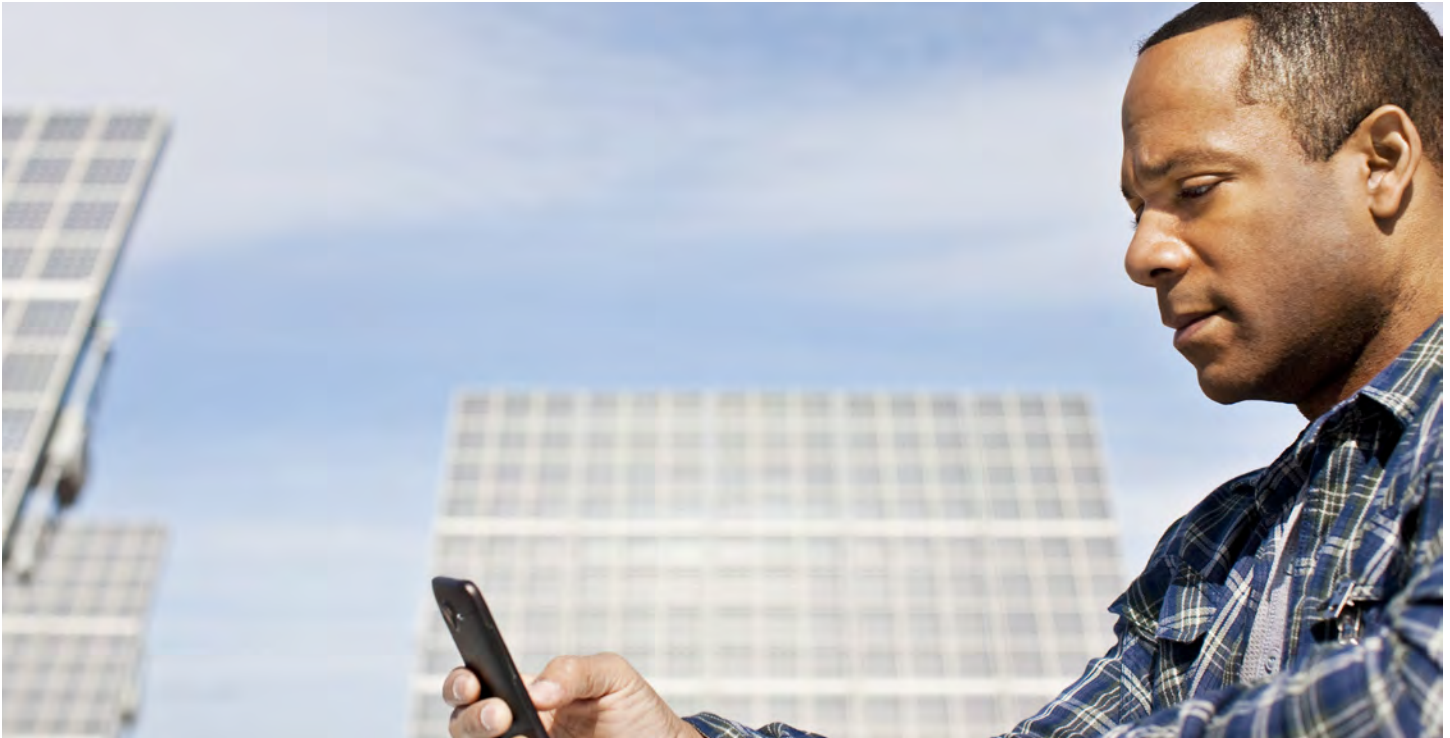# HP LoadRunner software

HP LoadRunner software is the industry-standard software for performance engineering. Generate real-life loads. Identify and diagnose problems. Deploy with confidence.

Understanding Application performance

How do you know whether your mission-critical applications meet the performance and scalability requirements of your business? How do you decrease the risk of a catastrophic failure when deploying to production? Are your applications performing optimally?

