



CIO PULSE REPORT

Distributed Cloud Computing

An emerging strategic imperative for IT leaders

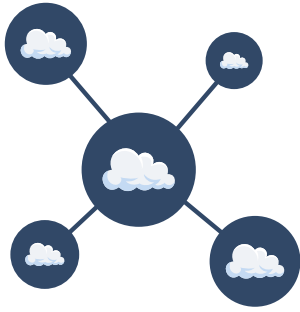


in association with



and





Facing up to the risk of runaway cloud complexity

The use of public cloud services is now well accepted in the enterprise mainstream, to the point where many organisations have workloads and data spread across a number of different provider environments. But activity has too often become very fragmented, leading to inconsistencies in areas such as security and access, information management, and the experience provided to both users and developers. Add cloud-native applications running on-premises into the mix, along with the rise of edge computing, and things are set to become even more challenging. Enter the distributed cloud model.

KEY TAKEAWAYS

Cloud activity is evolving, extending and becoming more distributed

A recent survey of 51 senior IT professionals from the CIO Watercooler community confirmed broad commitment to the public cloud. The study also told us that cloud native application architectures and modern software delivery approaches are increasingly being used or considered in the context of the enterprise datacentre and at the network edge.

Increased distribution of cloud activity raises some real concerns

An overwhelming majority of study participants said that it matters both where data is stored and where it is processed, and not just from a compliance perspective. The placement of data and workloads can also impact application performance and the user experience. Latency is the big enemy as distances increase between the point of storage, processing and access. Another set of concerns then came up around the need for visibility and coherent management to maintain service levels and keep control of costs and risks.

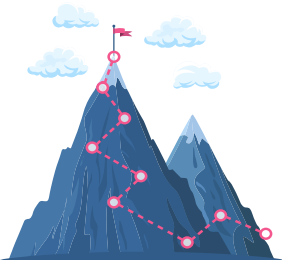
A role is clearly emerging for distributed cloud platforms

During the research, we described 'distributed cloud' as an approach that allows managed cloud services to be deployed across your datacentre, your edge locations and/or third-party public clouds in a coherent and coordinated manner. Based on this definition, a number of platform-level capabilities were acknowledged as key enablers. These included centralised security and compliance management and real-time visibility across locations. Other functions to deal with distributed administration, application orchestration and developer support were also seen as important.

A proactive, coherent approach to distributed cloud is now a strategic imperative

Given the trend towards greater distribution of cloud activity highlighted by this research, a clear need has emerged for positive steps to maintain control and efficiency. But just as importantly, technology advances in this space can also boost your ability to innovate and transform. Platforms that enable true location-independence, including the consumption of AI, IoT and other advanced cloud services across the entire location continuum, create huge possibilities for new types of distributed application. Embracing distributed cloud therefore represents a strategic as well as an operational imperative.

