Research Report

FREEFORM DYNAMICS

in association with

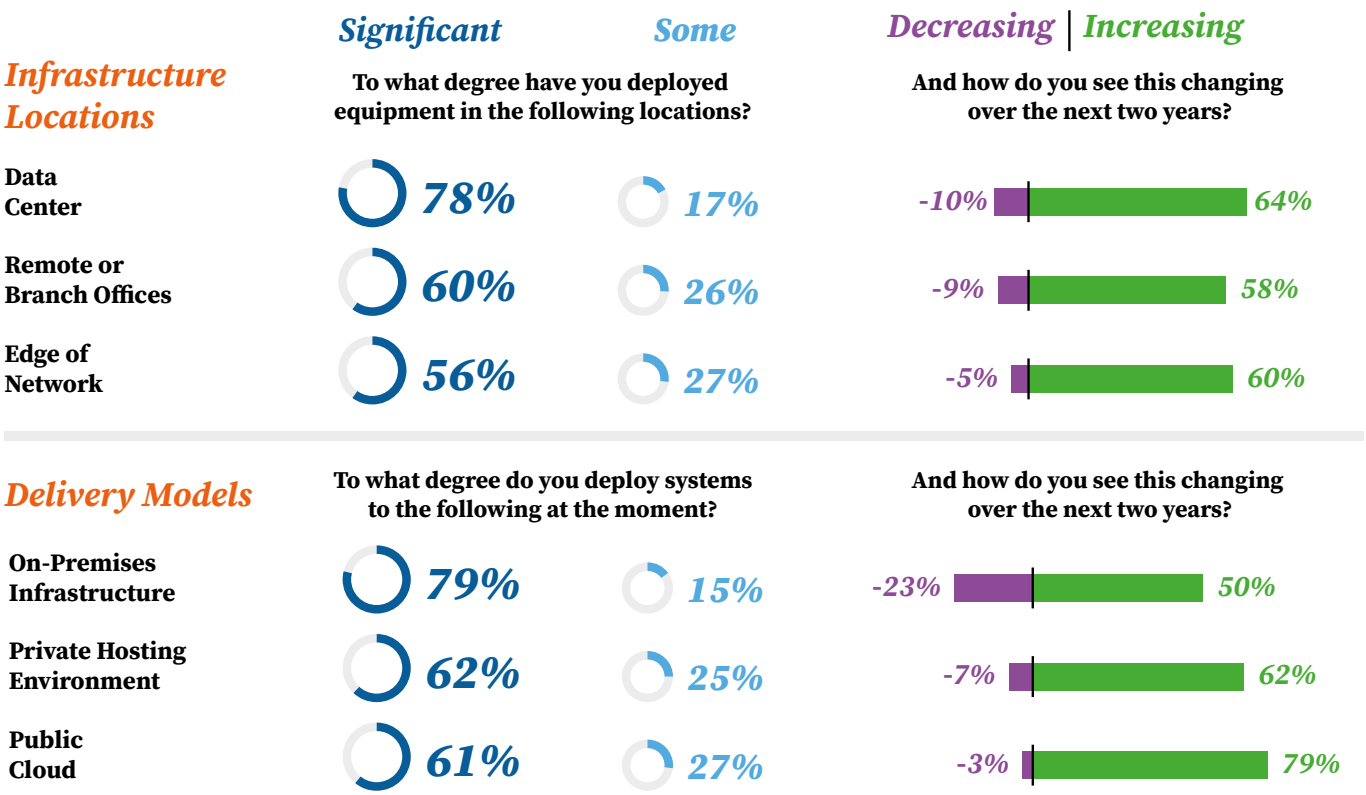
FUJITSU

Hyper-converged has come of age

Modern infrastructure options are now integral to service delivery

Introduction

The IT systems landscape is changing. As digital transformation moves onwards, the technology infrastructure needed to provide the necessary applications, along with facilities such as user self-service, grows more complex and layered. As a recent world-wide survey of over 800 IT professionals showed, this means more infrastructure, in more locations and using more IT delivery models - which often creates a hybrid of traditional IT with public and private clouds.



