WHITEPAPER

Optimising Your IT Costs: Nutanix vs. the Traditional Three-Tier Virtualisation Solution

Reducing TCO and Expanding Hybrid Multicloud Options with Nutanix Cloud Platform and Nutanix AHV Hypervisor

Cyberfort NUTANIX

New IT Ops Principles Are in Order

Organisations are exploring alternatives to conventional three-tier and virtualisation solutions. This is driven in part by an evolving technology market shaped by the need to control costs, the widespread adoption of AI and the disruption resulting from Broadcom's VMware* acquisition.

This white paper discusses the cost-control benefits and versatility of the Nutanix Cloud Platform (NCP) solution and Nutanix AHV hypervisor. Nutanix solutions stand out for their cost-saving potential, with TCO reductions of as much as 33% to 65%** versus traditional three-tier and virtualisation solutions, while offering a robust ROI, particularly for large scale infrastructures.

Why Traditional Three-Tier Virtualisation Users Choose Nutanix Infrastructure

In 2011, Nutanix introduced hyperconverged infrastructure (HCI) to the world, transforming IT operations with its sleek, powerful solutions for VMware virtualisation at the time. The following year at VMworld, Nutanix won "Best New Product," offering a refreshingly simple infrastructure for running applications hosted by VMware.

Fast forward through years of innovation and product line expansion, and Nutanix stands as the premier hybrid multicloud platform, empowering traditional virtualisation customers who choose to run on Nutanix infrastructure with the simplicity and agility needed to build out tomorrow's IT landscape confidently. Nutanix is your ally in maximising your virtualisation investments, offering a cloud platform that embraces the industry's leading hypervisors and thrives across a spectrum of hardware and cloud environments.

With Nutanix, you're not just adopting a platform. You're embracing a philosophy of simplicity and innovation. The Nutanix distributed systems architecture banishes the old complexities and associated costs, paving the way for a more modern, streamlined and cloud-extended infrastructure.

NCP extends the benefits of Nutanix technology innovation to simplify hybrid multicloud operations, allowing you to deploy and run applications closer to your customers and employees while maintaining simplicity. NCP also provides a secure, resilient and self-healing architecture that supports all kinds of workloads and use cases, from high-performance databases to end-user computing (EUC) to cloud-native applications, in the datacentre, at the edge and in the public cloud.

If you are a current traditional three-tier customer, we can help you:

Reduce risk: Shield yourself from the perils of complexity and downtime.

Increase agility: Swiftly adapt to new demands, expand services and embrace the full potential of hybrid multicloud operations.

Reduce the cost of virtualisation: Gain greater control over capital and operating expenses and take advantage of flexible consumption models.

Migrate at your own pace: Run your current virtualisation software and services on Nutanix HCI or migrate some or all workloads to Nutanix AHV. Nutanix supports your journey at your pace.

**Nutanix, Inc. is not affiliated with VMware by Broadcom or Broadcom.*
***Projected savings are estimates only, influenced by variables beyond Nutanix's control. Although care has been taken to ensure the accuracy and completeness of our pricing models, Nutanix is unable to accept any legal responsibility for any actions taken based on the information contained herein.*

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When you are ready, dive into the Nutanix AHV experience and discover a hypervisor that's enterprise-ready, feature-rich and capable of hosting both your traditional virtualised and cloud-native workloads. With over 1,000+ industry solutions validated through the Nutanix Ready program, you can rest assured that your favorite application software is in good hands. Migrating to AHV is simple and offers minimal disruption and maximum continuity.

Addressing Varying Deployment Needs

To illustrate how Nutanix may be able to help you and like-sized organisations benefit from our solutions, we created three hypothetical scenarios based on the number of VMs deployed, which we characterise as small (30-44 VMs), medium (200-282 VMs) and large (1,300-1,827 VMs).

For each deployment target, we compared the estimated costs of running these solutions:

1. Traditional three-tier. A leading virtualisation provider software on three-tier infrastructure with separate servers, storage and SANs.
2. Nutanix running a leading virtualisation software provider. The leading virtualisation provider software and Nutanix software running on Nutanix HCI.
3. Nutanix running AHV. The Nutanix AHV hypervisor and associated Nutanix software running on Nutanix HCI.

As you'll learn, the economics of Nutanix solutions are compelling for all sizes of deployments, with potential TCO reductions ranging from 33% to 65%.

