Infosys ACCORD solution—based on HP Quality Center

Enabling flexible and scalable test automation for middleware

Solution brief

Overview

- Lower testing costs for transaction-intensive, server-based applications
- Shorten testing time by automating regression testing and reusing pre-configured test cases
- Generate and maintain test cases easily with a central repository for tests, requirements, and defects

Can you add or modify applications quickly enough so the business is not impacted?

Most enterprises face challenges at two levels when implementing or upgrading major applications within desired timelines:

Test case authoring

- Generated manually with a process that is error-prone and tedious
- Scattered in non-standard formats, due to lack of a centralized repository
- Does not support optimal test case selection and business process coverage
- Difficult to visualize all possible test scenarios in complex applications

Test case execution

- The user interface (UI) is either not exposed or unavailable for some or all systems
- Server-side testing is independent of UI testing in some cases
- Script-based tools are difficult to use and costly to maintain
- Dependence on upstream and downstream systems often hampers testing

A solution based on HP and Infosys collaboration

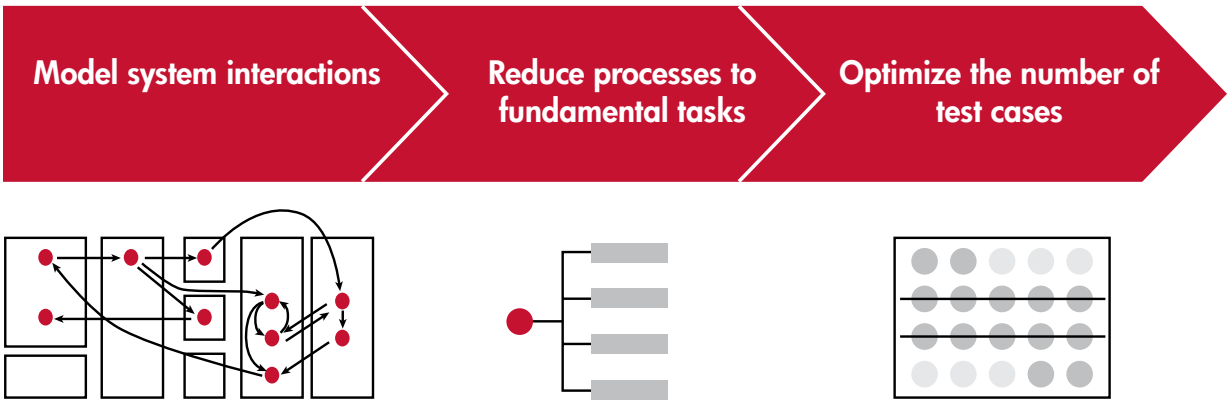
HP and Infosys bring together unique capabilities to help keep your IT organization competitive and ready to evolve as your business needs change. HP provides the reliability of a proven testing platform—HP Quality Center software—and Infosys adds value with its domain expertise, technical expertise on middleware, CMM level-five processes, and extensive testing experience. Through this collaboration, Infosys harnessed the strength of HP Quality Center to create Infosys ACCORD (Accelerated Deployment of Order Management)—a middleware-focused testing solution to help you reduce the cost of your testing process and shorten the time to market for new application features.

HP Quality Center offers a single Web-based application that supports the essential aspects of test management. It provides a consistent, repeatable process for gathering requirements, planning and scheduling tests, analyzing results, and managing defects and issues. The solution enables your organization to digitize specific quality processes and procedures within the larger application lifecycle. It also supports high levels of communication and collaboration among distributed IT teams.

By combining Infosys services with HP Quality Center, ACCORD addresses limitations in middleware testing, such as:

- Inadequate capabilities for validating the middleware components
- Low coverage, tedious to execute manual testing in the middle layer, and redundancy in the test cases
- Inability of traditional GUI-based automation tools to capture the server-side functionality fully and provide adequate code coverage
- Middleware testing tools narrowly focused on individual applications under test

The ACCORD workflow



ACCORD is a scriptless, repeatable test automation solution—for both functional and regression testing—that enables you to improve the quality of your core applications in a cost-effective and time-efficient manner. This is especially helpful in testing complex, transaction-intensive applications, such as sales and trading; trade processing; clearing; order management and settlement; and custodial systems.

