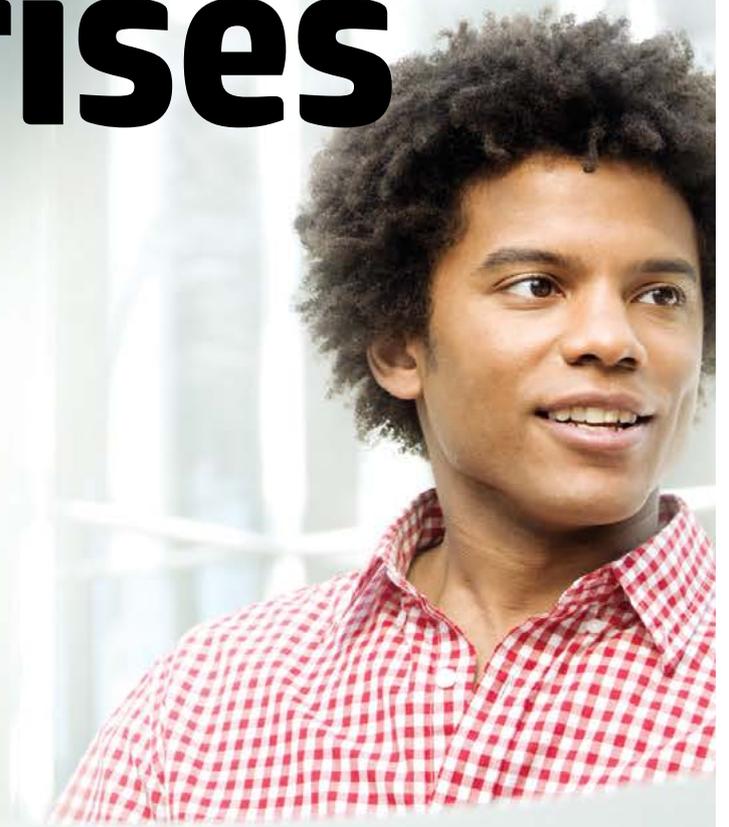


Brochure

Validate performance for global enterprises

HP Performance Center



Introduction

Load and performance testing tasks are frequently tactical and project focused efforts to ensure that an application will be successful when deployed to production. Project testing teams require tools to support their specific performance testing needs and for many years, an industry leader in the project load and performance testing space has been HP LoadRunner.

HP LoadRunner software is a desktop and site-licensed load-testing product that allows a single user or team to test applications. The features of LoadRunner enable you to:

- Decrease the risk of deploying systems that do not meet performance requirements
- Lower hardware and software costs by accurately predicting system capacity
- Begin intelligent service-level management before live operations
- Shorten test cycles to accelerate delivery of high-quality applications
- Pinpoint end-user, system-level, and code-level bottlenecks in a quick and easy manner
- Reduce the cost of defects by allowing early testing in the development cycle

LoadRunner is an effective choice when you need to test a handful of projects and applications at a single geographic location before deploying them to production. Very often, enterprises find it difficult to support distributed development and testing teams who are responsible for various pieces of the overall solution being tested. At times, distributed teams need to collaborate for a timely and successful deployment to production.

For simple project-focused load testing, the benefits of a site/departmental solution outweigh the risks and costs of enterprise solutions. But, when there are many groups using different tools and practices for software performance testing, the costs can quickly become very significant. Consider this scenario: A global organization has over 200 installations of LoadRunner spread on hardware distributed around testing labs on four different continents. How would you apply upgrades or patches to all these instances and be satisfied and confident that they are all running the correct version of the software? How would you track any changes made to a specific installation of software and find who made those changes?

Imagine that a business team is in New York, the application development team is in San Jose, CA, and the Quality Assurance (QA) department is organized in India, Ukraine, and China. How does the CIO or Director of applications ascertain that all of them are coordinated to enable synchronization on the latest version of applications, scripts, and results and also take necessary actions in a timely manner?

