



Top ten reasons to transition your IT lab environments to the cloud

WHITE PAPER

Table of Contents

The Promise of Cloud Computing	1
The Challenge: Which IT Environments to Transition First?	1
Adopting a Cloud Service for IT Lab Environments	2
1. Eliminate infrastructure constraints on the business	3
2. Run applications unchanged in the cloud	3
3. Reduce data center cost and complexity	3
4. Enable global team collaboration with shared virtual infrastructure	3
5. Accelerate provisioning time with a self-service model	4
6. Increase software quality and predictability	4
7. Reduce server sprawl	4
8. Create pre-production “sandboxes” to test the impact of production changes	4
9. Allow IT operations teams to focus on production uptime	5
10. Reduce the time to replicate and resolve software issues	5
Summary	5

Many IT organizations are evaluating cloud infrastructure as part of their IT portfolio. Transitioning existing production environments is risky, so CIOs, IT managers and IT operations teams are looking for low risk, high ROI projects to prove out cloud services. This white paper explains the top ten reasons why they are choosing IT lab environments to transition first.

The Promise of Cloud Computing

Cloud computing is being hailed as the next major disruptive change in the IT industry. If the promise of cloud computing is realized, organizations will see dramatic reductions in operational costs by outsourcing their data centers to cloud service providers. Just as electric power generation transitioned from individual manufacturers to centralized utility companies at the turn of the 20th century, the pundits argue the same economies of scale and market forces will lead to cloud service providers hosting the majority of the world's IT infrastructure in a few years.

The benefits of cloud computing certainly appear compelling: vastly reduced IT operational effort, reduced costs and the ability to scale up and down infrastructure according to business need. It seems the era of on-demand computing is finally here. However, the hype around cloud computing makes it difficult for IT organizations to determine which vendors are ready to adopt now and which should be considered later. Too many of today's cloud providers are using proprietary environments that require costly rewrites of applications to move them to the cloud.

The Challenge:

Which IT Environments to Transition First?

IT managers are looking for a way to prove out cloud services in a way that doesn't pose a major risk to the business operations and delivers immediate benefits. Many organizations are coming to the conclusion that dynamic environments, such as development and QA, IT ops testing, training and demo labs environments, not only provide a low-risk adoption path, but also provide the highest ROI as their usage fluctuates dramatically and they are expensive to administer. The benefits of a cloud service combined with the new capabilities of virtual lab automation make a compelling business case to transition these environments first.

Adopting a Cloud Service for IT Lab Environments

Skytap Virtual Lab provides industry standard virtual infrastructure, a self-service user interface and built-in virtual networking so organizations can use the service as an extension of their existing IT environments. This so-called 'hybrid' model offers organizations the ability to scale up cloud infrastructure for lab environments while maintaining business-critical production environments in-house.

IT managers are choosing this approach because they can:

1. Eliminate infrastructure constraints on the business
2. Run applications unchanged in the cloud
3. Reduce data center cost and complexity
4. Enable global team collaboration with shared virtual infrastructure
5. Accelerate provisioning time with a self-service model
6. Increase software quality and predictability
7. Reduce server sprawl
8. Create pre-production 'sandboxes' to test the impact of production changes
9. Allow IT operations teams to focus on production uptime
10. Reduce the time to replicate and resolve software issues

1. Eliminate infrastructure constraints on the business

Too often, the lead time and costs of provisioning infrastructure impact an IT organization's ability to deliver on business needs. This is evident in a number of examples:

- » Production downtime occurs after a new patch is applied because the IT operations team didn't have a mirrored copy of production for testing
- » A web application for a critical new business initiative is delivered late because the outsourced Quality Assurance (QA) team faced significant challenges with test environments
- » Business users avoid using a newly deployed application because training was postponed due to high costs.

In each of these cases, the availability of on-demand virtual infrastructure could have prevented a poor business outcome by removing infrastructure constraints on the IT organization. A cloud service enables infrastructure to be added to meet business demand and costs less because it's provided using a utility billing model.

2. Run applications unchanged in the cloud

Some cloud platforms require applications to be rewritten to take advantage of proprietary application frameworks or storage services. This makes it challenging to use them to replace existing IT lab environments.

Skytap uses industry standard virtual infrastructure and supports the leading hypervisors and operating systems so organizations can achieve 'cloud economics' with their existing application architectures and investments. In addition, Skytap provides advanced virtual private networking to allow machines to keep the same networking settings and hostnames and connect to onsite infrastructure as required. This enables IT and development teams to use a cloud service as an extension of their onsite IT environment and run their existing applications, virtual machines and systems unchanged in the cloud.

3. Reduce data center cost and complexity

Data centers are complex and, as a result, costly to manage. Building a centralized IT lab environment typically involves a large capital outlay. Data center space, hardware, networking and storage subsystems are just the start. The cost of implementation and subsequent administration is usually up to five times the initial hardware costs. Often extra capacity for peak demand is not factored into planning which results in frequent infrastructure rationing amongst teams.

Now add the fact that most servers are underutilized and not easily redeployed to where they are needed most, and you find most IT managers agree that using an on-demand cloud service is the most cost effective, flexible solution for IT infrastructure.

A cloud service provides the same data center infrastructure, however usage is billed hourly, so an organization can convert large upfront capital expenditures into needs-based operational expenses. In addition, due to economies of scale and the multi-tenant nature of a cloud service, the cost savings achieved by a cloud service provider can be passed back to the customer. The resulting costs are typically 30-40% lower than managing infrastructure in-house.

