

Delivering on the Promise of the Software-Defined Data Center

Global Bank Turns to VMware Accelerate Advisory Services for Cost Modeling, Architecture Design and More

Like many of its competitors, this US-based top-15 bank grew rapidly over the last decade, largely through high-profile acquisitions. As a result, its IT infrastructure had become complex, inflexible and expensive to operate. Corporate management directed the CIO to dramatically reduce his group's multibillion dollar yearly spend and—at the same time—improve operating efficiency across the board. Spend less, do more—a familiar refrain today.

While researching options, IT planners were intrigued by the potential of the software-defined data center (SDDC) to reduce operating costs, consolidate the infrastructure and eliminate vendor lock-in. Armed with their analysis, the CIO set aggressive three-year targets: Cut operating expenses in half and transform IT into a streamlined, service-oriented organization.

Lacking the internal expertise to execute these goals, the CIO called in VMware Accelerate Advisory Services. Accelerate consultants—veterans of similar initiatives in large financial institutions—delivered tangible business value by:

- Modeling cost savings
- Designing SDDC architecture
- Developing a migration plan
- Recommending organization/process improvements

Now the bank is building one of the industry's first large-scale SDDCs, based on VMware technology. The IT group is implementing organizational and process changes and renegotiating vendor contracts. Based on the predictions of the VMware cost models, the company expects to reduce OpEx and CapEx by up to 70 percent. Most importantly, the bank will be positioned for growth, competitiveness and efficiency—for years to come.

Over the last few years, more and more corporate executives have been evaluating the possible benefits of migrating to a software-defined data center (SDDC). Some early adopters have moved beyond the evaluation stage to start planning and even implementation. Why are CIOs and CFOs so interested in the SDDC? And how can they move forward with their own SDDC initiatives?

Beyond Virtualization

To step back a little, let's look at the data center over the last decade. One technology—server virtualization—has literally transformed the corporate data center into a more adaptable and efficient platform for business applications. This transformation is pervasive—according to IDC, more than 50 percent of all applications run on virtual machines¹. Virtualization—an innovation pioneered by VMware—has delivered enormous benefits such as reduced capital spending, greater asset utilization and enhanced IT productivity. Moreover, virtualization is considered an indispensable software component of the corporate IT infrastructure.

However, in many data centers, the benefits of server virtualization have “stalled”—a source of frustration to IT executives. IDC outlines the problem:

While virtualization delivers impressive initial productivity boosts, continuing results often do not meet management's expectations for further improvements in IT asset use and operational efficiency. This stall often occurs as the rapid expansion of virtual server deployments threatens to overload storage and data network facilities, resulting in overprovisioning of storage capacity and sharply increased administration workloads².

Put another way, realizing the full potential benefits requires more than server virtualization. The next stage is to take what virtualization software has done for servers to the other components of the data center: virtualize the storage, networking and security (see Figure 1).

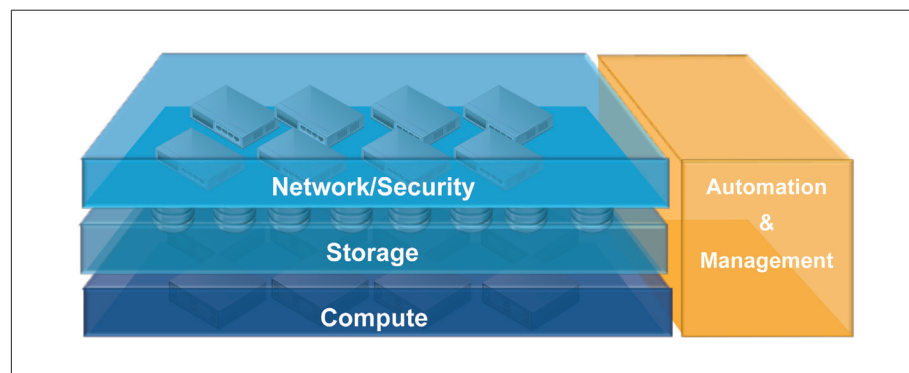


Figure 1. The Components of the Software-Defined Data Center

¹ From “The Software-Defined Datacenter: What It Means to the CIO,” by Al Gillen et al., IDC solution brief, 2012.

