RightScale 2015

STATE OF THE CLOUD REPORT

Central IT Is Taking the Lead to Broker Cloud Services to the Enterprise

RIGHT SCALE®

Executive Summary

In January 2015, RightScale surveyed 930 technical professionals across a broad cross-section of organizations about their adoption of cloud computing.

The 2015 State of the Cloud Survey identified several key findings:

Cloud is a given and hybrid cloud is the preferred strategy.

- 93 percent of organizations surveyed are running applications or experimenting with infrastructure-as-a-service.
- 82 percent of enterprises have a hybrid cloud strategy, up from 74 percent in 2014.

Public cloud leads in breadth of enterprise adoption, while private cloud leads in workloads.

- 88 percent of organizations are using public cloud while 63 percent are using private cloud.
- 13 percent of enterprises run more than 1000 VMs in public cloud, while 22 percent of organizations run more than 1000 VMs in private cloud.
- Enterprises anticipate growing public cloud workloads more quickly.

Significant headroom for more enterprise workloads to move to the cloud.

- 68 percent of enterprises run less than a fifth of their application portfolio in the cloud.
- 55 percent of enterprises report that a significant portion of their existing application portfolio is not in cloud, but is built with cloud-friendly architectures.

Enterprise central IT teams take the reins to broker cloud services.

- 62 percent of enterprises report that central IT makes the majority of cloud spending decisions.
- 43 percent of IT teams are offering a self-service portal for access to cloud services, with an additional 41 percent planning or developing a portal.

DevOps rises; Docker soars.

- Overall DevOps adoption rises to 66 percent, with enterprises reaching 71 percent.
- Chef and Puppet are used by 28 and 24 percent of organizations respectively.
- Docker, in its first year, is already used by 13 percent of organizations with a whopping 35 percent of organizations planning to use.

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Amazon Web Services (AWS) continues to dominate in public cloud, but Azure makes inroads among enterprises.

- AWS adoption is 57 percent in this year's survey, while Azure IaaS is second at 12 percent up from 6 percent in 2014.
- Among enterprise respondents, Azure IaaS narrows the gap with 19 percent adoption as compared to AWS with 50 percent.
- The rebranded vCloud Air comes in with 10 percent adoption among enterprises, behind AWS and Azure.

Private cloud stalls in 2015 with only small changes in adoption.

- VMware vSphere continues to lead with 53 percent of enterprise respondents reporting that they use it as a private cloud.
- Enterprises using OpenStack show the largest increase for 2015, growing by 3 percent.
- The new Azure Pack offering shows strong use in its first year, used by 11 percent of enterprises.

Methodology

In January 2015, RightScale conducted its annual State of the Cloud Survey. The survey questioned technical professionals across a broad cross-section of organizations about their adoption of cloud infrastructure. The 930 respondents range from technical executives to managers and practitioners and represent organizations of varying sizes across many industries. Respondents represent companies across the cloud spectrum, including both users (24 percent) and non-users (76 percent) of RightScale solutions. Their answers provide a comprehensive perspective on the state of the cloud today.

Key Survey Stats:

All respondents = 930

- **Enterprise respondents (1000+ employees) = 306**
- **SMB respondents (<1000 employees) = 624**

Margin of error = 3.2 percent.

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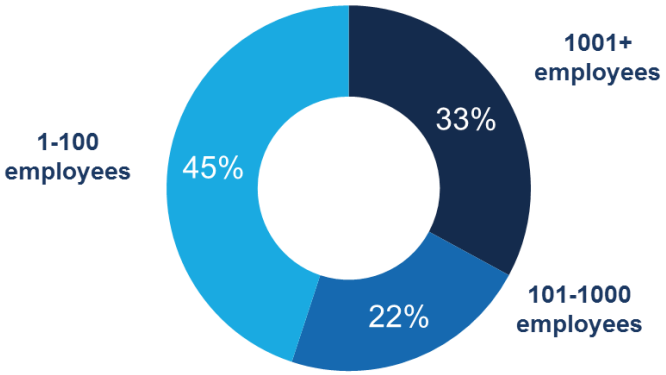
Respondents by Company Size

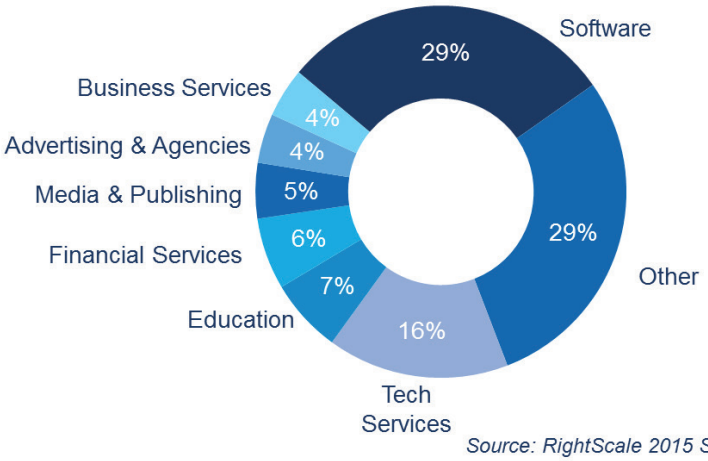
930 respondents



Source: RightScale 2015 State of the Cloud Report

Respondents by Industry

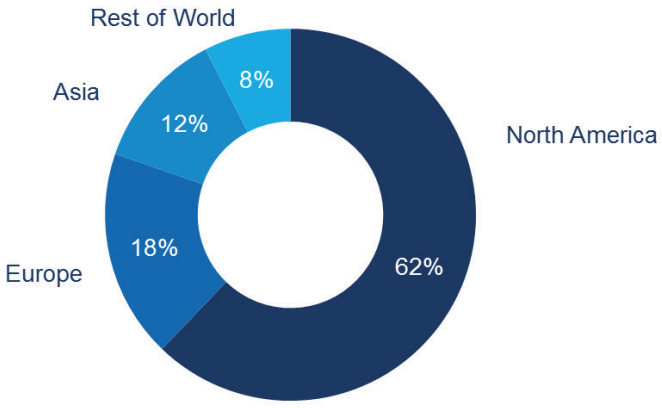
930 respondents



Source: RightScale 2015 State of the Cloud Report

Respondents by Region

930 respondents



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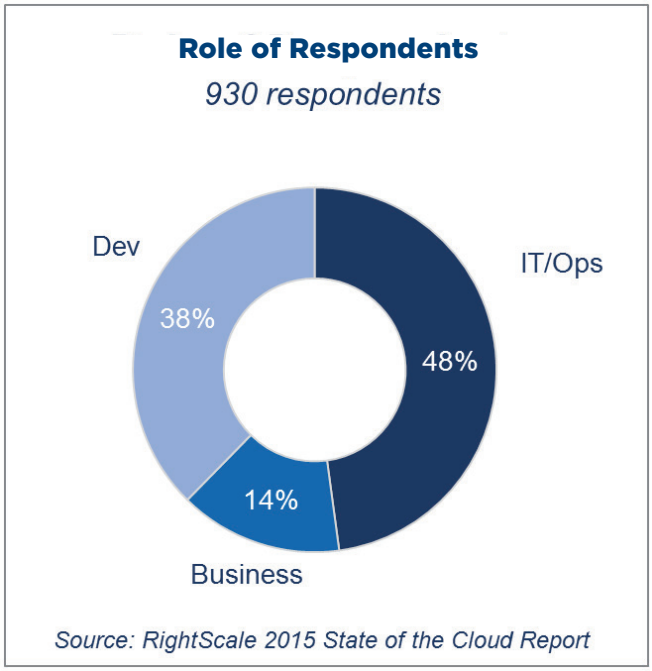

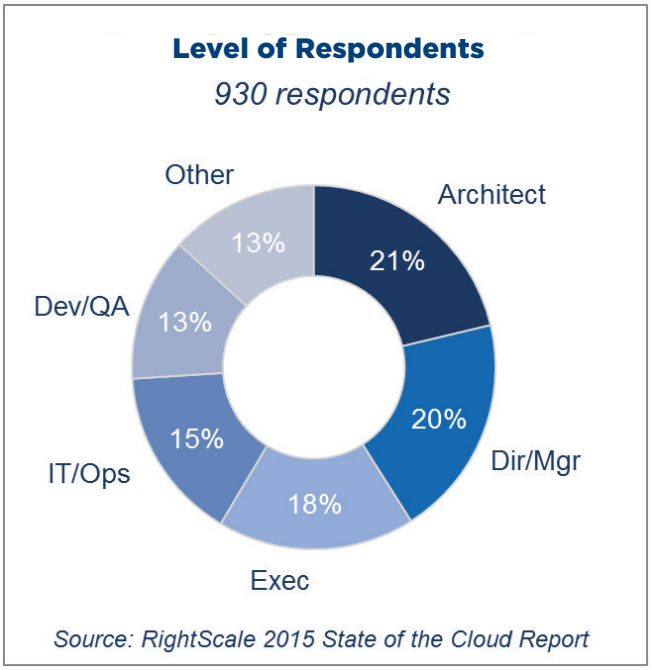

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The Cloud Maturity Model

In this report, RightScale uses its Cloud Maturity Model to segment and analyze organizations based on their levels of cloud adoption. The Cloud Maturity Model identifies four distinct stages of cloud maturity. Denoting cloud adoption by organizations from least to greatest experience, the four stages are:

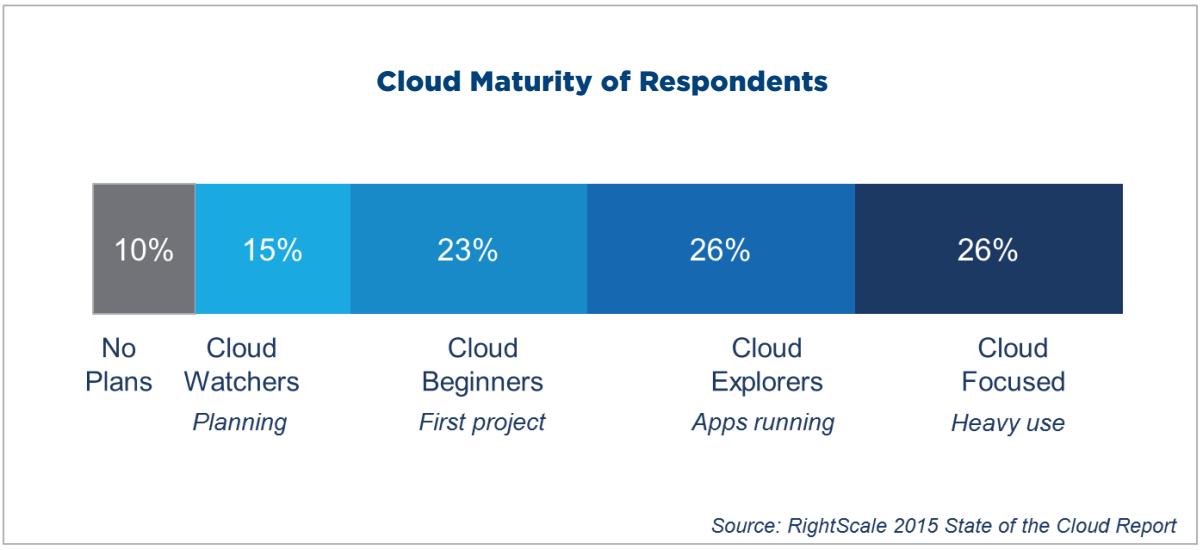
Cloud Watchers are organizations that are developing cloud strategies and plans but have not yet deployed applications into the cloud. Cloud Watchers want to evaluate available cloud options and determine which applications to implement in the cloud.

Cloud Beginners are new to cloud computing and are working on proof-of-concepts or initial cloud projects. Cloud Beginners want to gain experience with cloud in order to determine future projects

Cloud Explorers have multiple projects or applications already deployed in the cloud. Cloud Explorers are focused on improving and expanding their use of cloud resources.

Cloud Focused businesses are heavily using cloud infrastructure and are looking to optimize cloud operations as well as cloud costs.

The survey on which the RightScale 2015 State of the Cloud Report is based includes organizations across all the stages of cloud maturity.



