



# 3SGplus successfully designs and deploys software-defined datacenters for Enterprise Organizations

## The Concept:

A Software-Defined Datacenter (SDDC) is an approach to datacenter management and infrastructure provisioning where the entire datacenter is virtualized and controlled through software, abstracting the underlying hardware. In an SDDC, key infrastructure components such as compute, storage, and networking are virtualized and managed through software-defined technologies. This allows for:

- Greater flexibility in services and specific configurations
- More adaptability to sudden changes or sources of disruption
- The use of more automation in managing datacenter resources, making it easier to scale and adapt to changing business needs

Nutanix and VMware are two leading companies that offer solutions to build and manage Software-Defined Datacenters.

**Nutanix** specializes in hyper-converged infrastructure (HCI). In an HCI solution, compute, storage, and networking resources are integrated into a single appliance, creating a tightly integrated and easily-scalable infrastructure. Nutanix's HCI platform leverages a distributed file system to manage and store data across multiple nodes, eliminating the need for separate storage arrays. The Nutanix platform also includes advanced data services like data deduplication, compression, and encryption to optimize storage efficiency and security.

**VMware** is a pioneer in virtualization technology and offers a deep suite of products for building and managing Software-Defined Datacenters. VMware's vSphere is a virtualization platform that provides the foundation for creating virtual machines (VMs) on physical servers. vSphere enables the consolidation of multiple VMs on a single physical server, increasing hardware utilization and reducing operational costs. VMware's NSX is a software-defined networking (SDN) solution that provides network virtualization, allowing for the creation of virtual networks that are decoupled from the physical network infrastructure. This allows for more flexibility and agility in network provisioning and management.



Together, Nutanix and VMware provide a powerful combination of hyper-converged infrastructure and virtualization technologies, enabling organizations to create highly efficient and agile Software-Defined Datacenters. These SDDCs offer benefits such as simplified management, improved scalability, increased resource utilization, and enhanced automation, making them an ideal choice for modern datacenter deployments.

What kind of organization can benefit from using SDDC technology, and what other considerations are there when making the decision to rely on an SDDC rather than traditional Three-Tier, Converged, Modular or Cloud Datacenter architectures? And importantly, what other expertise should a technology partner have when aligning with your organization to implement a SDDC architecture?

This Case Study is presented as a use case of the technology, and also details the additional areas of expertise that ensure your organization gains the full benefits of this innovative approach, which involves a great deal of planning and onboarding expertise in addition to technical skill and certifications.

### The Customer:

This utilities and power company with over 4 million customers, 7,000 employees and an Operating Expense of more than \$1.4 billion in energy infrastructure per year knew that their costs were accelerating as they grew. Inefficiencies were growing even faster than the business itself, and these were compounding each the customer opened a new office or service point.

Operational management identified four key areas that needed prompt correction for the company to continue to grow without significant self-inflicted headwinds:

1. The customer had a large ecosystem of field stations and offices, each a little different from the other in terms of setup, systems access, administration and security. As scale increased, so did chaos.
2. Security was a major concern due to the challenges of operating a utility organization in the 2020s. The complexity of multiple systems protecting separate pieces in an increasingly intricate ecosystem also made it difficult for authorized users to access what they needed, and a disaster or business continuity event might also expose additional cracks to unauthorized users.
3. While they had significant infrastructure, the costs and complexity of optimizing hardware and maintenance would be daunting, and service disruptions would not be acceptable in the midst of any move, add, or change of server, storage or network hardware. They didn't want to make a massive investment in building,



maintaining and securing a completely new on-premise datacenter, but the nature of their business didn't lend itself to rolling everything to the cloud either.

4. A less dramatic but still serious concern was their diverse ecosystem of business and infrastructure applications that couldn't be used to their full potential in such a chaotic environment. Duplication of features, licenses and data files created additional time and profit-stealing inefficiencies.

### The 3SGplus Solution: Ten Initiatives

1. 3SGplus designed a Software-Defined Datacenter (SDDC) using Nutanix and VMWare, providing a flexible and scalable infrastructure. Our team deployed Nutanix hosts, optimizing application performance. We also simplified the process of creating and adding new clusters, facilitating seamless growth and adaptability for the datacenter.
2. 3SGplus enhanced the customer's remote offices by setting up modern business office datacenters using Nutanix ROBO configurations. Through our expertise, these remote locations now leverage the same high-performance infrastructure as the main headquarters. Nutanix ROBO brings simplicity, scalability, and centralized management, optimizing efficiency across the organization. This unified datacenter experience applies seamlessly to all business offices, regardless of location or size.
3. 3SGplus set up new Cisco Networks for the client and configured Palo Alto Firewalls to ensure a reliable network infrastructure. 3SGplus technical certifications and decades of experience ensure network environment peace of mind. Cisco Networking solutions improve network performance and ease of management, and our skilled guidance in configuring Palo Alto Firewalls ensures robust cybersecurity protection, safeguarding critical data and system assets from potential threats.
4. 3SGplus ensured the security of customer systems by conducting thorough server hardening for both Windows and Linux environments. Our team implemented the necessary tech spec controls based on comprehensive Qualys security scans, fortifying servers against potential vulnerabilities and unauthorized access. For Windows systems, we applied best practices to safeguard against common exploits and maintain security updates. Similarly, our Linux server hardening process involved robust authentication mechanisms, secure permissions, and stable patch management, providing strong protection without disrupting authorized activity. Our diligent approach significantly reduced the attack surface and improved the overall security posture for the customer.