Enterprise applications are becoming increasingly complex. With modern applications, there are many moving parts that can easily become points of failure if not tested prior to deployment. Platforms such as mobile, Cloud, and hybrid environments offer their own share of challenges. HP LoadRunner software, used by thousands of businesses around the world, is a comprehensive solution for testing system behavior and performance. It provides an efficient and robust means to verify that your application's architecture is built for more efficient performance and reliability. LoadRunner helps you:

- Test a broad range of applications, including the latest Web and Mobile technologies, ERP/CRM applications, and many legacy systems.

- Run high-scale tests using minimal hardware, including any mix of physical and virtual environments, including public Cloud infrastructure.

- Identify end-to end performance bottlenecks using advanced monitoring and analysis tools, and ensure that new or upgraded applications meet the performance requirements of your business.

Click here to learn how HP LoadRunner can help you deliver high-performing applications.

The inside story on HP LoadRunner

With an intuitive record and playback mechanism, including the patented TruClient technology, HP LoadRunner reproduces real business processes that a user would perform in production. These scripts can then be easily modified to emulate real user behavior.

LoadRunner then emulates hundreds or thousands of concurrent virtual users, with minimal hardware, to apply accurate workloads to any application. As it drives load against the system, LoadRunner captures end-user response times for business processes and transactions to determine whether the application can meet the required service-level agreements. Non-intrusive, real-time performance monitors from **HP SiteScope** captures real-time performance data from every component of application infrastructure, while **HP Diagnostics** collects application-layer and code-level performance data. By leveraging **HP Network Virtualization** and **HP Service Virtualization**, you can eliminate and control unknown variables and isolate performance risks.

After the test completes, the LoadRunner analysis engine provides a single view of end-user response time, infrastructure-level and code-level performance; and includes the patented auto-correlation engine to identify the most likely causes of performance issues.

Figure 1. HP LoadRunner Analysis: A view of cross-results trending capabilities, showing a comparison of increased system scalability and optimized response-time performance
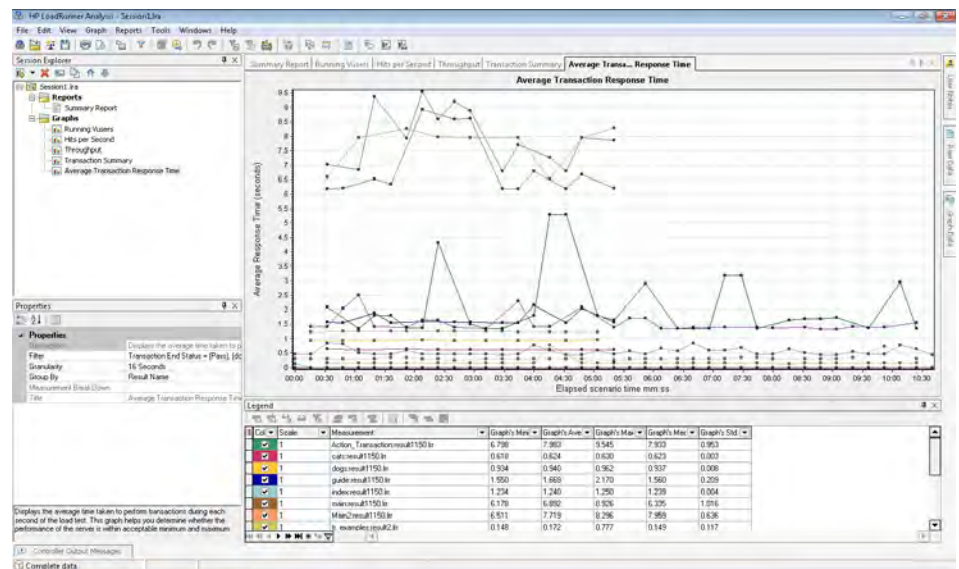
Test against a broad range of applications and protocols
HP LoadRunner supports performance testing for a wide range of application environments and protocols, including Web/Mobile, Web services, MQ, HTML5 WebSockets AJAX, Flex, Microsoft® Silverlight, RDP, Database, 5250/3270 Terminals, Citrix, Java, .NET, Oracle, and SAP. An easy-to-use scripting and debugging engine leverages data format extensions and correlation studio to reduce the amount of time spent scripting.