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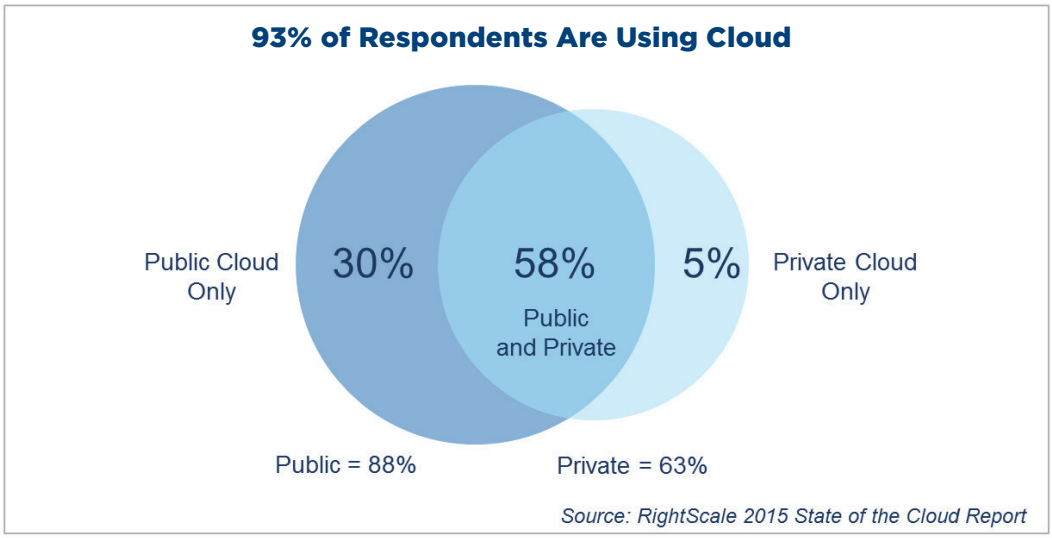
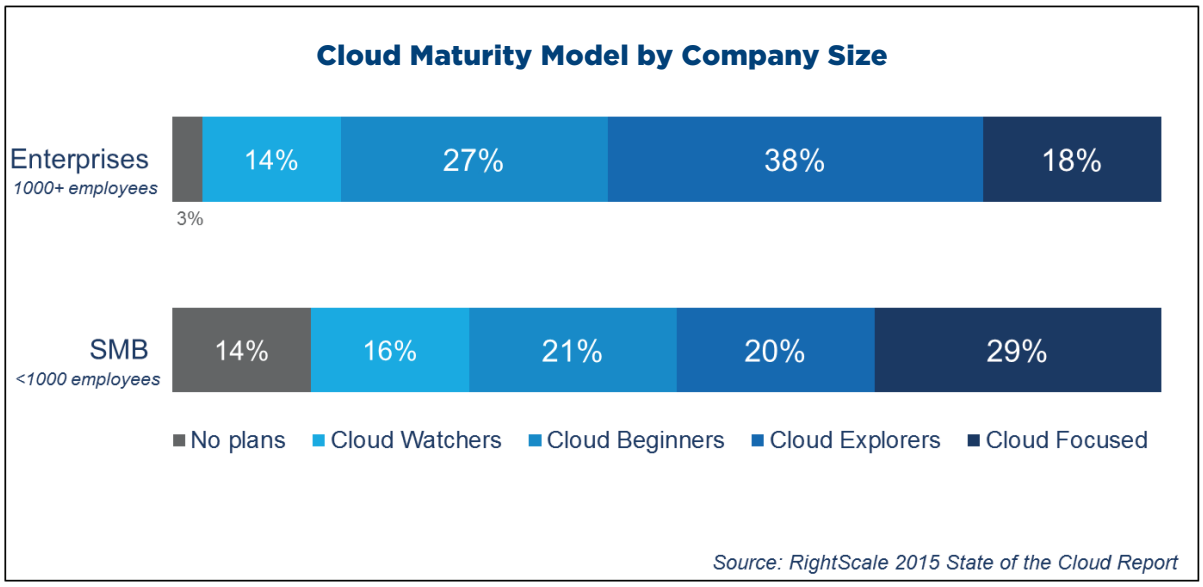
Key Findings

Cloud is a given and hybrid cloud is the preferred strategy.

In the 12 months since the last State of the Cloud Survey, adoption of cloud computing continues to be a given with 93 percent of respondents report that they are adopting cloud. Eighty-eight percent of respondents are using public cloud and 63 percent using private cloud, with 58 percent using both.



When comparing cloud adoption in large and small companies, it is interesting to note that enterprise respondents are more heavily clustered in the middle stages of Cloud Beginners and Cloud Explorers. In the last year, many enterprises have moved to the Cloud Explorers stage — now representing 38 percent of respondents vs. 25 percent in 2014.



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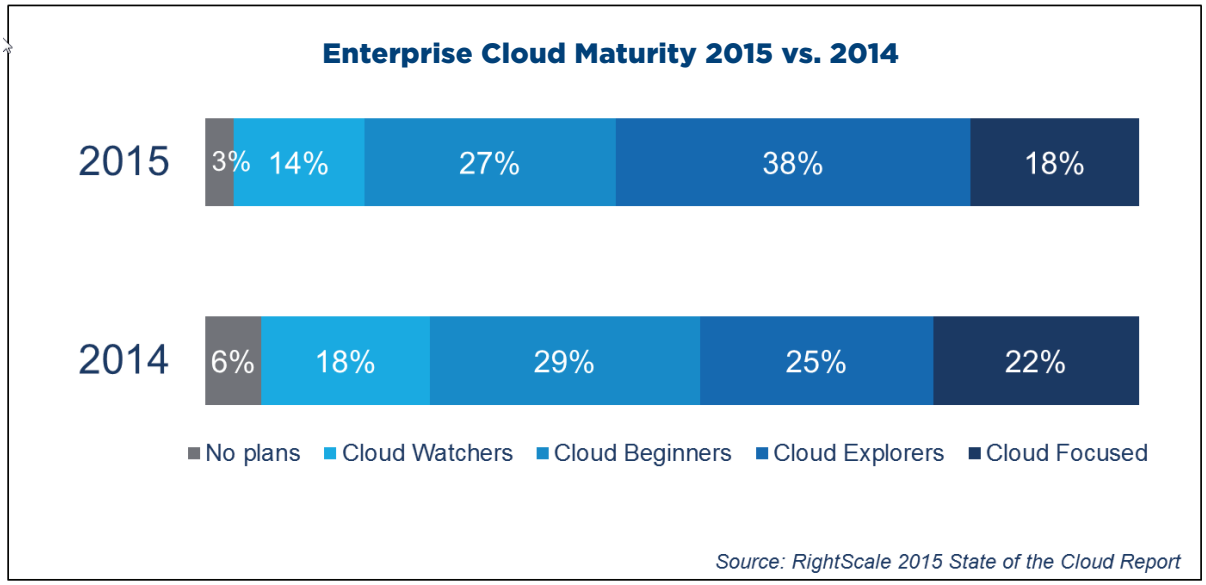
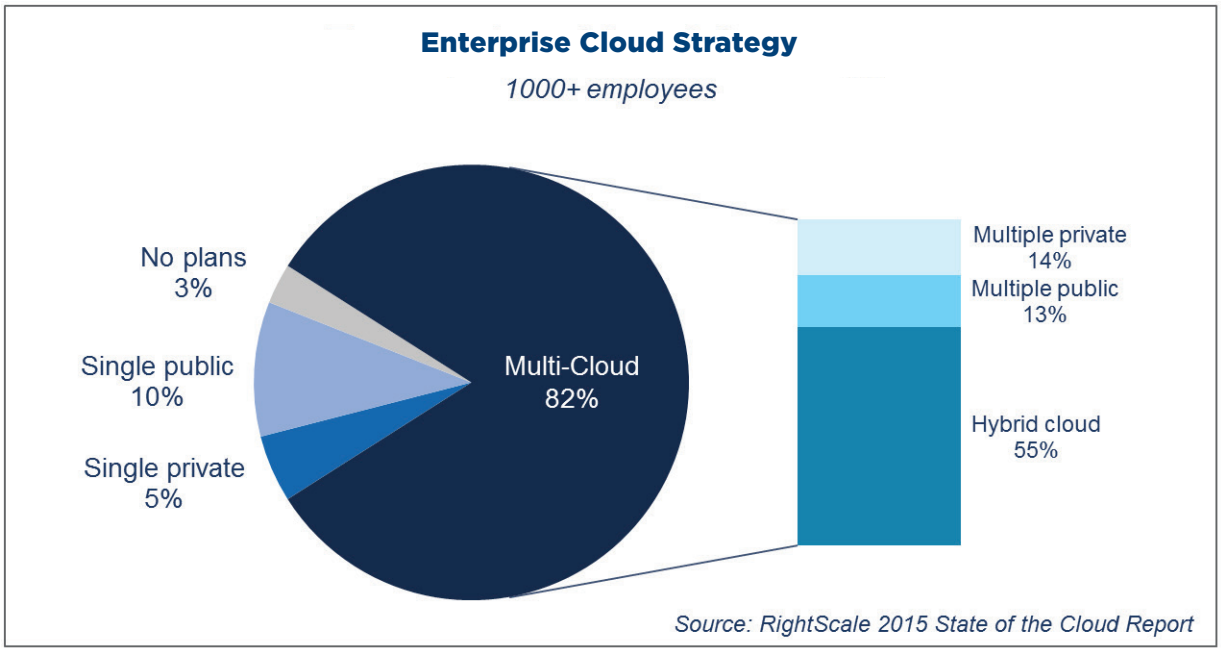
Larger organizations continue to push forward in their journey to cloud with only 3 percent of enterprise respondents expecting to remain on the sidelines.



Increasingly, enterprises plan to use a portfolio of clouds, with 82 percent reporting a multi-cloud strategy as compared to 74 percent in 2014. This year's survey reveals that 55 percent of enterprises are planning for hybrid clouds, 13 percent expect to use multiple public clouds, and 14 percent are planning for multiple private clouds.



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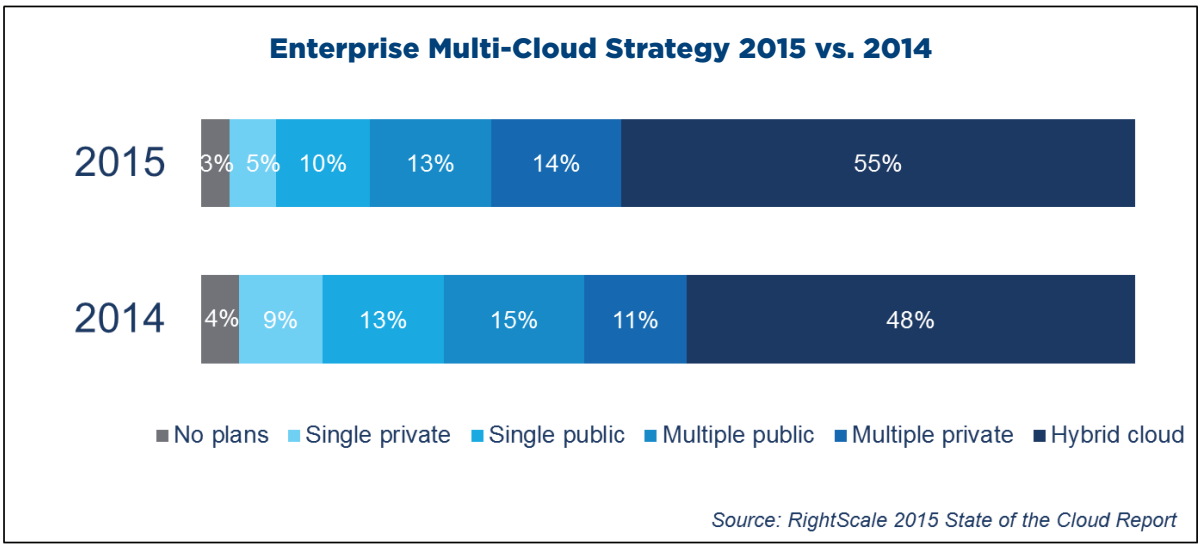
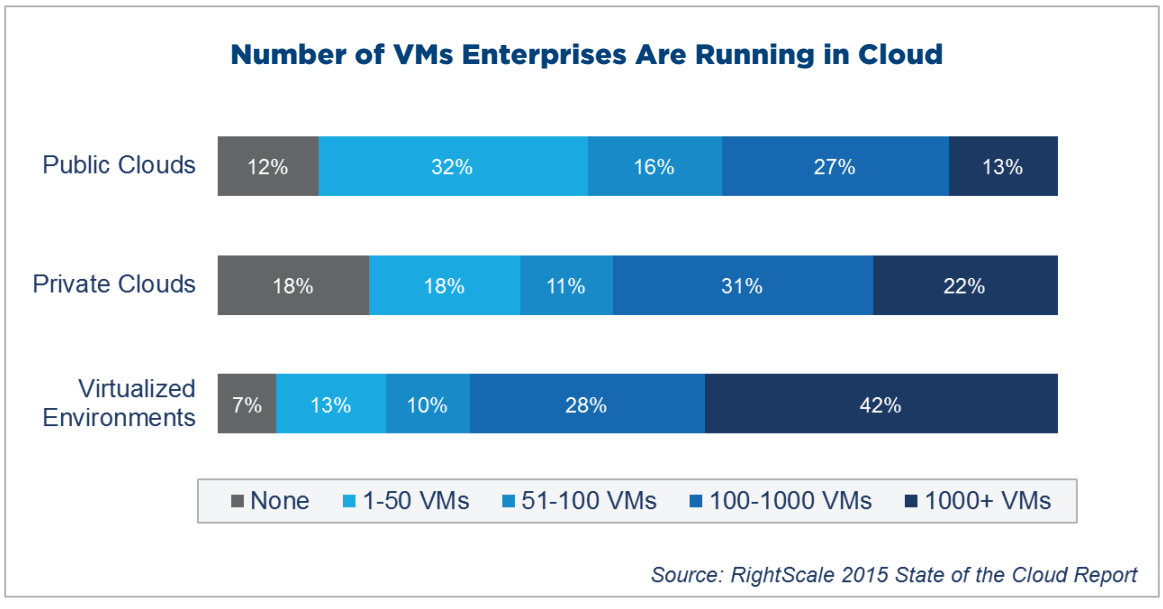


Enterprises have wider adoption of public cloud; deeper adoption of private cloud.

While public cloud leads in the number of enterprises adopting, private cloud leads in the number of workloads being run. Only 13 percent of enterprises are running more than 1000 virtual machines (VMs) in public cloud, while 22 percent have more than 1000 VMs in private cloud. In comparison enterprises often have long-standing virtualized environments, with 42 percent containing 1000 or more VMs. The private cloud lead in workloads may represent existing virtualized environments that have been enhanced and relabeled as a private cloud.

However, as we look forward, enterprises are expecting to grow public cloud workloads more quickly. In 12 months, 27 percent of enterprise respondents expect to have more than 1000 VMs — more than doubling the current 13 percent. Private cloud workloads are also expected to grow, with 31 percent expecting to run 1000 or more VMs, up from 22 percent in 2014. Fast-forward one year and we may find that enterprises are dividing workloads more equally between public clouds and private clouds, while non-cloud virtualized environments remain relatively static.