5. The 3SGplus team undertook unified deployments of both Linux and Windows systems, tailored to the customer's specific organizational requirements. By leveraging their expertise in system deployment, 3SGplus ensured that optimal Linux and Windows environments were set up efficiently, enabling the customer to leverage the systems for their core business operations without any hindrances. In preparation for Oracle Real Application Clusters (RAC) deployments, 3SGplus primed systems to optimize performance and reliability. Their certified in-depth knowledge of Oracle RAC allowed us to fine-tune the relevant infrastructure, ensuring high availability and efficient utilization of resources. After careful planning and implementation, the organization is now equipped to handle the complexities of Oracle RAC with ease, enabling the customer to take advantage of its many advanced capabilities to drive innovation and growth.
6. 3SGplus efficiently deployed essential customer tools like Splunk and Commvault agents, dialing them in to suit the customer's unique business requirements and optimizing them for this new datacenter deployment. Our seamless integration of these customer tools streamlines operations and optimizes IT infrastructure, allowing the customer to focus on core objectives and achieve greater productivity and success.
7. 3SGplus conducted WiFi security audits of the customer's physical locations, carefully examining network infrastructure to identify and address potential vulnerabilities. These audits strengthened customer WiFi networks, ensuring robust protection against unauthorized access and potential threats. For locations requiring new hardware installations, we executed detailed WiFi surveys, repeatedly testing configurations for optimal performance under varying conditions. Our surveys included a comprehensive analysis of physical premises, enabling us to recommend suitable infrastructure topology and placements for new hardware, such as racks, repeaters, cables, and Access Points, while also ensuring efficient cable management at each endpoint.
8. The 3SGplus team contributed significantly to the development of the customer's Disaster Recovery (DR) and Business Continuity (BC) strategies. We collaborated closely to create comprehensive plans for resilience and continuity. By analyzing the IT infrastructure and implementing redundancy measures, we aimed to safeguard against disruptions. Our DR design allows for swift recovery, minimizing downtime and data loss. In creating strategies to mitigate risks and ensure continuous services during adverse situations, we identified key dependencies and



critical processes. With our expert assistance, organizations are well-prepared to handle challenges, safeguarding their reputation, data, and customer trust.

9. 3SGplus provided expert assistance in designing and deploying InfoBlox DNS and DHCP solutions, tailoring them to meet the organization's specific needs. This integration ensured efficient and reliable performance, streamlined administration and improved network response. With our solutions in place, the customer can confidently focus on strategic initiatives and their desired business outcomes, with their critical DNS and DHCP services in capable hands.
10. 3SGplus thoroughly assessed both the existing and future requirements for infrastructure and security needs. We collaborated closely with the customer's internal teams to create a robust and scalable plan that considered potential bottlenecks, vulnerabilities, and several different growth projections. The result was a well-defined roadmap that empowers the organization to embrace growth confidently and elevate operational efficiency. With our expertise, the organization is well-equipped to thrive in an ever-evolving and often uncertain technological landscape.

## Results:

The customer's successful transition to a fully SDDC model has delivered efficient, safe and easy access to data and services that the company will not outgrow, thanks to methodical planning for both flexibility and scale. Re-examining the areas for correction that Operational Management identified:

- Rather than a disparate collection of apps and data access, the organization operates on a unified technology platform that suppresses costs, increases accuracy and saves time, all of which increase net revenues and improve customer outcomes and satisfaction.
- The disorganized and unmanageable security landscape has been streamlined into a full featured suite of comprehensive security protocols that work in harmony. Attack surfaces have been reduced or eliminated where possible, and the overall security posture of the company is equivalent to the threat level it faces. They are now objectively more secure than was previously possible with former approaches.
- SDDC allows them to virtualize the entire datacenter, providing a host of efficiency, management, and cost benefits they could not derive from other architectures, and which would not integrate as smoothly as SDDC across customer-facing, power service delivery, and internal business applications.



- SDDC in turn leverages all of the organization's existing investments into business applications because all points of the company can access and benefit from them in ways that were not formerly possible. Duplicated licensing, overprovisioning and other costly sources of inefficiency have also been eliminated.

### Summary:

This customer was able to make a significant improvement across the organization in objectively measurable ways through the implementation of an SDDC technology architecture delivered by 3SGplus. 3SGplus places great emphasis on the planning and architecting stages of any solution at any scale, and for a transition this significant, the investment of time and energy in the plan ensures that conflicts and duplications are resolved before leaving the drawing board.

Many service providers lack the broad range of skills and product/service depth that 3SGPlus puts at your disposal. They may only be able to get you part way there, because their expertise is narrow, or they may be locked in to only the products they are licensed to resell directly and not fully understand how products interact in the overall ecosystem. 3SGplus combines the best of reseller and implementation consulting, with a tech team that not only carries leading product and industry certifications, but includes actual users of the products we sell from their former roles in other companies. They bring you the benefit of hands-on knowledge that can't be duplicated any other way.

If you are interested in an SDDC technology implementation or any other significant technology transition or migration in the datacenter, backoffice or front office, 3SGplus would love to talk with you and assist in any way that we can, whether consultatively or in a direct and hands-on way.