



OPENSTACK USER SURVEY

OpenStack's eighth User Survey demonstrates the maturity and deep adoption of the the world's most widely deployed open source software for building clouds. In this cycle, we focused on comparing this cycle's 260 deployment responses to the 267 deployment responses from one year ago.

Key findings:

- **NPS** for deployments continues to tick up, eight points higher than a year ago.
- The share of **deployments in production** is 20% higher than a year ago.
- **Cost, operational efficiency** and **innovation** are the top three business drivers.
- Significantly higher interest in **NFV** and **bare metal**, and **containers** leads the list of emerging technologies three cycles in a row.
- **Kubernetes** shows growth as a container tool.
- OpenStack is adopted by companies of every **size**. Nearly one-quarter of users are companies smaller than 100 people.

Our survey request went out to everyone who had answered the User Survey and logged a deployment in 2015 or 2016, with approximately 50% of those users responding. In total, we received 388 completed surveys including 260 deployments, and 44 respondents had more than one deployment.

This report is an update to some of the charts most often cited by our community. In the next survey, launching February 2017, we will return to the User Survey's in-depth analysis of more than 50 questions including app development, cloud size and deployment decisions.

Analyze the results yourself

A new asset for the community this year is a live survey analysis tool, which provides an online dashboard and six global filter categories, enabling the community to do their own data analysis at <http://www.openstack.org/analytics>.

This dashboard is fed with live data as survey responses are logged, and it presents 2016 results in aggregate, comparing them to the second half of 2015 survey results. Due to different data parameters, this short survey report will reveal different answers compared to the dashboard, but we believe both are valuable resources for the community.

Some of the charts presented in this user survey report do not add to 100% because multiple responses are accepted, or due to rounding.

Survey Credits

The OpenStack User Committee includes Edgar Magaña, Jonathan Proulx, and Shilla Saebi.

Heidi Joy Tretheway from the OpenStack Foundation staff leads creation of the survey and report, with support from Anne Bertucio, Jonathan Bryce, Mark Collier, Tom Fifield, Jimmy McArthur, Lauren Sell, and Wes Wilson.

The OpenStack Foundation partnered with independent data scientist Kelly Valade to analyze and chart the data.

Increasing user satisfaction with OpenStack shown in NPS score

The trend in user satisfaction continues to be highlighted by the Net Promoter Score (NPS), which has consistently climbed over the last four survey cycles.

The NPS is based on the question “How likely are you to recommend OpenStack to a friend or colleague?” with a 0–10 rating scale. The score takes the total

percentage of “promoters” (53%) who rate OpenStack as a 9 or 10, and subtracts the total percentage of “detractors” who rate OpenStack as 0–6.

In this cycle, OpenStack’s NPS score was 43 among those with deployments, up eight points from one year ago.