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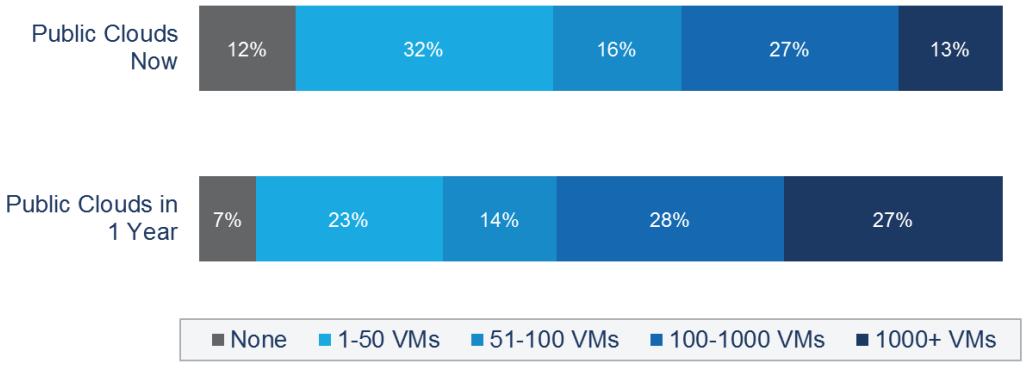
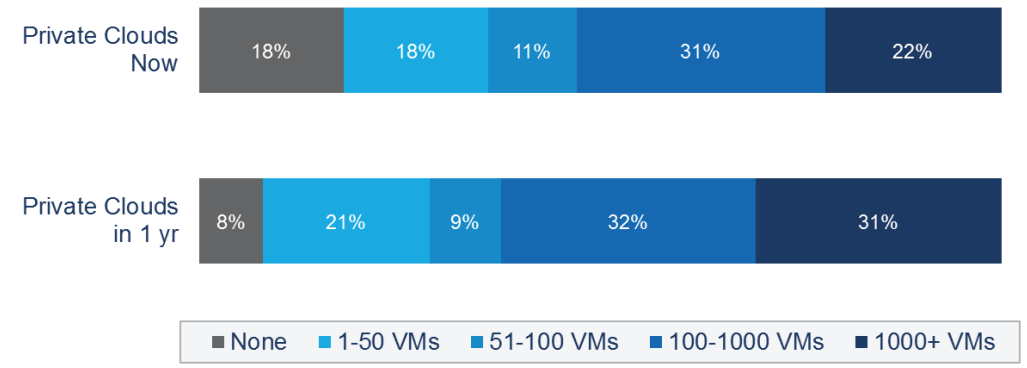
Number of VMs Enterprises Are Running in Public Cloud



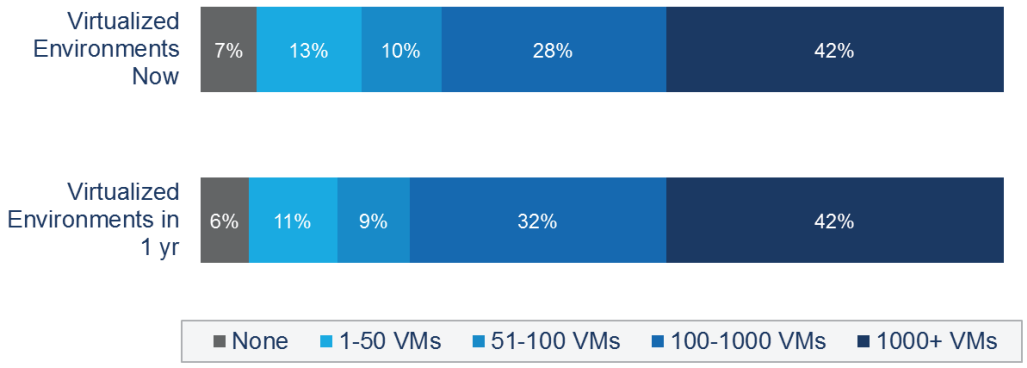
Source: RightScale 2015 State of the Cloud Report

Number of VMs Enterprises Are Running in Private Cloud



Source: RightScale 2015 State of the Cloud Report

Number of VMs Enterprises Are Running in Virtualized Environments



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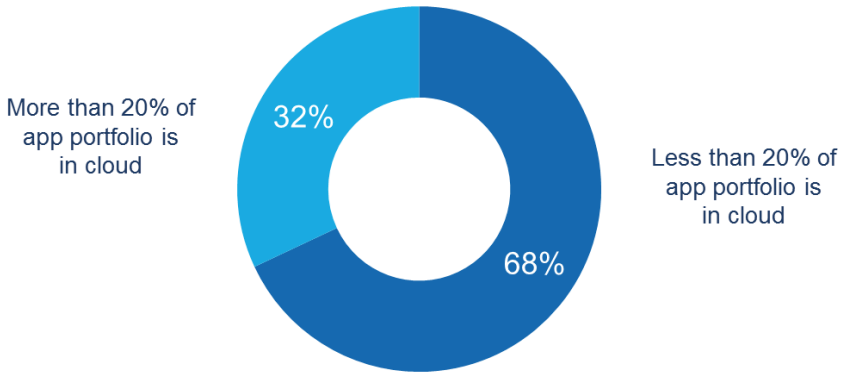
Significant headroom for more enterprise workloads to move to the cloud.

While cloud adoption is growing quickly, enterprises still run a fraction of their workloads in the cloud. A broad majority (68 percent) of enterprise respondents report that less than 20 percent of their applications are currently running in cloud.

However, they report plenty of headroom to move additional applications to the cloud. A majority (55 percent) of respondents report that at least another 20 percent of applications are built on cloud-friendly architectures and are ready for cloud.

Enterprise Application Portfolio That Is in Cloud



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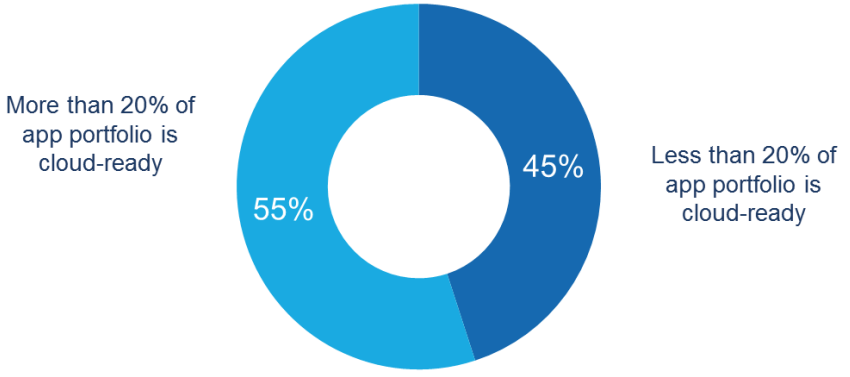
Enterprise Application Portfolio That Is Cloud-Ready



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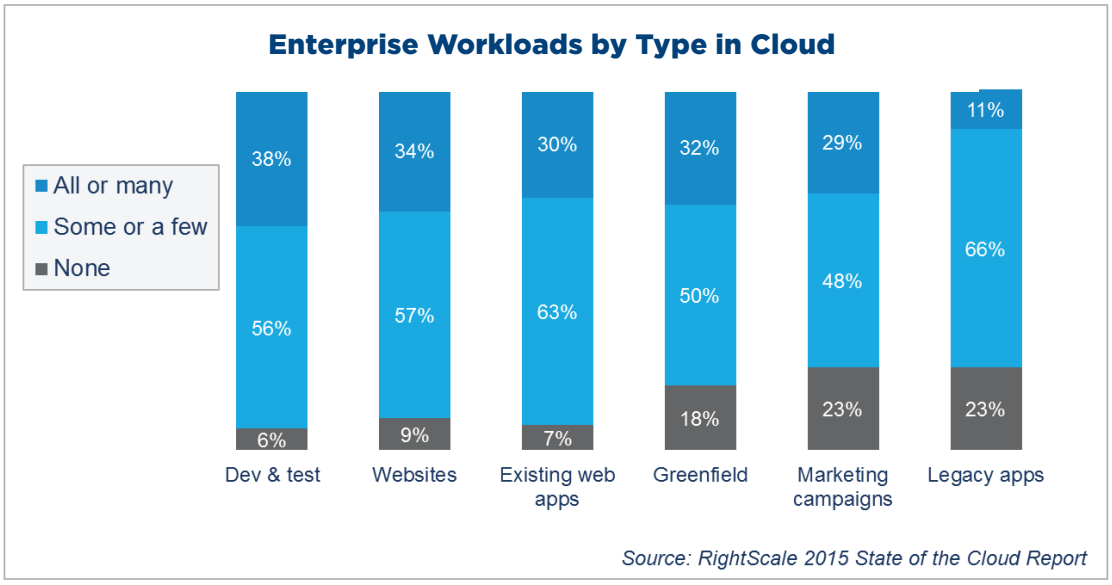
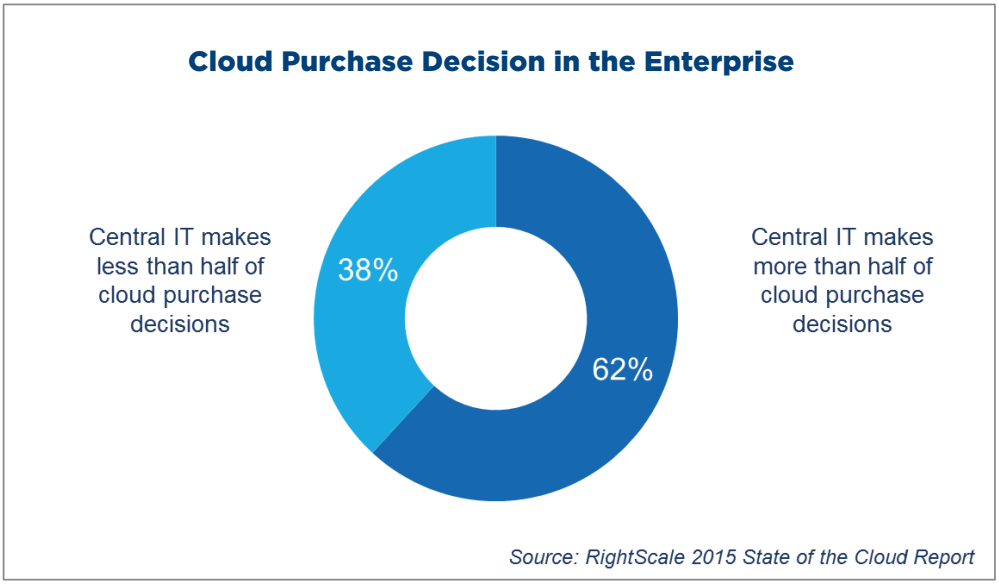
Among applications that are prime candidates for migration to cloud, only a fraction of enterprises report running ***all or most*** of these workloads in the cloud: 38 percent of enterprises run all or most development and test in the cloud, 34 percent run all or most websites in the cloud, and only 30 percent run all or most web applications in the cloud.



Enterprise central IT teams take the reins to broker cloud services.

The early public cloud market was largely driven by small technology-focused companies and forward-looking business units within larger enterprises. More recently, as enterprises have become increasingly comfortable with cloud technologies, central IT teams are seeking to take a more significant role in cloud purchasing decisions. More than 62 percent of enterprise respondents report that a majority of cloud purchase decisions are made by central IT.



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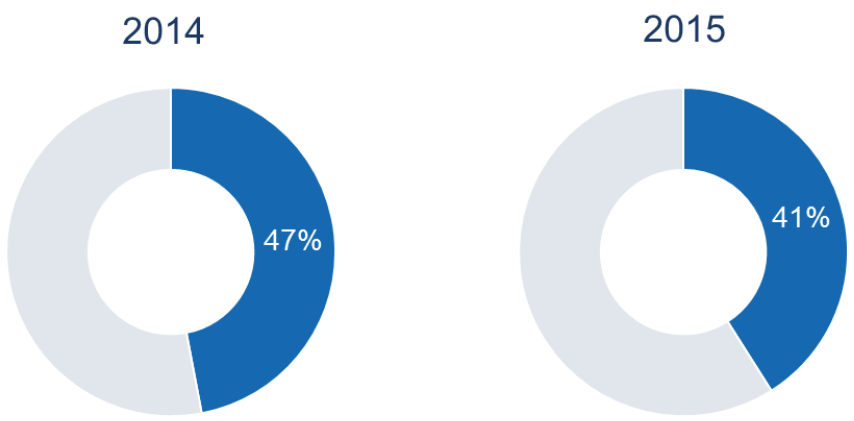
However, central IT and business units in the enterprise have different views about the role that central IT ***should*** play. The 2014 State of the Cloud Report showed large discrepancies between the two groups, with business units generally seeing a more limited role for central IT. Part of this conflict in expectations is likely rooted in the business units' desire for more agility and their concerns that central IT is too cautious in cloud adoption — especially public cloud adoption

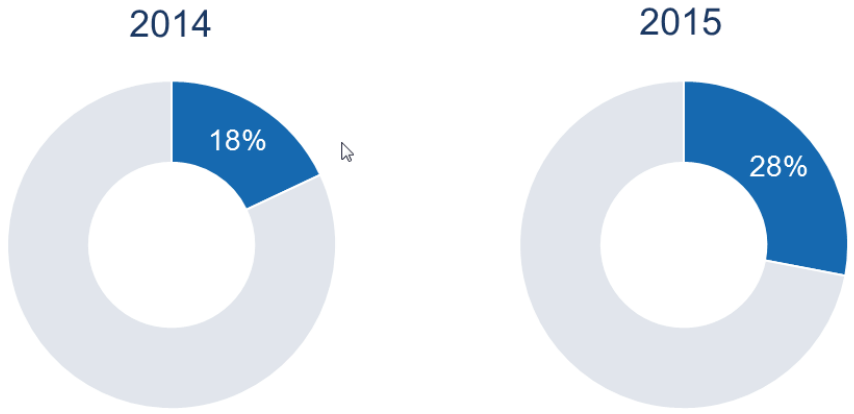
However, in the last year, central IT views of cloud have moved closer to those of the business units. Central IT concerns about cloud security have declined, down from 47 percent reporting it as a significant challenge in 2014 to 41 percent in 2015. As a consequence, central IT has increased its focus on public cloud, with 28 percent of central IT respondents reporting public cloud as the top priority in 2015 up from 18 percent in 2014.