HP Performance Center addresses such challenges, faced by modern load-testing customers. Building upon the LoadRunner foundation, Performance Center takes software performance validation to a global enterprise level. This brochure reviews challenges encountered in enterprise load testing in detail and examines how the Performance Center helps enterprises address these challenges.

Challenges encountered in large-scale testing

The challenges encountered in any large-scale load test can be classified into three broad categories—products, people, and processes.

Limited and distributed human resources

The growing trend of outsourcing and downsizing implies that testers must do more with less, at all times and locations. Factors such as IT spending, tight budgets, and contractors with limited business knowledge, force to use scarce talent resources in the most cost-effective way.

Lack of quality standards, metrics, and methodologies

As each testing group operates its own mini testing lab; hardware, software, and technical resources are shared. The absence of an enterprise-wide standard leads to inconsistent quality of services, followed by results across lines of business (LOBs).

Lack of collaboration between teams

Every team operates in its own testing lab with little or no communication with other teams, leading to a severe lack of skill reuse and knowledge transfer. Another obvious source of wasted money is the investment in redundant hardware and software solutions in each individual group. In the long term, this duplication of investment and lack of sharing increases time toward live operations, which in turn affects the bottom line.

In addition to these challenges, IT organizations are faced with several new requirements. Some of these requirements are:

DevOps collaboration

Performance testing is not a one time, isolated activity that is completed before an application is moved to production, but rather, part of an extended value chain that ends with users actively using the system. The performance testing team must be closely aligned with the operations team managing production performance, and their tools must enable them to effectively and accurately test application changes. Performance testing tools that live in a silo, do not effectively meet the needs of today's enterprise users.

Increasing performance requirements

Applications must meet minimal enterprise standards for performance. This means that in the absence of a plan to consolidate testing efforts beginning with standardization on a common platform and maturing to a performance-testing center of excellence (CoE), companies are losing valuable time before they can go to market with their applications.

Increasing number of applications

Performance testing has to be an end-to-end effort. The complexity and sheer number of applications can quickly overtake available resources. This is because of the fact that though each individual group might be equipped to test a small number of small-to-medium scale applications; it cannot scale to meet the needs of true enterprise application testing. This is a result of lack of synergy between the load-testing teams operating without shared resources (hardware, software, and human); let alone the best practices developed in individual groups.

Organizational chaos

Application testing when conducted by disparate groups with dissimilar tools and methodologies results in organizational chaos and quickly becomes a management nightmare. Consider a scenario where the IT organization needs to create an inventory on the assets within the organization. The resulting problem becomes painfully obvious.

Inconsistent application performance

Application performance expectations vary unpredictably from one organization to another. This is due to a lack of consistent methodologies between the various testing groups in the organizations. As a result, what one group might consider as acceptable performance another group might reject. Consider this in light of an application that spans a database, an enterprise resource planning (ERP) application layer, and a customer relationship management (CRM) application layer, coupled with inconsistent performance requirements between these layers. Ultimately, customers experience whole applications, not individual components. If the application fails to meet the service-level agreements (SLAs), the entire application is blamed, not an individual portion. In the absence of a consistent application performance benchmark, failure is imminent.

Enterprise load-testing teams do a lot more than load testing

In an enterprise testing organization, the performance testing teams do a lot more than just load testing. They are required to:

- Manage the demand that comes from multiple LOBs
- Schedule appropriate resources
- Manage load-testing projects
- Serve as the technical support center for the LOB
- Provide training to performance engineers in the LOB

Other requirements

In addition to these challenges, there are several other requirements placed on the performance testing of enterprise applications. They are as follows:

- Mobile application performance testing is an essential capability that modern enterprise performance testing teams must be able to address.
- Support of multiple environments. It includes testing on multiple browsers, operating systems, Java Development Kits (JDKs), .NET CLR, or .NET Common Language Runtime environments, and also setting up and tearing down systems (which means getting access to hardware and software resources that might not be available in a small testing lab).
- Need to rerun tests for each defect correction. Regression needs to be a full execution of the entire test plan that again calls for resources, which are hard to obtain.