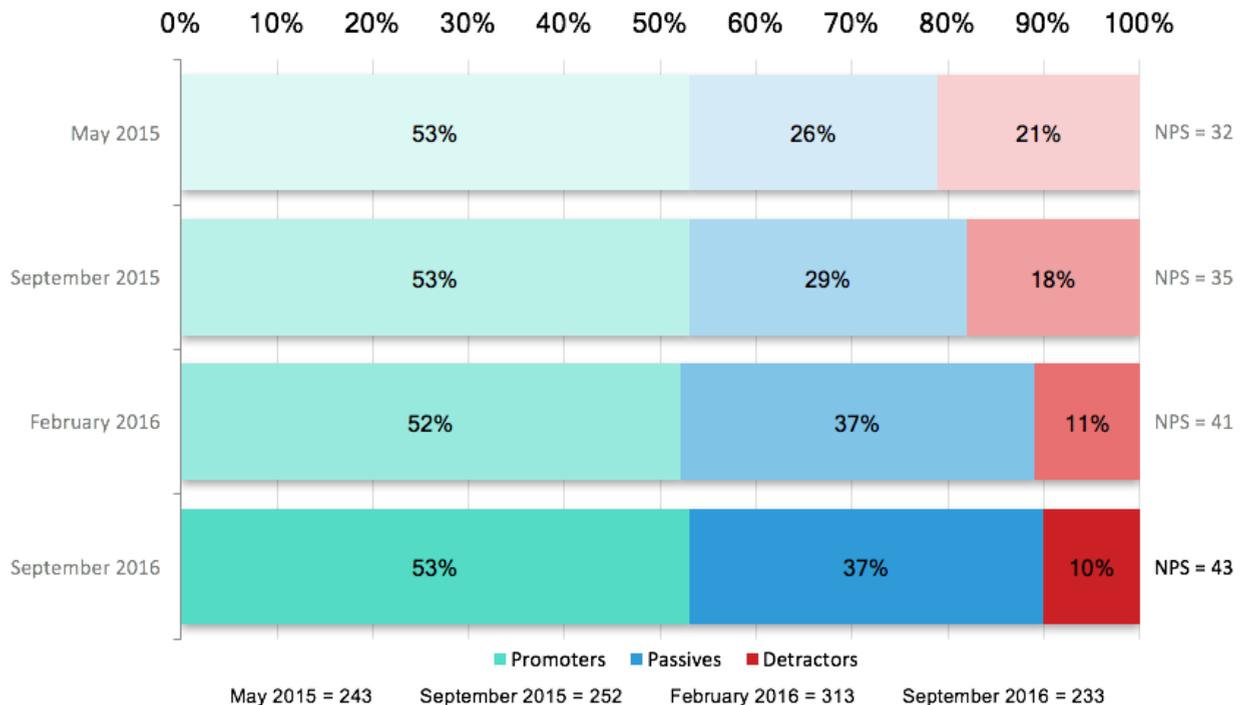


Figure 1

Share of deployments in production is 20% greater than a year ago

Over the past seven cycles, we have shown the proportion of OpenStack clouds in various stages: production or full operational use; under development/in testing; or proof of concept. And in each survey, users have reported more clouds moving into production.

With 71% of clouds in production or full operational use, OpenStack is more prevalent and full-functioning than ever—over the past year, the portion of clouds in production grew by 20%.

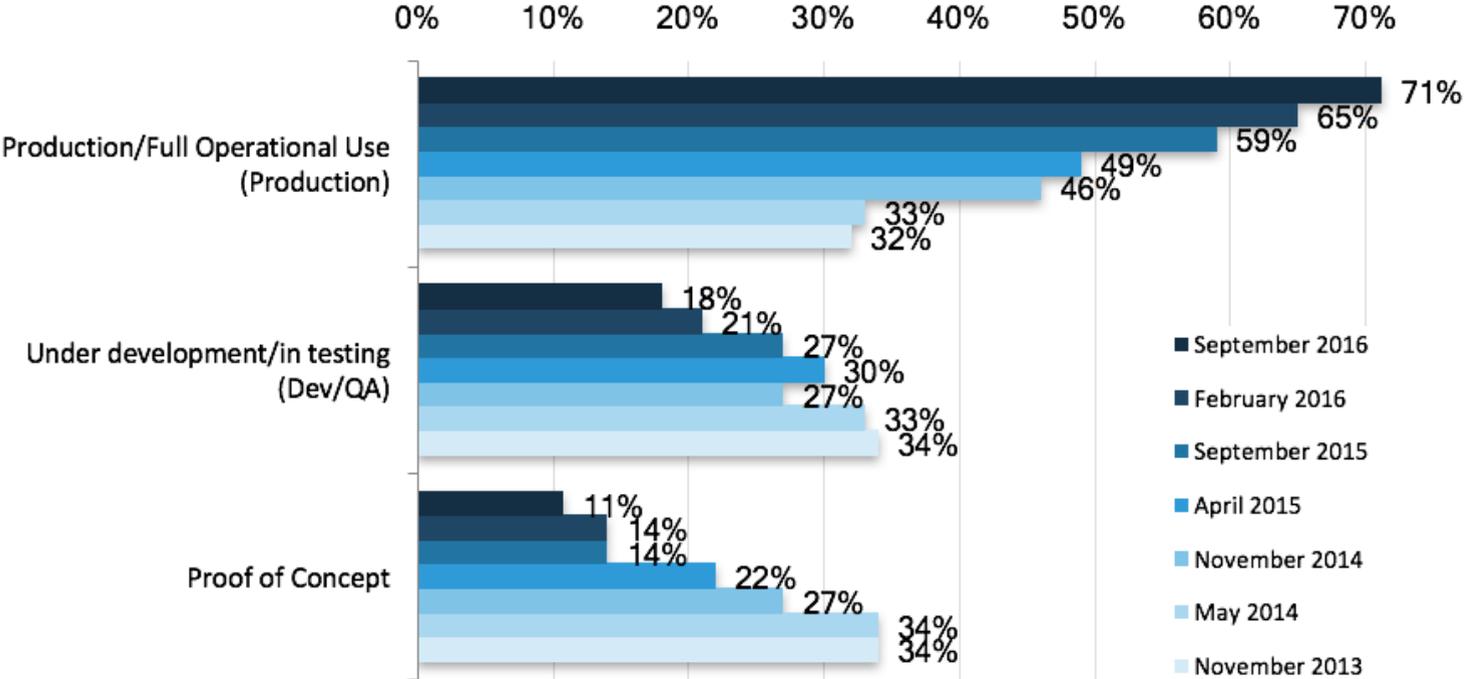


Figure 2

Project adoption for clouds in production shows strong use of core services

We look at “production” and “testing” in two ways. First, we ask whether a cloud is in production, test, or proof of concept. Those results are shown in the prior section.