The solution components include:

- Reusable adapters and message parsers—to decrease the time and cost to build from scratch
- Data generation and simulation—for reduced dependency on interfaces
- Application-level testing with automation and optimization—for increased test coverage
- Centralized test repository—for integrated test management
- Custom components creation—for flexibility
- Structured test execution and comparison—for advanced reporting

Launch new middleware application features faster and at lower cost

ACCORD can help deliver the following advantages to your business:

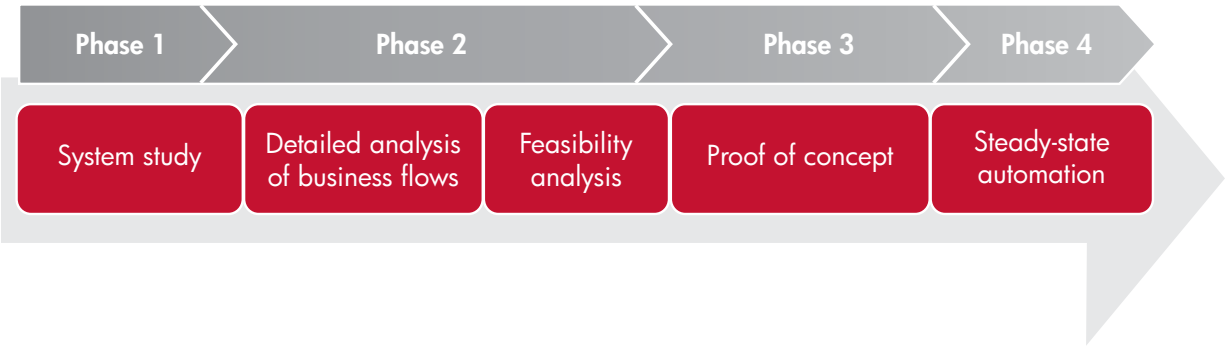
- **Faster go-to-market:** Automates the functional test cycle, specifically reducing regression testing time
- **Cost savings:** Lets you do away with the costs associated with building a fresh test automation suite for regression scenarios, while realizing cost reduction and productivity increase
- **Lower total cost of ownership (TCO):** Presents a scriptless alternative to remove the costs associated with test script maintenance and enables substantial reductions in application TCO
- **Higher ROI:** Provides incremental returns from the same investment, by reusing test cases throughout various phases with a centralized repository

ACCORD offers the ability to test end-to-end business processes as well as client-specific scenarios. It also enables complete functionality testing through existing out-of-the-box adapters and message parsers and expandability through custom adapters and message parsers.

How ACCORD works

ACCORD has several pre-built components with extensive scope for customization, enabling these essential tasks:

- **Transaction flow modeling:** Executes test cases against the application logic by coordinating transaction flow across a network of applications, where complex business transactions are broken down into small manageable units and then put together to create a business transaction
- **Functional decomposition:** Reduces functions and processing steps identified in "transaction flow modeling" to fundamental transactions; identifies parameters and their values for each transaction; and creates test cases based on parameter-value pairs
- **Pair-wise coverage:** Tests every value of every parameter at least once with every other value of every other parameter, drops a combination if all the pairs in it exist in other combinations, and adds business rules to its intelligent algorithm



The solution supports communication with proprietary messaging protocols and messaging formats, using customized pluggable communication adapters and parsers. Using out-of-the box communication adapters, ACCORD communicates with messaging-oriented middleware such as MQ and Tibco, Web Services, EJBs, Mainframes, FTP servers, Unix boxes, and databases, such as Oracle, Microsoft SQL Server, Sybase, DB2, and UDB. ACCORD also supports various messaging formats, which are standard throughout the industry, such as XML, SWIFT, FIXML, and MF Copybooks.

ACCORD enables HTML-based report generation and can compare the baseline results and actual results. It also allows you to choose fields to compare selectively.

ACCORD, integrated with HP Quality Center and enabled by HP Quality Center's Open Test Architecture (OTA), runs test cases and generates reports, using HP Quality Center as a test management platform. This means that the scenarios created in ACCORD are orchestrated and tracked in HP Quality Center, which can improve test case organization and storage by allowing both UI as well as server-side test cases to reside in one place.

