A Custom Technology Adoption Profile Commissioned By Cisco Systems

Enterprises Seek The Benefits Of Hybrid Cloud, And Work To Overcome The Challenges

January 2013

Introduction

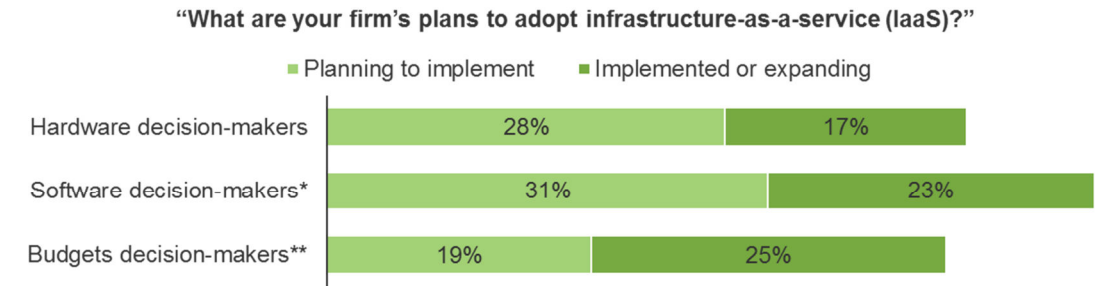
About half of US and European enterprise IT decision-makers report that their companies use cloud infrastructure-as-a-service (IaaS). Adoption has grown over the past five years, and Forrester expects continued momentum for this infrastructure strategy. One type of cloud service architecture, hybrid, combines the use of on-premises cloud infrastructure with cloud service provider infrastructure to create a firm's overall capacity from the combined capabilities. IT decision-makers report greatest interest in using IaaS in a hybrid cloud approach to complement on-premises capacity, rather than replace it, and are planning for the impact that will have on network operations and spending. While a hybrid approach promises cost savings and significant gains in IT and business flexibility, some concerns remain around how to manage and integrate on-premises infrastructure with cloud services in a hybrid cloud architecture. This profile highlights cloud adoption trends as well as the key benefits and challenges that US and European enterprises see when considering and adopting hybrid IaaS strategies.

Firms Are Adopting Cloud IaaS, Including Hybrid Cloud

Forrester Research surveys across varied groups of IT decision-makers show that adoption of IaaS is high and is expected to continue to grow. While more than 40% of both hardware and budget decision-makers report implementing or planning to implement IaaS, software decision-makers are even more likely to report using IaaS, with more than half of those decision-makers surveyed reporting current implementation or plans to adopt (see Figure 1).

Figure 1

Many Firms Have Plans Or Have Implemented IaaS; Adoption Is Strongest Among Software Decision-Makers



Base: 317 US and EU enterprise (5,000+ employees) hardware decision-makers (Note: hosted and public cloud responses combined)
*Base: 602 US and EU enterprise (5,000+ employees) software decision-makers
**Base: 604 US and EU enterprise (5,000+ employees) technology budget decision-makers

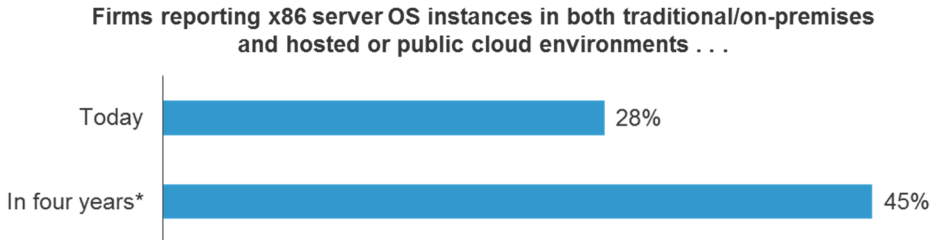
Source: Forrsights Hardware Survey, Q3 2012
*Source: Forrsights Software Survey, Q4 2011
**Source: Forrsights Budgets And Priorities Tracker Survey, Q2 2012

FORRESTER®
Headquarters
Forrester Research, Inc., 60 Acorn Park Drive, Cambridge, MA 02140 USA
Tel: +1 617.613.6000 • www.forrester.com

The hybrid model of implementing IaaS is particularly enticing for US and European enterprises. Twenty-eight percent of hardware decision-makers report using a hybrid cloud strategy for server resources today, and nearly half predict that they will have workloads in both traditional/on-premises and hosted/service provider cloud environments by 2016 (see Figure 2). This new architecture will bring unfamiliar challenges, as IT works to integrate resources and workloads in their data centers with those at a cloud service provider. Having infrastructure resources at two locations connected via the network creates the need for a whole new level of integrated visibility, management, and orchestration.