Next, we drill down into project adoption *only among clouds in production* for 25 of OpenStack’s most pop-

ular projects, and ask which of those projects are in production or test phase. (Note that in prior surveys, we’ve shown the following chart for projects in use by clouds *both in production or test phase.*)

As we’ve seen in past user surveys, OpenStack’s core services are among the most highly adopted.

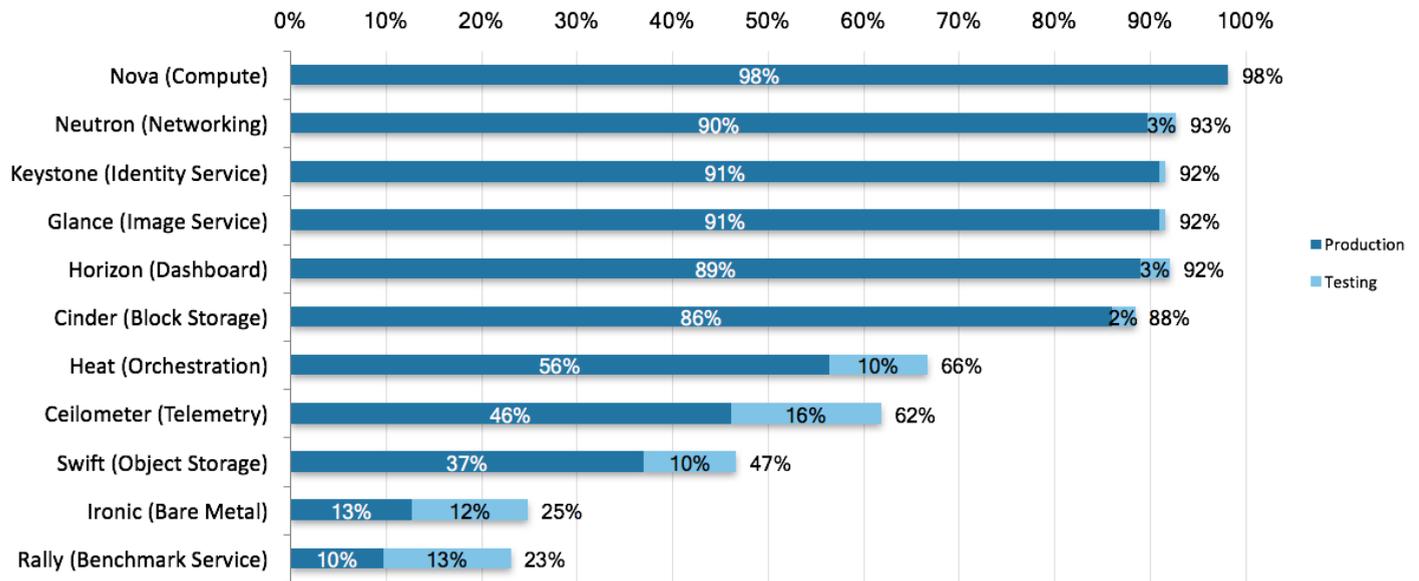


Figure 3.1 n=165

Project adoption for emerging projects forecasts growth

In addition to the most highly adopted projects, other OpenStack projects have also seen greater use, notably the containers-related projects Kolla and Magnum, as well as Designate, Sahara and Barbican. Note the change in scale on the following chart.

