8 Reasons to Rethink Virtualization in Your Datacenter

NUTANIX™

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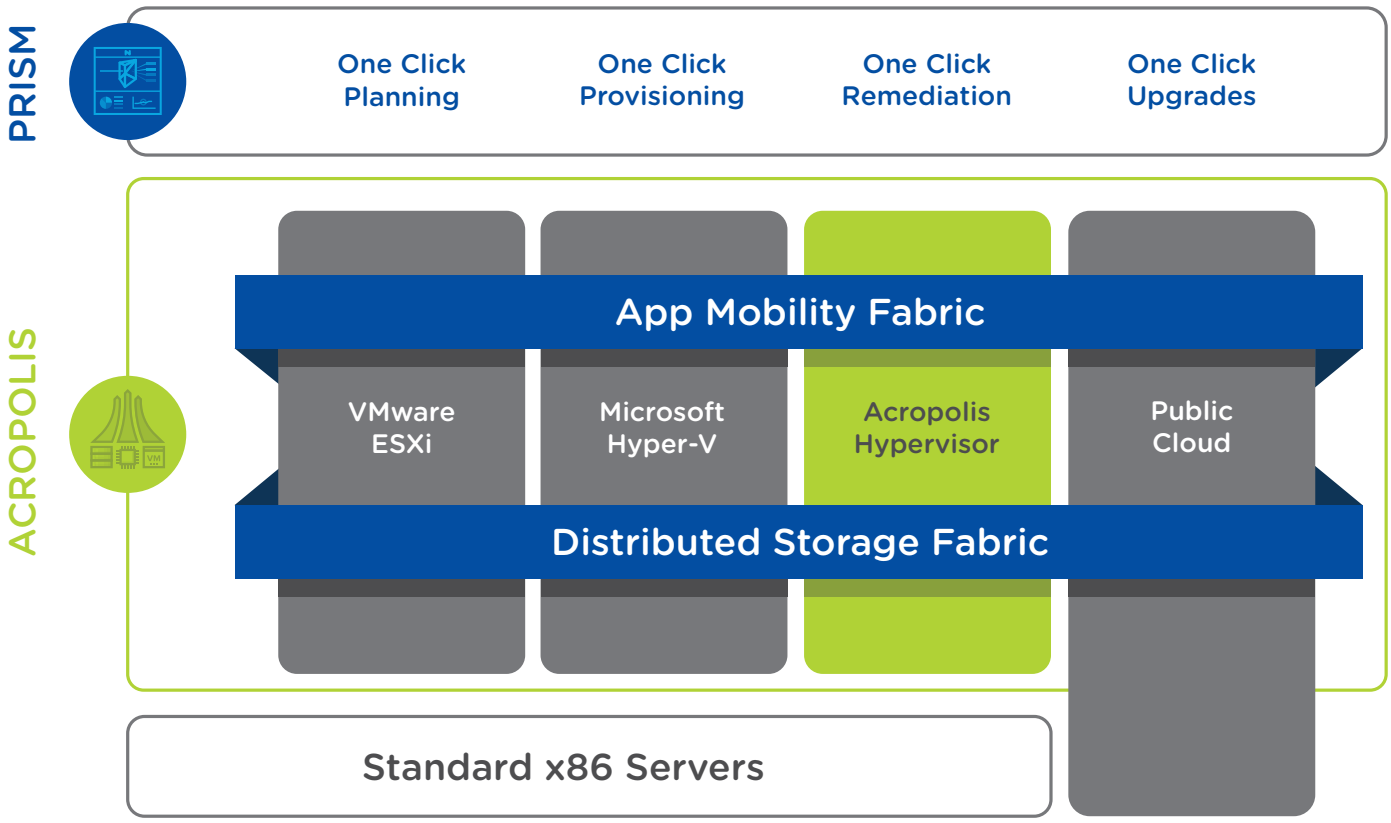
Server virtualization drove the last big wave of disruption in the enterprise datacenter. Unfortunately, the architecture underlying most popular hypervisors has not changed significantly in over 12 years, despite big technology advances and evolving user expectations.