HP Performance Center software

LoadRunner is an effective desktop solution designed to solve load-testing problems by simulating large number of virtual users. However, it is not designed to help address the challenges faced by large enterprise-wide testing requirements. Performance Center is required for this purpose.

Performance Center is built on top of LoadRunner. It is an enterprise product that enables controller sharing across multiple projects and multiple users, working concurrently on different projects from globally distributed locations. In addition to the functionality of LoadRunner, Performance Center also allows you to:

- Coordinate enterprise-wide testing and collaboration to achieve more performance testing in less time
- Manage and control performance testing projects, users, and resources in different locations from a centralized location
- Streamline and standardize the testing process with a centralized performance-testing practice using common resources and consistent best practices
- Increase testing capacity by delivering global 24x7 access to testing resources with a Web-based interface, pooled infrastructure and a shared licensing model
- Achieve consistent quality across enterprise applications by applying the same tools, expertise, and best practices to every IT project
- Audit, use, and bill LOBs for the time and resources used to prove business return on investment (ROI)

Features

Performance Center is an effective enterprise-scale testing platform. Some of its key features include:

- Remote testing through Web access
 - Access centralized testing resources at all times, even when outside the office
 - Leverage testing expertise across worldwide locations
 - Global coverage with a single license
- Concurrent testing
 - Execute multiple projects at the same time
 - Convert the serial testing process to parallel testing process
- Remote secure management through Web access
 - Control the testing environment at all times
 - Manage the lab from any location, through the Web
- Acts as a platform for additional CoE services
 - Diagnostics
- Streamlined and standardized testing processes
 - Coordinate enterprise-wide testing and collaboration
 - Achieve consistent quality across all enterprise applications
- Lowered application portfolio risk
 - Increase access to testing resources
 - Decrease IT-related business failures
 - Reduce investment
- Enhanced enterprise productivity
 - Increase testing capacity
 - Globalize test expertise and usage
 - Facilitate best practices and collaboration
 - Document everything

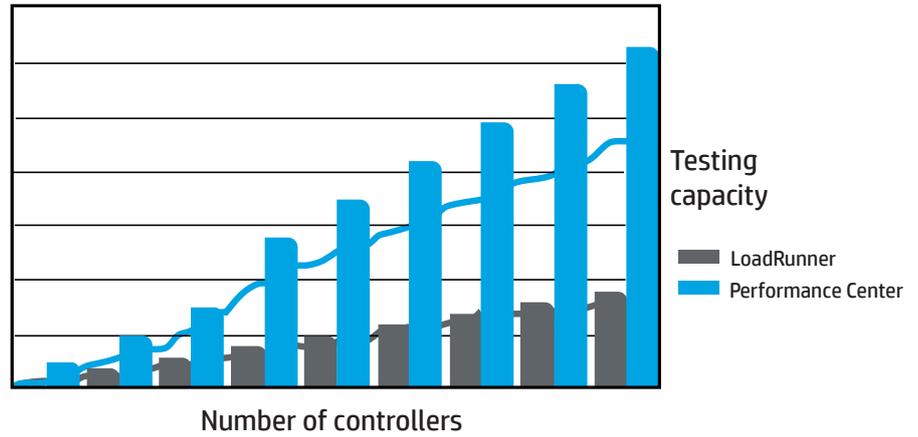
- Reduced investment
 - Decrease administration and management
 - Pool and share common resources across users
 - Acquire license for unlimited access to:
 - Scripting
 - Monitoring
 - Analysis
- Application Lifecycle Management (ALM) Integration
 - Tracking of performance service-level objectives (requirements) through actual test execution
 - Tracking and management of performance related issues/defects
 - 360-degree visibility for project leadership
- Automated lab management
 - Scheduling deployment of the test lab and initiation of performance tests
 - Integration with HP Continuous Delivery Automation (CDA) to automate the actual provisioning and deprovisioning of test lab assets

Performance Application Lifecycle, bringing production test data into the performance testing process enabling the performance test results to more accurately represent the actual performance of the application in production. This makes performance testing more reliable and effective.

