



Data-driven Innovation with Kubernetes & Multicloud

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An IDC InfoBrief, sponsored by Google Cloud and Dell Technologies
March 2020

US45920520BROI



By 2024, Over 50% of All IT Spending Will Be for Digital Transformation and Innovation

90% of new enterprise apps will **embed AI** by 2025

110 ZB+ of data will be generated by **AI-enabled automation, IoT, and smart devices** by 2024

500M new **logical applications** will be published by 2023

Analytics will make or break market leaders:

- Customer insight
- Real-time business decisions
- Operational improvements
- Event- and insight-driven automation

Sources: IDC FutureScape: Worldwide IT Industry 2020 Predictions, #US45599219, October 2019; IDC FutureScape: Worldwide Cloud 2020 Predictions, #US44640719, October 2019

Enterprise IT Architectures Push Toward the Edge



By 2021, over
90%

of enterprises worldwide will rely on a mix of **on-premises/ dedicated private clouds, several public clouds, and legacy platforms** to meet their infrastructure needs.

By 2023, over
50%

of new enterprise **IT infrastructure deployed** will be at the edge rather than corporate datacenters, up from less than 10% in 2019.

By 2024, an
800%

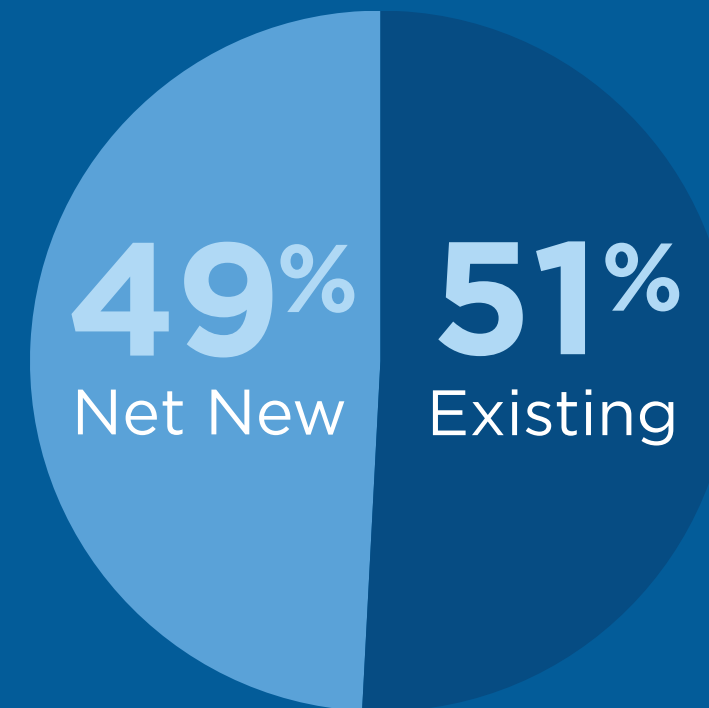
increase in the number of **apps at the edge** will be seen.

Sources: IDC FutureScape: Worldwide Cloud 2020 Predictions, October 2019;
IDC FutureScape: Worldwide IT Industry 2020 Predictions, October 2019

New Operational Challenges

- Containers promise support for microservices, CI/CD, and Agile cloud-native innovation.
- Consistent application experience depends on reliable data access and infrastructure availability.
- Managing data mobility, cost, and performance is critical to success.
- Cloud-native and traditional apps will coexist for many years.

