



Preparing for the Future of Digital Infrastructure

Moving to a Connected Cloud Architecture



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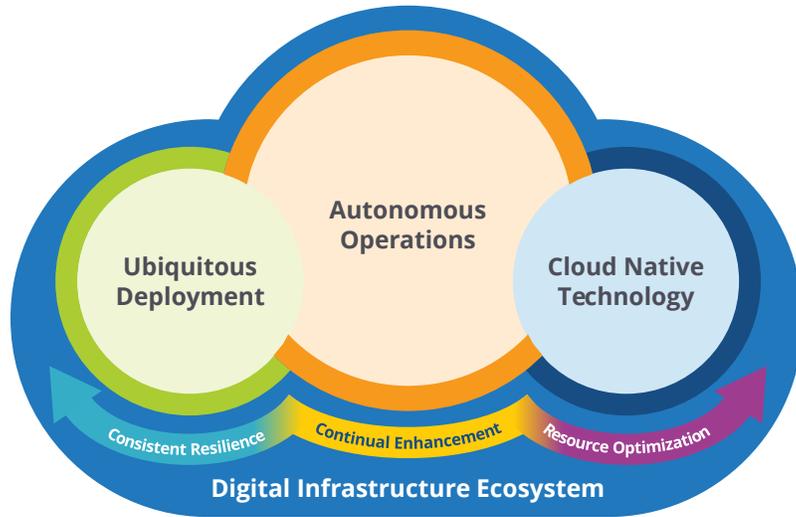
In the Future of Digital Infrastructure, enterprises will implement more adaptive and flexible infrastructure architectures increasingly built on cloud-centric technologies, more ubiquitous deployment options, and more automated IT operations. By 2024, according to IDC, 63% of enterprise infrastructure hardware spending will be dedicated to cloud technologies. At the same time, applications will become more stateless and ephemeral – changing more rapidly than ever before.

Traditional approaches to managing cloud environments and workloads, with their focus on physical cloud locations and ownership, must evolve. Typically, today's multicloud and hybrid cloud strategies are built on a patchwork of disconnected, cloud silos that depend on a mix of cloud-specific APIs and management tools. Workload portability and data integration is often hard coded and brittle in these environments.

Cloud management platforms (CMPs) have been used by many organizations to try to simplify the developer experience by automating day one infrastructure provisioning using templates, service catalogs and automated access approvals. CMPs provide a thin layer of shared management focused on day one deployment, but generally provide little benefit for optimizing runtime workload scale, security and performance. These platforms require significant ongoing effort to maintain APIs, keep up with changing public cloud service portfolios and prices and address developer preferences. Though adequate for smaller organizations and teams, the brittle nature of these platforms makes them difficult to scale across large enterprises, particularly those that rely on private cloud platforms as part of the mix.

FIGURE 1

The Digital Infrastructure Ecosystem



Source: IDC 2020

Most organizations continue to invest in a wide array of management tools, including cloud-specific configuration and monitoring, observability and APM, ITSM, security, configuration automation, VM administration, networks and storage management and many more. In many organizations the links between these tools and workflows are manual and ad hoc. This results in significant friction across business and IT as manual change control, updates, troubleshooting and system admin activities slow down approvals, migrations and remediations.

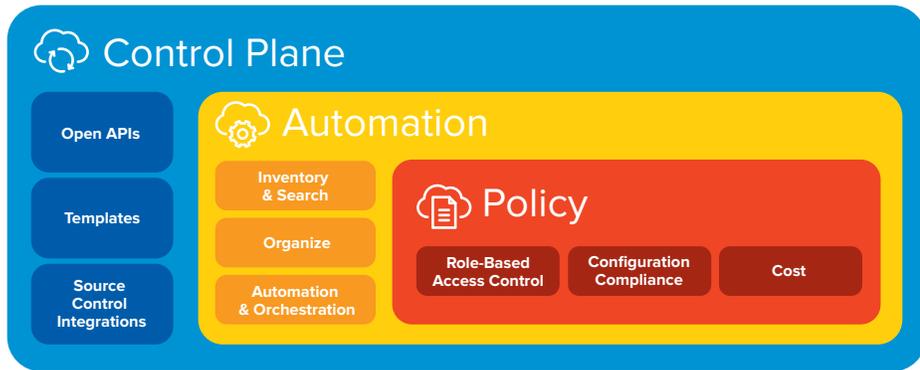
Connected Cloud Architectures

New Connected Cloud architectures represent a modern, agile approach to managing workloads across disparate cloud environments. Connected cloud architectures are enabled by standardized, automated cross-cloud governance, security, and cost management control planes anchored by advanced observability and analytics. These cross-cloud management control planes abstract away cloud-specific dependencies to standardize operations regardless of where clouds are physically deployed, who owns the physical assets, or how the payment options are structured.

Connected Cloud architectures depend on establishing a consistent open API driven management layer to unify cross-cloud governance, security, cost management and performance optimization. They rely on open policy agents, event triggered automation, open telemetry platforms and robust AI/ML analytics to deliver consistent operations and performance across all connected clouds.

FIGURE 2

Cross-Cloud Management Control Planes Enable Connected Cloud Architectures



Source: IDC 2020



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IDC’s research shows that 71% of enterprise cloud users believe it is very important to implement a shared management control plane across all cloud resources in order to improve end to end performance, cost control and infrastructure asset and configuration management. Cross-cloud management control planes enable more consistent, programmable, AI/ML driven approaches to cloud management and promote consistency across clouds. As applications are developed, refactored, lifted and shifted or replaced, policy driven automation, advanced observability and real time analytics will help maintain service levels, security and compliance.