Simplify analysis and reporting
With its Bubble-Up analysis capabilities, HP LoadRunner helps you quickly determine which transactions passed or failed the set service-level objectives, as well as some potential causes of failure. A strong analysis engine helps you slice and dice data in many ways to easily pinpoint the root cause of the problems. You can also use templates to generate multiple custom reports to serve the needs of various stakeholders.

Record and replay a variety of Web 2.0 technologies

TruClient technology, available in HP LoadRunner and HP Performance Center, is a browser-based virtual user that supports next-generation AJAX applications. TruClient is embedded in the browser and provides interactive recording and scripting, dramatically reducing the amount of programming required. This gives you the ability to various levels of user activity, from the GUI level down to the transport and socket level, depending on the skill set available and the level of customization required. TruClient supports most AJAX applications, regardless of the framework used; making testing of Web 2.0, and Mobile Web applications faster, easier, and more comprehensive.

Figure 2. The patented **HP TruClient** technology provides a browser-embedded, interactive way of scripting next-generation AJAX applications
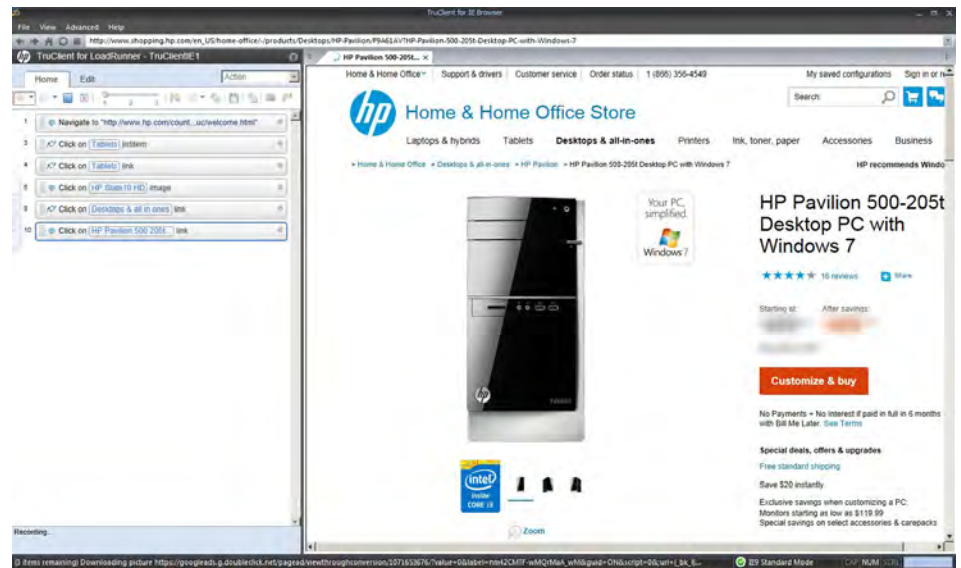
**Scale up tests leveraging the public Cloud**

HP LoadRunner supports testing of applications on all platforms. Whether the application is running in the cloud or in-house, on bare-metal or virtual machines, or in a hybrid environment; LoadRunner can help test the application before it goes live, so that you can deploy with confidence.

With cloud testing, you can quickly and elastically scale up tests to meet the demands of your customer-facing business applications, reducing the cost and overhead of managing dedicated machines. HP LoadRunner now provides the ability to seamlessly leverage public cloud infrastructure to deploy load generators (LGs) to scale up and down based on your performance testing needs, without complicated network configuration.