² Ibid.

What is The Software-Defined Data Center?

The software-defined data center is a unified data center platform that provides unprecedented automation, flexibility and efficiency to transform the way you deliver IT. Compute, storage, networking, security and availability services are pooled, aggregated and delivered as software, and managed by intelligent, policy-driven software. Self-service, policy-based provisioning, automated infrastructure and application and business management complete the picture. The result is a data center optimized for the cloud era, providing unmatched business agility, the highest service-level agreements (SLAs) for all applications, dramatically simpler operations and lower costs.

Based on our experience in hundreds of virtualization deployments, VMware believes that the SDDC is a transformative data center platform that fundamentally changes how organizations deliver IT services, benefiting both users and IT. Business users get faster deployment and more reliable access to the applications they need to compete. IT reduces both operating and capital costs and has more time to devote to innovation—a key requirement in today's enterprise—thanks to simplified operations. Best of all, the risks of migrating to a SDDC can be substantially mitigated—with the right partner.

The SDDC Is Evolutionary

In a sense, the SDDC is simply the logical extension of server virtualization. Analogous to the way that server virtualization dramatically maximizes the deployment of computing power, the SDDC does the same for all of the resources needed to host an application, including storage, networking and security.

In the past, each new application required a dedicated server, which could take up to 10 weeks to deploy (see Figure 2). Today, server virtualization allows a virtual machine to be provisioned within minutes. However, the other resources needed by the application—storage, network, security—are physical, not virtual, so they take much longer to deploy, on the order of a week or more. Worse, provisioning these physical resources consumes a great deal of IT time, which would be better spent on strategic initiatives. In a very real sense, the full potential of server virtualization cannot be realized when other resources are physical.

In the SDDC, all resources are virtualized so they can be automatically deployed, with little or no human involvement. Applications can be operational in minutes, shortening time to value and dramatically reducing IT staff time spent on application provisioning and deployment.

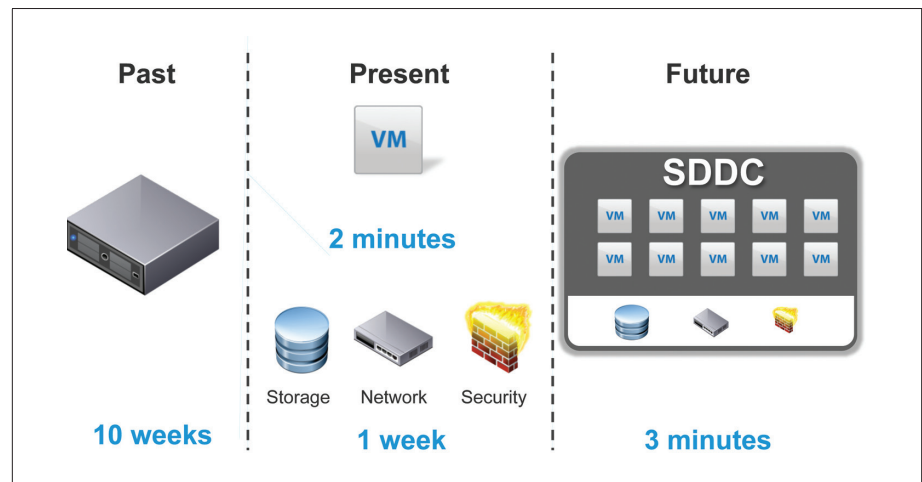


Figure 2. The Evolution of the Application Platform

Business Benefits

Faster Time to Value

The data center today is more than just a cost center—it is viewed by business users and executives as a competitive differentiator and strategic asset. Meeting and exceeding these expectations requires an automated infrastructure that can provision resources in minutes, not weeks, so that key applications are up and running quickly—and delivering business value. In the SDDC, resources are deployed automatically from pools, speeding the time to application rollout and providing an unprecedented degree of flexibility in the data center architecture. As a result, the organization has the agility to respond quickly to changes in the marketplace—and gain competitive advantage.