Fortunately, there are ways to reduce, or at least mitigate, that growing complexity. In this paper we will look at a key one that was highlighted in our study: the growing use of, and increasing preference for, hyper-converged infrastructure (HCI).

Convergence and automation

The infrastructure needed for modern IT service delivery is complex and layered. HCI can help mitigate that complexity.

HCI brings together (converges) and virtualizes the key elements of IT - servers, networking and storage - under a single automated management framework. Because they are virtualized, these resources can all run on the same host system or cluster, and they can be deployed, expanded, recovered and so on, all under software control.

For example, a complete virtual system could be automatically assembled and added to a server farm. This capability is important because modern infrastructure is increasingly software-defined at all levels. Likewise, automation is becoming a necessity, both to cope with the large scale of today's IT infrastructures and to free up skilled technologists for higher-value work.

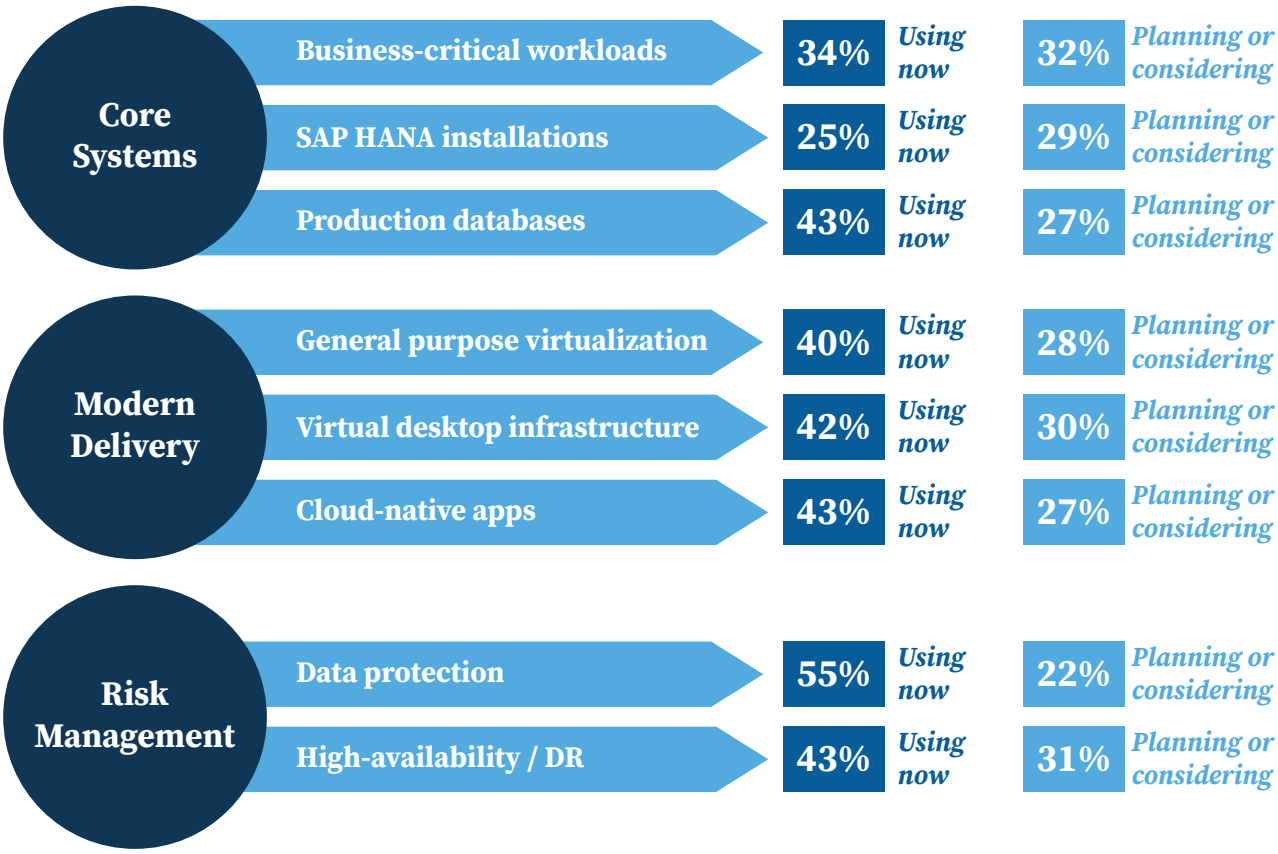
Growing awareness, growing usage

Many IT teams have overcome their initial HCI uncertainty and doubt.

Not so long ago, the biggest challenge for anyone proposing HCI for a project, or indeed for anyone selling HCI systems, was fear, uncertainty and doubt. For example, people feared that HCI would create yet more silos, because some HCI systems are only available as fixed-size building blocks. They doubted too that it would suit a broad range of application cases.

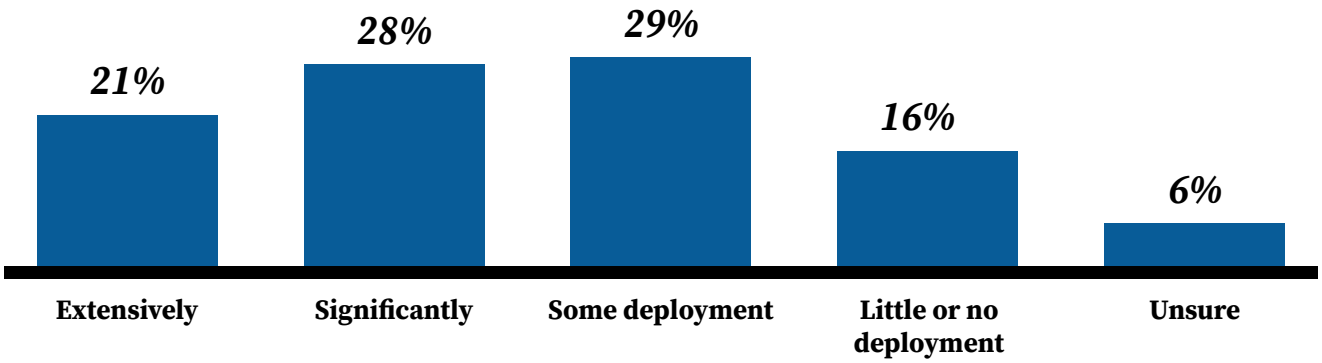
However, our study revealed IT teams moving ahead with HCI across the board.

Are you using, or might you potentially use HCI for the following?



At the same time, almost half of our survey respondents said they already had extensive or significant deployments of HCI - we will come back to this experiential divide later.

To what degree have you deployed Hyper-converged infrastructure (HCI)?



Drivers for HCI

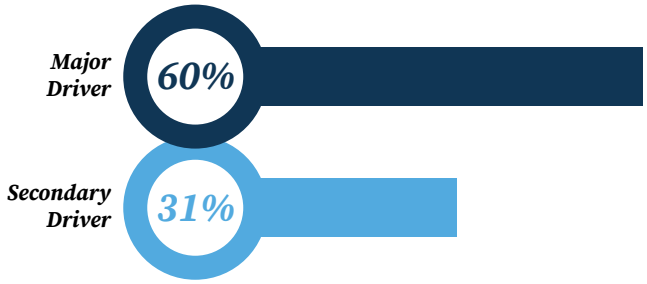
HCI defines IT resources in software, allowing more efficient utilization.