The deployment of cloud-based LGs is built into LoadRunner, significantly reduces provisioning time, while maintaining security and control. You can add multiple cloud accounts and manage network profiles for connecting to your various LGs. You can also secure host communications using public/private key pairs, and provision hosts using standard templates or by creating your own. Tests can be executed with any mix of load generators within your network or in the public cloud in the cloud.

Deliver enterprise load generation, monitoring, and diagnostics

HP LoadRunner can generate realistic loads scaling up to hundreds and thousands of virtual users (VUs).to reproduce realistic conditions. LoadRunner integrates with **HP SiteScope** to provide more than 60 non-intrusive monitors to measure the impact of load testing on every component of the application. LoadRunner also seamlessly integrates with **HP Diagnostics**, allowing you to drill down into applications level issues to find the root cause of problems across heterogeneous application stacks; including **J2EE**, **.Net**, **SAP**, **Oracle** and **SOA** based applications.
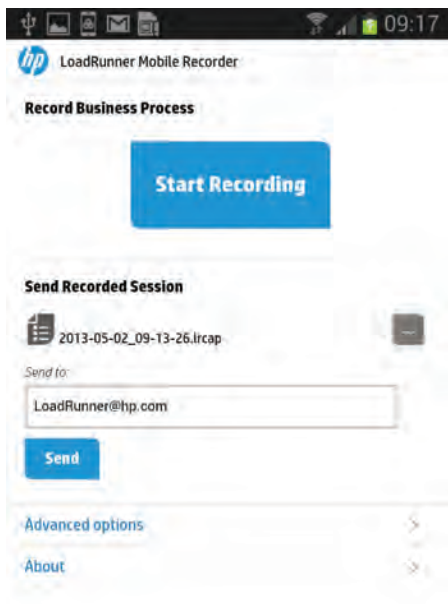
Mobile application testing

HP LoadRunner is the most complete solution for mobile application performance testing; including Mobile Web, Native and Hybrid applications. The Mobile TruClient protocol supports the rapid testing of browser-based mobile applications, and the Mobile Applications protocol provides support for native, Web and Hybrid applications HP solutions for mobile testing can be used to test mobile applications against any platform and OS. HP LoadRunner seamlessly integrates with **Network Virtualization** enabling realistic network conditions during each test.

### Mobile Application recording options
When it comes to Mobile testing, one method does not fit all. Whether you have access to a physical device, application or device emulator, or traffic capture from any available Mobile device cloud; the methods used for capturing application usage will vary with each deployment model. That is why HP LoadRunner includes multiple methods for recording Mobile application scripts, to meet the needs of any Mobile development project. Virtual User Generator supports the following Mobile application scripting methods:

• Server-side traffic capture

• PCAP traffic recording

• Mobile Device Emulator

• Proxy recording

• TruClient Mobile (for mobile-web applications)

The HP LoadRunner Mobile Recorder is also available on Google Play for capturing traffic directly on an Android device.

Network Virtualization Support
Mobile application performance is critical to the success of a business. As much as 70% of the application response time is caused by network conditions, and optimizing applications to run on Mobile is impossible without including realistic network conditions in each test. The impact of network conditions isn't only on Mobile users, but on the entire application infrastructure That is why HP LoadRunner seamlessly integrates with **Shunra Network Virtualization** to capture and include realistic network conditions during each test.
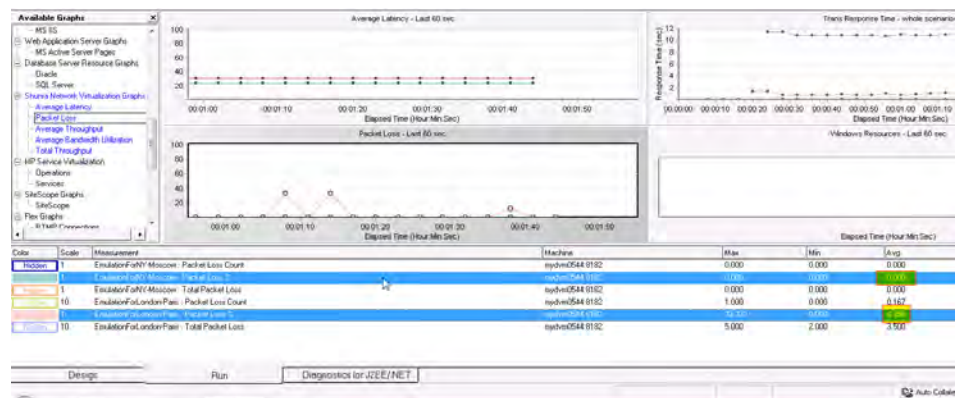
Continuous Testing Support