Source of Deployed Containers

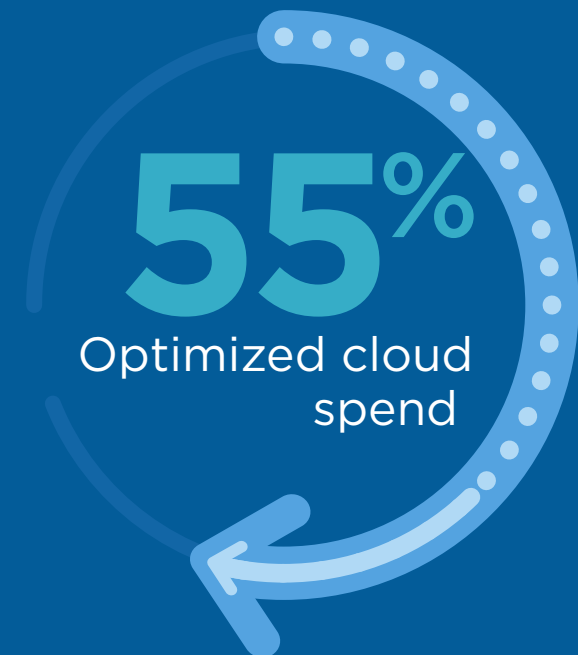
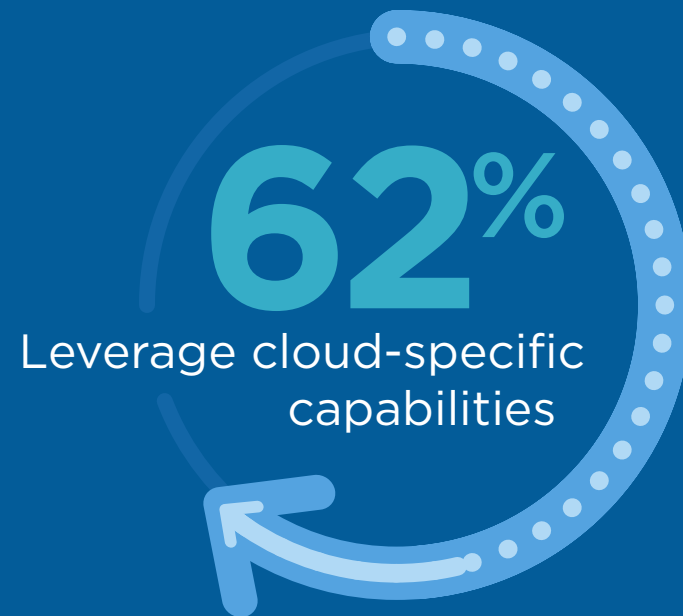


Both new and existing applications are becoming containerized

n = 413 Source: IDC's Enterprise Infrastructure Market Pulse: 2Q19 Market View Insights into Deployments of Containers, #US45326519, June 2019

Multicloud Enables Flexible Access to a Broad Range of Digital Innovation Resources

Enterprises' Top Multicloud Drivers



93% of large enterprises have **adopted multicloud architectures** that include a mix of on-premises and public cloud platforms

n=200 U.S.-based enterprise I&O decision makers using multiple infrastructure clouds
Source: IDC Multicloud Management Survey, 2019: Special Study, #US45020919, April 2019

Matching Workloads to Resources Can Be Complex

Data dependencies often require on-premises and edge computing for:

- Low latency
- Local resiliency
- Data sovereignty



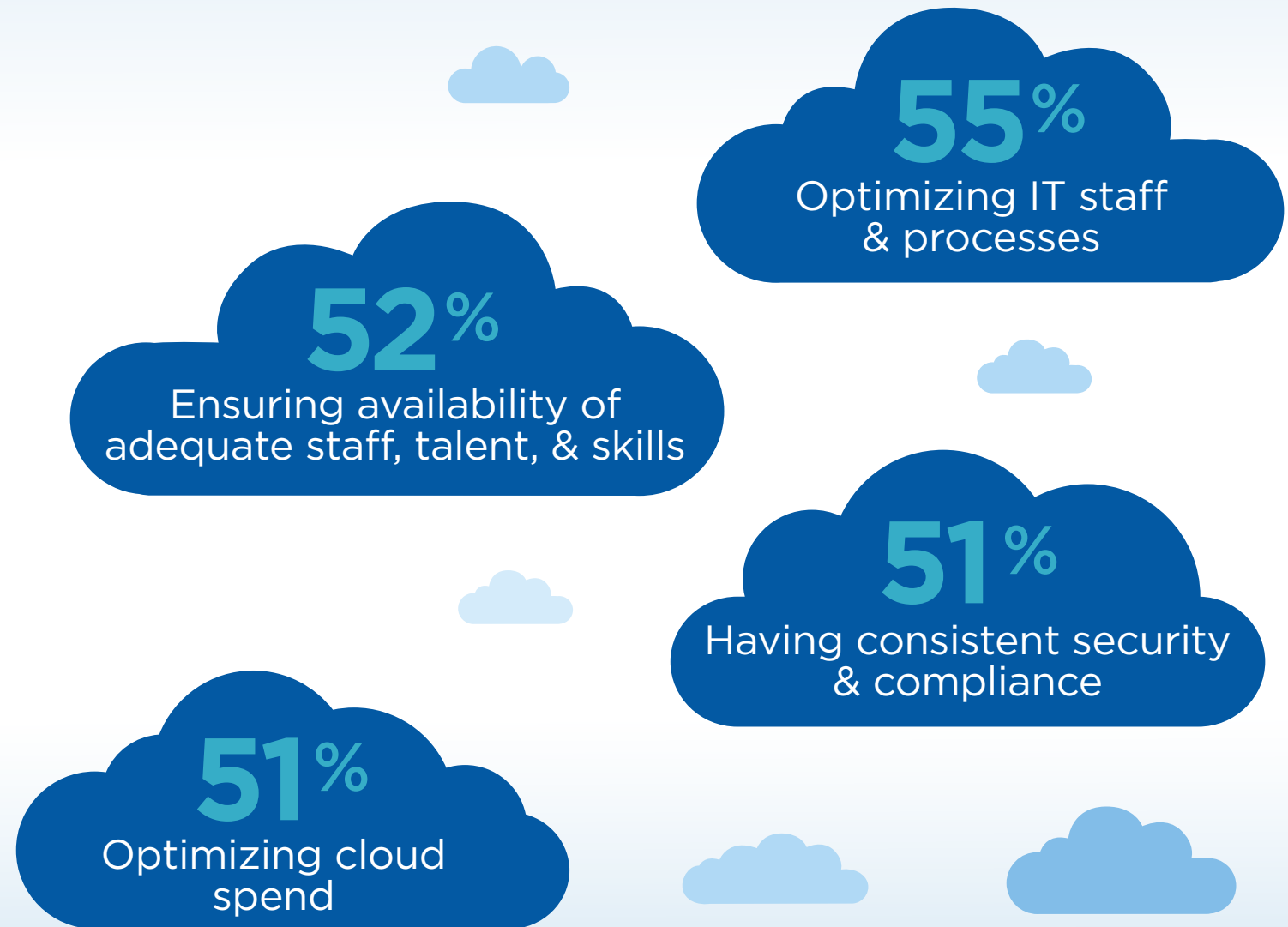
Consistent policies, security, and control are required across complex multicloud environments.

Source: IDC.com

Enterprises Face Multicloud Management Complexity

Multicloud Management Concerns

- Delivering consistent app experience and security across diverse application and platform architectures
- Leveraging staff with automation and analytics
- Knowing when to use on-premises versus cloud/SaaS options
- Having the ability to unify policies and controls



Source: IDC Multicloud Management Survey, 2019: Special Study, April 2019

Analytics and Insights Required Across Applications and Infrastructure

New Multicloud Management Needed

67%
Analytics

AI/ML to optimize
infrastructure
usage, application
performance,
security, and end-user
experience across
multiclouds

