



Nutanix Accelerates Transformation for Utilities Industry

Embracing digital transformation and evolving to become a “digital enterprise” is essential for electric, natural gas, and water utility companies that want to survive and thrive. According to the [Institute for Digital Transformation](#), a digital enterprise is one where digital technology plays a central role in how a company: operates, creates products and services, generates revenue, seizes competitive advantage, and produces value. A digital enterprise is more competitive, more efficient, and more dynamic.

The utilities sector is facing both new challenges and new opportunities ripe for digital solutions. As consumer demands and expectations evolve rapidly, utilities must move quickly to offer new services, especially in unregulated sectors while utilizing data to streamline operations. Utility companies face a number of barriers that are unique to the industry.

Utilities often depend on projects and plans that take decades to execute with assets built to last for multiple decades such as power-generation plants, transmission lines, and pipelines. This can lead to a corporate culture that is conservative and risk averse. Many companies have used the same core software for years with little change—software developed in legacy languages including COBOL remains common—and may continue to look to internally developed solutions over outside innovation.

Given the critical nature of the services utilities must deliver, the risks inherent in digital transformation may be difficult for utilities business executives to contemplate, but digital transformation is essential for utilities as they seek to:

- Enhance the customer experience to satisfy the needs of digitally connected and conservation-minded customers
- Increase efficiency and optimize production, distribution, and service to keep pace with fast evolving regulations and their competition old and new
- Capitalize on new business challenges and opportunities like distributed power generation, smart metering and smart grids

To prepare for the future, IT in utilities may have to fundamentally rethink your organization’s approach to digital infrastructure and services. Nutanix Enterprise Cloud, the industry’s leading hyperconverged infrastructure (HCI) platform, simplifies IT infrastructure and cloud management and frees your teams to focus on business and IT initiatives that will move your company forward.

“Three issues appear to inhibit their [utilities] digital transformation. First, the working methods of the typical utility company are built around safeguarding large, long-lived assets and minimizing operational risks... Second, the popular perception of utilities as analog-era companies makes it hard for them to attract people to fill digital-economy roles, such as data scientists. Third, utilities typically have complex legacy operations and IT environments that inhibit rapid innovation.”

-McKinsey & Company

Nutanix transforms core datacenters and enables a multi-cloud environment that encompasses critical production facilities, remote offices, and the public cloud. Infrastructure becomes invisible, allowing you to more quickly deploy new digital services and turning IT into an engine for business agility and innovation.

BECOMING A DIGITAL UTILITY

Utility companies have a wealth of data that, properly understood and utilized, can enable new types of services for connected customers, inform and accelerate decision making, and increase operational efficiency. However, you can't simply sit back and expect that the necessary changes will happen on their own. Digital transformation can require significant organizational changes, skill building, and training across the company. In the organizations that are moving the fastest, executives at the highest levels are actively driving the process. In the utilities industry, leading companies are transforming their IT operations and tackling digital transformation surgically—going after discrete, high-value projects that deliver an immediate and measurable benefit, while building momentum for future projects.

IT has become an essential driver of revenue and a critical part of utilities' business model, both regulated and unregulated. A cornerstone of the digital utility is the ability to deliver a seamless experience for customers. Customer information must be pervasive across physical locations, phone support, web, mobile and even social, so customers can request service, learn about new products and services, and complete transactions easily.

Unfortunately, legacy IT systems may make it difficult or impossible to deliver this seamless experience or add new customer-focused capabilities. The complex and fragmented IT environments that are commonplace, resulting in application and data silos that make interoperation difficult. With data isolated on incompatible systems, it's hard to get a full picture of your operations or identify correlations. Executives and employees may still resort to making decisions based on incomplete data or gut feelings.

Developers and business managers working to deliver next-generation services face challenges getting the resources they need to be productive, delaying important initiatives. If they turn to the public cloud, they struggle with challenges caused by inability to integrate critical on-premises resources with cloud services.

As IT operations become increasingly distributed across corporate datacenters, production facilities, remote offices, and the cloud, meeting regulatory requirements, protecting intellectual property, and maintaining security—always a challenge—becomes that much harder.

And finally, the workforce that utilities depend on for success has always been distributed and fluid. How do you empower a complex web of employees, contractors, and partners with the latest digital tools without adding to your risks?

THE DIGITAL ENTERPRISE

Companies today face growing threats from shifting consumer habits, global competitors, and well-funded startups. Enterprise leaders worldwide are looking for ways to gain a sustainable advantage in an increasingly competitive global economy.

