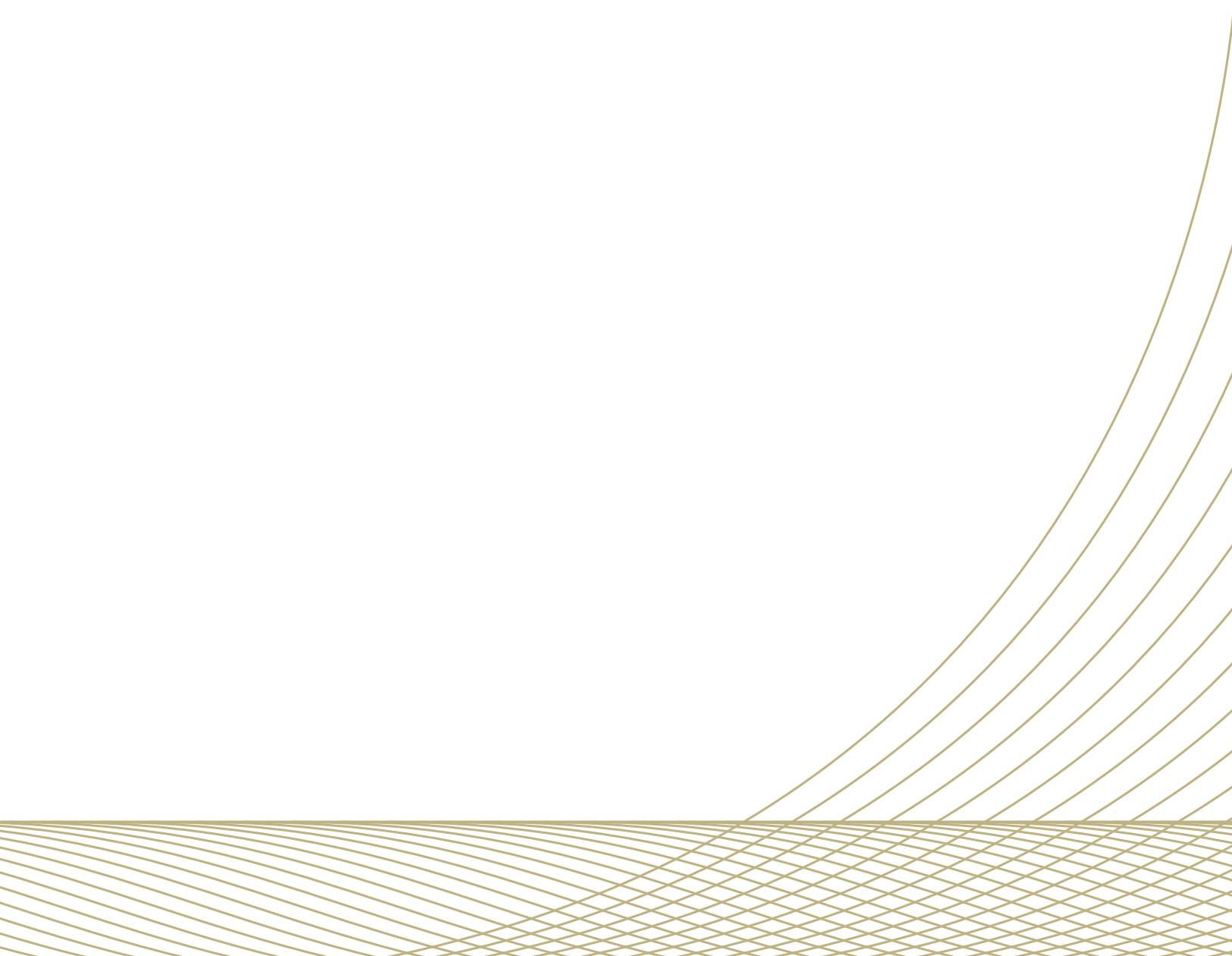




# Enhancing the Software Product Lifecycle with Skytap Cloud



## Introduction

Skytap Cloud helps businesses innovate faster by accelerating product lifecycles from unit testing through sales, training, and support. Skytap Cloud removes common constraints and reduces costs by delivering cloud-based environments on-demand, and is the only cloud-based solution compatible with on-premises datacenter environments.