Integrations for Developers

To enable load testing earlier in the application lifecycle— which is particularly relevant in agile environments—HP LoadRunner provides IDE to integrate with leading development environments **Visual Studio** and **Eclipse**; allowing developers to run unit tests using the LoadRunner engine. This integration lets Developers create LoadRunner scripts directly within the IDE, and contribute to performance testing efforts earlier in the application lifecycle. LoadRunner also supports execution of **JUnit**, **NUnit** and **Selenium** scripts as part of the test scenario, allowing you to leverage Unit tests the developers are already creating.

In addition, the **HP Diagnostics** Profiler software allows Developers to view and debug performance issues at the code level within their test environment.

Continuous Delivery

HP LoadRunner provides APIs for integrating load testing into your build management or other automated systems, as well as providing an add-in for **Jenkins** Continuous Integration platform. This add-in executes LoadRunner scenarios and reports pass/fail status at the end of a build job. There are also APIs for automating the analysis and reporting of completed tests.

Community content

To connect users within the largest performance engineering community in the world, HP LoadRunner integrates with the HP Live Network. The Live Network provides a single portal for HP performance testing users and partners to share and distribute content with the entire user community, who can access and automatically install Function Libraries, Correlation Rules, Data Format Extensions and other add-ins directly from VUGen.

Additional HP Application Lifecycle integrations

To facilitate intelligent release decisions, LoadRunner is integrated with industry-leading quality software, such as **HP Quality Center (QC)**, and **Application Lifecycle Management (ALM)**. Leveraging these complementary products together with LoadRunner provides a comprehensive solution for managing release risk, so you can make informed decisions prior to going live.

LoadRunner also integrates with **HP Service Test (ST)** for testing Web services.

This becomes particularly relevant when services are not yet completely integrated into the application, but need to be tested so that they perform and scale as expected.

Complete integration with **HP Unified Functional Testing (UFT)** helps bridge the functional testing gap and eliminate the risk caused by external dependencies component services. API tests authored in UFT can be executed directly in the LoadRunner Controller as part of a performance test.

Integrations with production

Application-performance and service-level management doesn't end when load testing is done. In fact, service-level management begins when the system goes live. During the transition from prerelease to production, you can use **HP LoadRunner** scripts within **HP Business Systems Management (BSM)** software to monitor application performance, availability, and service levels in production under real-user workloads. Common technologies in HP products such as **HP Diagnostics** and **HP SiteScope**, which integrate with both LoadRunner and BSM, help bridge the gap between testing and production. These integrations, both upstream to QA and downstream into production, make HP LoadRunner an ideal solution for performance engineering across the application lifecycle.

Access HP Live Network

HP Live network: hpln.hp.com/group/
performance-center-and-loadrunner

Build a performance testing center of excellence

hp.com/go/performancecenter

Increase organizational efficiencies, deliver better quality
In addition to the standard performance testing process, many companies are moving to an IT shared services model, called a performance testing Center of Excellence (CoE), to increase productivity and standardize processes.