Embracing digital technology and evolving to become a "digital enterprise" is essential for companies to survive and thrive. A digital enterprise is one where digital technology plays a central role in how a company: operates, creates products and services, generates revenue, seizes competitive advantage, and produces value. A digital enterprise is more competitive, more efficient, and more dynamic.

With Nutanix Enterprise Cloud OS, all applications and services can share the same infrastructure, simplifying operations and accelerating results.

“Consumers are motivated by environmental concerns and the desire to reduce costs. They are cutting their energy and water consumption, leading to stagnant demand growth for the first time in the industry’s history. Clear opportunities exist to offset the decreasing consumption by offering new energy efficiency (EE), distributed energy resources (DER), and analytics products and services that consumers are interested in.”

-Deloitte

NUTANIX DIGITAL ENTERPRISE FOR UTILITIES

Traditional IT infrastructure—with separately sourced servers, storage, and storage networks—is not flexible or scalable enough to meet the requirements of a modern digital utility. Your IT teams today may be spending far too much time and effort on mundane management tasks that don’t move the business forward.

In an ideal world, your infrastructure and application stack would be uniform across your operations from your biggest data center to the cloud to your smallest remote office. This is what Nutanix Enterprise Cloud OS was born to do.

For example, [Tohoku Information Systems](#) acts as a system integrator for Tohoku Electric Power, the fourth largest utility in Japan. The company chose Nutanix Enterprise Cloud to upgrade the infrastructure supporting cloud services for its internal customers. With Nutanix, the team deployed new infrastructure in a matter of days that required only 25% of the footprint of the infrastructure it replaced, allowing the company to offer services at a cost competitive with public cloud. Because the infrastructure is highly scalable, it simplifies capacity planning and will serve as the foundation for additional services in the future.

With Nutanix, your applications define your infrastructure, not the other way around, so you can stop building datacenters and start building clouds. Only Nutanix enables you to embrace your digital future, with the public cloud benefits you want and the private cloud control you need. Your operations and development teams are finally free to focus on innovation instead of just keeping the lights on. Among the benefits for utility companies, Nutanix Enterprise Cloud delivers:

- A private cloud infrastructure capable of supporting every application, including your most mission-critical services like billing systems.
- Superior support for analytics and big data initiatives.
- Infrastructure options suitable for even the smallest remote offices.
- Innovative tools and services to accelerate IoT adoption.
- Advanced digital workspaces to empower your workforce.
- An extensive portfolio of services and industry partnerships.

SIMPLE, CONSISTENT INFRASTRUCTURE AND APPLICATION STACK EVERYWHERE

Nutanix Enterprise Cloud OS provides a unified IT operating environment that melds private, public and distributed clouds, providing a single point of control for managing infrastructure and applications. Nutanix solutions are 100% software-based and built on the industry’s most popular hyperconverged infrastructure technology, delivering a full infrastructure stack that integrates compute, virtualization, storage, networking and security to power any application, at any scale. Having all your applications and data on Nutanix Enterprise Cloud eliminates the infrastructure and data silos that are barriers to interoperability, insight, and innovation.

The entire stack can be managed through Nutanix 1-click management framework, streamlining common IT workflows and providing a single interface for managing servers, storage, data protection, and virtualization.

Legacy infrastructure solutions were simply not designed with security as a primary consideration. The Nutanix architecture takes a security first approach; built-in features deliver defense in depth so that customer information is always protected.

RUN ALL YOUR APPLICATIONS—INCLUDING ANALYTICS

With Nutanix Enterprise Cloud OS all applications and services share the same validated infrastructure with no negative performance or availability impact, enabling greater consolidation, reducing complexity, and substantially reducing total cost of ownership (TCO).

Enterprises today are using Nutanix Enterprise Cloud to support application workloads of all types: from critical enterprise applications for managing operations including SCADA (Supervisory Control and Data Acquisition) workloads to billing to customer contact centers, to big data analytics leveraging Splunk and Hadoop, to virtual desktop infrastructure (VDI), to the latest cloud-native applications built on containers and NoSQL databases. With Nutanix Calm, a new or updated application can be deployed quickly in multiple facilities with everything configured automatically and correctly. And the same blueprints can be used to deploy application instances in public clouds.

