

Analyze, Validate, and Optimize Business Application Performance



The Best-Run Businesses Run SAP

Test performance throughout the application lifecycle

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In a world moving at Internet speed, your increasingly complex mission-critical applications must **operate at peak performance** and scale to meet changing requirements. You must be able to test system behavior under realistic stress conditions, so you can accurately predict performance and quickly identify root causes of shortfalls across the network and in individual processes.

Do your mission-critical applications meet performance and scalability requirements? Are your applications performing optimally? Do you want to boost your chances of success when you deploy to production?

The SAP® LoadRunner application by HPE helps verify that your application architecture is built for performance and reliability. Used by thousands of businesses worldwide, it empowers you to duplicate your network conditions and test both physical and virtual architectures

quickly and efficiently for any workload. You can test a broad range of applications, including those running on the SAP HANA® platform, by running high-scale tests using minimal hardware. And, if you detect bottlenecks, you can identify and fix root causes and verify remedial changes before going live. You help ensure fewer network-related issues in your production system and boost performance where processes hit snags. It has never been easier to benchmark performance, retest changes, and go live with confidence.



Virtualize network conditions to test even mobile apps

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Replicate processes and run real-life workloads

Analyze performance data to identify and diagnose problems

Evaluate, modify, and retest for performance improvements

Optimize the entire testing lifecycle

Upgrade to the performance center edition to test globally

Mobile app performance has become critical for business success in every industry. In our mobile society, more users than ever are working remotely, using mobile or native applications running on their laptop or mobile device. The network conditions they experience have a profound impact on the performance of business processes. Clearly, a business process accessed over a 100-megabit Ethernet connection performs much differently from the same process accessed over a 3G connection.

The network virtualization module for SAP LoadRunner captures and simulates realistic network conditions and includes them in each performance test. You can thus accurately test business-process performance for any application in a variety of network configurations and conditions. And that means you can optimize even mobile apps to provide users the business process performance they expect, regardless of their location or available network hookups.

SAP LoadRunner provides a complete solution for testing in the mobile enterprise, including mobile Web and hybrid applications.



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With SAP LoadRunner, you can reproduce any number of the business processes a typical user performs. To streamline scripting, the software includes a simple scripting and debugging engine that even nontechnical or novice testers can use. The result is faster, more efficient scripting that shortens test cycles significantly and frees up technical resources to focus on higher-level tasks like analysis.

You can also virtualize the crucial connections among the users, services, and applications

that define your network, so the test environment can emulate them. You can create virtual users for specific processes, expanding user loads to hundreds or thousands of concurrent virtual users – whatever will realistically test application performance during typical and peak workloads. Testing requires minimal time, effort, and hardware, allowing you to test early in the application lifecycle – and fix defects when they are inexpensive to address. In addition, the testing cycle delivers robust reporting for service-level analysis per location, connection type, or user segment.

SAP LoadRunner helps you optimize hardware and software configurations based on test results from specific business processes.



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SAP LoadRunner supports performance testing and network virtualization for a wide range of application environments and protocols, including the SAP HANA platform and Web, mobile, Web-service, and legacy technologies. In addition, the software supports testing of applications on all platforms running in the cloud or

on premise, on bare-metal or virtual machines, or in a hybrid environment. It helps you seamlessly utilize public cloud infrastructure to deploy load generators that scale up and out securely based on your performance testing needs – all without extra work configuring your test environment.

Run accurate workloads – including peak loads – to pinpoint code-level, network-level, system-level, and end-user bottlenecks rapidly and more easily.



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As it models and drives load against the system, SAP LoadRunner captures end-user response times for business processes and transactions. Real-time performance monitors track performance data from every component of the application infrastructure. By integrating with HPE SiteScope, SAP LoadRunner can provide more than 60 agentless, real-time monitors to measure the impact of load testing on every component of an application and the underlying infrastructure.

Diagnostic functions collect application- and code-level performance data and provide tools for drilling down into application-level issues. You can use deep diagnostics to drill down

into Java EE, .NET, SAP, Oracle, and service-oriented-architecture applications to find the root causes of problems across heterogeneous application stacks.

After testing is complete, an analysis engine provides a single view of end-user response time and infrastructure- and code-level performance. Autocorrelation and analytics engines help you identify the most likely causes of performance issues. Built-in bubble-up analysis helps you quickly determine which transactions have passed or failed tests against service-level objectives and helps identify the potential causes of failure. Using the heavy-duty analysis engine, you can also slice and dice data to arrive at the root causes of problems.