For example, the legacy virtualization solutions were designed for a world of unintelligent storage arrays, and were built to interoperate with thousands of combinations of servers, network cards and software drivers. While hypervisors are not much more than a component in a larger infrastructure 'stack,' they continue to be sold as stand-alone products with their own management tools, requiring specialized skills to deploy, manage and troubleshoot.

Historically, when new innovative technologies such as WAN acceleration, compression and deduplication were first introduced in a market, they were packaged and sold as stand-alone products. Over time, as these technologies gained mainstream adoption and became well understood, they ended up as features within storage and networking systems.

After more than a decade of growing adoption, server virtualization is now basic, mainstream technology that is being used in datacenters around the world. The time has come for virtualization to become integrated as a core feature into the rest of the infrastructure. Virtualization needs to become invisible.



How Nutanix Makes Virtualization Invisible

Nutanix is best known for delivering the industry's most popular hyperconverged solution, natively converging compute and storage into a turnkey appliance that can be deployed in minutes to run any application out-of-the-box. Nutanix has now also integrated proven virtualization capabilities into the converged infrastructure stack, complete with built-in management.

Nutanix Acropolis is a turnkey infrastructure platform delivering enterprise-class storage, compute and virtualization services for any application. Acropolis includes its own natively integrated hypervisor - the Acropolis Hypervisor (AHV) – and offers rich virtualization capabilities, including basic virtual machine operations, live migration, VM high availability and virtual network management.

Here are 8 reasons why Nutanix Acropolis will have you rethinking your datacenter virtualization decision:

Simplicity

For all the benefits that virtualization offers in terms of increased flexibility and resource efficiency, existing virtualization solutions are increasingly complex, particularly the tools used to manage the environment.

Management components have to be installed separately, and often have external dependencies on additional software, such as databases. Administrators must actively manage the management plane just to keep the hypervisor environment functioning.

Nutanix brings together web-scale engineering and consumer-grade design to simplify every step of the infrastructure lifecycle, from buying and deploying, to managing, scaling and supporting.

Powerful enterprise-grade virtualization comes pre-installed on all Nutanix appliances and is available to use immediately – no additional software components to install and manage.

Every Nutanix node also includes Nutanix Prism, the beautifully simple and intuitive management interface. Prism provides a single pane of glass for managing the entire infrastructure stack, whether in a single datacenter or distributed throughout datacenters and offices globally. Common tasks such as deploying, cloning and protecting (DR) VMs are done holistically as part of infrastructure solution, rather than utilizing disparate products and policies in a piecemeal strategy.

Built-in automation and self-healing capabilities remove the burden of constantly tuning the environment. For example, changes to storage policies can be made on the fly, without migrating data off and on as with traditional RAID volumes. With just a few clicks, IT professionals can upgrade their entire virtualization environment regardless of geography, including OS, firmware and hypervisor.

Summary

The Nutanix converged infrastructure solution brings together web-scale engineering and consumer-grade design to simplify every step of the infrastructure lifecycle.

Scalability

Virtualization has made the compute layer in today's datacenters a scale-out resource that can be grown incrementally, and on demand. The management platforms in today's virtualization solutions, however, are designed using a scale-up architecture - mirroring the SAN and NAS storage solutions with which they were designed to work. These legacy hypervisor solutions have an unfortunate tipping point that is reached when the cluster grows, where it becomes necessary to deploy an additional management server, analytics software package or database.

In contrast, every layer of the Nutanix solution, including storage and virtualization, is built on a highly distributed, scale-out architecture. Prism, the integrated management platform, is also built using the same underlying web-scale technologies.

Infrastructure objects such as snapshots and clones, and meta-data such as VM configurations and host configurations are stored in a modern, massively scalable NoSQL database. This means that no part of the infrastructure stack becomes a bottleneck as the environment grows.