65%
Performance

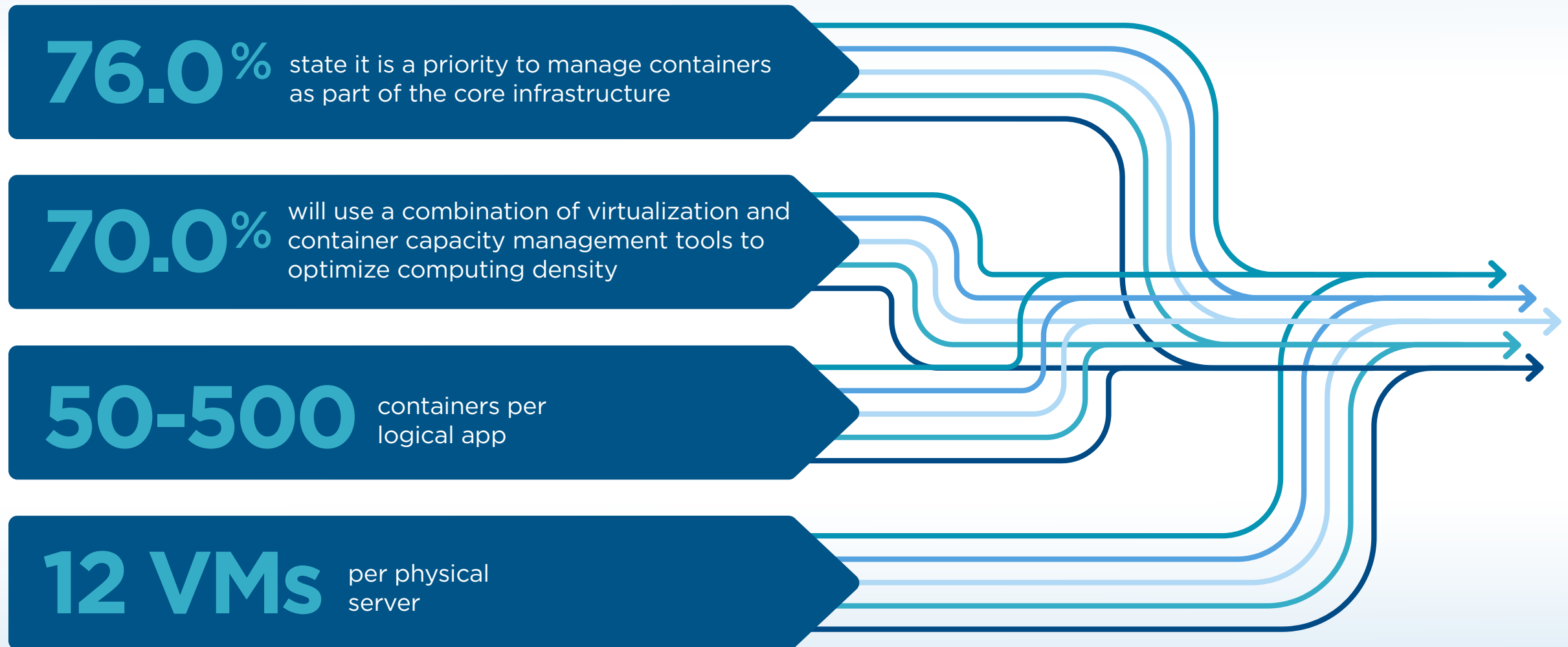
Tools and services
to monitor and
optimize application
and infrastructure
performance and
availability on an
end-to-end basis

60%
Capacity

Matching application
deployments to
appropriate resources
based on cost, security,
and performance