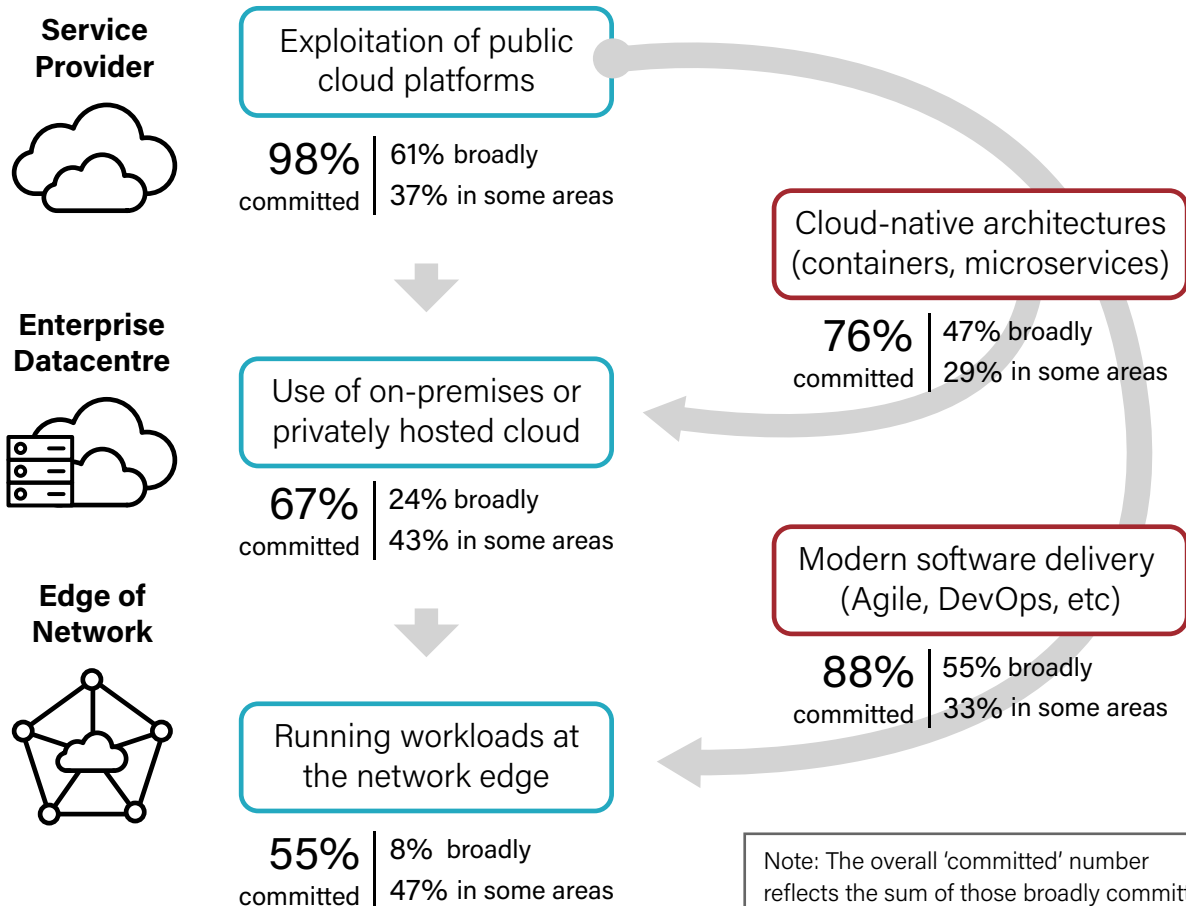
Evolution of cloud activity



The journey to distributed cloud

Public cloud services are now well proven and have catalysed the adoption of modern 'cloud-native' software architectures such as containers and microservices. They have also accelerated the use of progressive software delivery approaches such as Agile and DevOps. As cloud-native activity propagates through the enterprise datacentre and the network edge, the notion of distributed cloud computing is starting to emerge.

How committed are you to the following?



Note: The overall 'committed' number reflects the sum of those broadly committed across the business and others committed in just some areas, e.g. specific divisions, departments or functions.

The distributed cloud model is relevant to us given how our activity is evolving



59% Strongly agree/Agree



Location and distribution matter

In a distributed environment, you have to consider both the location of data and where it is processed. Regulators define what's legal here, but beyond compliance, the placement of data and workloads can also impact performance and the user experience. Most cite areas of sensitivity here and latency is the enemy for critical applications where speed really matters as distances increase between the point of storage, processing and access.

How sensitive is your organisation to...

Compliance Related



! 65% ! 29%

Where data is stored



! 61% ! 31%

Where data is processed

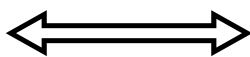
! Sensitive in general

! Sensitive in some areas

Performance Related



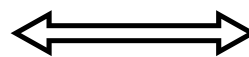
! 18% ! 57%



Distance between workload and data



! 22% ! 55%



Distance between user and workload



Management of service levels, costs and risks

As data and workloads become more distributed, you need visibility across the environment and mechanisms in place to manage performance, keep costs under control, and troubleshoot effectively when problems arise. Ensuring continued freedom to move data and workloads around as business needs evolve is also important.