Evaluate, modify, and retest for performance improvements

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SAP LoadRunner automatically measures simulated performance against key performance indicators, establishes benchmarks, and recommends changes related to the enterprise software you are testing. Once you make changes to implement desired improvements, you can run tests again to validate the effectiveness of the changes.

Equally important, using the results of retests, you can establish intelligent service-level agreements based on facts, not educated

guesses. If users experience a performance issue, you can quickly run accurate tests to verify that performance meets agreed-upon levels – or find and fix a problem. SAP LoadRunner also delivers optimization recommendations that you can choose to follow.

Flexible templates make it easier to generate custom reports for stakeholders. Customized templates can be applied to other performance tests as needed.



Use test results and analyses to optimize the performance of applications running on SAP HANA and make the most of the platform.



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SAP LoadRunner supports leading integrated development environments (IDEs) to let you test loads early in the application lifecycle. Particularly in agile environments, developers can contribute significantly to performance testing efforts by creating test scripts directly within the IDE. In addition, developers can view and debug performance issues at the code level in their development test environment.

SAP LoadRunner also helps bolster quality and security by integrating with the SAP Quality Center application by HPE and SAP Fortify software by HPE. Together, these applications

create a comprehensive solution for managing release risk – and foster informed decisions before you go live.

Complete integration with the unified functional testing module in SAP Quality Center helps bridge the gap between functional and performance testing and eliminate the risk caused by external dependencies on component services. And developers can author application programming interface tests in the unified functional testing module that execute directly in SAP LoadRunner as part of a performance test.

Now you can run performance tests with ease at any stage of the application lifecycle – even in high-performance environments like SAP HANA.



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The standard edition of SAP LoadRunner is the optimal solution for business units or departments that typically work on one project at a time in a single geographic location. However, many companies are moving to a shared-services model called a performance-testing center of excellence (CoE) to increase productivity and standardize processes. When your stakeholders need to share assets from one project to another, evaluate performance against global service-level agreements, or establish a performance-testing CoE, SAP provides a migration path from the standard edition to the performance center edition of SAP LoadRunner.

The efficiencies gained by creating a performance-testing CoE include increased testing productivity, improved collaboration across testing teams, and the ability to outsource some or all of the tactical work of load testing. A CoE facilitates sharing best practices and skills, and it can quickly deliver testing capability throughout the enterprise. In addition, the CoE model optimizes your resource utilization, driving better software quality across the enterprise.

When you centralize testing across projects and locations with the performance center edition, you increase efficiency and deliver higher-quality results.



Deploy with confidence

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With SAP LoadRunner, you can test performance quickly and more easily at any point, gain insights into root causes, address them, and then retest – deploying new or modified software with confidence. You can help ensure preparedness for SAP HANA by benchmarking and optimizing the current performance of enterprise applications selected to run in the high-performance environment. Then, after the move, you can compare performance results to identify potential errors in migrated data.

You can also:

- Increase efficiency and cut development costs by rigorously testing applications early in the application lifecycle
- Help your organization adapt more quickly and easily to changing business processes by reducing slowdowns in application development
- Reduce the risk of software or network failure at times of peak demand by consistently performing thorough, efficient load modeling, testing, and validation
- Accelerate the planning and delivery of the newest classes of service-driven business processes
- Create a centralized performance-testing center of excellence



Generate real-life loads. Identify and diagnose problems. Deploy with confidence.





Objectives

Solution

Benefits

Quick Facts

Summary

To support dynamic processes and changing user demand, enterprise applications must run at their best. With the SAP® LoadRunner application by HPE, you can quickly validate performance with robust load testing. Virtualize your network, simulate and run accurate workloads, benchmark production system performance, diagnose issues, and retest before going live with new or modified functionality in a new environment like the SAP HANA® platform.

Objectives

- Benchmark performance of production software
- Help ensure a successful deployment on SAP HANA
- Accurately predict scalability and capacity
- Establish intelligent service-level agreements
- Shorten test cycles
- Find and fix bottlenecks and defects early

Solution

- Emulation of network conditions to evaluate business processes and determine optimal hardware and software configurations
- Diagnostics to find root causes of performance issues
- Fast scripting to simulate and expand user loads
- Tools to measure simulated performance against key performance indicators
- Tools to retest and validate software fixes

Benefits

- Increase efficiency and cut development costs
- Adapt to changing business processes
- Reduce risks during peak demand
- Prepare for deployment of SAP HANA
- Speed planning and delivery of new, service-driven processes

Learn more

To find out more, call your SAP representative today or visit www.sap.com/loadrunner.



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