The great news is that when your organization is ready for performance testing CoE, HP provides an easy migration path from HP LoadRunner to the HP Performance Center solution.

The efficiencies gained by creating a CoE with HP Performance Center include increased testing productivity, improved collaboration across application teams, and the ability to outsource some or all of the tactical work of load testing.

A CoE facilitates sharing of best practices and skills, and enhances your organizational efficiency by quickly delivering testing capability throughout the enterprise. In short, a CoE model increases your infrastructure and human resources utilization, and eventually drives better quality across the enterprise.

LoadRunner helps detect pre-production issues

"With the help of LoadRunner through load testing in general we have found many issues that we would not have been able to handle in production without loss of service and business."

IT manager, large enterprise financial services company (**TVID: F3E-C13-172**)

See what other customers are saying about the new **HP LoadRunner software**.

Key benefits

- Reduces cost of application downtime related to performance issues in production
- Supports performance testing of new technologies together with your existing, legacy applications
- Accurately tests a mix of mobile and Internet users, reducing the risk of performance bottleneck when bringing new mobile applications to production
- Decreases the risk of deploying systems that do not meet performance requirements
- Reduces hardware and software costs by accurately predicting application scalability and capacity
- Helps you establish intelligent service-level agreements before applications go live
- Shortens test cycles to accelerate delivery of high-quality applications
- Pinpoints end-user, system-level, and code-level bottlenecks rapidly and with ease
- Reduces the cost of defects by testing earlier in the application lifecycle

About HP Software application solutions

HP Software application solutions help ensure modernization initiatives deliver business outcomes instead of failing under the burden of outdated, legacy delivery mechanisms. Where rival solutions mistake the software development lifecycle for a total picture of the application, HP sees core delivery in the context of the complete application lifecycle—from business idea through retirement. Furthermore, by providing unified management and automation solutions, HP offers customers not simply more tools and integrations, but greater simplicity. The result for enterprise application teams is improved predictability, repeatability, quality, and change readiness in both the core and complete lifecycle.

HP Performance Testing offerings

Performance testing from anywhere, for any size and any type of environment.
The agility in how business wants IT to deliver has drastically increased. HP's objective is to provide a menu of options on performance testing solutions to support any type of environment, application, methodology, maturity, and consumption model that the customer have to allow them to accelerate the delivery applications that perform with quality.

HP provides high-quality software and services that address all aspects of your software application lifecycle needs. With HP, you have access to standards-based, modular, multiplatform software coupled with global services and support.

HP Performance Testing is available via:

• Permanent Licenses

• Term Licenses (daily, monthly, 3 months, 6 months, 1 year terms)

• HP Performance testing in the Cloud

• HP Performance testing as a Service (TaaS)

• HP LoadRunner delivered by partners

• HP Performance Center via HP SaaS

To generate real-life loads and identify and diagnose problems, visit
hp.com/go/performancevalidation

Connect with peers and HP Software experts at
hp.com/go/performancecommunity

Join our blog
hp.com/go/lrblog

For an overview of HP software services, visit
hp.com/go/hpswprofessionalservices

To access technical interactive support, visit Software Support Online at
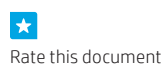support.openview.hp.com

To learn more about HP Software Customer Connection, a one-stop information and learning portal for software products and services, visit
hp.com/go/swcustomerconnection

HP SaaS can host and maintain your Performance Center instance. Some of the key benefits of HP Performance Center on SaaS include:

• Available Cloud-based load generators located in multiple locations and the option to connect your own for behind the firewall testing

• The option to quickly and easily ramp up and down virtual users to extreme levels

• The ability to consume HP PC in a pay-as-you-go model with operational expense budgets

• Subscription pricing for TCO and predictable IT expenditures

• Multi-layer security with less risk

• 24x7x365 support

• Built-in and on-demand scalability

Learn more at
hp.com/go/loadrunner
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