Monitoring and management related



! 74% ! 20%

Effective cost monitoring and management

! 47% ! 39%

Central, real-time visibility to manage performance



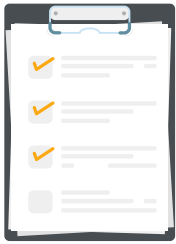
! 63% ! 29%

Ability to quickly troubleshoot across clouds/locations

! 33% ! 47%

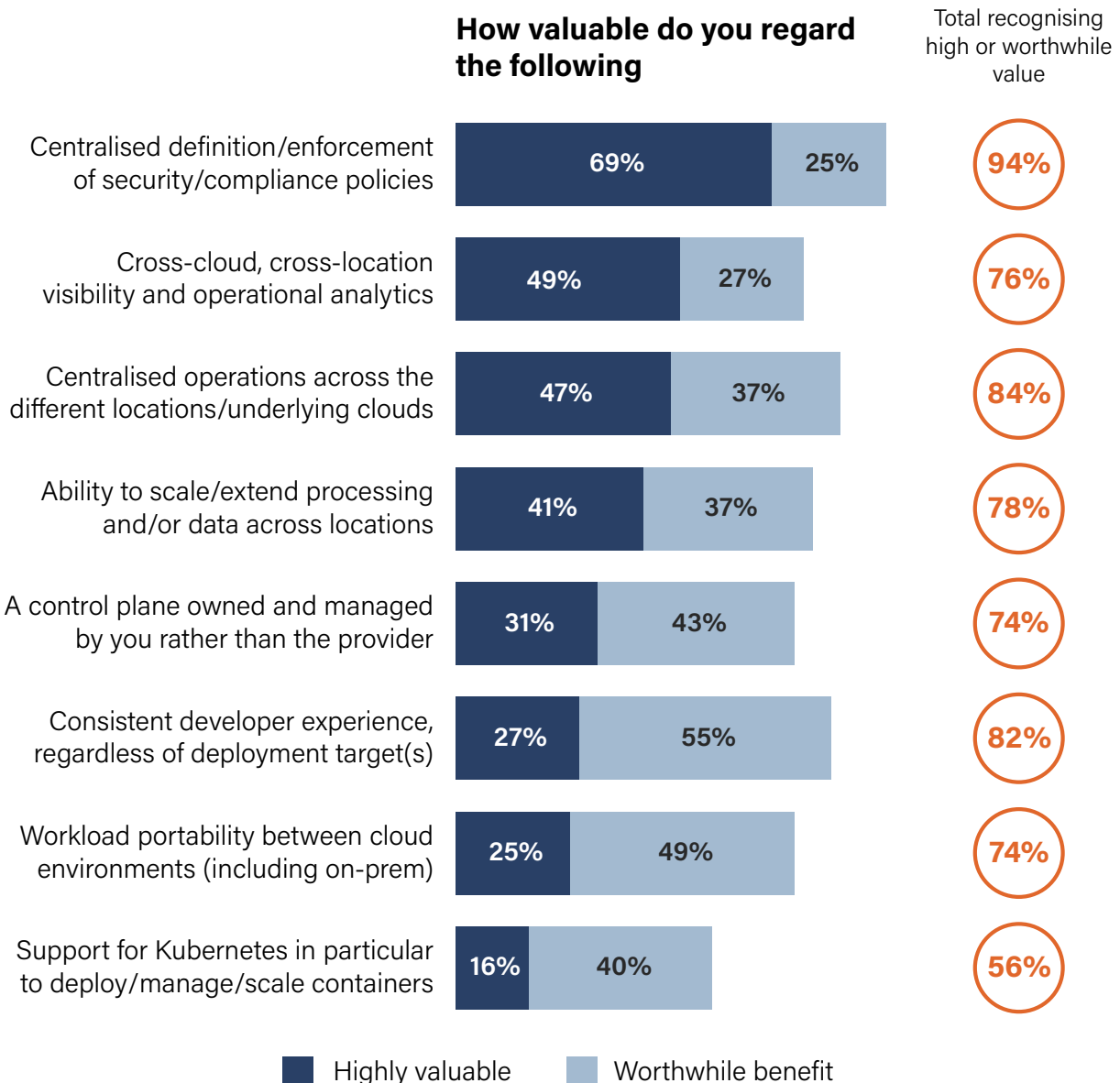
Workload and data portability to maximise flexibility

Distributed cloud platforms



Focus on functional requirements

There's no absolute right or wrong way to implement a distributed cloud environment. However, whether you adopt an integrated platform approach or assemble key components yourself, you need to make sure some key functional areas are effectively covered. In the spirit of hybrid/multi-cloud, maximising openness and inclusivity is also an important goal.