Many teams need to interact with a software product throughout its lifecycle, including engineering, QA, product, presales, training and support. Skytap Cloud provides these groups with on-demand access to complete, consistent environments that support their various use cases, and typically require little postprovisioning or setup. The result is improved efficiency of the entire product pipeline, with usage quotas and automation that can improve utilization to help reduce your total cost of ownership.

This white paper outlines how Skytap Cloud addresses the unique requirements of each team throughout the product lifecycle.

## Solution Overview

### Complete Environments

Skytap Cloud packages the infrastructure, application code and configuration, operational tools and external connections into consistent virtual datacenters called “environments.” Skytap Cloud environments are easily provisioned, cloned, suspended, and shared around the world. Skytap Cloud environments are identical down to the IP and MAC address, enabling complex software to be replicated without reconfiguration. The result is true self-service access to end users.

Compatibility with on-premises or customer datacenters enables Skytap Cloud environments to support complex traditional enterprise software unmodified. Skytap Cloud supports on-premises equivalent networking, native ESX hypervisor access, and flexible VM hardware and OS configuration options. Networking capabilities such as self-service VPNs with 1-to-1 NAT make it easy to connect Skytap Cloud environments to resources that remain on-premises or within other service providers. No other solution offers both the power and flexibility of the cloud together with compatibility for traditional on-premises virtualized workloads.

### Speed, Scale, Ease of Use

Skytap Cloud enables organizations to import, deploy, share, and manage on-demand virtual datacenters faster than any other on-premises or cloud-based solution on the market today. Skytap Cloud operates global datacenters are partners with IBM SoftLayer’s global infrastructure, providing globally distributed end users with on-demand access to complete ready-to-use cloud-based environments. With Skytap Cloud, complete working environments can be copied between global datacenters by anyone with the permissions to do so.

Skytap Cloud environments are easily accessed via web browsers, VPN, direct connect, and public IP addresses. End users get instant self-service access to working environments, while IT maintains full visibility and control over security and costs. With Skytap Cloud, environments are delivered in minutes that would otherwise take days or weeks to deploy on-premises or using infrastructure as a service alternatives.

Skytap Cloud environments can be cloned and run in minutes. Each copy is an exact duplicate of the original, from the in-memory state of running applications to the virtualized hardware and network addresses. The ability to make independent clones of complete working application environments on-demand opens new possibilities to improve the full software product lifecycle.

New environments can also be built from scratch by importing virtual machines, including OVAs, and mixing in the existing library of environments available within Skytap Cloud.

## More than IaaS

IaaS providers are generally not able to provide fully deployed working application environments on demand. While most IaaS providers are able to allocate raw resources quickly, those resources require additional configuration and deployment steps before they become working systems. What distinguishes Skytap Cloud is the ability to operate on complete working application environments rather than just raw resources such as VMs, networks, and disks.

## Support for Dynamic Workloads

Skytap Cloud allows for highly dynamic cloning, sharing, and management of fully deployed working environments. A Skytap Cloud user can clone and run an existing complex environment in minutes, including live application state, use it for 30 minutes, and then throw it away. While the original Skytap Cloud environment may have been created using traditional provisioning tools, the dozens or hundreds of subsequent clones are available in seconds, requiring no further setup.

Skytap Cloud environments are also easy to share, either within an organization or to external parties. The ability to collaborate on shared environments is critical to enabling practices like DevOps. Integrated collaboration simplifies tasks like pair programming, obtaining third party support, failure testing, remote proof-of-concept projects and virtual training. In a single action, a complete working environment may also be copied to any Skytap Cloud global datacenter. Global copies can be used to provide distributed teams with low latency access.

## Parallel, Identical Environments

Environments on-demand that are isolated, natively support on-premises enterprise applications, and are easy to share unlock capabilities that were previously unavailable to many businesses. Skytap Cloud customers are able to parallelize work streams, reduce resource contention, improve test fidelity, reduce development and test costs, and deliver software faster - all without significant changes to technology or development practices. From this starting point, Skytap Cloud

customers continue to improve their overall speed and efficiency by gradually introducing modern technologies and development practices.