Source: IDC Multicloud Management Survey, 2019: Special Study, April 2019

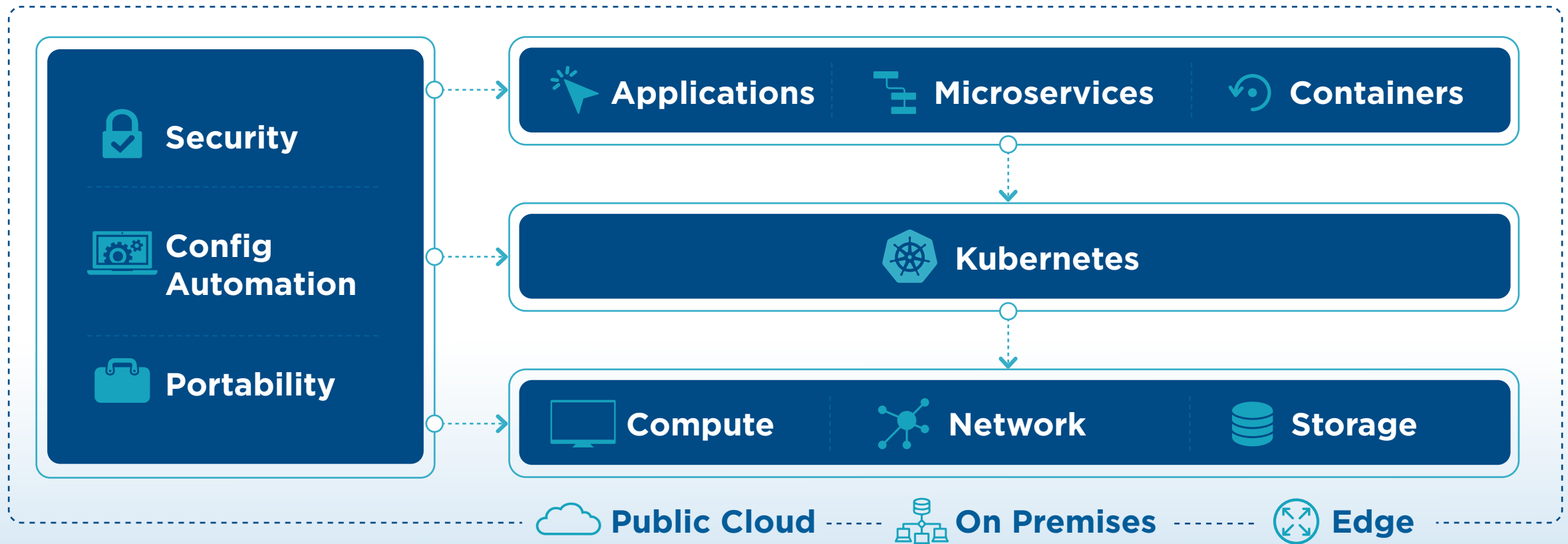
Enterprises Expect to Unify Cloud and Container Management Across Cloud, Datacenters, and Edge by 2023



Sources: IDC Enterprise Containers & Cloud Management Survey, #US45084619, May 2019; n = 200 U.S. IT decision makers with \$1+ billion annual revenue. 500 Million New Logical Applications: More Background, IDC #US45622019, November 2019