All Nutanix configurations in the three scenarios indicate a positive ROI relative to a traditional three-tier virtualised infrastructure, with large-size deployments offering the most significant potential for return.

Software Configurations

Software configurations are the same across small, medium and large deployment scenarios, as summarised in Table 1.

Traditional Three-tier	*Nutanix Running a Leading Virtualisation Solution*	*Nutanix Running AHV*
Associated hardware and software management tools	Nutanix NCP Ultimate	Nutanix NCP Ultimate
Leading virtualisation provider software	Leading virtualisation provider software	
Highest vendor support options	Highest vendor support options plus Nutanix mission-critical support	Nutanix mission-critical support

Table 1: Nutanix software configurations used in the small, medium and large deployment scenarios.

Cost Savings

The estimated cost savings reported in the following sections result from reduced spending on technology, administrative and datacentre costs, as described in the IDC white paper, The Business Value of Nutanix Cloud Platform and summarised in Table 2 below.

Cost Savings	*Explanation*
Technology	Direct hardware and software costs for a configuration during its three-year lifecycle.
Administration	Administrative costs associated with managing a configuration for three years. Based on a recent independent study, the total cost of operation for NCP configurations is estimated to be 43% lower than those for an equivalently sized three-tier configuration.
Datacentre	Costs associated with the required power, cooling and rack space.

Table 2. Categories of potential cost savings.

Financial Considerations

The following tables show that all comparisons in the three hypothetical deployment scenarios are based on a three-year lifecycle, internal ROI toolsets, and test environments with similar capabilities and services.

Additional Assumptions

The following principal assumptions were used when modeling costs reported in this white paper.

Traditional Three-tier	*Nutanix Running AHV*
Capital depreciation and amortisation	Three years capitalised hardware and professional services; software amortised over term deployed
Weighted average cost of capital (WACC) or discount rate	10.0%
VM densities	30 VMs per host
Task/activity reduction due to Nutanix	38%
Fully burdened cost of FTE	£110,000
Cost per KwH	£0.07
Power utilisation efficiency (PUE)	1.7
Cost per rack unit	£17.60
Enterprise SAN storage, including controllers, disk arrays, interconnects and software	£185,000+ (dependent on deployment model)
Enterprise servers including both stand-alone and blade servers	£62,000+ (dependent on deployment model)
Enterprise network switches (top of rack)	£37,000+ (dependent on deployment model)

Table 3. Cost Assumptions

Definitions and Explanation of Financial Terms Used in this White Paper

TCO: Total cost of ownership calculations are based on the total lifecycle costs for each of the three scenarios, including the capital and operating costs during the three-year period. The estimated TCO savings shown in this white paper derive from reductions in datacentre, administrative and technology costs.

ROI: The return on investment measurement is derived from an estimate of how much money may be saved or earned relative to the amount invested in a new technology. An ROI analysis is particularly valuable when considering a new technology. Calculations are based solely on the relative expenditures for the two Nutanix scenarios in Table 1 versus the three-tier scenario of Table 1 during the three-year period. No attempt has been made to include the potential value of reduced downtime, benefits or other savings, such as improvements in business operations or better customer experience.

Net Present Value (NPV) of Savings: NPV calculates how much an investment is worth discounted to today's value. The NPV of savings figures presented in this white paper are based on a 10% weighted cost of capital.

Deployment Models

To illustrate the different deployment scenarios and assess the TCO and ROI potential of Nutanix solutions relative to traditional three-tier, we started by specifying Nutanix and three-tier configurations to support a given number of VMs.

Deployments of these sizes are—respectively—ideal for accommodating just a few workloads (Small), satisfying the needs of line of business applications (Medium), and supporting organisations that need multiple clusters to support diverse workloads, including mission-critical and cloud-native applications (Large). We then modelled an assumed 12% growth in the number of VMs and 20% growth in the amount of data over a period of three years.

Deployment Model	No. of VMs	VM Growth	Data (Mediaun Average)	Data Growth	Period
Small	30 > 44	12% / year	400 GB/VM	20% / year	3 years
Medium	200 > 282	12% / year	400 GB/VM	20% / year	3 years
Large	1,300 > 1,827	12% / year	400 GB/VM	20% / year	3 years

Table 3. Cost Assumptions

TCO and ROI Results

The projected benefits of the Nutanix solution versus a traditional three-tier configuration are illustrated in Figures 3-5. Both Nutanix configurations are estimated to deliver substantial TCO and ROI benefits relative to the traditional three-tier configuration.

