



HP service delivery platform testing

An SDP quality management solution based on HP business technology optimization products



The need for testing

In seeking faster time-to-market with new converged services that drive better business outcomes—more profitable revenue and enhanced consumer loyalty—communications, media and entertainment companies are making the evolution to service delivery platform (SDP) technologies. Designed to replace inefficient, redundant siloed services legacy infrastructures and improve collaboration throughout the services value chain, these core-to-edge service-oriented architectures (SOAs) enable operators to develop, deliver and manage converged digital services, including IP multimedia subsystem (IMS)-based services, faster, more cost-effectively and with lower risk.

However, implementing a service delivery platform involves coordinating and integrating complex business technologies and business processes. Faced with fierce competition and tight margins, operators must be sure that their SDP deployment initiative is proceeding correctly, that the rich services they will deploy will function properly and that the very significant investments being made will produce the rates of return that are anticipated.

Why HP for service delivery platform testing?

The SDP environment is typically comprised of multiple network technologies, from traditional telco time-division multiplexing (TDM) and Internet Protocol (IP) to new generation IMS and Web 2.0 technologies, deployed across fixed, mobile and convergent network infrastructure components and protocols. The components come from multiple vendors and run on disparate operating systems. Web services are at the heart of SDP environments, adding yet another layer of complexity. Testing must include all of these various aspects, from those network assets and service enablers that lie close to the network, such as presence and location, messaging, home subscriber server (HSS), and others, to the third-party framework that expose those services and the associated service-level agreements (SLAs) and policies, and applications and software clients that reside on the user devices themselves.

HP SDP testing solutions comprehensively address these critical issues from end-to-end. Combined with SOA governance provided by the HP Third-Party Framework (HP 3PF) and HP Systinet, they facilitate SDP quality management. The HP methodology encompasses both testing of service components and of the complete service interaction experience, as well as services governance. This approach enables operators to know precisely how their platform performs and how a given service or service element will perform before it reaches the customer, and before a service failure negatively impacts the customer experience. The HP SDP testing solution has been designed to address the specialized demands of Web 2.0; it supports all the Hypertext Transfer Protocol (HTTP), Simple Object Access Protocol (SOAP), and other leading protocols, as well as the testing of enablers such as Parlay-X APIs which abstract service capabilities from any type of network, including converged network, for call control, presence, conferencing or other capabilities.

Operators can trust HP for SDP testing because HP offers a unique set of qualifications, including:

- A portfolio of proven testing technology, including HP business technology optimization (BTO) products
- Thousands of HP Services personnel with deep and broad experience in managing complex engagements across both telecommunications and IT
- Comprehensive communications, media and entertainment industry knowledge and strong relationships with leading technology vendors
- A portfolio of field-proven best practices that helps verify every SDP deployment runs smoothly

HP SDP testing solution overview

Operators must be assured that the rich digital content and services they provide to their customers are easy to discover, invoke and deliver. That can only happen by taking a holistic look at all the processes and components that surround the services. The HP SDP testing solution not only examines the function of individual service components, but also the interactions between the components all along the value chain. The typical SDP environment will encompass both internal operator network infrastructure and third-party developers and other service partners. End users themselves are increasingly using mash-ups of service enablers to create their own niche services, and operators must also be sure that the enablers and service components that are called upon will work seamlessly together to provide the kind of experience that will have customers using the service again and again.

Take for example the HP SDP platform with network and Web services capabilities and a mobile service that utilizes an IMS client interacting with a Web service application that has been composed with a business process execution language (BPEL) tool combining pure web services and Parlay-X network capabilities. Testing for this environment must include a combination of core SDP platform deployment testing and component testing, but also testing of the enablers and the actual service. Both functional and performance testing must be performed. As the platform evolves, such as adding new components, exposing new network capabilities and designing new services, testing must be performed again both on the new components and for their impact on the existing platform and services. Regression tests also need to be performed. HP SDP testing addresses all these vital aspects, so the service experience is simple, enjoyable, repeatable and consistent.

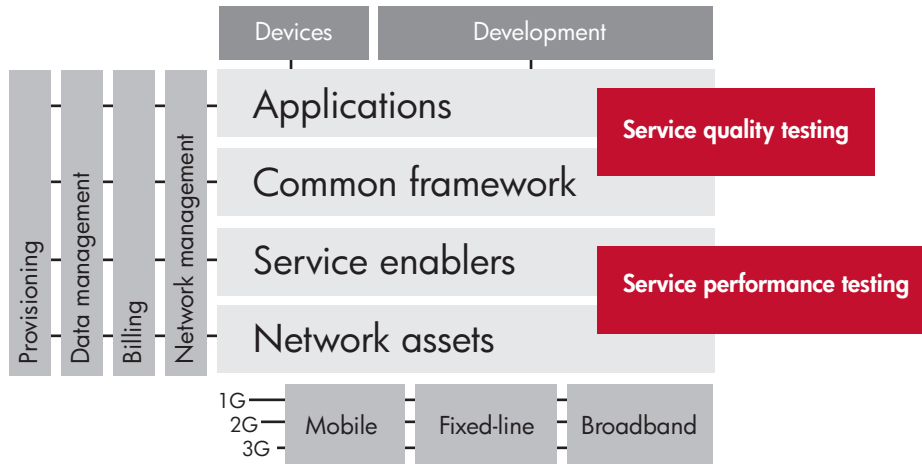
Key solution components

HP SDP is typically a three layer architecture on top of network assets with service enablers, a common framework and applications—HP SDP testing is based on HP Quality Center and Performance Center that have been specifically applied to the SDP environment to deliver a packaged SDP quality management solution that addresses both functional and non functional testing and provides test cases, simulators, acceptance test plans to speed up SDP deployment and ensure best in class quality across the lifecycle.