HP Performance Center: benefits and ROI

- Centralizes the testing environment
 - Reduces duplication of labs and costs associated with tools and equipment purchases
 - Decreases costs of new personnel hires
 - Lowers unnecessary time spent on individual lab setup effort
- Provides global load-testing capability by utilizing testers from various locations
 - Leverages expertise of fewer testers for more projects
 - Reduces travel costs for geographically dispersed testers and consultants
- Increases testing efficiency
 - Completes more projects in the same timeframe
 - Preserves time to market
- Provides one global license to manage
 - Reduces license and software distribution management in geographically dispersed sites
- Helps do more with less

Figure 1. Productivity gains with HP Performance Center



Exponential increase in testing capacity

Performance Center is not just LoadRunner on the Web. There are significant feature differences between the products. The cost of LoadRunner increases linearly with the number of controllers. On the contrary, Performance Center delivers an exponential growth in testing capacity with the same number of controllers due to pooling, remote access, and scheduling capabilities.

Performance Center helps manage tests across all available controllers from a single console. This includes administering controllers, managing users, software, and rebooting of machines when needed. LoadRunner is not built to serve such needs.

Figure 2 provides a comparison between the testing capacity of Performance Center with a similar-sized configuration based on the LoadRunner software.

When is Performance Center a better solution than LoadRunner?

Performance Center proves to be a better option when:

- Annual maintenance costs for existing LoadRunner assets are high
- Duplicate or redundant licenses increase in number
- Scripts, best practices, and knowledge are not easily shared across projects/teams
- Physical and virtual gatherings around a desktop facilitate collaboration
- Limited ability to “pool” all available licenses
- Limited possibility to bring new applications and teams online quickly
- Lack of visibility into demand and sometimes difficult to justify the value of performance testing

HP Performance Center includes:

- Performance Center Scheduler
- Multiple VuGens, controllers, agents, and analysis
- All performance monitors
- Analysis database servers
- Test file server

Figure 2. Summary of feature differences between HP Performance Center and LoadRunner

Features	Performance Center	LoadRunner
Capability		
ALM Integration	●	○
Lab management	●	○
Mobile testing	●	●
Shunra Network Virtualization	●	●
Enterprise-wide collaboration	●	○
Security	●	○
Reporting and visibility	●	⊙
Role-based workflow	●	○
24x7 global access	●	○
Centralized management and administration	●	○
ROI reporting and auditing and charge back	●	○
Central repository for scripts, results, and analysis	●	○
Functionality		
Planning workflow	●	○
Requirements management	●	○
Defect management	●	○
Enterprise dashboard	●	○
Lab management automation	●	○
Production metrics used in test design	●	○
User privileges	●	○
Web interface	●	○
User administration	●	○
Project administration	●	○
System management	●	○
Web-based reporting	●	○
Project usage tracking	●	○
User rights management	●	○
Project rights management	●	○
Multi-layered user/project privileges	●	○
Resource and test scheduling	●	○
Autostart	●	○
System checks	●	○
Remote reboot	●	○
Shared/Floating licensing	●	○
Shared virtual users	●	○
Shared controllers	●	○
Regional and global access to assets and application under test	●	○
All protocol bundles	●	○
Unlimited VuGen and monitors	●	●

- Represents 1
- Represents 0
- ⊙ Represents 0.5

Global citizenship at HP

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HP Software Support Services gives you:

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- Support: VMware, Microsoft®, Red Hat, and SUSE Linux as well as HP Insight software
- Fast answers giving you technical expertise and remote tools to access fast answers, reactive problem resolution, and proactive problem prevention
- Global Reach Consistent Service Experience giving global technical expertise locally

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