Small Deployment: Estimated 3-Year Total Cost of Ownership

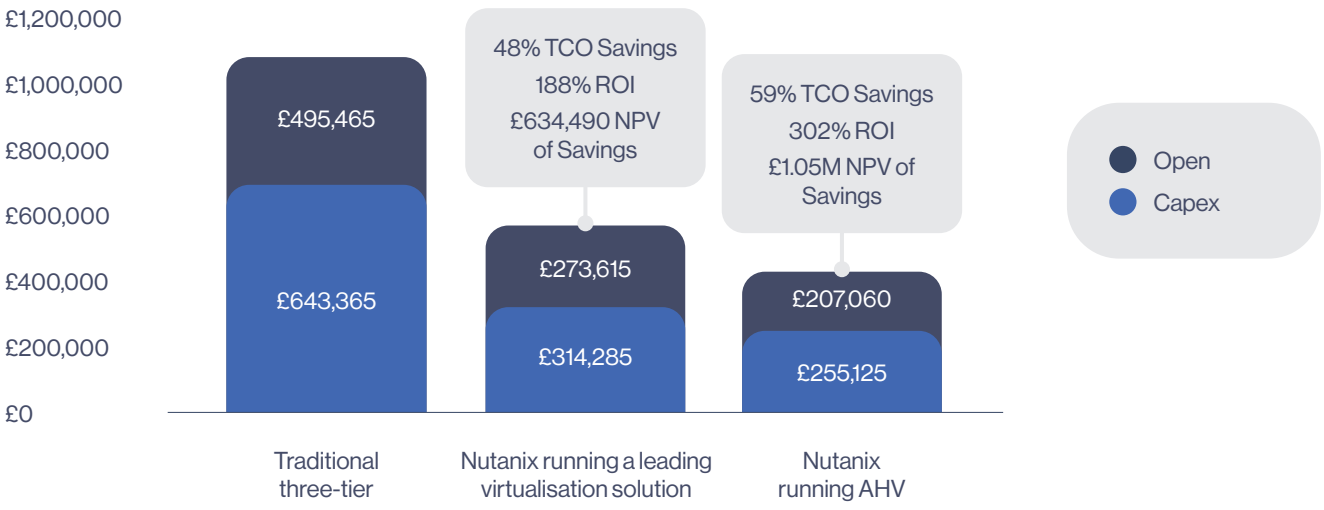

Figure 3: Projected Nutanix benefits for small deployments.