An additional benefit of ready-to-use environments on-demand is a significant reduction in infrastructure needs. Both analysts and customers alike state that “private cloud” installations typically have less than 10% utilized. This is the result of VM sprawl caused by teams not returning running, but unused, virtual machines back to IT. The most often cited reason for teams to hoard unused resources is concern over the length of time it takes to obtain and configure new resources. Skytap Cloud removes that concern by providing teams self-service access to working environments in minutes.

In addition, built in quota enforcement and usage alerts also give IT administrators the power to compel users to be efficient. And finally, the ability to suspend and resume complete virtual datacenters means even long-lived environments do not need to consume compute resources at all times. Combined, these Skytap Cloud features greatly reduce underutilization thereby decreasing overall infrastructure needs.

## Visibility and Control

Full visibility and control of security and cost is critical to successfully manage globally distributed resources. Skytap Cloud gives IT administrators deep visibility through a unified dashboard, fine grained audit logs, tagging, labels, per minute usage reporting, and network ingress/egress views. Administrators can control resource usage per user or department with a fully integrated quota and notification system. Exportable granular reporting simplifies integration with external accounting and charge-back tools.

## Security and Compliance

Skytap Cloud includes single sign-on capabilities, role based access control, customizable account-wide security policies, and detailed audit logs to help IT administrators maintain a strong and compliant security posture. Skytap Cloud environments are isolated by default, preventing unplanned ingress from the Internet, corporate resources, or other Skytap Cloud environments. Even egress can be restricted. Skytap Cloud itself is certified by several third party organizations including internal and external penetration testers and SSAE 16 Soc 2.

# Product Lifecycle Use Cases for Skytap Cloud

## Product Development

Software development teams are often constrained by a lack of enough ready environments. Developers and testers are often working on multiple versions of software at any given time, all of which may need to be verified for compatibility across dozens or hundreds of different configurations defined by the product support matrix. Many test labs can include complex infrastructure components such as OS configurations, databases, and middleware that specialized

SMEs must set up, configure, maintain and reset. Software development initiatives such as continuous integration and continuous delivery amplify environment access challenges.

Skytap Cloud provides development and test teams self-service access to working labs when needed. SMEs such as server, database, and middleware administrators are able to set up infrastructure once. Other teams can then clone, use, and destroy identical copies without interfering with other teams. Skytap Cloud enables a full software support matrix to be stored as a library of templates that can be rapidly provisioned for both interactive testing or fully automated tests.

Skytap Cloud enables environments to be easily cloned and shared outside of the firewall using patented Skytap Cloud sharing portals. Sharing portals enable product teams to share early access to products under development to receive feedback from customers and end users.

## Sales Demonstrations

Software demonstrations are required throughout the software sales cycle, typically delivered by a sales engineer to a technical audience. As the sales cycle progresses, software demos are personalized to provide the prospective customer with a better example of how the software will work for them, eventually leading to a proof of concept where the software and proposed value is validated in a live environment.

Shared demo environments cause many conflicts for these teams. When a conflict causes a demo to fail, or a customer-specific configuration is deleted by another user, a sales campaign can lose momentum and it may extend the overall sales cycle, delaying revenue and creating unnecessary tension. Other approaches, like shipping demo laptops, are costly and maintenance heavy since environments decay over time with frequent adding and deleting of data.

Skytap Cloud enables self-service access to consistent, predictable, and repeatable demo environments for sales engineers. Customer-specific demos that match targeted infrastructure can be built out and saved as templates. A library of templates that can be redeployed at any time helps sales engineers effectively manage more accounts in their funnel. Customers can even be given direct, yet controlled, access to live environments through Skytap Cloud's patented sharing portals.

## Virtual Training

Well-trained end users are known to be happier customers who purchase more software and file fewer support tickets. Unfortunately, in recent years, most end users' workloads have increased and it is more difficult to schedule time for live training. Many customers would benefit from self-service access to training labs from wherever they are in the world, but making infrastructure globally available 24x7 is often cost prohibitive.

Skytap Cloud enables both live instructor-led as well as self-paced training for end users. Skytap Cloud environments are available on-demand, deployed identically for all students, and fully isolated. Resources may be suspended between training sessions to reduce costs. Additionally,

training environments can be copied around the globe to enable low-latency local access. Training class environment definition, access permissions, and cost constraints may all be centrally managed. Skytap Cloud gives instructors fast browserbased over-the-shoulder access to all student virtual machines. Skytap Cloud helps customers deliver training that surpasses even physical classroom delivery.