Central IT Rating Cloud Security As Significant Challenge



Source: RightScale 2015 State of the Cloud Report

Enterprise Central IT Viewing Public Cloud As Top Priority



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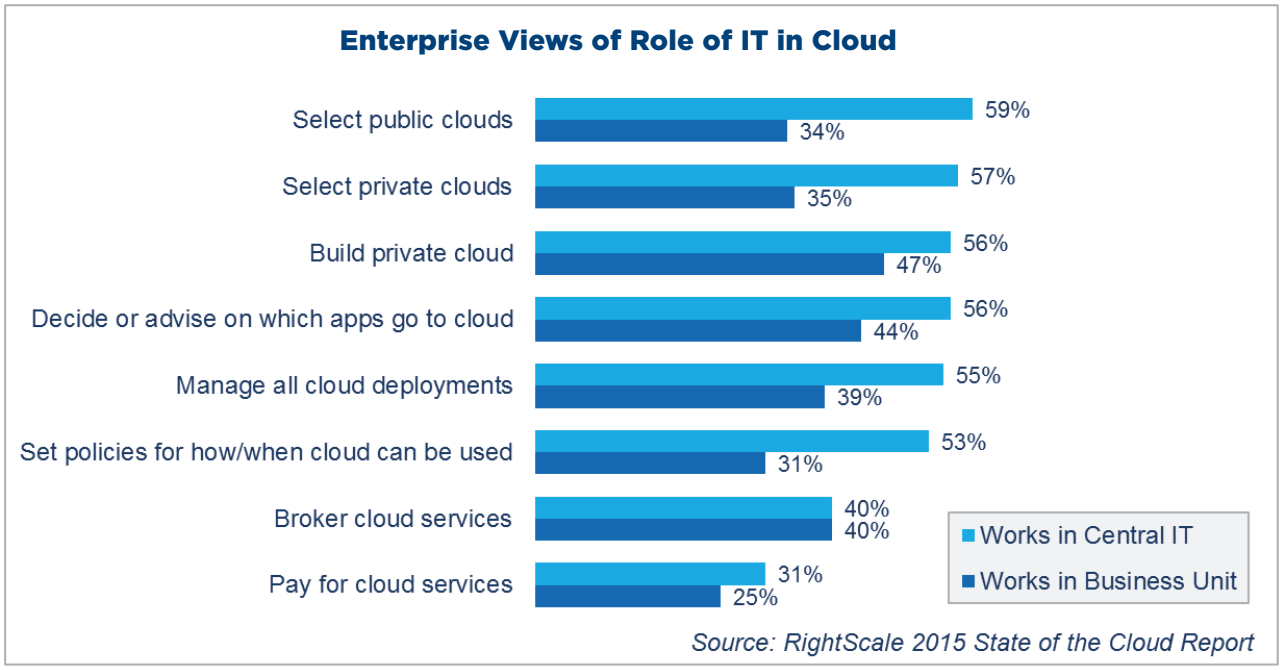
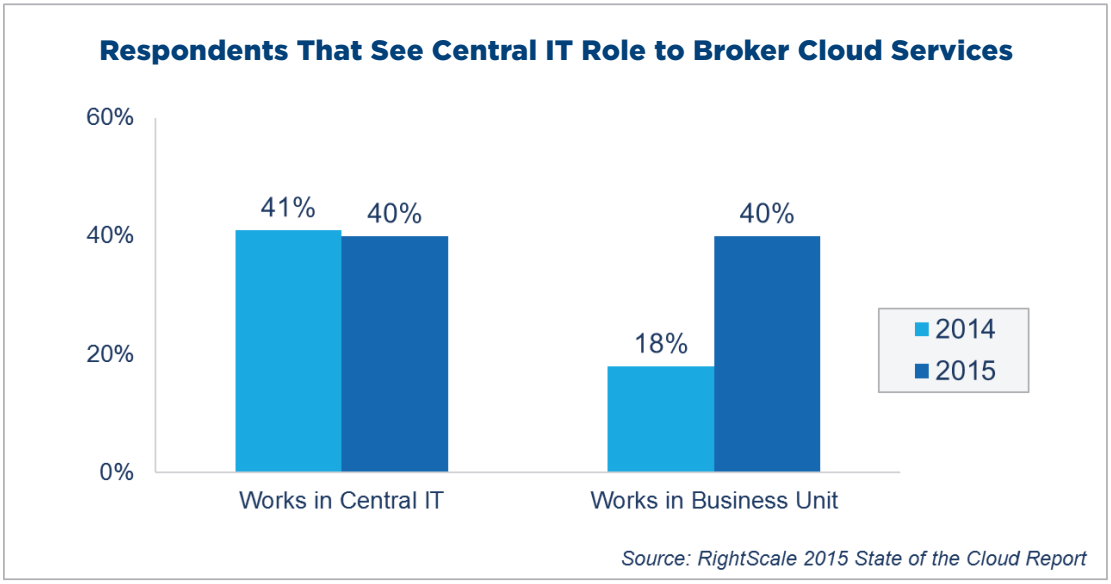
This increasing alignment between the two groups has now started to tip the scales, with 40 percent of business unit respondents in 2015 agreeing that central IT should act as a broker of cloud services, more than double the 18 percent that agreed in 2014. While there are still significant differences of viewpoint, 40 percent of both groups are now unified in support for central IT acting as a cloud broker.





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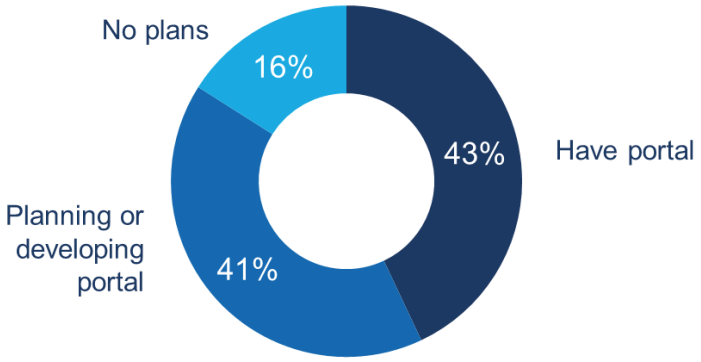
Central IT teams are increasingly offering self-service portals as a central hub to broker cloud services to the enterprise. In 2015, more than 43 percent of enterprise respondents already have a multi-cloud portal, while another 41 percent are planning or developing one.

Enterprises with Self-Service Portal for Cloud Services

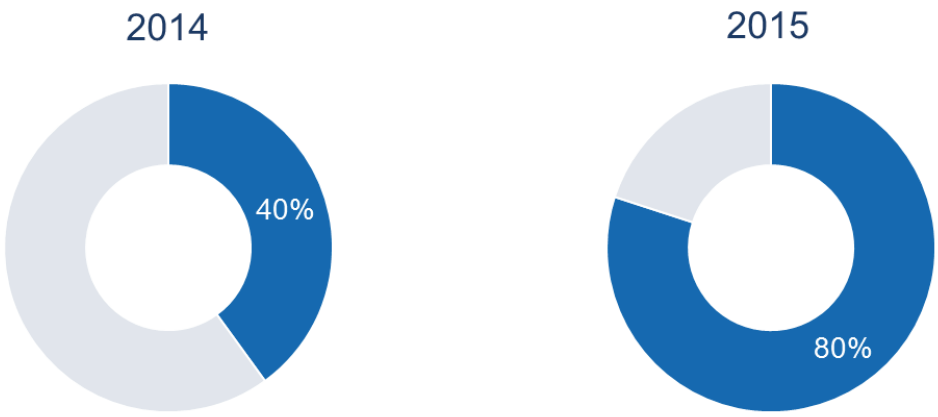


Source: RightScale 2015 State of the Cloud Report

In addition, central IT has gotten the message loud and clear that internal business units expect no less than near-instant access to cloud services. Among enterprises that offer a self-service cloud portal, 80 percent can provision cloud workloads in less than an hour, double the 40 percent that could meet that standard in 2014.

Enterprises with Self-Service Portal for Cloud Services

% Respondents with less than 1 hour provisioning time



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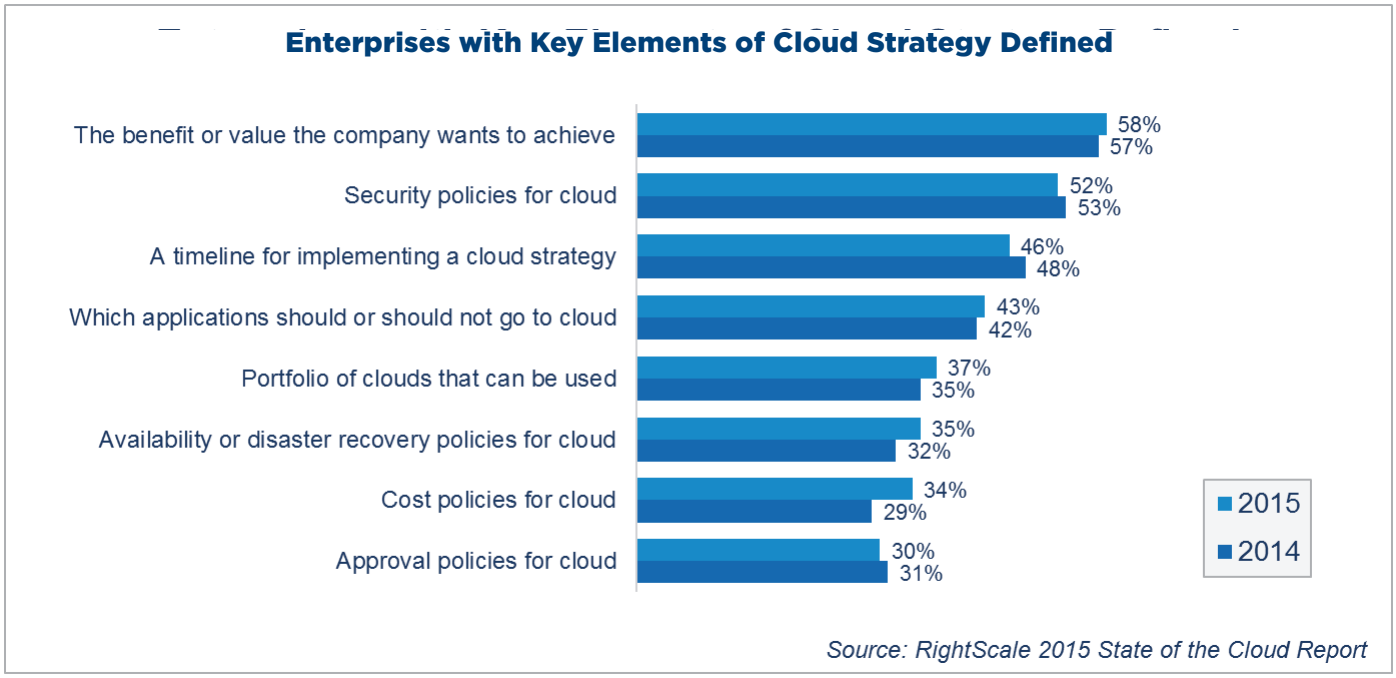
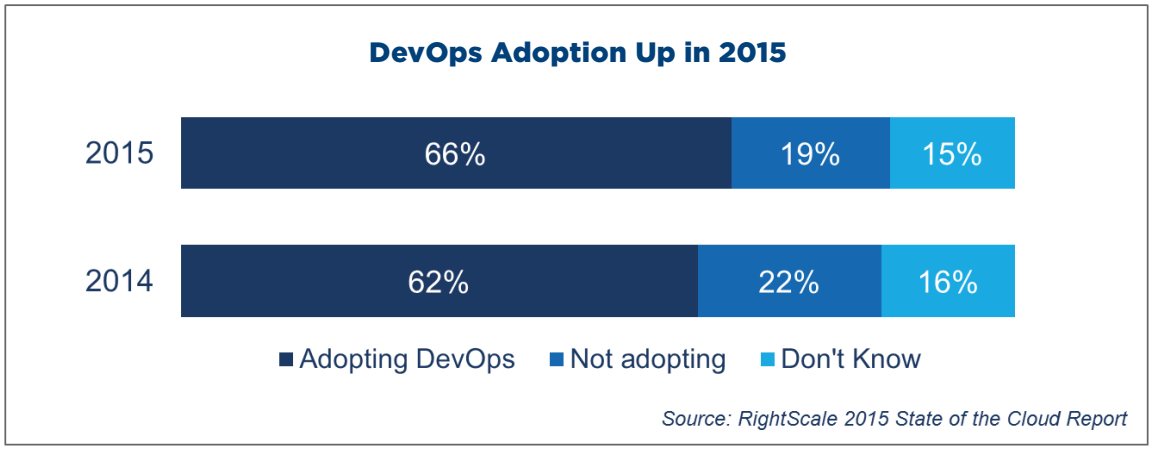
While central IT is seeking to take the reins by bringing cloud services into the enterprise, cloud governance has remained stuck in neutral during the past year. A majority of enterprises are still missing critical elements of cloud governance, including a defined portfolio of cloud providers; guidelines on which applications should migrate to cloud; cloud SLA and disaster recovery policies; and basic approval policies. Enterprises made some progress implementing cost controls for cloud, with 34 percent now having defined cost policies, up from 29 percent in 2014.



