SAP FICO, MM, SD, HR and APO

### Engagement scope

- Set up a TCOE for their SAP Global Template initiative across plants in US, India and Thailand

### Tools and accelerators

- Micro Focus UFT One
- Micro Focus ALM
- SAP TAO / BPT
- Infosys Accelerator Packs (ITPA, IDEAS, IAOP)

### Key program asks/challenges

- Standardize testing processes across complex landscape with multiple SAP and non-SAP applications
- Optimize testing efforts across multiple parallel releases and projects
- Establish change impact analysis process
- Create baseline regression suites



### Our solution components

- Initial assessment and refinement of redundant test cases
- Ensure end-to-end business process test cases in the test suite
- Perform analysis for test automation feasibility using SAP TAO/BPT
- Perform continuous maintenance of the regression suite for changes and enhancements

### Quantifiable benefits delivered to customer

- Assessed, refined, and consolidated more than 17,000 test cases to 5,000 test cases with enhanced coverage
- 50 percent reduction in test execution effort
- 70 percent reduction in test scope
- 30 to 40 percent automated regression tests
- 80 to 90 percent test coverage of core business process
- Leveraged automation to validate security role changes for greater than 10,000 plus T-Codes

### Best practices followed and applied

- Automated the pre-requisites for test data requirements
- Eliminated the need for manual activities by creating automated scripts for Bike building process
- Implemented standards and review checklist documents
- Used Infosys tools including IDEAS and NRBT tools to increase the productivity

## 5 Leading bank

### Customer snapshot

- Region: APAC/Australia and New Zealand
- SAP Portfolio: FICO, HCM, SRM, HR LSO, BI/BW, PI, BMC Control-M Putty (UNIX)

### Engagement scope

- Manage overall testing for transformation of legacy GL applications to Global SAP template

### Tools and Accelerators

- Micro Focus ALM
- Infosys Panaya
- Micro Focus UFT One and BPT

### Key program asks/challenges

- Overcome existing challenges of poor data management and governance, with no consistent reconciliation and control framework
- Create a global regression suite in client's SAP technology stack for roll-outs and maintenance

- Establish change impact analysis process

### Our solution components

- Ensure end-to-end business process test cases in the test suite, and testing across diverse test environments
- Implement BPT test approach adoption for client's SAP technology using ALM
- Implement adoption of Panaya for change
- impact analysis

### Quantifiable benefits delivered to customer

- 100 percent coverage of business-critical processes
- 80 percent regression test automation (more than 500 automated scripts), reducing testing efforts more than 40 percent
- Defect detection efficiency improved to 98 percent
- Performed automation beyond regression testing, including all upgrade projects and Security testing, to reduce testing timelines by 60 percent

### Best practices followed and applied

- Early engagement and functional specification sign off using "shift left" principles
- Used tools-driven SAP test life cycle
- Core/Flex team structure for knowledge retention with cost effective measures
- Risk-based approach based on impact
- Implemented dashboard metric reporting

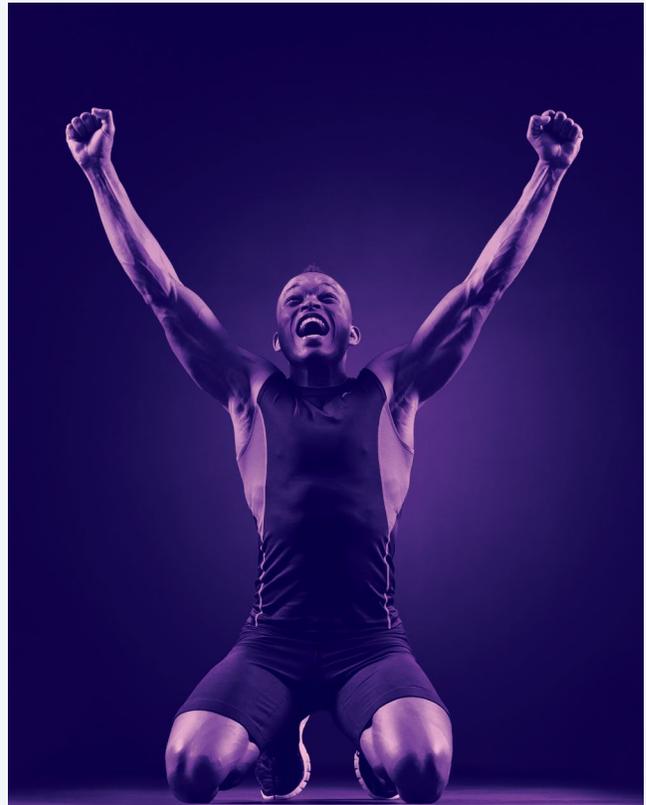


# The Micro Focus and Infosys Team

## Joint Go-to-Market Solution Award for Infosys-Micro Focus SAP E2E testing solution

The 2020 SAP Quality Innovation Micro Focus Partner Award was presented to Infosys at the Micro Focus Universe event on March 18, 2020.

The Infosys Micro Focus-SAP end-to-end testing solution provides a comprehensive suite of Infosys intellectual property and tools built on top of the Micro Focus Application Delivery Management (ADM) portfolio. It provides an end-to-end testing solution for SAP projects. This collaboration produces a significant increase in productivity and reusability, and helps reduce time to market, optimize investment, accelerate lifecycle automation, and deliver the best value per dollar. Infosys and Micro Focus already have joint wins based on this solution across marquee clients in manufacturing, life sciences, retail, pharmaceutical, healthcare, and automotive.



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## Infosys and Micro Focus Partnership Overview

It makes sense that a market-leading global systems integrator has a strong relationship with one of the world's largest software companies, and that is certainly the case with Infosys and Micro Focus. The two industry leaders have held a 360-degree relationship for more than 12 years, spanning across multiple solution areas such as: Enterprise DevOps, Quality Management, Intelligent Automation, Data Security, Application Security, and Big Data/Analytics.

For example, the Infosys Digital Assurance Suite leverages Micro Focus solutions to provide a continuous testing framework for Agile and DevOps engagements, SAP Test

accelerators, and award-winning peak traffic performance testing services for high volume websites. Together, Infosys and Micro Focus successfully deliver hundreds of modernization projects around the world.

Our 360-degree partnership continuously evolves through a variety of programs, including enablement of more than 100 Infosys consultants on Micro Focus solutions every month. They engage in beta testing Micro Focus solutions as part of the design partner program, and jointly deliver webinars and LinkedIn campaigns to provide subject matter expertise globally.

## Additional reading

Accelerate Your SAP Transformation with Micro Focus ADM (Brochure)

SAP Modernization with Enterprise DevOps (Flyer)

Ensure SAP Modernization Success with the Power of DevOps (White Paper)

Infosys is a 'Leader' in Gartner's Magic Quadrant for Application Testing Services Worldwide, 2019 (Web)

Infosys—Ensure end-to-end testing of ERP packages with quality, speed and cost effectiveness (Web)

Infosys—Accelerate SAP S/4HANA Deployment with Continuous Testing Platform (Web)

## Contact information

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