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Definitive Guide to Hybrid Multicloud on the Nutanix Cloud Platform

Simplify IT operations with a single platform that unifies on-premises, cloud and edge.

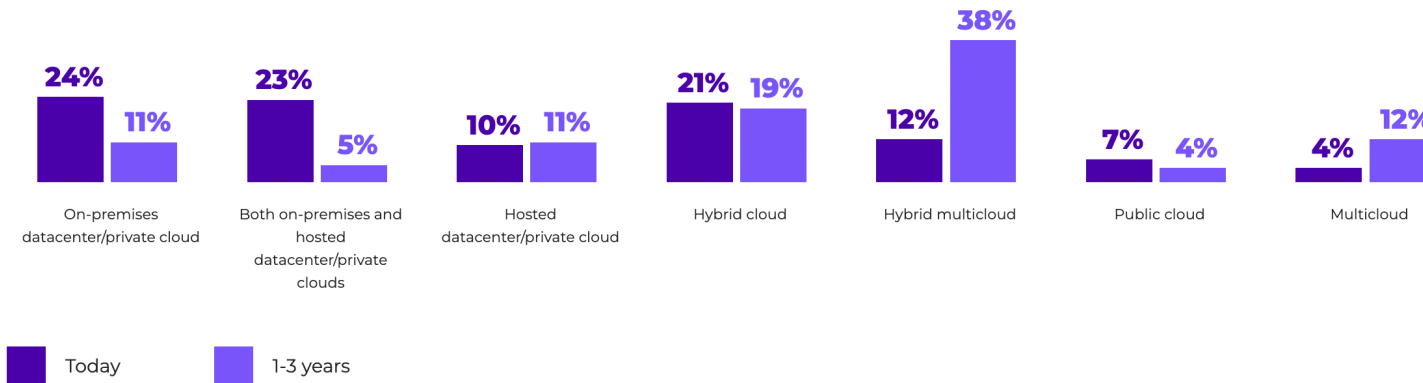
NUTANIX



Hybrid Multicloud is the Future of IT

The last several years have witnessed explosive application growth that is redefining the modern enterprise. An expected influx of [750 million new apps by 2025](#)—each with unique infrastructure and data needs—is putting extreme pressure on IT organizations. Your team may already be struggling to manage complexity across multiple operating environments—from on-premises to the cloud to the edge.

This year's [Enterprise Cloud Index](#) shows that a large percentage of organizations are embracing a [hybrid multicloud operating model](#)—encompassing datacenters, clouds, service providers, SaaS, branch, and edge. Within 1-3 years, it is forecast to become the most prevalent operating model.



However, without careful planning, a rapidly expanding hybrid multicloud environment is a recipe for chaos. While a lot of organizations already operate in multiple on-premises and cloud environments, many of these locations are siloed, with limited interoperability between environments and no ability to monitor and manage the entire ecosystem cohesively.

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The top challenges facing hybrid multicloud include:

Siloed Environments and Complex Management: Too much time and specialized expertise is necessary to manage each environment, and every new environment—whether it's a new public cloud, an edge deployment, or a service provider—adds additional complexity.

Lack of Portability: In a perfect world, you'd move your apps and data wherever it makes the most business sense with no friction. But the reality is that every time you move an app to a new location you have to think about whether it will need to be replatformed or refactored—a 9- to 12-month process for each app— and whether it will deliver the same performance. Every time you move data or configure a new data service, you have to think carefully about whether it will deliver equivalent performance, data protection, and security, and whether you'll have the data management capabilities you need, such as snapshots and clones.

Risk of Configuration Errors and Exposures: With different tools and controls across your hybrid multicloud, the likelihood of configuration errors is high, increasing the risk that systems will be breached, critical data exposed, and operations threatened. Data privacy, control, and governance are essential to hybrid multicloud success.

This guide explains why [Nutanix Cloud Platform](#) is the best solution to help you gain control of rapidly expanding hybrid multicloud operations. With Nutanix, you can run your apps and data anywhere from edge to core to cloud.