In the HCI model, key IT elements that were traditionally separate, such as servers and storage, are instead implemented as software on a shared platform. This allows HCI to offer significant gains over traditional IT in the efficiency, consolidation and utilization of resources, all of which were reported by our respondents as drivers for HCI adoption.

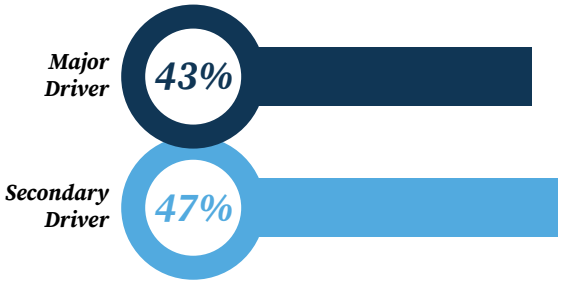
Other adoption drivers include easier scalability, and the way HCI both enables and requires automated management. Lastly, its integration and efficiency enables it to provide fast and cost-effective storage services.

How much do you see the following as drivers (or potential drivers) for HCI adoption?

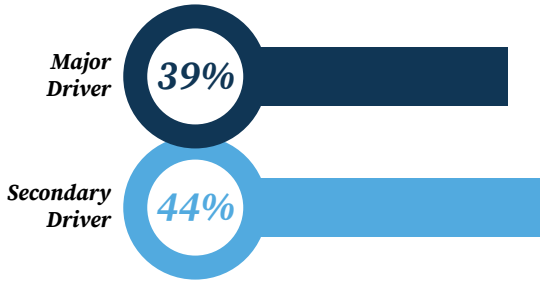
High-performance, low-latency storage - Speed up performance of specific applications



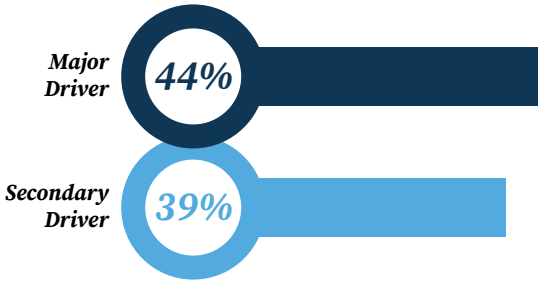
Improved scalability - Easy, linear and non-disruptive scalability



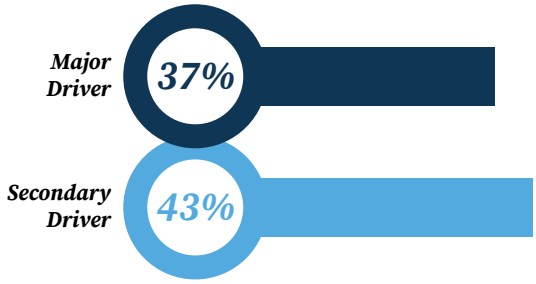
Server and storage consolidation - Fewer components, space, energy and cooling



More efficient use of resources – e.g. as a result of increased component utilization



Simplified management – Lower admin overhead, reduced skills requirements, etc.