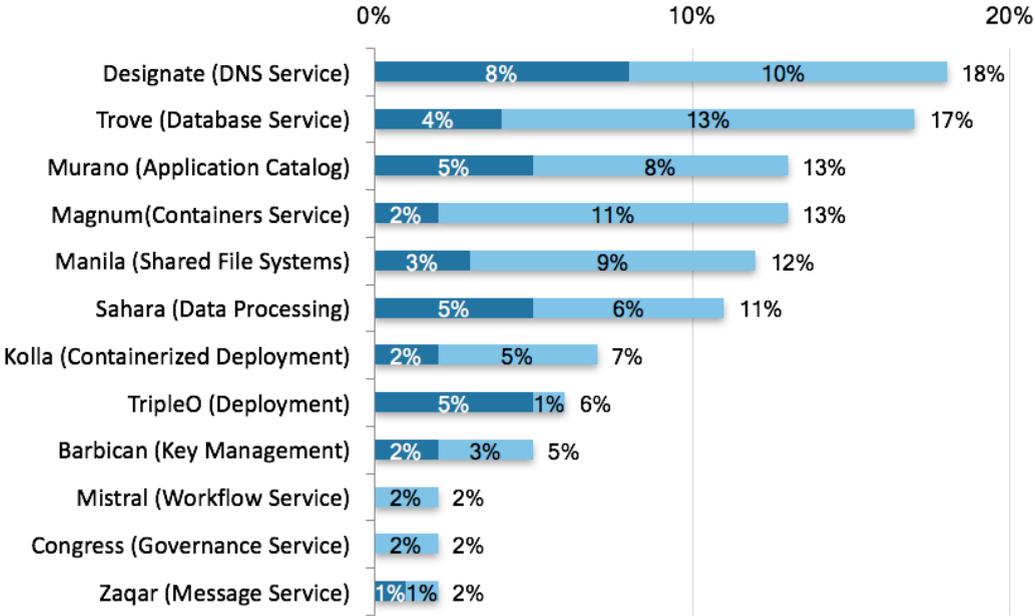


Figure 3.2 n=165

Which projects most interest the OpenStack community?

In addition to asking which projects production clouds are actively using or testing, we asked which projects they are interested in using.

This gives us an interesting forecast of likely growth in specific projects within OpenStack’s “big tent” of

now more than 60 total projects.

Among those clouds that were represented in both February and September 2016 survey results, we saw significant growth in interest for Magnum, Manila, Trove, Murano, Sahara, and Swift.

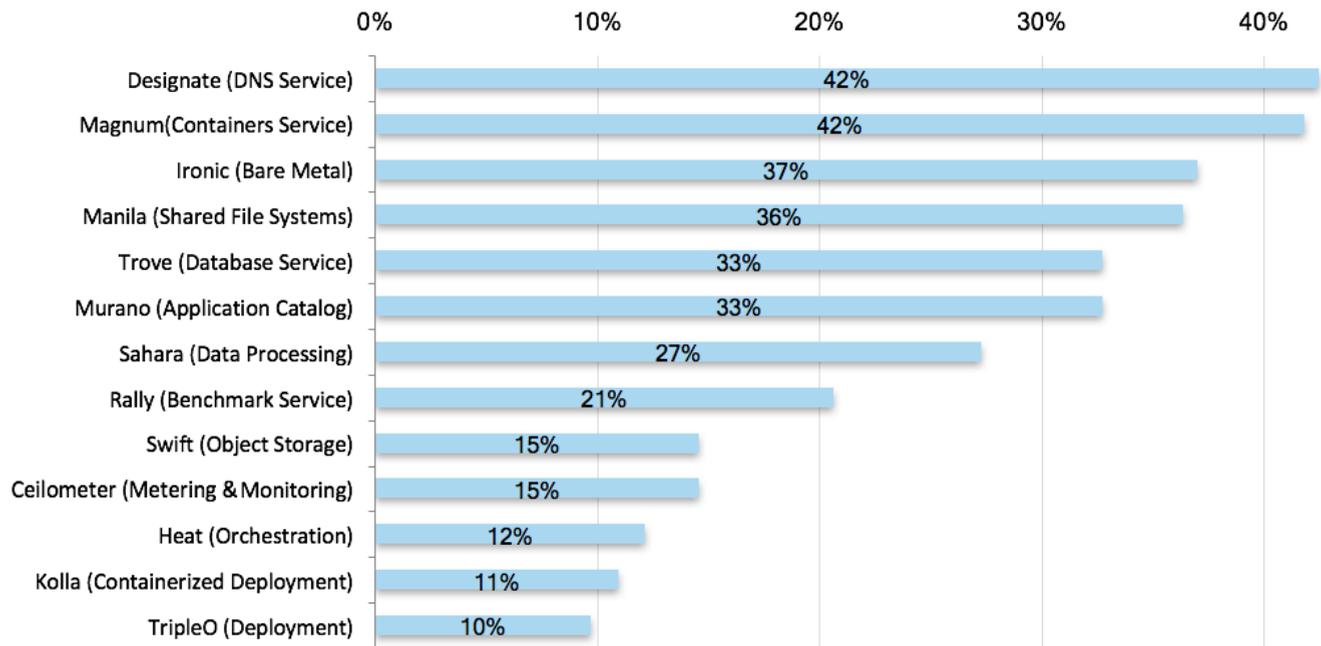


Figure 3.3 n=160

Adoption of new software releases

We asked users which releases they are currently using in their deployment, and as expected, we saw significant growth in the most recent releases at the time of the survey, Liberty and Mitaka, while near-

ly all others dropped as users take advantage of the greater scalability, resiliency and enhanced user experience offered by OpenStack's latest releases.