Figure 2

Nearly A Third Of Enterprises Report Hybrid Allocation Of Server Resources Today

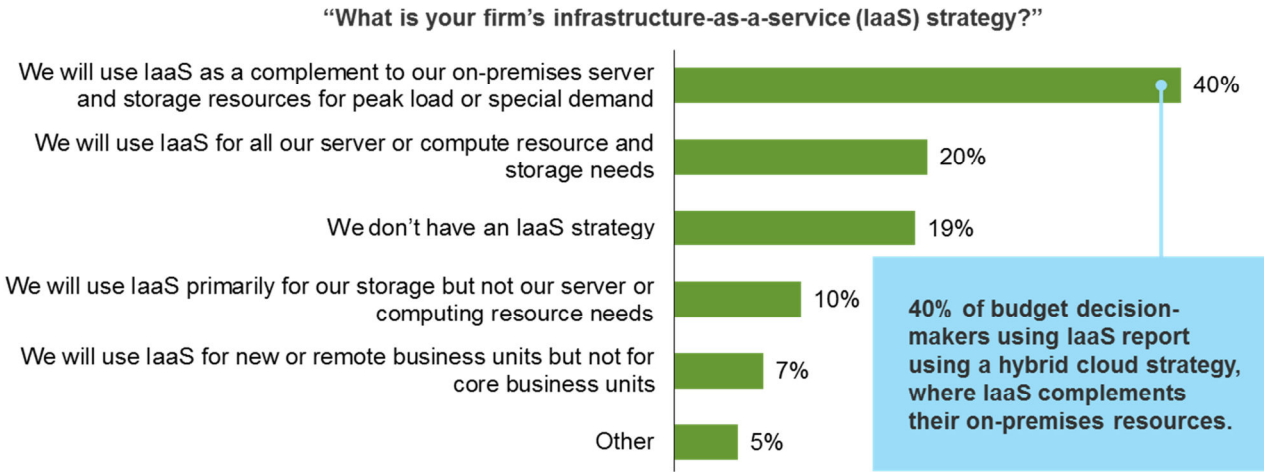


Base: 290 US and EU enterprise hardware decision-makers who have already adopted or have plans to adopt x86 virtualization
* Base: 289 US and EU enterprise hardware decision-makers who have already adopted or have plans to adopt x86 virtualization
Source: Forrsights Hardware Survey, Q3 2012

Even budget/purchase decision-makers appreciate the opportunity of using a hybrid cloud strategy. When Forrester asked these respondents about their use of a range of cloud IaaS strategies, the most, 40% of firms, said "We will use IaaS as a complement to our on-premises" resources (see Figure 3). Hybrid cloud architectures let firms provision capacity for typical workload needs and use cloud service provider capacity for demand spikes. This saves them from having to purchase mostly idle peak server capacity for peak needs, such as an extra 50% for end of quarter financial closing or 10x capacity for web marketing flash crowds. And firms only pay for the capacity they use, which is often cheaper.