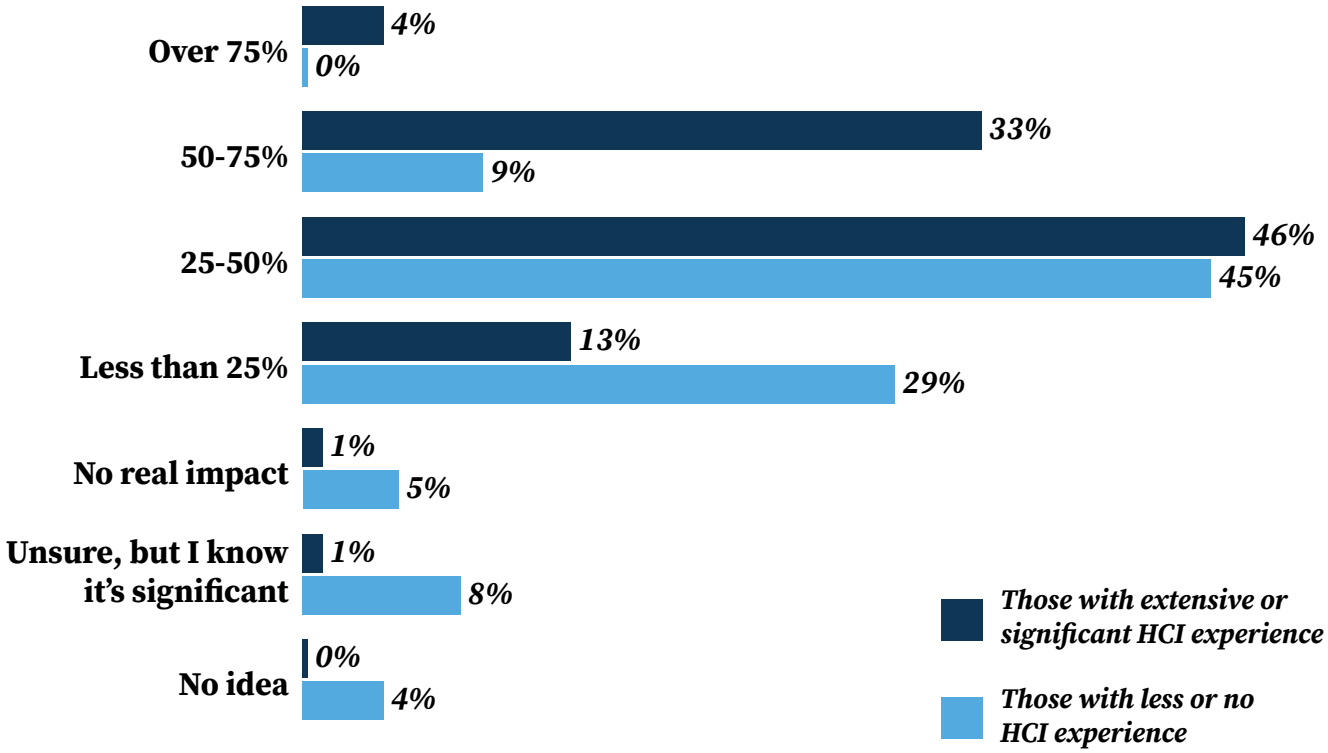


Experience pays off

As mentioned previously, around half of our respondents declared that they had already deployed HCI extensively or significantly. We used this information to compare their responses, as IT professionals who have greater direct experience of HCI, with those of the others.

Some of the biggest differences between the two groups came when we asked about the lifetime financial savings (or potential savings, for those without direct experience) to be gained from operating HCI instead of traditional IT infrastructures. As the chart below shows, the average estimate from those with more experience was dramatically higher than the predictions of the less experienced group.

Roughly how much would you estimate the savings or potential savings to be over the lifetime of an HCI-based system compared to traditional infrastructure?



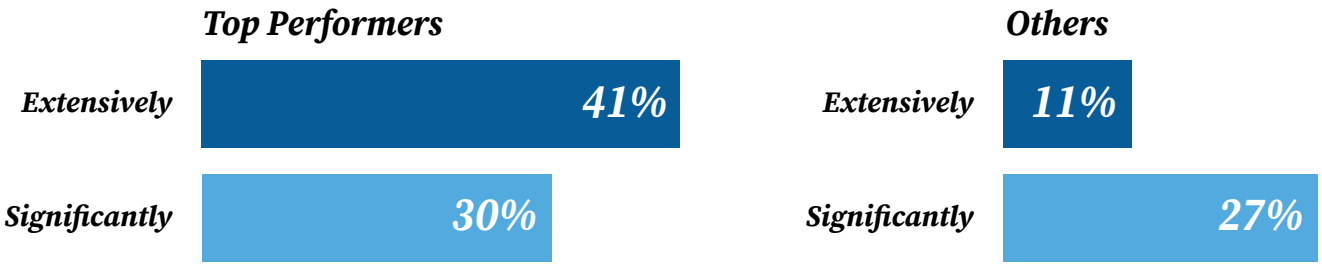
Improved performance

The IT departments which rate highest on service delivery are more likely to have extensive HCI deployments.