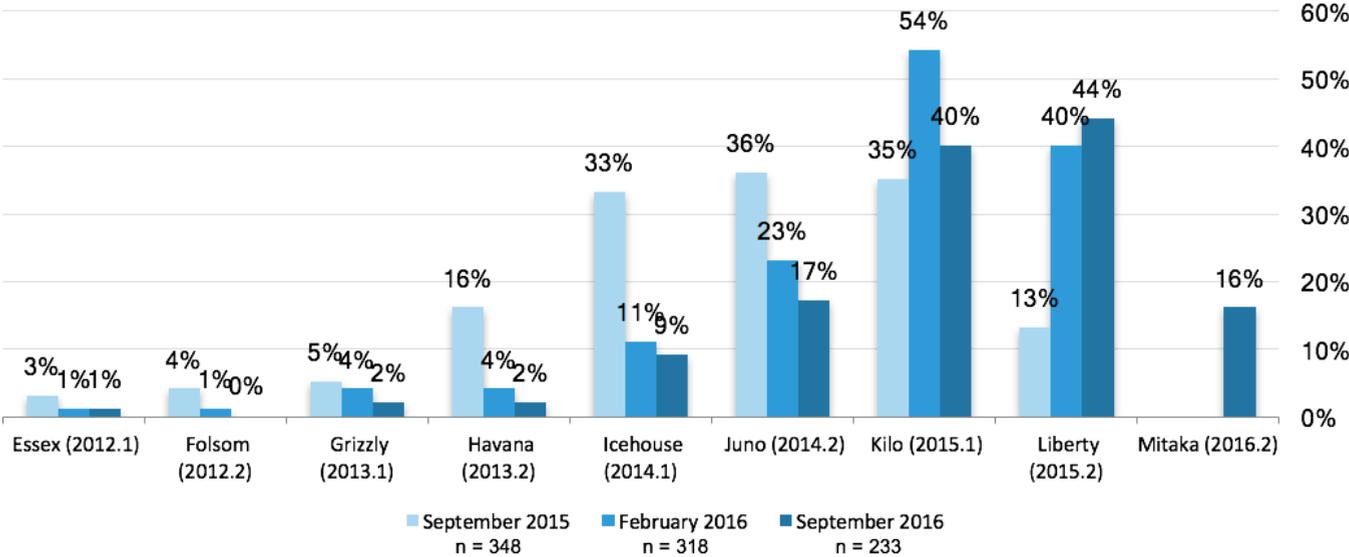


Figure 4.1

Adoption of OpenStack's software releases over time

Another view of release adoption looks at historical data from clouds in production to create an area chart that reveals which OpenStack software versions have been most adopted by the community.

Grizzly, Icehouse and Kilo each show substantial adoption. Additionally, data shows an acceleration of new release adoption, with clouds moving to newer versions more rapidly in each cycle.