Figure 3

The Most Popular IaaS Strategy For Budget Holders Is A Hybrid Cloud Strategy



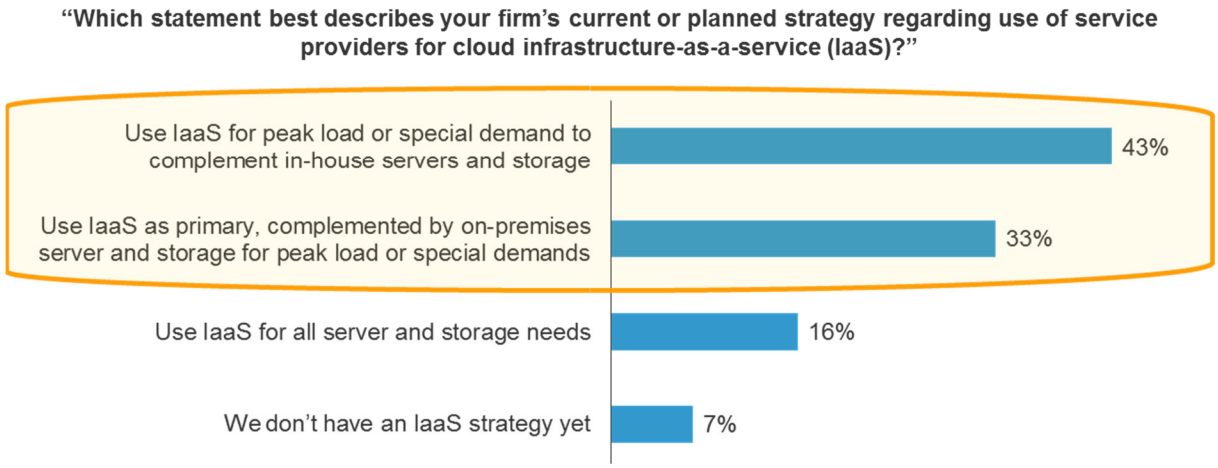
Base: 151 US and EU enterprise technology budget/purchase decision-makers whose organizations have already implemented IaaS
Source: Forrsights Budgets And Priorities Tracker Survey, Q2 2012

Firms Like Benefits Of Hybrid Cloud But Are Concerned About Security And Compatibility

In December 2012, Cisco Systems commissioned Forrester Consulting to delve deeper into the growing interest in IaaS, and in the hybrid model specifically. Forrester asked 69 IT decision-makers in the US, UK, France, and Germany who were interested in or already using a service provider for cloud IaaS about their cloud strategy and found that 76% are planning to implement a hybrid scenario (see Figure 4). The majority of these hybrid adopters plan to use IaaS as a complement to their on-premises servers and storage, but a significant number will also be looking to their service provider for primary support, using their in-house resources only for peak load or special needs.

Figure 4

Seventy-Six Percent Of IT Decision-Makers Surveyed Use/Will Use A Hybrid Cloud Strategy



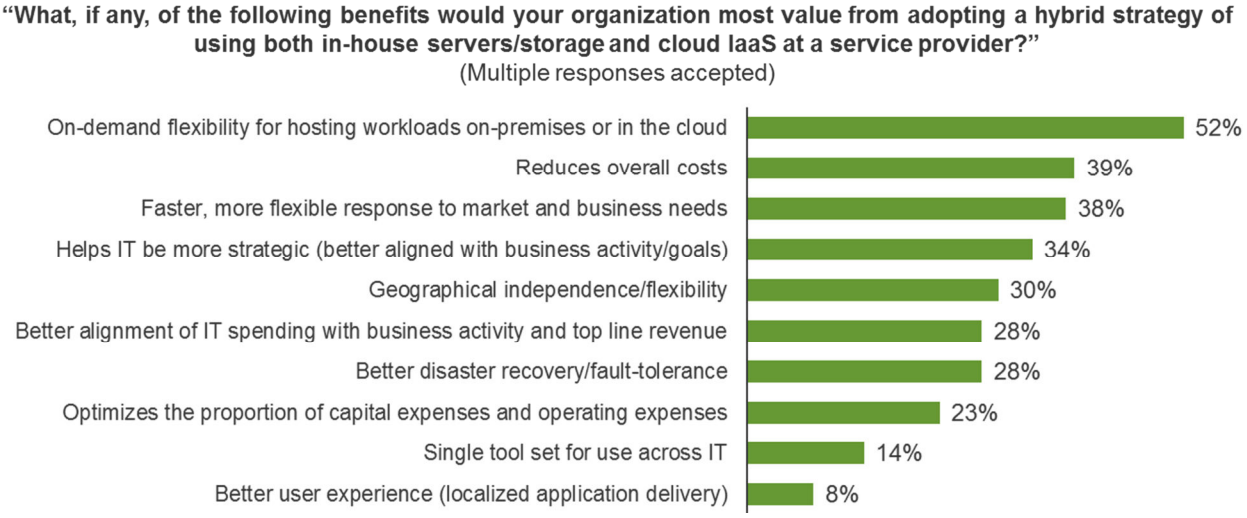
Base: 69 US and EU enterprises (2,000+ employees) who use or plan to use service providers for cloud infrastructure-as-a-service (IaaS)
Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco Systems, January 2013

Historically, costs have been the initial motivator for virtualization and cloud adoption, but Forrester Consulting found that flexibility is on par with cost as a primary driver for a hybrid cloud approach (see Figure 5). More than half of those planning to use or using IaaS see "on-demand flexibility for hosting workloads on-premises or at a cloud service provider" as a key benefit of going hybrid with their IaaS strategy. Flexibility to respond quickly to business needs also topped the list of key benefits associated with a hybrid model.

