

LOAD TESTING: AN ESSENTIAL STEP

MITIGATING RISK BEFORE GO-LIVE

White Paper
SAP LoadRunner by HP

THE BEST-RUN BUSINESSES RUN SAP™



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EXECUTIVE SUMMARY

ENSURING THE SAFETY OF YOUR IMPLEMENTATIONS

The world of IT has reached a new phase of maturity. Rather than rampant, unthinking growth in investment and innovation, IT must now justify costs – with a solid demonstration that risk will be mitigated – and the potential for risk is significant.

For one thing, you need to assure the timeliness of go-lives to accommodate business needs and lessen interference in business process. This can be threatened for any number of reasons, although technology is frequently cited as the core issue. Additionally, you need to see any potential bottlenecks down the road and be prepared to circumvent them before the situation becomes critical.

To make sure your implementation will be successful, it's best to ensure the optimum operation of your investments by validating the performance of your IT solutions – before go-live.

THE BUSINESS CHALLENGE

REDUCING THE BARRIERS TO IMPLEMENTATION

“[With SAP LoadRunner] we’re able to generate reports that use Six Sigma terminology and support our service-level management objectives.”

Rich Guidotti, Process Lead for Availability Management, Dow Chemical Company

Today, across all industries, organizations are challenged to discover new markets, create innovative new products and business processes, and compete on complex playing fields. Robust, reliable enterprise software is one of the most important assets an organization has for fulfilling these mandates. But investments in enterprise software are costly and require extensive justification and proof that the technology reacts quickly and effectively to changing business scenarios, rapid increases in data volume, and multiple application types.

Compounding the complexity of the IT issue is the heterogeneity of solutions. It’s common practice to stitch together packaged enterprise application suites, best-of-breed applications, legacy systems, and even external services all under one roof. Even the simplest business processes often span different organizational units and various systems, requiring some facilitation of communication across applications and platforms.

While IT must be in cost-effective alignment with business initiatives, extensive cross-wiring of systems can threaten an organization’s bottom line. Increased risk of suboptimal performance, system bottlenecks, or complete failure comes with this territory, also increasing the potential for system breaches at moments that are most critical to a business’s success.

So if the primary role of enterprise software is to facilitate and optimize business processes, shouldn’t it also be optimized to ensure the most reliable system performance possible? Rigorous testing of new, upgraded, and newly integrated software applications before they go live is one proven way to mitigate the risk of underperformance and to decrease the cost of ownership of IT.

THE BUSINESS INITIATIVE

RUNNING CORE PROCESSES AT THE REQUIRED PERFORMANCE LEVELS

A rapidly changing business landscape and the imperative to keep pace with competitors have led to increasing cycles of reinvention in mission-critical core business processes. The need to continuously improve business processes and the quest for cost-driven efficiencies put companies on a collision course straight toward the risks inherent in technological improvements.

When core business processes don't meet the performance levels required for your business, it creates still other competitive challenges. The end results: break points often appear between disparate technologies within an IT landscape just as an organization's IT skills lag, the rate of technology change increases, and budgets shrink.

CIOs are truly caught between two very difficult positions. They know that the skills gap between technology innovations and their companies' IT users has increased. At the same time, they realize that successful implementation of technology can drive significant growth to the bottom line in a number of ways. These opportunities cannot be ignored, but when growth goals involve technology implementation, timeliness, insight, and performance validation are paramount to a project's success as follows.

Timeliness

Create on-time and within-budget project go-lives. In today's operational reality of tight budgets and scrutiny, it's essential to adhere to budgetary directives. Companies often cite "handling technological difficulties" as the reason for overruns. Unfortunately, many project consultants have a business rather than a technical background and often cannot identify the arcane and sometimes highly technical risks the project faces.

Insight

Ensure that there are no unforeseen difficulties during implementation or throughout the project life cycle. IT projects are notorious for their surprise quotient. Indeed, without insight into potential hurdles, CIOs have no way of knowing the extent of unanticipated situations that can occur. Surprises are an unwelcome reality, particularly since they often come on the heels of other problems. Taken together, the surprises and the original problems can require additional budget, creating budget overrun.

Performance Validation

Even the best-prepared CIO credited with an on-time, within-budget go-live can face criticism because of lackluster solution performance and the attendant challenges in creating user and customer satisfaction. In the testing phase, strict engineering should discipline the IT landscapes to measure throughput capacity and performance levels.