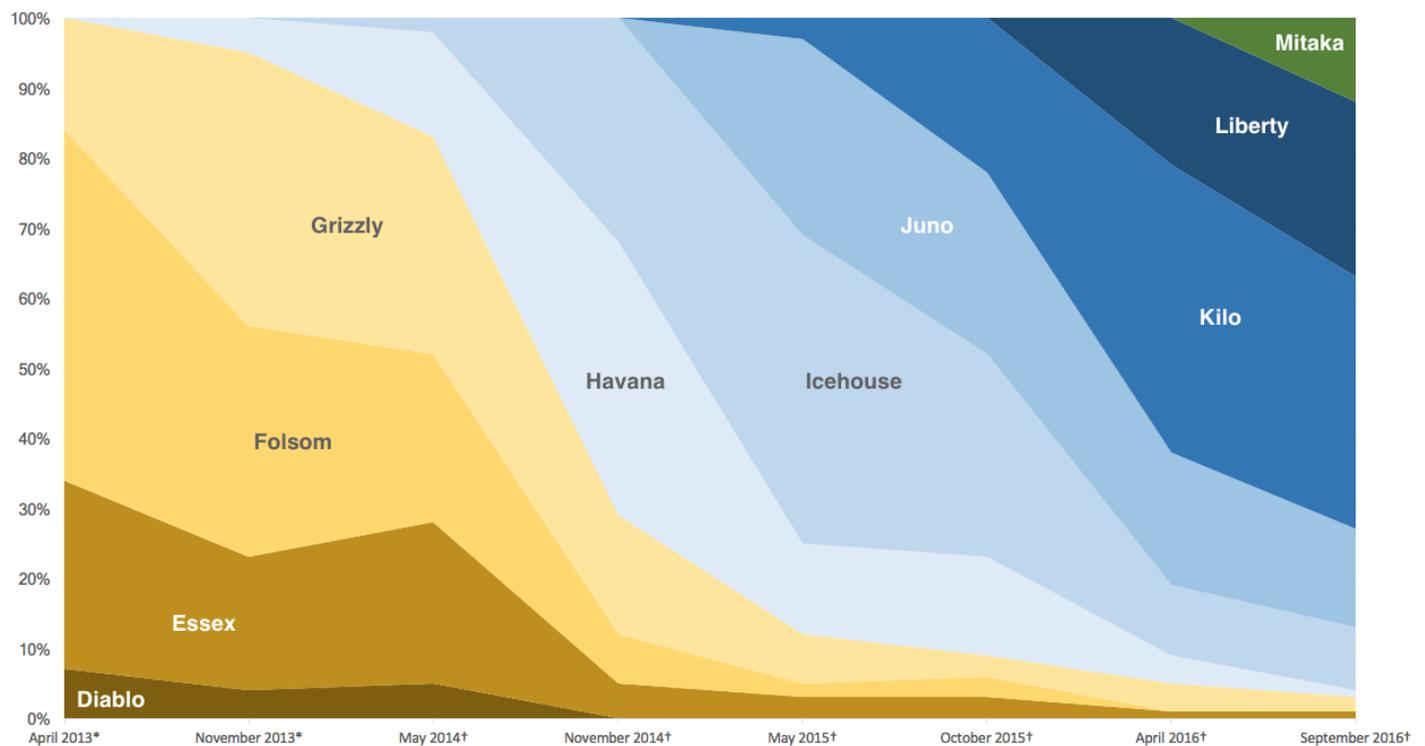


Figure 4.2

*April 2013 and November 2013 figures include all deployments
 † May 2014 – September 2016 figures represent production deployments only

Interest in containers, NFV and bare metal continues to rise

One of the most anticipated questions on the user survey asks which new or emerging technologies interest OpenStack users. For the third year in a row, containers topped the list. Additionally, interest in

software-defined networking (SDN) and network functions virtualization (NFV), and bare metal were significantly higher than in our prior survey.