NCP: Estimated Datacentre and Admin Cost Savings vs Traditional Three-Tier

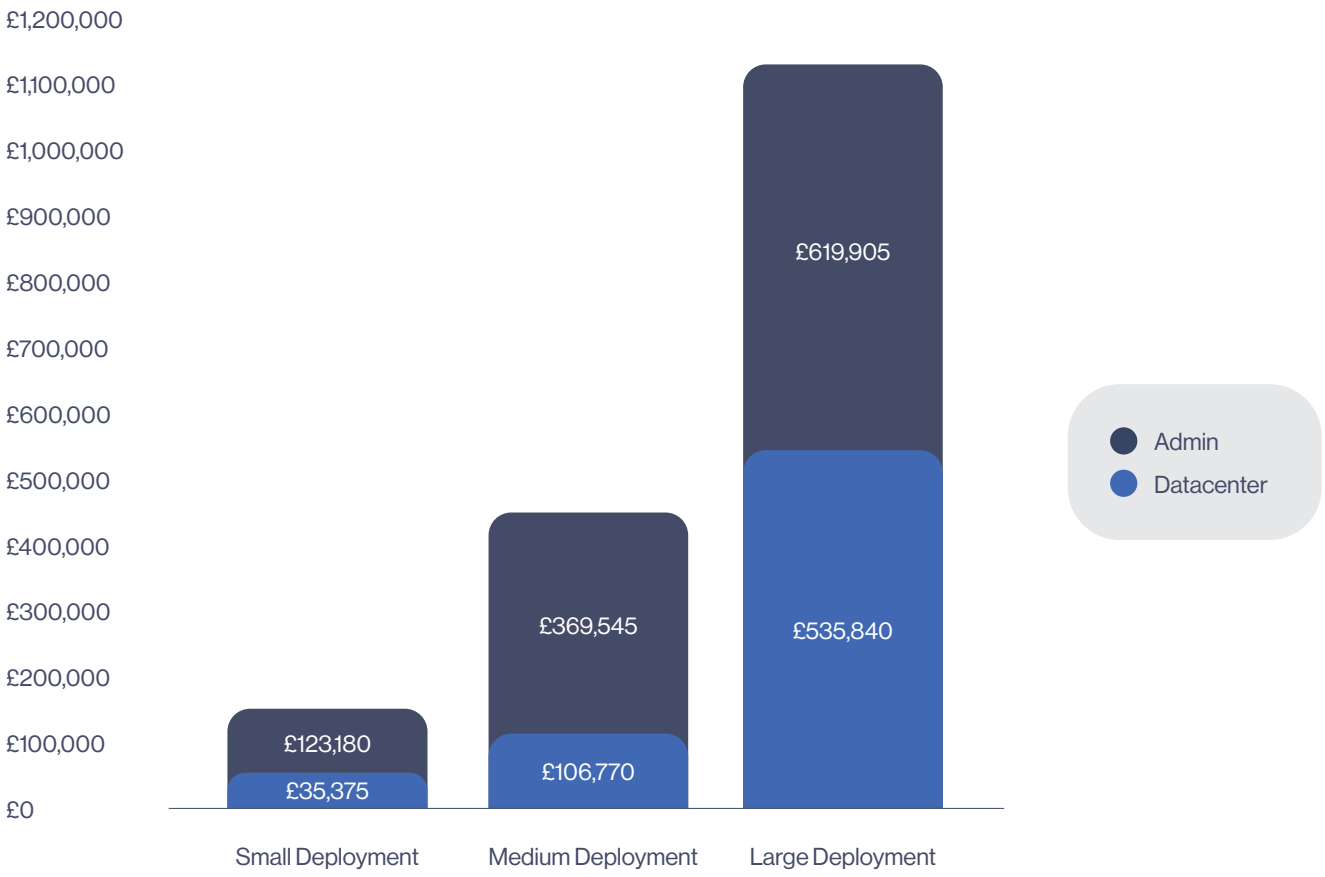

Figure 1. Estimated datacentre and administrative cost savings for NCP configurations relative to three-tier configurations.

Running Nutanix AHV in place of the leading virtualisation software for some or all of your workloads further increases the potential for cost savings. As detailed in Figure 2, small deployments could save up to an additional £375,000+, while medium-sized deployments could save up to £750,000+, and large deployments could save up to £4.5 million+ in infrastructure-related capital costs.

And it's not an either/or situation. Many Nutanix customers run the leading virtualisation software as well as AHV in their Nutanix environments. Combining the two gives you more flexibility to decide on the right direction for the future, recognising that IT budgets will remain tight even as digital needs expand. You'll be positioned to meet those tight future budgets by starting now to grow your Nutanix AHV workloads.

Potential Datacentre and Administrative Savings

Built on the proven Nutanix HCI architecture, NCP gives customers greater flexibility to address their future needs while gaining far more control over costs.

By moving from a traditional three-tier architecture with the leading virtualisation provider software platform to Nutanix HCI, you can achieve significant reductions in datacentre and administrative costs. The savings are the same for both Nutanix scenarios of Table 1, i.e., with the leading virtualisation provider software or Nutanix AHV virtualisation. This means that, whether you choose a small, medium or large Nutanix deployment, there is an opportunity for significant datacentre and administrative savings similar to what's shown in Figure 1 on the next page.

Small Model Configuration

The initial three-tier solution supports 30 VMs and the leading virtualisation software suite. It also includes two rackmount servers, SAN storage with a single disk enclosure and all associated SAN, Ethernet connectivity, and management software. One additional disk enclosure was needed to support the final expansion to 44 VMs.

The initial Nutanix configurations are three-node Nutanix NX clusters and all required Ethernet connectivity. No additional nodes were needed over the three-year term.