IT teams can deploy applications within hours or minutes. Infrastructure scales by adding more nodes to the cluster; these nodes are discovered automatically, and can be configured using existing policies with a single click. Unlike other hypervisors, AHV doesn't have cluster size limits from a compute or storage perspective. Customers can start with only three nodes and then continue to scale to hundreds without the need to create silos of compute or storage.

Summary

Every layer of the Nutanix solution, including storage, virtualization and integrated management, is built on a highly distributed, scale-out architecture.

Security

Legacy hypervisors need to interact with hardware and software products from many manufacturers who take a narrow, fragmented view of security. Multiple participants create security vulnerabilities at the boundaries of product intersections.

In addition to the hypervisors themselves, legacy virtualization solutions typically also bundle a variety of management, analytics and automation tools that were built separately or acquired and are not hardened from a security perspective. These tools may further increase the attack surface area.

AHV is designed, tuned, tested and hardened as an integral component of the converged infrastructure stack, rather than a general-purpose hypervisor. Many of the services not required are turned off, in order to reduce the threat surface area.

Additionally, Nutanix has developed a custom security baseline document, a Security Technical Implementation Guide (STIG), based on well-established National Institute of Standards and Technology (NIST) standards, that covers the full stack.

Nutanix's comprehensive analytics capabilities keep the entire platform baseline compliant.

Summary

Nutanix has developed a custom security baseline document, a Security Technical Implementation Guide (STIG), based on well-established National Institute of Standards and Technology (NIST) standards, that covers the full stack.

Resiliency

Many legacy virtualization solutions have 'thick' management clients based on a centralized, scale-up architecture. A result of this architecture is that the single, central management VM becomes a single point of failure for the larger environment.

Resiliency does not come standard, but needs to be configured manually, using third-party relational database platforms that may be vulnerable to a single point of failure.

Acropolis virtualization, like the rest of the Nutanix hyperconverged data plane, is scale-out and highly available. Nutanix Prism is part of the Nutanix software on every node in a cluster in a highly redundant configuration. Administrators have uninterrupted access to the management platform even in the event of node, NIC or disk failures.

With fewer moving parts in the infrastructure stack, there is little risk of compatibility-related failures, which reduces IT downtime and troubleshooting. Continuous uptime is further ensured by Nutanix's non-disruptive, rolling, one-click upgrades.

Summary

With fewer moving parts in the infrastructure stack, there is little risk of compatibility-related failures, which reduces IT downtime and troubleshooting.

Flexibility and Choice

Nutanix is committed to providing flexibility and choice with regards to infrastructure in the enterprise datacenter. In addition to the Acropolis Hypervisor (AHV), Nutanix Acropolis fully supports VMware vSphere and Microsoft Hyper-V as hypervisors on Nutanix clusters. Acropolis also incorporates the Acropolis App Mobility Fabric (AMF) - a set of powerful technologies that allow applications and data to move freely between hypervisors.

AMF includes features such as cross-hypervisor backup, disaster recovery and migration. Nutanix's Foundation tool allows administrators to automatically install the hypervisor of their choice on a Nutanix cluster, and perform in-place hypervisor conversions with minimal disruption.

Summary

Nutanix is committed to providing flexibility and choice of infrastructure in the enterprise datacenter.

6 Analytics and Data-Driven Insight

Rich analytics and heuristics-driven insights are built into the Prism platform, and cover the entire infrastructure stack including storage, compute and virtualization. Nutanix utilizes extensive automation and rich system-wide monitoring for data-driven efficiency combined with REST-based programmatic interfaces for integration with datacenter management tools.

AHV does not require external databases to load the data extracted from the environment. The hypervisor feeds all system, audit, intrusion detection, and self-remediation logs to the central log host for real-time situational awareness used in forensic support and root cause analysis. Nutanix Prism combines analytics and intelligence that help identify and diagnose issues, and the control mechanisms required to remediate them.

Rich analytics and heuristics-driven insights are built into the Prism platform

Summary

Rich analytics and heuristics-driven insights are built into the Prism platform, and cover the entire infrastructure stack including storage, compute and virtualization.