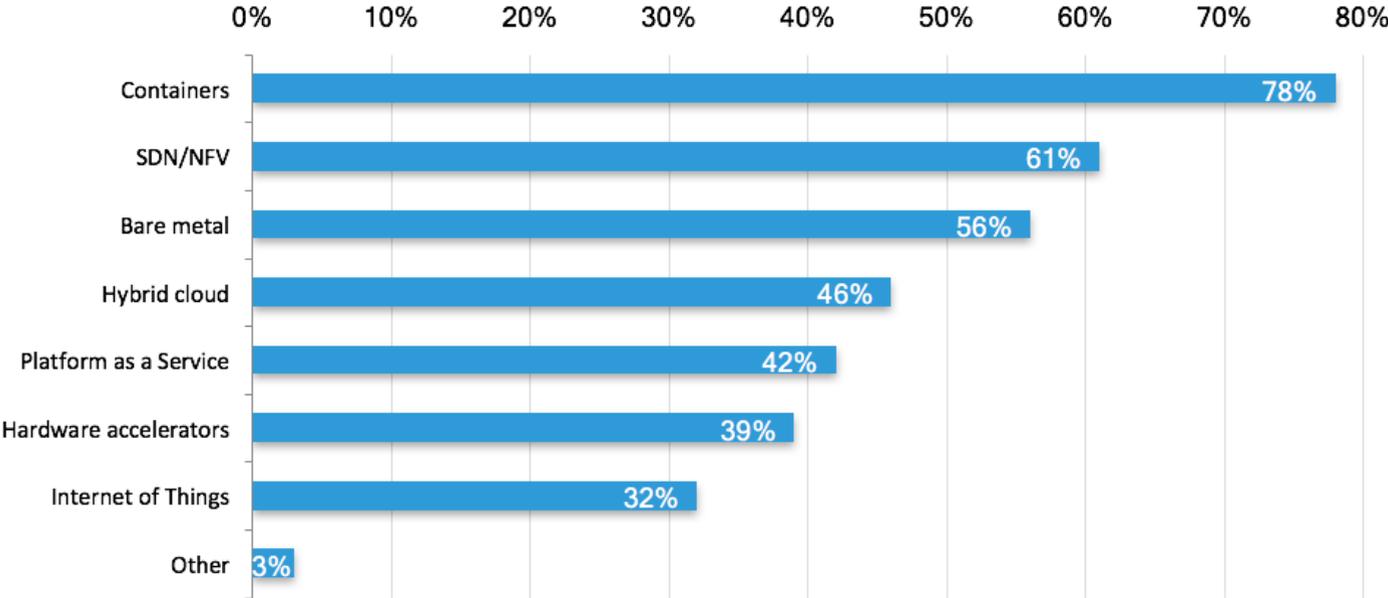


Figure 5 n=317

Kubernetes leads containers and Platform-as-a-Service tools

Due to the relatively small sample size, we looked at 2016 results in aggregate when considering which container and PaaS tools are selected by OpenStack users.

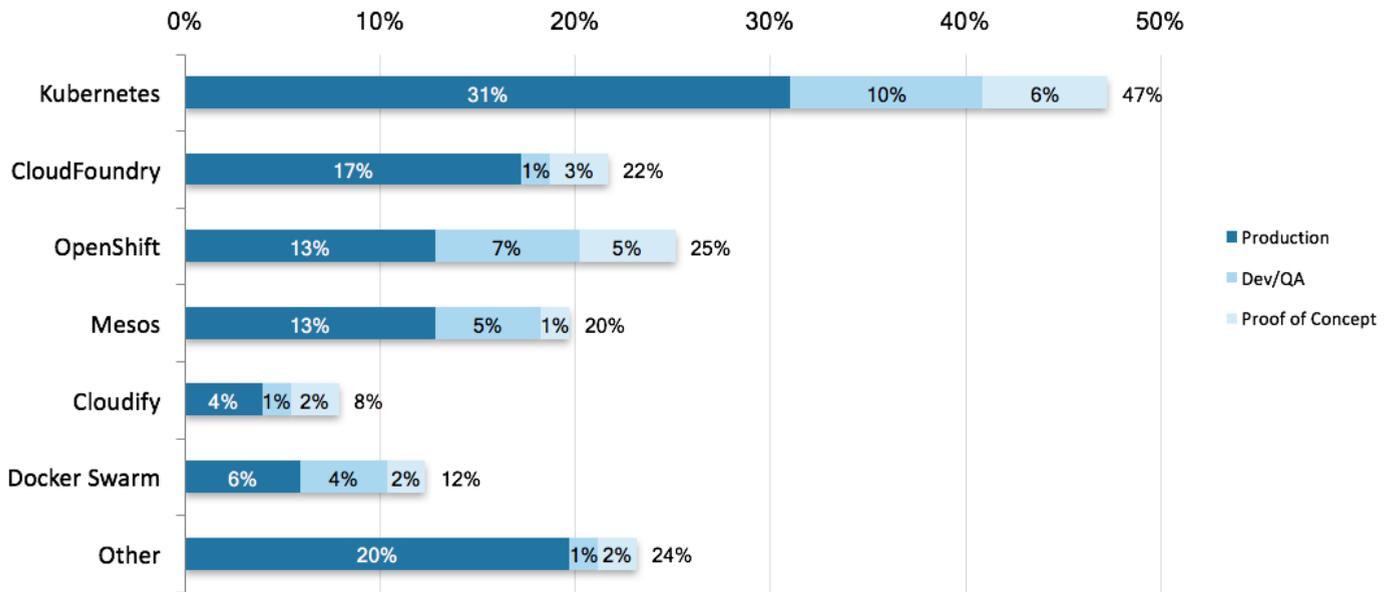


Figure 6.1 n=203 shows all of 2016

We also looked at how these answers have changed over the last three survey cycles. Over the past 12 months, Kubernetes showed significant increases, while CloudFoundry use fell in the same timeframe.