NCP: Estimated Technology Savings vs Traditional Three-Tier

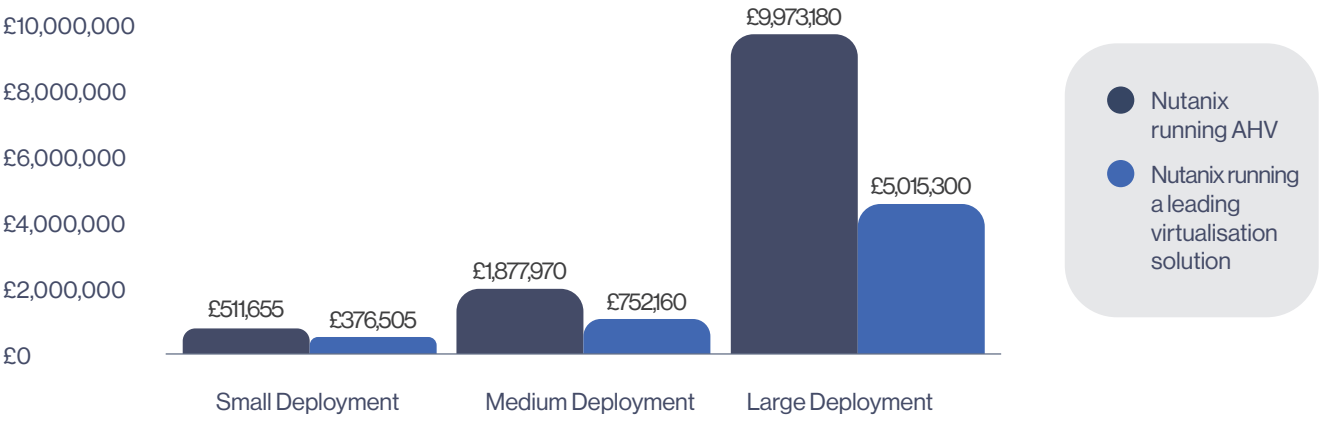

Figure 2. Estimated technology cost savings for NCP configurations relative to traditional three-tier configurations.

Medium Deployment: Estimated 3-Year Total Cost of Ownership

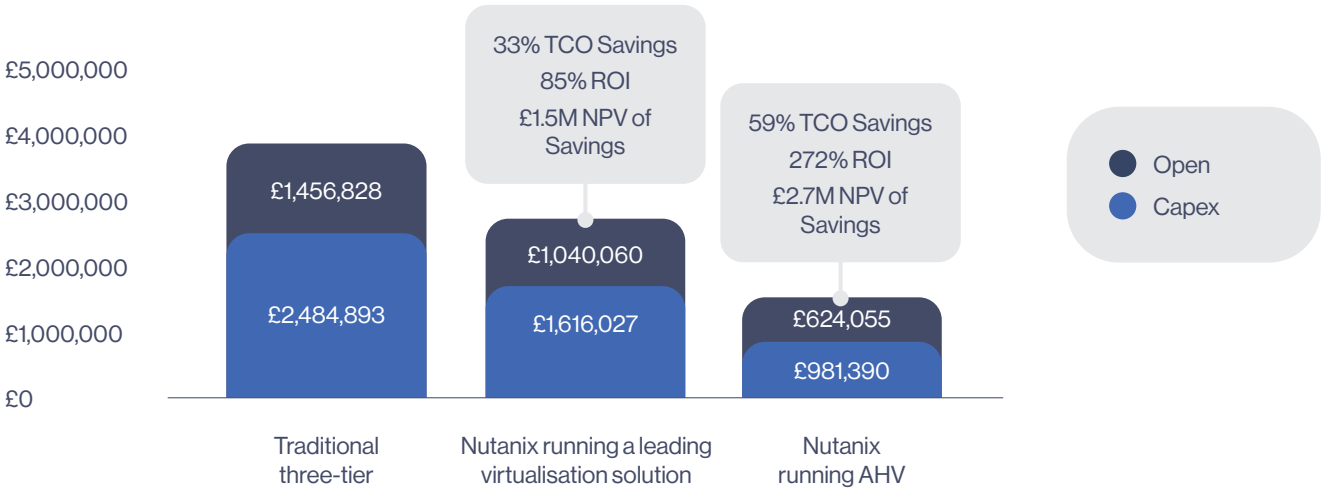

Figure 4: Projected Nutanix benefits for medium deployments.

