

Business white paper

# Increasing agility and reducing cost for private and hybrid cloud computing



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## Executive summary

Now that the dust has settled from the initial cloud excitement, IT is realizing that its main task remains unchanged: to deliver reliable services in a cost-effective way.

What has changed significantly is the way lines of business think about IT services. They now expect to consume services from in-house IT departments the same way they do from cloud providers—with similarly fast response times to requests for services, agility to deploy new applications in response to business trends and opportunities, and the ability to turn services off when they are not needed. So cloud changes everything for IT.

In addition to heightened expectations, the overall technology context has become much more complex. Not all applications can or should be moved to the cloud. And the cloud model can be used internally to good effect as well as externally with third parties. That means that IT organizations end up managing a mixture of public cloud, private cloud, and traditional IT.

This is a big challenge. IT managers have to acquire the tools to manage resources across three sourcing models and avoid having multiple islands of management operating separately. But this is also a great opportunity to be the innovation engine of the business and the catalyst of business decisions—provided IT can master the world of hybrid service delivery. And mastery requires two adjustments to the notion of cloud—realizing that cloud is a journey that follows distinct steps, and implementing comprehensive, unified management that can help you handle the intricacy of large hybrid cloud environments.

## A time of big IT trends

Virtualization, mobility, agile development, right-sizing, composite applications—never have so many major trends and developments converged on the IT world at once. And the biggest trend of all is cloud computing. Of all the innovations that are revolutionizing IT, cloud delivery is the one that has most captured the imagination of business leaders.

Cloud computing has the potential to drive greater agility, speed, and cost savings by providing on-demand access to an elastic pool of shared computing assets—such as applications, servers, storage, and networks—that can be rapidly provisioned and released, with minimal service provider interaction, scaled up and down in response to business demands, and acquired economically on a pay-per-use basis. Little wonder that it appeals to the business side of the house.

The IT side has responded somewhat more cautiously. Some see it as an inevitable trend that needs the oversight and expertise of the internal IT organization to make it yield the benefits the business expects. Others see it as a new and better way to deliver IT services for in-house organizations, that can leverage it as well as or maybe better than third parties.

In practice, cloud delivery is proving to be all of the above, and increasingly, IT organizations are finding themselves involved in managing hybrid infrastructures that combine public cloud, private cloud, and traditional IT services.

## As if IT needed more challenges

Cloud brings its own set of challenges. Some of them stem from the ever-more-demanding requirements of the business. Specifically, the main business demands that account for much of the interest in cloud computing are speed and agility, cost, risk, and control.

These business drivers translate into four goals that IT has to keep at the top of the agenda:

- Reducing the time it takes to deploy applications and responding promptly to requests for business services
- Making maximum use of resources to reduce capital spending
- Complying with policies and audits quickly, completely, and cost-effectively
- Making sure that internal organizations don't acquire public cloud services without IT oversight, creating "shadow IT" with unmanaged spending, lack of compliance, and inadequate security

Other challenges stem from the fact that in the real world, IT is faced with hybrid delivery rather than pure cloud delivery, and cloud services will have to be managed in parallel with management of legacy applications and infrastructure that aren't going away any time soon. IT will have to meet these challenges by gaining comprehensive control of hybrid infrastructures without multiplying the management burden and complexity. And since in most businesses, IT staff members are already overloaded and the particular skills that apply to cloud delivery are scarce, standardized best practices and automation become even more important.

A challenge that many organizations overlook is future-proofing. Most of them start with infrastructure as a service and neglect to look ahead, preparing for the applications they'll have to deploy and manage on that infrastructure down the road. And finally, the frequent and fast application upgrades that are a primary reason for adopting cloud delivery can't happen without service disruption unless you have automation technology and project-based integration.