DevOps rises; Docker soars.

Since the advent of AWS in 2006, cloud and DevOps have become inextricably intertwined. For many organizations, the use of cloud infrastructure is a critical pillar to support the continuous integration and delivery cycles and release cycles that DevOps helps to drive.

The 2015 survey results shows continued growth in DevOps adoption, up to 66 percent from 6 percent in 2014. Enterprises, often seeking greater agility amid the complexity that comes with their larger size, show even greater DevOps usage (71 percent) vs. SMBs (63 percent).



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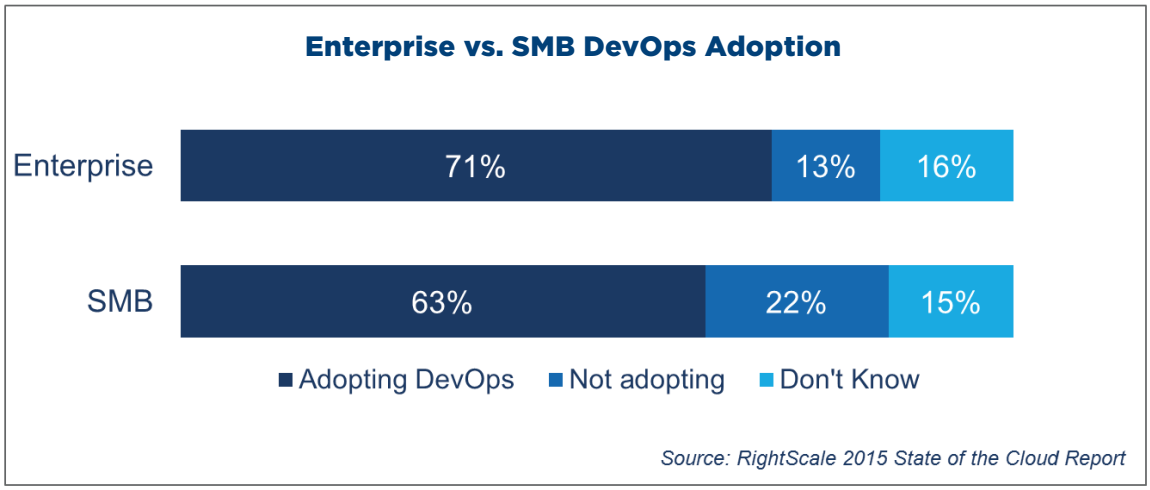
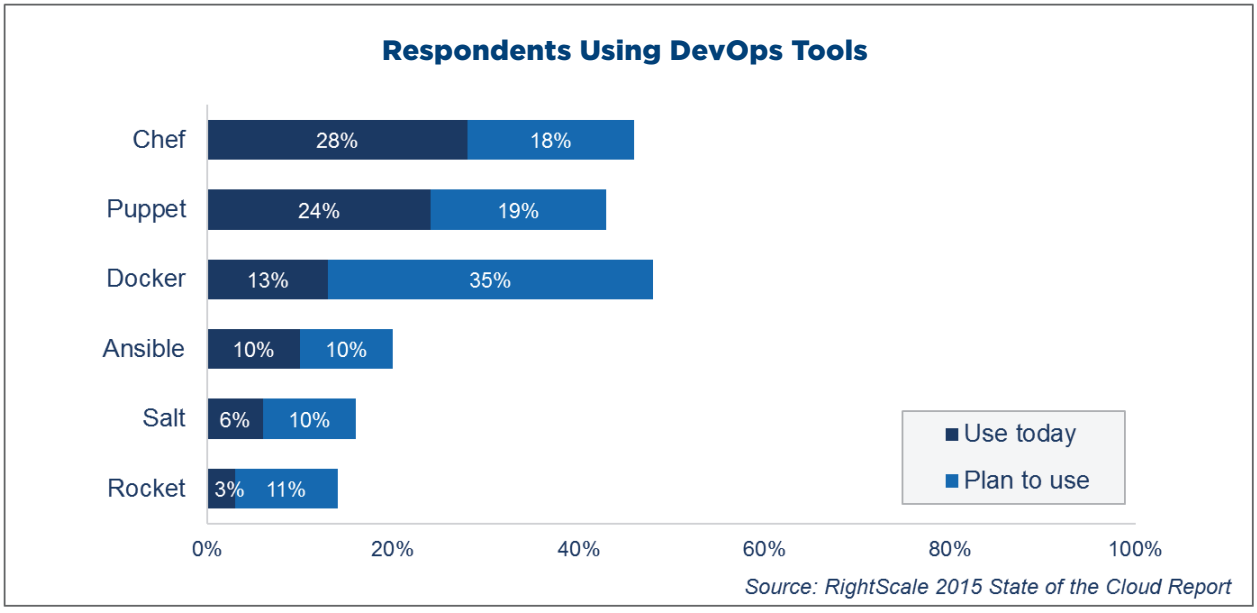


As DevOps has grown, the set of available tools has also expanded. DevOps teams are often leveraging automated configuration management tools — such as Chef, Puppet, Salt, and Ansible. In the last year, Docker, a container-based approach, has also stormed onto the scene as another way to deploy code assets on infrastructure. All of these tools are often used in conjunction with cloud management solutions that provision infrastructure across clouds.

With a significant head start, Chef (28 percent) and Puppet (24 percent) remain the most used DevOps tools overall. However, Docker, in just its first year on the market, is already being used by 13 percent of organizations. Even more impressively, more than a third (35 percent) of respondents report plans to use Docker.



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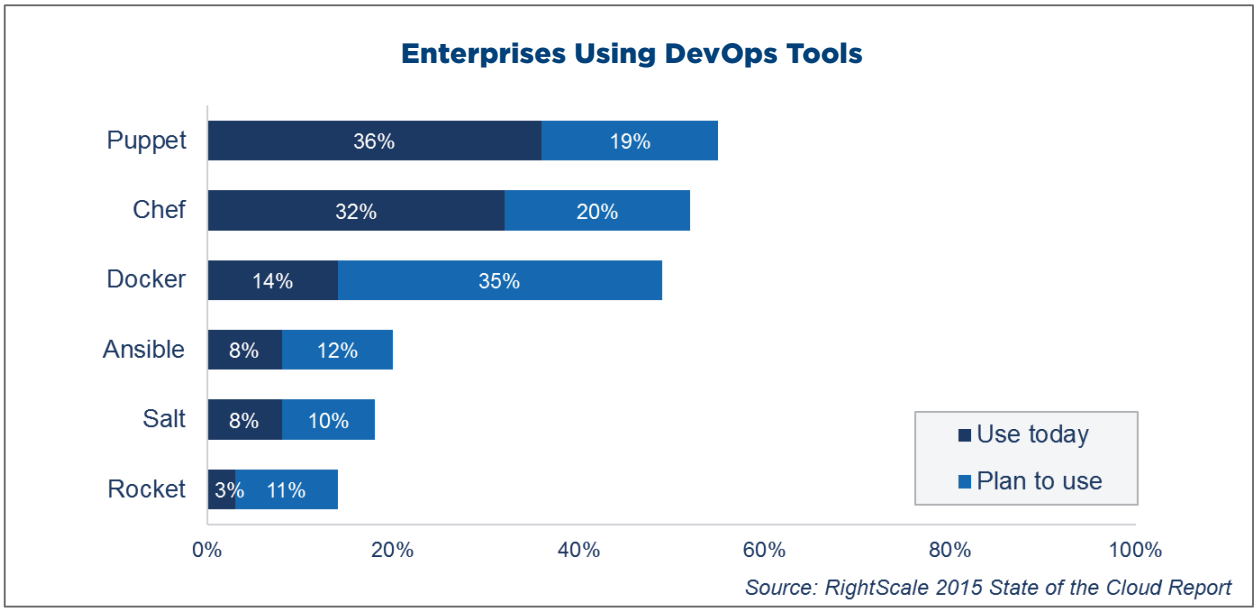
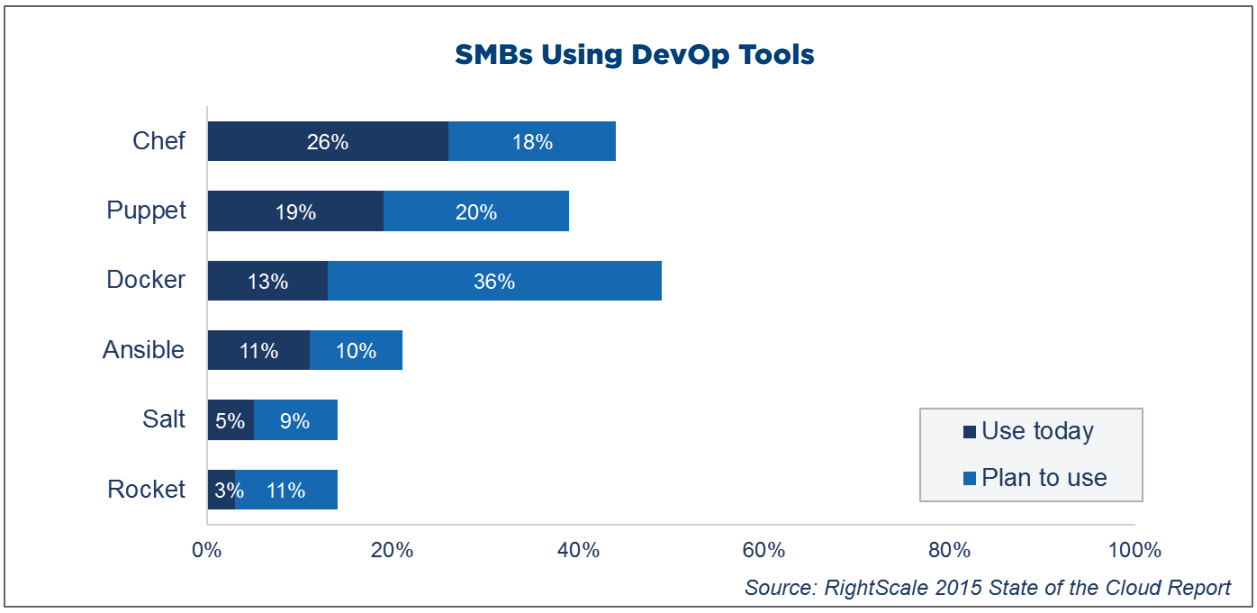
Among enterprises, Puppet is used most frequently (36 percent) followed by Chef (32 percent) and Docker (14 percent). SMBs chose Chef more often (26 percent) followed by Puppet (19 percent) and Docker (13 percent).





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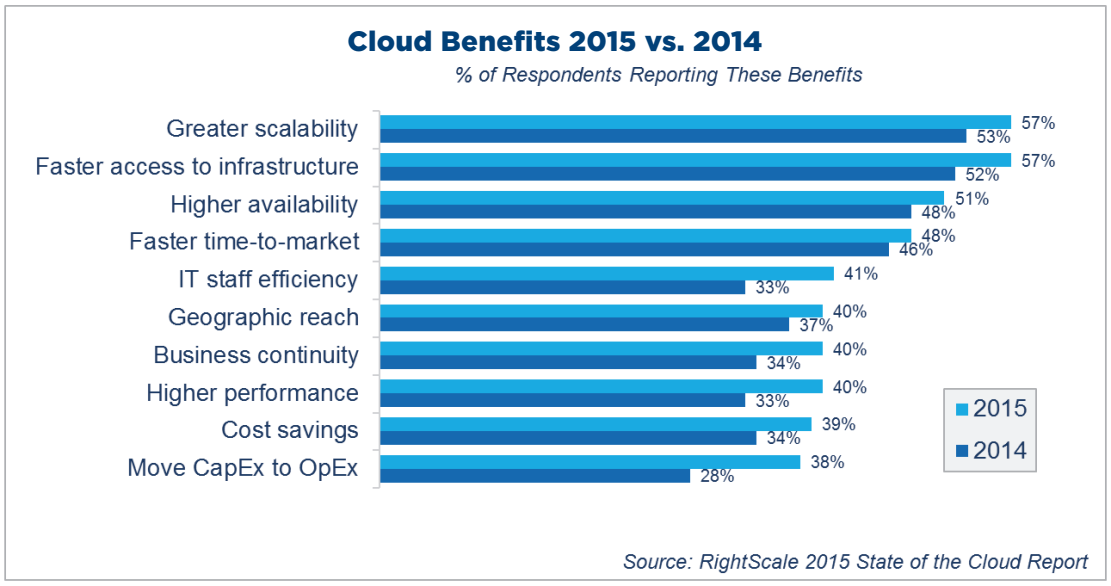
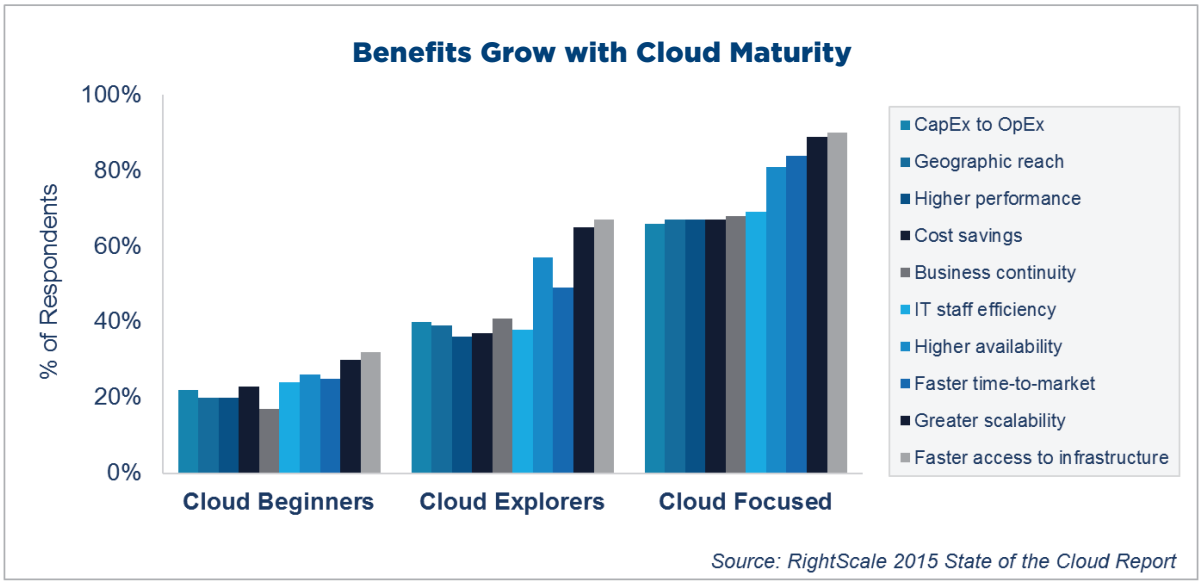
Cloud benefits and cloud challenges evolve.