Extensive testing in advance of go-live helps avoid potentially costly surprises that delay projects or drive downtime. And, most important, validating the performance of your solutions before go-live assures you can meet the demands of your users and customers. This allows you to improve your competitive stance and guard against the potential loss of customer goodwill – a loss no business can afford.

Validating that solutions perform at required levels is essential for any enterprise that relies on high-volume transactions for its business. This includes airlines that handle bookings online and via industry networks, financial institutions that process high numbers of trades and transactions, and retailers and consumer products companies that process multiple sales online. And it concerns shipping and logistics service providers that enable partners and customers to track shipments, and utilities and government agencies that rely on optimum solution performance to deliver their services.

THE SOLUTION

TAKING THE STEPS TO ENSURE OPTIMUM PERFORMANCE

To ensure optimum performance of enterprise software to support critical business processes and mitigate the potential risk of underperformance, IT needs a reliable means of evaluating that performance as described below.

When to Test

Thorough load testing helps you better deliver high-performing solutions at many junctures in an IT implementation, as follows:

- Before new installations or deployments
- During capacity planning and sizing
- During the integration of new components or software for business scenarios
- During functionality and performance tests of a chosen solution
- Around in-house developments
- During upgrades or updates

Automated to test the full spectrum of software supporting business scenarios, the SAP® LoadRunner application by HP predicts solution behavior and performance under any of these conditions. SAP LoadRunner emulates hundreds or thousands of concurrent users to put applications through the rigors of real-life user loads, allowing IT groups to stress an application from end to end and measure the response times of key business processes.

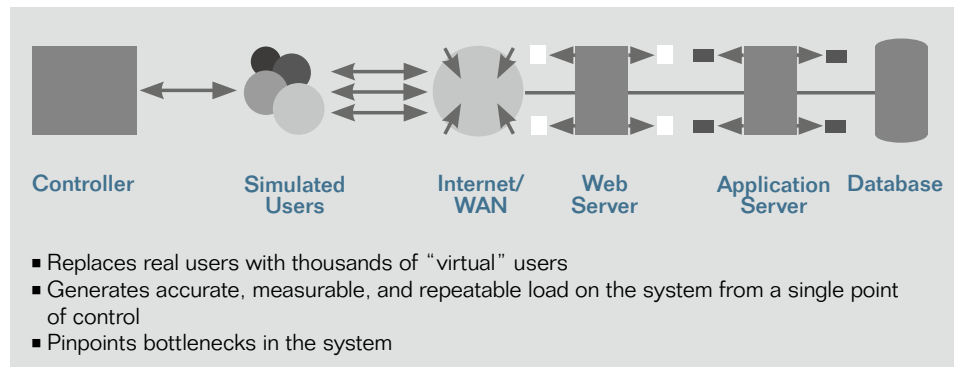


Figure 1: Emulating Production Workloads with Automated Load Testing

Benefits of Performance Validation

Testing solutions before they go live helps project teams make necessary corrections and then retest before the solutions are delivered to their end users, thereby mitigating the risk of process failure. Rich Guidotti, process lead for availability management at Dow Chemical Company, stresses the benefit of knowing in advance whether or not applications are ready to meet the service levels their end users expect: "[With SAP LoadRunner] we're able to generate reports that use Six Sigma terminology and support our service-level management objectives. This way, both IT and our business units are able to get answers to the same quality-centric questions. 'Am I in Six Sigma compliance? What defects or variations exist in my IT systems? What steps are we taking to reduce those defects or variations?'"

Using this methodology, customers using SAP LoadRunner have achieved substantial results such as the following:

- Reducing support costs by 50% to 60%
- Increasing online user capacity by up to 100 times
- Improving application response time by 75% to 500%
- Cutting the time to resolve problems by 50%
- Reducing application failure rate by 50% to 80%

How It Works

In a typical situation, an IT project team might want to launch a new business process. The team will use SAP LoadRunner to validate and test the performance of the software that supports the process in five steps, as follows:

1. Define the business process

The team uses SAP LoadRunner to determine the optimum hardware and software platform based on the operations of the business process itself.

2. Develop the script

The team then develops one or more test scripts to “walk” the software through the actual screens and entries that will be used in the business process. This script represents the activities of a virtual user.

3. Expand the user load

The team uses SAP LoadRunner to increase the virtual user load in order to simulate the peak loading requirements for this business process.

4. Evaluate the results

SAP LoadRunner measures simulated performance against the key performance indicators for the process and then recommends any necessary changes to the related enterprise software systems.