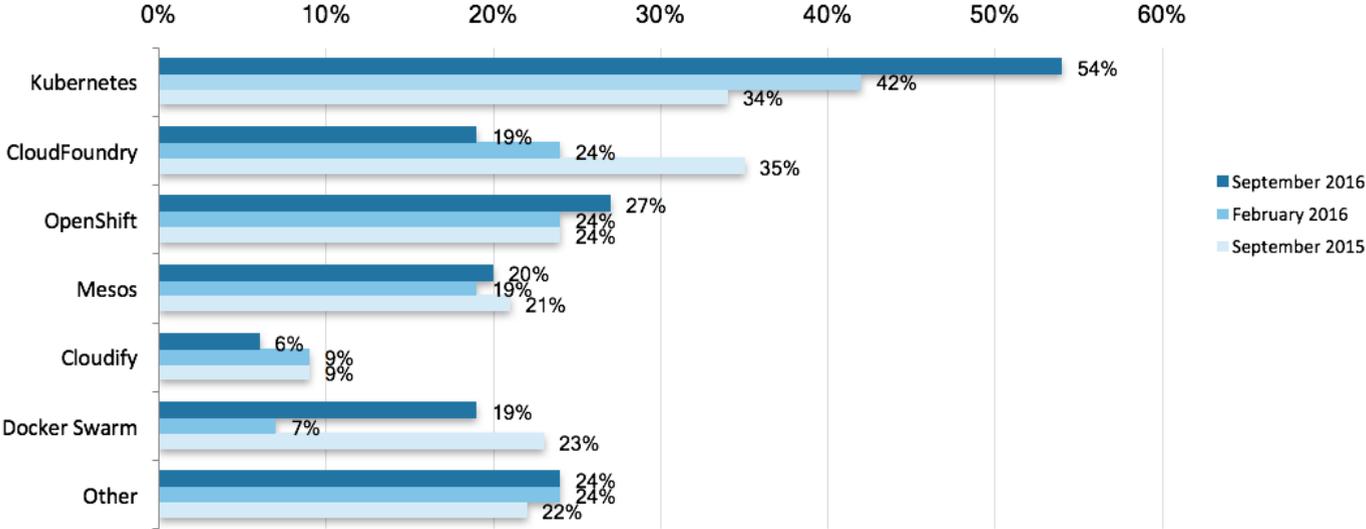


Figure 6.2
September 2015 n=82
February 2016 n=118
September 2016 n=85

Business drivers: Cost is a competitive advantage

We ask all organizations why they choose OpenStack, offering seven options, to better understand how OpenStack delivers value to a wide variety of organizations.

The No. 1 ranked response—with 72% of users ranking it as their top choice—is that OpenStack enables organizations to save money over alternative infrastructure choices.

Users also choose OpenStack for its ability to increase their operational efficiency: 17% ranked that their No. 1 choice, and 63% indicated it was their No. 2 choice.

A third reason OpenStack offers a competitive advantage is accelerating an organization’s ability to innovate and compete by deploying applications faster. 86% of users noted this as one of their top three business drivers.

Other responses included avoiding vendor lock-in with an open platform and ecosystem with flexible underlying technology choices; standardizing on the same open platform and APIs that power a global network of public and private clouds; attracting top technical talent; and achieving security and/or privacy goals with control of their platform.

Organizations of all sizes finding success with OpenStack

OpenStack’s users are truly diverse in size. Nearly one-quarter of organizations that logged deployments this survey have fewer than 100 employees. Another quarter have between 100 and 999 employees.

This demonstrates that while OpenStack is adopted by some of the world’s largest brands, it is also a strong choice for small and mid-size companies that desire one platform to manage their virtual machines, containers and bare metal.

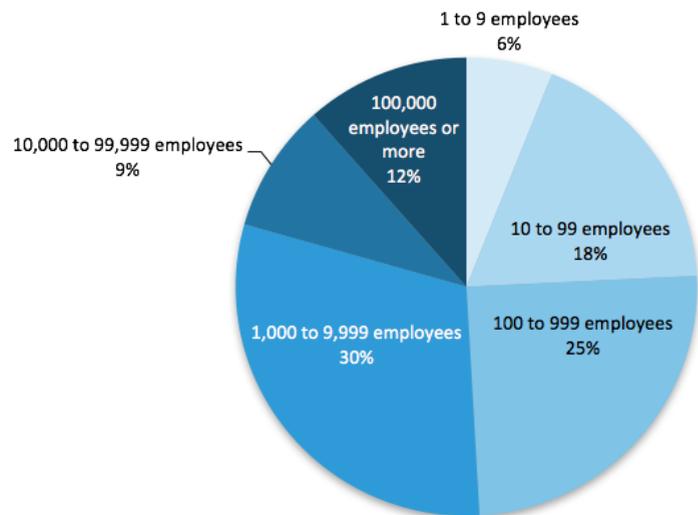


Figure 7 n=233