In 2015, the benefits that respondents experienced using cloud increased across the board. The top three benefits — scalability, faster access to infrastructure, and availability — are the same in 2015, but in each case these benefits were cited by more respondents.

In addition, the 2015 survey echoes a key finding of the 2014 State of the Cloud Report: **cloud maturity matters.** As organizations adopt cloud more broadly, they realize increasingly more value, and the challenges of adopting cloud decline.

In 2015, some of the largest growth in reported benefits were financial related. For example, moving CapEx to OpEx was reported as a benefit by 38 percent (up from 28 percent in 2014). IT staff efficiency was reported by 41 percent (up from 33 percent in 2014) and cost savings was reported by 39 percent (up from 34 percent in 2014).





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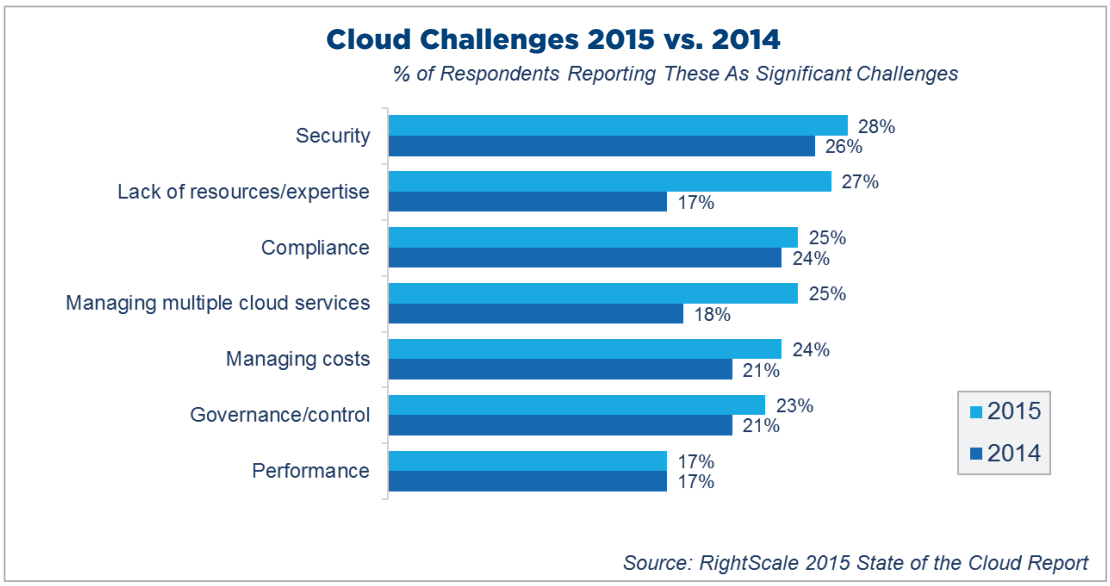
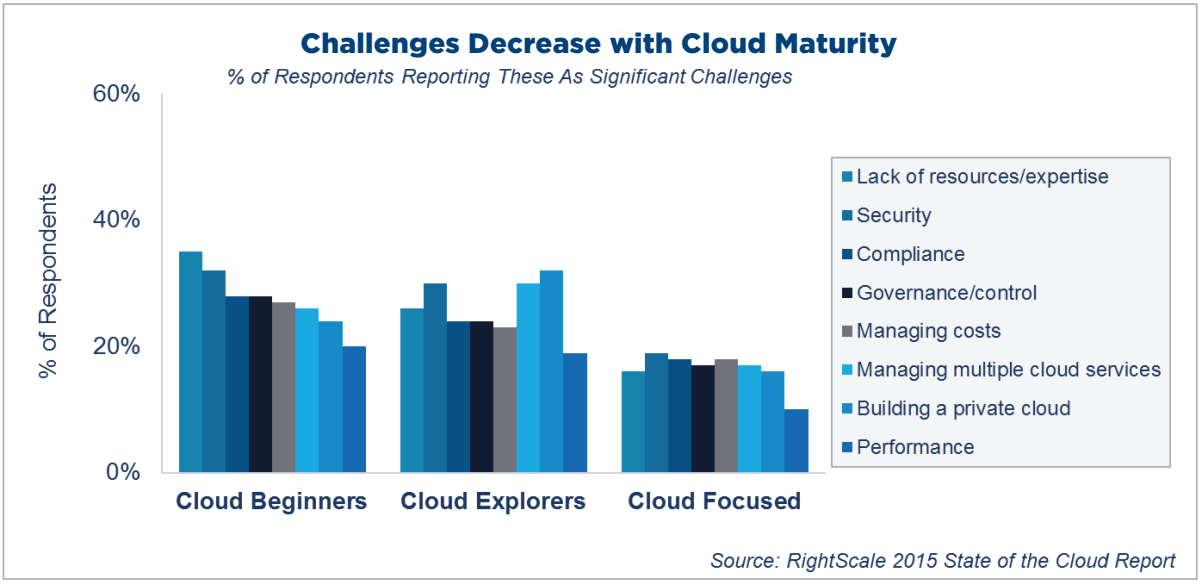
There were also significant increases in several specific areas of cloud challenges. As cloud adoption expands and companies progress further in their cloud journeys, the competition for scarce cloud expertise has increased. As a result, lack of cloud resources and expertise is now reported as a significant challenge by 27 percent of respondents vs. 17 percent in 2014 — making it the second most common challenge after security.

The other challenge that was reported more frequently is managing multiple cloud services (25 percent in 2015 vs. 18 percent in 2014). As companies expand their cloud footprints and their portfolio of cloud services, they often struggle to gain visibility, automation, and governance across all of their cloud providers. To help companies address these challenges, we've identified key steps and provided a roadmap for success in **The Definitive Guide to Cloud Portfolio Management**.





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Top 5 Challenges Change with Cloud Maturity

Place	Cloud Beginners	Cloud Explorers	Cloud Focused
#1	Lack of resources/expertise (35%)	**Complexity of building a private cloud (32%)**	Security (19%)
#2	Security (32%)	Security (30%)	Compliance (18%)
#3	Compliance (28%)	**Managing multiple cloud services (30%)**	Managing costs (18%)
#4	Governance/control (28%)	Lack of resources/expertise (26%)	Managing multiple cloud services (17%)
#5	Managing costs (27%)	Compliance/governance/control (24%)	Governance/control (17%)

Source: RightScale 2015 State of the Cloud Report

Increasing Competition in Cloud

After many new cloud providers entered the market in 2013, we've now started to see the dust settle and get a better view of the competitive landscape. Over the last 12 months, we've begun to get a picture of how public cloud offerings from Microsoft and Google are faring as well as the rebranded vCloud Air from VMware. On the private cloud front, VMware and OpenStack continue to evolve their offerings while Microsoft introduced Azure Pack, which creates Azure cloud APIs on top of Microsoft-based private clouds.

We asked respondents to tell us which clouds they were using and whether they were running applications in the cloud, experimenting with the cloud, planning to use the cloud, or had no plans to use the cloud. As cited earlier, most enterprises are using more than one cloud, so totals will add up to more than 100 percent. These results indicate whether a respondent is using any cloud, but do not specify the number of applications that are running in each cloud.

AWS still dominates in public cloud; Azure makes inroads among enterprises.

No surprise: AWS continues to lead overall in public cloud adoption, with 57 percent of respondents currently running applications in AWS, up from 54 percent in 2014. This continues to be more than 4x the adoption rate of the closest competitor. Azure IaaS has moved into the clear #2 position, doubling from 6 percent in 2014 to 12 percent in the 2015 survey.

IaaS offerings from Azure and Google continue to generate a lot of interest and potential for future adoption — 29 percent of respondents are experimenting with or plan to use these clouds. AWS, despite its already large share of the market, has 24 percent of respondents showing interest.

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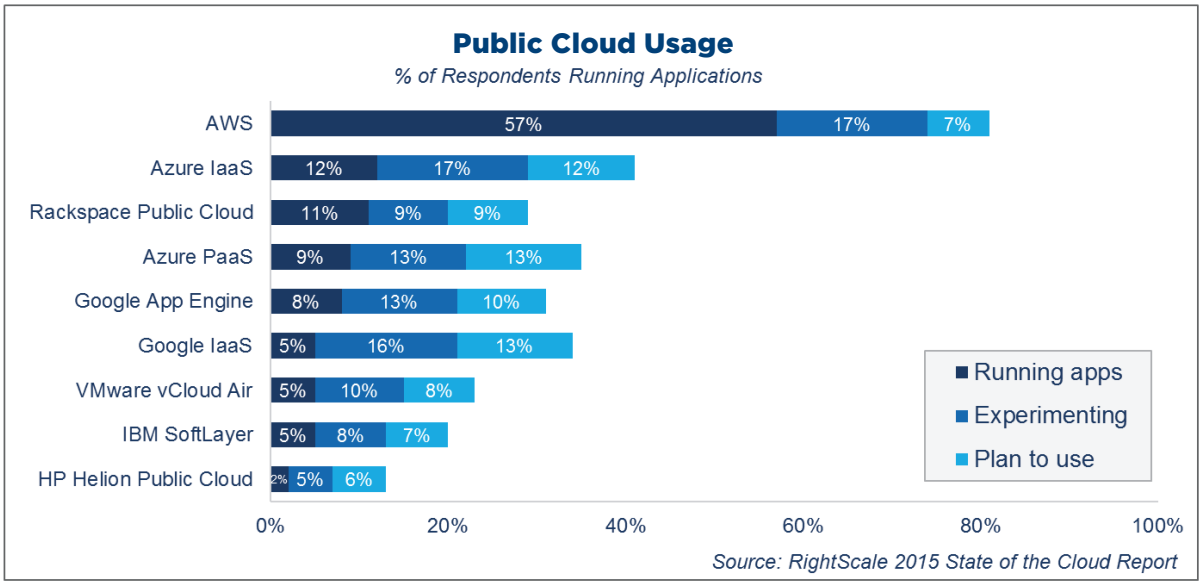

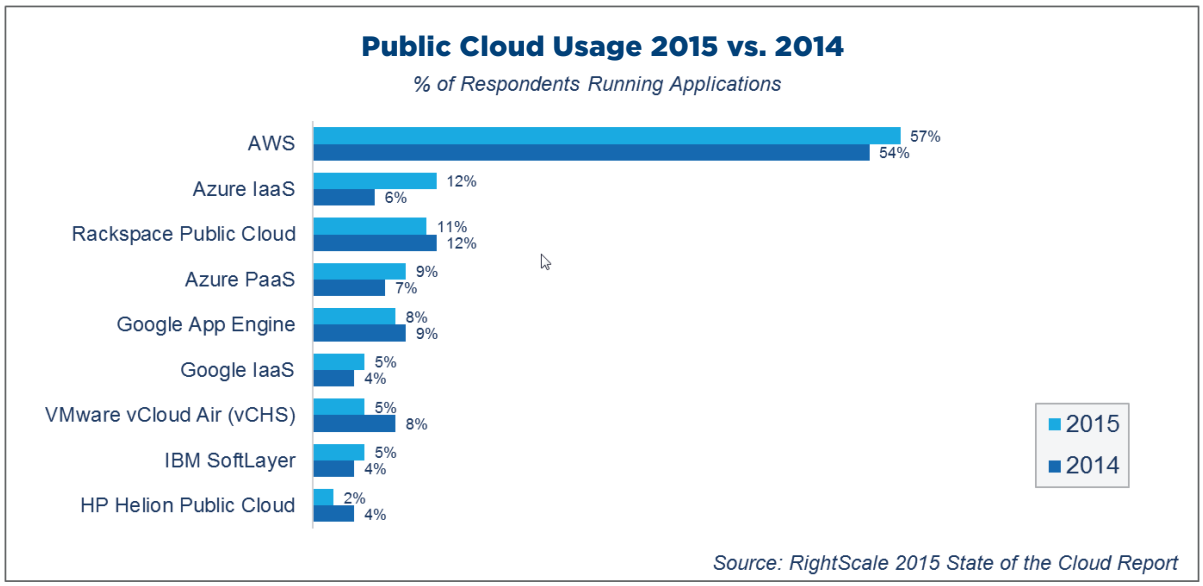

Special note: The VMware vCloud Air is a rebranding of the VMware vCloud Hybrid Service (vCHS), so we compared year-over-year adoption between them. We believe that the decrease in percentage of adoption in 2015 is likely due to an overstatement of vCHS use in last year's survey due to respondent confusion over the variety of VMware products.

