5 Steps to Implementing Software-Defined Infrastructure

Enabling Innovation in the Digital Economy with a Software-Defined Infrastructure

The need for greater business agility is driving new requirements for faster service delivery and more efficient operations. The traditional approach of setting up new hardware systems dedicated to each new workload won't work in today's fast-paced, highly competitive business world. An open source based software-defined infrastructure enables the innovation and agility you need to meet your customers' rising expectations.

The New Digital Economy

With an estimated two billion smartphone users across the globe, today's digital culture is changing consumer expectations. Our always-on mindset compels businesses to find new ways to interact and communicate with consumers. Modern apps and other digital business initiatives satisfy rising consumer demands while also enabling businesses to react to fierce competition driven by innovation.

However, with the proliferation of digital business initiatives, data is growing at exponential rates. The growth of structured and unstructured data requires businesses and their IT departments to optimize data storage. At the same time, the processing power required by the digital economy puts additional strain on the data center.

Further complicating matters is the fact that the business units that spearhead digital efforts require agility to meet their time-to-market needs. When IT is slow to react, business units often circumvent IT altogether, opting for the ease and simplicity of public cloud providers like Amazon Web Services or Microsoft Azure.

To reduce application teams from going to public cloud vendors and often times circumventing internal standards, IT must adopt new approaches to optimizing the data center. It's important to strike a balance between enabling innovation for the digital business while also maintaining the control IT needs to protect the business and comply with regulatory requirements. Doing so while reducing costs is paramount. Despite the greater demands being put upon IT, technology budgets are flat or even declining.

A software-defined infrastructure enables IT to accommodate these competing pressures. It offers the flexibility and agility needed to improve time-to-market speeds while also reducing costs through existing or commodity hardware, centralized management, and the avoidance of vendor lock-in.

Implementing a Software-defined Infrastructure

Step #1: Begin Your Software-Defined Projects Now

When implementing a software-defined infrastructure, there are several best practices to consider. First, it's important to adopt a proactive approach, recognizing the need to plan ahead for greater speed and flexibility to meet the needs of the business. With a proactive mindset, you can ensure the infrastructure offers personalized and innovative services to meet increasing customer demands and to react to global competition.

Understanding the scope and objective of digital initiatives offers insight into what your internal customers require in terms of agility and deployment speeds. A software-defined infrastructure is all about rapidly provisioning services to internal customers. A proactive approach ensures that the data center has the compute, storage, and networking capacity needed to support business requirements for speed to market, performance, and availability.

By proactively identifying the compute, storage, and networking needs of applications and then projecting the growth of these applications that support the business, you can more effectively leverage existing capacity. Even if you're already using virtualization and/or containers, your typical utilization could be as low as 20% when you allow capacity for high-demand periods. With a more elastic infrastructure, you can shift that unused capacity to other applications where it is needed. You can also make use of existing shared infrastructure and adapt it to the needs of the application rather than building a new infrastructure specifically for it.

Step #2: Get Buy-In from Key Stakeholders

Before beginning any software-defined infrastructure project, it's important to outline your objectives and communicate them to key stakeholders. There are three groups who should offer their approval: upper management, line of business, and IT operations.

You can gain buy-in from management by illustrating how meeting time-to-market speeds has a direct effect on the success of the business in the new digital economy. You can demonstrate improvements to the bottom line from CapEx and OpEx savings based on higher utilization of a shared infrastructure and reduced management from automation. Also, show management how modern apps can help you compete with greater innovation and faster time to market. According to a recent SUSE study, 61% of IT leaders surveyed, believe that using containers will result in better resource utilization.[1]

Second, seeking buy-in from line of business leaders is crucial as you attempt to reduce "shadow IT" and the costs and risks associated with public cloud providers. Offering a software-defined approach to their needs helps prove that IT is an enabler of innovation, not an obstacle to it. Also, getting buy-in from line of business leaders enables you to impress upon them the need to ensure data security and compliance with corporate and industry regulations and requirements.

1 SUSE Research Report; SDI, Containers and DevOps - Cloud Adoption Trends Driving IT Transformation, 2017

Finally, you can reduce resistance from IT operations by demonstrating how a software-defined infrastructure helps them deploy applications faster with fewer resources and can support their move to a DevOps model. They'll spend less time and effort on administrative management tasks. Plus, a software-centric mindset can help them build marketable skills for future innovative, open-source technologies.

Step #3: Build New Software-defined Skills

For any software-defined infrastructure to succeed, you must evaluate the skillsets in your organization. Determine in advance what resources are required and where gaps may exist. Build your new infrastructure with the skills and technologies you already know. It's easier and less risky to start by choosing platforms based on the skills your IT teams already have rather than trying to retrofit existing IT services into unfamiliar technologies. However, you will need people who are willing to experiment, try new innovations and technologies, so that they can help you further down your transformation journey.

Hank Marquis, research director at Gartner says "The key to delivering digital value at scale is having the right people. As well as the required skills, people must have the desire and aptitude to exploit existing and emerging technologies".[2]

When determining how to fill any resource gaps, leverage your entire network. You may glean insights or assistance from trusted sources within and outside of the organization. Consider vendors with the right tools and templates or those who have expertise in building, provisioning, and managing a software-defined infrastructure. Remember to ensure that all vendors meet your SLAs and security needs.

Step #4: Begin with a Single Project

When beginning your software-defined project, be sure to crawl before you walk. Begin slowly and devise a strategy at the outset. By starting small, with a new non-mission-critical application, you can build the skills and expertise you need without incurring risk to the business. Software-defined technology is still in the early adoption stage, so implement it in phases to determine whether the technology is robust enough for your needs. Once you've built one project, you can then translate those skills and experiences to future projects with greater ease and speed.

2 "Gartner says I&O skills gaps will cause 75 percent of organizations to experience visible business disruptions by 2020"
Gartner, March 27, 2018"

Step #5: Keep It Open

The final best practice to consider when developing a software-defined infrastructure is to leverage open-source technology. Choose wisely, as it will form the basis of your software-defined infrastructure. "Recognize that adopting a software-defined data center means trading a hardware lock-in for a software lockin," said Russell. "Choose the most appropriate kind of lock-in consciously and with all the facts at hand."[3] The best way to avoid vendor lock-in or minimize its effects is to take advantage of opensource software.

Open-source platforms give you the freedom and flexibility to work with multiple vendors and leverage existing investments in physical and virtual systems. It also enables you to accelerate your data center technology as you maximize the rapid innovation provided by the large, open-source community. When deciding on an open-source platform, choose from best-of-breed vendors who are flexible and agile enough to accommodate such accelerated innovation.

SUSE Solutions for the Software-defined Infrastructure

SUSE offers several solutions for IT organizations looking to build a software-defined infrastructure on open-source technologies:

- **SUSE® OpenStack Cloud** dynamically allocates compute, storage and networking resources on demand via self-service, in a software-defined infrastructure.

- **SUSE Enterprise Storage™** is built on CEPH to reduce CapEx and OpEx by providing a self-managing and self-healing storage infrastructure.

- **SUSE Linux Enterprise Server** includes support for Docker Linux container technology to quickly and easily deploy new applications.

- **SUSE Manager** offers a robust infrastructure management solution, supporting multiple Linux distributions and hardware platforms, as well as physical, virtual, and cloud environments.

- **SUSE Global Services** offers flexible consulting, delivery, and premium support services offerings to maximize the value from your SUSE solution investments so you can achieve the outcomes your business needs.

3 Gartner Says the Future of the Data Center Is Software-Defined," Gartner, September 24, 2015.

Thank You