4. Enable global team collaboration with shared virtual infrastructure

Most IT organizations now have some relationship with an outsourcing service provider. A common scenario is that business analysts and application development teams are in one location and a testing team from an offshore provider is located in a country such as India or China. The resulting distance and time zone differences creates challenges for these teams. Using different infrastructure for development and testing in each location only compounds these challenges, especially as moving virtual machines between environments is cumbersome due to their size.

Using a cloud-service for test environments enables both teams to work on the same virtual infrastructure. Developers and testers can collaborate on the same virtual machines in real time over the Web to resolve problems. Shared virtual infrastructure not only simplifies administration of lab environments, but also reduces the time associated with issues caused by different environmental and configurations settings.

5. Accelerate provisioning time with a self-service model

The highly dynamic nature of labs means new multi-machine environments require constant set-up and tear-down work. Often, if the lab is busy, this means long delays for the IT operations or test teams. If there is a shortage of infrastructure, this can result in several weeks or months delay while hardware is ordered before work can start.

Virtual lab automation solutions provide a self-service Web portal so IT Operations and QA professionals can deploy environments without involving an IT administrator. This dramatically improves provisioning times and increases productivity.

6. Increase software quality and predictability

An IT manager in charge of application delivery needs to determine the best way to apply limited resources to reduce the risk of undetected software defects that could impact software stability and performance. A typical application development team spends over 25% of their time on environment configuration and defect reproduction. By adopting a virtual lab automation solution, this time is dramatically reduced through automation, enabling teams to spend more time on development, test planning and execution and resolving defects. This ultimately results in better software quality and more predictable delivery schedules.

7. Reduce server sprawl

Server sprawl is a common problem reported by IT administrators. Servers that are kept under desks or left in lab environments are usually underutilized and unavailable to other teams that need them. Creating a common pool of virtualized machines and sharing these across individuals is now a best practice to reduce server sprawl. However, many organizations are now reporting a new problem of virtual machine sprawl. Once hardware is centralized in a common pool, virtual machines become difficult to manage and track. Different individuals or groups may create virtual machines that are not easily identified and it becomes difficult to know when to 'de-commission' these VMs.

Virtual lab automation solves this problem by providing a configuration library to manage, track and deploy virtual machines. Virtual lab users can easily discover virtual machine configurations, create copies and start them in the lab through a self-service Web interface. In addition, virtual machines that have been left running can be set to suspend after a period of time to save costs and reduce infrastructure usage.

8. Create pre-production "sandboxes" to test the impact of production changes

More often than not, an IT organization doesn't have a pre-production environment to test software updates. Often the low utilization and high cost of maintaining a second environment is prohibitive. Furthermore, many production updates are minor change requests to a wide range of existing business applications, so maintaining static pre-production environments for all these applications is not cost effective. Finally replicating the network settings of a production environment is often difficult as the pre-production environment resides on the same network.

A virtual lab environment enables IT operations and test teams to create pre-production environments and ‘check’ them into a configuration library. When a change needs to be tested, an IT professional or tester can deploy the environment into the virtual lab, ensure network settings are replicated by using network fencing, and test updates before rolling into production. Once the test is complete the virtual infrastructure is released back to the shared pool for other users. This enables patches, software updates and application changes to be safely and thoroughly tested before releasing to production environments.

9. Allow IT operations teams to focus on production uptime

IT professionals responsible for infrastructure provisioning will often say lab environments are 20% of the IT footprint but 80% of the work. The dynamic nature of development and QA, IT ops testing, training and demo lab environments requires that IT operations teams are frequently tasked with provisioning, set-up and tear-down work which is often manually intensive and time consuming. Adopting a cloud service for virtual lab automation frees up IT operations teams to focus on production systems rather than spending cycles on lab environments.

Skytap includes simple, powerful networking technology to enable cloud infrastructure to be connected to on-site infrastructure. IT operations teams can still control access and security to the cloud environment, but no longer needs to spend unnecessary time on provisioning requests and lab administration.

10. Reduce the time to replicate and resolve software issues

Often, a tester will report a software defect and a developer will spend hours trying to diagnose it and be unable to reproduce the problem. In these cases, a developer will usually report ‘it works on my machine’ and the bug is left unresolved. Alternatively, a tester will need to spend more time trying to communicate the issue back to the

development team.

A virtual lab enables an entire multi-machine system to be suspended at the point of failure. A tester can ‘check in’ the virtual machine configuration to a shared library and attach a Web URL to a defect report that points to the configuration. It’s then quick and easy for a developer to bring up the entire application stack at the point of failure and debug the issue.

The ‘suspend and snapshot’ capabilities of a virtual lab enable developers and testers to save hours of unnecessary time resolving software defects. In addition, the advanced search and filtering capabilities of the configuration library gives users a way to easily manage and find system configurations. These capabilities result in shorter development cycles and applications delivered to the business sooner.

Summary

Adopting cloud services is a smart move for almost any IT organization and the high cost, dynamic nature of lab environments makes them prime candidates to transition first. Just as Software-as-a-Service vendors such as Salesforce.com offer a low-risk, high ROI alternative to in-house CRM packages, using a cloud service for virtual lab automation offers similar benefits. Organizations typically see immediate cost savings, increased productivity and improved responsiveness to the business by incorporating cloud infrastructure as part of their IT strategy.

For more information on Skytap Virtual Lab please visit www.skytap.com or call a customer representative on 1-888-SKYTAP8.

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