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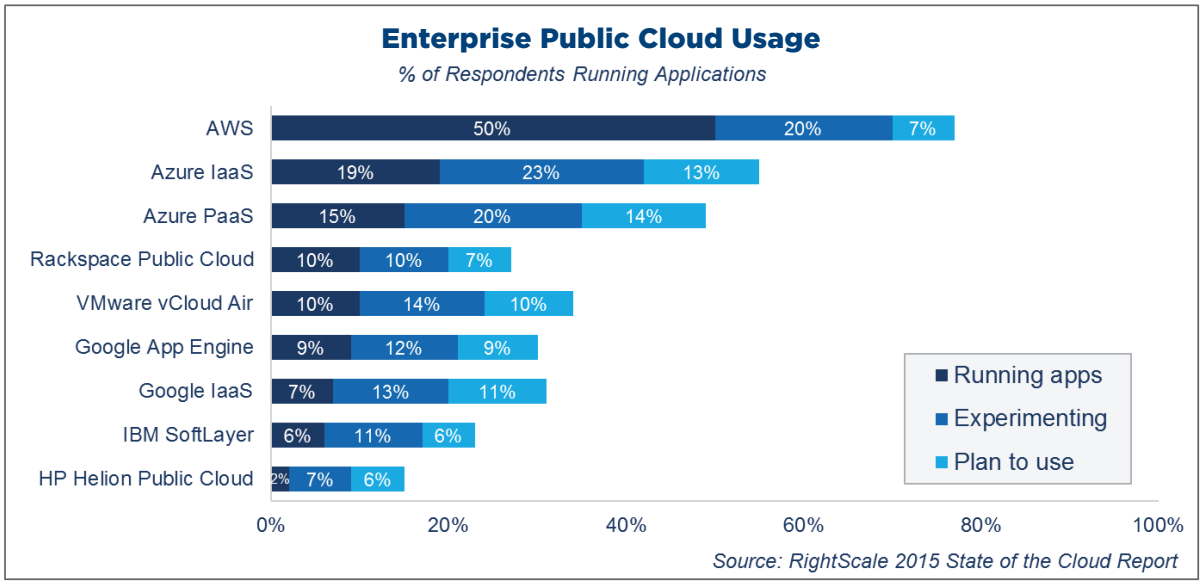
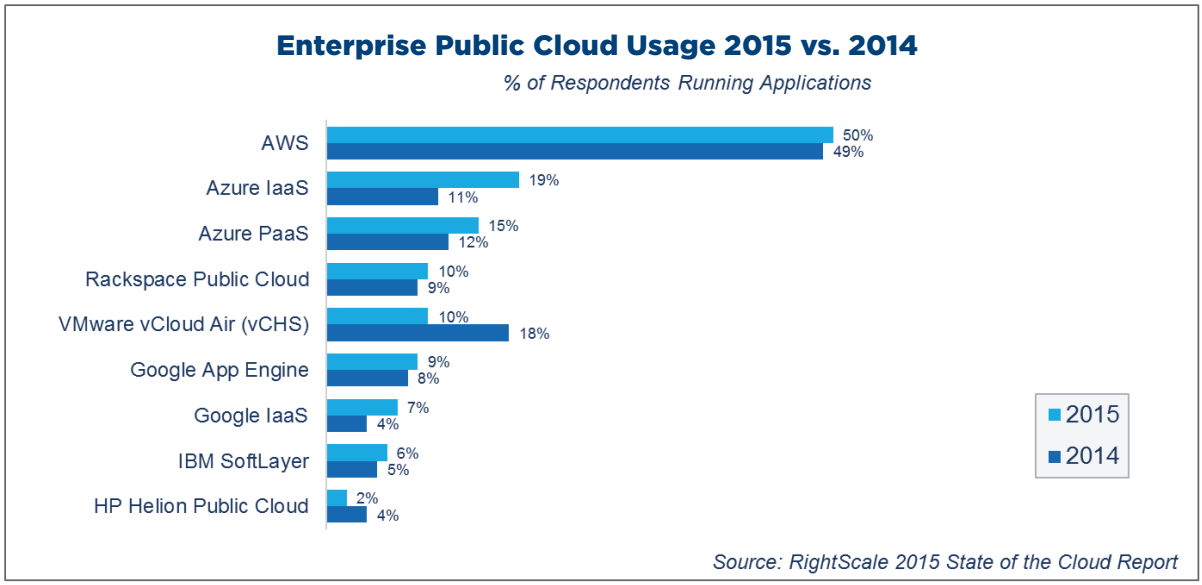
Cloud competition for enterprises (1000+ employees) got a lot more interesting in 2015. AWS still maintains a lead (50 percent vs. 49 percent in 2014), but Azure IaaS has closed the gap significantly (19 percent vs. 11 percent in 2014). As a result, the AWS lead in the enterprise narrowed from more than 4x to 2.5x its nearest competitor. In addition, 36 percent of enterprise respondents are experimenting with or planning to use Azure as compared to 24 percent for AWS. It is important to note that many enterprises will use both AWS and Azure as part of a diversified portfolio of cloud providers. Google IaaS also made inroads with enterprises, increasing from 4 percent to 7 percent in 2015.





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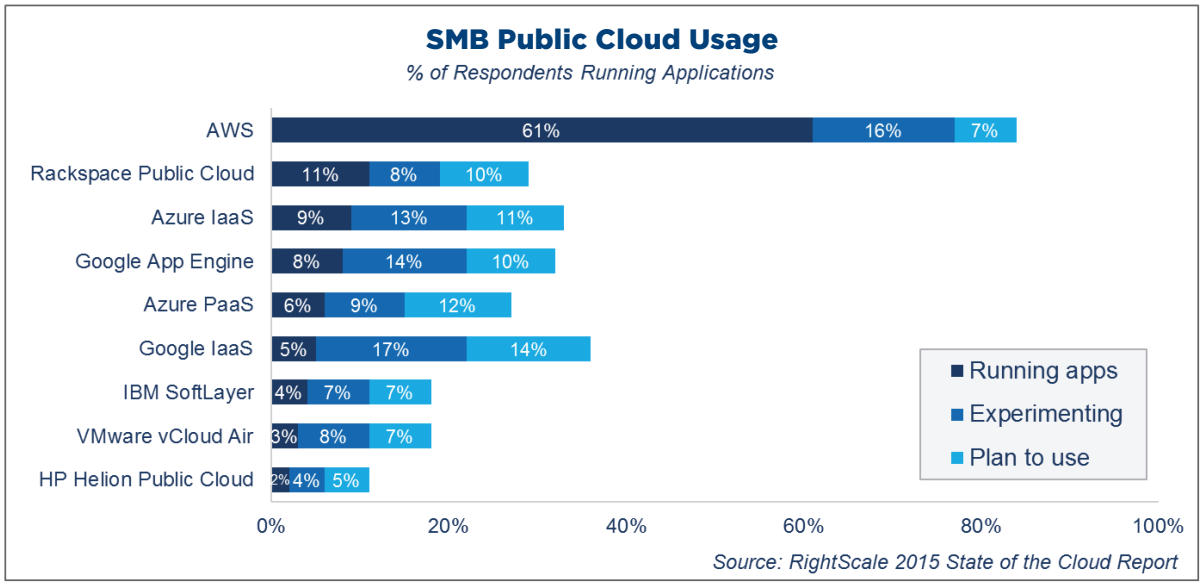
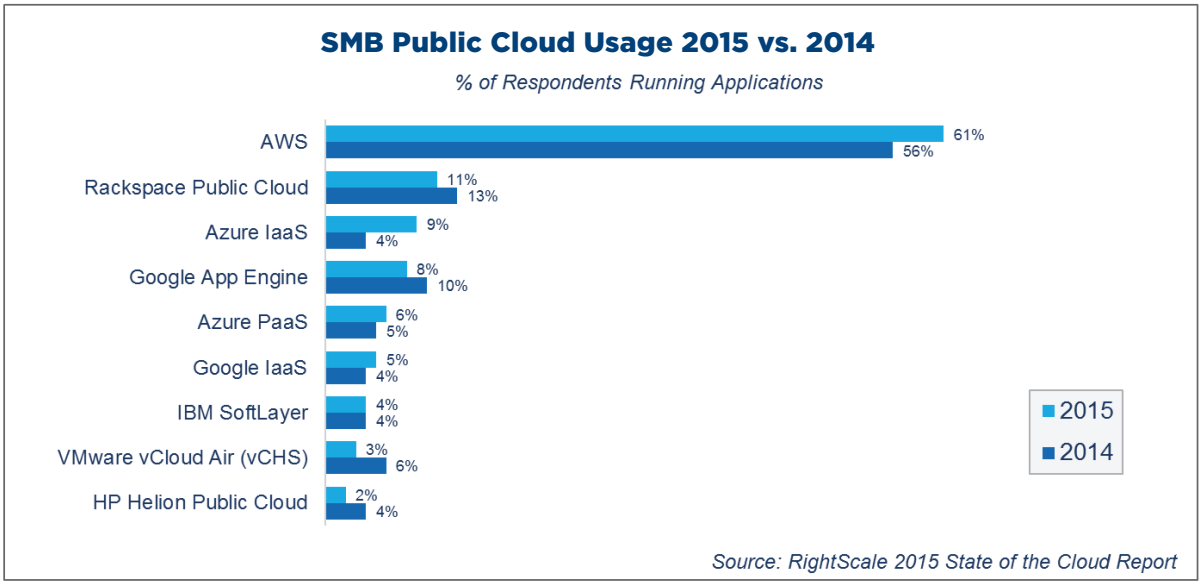
Among smaller organizations (less than 1000 employees), AWS adoption has increased (61 percent vs. 56 percent in 2014). Rackspace remains in second place (11 percent adoption vs. 13 percent in 2014) but has decreased slightly in adoption, so the AWS lead has grown. Azure IaaS adoption also grew for smaller companies in 2015 (9 percent vs. 4 percent in 2014). Interest levels for future adoption are highest in Google IaaS with 31 percent of SMB respondents experimenting or planning to use.





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Top Public Clouds Used

Place	Enterprise *(1000+ employees)*	SMB *(Under 1000 employees)*
#1	AWS	AWS
#2	Azure IaaS	Rackspace Public Cloud
#3	Azure PaaS	Azure IaaS
#4	Rackspace Public Cloud	Google App Engine
#5	VMware vCloud Air	Azure PaaS
#6	Google App Engine	Google IaaS
#7	Google IaaS	IBM SoftLayer
#8	IBM SoftLayer	VMware vCloud Air
#9	HP Helion Public Cloud	HP Helion Public Cloud

Source: RightScale 2015 State of the Cloud Report

Private cloud stalls in 2015 with only small changes in adoption.

The 2015 State of the Cloud Survey reveals little change in private cloud adoption from 2014.

Although virtualized environments from VMware or Microsoft don't meet all of the requirements of cloud computing, many survey respondents currently view these environments as a private cloud, and so we gave respondents an option to identify them as private cloud technologies.

VMware remains in the lead overall, with 33 percent of respondents using vSphere as a private cloud and 13 percent using vCloud Director. OpenStack also has 13 percent adoption, but continues to generate high levels of interest with 30 percent of respondents evaluating or planning to use. The most significant change was the entry of Microsoft Azure Pack to the market, with 7 percent of respondents already using it.

The slowing of adoption in private cloud is likely caused by the much talked about complexities of standing up and deploying a private cloud environment. However, interest levels remain strong, so this could lead to a reacceleration of growth over the next year.

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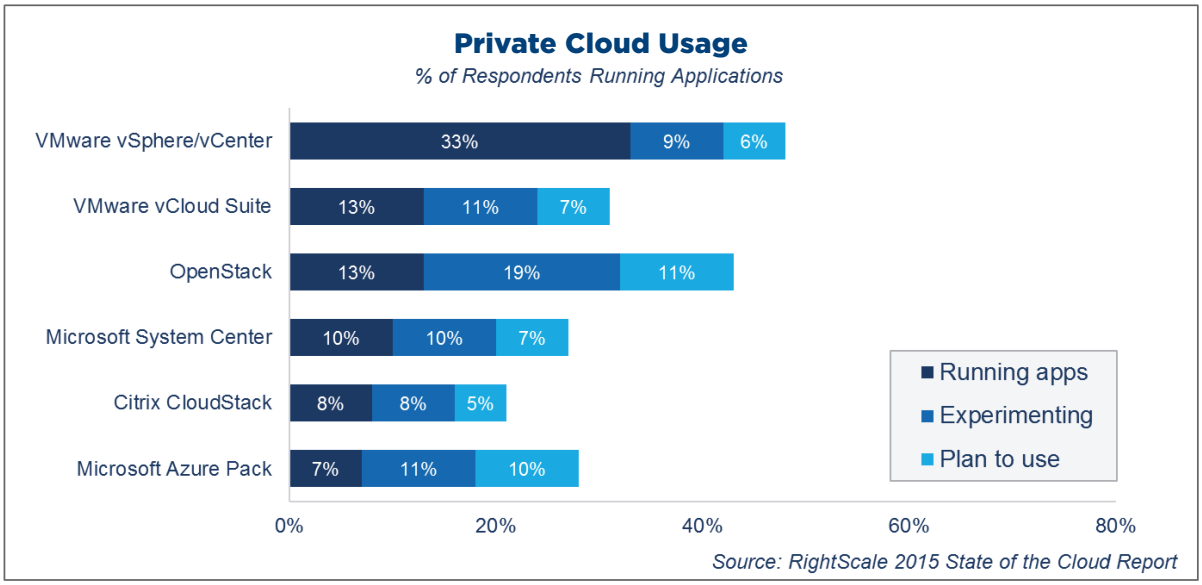