Among the industry-leading tools HP uses for SDP testing are:

- **HP Quality Center**—manages and governs quality processes and automates software testing. It is composed of:
 - **HP TestDirector for Quality Center**—a web-based application that provides requirements management, test plan, test lab and defect management modules. It addresses all stages of application quality management, such as gathering requirements, planning and scheduling the tests, analyzing the results, and managing defects and issues. The TestDirector issues easy-to-read graphs and reports.
 - **HP functional testing software including HP Quick Test Pro**—an advanced automated testing solution for building functional and regression tests for Java™, .NET, extensible markup language (XML), HTTP, Oracle®, Siebel, and other environments.

Figure 1. CME SDP testing



“HP BTO solutions have helped us improve the efficiency and effectiveness of our Business Process Quality Management and Performance Optimization Management processes, which have resulted in significant cost avoidance and revenue savings. Over the course of three years, we estimate our total savings will be between \$9 million and \$11 million.” — Dick LeFave, Senior Vice President and Chief Information Officer, Nextel Communications

– **HP Service Test**—a tool which simplifies the ongoing testing of services by importing web services description language (WSDL), providing stub simulation, and enabling automation and scripting that can be imported in HP LoadRunner for performance testing. It addresses SOA test management, requirements, defects tracking, functional testing, regression testing and business process design validation.

• **HP Performance Center**—helps analyze and validate the performance of given components, but also of the overall platform and the applications. The module provides project-level visibility and a collaborative working environment, while enabling far greater efficiency through centralization and standardization of common skills sets, hardware and licenses, as well as follow-the-sun testing for lower costs. It is composed of:

– **HP LoadRunner**—the world’s most popular testing solution using custom-generated virtual users to enable operators to drive load, diagnose problems and deploy services with confidence. Under load, LoadRunner captures end-user response times for key business processes and transactions to determine the ability to meet SLAs. Real-time performance monitors gather and display performance data from every application tier, server and system component, while diagnostic probes gather code-level data to isolate bottlenecks down to the structured query language (SQL) or method level for faster problem resolution.

– **HP Diagnostics**—isolates performance problems and provides actionable information to resolve these problems across different technologies J2EE, .NET etc.

– **HP Center Management**—gives a project management tool for consolidating demand, tracking and managing projects and logging performance tests.

Sample use cases

HP SDP core platform testing sample use cases include:

- HP 3PF testing using Quality Center
- BPEL performance testing using HP LoadRunner
- Session Initiated Protocol Application Server (SIP AS) performance testing using HP LoadRunner
- SIP AS—Web service I/F testing using QuickTest Pro
- Parlay-X API testing using HP Service Test

Solution benefits

Better business outcomes are made possible when business technology is aligned with business goals. HP SDP testing delivers important benefits for helping make that alignment seamless, whether operators are launching small pilot projects or the largest and most complex SDP deployments. The solution stack offers a rich and fully-featured toolset, with graphical user interfaces, pre-defined testing templates, scripts and test plans that help return results quickly.

The HP SDP testing solution enables:

- Faster time-to-market with high-performing services for quick return on investment
- Reduced risks of service failure, through testing that is consistent and repeatable across diverse environments
- Better adherence to service level agreements
- Lower costs of services testing as compared to time-consuming manual testing schemes
- A more enjoyable customer experience that can lead to improved revenue and decreased churn

The HP advantage

Increasingly complex and rapidly evolving communications solutions force service providers to deliver even more innovative services to the market while keeping customers loyal and insulated from the complexities behind the services. To achieve this, communications and media service providers need strategic partners that can do more. HP offers targeted and seamless solutions based upon open industry standards, integrated with partners and delivered quickly and efficiently. Flexible HP systems and solutions improve collaboration and empower customers to customize or create value-added services that can open new revenue streams and enhance profitability across the services ecosystem. HP service capabilities provide the expertise to develop, integrate, test, install, and support the most complex service launches. This one-stop shopping approach allows providers to focus on customers—not suppliers.

HP focuses more than 30 years of expertise into a powerful integrated team, the Communications, Media and Entertainment (CME) organization, which, along with hundreds of valued solutions partners, assists the world's top service and equipment providers, as well as media, entertainment and cable operators, in meeting their subscriber needs.

HP Services

Every HP solution leverages proven global experience that spans people, processes and technology. HP Services consultants understand the manufacturing and distribution industry, and can help companies get the most from their business technology investments. HP Services can help in these critical areas:

- **Application modernization services**—Offering a full range of mainframe transition services, current and future business need assessments, strategic and technological roadmaps for change, and monitoring services for the evolved application environments.
- **Mission-critical support**—Onsite consulting and technical support is available at whatever level of service the organization desires, including Operational ITSM to help benchmark their processes against others.
- **Outsourcing services**—HP offers a comprehensive portfolio of innovative and scalable sourcing options, so company personnel can focus time and resources on their core business.
- **Security services**—HP has developed a detailed methodology for secure evolution of the manufacturing environment. Risk is minimized and both the data and the network are protected.
- **Financial services**—HP Financial Services offers a range of creative and flexible financing options.

Across the globe, enterprise customers rely on HP Services to design, build, integrate, and manage the business technology assets that run their businesses. HP Services capabilities cover consulting and integration, outsourcing, support, and education services, all delivered by more than 69,000 services professionals in 170 countries. As the marketplace continues to evolve, HP Services will be there to help manufacturing and distribution organizations adapt and compete.

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