7 Industry-leading Support for the Virtualization Stack

Nutanix boasts an industry-leading Net Promoter Score (NPS) and high customer satisfaction rating. Our support capabilities cover the entire infrastructure stack, including the hardware, distributed storage fabric and Acropolis Hypervisor.

Nutanix takes responsibility for resolving problems, even when the issue relates to a third-party technology or product. Nutanix support experts will arrange and actively participate in multi-way calls between vendors until the customer's problem is resolved. While Nutanix support professionals are highly skilled and experienced, they also can escalate to multiple CCIE, VCDX, NPX and CTPs – all on the Nutanix team.

Summary

Nutanix boasts an industry-leading Net Promoter Score and high customer satisfaction rating. Our support capabilities cover the entire infrastructure stack, including the hardware, distributed storage fabric, and Acropolis Hypervisor.

Economic Benefits

As a core component of the Nutanix solution, AHV helps IT staff focus on the business, rather than the plumbing of the datacenter infrastructure. It also reduces legacy hypervisor costs, including:

Software Licensing Costs: There is no need to license operating systems, third party database products such as Microsoft SQL or Oracle, or management, analytics or disaster recovery software to enable HA management capabilities.

Design/Implementation/Support: Out-of-the-box availability and auto-scaling simplifies the AHV environment design and implementation. All support costs are included as part of the overall Nutanix hyperconverged platform.

Ongoing Administration Expense: Fewer moving parts and end-to-end integrated software ensures all virtualization parts work together. One-click, fully automated rolling upgrades for Acropolis and system firmware eliminate the requirement to check an interoperability matrix before upgrades.

Business Disruption Costs: Non-disruptive upgrades and all-inclusive software remove numerous points of failure, reducing the need for maintenance and the likelihood of outages.

An August 2015 IDC study of 13 Nutanix customers showed that unplanned downtime decreased by 99.7%, and planned downtime decreased by 100%, when customers moved from traditional datacenter infrastructure to Nutanix hyperconvergence.

Hardware Costs: Even small legacy virtualization platforms require a patchwork of tools that necessitate additional resources. As they grow, the number of required resources tends to increase. AHV eliminates the need for dedicated management clusters and the associated compute/storage resources along with rack space, power, cooling and network port costs.

Summary

Nutanix makes infrastructure invisible, elevating IT and enabling them to utilize their talents and creativity to make the business more competitive, efficient and profitable.

Let's Review.

1. **Simplicity**
   The Nutanix converged infrastructure solution brings together web-scale engineering and consumer-grade design to simplify every step of the infrastructure lifecycle.

2. **Scalability**
   Every layer of the Nutanix solution, including storage, virtualization and integrated management, is built on a highly distributed, scale-out architecture.

3. **Security**
   Nutanix has developed a custom security baseline document, a Security Technical Implementation Guide (STIG), based on well-established National Institute of Standards and Technology (NIST) standards, that covers the full stack.

4. **Resiliency**
   With fewer moving parts in the infrastructure stack, there is little risk of compatibility-related failures, which reduces IT downtime and troubleshooting.

5. **Flexibility and Choice**
   Nutanix is committed to providing flexibility and choice of infrastructure in the enterprise datacenter.

6. **Analytics and Data-Driven Insights**
   Rich analytics and heuristics-driven insights are built into the Prism platform, and cover the entire infrastructure stack including storage, compute and virtualization.

7. **Industry-leading Support for the Whole Virtualization Stack**
   Nutanix boasts an industry-leading Net Promoter Score and high customer satisfaction rating. Our support capabilities cover the entire infrastructure stack, including the hardware, distributed storage fabric, and Acropolis Hypervisor.

8. **Economic Benefits**
   Nutanix makes infrastructure invisible, elevating IT and enabling them to utilize their talents and creativity to make the business more competitive, efficient and profitable.