Implementing Connected Cloud architectures and reaping the benefits, however, will require coordination and communication across the enterprise. Here’s how to get started.

Identify and Align Key Stakeholders

Traditional hybrid and multicloud approaches empowered individual business units and development teams to make independent decisions about the purchase and management of cloud resources. While this enabled teams to move quickly, it also promoted cloud and data silos that have become difficult to integrate – creating business friction and slowing, rather than accelerating, innovation.

In times when budgets are under pressure and many businesses need to pivot quickly to address market uncertainty, Connected Cloud architectures provide more flexibility, but success requires full organizational engagement. Stakeholders across Cloud, IT and DevOps teams will need to align closely on a unified set of approaches in order to take full advantage of Connected Cloud architectures. Organizations should also establish collaborative cloud centers of excellence to define roadmaps and validate and implement policies and cross-cloud management best practices.



Most organizations will implement Connected Cloud architectures gradually, depending on business priorities and planned evolution of existing applications environments.

Key stakeholders include:

- » **Cloud architects** are becoming prominent focal points for defining standards and policies in collaboration with business, development and IT ops stakeholders.
- » **Infrastructure and CloudOps leaders** are focused on the automation and manageability of Connected Cloud resources in ways that improve resiliency, scalability and consistency of operations.
- » **DevOps and developer innovation leaders** continue to drive priorities around the shift to cloud native platforms and developer empowerment.
- » **Security and compliance teams** are critical decision influencers who are responsible for defining configuration, access, change control and reporting requirements and policies that can then be automated and standardized across Connected Clouds.
- » **LOB decision makers** drive innovation and set business priorities.
- » **Finance and procurement leaders** recognize that cloud consumption has become a significant slice of the overall IT pie and are becoming much more engaged in budgeting and purchase/price negotiations.

Evaluate and Test Cross-Cloud Management Control Plane Technologies

Most organizations will implement Connected Cloud architectures gradually, depending on business priorities and planned evolution of existing application environments. Evaluating and testing will be critical to success. Enterprises should:

- » Pinpoint workloads that will benefit from migrating across clouds and where cloud resource requirements typically need to scale up and down.
- » Evaluate emerging cross-cloud management control planes with an emphasis on creating consistent operational automation and governance for cloud native applications as a first step toward implementing a Connected Cloud architecture.
- » Focus on standardizing policies, configuration requirements, AI/ML analytics and observability across container-based cloud-native workloads deployed across multiple clouds and physical locations.



Connected Cloud architectures create a consistent automated environment in which DevOps teams can quickly build and deploy applications regardless of where they are deployed.

Transform Operational Processes and Policies

Connected Cloud architectures create a consistent automated environment in which DevOps teams can quickly build and deploy applications regardless of where they are deployed. Decision makers and stakeholders can focus on standardizing operational and business policies without the need to debate the technical differences between competing cloud platforms and services. In mature Connected Cloud environments, much of day-to-day infrastructure operations and workload optimization activities will become highly autonomous.

When focusing on operational processes and policies, here are a few areas of focus:

- » Identify areas of friction where cloud-native development efforts are being delayed due to manual requirements for security, compliance or cost controls and reviews.
- » Identify groups of resources that can be tagged and treated on a consistent basis in terms of configuration and security policies. Define policies as code and integrate into CI/CD tools chains whenever possible.
- » Identify configuration, cost and security metrics that can be applied on a reusable basis across public, private and hosted clouds.
- » Identify and prioritize strategies that streamline workflows, provide faster and deeper insight into dependencies and root cause identification and control costs and security.

Identify and Track KPIs

Decision makers must increasingly focus on business objectives and KPIs and let infrastructure and cloud ops teams take care of the underlying resources. This is a pivot from the early days of cloud where the applications and innovation capabilities were viewed as being tightly coupled with cloud-based innovation and agility.

- » Identify mission critical business KPIs that can provide context for configuration, security and compliance policies as well as performance management thresholds and cost management governance.
- » Understand how to optimize cross-cloud workload portability and scale in a consistent way that satisfies their KPIs and addresses compliance and security requirements.

Summary

Ultimately, Connected Cloud architectures will improve change control and compliance, create more consistent security and risk management, reduce downtime and human error, and mitigate operational complexity. Intelligent autonomous operations enabled by cross-cloud management control planes will support greater levels of workload portability, consumption-based usage, highly dynamic agile applications, and digital transformation programs while addressing cost and security compliance requirements. However, thoughtful planning across the organization is critical to achieving success.

Learn more about IDC's Future of Digital Infrastructure Research

- Contact your Account Representative or download the eBook, "*Future of Digital Infrastructure: Adopting a Holistic Approach for Ubiquitous Deployment*" at: <https://bit.ly/3kbsH10>.
- View the new infographic, "Cloud-Centric Digital infrastructure: A Key to Successful Digital Transformation" at: <https://bit.ly/376Q2XG>.
- Download the IDC PlanScope: *Connected Cloud Architectures Enable the Future of Digital Infrastructure (#US46886620)*, which provides a more comprehensive look at the role of Connected Cloud Architectures in the Future of Digital Infrastructure at: <https://bit.ly/2GUM75L>.

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