To look at this from another perspective, we also asked our 819 survey respondents to rate their IT department against key service delivery metrics. Aggregating these ratings allowed us to identify one-third of the respondents as Top Performers, and the remainder as Others.

When we compared the two groups' usage of HCI, the difference (below) was very clear: more than 70% of our Top Performers have significant or extensive HCI deployments, compared to less than 40% of the Others.

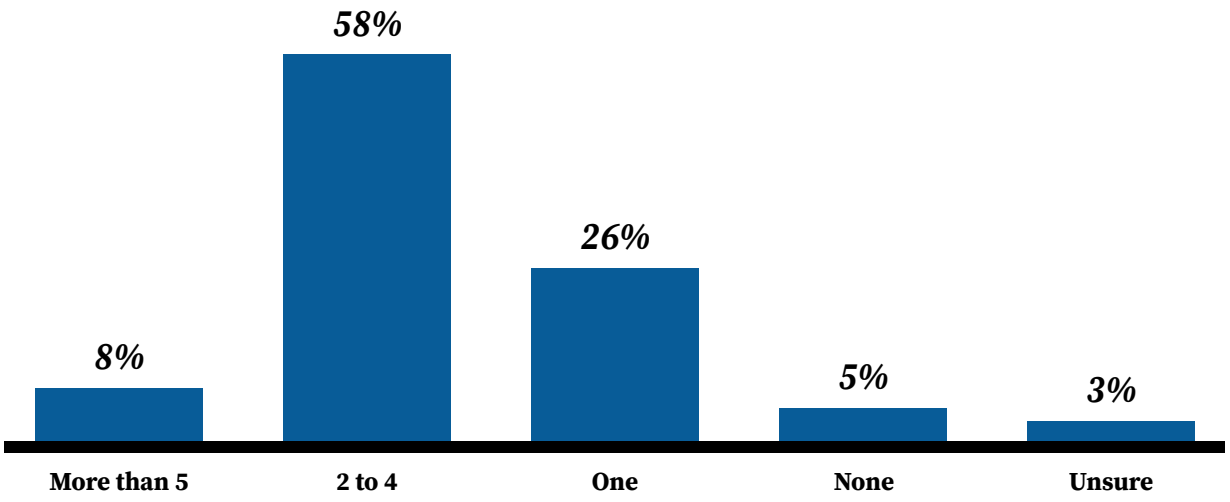
To what degree have you deployed hyper-converged infrastructure?



Multi-cloud, not cloud sprawl

Many organizations use multiple clouds or cloud providers, both for infrastructure-as-a-service and platform-as-a-service (IaaS/PaaS). As in previous studies by Freeform Dynamics, a small but significant number of respondents said they had more than five cloud suppliers, while overall, two-thirds reported having at least two. In addition, the majority said that they expected this number to increase over the next two years.

How many public cloud IaaS/PaaS providers do you currently use?



Using multiple cloud providers is an increasingly strategic choice for IT departments.

In the past, some have referred to this phenomenon of multiplying cloud suppliers as 'cloud sprawl', but along with other studies we have carried out recently, this latest survey reveals a much more nuanced and deliberate multi-cloud approach. A full two-thirds of respondents said that they were committed to multiple cloud providers.

Whether it is desired for resilience, to take advantage of varying pricing models, or because the public clouds all have their individual strengths and weaknesses, today's Hybrid IT options and infrastructures allow you to make an active and strategic choice to go multi-cloud.