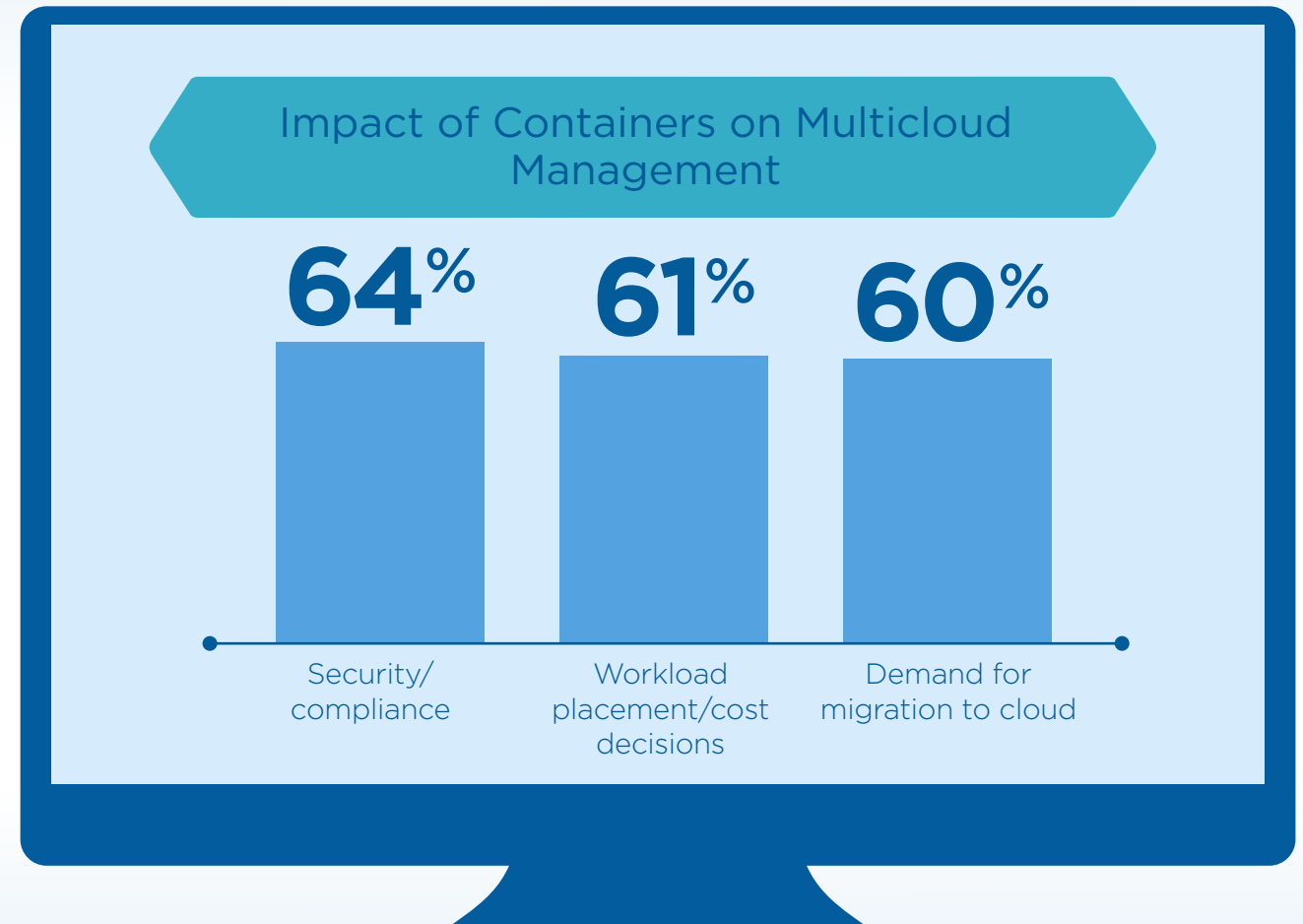
Kubernetes Provides Multicloud Container Scaling and Operational Consistency Across Public Cloud, On-Premises, and Edge Clouds

- IDC estimates that enterprise containers are split **50/50** between those run on-premises versus those run in public clouds.
- Kubernetes provides common application portability and policy framework across diverse infrastructure options.
- Software-defined infrastructure and data controls take advantage of consistent Kubernetes APIs to connect to containers and applications.



Containers Create Additional Multicloud Management Concerns

- Traditional IT operations skills, workflows, and tools are built for domain-specific operations and slow rates of change.
- Shifting infrastructure demands can drive unpredictable costs in a consumption-based world.
- Security and compliance challenges arise when infrastructure and workload change and scale on the fly.



Cloud-native apps that **provide a modern end-user consumer style experience** online must often integrate with existing systems of record, data stores, and workflows.

Source: IDC Multicloud Management Survey, 2019: Special Study, April 2019

Message from the sponsor

Dell Technologies: Google Cloud Platform Partner
Anthos on Dell EMC at cloud.google.com/dell

Develop once, deploy anywhere

Allows enterprises to containerize apps on their path to modernization through a consistent management, policy, and robust enterprise offering through Anthos's service mesh layer.

Ease the transition to cloud or hybrid

Organizations have a choice when moving to or from the cloud — they can now use Anthos to modernize on-premises, while still leveraging their trusted Dell EMC infrastructure. Anthos on Dell EMC HCI provides a path to move to the cloud at your own pace, providing consistent management and orchestration capabilities across multicloud and Dell Technologies environments.

Message from the sponsor

Anthos on VxFlex: Hybrid done right



- › Ability to mix workloads
- › High performance
- › Compute and storage can scale independently
- › Built on open source software and VMware
- › Everything as Code
- › Policy-driven, automated controls
- › Consistent experience across operations for managing resources, services, and platform life-cycle management
- › Improved application development