You'll learn how Nutanix Cloud Platform:

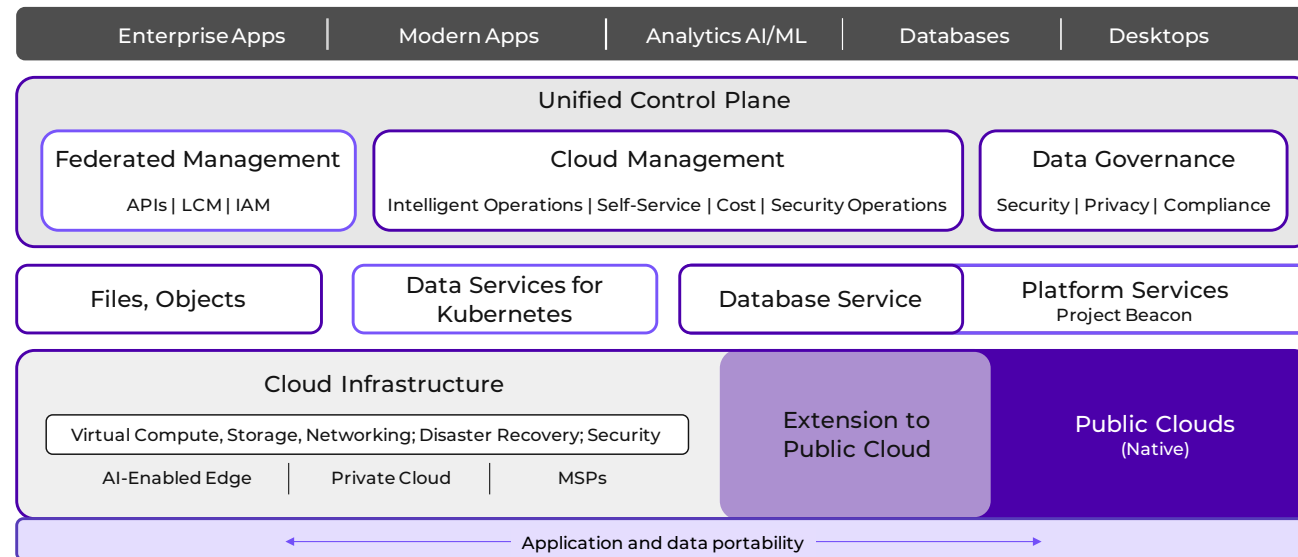
- Eliminates silos and simplifies management
- Delivers greater control over your data and simplifies data management
- Unifies cybersecurity so the same security controls can be applied everywhere
- Enables you to deploy traditional and cloud-native apps on the same infrastructure
- Move apps anywhere, anytime without refactoring, re-architecting or replatforming
- Provides greater operational visibility and superior cost governance and cost control across clouds



Introducing Nutanix Cloud Platform

Drawing on a proven track record of [hyperconverged infrastructure \(HCI\)](#) and cloud innovation, Nutanix delivers the technology and expertise to help you break down the barriers that complicate hybrid multicloud operations. Nutanix Cloud Platform is a single, simple-to-use solution that spans datacenter, cloud, and edge—with full license portability across supported environments.

With Nutanix Cloud Platform, the same full-featured infrastructure software that runs in your datacenter also runs at the edge, in the public cloud, and at leading service providers, unifying the hybrid multicloud experience and simplifying app and data movement. A single control plane and unified data services further simplify the experience, enabling you to run any workload anywhere.



Among the many benefits of Nutanix Cloud Platform are:

Unified Everything: Manage your hybrid multicloud as a single unified environment for the first time. With the same software, data services, and management tools everywhere, an administrator that learns to manage one environment can manage all your environments—without the need to learn special skills for each one.

Greater Visibility and Control: See and manage your entire hybrid multicloud environment in one place

Easy Upgradability: Nutanix one-click upgrades take the pain out of software upgrades, eliminating unpatched vulnerabilities that increase your risk of compromise.

Seamless Scaling: With the same operating environment everywhere and license portability, you have more flexibility to scale your operations where and when you need to. Because Nutanix infrastructure is compact, it's a great fit for edge locations with limited space, power, and cooling.

Portability: Easily move your apps and data where and when you want without re-architecting, refactoring or replatforming.

Choice: Use your preferred hardware provider, hypervisor, Kubernetes distributions, and public cloud provider. With a wide range of supported options, Nutanix delivers greater choice for greater flexibility.

Support: Take advantage of our exceptional worldwide support and services to get the most from your Nutanix investment.