90%
Strongly agree/
Agree



We need the flexibility to run workloads wherever it makes sense as circumstances change

68%
Strongly agree/
Agree



Openness and inclusion are critical for success with the distributed cloud model

Laying foundations for the future

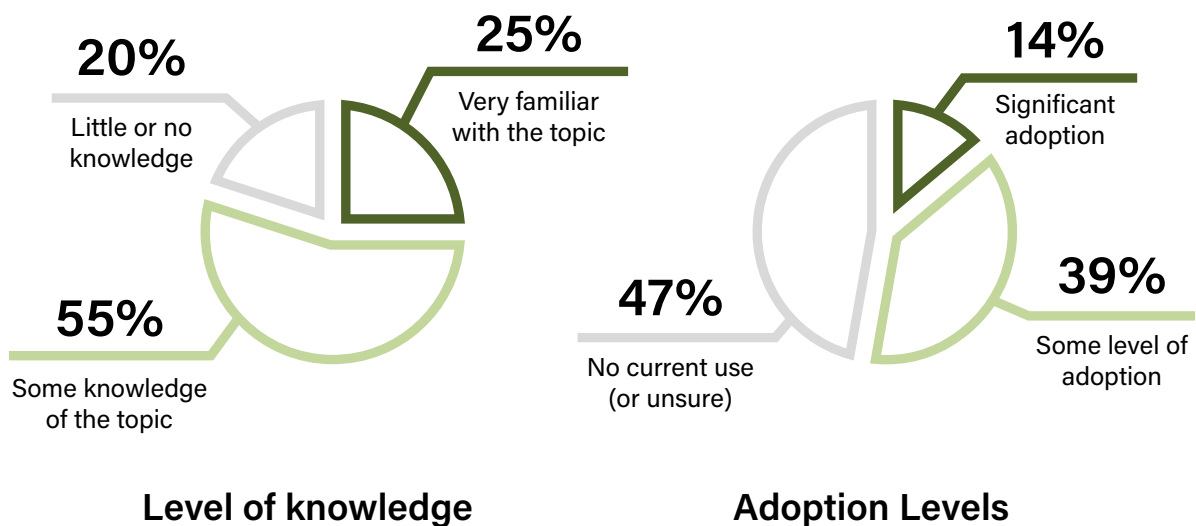


A positive start, but still early days

The level of knowledge and experience within our study sample varied considerably. This is not surprising given that practical solutions in the distributed cloud space have only recently entered the mainstream market in a meaningful way. Indeed, the numbers below probably over-state the current position as our sample was drawn from CIO Watercooler members who tend towards the upper-end of the progressive/enlightened scale.

Distributed cloud and technology services

The percentages shown relate to our progressive sample; they are likely to be lower in the broader universe



An emerging strategic imperative

It's tempting to regard solutions in this space as simply solving a range of tactical operational issues. When you consider the transformational potential of modern, distributed, cloud-native applications, however, it's clear that the distributed model represents a strategic as well as an operational imperative. With this in mind, our advice to IT leaders is to prioritise getting up-to-speed in this area if you haven't done so already, and act sooner rather than later.

68%
Strongly agree/
Agree



The distributed cloud model has benefits for optimising our use of cloud in general

90%
Strongly agree/
Agree



The distributed cloud model has particular benefits for distributed/ edge deployments

About Freeform Dynamics

Freeform Dynamics is an IT industry analyst firm. Through our research and insights, we help busy IT and business professionals get up to speed on the latest technology developments and make better-informed investment decisions.

For more information, visit www.freeformdynamics.com or follow us on Twitter @FreeformCentral

About CIO WaterCooler

The CIO WaterCooler is a free, open and supportive community that provides resources to help IT leaders develop and identify solutions, gain knowledge from their peers and build networks to support them in becoming leaders in both their industry and business.

For more information, visit www.ciowatercooler.co.uk

About IBM Cloud Satellite

The IBM Cloud Satellite managed distributed cloud solution delivers cloud services, APIs, access policies, security controls and compliance. It allows you to deploy and run your apps consistently across on-premises, edge computing and public cloud environments from any cloud vendor, while consuming a common set of IBM Cloud services, including toolchains, databases, and AI, in any location.

For more information, visit www.ibm.com/uk-en/cloud/satellite

Terms of Use

This document is Copyright 2021 Freeform Dynamics Ltd. It may be freely duplicated and distributed in its entirety on an individual one to one basis, either electronically or in hard copy form. It may not, however, be disassembled or modified in any way as part of the duplication process. Hosting of the entire report for download and/or mass distribution by any means is prohibited unless express permission is obtained from Freeform Dynamics, CIO WaterCooler or IBM. The contents contained herein are provided for your general information and use only, and neither Freeform Dynamics nor any third party provide any warranty or guarantee as to its suitability for any particular purpose.