5. Retest to validate

The team uses SAP LoadRunner to rerun the tests in the modified environment to validate the effectiveness of the changes.

Support for Production Environments

SAP LoadRunner scales easily from small user environments to very large environments that support tens of thousands of users with complex application needs. At the same time, the application measures the full, end-to-end performance of business processes even when they take place across enterprises, as is typical in supply chains and demand chains. Also, because SAP LoadRunner is integrated with the computing center management solution from SAP, it lets organizations automate application load testing and operates with minimal administrative overhead. SAP LoadRunner is powered by the SAP NetWeaver® technology platform, the open integration and application platform that unifies technology components into a single platform, allowing organizations to reduce IT complexity and obtain more business value from their IT investments.

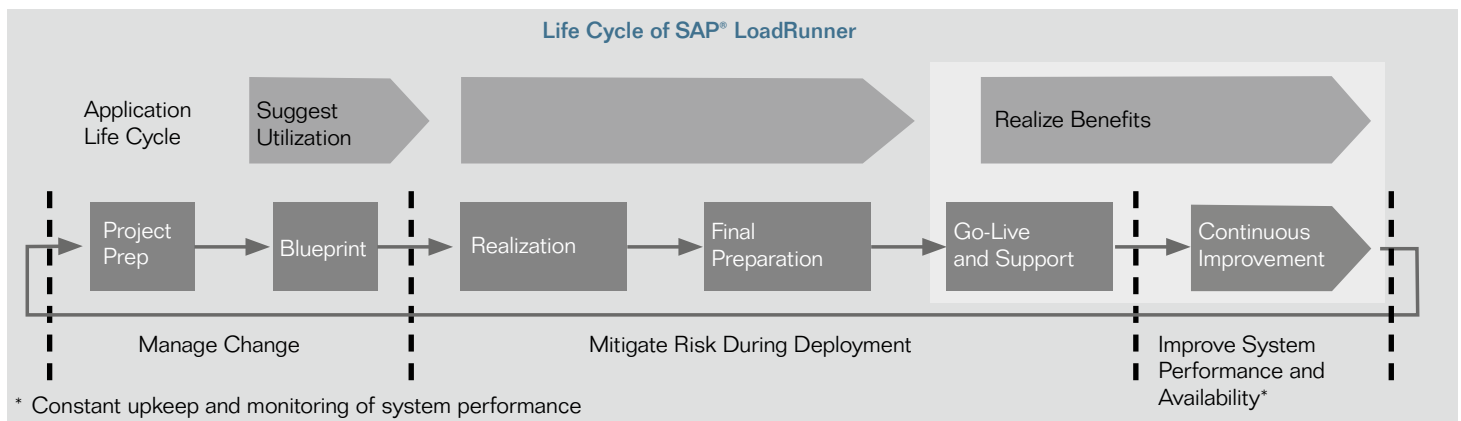


Figure 2: Project Life Cycle

CONCLUSION

PERFORMANCE TESTING IS GOOD BUSINESS

The importance of protecting and insuring enterprise IT investments mounts as the complexity and number of IT systems resident in organizations grows and the sophistication of new technology increases. As risks expand – including everything from downtime to implementation delays, loss of efficiencies and functionality, negative impact on growth from delayed innovations, and soured customer relationships – the value of preempting these problems grows. As Thomas Steinich, manager of the customer competence center at Linde Gas AG, put it, “If our resellers cannot sell our product, we will lose customers and damage our business. And if something harmed the sales channel by not having the right performance or, even worse, not having the portal available, then we would have big, big problems.”

With significant market share in load testing worldwide, SAP LoadRunner offers functionality that mitigates performance risk and accelerates application delivery, optimizing business agility. SAP LoadRunner represents an

important solution for organizations that move to an enterprise service-oriented architecture (enterprise SOA), a framework for service-oriented computing. Enterprise services are far more dynamic, and therefore less predictable, than traditional applications. Because of its compatibility with platforms that support enterprise SOA, SAP LoadRunner is essential in helping enterprises plan, deliver, and benefit from the newest classes of service-driven business processes.

Contact

For more information about SAP LoadRunner, please contact your local SAP customer engagement manager at +1-888-727-2955 or go to www.sap.com/solutions/solutionextensions/loadrunner/index.epx.

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Thomas Steinich, Manager of the Customer Competence Center, Linde Gas AG

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