How Nutanix Cloud Platform Works

How has Nutanix created a successful platform that runs everywhere, eliminates silos, and unifies and simplifies hybrid multicloud operations? The solution starts with our proven HCI architecture. First introduced in 2012 to eliminate the complexity of the standard three-tier architecture—with separate servers, storage and storage area networks—Nutanix HCI provides turnkey infrastructure that integrates servers, storage and virtualization, eliminating the complexity, cost and bloated footprint of SAN-based infrastructure deployments.

In the 10+ years since its introduction, Nutanix has built on this foundation to deliver the cloud capabilities your team needs to succeed, focusing on critical areas including performance, data protection, security, and flexibility. Today, Nutanix Cloud Platform is a comprehensive distributed infrastructure platform that bridges the wide gap between traditional infrastructure and public cloud services. The solution delivers turnkey infrastructure and incorporates end-to-end systems management, automation and operations management that greatly reduce the IT burden while providing more flexible deployment options and consumption models.

**Nutanix Pioneered HCI,
the foundation for
Private Cloud**



- Datacenter Consolidation
- Compute, Storage, and Network
- 1-Click Private Cloud

**Now, we're making
Hybrid Multicloud simple**



- Cloud Interoperability
- Private and Public Clouds
- 1-Click Hybrid Multicloud

Nutanix in the Datacenter

When deploying Nutanix Cloud Platform in the datacenter, you can choose from a wide range of hardware options from leading vendors, including Dell EMC, HPE, Lenovo, and Cisco. You are also free to choose between VMware vSphere and [Nutanix AHV](#), our native hypervisor that is included with Nutanix Cloud Platform at no extra cost.

Nutanix at the Service Provider

Leading service providers combine proven Nutanix software, their preferred hardware, plus their own software innovations and high-performance internet connectivity options to deliver Nutanix Cloud Platform as-a-service.

Nutanix at the Edge

Our proven HCI architecture shines in edge deployments, where simplicity and a compact footprint can be a necessity. Single-node and two-node configurations economically address the requirements of the smallest locations. Nutanix makes it simple to manage multiple edge locations with powerful remote management capabilities plus data protection and security capabilities tailored to edge needs.

Nutanix in the Public Cloud

Your business needs to operate in the public cloud to reach customers worldwide and take advantage of the latest services, but it takes a lot of time and expertise to manage public cloud deployments. And, your existing cloud operations are essentially siloed from your datacenter operations, complicating life for your IT team. [Nutanix Cloud Clusters \(NC2\)](#) bring the entire Nutanix operating environment to AWS and Microsoft Azure. With NC2, Nutanix software runs seamlessly on bare-metal cloud instances. A range of bare metal options in each cloud lets you choose exactly what you need—including high-performance instances with GPUs to support end-user computing and AI workloads.

Greater Control and Protection for Your Data

One of the big challenges in a typical heterogeneous hybrid multicloud environment is that data services in each location are different. For example, while you may have block or file services available in your datacenter, in the cloud and at the edge, the details of operating those services, the data management capabilities that are available, and the performance you can expect are dramatically different from one location to the next.

With different data protection tools in each environment, it's difficult to be sure that your data is protected to the level it should be, let alone that you're meeting governance and regulatory requirements. While you'd like to be able to move data quickly and easily in accordance with changing business needs—given the differences in data services, data protection tools and security controls—every cross-cloud data movement is really a data migration that has to be carefully planned and executed. It's up to you to make sure that when the data lands in its new location that it's properly protected and delivers the performance you expect.

Nutanix Unified Storage Raises the Bar for Hybrid Multicloud Data Services

Nutanix eliminates data management challenges with [Nutanix Unified Storage](#), a software-defined data services platform that simplifies storage while offering the speed and flexibility you need to confidently deploy apps and services in the datacenter, in the cloud and at the edge. Because Nutanix Unified Storage is built into Nutanix Cloud Platform, any Nutanix cluster can support the data services you need, or you can dedicate clusters to address large-scale data storage requirements. With unified file, block and object options, Nutanix Unified Storage helps you optimize storage performance, simplify data management and sharpen data security.