Unlike tools that rely on GUI responses for regression testing, ACCORD directly tests the underlying application transactions by latching onto the exposed interfaces at the business tier to enable high code coverage.

ACCORD achieves all this, by adopting a five-step approach to automated testing:

- **Step 1:** Configure applications and systems that need to be tested, covering application details and messaging protocols supported by the application
- **Step 2:** Define (a) attributes/data elements for each transaction/activity, (b) activities, and (c) a number of values for each attribute/data element
- **Step 3:** Generate model test scenarios, using a combination of activities or transactions that are defined earlier in the correct sequence, as laid down by the business flow to be tested. Then add/modify dependencies between activities or transactions to generate an optimized number of test cases, both automatically and manually
- **Step 4:** Execute test cases against the application(s) being tested and collect the responses
- **Step 5:** Compare the results of the testing with the baseline and create easy-to-use drill-down reports to analyze and present the results of the testing

Test cases are stored and accessed from a centralized repository, making them very easy to maintain and execute. The configuration is a one-time effort—that is, the same configuration can be used for repeated testing runs. Since ACCORD is built on the HP Quality Center platform, you can maintain a single repository for all your test cases, whether they were created by ACCORD, HP QuickTest Professional, HP Service Test, HP Business Process Testing, or a combination of the above.

Why ACCORD is different from other testing solutions

How many of the following benefits do your existing testing tools offer? If you do not have most of these already, perhaps it is time to consider ACCORD:

- **Test case optimization:** Provides a pair-wise algorithm to optimize the number of test cases, test throughput, and code coverage; and tests business components in isolation to optimize the quality of test cases

- **Higher code coverage:** Tests the complete business logic in the back-end servers, capturing the attributes of a transaction at a more detailed level, going beyond black-box testing or UI-level testing
- **Reduced number of test cases:** Shortens your testing cycle, removing many test cases that unnecessarily lengthen the testing cycle
- **Expandability:** Supports most of the popular message formats; has in-built message parsers; and allows custom parsers and adapters to be built and integrated easily
- **Ease of use:** Greatly reduces the learning curve, being a scriptless testing tool that removes the need for users to learn any scripting language, proprietary or generic

A phased approach to implementing ACCORD

The solution is implemented by Infosys, working in partnership with HP, in a phased manner, with a clear agenda for each phase:

- **First phase:** Understand your system architecture and conduct a fitment analysis of the solution
- **Second phase:** Understand the business feasibility of the scenarios
- **Third phase:** Conduct a pilot implementation of the solution on the selected flows
- **Fourth and final phase:** Carry out ongoing steady-state automation and execution of the scenarios

The HP and Infosys advantage

HP

HP Business Technology Optimization (BTO) solutions help you make sure that every dollar invested in IT, every resource allocated, and every application in development or production meets your business goals. It is an approach to IT management that reduces costs and produces business outcomes by helping your IT leaders:

- Allocate IT spend and resources based on business priorities
- Automate key processes across IT strategy, applications, and operations
- Measure IT effectiveness and efficiency from a business perspective

Infosys

Infosys is among a select group of global system integrator partners that represent HP BTO. As a HP Software and Solutions Partner, Infosys completes and maintains rigorous sales and technical training and certifications to demonstrate competency in presenting, architecting, and delivering solutions powered by HP Software. Infosys delivers services with the full range of HP quality management and functional testing products and builds joint solutions with HP in the area of testing and validation. This collaboration brings expertise from both organizations to help you save effort, time, and costs.

Infosys provides end-to-end business solutions that leverage HP Software and Solutions technology and go-to-market solutions developed in partnership with HP. These solutions cater to a dynamic environment, where business and technology strategies converge—with an approach that focuses on new ways of combining IT innovation and adoption by the business. HP and Infosys also partner with large global corporations and next-generation technology companies to build and validate products and services and to implement prudent business and technology strategies in today's dynamic digital environment.

Learn more

To get started or learn more about ACCORD, visit **www.hp.com/go/partner/infosys**

Technology for better business outcomes

To learn more, visit www.hp.com/go/partner/infosys

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