However, decision-makers also see challenges in using a hybrid cloud strategy. Two security challenges are top of mind for decision-makers pursuing a hybrid strategy for IaaS. Ensuring the consistency of security policies between the on-premises environment and the service provider is seen as a significant challenge/barrier for 46% of US and EU enterprises surveyed, on par with concerns about securing communication and data sharing between the two environments (see Figure 6). The potential need for re-architecting applications to operate in the shared environment is also a major concern for 45% of decision-makers surveyed. Other challenges, such as seamless integration across data center and cloud service provider, were listed as major concerns by 30% of respondents or less.

Figure 5

IT And Business Flexibility Drive Interest In Hybrid Cloud

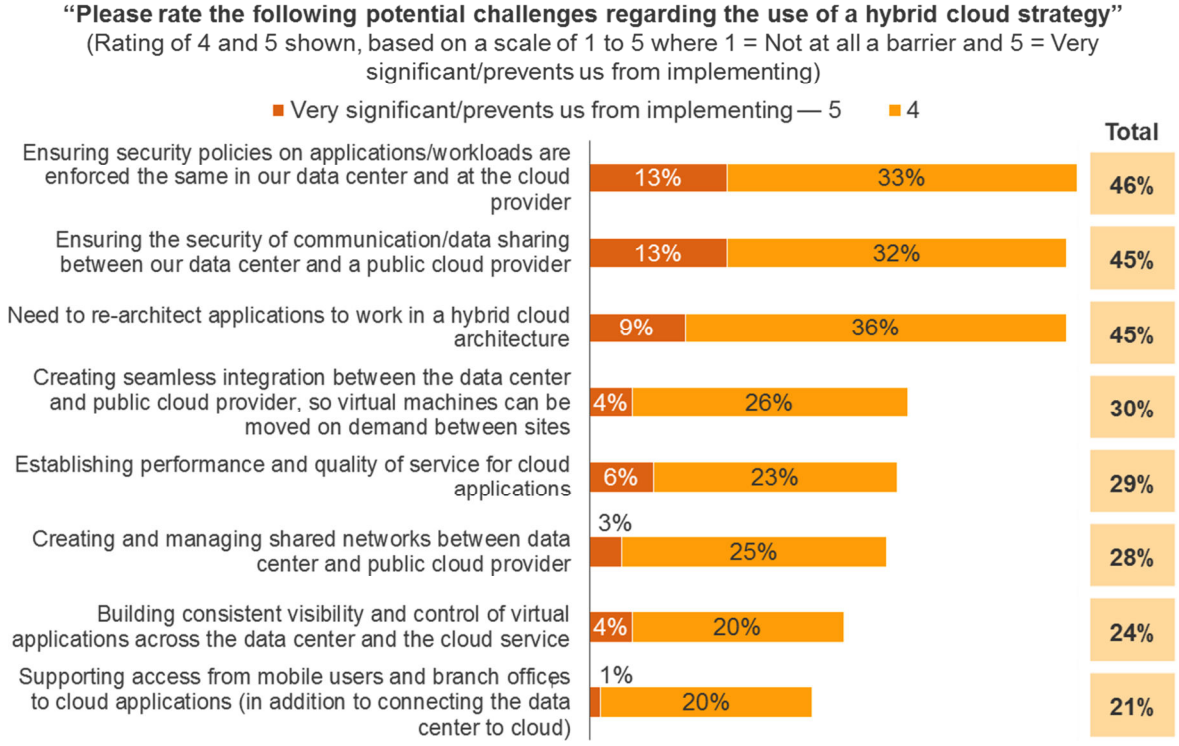


Base: 69 US and EU enterprises (2,000+ employees) who use or plan to use service providers for cloud infrastructure-as-a-service (IaaS)

Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco Systems, January 2013

Figure 6

Security And Application Challenges Are Top Hybrid Cloud Concerns



Base: 69 US and EU enterprises (2,000+ employees) who use or plan to use service providers for cloud infrastructure-as-a-service (IaaS)

Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco Systems, January 2013

Firms Pursue Hybrid Cloud Benefits But Want Security And Compatibility Assurance, Too

Many enterprise IT decision-makers, about half and growing, are using IaaS — and three quarters of firms using IaaS today use or plan to use a hybrid cloud strategy to combine server infrastructure on-premises with infrastructure at a cloud service provider. In our survey of firms using IaaS, decision-makers reported that the most valuable benefits of a hybrid cloud strategy were IT flexibility, reduced costs, and a faster, more flexible response to market and business needs. IT decision-makers were also clear about their take on potential challenges associated with a hybrid cloud strategy. Many want consistent security policies and secure communications that span both their data center and the cloud service provider — and to figure out how to make existing applications work across both locations. Other key needs include seamless integration with cloud providers for moving virtual machines, shared networks with cloud provider, and consistent management of applications across the hybrid cloud architecture.

IT decision-makers will look to find solutions to these challenges with existing tools and skills — or explore new offerings that make it easier to address the challenges of using a hybrid cloud strategy. There are evolving solutions they may employ to address their most pressing hybrid cloud challenges, including:

- **Consistent policy enforcement and capabilities for firewalls, security, and application delivery.** Since customers can't dictate what hardware the cloud provider will use, they can deploy software or virtual machine-based infrastructure such as firewalls, security services, and application delivery services that are consistent across the cloud and the data center.
- **Layer 2 network connectivity to support VM migration.** For true VM-mobility between on-premises infrastructure and cloud providers, firms can implement L2 connectivity to support VM migration, using encryption to secure communication of mission critical applications and data.
- **A common view of virtual applications and resources across the data center and cloud service provider.** Decision-makers can tie their hybrid VM management tools into cloud orchestration platforms to increase automation of application deployment and network provisioning — and create a unified operations and management view.
- **Support for multiple hypervisor environments and related infrastructures software.** Forrester's surveys show that many firms have more than one hypervisor environment and management tools in their data centers. So decision-makers can implement solutions and strategies that interoperate with a range of hypervisor environments, both within the enterprise data center and at various cloud providers, including multiple hypervisors, virtual switches, and cloud automation tools.
- **Virtual network overlays designed to integrate with evolving frameworks for SDN.** Software-defined networking (SDN) is an emerging concept for virtual network infrastructure (VNI) that enables firms to virtualize and automate network characteristics and manage the network by workload.[1] Decision-makers may also implement network overlays for hybrid cloud that will be interoperable with emerging standards for flexible programmatic control of virtual infrastructure, such as OpenFlow and OpenStack.

Methodology

This Technology Adoption Profile was commissioned by Cisco Systems. To create this profile, Forrester leveraged its Forrsights Hardware Survey, Q3 2012, the Forrsights Software Survey, Q4 2011, and the Forrsights Budgets And Priorities Tracker Survey, Q2 2012. Forrester Consulting supplemented this data with custom survey questions asked of 69 US (21), UK (17), French (16), and German (15) IT decision-makers, at enterprises (2,000+ employees) currently using or planning to use service providers for cloud infrastructure-as-a-service (IaaS). Survey questions related to their plans for implementing IaaS as well as key benefits and challenges associated with a hybrid cloud strategy. The auxiliary custom survey was conducted in January 2013. For more information on Forrester's data panel and Tech Industry Consulting services, visit www.forrester.com.

Endnotes

[1] Infrastructure and operations (I&O) teams are aligning themselves and infrastructure around key workloads to drive greater simplicity and efficiency. In kind, the networking industry has responded by suggesting that networks can provide greater support for this approach using OpenFlow protocol and software-defined networking (SDN) concepts. SDN provides the means to automate networks to better support different workloads, but I&O professionals also need to understand how SDN can support turning networks into a virtual network infrastructure. Source: "Workload-Centric Infrastructure Ignites Software-Defined Networking," Forrester Research, Inc., November 8, 2012.