Minimize IT Spend

By pooling and intelligently assigning resources, the software-defined data center maximizes the utilization of the physical infrastructure, extending the value of investments. The SDDC makes use of commodity x86 hardware, cutting capital spend and reducing on-going maintenance expenses compared to proprietary solutions. IT staff devotes less time to routine tasks, maximizing productivity. The net result is a dramatic drop in CapEx and OpEx spend—50 percent and more for some enterprises.

Eliminate Vendor Lock-in

Today's data center features a staggering array of custom hardware in routers, switches, storage controllers, firewalls, intrusion detection and other components. In the SDDC, all of these functions are performed by software running on commodity x86 servers. Instead of being locked in to the vendor's hardware, IT managers can buy commodity servers in quantity through a competitive bid process. This shift not only saves money, but also avoids situations where problems in the vendor's manufacturing process or supply chain result in delivery delays and impact data center operations.

Free IT Staff for Innovation

The SDDC includes a management framework with built-in intelligence to eliminate complex and brittle management scripts, enabling cloud-scale operations with less manual effort and significant cost savings. With less time spent on routine tasks, IT staff can focus on more strategic tasks that drive innovation—a key management expectation of the corporate IT function today.

Unmatched Efficiency and Resiliency

The SDDC provides a flexible and stable platform for any application, including innovative services such as high-performance computing, big data (Hadoop), and latency-sensitive applications. Provisioning and management are automated by programmable policy-based software. Changes are made and workloads balanced by adjusting the software layer rather than hardware. When a failure occurs, the management software in the SDDC automatically redirects workloads to other servers anywhere in the datacenter, minimizing service-level recovery time and avoiding outages.

Considerations for Executives

The promises of the SDDC are enticing, but corporate executives know only too well the potential for problems along the way. Before they commit substantial amounts of money and time—and run the risk of degrading employee productivity—executives are asking hard questions such as:

- How viable is this technology? Is it mature or still in the R&D phase?
- What is the underlying financial model? Where will I find significant savings?
- What should my migration plan include?
- How do I operate in the new world? Which IT processes will have to change?
- What is the optimum IT organizational structure for the SDDC?
- What KPIs give the best indication of SDDC operation and health?
- What is the impact of a SDDC on security and compliance?
- How does a SDDC change my business continuity/disaster recovery plans?
- How does the SDDC impact our capacity planning?

VMware Accelerate Advisory Services

VMware Accelerate Advisory Services was created to answer these questions—and many more. Accelerate strategists—IT executives with decades of experience in data center operations—provide high-value strategy consulting to help CIOs and their key stakeholders understand the SDDC value proposition and accelerate IT and business transformation. Accelerate business solution architects work with our strategists to quantify the potential benefits, develop architectural designs, recommend organizational and process changes, create a migration plan and advise during implementation.

VMware Accelerate Advisory Services cover all phases of the enterprise IT strategy development process, from benchmark analysis and value modeling to balanced transformation plans. And the VMware Accelerate team has real-life SDDC engagements underway (see “Global Bank Turns to VMware Accelerate for Cost Modeling, Architecture Design and More” on page 1).

Sooner or later, the SDDC is coming to your data center; now is the time to start planning. For more information about the SDDC and other VMware Accelerate Advisory Services, visit www.vmware.com/go/accelerate or contact your local VMware sales representative.

Learn more about the VMware software-defined data center:
www.vmware.com/solutions/datacenter/software-defined-datacenter