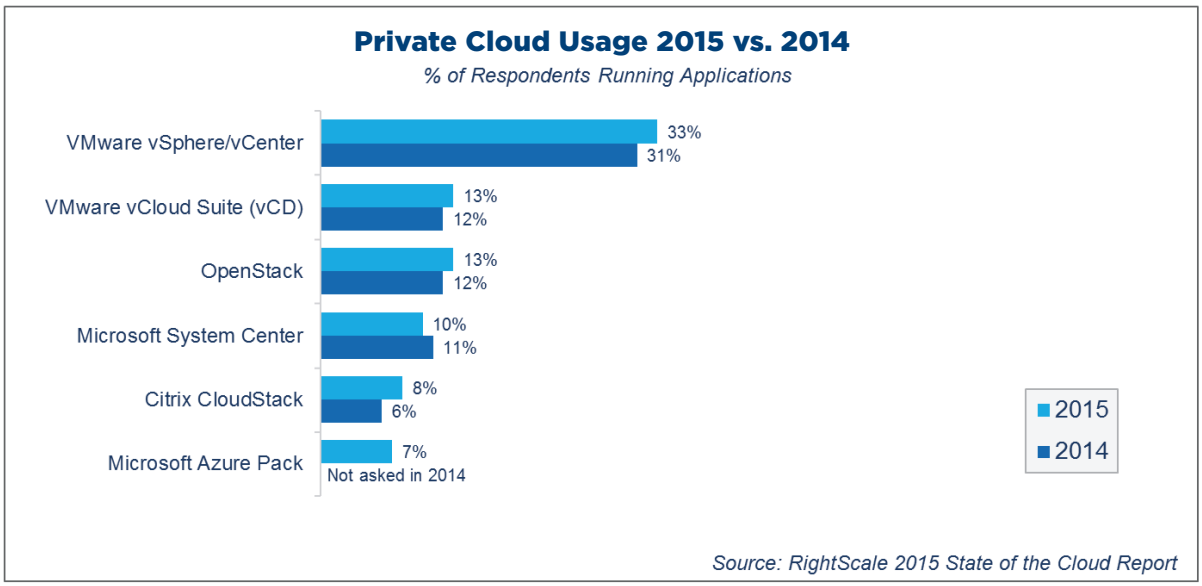

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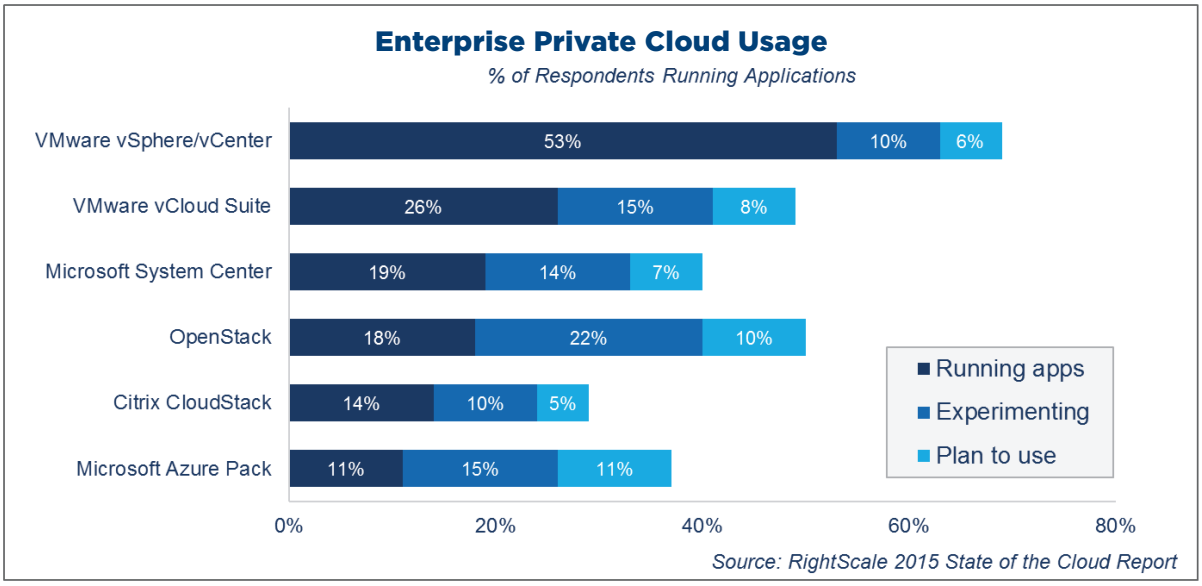
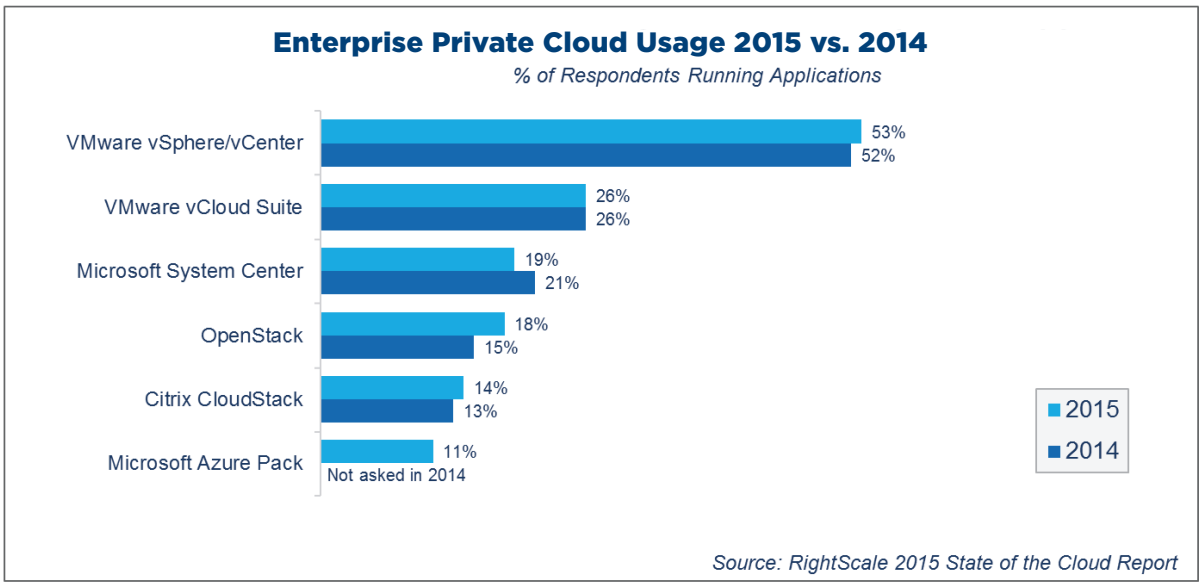
Among enterprises, as expected, VMware is more widely used (53 percent for vSphere and 26 percent for vCloud Suite). This represents almost no change compared to the 2014 survey. Microsoft System Center holds third position with 19 percent adoption among larger organizations, while OpenStack increased from 15 percent last year to 18 percent in 2015. Microsoft Azure Pack, a new entry, is being used by 11 percent of enterprise respondents.





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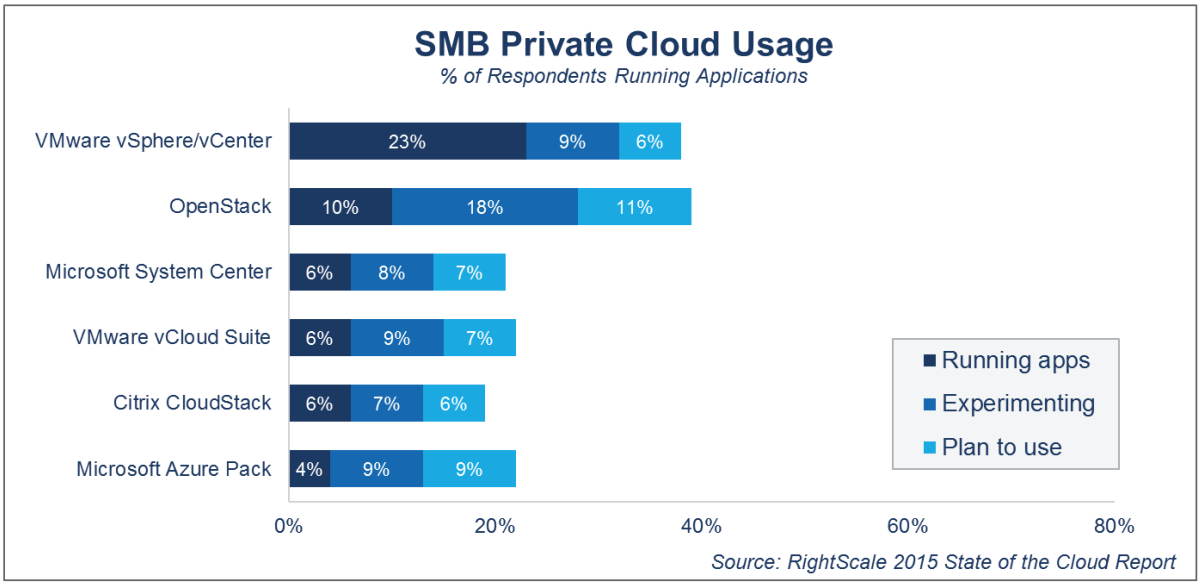
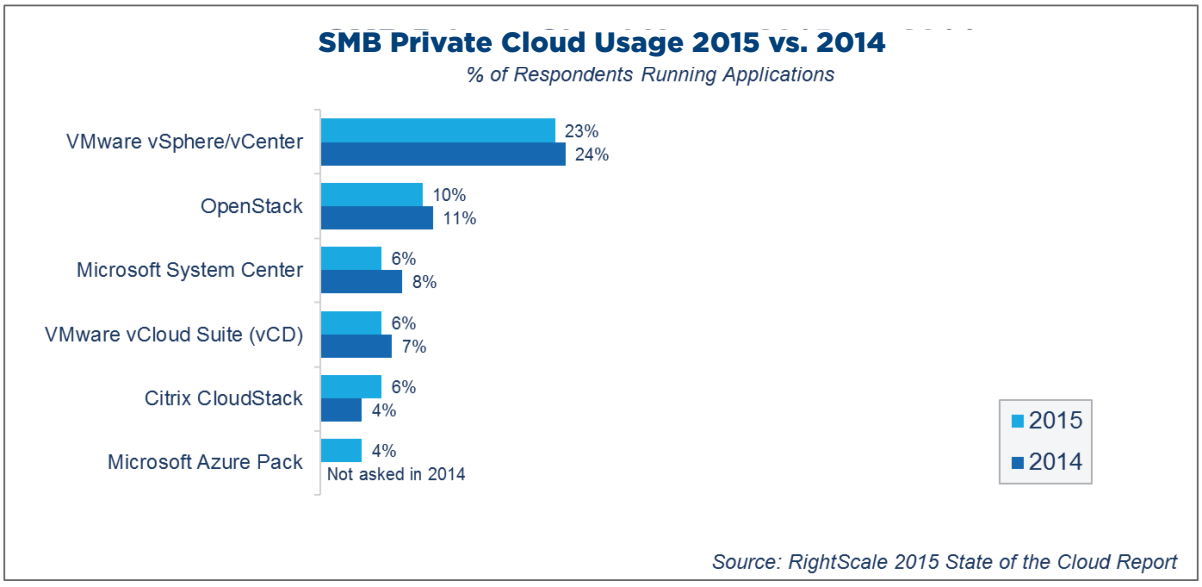
Among SMBs, VMware vSphere holds the lead at 23 percent adoption while OpenStack is second with 10 percent adoption.





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Top Private Clouds Used

Place	Enterprise *(1000+ employees)*	SMB *(Under 1000 employees)*
#1	VMware vSphere/vCenter	VMware vSphere/vCenter
#2	VMware vCloud Director	OpenStack
#3	Microsoft System Center	Microsoft System Center
#4	OpenStack	VMware vCloud Suite
#5	Citrix CloudStack	Citrix CloudStack
#6	Microsoft Azure Pack	Microsoft Azure Pack

Source: RightScale 2015 State of the Cloud Report

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Summary: IT Teams Take the Reins to Further Drive Cloud Adoption

The 2015 State of the Cloud Survey shows a shift in the way enterprises are moving to the cloud. While early cloud adoption was pioneered by business units acting alone, central IT teams are now taking notice and taking charge.

Enterprise IT organizations are moving quickly to broker cloud services (and not just private clouds) in order to meet the requirements and expectations of their internal customers. They expect to create portals that will offer fast access to both public and private cloud resources, while controlling costs and ensuring governance.

About RightScale

RightScale® enables leading enterprises to accelerate delivery of cloud-based applications that engage customers and drive top-line revenue while reducing risk of outages and optimizing costs. RightScale Cloud Portfolio Management provides a single pane of glass to manage, govern, and optimize applications in public, private, and hybrid clouds. With RightScale, IT organizations can deliver instant self-service access to a portfolio of public, private, and hybrid cloud services across business units and development teams. RightScale provides enterprise-grade governance so that IT teams can control user access; standardize technologies and processes; ensure security and compliance; and enforce budgets. In addition, RightScale Consulting provides deep cloud expertise to help companies develop cloud strategies, deliver cloud projects, and optimize cloud usage. Since 2007, more than 50,000 users at leading organizations across a variety of industries have launched millions of servers and advanced their cloud infrastructure through RightScale.

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RightScale can help you take the next step in your cloud journey, no matter your current stage of Cloud Maturity. We can help you build a strong foundation as your cloud adoption grows across workloads and across public and private clouds and virtualized environments.

A RightScale CloudSight Consulting engagement will help you transition from your high-level cloud goals and strategy to a tangible roadmap and plan. Our cloud experts are here to share the lessons learned from years of experience deploying thousands of cloud applications. They can advise you on:

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- Which applications to migrate
- Which architectures and technologies to use
- Project roadmaps and timelines
- Planning for cloud costs and ROI

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