Medium Model Configuration

The initial three-tier solution supports 200 VMs and the leading virtualisation software suite. It also includes four rack-mount servers, a chassis containing four-blade servers, SAN storage with a seven-disk enclosure, and all associated SAN, Ethernet connectivity, and management software. Two blade servers and four additional disk enclosures were needed to support the final expansion to 282 VMs.

The initial Nutanix configurations are 12-node Nutanix NX clusters and all required Ethernet connectivity.
No additional nodes were needed over the three-year term.

Large Deployment: Estimated 3-Year Total Cost of Ownership

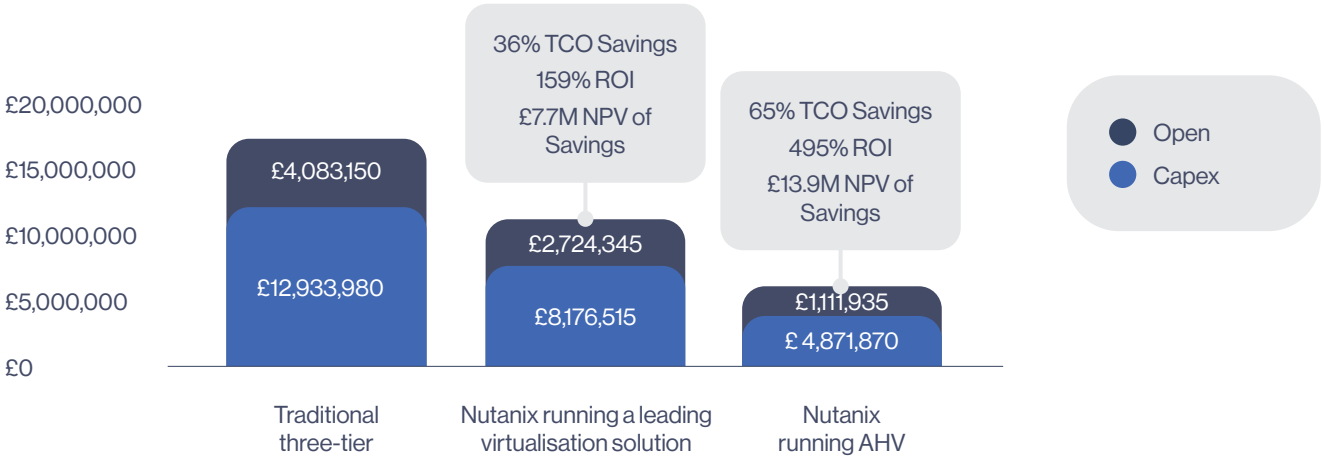

Figure 5. Projected Nutanix benefits for large deployments.

Large Model Configuration

The initial three-tier solution supports 1,300 VMs and the leading virtualisation software suite. It includes 22 rack-mount servers, two dual-blade chassis containing 22 blade servers, two SAN arrays with 42 disk enclosures with all associated SAN, Ethernet connectivity, and management software. Nine additional rackmount servers, nine additional blade servers, additional SAN array expansion, and 29 additional disk enclosures were needed to support the final expansion to 1,827 VMs.

The initial Nutanix configurations are two 17-node Nutanix NX clusters and all required Ethernet connectivity. An additional 29 nodes were required to support the assumed VMs and data growth over the three-year term.

All three deployment models running Nutanix configurations deliver substantial TCO and ROI benefits relative to a traditional three-tier configuration. The upfront cost of Nutanix running a leading virtualisation solution and Nutanix running an AHV configuration is less than the assumed upfront cost of the three-tier configuration, so payback is immediate.

Discover more about Cyberfort's Services

Hybrid multicloud environments are quickly becoming an enterprise necessity for meeting the unique requirements of each business workload.

To avoid the expense and time constraints of operating each distributed IT environment independently using dedicated staff, processes, and tools, enterprises need a unified management platform that lets them view and operate them all in the same way.

Nutanix delivers on this promise by offering a single platform to run apps and data across on-premises, public clouds, hybrid environments, and at the edge, while simplifying operations and enabling business agility.

To test drive the Cyberfort and Nutanix Cloud Platform across hybrid multicloud environments, email info@cyberfortgroup.com and one of our Hybrid Cloud experts will be in touch.

For more information on our Secure Cloud services and how we work with Nutanix please contact us at the details below:

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We look forward to working with you

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