## Putting cloud in context

To understand the need for cloud management and the kind of management solutions that can meet that need, we first have to look at what is currently going on among adopters of private and public cloud. Favorable experiences with cloud are changing end-user expectations. IT's internal partners are coming to expect the same advantages from their in-house IT organization that they get from cloud providers—readily available services and pay-per-use pricing. The combination of a wide variety of access points, from desktop PCs to mobile devices, is changing the way IT services are consumed, accelerating the movement toward service-oriented delivery models. "Time to market" has become synonymous with "time to revenue," and is seen as the top cloud benefit.

At the same time, server sprawl has led to under-utilized resources, and that in turn has caused capital expense to skyrocket, with some servers running at no more than 15 percent capacity—and business managers see cloud delivery with its promise of resource management and workload optimization as the solution. The application layer—its capabilities and the way it is exploited—is seen more and more as the next destination in the cloud journey, where companies will add application deployment to the list of services they source from the cloud. And regulatory compliance issues, particularly regional ones, are forcing companies to find flexible and effective ways to make sure that services are aligned with business policies.

## Cloud as a journey

In this context, IT organizations, whether their businesses task them with building a private cloud or look to them to manage relationships with public cloud providers, have a large task ahead of them.

Effective cloud computing doesn't happen instantly. Cloud is a journey, and IT needs to know where it's going—what the requirements are, and what the goals are. The journey itself can be divided into identifiable steps.

The first is consolidating and standardizing IT resources. If your company is successful, it is probably growing, and if it is growing, you've probably got server sprawl. Before you bring cloud into your environment, you must consolidate and standardize your resources. This frees up funding for your cloud initiatives, and frees up staff to focus on them.

Virtualization comes next. In fact, it's impossible to move to the cloud without virtualization. Most IT organizations are already virtualized to one degree or another, so this is often a matter of accelerating efforts already underway. And in addition to providing the necessary foundation for implementing cloud, virtualization contributes to the success of your consolidation efforts.

Then comes automation, which makes it possible to provision physical and virtual servers in real time and speed up response to business demands, reaction to service disruptions, disaster recovery, and so forth. Automation tactics range from the use of scripts to more advanced automation using orchestration solutions, and they yield big benefits—like process improvements, compliance, rapid delivery, and cost reduction.

And finally you reach the point where you can give your users simple, efficient self-service requesting and provisioning—the key benefit they're looking for from cloud technology.

More than likely, you're in the process already of taking one or more of these steps, and rather than following a strict sequence, they will probably overlap. But whatever the sequence, they prepare you to meet your cloud requirements and move toward your goals. They give you the flexibility to change as business requirements, cloud technologies, and the cloud model change and mature. And they enable you to scale and grow by increasing capacity and adding capabilities over time.

## Comprehensive unified management

These steps along the way lead to another, critically important concept—comprehensive, unified management. Cloud is simply another way to deliver services, and it can't be managed separately from the traditional IT environment, with which it will inevitably coexist.

Managing cloud in its own silo while you continue to manage your legacy systems as you always have can cancel out many of the benefits cloud offers. IT organizations need a single tool set to manage private cloud, public cloud, and traditional IT environments, to avoid increasing costs rather than reducing them, making things more complicated rather than simplifying them, and tying up more staff resources rather than freeing them to focus on innovation.

Functions such as governance, security, compliance, service assurance, and change management are common to both cloud and traditional IT environments, and should be managed in concert from a single system, whether they are applied to applications running in a private cloud or public cloud environment or in a traditional IT environment.

Unfortunately, most cloud management tools on the market today cannot be used to manage traditional IT environments. But HP offers a cloud solution that can—a truly hybrid IT solution that provides comprehensive unified management.



## The HP solution

HP Cloud Service Automation (CSA) software offers application and infrastructure provisioning for private cloud, public cloud, and hybrid IT services. It offers heterogeneous support, an extensible platform, and complete application, database, and middleware cloud management. As the software portion of HP CloudSystem Enterprise\*, which combines HP hardware and software, and as the core of the HP overall cloud-management solution, which includes HP Business Service Management, security, and governance software, Cloud Service Automation delivers:

- Advanced provisioning and management of applications and infrastructure with industry best-practice templates, providing greater flexibility at a lower cost
- A highly elastic, scalable architecture with advanced workload optimization and metering, supporting heterogeneous environments
- A self-service portal and service catalog to enhance user ability to design, build, and consume private and public cloud services
- An extensible platform that supports service assurance, application lifecycle management, security, and compliance

With HP Cloud Service Automation your IT organization can build a private, public, or hybrid cloud-computing environment that enables you to transform existing data centers and leverage virtualization investments and traditional IT business applications into a cloud environment. And this enables you to deliver services faster, through a self-service portal, while ensuring the highest levels of quality and security.