Our [Nutanix Data Lens™](#) data security solution helps you assess and mitigate unstructured data security risks by identifying anomalous activity, auditing user behavior, and adhering to monitoring requirements at the primary storage layer. Global data visibility allows you to make intelligent decisions to optimize primary storage through data lifecycle management.

Nutanix Integrated Data Protection Simplifies Backup and Disaster Recovery

Nutanix Cloud Platform integrates essential capabilities, providing a foundation for data protection at every level and greatly simplifying your operations while providing a higher level of protection.

Advanced availability and data protection capabilities include integrated snapshots and clones, automated failover, flexible replication options, and full integration with leading backup vendors.

- **On-cluster Snapshots** provide a first line of defense and the fastest and most convenient recovery.
- **Remote Backup** replicates snapshots to a remote Nutanix cluster (async or NearSync) for longer-term retention and site-level resilience.
- **Metro Availability** synchronously replicates data to another site, ensuring that a real-time copy exists for workloads requiring zero recovery point objective (RPO) and near-zero recovery time objective (RTO).
- **Cloud Backup** uses a public cloud as a remote backup target.





Unified Cybersecurity

Cyberattacks are becoming more refined and harder to detect every year, making sensitive data more vulnerable than ever. Security tactics must evolve to address a growing number of security challenges, including:

- Growing frequency and sophistication of cyberattacks
- Reliance on manual security controls that increase risk and impact operational agility
- Different security controls in each environment

Silos of security increase the chance of human error and misconfigurations and make it harder to ensure that known security vulnerabilities are patched everywhere on a timely basis.

Nutanix Cloud Platform ensures a unified security posture, streamlining security with the same tools everywhere, with multiple layers of defense and cyber resilience so that business operations remain resilient. The same security controls are provided everywhere, and security is built-in rather than bolted on.

Advanced capabilities improve your security posture, help detect security threats, and prevent breaches and data loss, while minimizing disruptions to ensure business continuity. Nutanix incorporates industry best practices and government standards into a system that automates the configuration and monitoring of a self-healing security baseline.

With Nutanix, cybersecurity is:

Integrated and Automated: Native, integrated controls are simple enough to be managed by non-security personnel.

Policy-based: Create security policies that govern your multicloud environment for identical operations everywhere, eliminating the risk of human errors and misconfigurations

Resilient to Attacks: With microsegmentation and other advanced virtual networking tools, Nutanix makes it possible to endure attacks while continuing operations and ensuring the integrity of critical apps and data

Lower in Cost: Nutanix provides a single validated security platform that is able to integrate with your existing security tools to reduce operational costs while improving threat detection and enhancing the overall business value of your security investments.

Traditional and Cloud-Native Apps on the Same Platform

As enterprises cross the digital divide, new development work and new apps increasingly leverage cloud-native tools like containers and Kubernetes. However, most companies have hundreds or thousands of VM-based apps that remain critical to business operations, so VMs and containers will need to co-exist for a long time.

While it can be tempting to silo traditional and cloud-native apps on separate infrastructure—managed by separate teams—it's much more efficient to make infrastructure and tool choices that can support both domains. Maintaining separate platforms and separate suites of management tools for each environment adds complexity and cost.

Nutanix Cloud Platform makes it simple to run VMs and containers using the same baseline infrastructure and tools. Containers run inside AHV VMs and inherit all the ease-of-management benefits of Nutanix virtualization. AHV supports cloud-native and traditional apps, making it easier for your team to manage VMs and containers without having to learn all new processes and tools as container use grows.

While you can run traditional and cloud-native apps on the same hardware, many organizations dedicate clusters to each domain. The key is that the underlying infrastructure, tools and processes are the same, unifying and simplifying management across domains so individuals can work efficiently in either domain as necessary.



Greater Cost Control

In this year's [Enterprise Cloud Index](#), 85% of those surveyed reported difficulty managing cloud costs, with more than a third (34%) ranking it as a significant challenge. The more diverse the environments you operate in, the harder it becomes to gain the cost visibility you need to make smart decisions and optimize workload placement.

Multicloud cost governance is essential for the long-term success of hybrid multicloud IT. If you are forced to rely on different tools in each environment, you'll never gain the visibility you need—or gather the consistent data necessary to make apples-to-apples comparisons across different environments.