Getting the most from the wealth of data that's already available to utilities—and the data that's going to flow from new IoT initiatives—is critical for utilities seeking to increase productivity and reduce costs. However, big data analytics supporting initiatives like smart metering and trending of supply/demand can pose significant challenges. With Nutanix Enterprise Cloud, you no longer need dedicated, siloed infrastructure that adds complexity and expense. Your analytics can run on the same shared infrastructure as other applications, eliminating silos, simplifying management, and further reducing costs.

SUPPORT FOR REMOTE AND BRANCH OFFICES

Large utility companies have to maintain a complex network of remote facilities and offices. Given the critical importance of utility services to customers, these locations require local IT systems to ensure they can operate effectively in all circumstances. By dramatically simplifying the infrastructure needed to run a remote or branch office, Nutanix changes the economics of onsite infrastructure. Nutanix offers a solution that's appropriately sized to handle a wide range of workloads including SCADA (Supervisory Control and Data Acquisition), local IT services such as file serving and directory services.

“Our customer call center is used by 1.2million utility customers. All of our customer contact center IVR and phone systems now run on Nutanix. We also have a separate Nutanix cluster that runs systems for managing our electric utility, and soon to be our gas utility. Those systems have strict regulatory requirements.”

-Black Hills Energy

Nutanix's offerings are affordable for even the smallest remote office—with the same capabilities, features, and management interfaces as Nutanix solutions suitable for your datacenters—enabling your vision for a distributed cloud.

Remote sites can be managed by a central IT team. Nutanix 1-click operations provide cloud-like automation and simplicity, so management tasks can be performed locally when necessary without extensive onsite expertise.

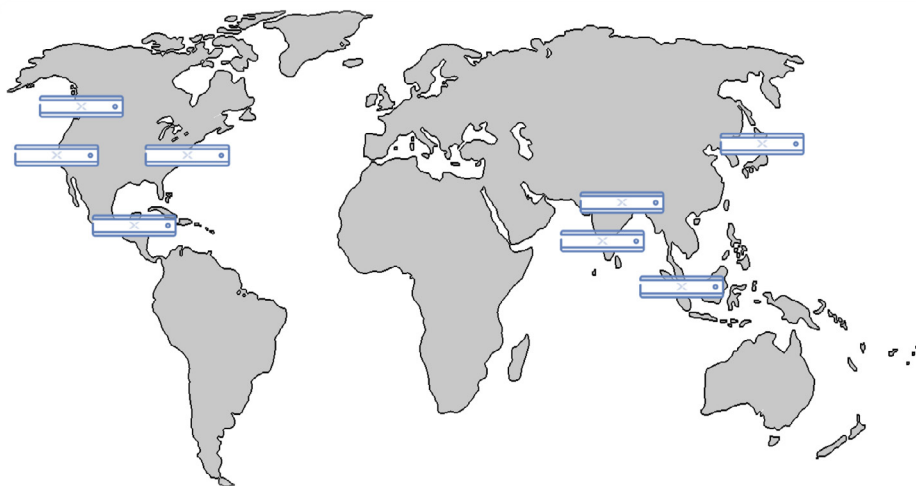


Figure 1: Nutanix Prism gives IT a centralized view of remote deployments

ELENIA GROUP CHOOSES NUTANIX FOR SMART GRID

The Elenia smart electricity distribution grid is built on a commercial SCADA (Supervisory Control and Data Acquisition) application. Moving the application from traditional infrastructure to Nutanix resulted in more scalable, agile infrastructure that the IT team can manage itself, providing a path forward for other initiatives. Enhanced availability with fewer points of failure is a key advantage for a utility focused on reliability.

EMBRACING THE EDGE AND IOT

Utilities are turning to Edge and IoT to connect and gather data from a wide variety of equipment and sensors across production facilities, distribution systems, and remote offices. Data from smart meters and other smart grid technology are becoming essential to deliver a competitive advantage. However, the number of connected devices and the amount of data makes sending all data to a central data center or the cloud for processing increasingly problematic.