### Customer Support

Enterprise software is configured in various ways when deployed to customer environments, and problems can occur with those configurations. Support teams are called in to help customers identify the root cause of an issue and either resolve or escalate to product engineering teams. The challenge is that customer support teams seldom have direct access to the configuration causing the issue.

With Skytap Cloud, customers and support teams can import VMs or recreate customer-specific configurations to reproduce issues. If the support engineer is not able to resolve the issue and needs to escalate to product engineering, the troublesome configuration can be cloned and shared with engineering teams. Those environments may also be rolled into a testing matrix to help prevent future regressions.

Skytap Cloud environments may also be used to dry-run complex software version upgrades to find problems before they impact production. With Skytap Cloud, customers and support engineers can import or recreate customer specific environments for upgrade testing in safe environments isolated from live deployments.

### Conclusion

From product development and testing, to customer support, environments are the key to each stage of the software delivery lifecycle. When teams do not have the ability to self-provision these environments on-demand, bottlenecks are immediately formed and pipeline efficiency suffers. In this paper, we have shown the powerful features and ease of use that Skytap Cloud offers enterprise teams, and the unmatched control and visibility that gives Skytap Cloud the lowest total cost of ownership for any cloud solution available today.

To learn more about Skytap Cloud, visit [www.skytap.com](http://www.skytap.com).



## SKYTAP CLOUD FEATURE SUMMARY

<b>Collaboration</b>	<ul style="list-style-type: none"> <li>• Built from the ground-up for dynamic uses including: <i>Product Development, Product Testing, Sales Demos, Training, Support</i></li> <li>• Template library and project for environment sharing between users, groups, and departments</li> <li>• Environments can be copied between datacenters with no scripting</li> </ul>
<b>Compatibility</b>	<ul style="list-style-type: none"> <li>• Native import and export of VMware images (OVF, OVA, VMDK)</li> <li>• On-premises equivalent L2 and L3 networking</li> </ul>
<b>Ease of Use</b>	<ul style="list-style-type: none"> <li>• Flexible OS and virtual hardware configuration options (not limited to small, medium, large instances)</li> <li>• Efficient self-service access controlled by IT governance rules</li> <li>• No scripting required to create, modify, manage environments</li> <li>• Intuitive user interface the does require specialized training</li> <li>• Instant duplication of fully deployed working environments</li> <li>• Full isolation between environments, allowing duplicate environments to run simultaneously</li> <li>• 1-to-1 NAT to allow duplicate environments with identical network to connect to shared resources</li> <li>• Self-service VPN to access external resources</li> <li>• Native support for suspend/resume of complete environments, including application state</li> </ul>
<b>Interoperability</b>	<ul style="list-style-type: none"> <li>• Complete REST API for automation of repetitive tasks</li> <li>• Plugins for Jenkins, TFS, UrbanCode, and others</li> </ul>
<b>Visibility and Control</b>	<ul style="list-style-type: none"> <li>• Rich quotas system for IT management and control costs</li> <li>• Mobile clients for IT administrators</li> <li>• Integrated notification system for key events</li> <li>• Detailed audit log of all Skytap access and activity</li> <li>• Integrated scheduler to build workflows and recurring events</li> <li>• Exportable usage reports by user, group, or department</li> </ul>
<b>Security</b>	<ul style="list-style-type: none"> <li>• Environments that are secure by default, preventing unplanned ingress from the Internet</li> <li>• SAML based Single sign-on</li> <li>• Full role based access control</li> <li>• Customizable account-wide security policies</li> <li>• Restrict portal login access by source IP range</li> <li>• Explicitly browser activation</li> <li>• Security tokens for API use without password exposure</li> </ul>



**Skytap Headquarters**

719 2nd Ave., Suite 800  
Seattle, WA 98104  
1-888-759-8278

**Skytap UK**

30 Stamford Street  
London SE1 9LQ  
+44 (0) 203-790-0962

**Skytap Canada**

240 Richmond Street W  
Toronto ON M5V 2C5  
+1 (426) 562-0201