**“The basics of IT are by now commoditized. The business value in IT is to become more of a trusted advisor. We must be in a position to advise customers on new strategies and services. With HP Cloud Service Automation we have a strong provisioning suite, a strong automation suite—and this is what cloud is all about. And with HP it was just one company, one phone number.”**

*– Jens Maagøe, Senior Architect, NNIT, a large European IT services provider*

## \*HP CloudSystem Enterprise

Integrated solutions can fast-track the journey to the cloud. HP CloudSystem Enterprise combines HP Cloud Service Automation with HP Converged Infrastructure to provide a complete, integrated, open solution for building and managing clouds. CloudSystem Enterprise provides a highly flexible, scalable, customizable solution for deploying a full range of cloud service models—from infrastructure to applications. It is optimized for HP Converged Infrastructure, but it also provides heterogeneous support for many virtualization technologies, operating systems, and both HP and non-HP infrastructure. It combines an easy-to-use approach to building infrastructure services with the advanced lifecycle management of HP Cloud Service Automation for a complete solution, with comprehensive cloud management for automated provisioning, governance, monitoring, deployment, and security.



## HP Cloud Service Automation key benefits

With HP Cloud Service Automation, your in-house IT organization can bring the power of the cloud model to bear to deliver:

- Faster time to value by reducing application and infrastructure provisioning from months to minutes across physical and virtual resources—delivering new services faster and accelerating time to revenue
- Reduced cost by increasing server utilization up to 80 percent and improving IT administrator efficiency up to 60 percent
- High-quality service delivery by providing an automated environment to incorporate best practices and knowledge capture, reducing outages and security incidents up to 70 percent
- Freedom from vendor lock-in by supporting heterogeneous environments, allowing you to leverage best-of-breed software and hardware
- Scalability and elasticity to scale up and down as the business grows and demand for IT services fluctuates
- Increased agility for quick response to requests and changes and for dynamic growth
- Service assurance and control for monitoring and managing the entire cloud service lifecycle across request, ordering, provisioning, usage, and retirement—in alignment with business policies, cost targets, and performance goals
- Investment protection by building cloud services on a flexible platform that can scale to support your cloud environment, support your existing heterogeneous infrastructure, and integrate application lifecycle management tools

**“We chose to work with HP for two reasons. Firstly, HP is well known and well established in the IT market so it would bring credibility to our new service. Secondly, the HP solution was mature, very well designed, and complete with good technology; in fact it included everything we needed to develop, manage, monitor, and provision the platform. Also, HP Cloud Consulting Services expertise helped ensure a successful solution that was up and running fast.”**

*– Managed services marketing director of a major telecommunications operator*



## Are you ready to move confidently to the cloud?

HP Cloud Service Automation is part of the only end-to-end, integrated cloud solution available on the market today, including advanced provisioning for composite applications as well as infrastructure, support for heterogeneous environments, and a flexible extensible platform for comprehensive unified management. HP offers a mature, proven, and integrated set of management solutions and services to improve service quality, availability, governance, and compliance, while supporting the entire lifecycle of your cloud initiative. HP also offers professional services, training, and support to help your organization develop the skills to maintain and grow your cloud solution.

If you're ready to reduce capital and operational expense, improve the quality of the services you deliver, control the entire cloud lifecycle, and reduce the time you spend on compliance and auditing, contact your HP sales representative today and sign up for our HP Cloud Discovery Workshop to define and develop consensus on your cloud strategy. For more information, visit [hp.com/go/CSA](http://hp.com/go/CSA).

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