Nutanix developed Xi IoT to address the challenges that utilities face as they deploy and scale IoT technologies. Xi IoT eliminates complexity, accelerates deployment, and elevates developers to focus on the business logic powering IoT-based applications and services. The Xi IoT platform incorporates local compute where it's needed, machine learning, and intelligence for IoT devices, creating an application development platform that meets the needs of both

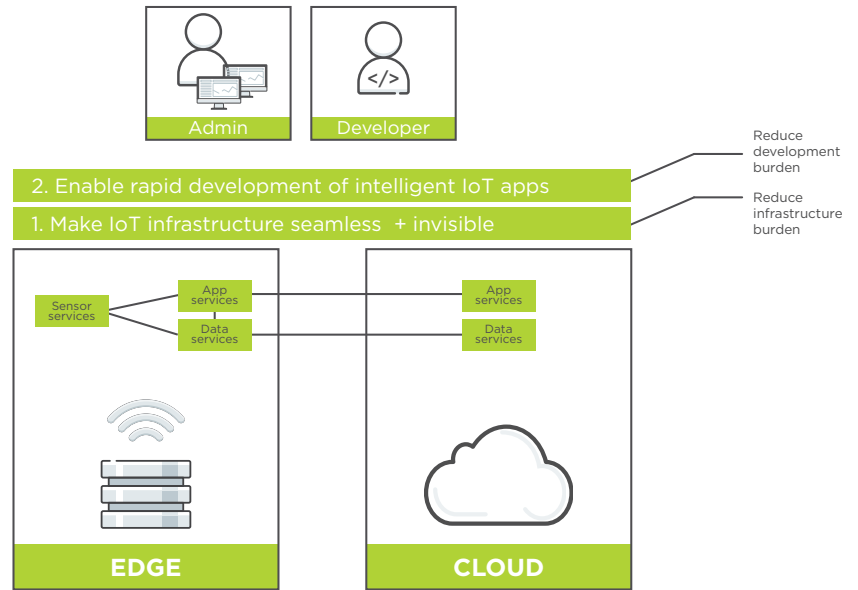


Figure 2. Xi IoT is designed to reduce the burden on both developers and operators.

developers and operators.

ADVANCED DIGITAL WORKSPACES

Physical desktops and laptops have always been an awkward fit for utility companies, where a large percentage of the workforce is mobile, field-based, and must be able to respond to changing priorities on short notice. Virtual desktop infrastructure (VDI) and application virtualization are a much better alternative, enabling users to access important applications and service information from anywhere—while critical customer data remains secure inside your datacenter.

When Black Hills Energy needed to refresh infrastructure for Citrix XenDesktop,

- Deliver a great experience for all users
- Add contingent workers as needed and remove access immediately when contracts end.
- Start small and scale to thousands of users without re-architecting
- Deploy validated end-to-end solutions 8x faster
- Pay as you grow and slash TCO by as much as 60%

“Nutanix is not only way ahead in terms of technology, it has inspired us with confidence in the whole hyperconverged infrastructure concept. It will be of huge benefit when it comes to embracing other new technologies such as the Internet of Things, and we will definitely be looking to migrate other systems to the platform...”

-The Elenia Group

the IT team chose Nutanix HCI to replace its traditional infrastructure, increasing stability, improving the user experience, and cutting management time and total cost. Nutanix Enterprise Cloud is the ideal platform to support your digital workspace needs, making VDI much easier to deploy and manage, while allowing you to:

THE RIGHT PEOPLE AND THE RIGHT PARTNERSHIPS

Success depends on more than just technology. Nutanix has the experience and expertise to make your technology vision a reality. We offer an extensive portfolio of services and the deep industry partnerships that are critical to success.

Nutanix Consulting Services delivers a full suite of professional services to help streamline operations, accelerate your modernization efforts, and transform your business. Our consultants are experts in hyperconvergence, virtualization, enterprise applications, VDI, cloud and IT/Business Transformation.

Our expansive partner ecosystem includes relationships with major application and networking companies and other technology industry leaders, as well as over a hundred partners delivering validated solutions on Nutanix.

READY TO EMBRACE DIGITAL?

When you're ready to become a digital utility, Nutanix serves as a trusted partner. To learn more about how Nutanix can help your business go digital contact Nutanix at info@nutanix.com, follow us on Twitter @nutanix, or send us a request at www.nutanix.com/demo to set up your own customized briefing.



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INDUSTRY-LEADING SUPPORT AND SERVICES

Nutanix delivers award-winning support with an NPS score of over 90 for four consecutive years and provides industry-leading services to help with design, migration and on-going operations.

Nutanix makes infrastructure invisible, elevating IT to focus on the applications and services that power their business. The Nutanix enterprise cloud platform leverages web-scale engineering and consumer-grade design to natively converge compute, virtualization and storage into a resilient, software-defined solution with rich machine intelligence. The result is predictable performance, cloud-like infrastructure consumption, robust security, and seamless application mobility for a broad range of enterprise applications. Learn more at www.nutanix.com or follow us on [Twitter@nutanix](https://twitter.com/nutanix).

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