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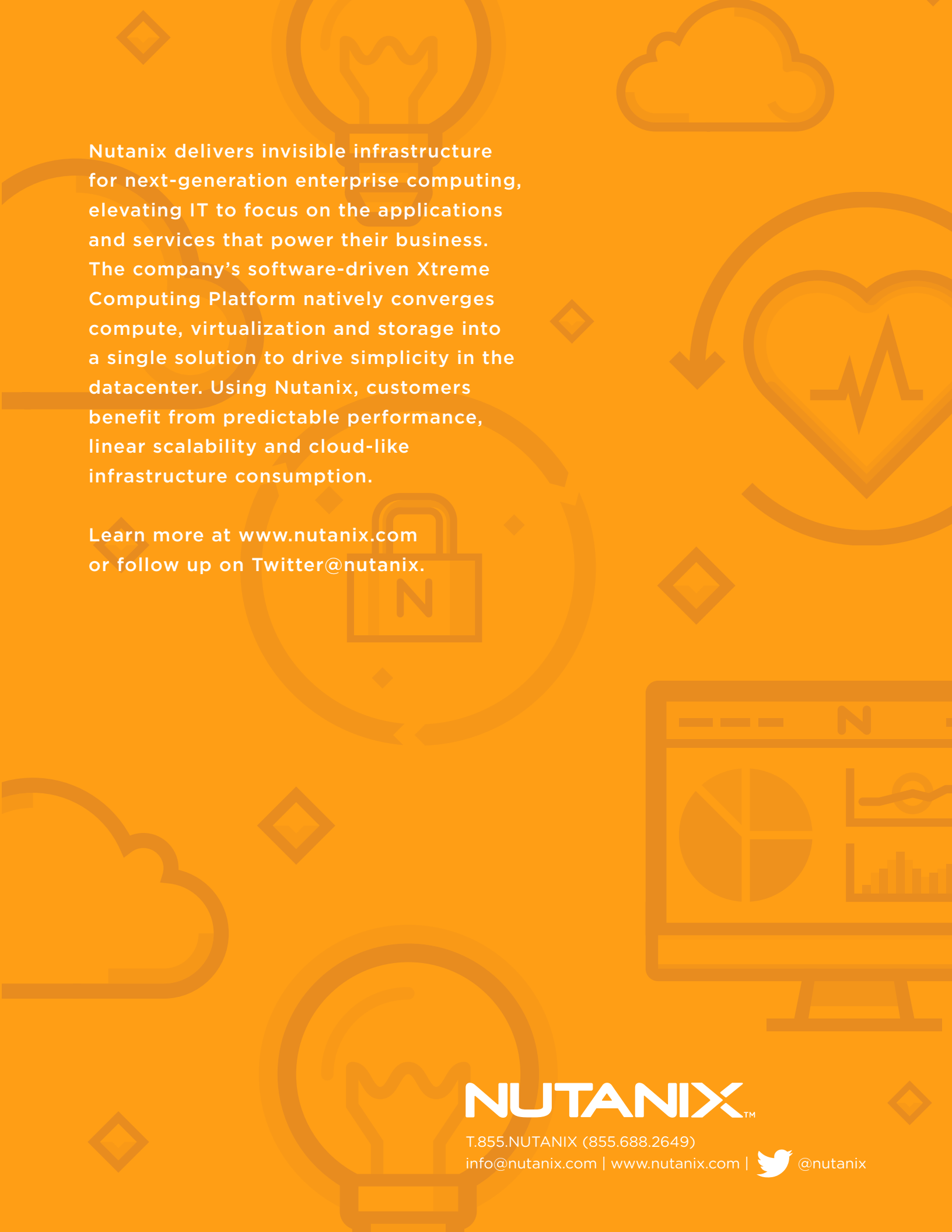
Nutanix delivers invisible infrastructure for next-generation enterprise computing, elevating IT to focus on the applications and services that power their business. The company's software-driven Xtreme Computing Platform natively converges compute, virtualization and storage into a single solution to drive simplicity in the datacenter. Using Nutanix, customers benefit from predictable performance, linear scalability and cloud-like infrastructure consumption.

Learn more at www.nutanix.com or follow up on Twitter@nutanix.



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