[Nutanix Cloud Manager \(NCM\) Cost Governance](#) provides advanced governance capabilities that span your entire hybrid multicloud, giving you the uniform tools you need to drive financial accountability, with intelligent resource sizing and accurate visibility into cloud metering and chargeback.

Unified Visibility and Metering: Gain visibility into spending in the datacenter, at the edge and in the cloud to simplify cost management and multicloud governance.

Cost Optimization and Savings: Optimize your cloud expenses by automating tasks through playbooks, eliminating and right sizing unused and underutilized resources, and making strategic reserved instance purchases. Benefit from intelligent machine-learning algorithms that automatically detect and address anomalous spending patterns for greater cost efficiency.

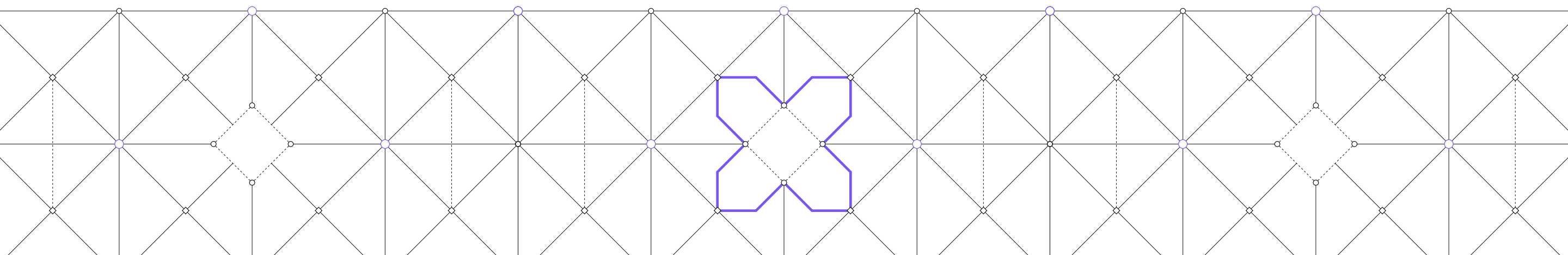
Chargeback and Budgeting Allocate resource costs based on consumption and encourage departmental spending accountability with multicloud showback and chargeback. Assign budgets and set spending alert thresholds to track consumption by business units and cost centers.

FinOps-as-a-Service

For even greater financial control over your hybrid multicloud, [Nutanix FinOps-as-a-Service](#) combines the power of NCM Cost Governance and the expertise of Nutanix professional services.

Dedicated FinOps engineers assist with onboarding, building reports and cost analysis. With coverage that includes AWS, Azure, Google Cloud Platform, and Nutanix workloads, Nutanix FinOps-as-a-Service can help you deliver cost controls across all major private and public clouds so you can increase insight, prevent cost overruns and further optimize your hybrid multicloud environment.

One-click visibility and tag-based mapping ensure your operations become better organized, more accountable, and much less susceptible to the cloud sprawl and high cloud costs that plague most enterprises. Nutanix FinOps-as-a-Service will help you align cloud resources to better address the needs of your organization with custom dashboards, reports and best practices to ensure proper governance as your hybrid multicloud operations continue to expand.



One Platform to Run Your Apps and Data, Anywhere

Drawing on a proven track record of HCI innovation, Nutanix delivers the technology and expertise to help you break down the barriers between on-premises, cloud and the edge. Only Nutanix delivers a single, simple-to-use platform across all endpoints—with full license portability. Eliminate infrastructure and management silos and take control of your entire hybrid multicloud environment from a single pane of glass.

The Nutanix Cloud Platform empowers you to seize the power of simplicity. With a single platform, one-click upgrades, seamless scaling and consistent management, Nutanix eliminates the need to re-architect, replatform or refactor apps for portability. And Nutanix provides exceptional worldwide support to ensure your success. Nutanix has maintained a 90+ Net Promoter Score (NPS) for the past seven years, ranking exceptionally high in the technology industry for customer loyalty and satisfaction.

If you'd like to try out Nutanix Cloud Platform firsthand, you can take a test drive to see the Nutanix difference for yourself.

[Take a Test Drive](#)

Or visit nutanix.com to learn more. You can also contact Nutanix at info@nutanix.com or send us a request at nutanix.com/demo to get a customized briefing that addresses your current and future requirements.

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