Hybrid IT

HCI technology and the HCI mindset can also be very useful in the construction and operation of Hybrid IT infrastructures.

At its simplest, Hybrid IT is the notion that you operate your various IT systems, public clouds and private clouds as a single landscape - as far as possible, anyway. The relevance of HCI, and of the principle of unified management that is fundamental to the HCI mindset, become even clearer when you consider them in this context.

In part this is because there are many conceptual similarities between Hybrid IT and HCI. In particular, both make extensive use of resource sharing and software-based abstraction or virtualization, and they share a model of unified management.

Given all this, it was of little surprise that most survey respondents saw HCI as an ideal foundational technology for Hybrid IT.

How much do you agree with the following statements?

Strongly agree/agree
We are investing in new platforms to enable our Hybrid IT strategy

Strongly agree/agree
Hyper-converged infrastructure provides an ideal foundation for Hybrid IT

Strongly agree/agree
Consolidated/unified management is critical to success with Hybrid IT

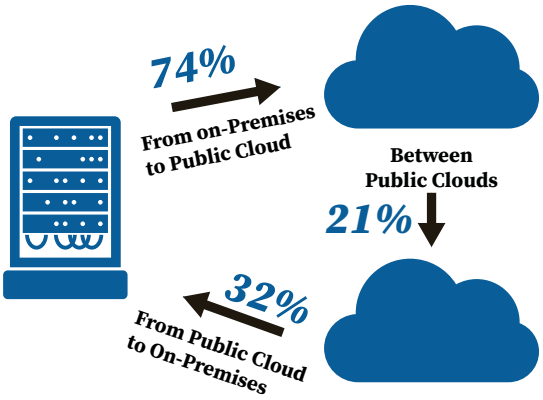
Enabling greater workload mobility

Workload migration doesn't just happen from on-site to cloud - modern apps need much greater mobility than that.

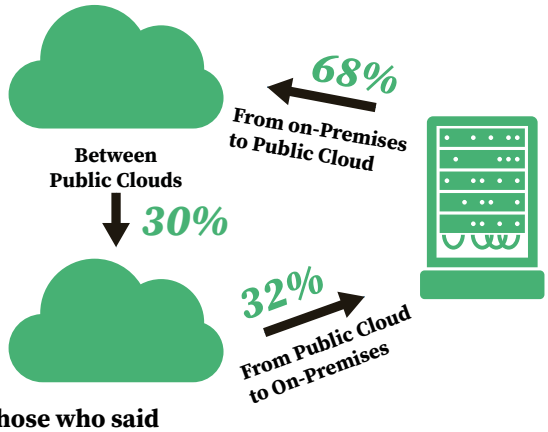
Hybrid IT and HCI are themselves signs of a broader requirement for, and expectation of, workload mobility. There's many reasons why this might be needed. It could be moving an on-site application to a public cloud for greater flexibility, moving a public cloud application to a national cloud provider because of data privacy rules, or pulling a cloud application back on-site to forestall runaway data access costs.

Whatever the reason, it is clear from our study that not only is there a lot of workload migration going on, it is happening - and people want it to happen - in every direction possible.

Have you undertaken any of the following types of migration over the past 2 years?



Are you currently undertaking or likely to do such migrations over the coming 2 years?



(The stats reflect those who said YES to the questions above)

In conclusion

HCI is taking the next step, from 'merely' an efficient platform for business apps to a strategic building block for modern IT service delivery.

HCI usage is growing across a wide range of application areas, as IT professionals, system architects and others come to recognize the benefits it can bring. At an immediate and tactical level, those include greater resource efficiency and simplified management.

However, our study also shows a growing strategic understanding of HCI's broader value to modern IT service delivery. Whether you think of Hybrid IT, public and private cloud, Kubernetes, the elastic data center, or some other exemplar, modern IT infrastructures are both software-defined and automated. In that context, HCI is both a natural fit and potentially a valuable building block.

About Freeform Dynamics

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