WHAT IS A SOFTWARE DEFINED DATA CENTER?

An increasing number of enterprises are realizing the benefits of utilizing cloud platforms to support employee productivity, collaboration and business innovation. The benefits of switching to the cloud are far-reaching and can include reduced operational costs, higher accessibility and lower maintenance. These technological advancements have paved the way for innovators to come up with a wide-range of cloud products to meet business needs.

One such product offering is a software defined data center or SDDC. SDDCs are similar to traditional data centers but with some notable differences. For those considering data storage for the first time, let's start by reviewing the definition of a traditional data center.

Datacenter vs. SDDC

A data center is a facility that keeps all of a company's data centrally housed. Think of a data center as the hub for IT operations and equipment. Some data centers are specific to a single company while others house data for multiple companies. Those who operate data centers specialize in keeping data secure and servers running. The purpose is to ensure business continuity.

A software defined data center is a platform, like SAAS, for centralizing an organization's data and IT operations. Similar to a typical data center, the platform needs to remain up and running and the data needs to be securely housed. But this is where the similarities end. **Unlike a regular data center, an SDDC is not a brick and mortar facility but rather servers that have been virtualized and exist in the cloud.**

There are many benefits to making the switch to an SDCC and there's a widely held belief that SDDCs are the future of data centers. A Gartner report predicts that by 2020, 75% of SDDC capabilities will be mission critical to businesses looking to make headway in the DevOps space.

That said, not every organization *today* is primed to take advantage of an SDDC. Here are some questions we will address in this article to help you determine whether it's time to transition to an SDDC.

- How does an SDDC work?
- What are the benefits of switching to an SDDC?
- Which businesses are best equipped to make this change?
- What is the outlook for SDDCs?

How does an SDDC work?

SDDCs deliver a programmatic approach to the functions of a traditional data center via a virtualized environment. These functions include:

- Computing
- Networking
- Security
- Server availability
- Storage

SDDCs use automation to keep business critical functions operational around the clock, reducing the need for IT manpower and hardware. They deliver on each feature via a software platform accessible by the organization from any suitable location.

Additional pieces of software critical to operations can be implemented to connect with and further customize the platform. In fact, it's recommended that organizations looking to implement an SDDC get their basic operations software infrastructure ready for the transition first.

Virtualized I/O

Virtualized I/O is a term used to describe input/output functions in a virtual environment. It's a key principle of how SDDCs operate.

In a traditional network, servers have certain hardware requirements that enable to physically connect them to one another to share data and other functions. But in an SDDC, each virtual machine must be imprinted with a part of I/O and bandwidth belonging to its host server. With the advent of converged I/O, network technology has the power to support SDDC and ITaaS initiatives.

What are the benefits of switching to SDCC?

As mentioned above, many experts believe the inevitability of switching to an SDDC from a traditional data center is just around the corner, as platforms like IT-as-a-service emerge as the new normal.

If your organization makes the transition, you can expect to benefit in major ways.

Business agility

Implementing an SDDC offers a number of benefits that increase business agility with a focus on three key areas: balance, flexibility and adaptability.

SDDCs increase business productivity by consolidating duplicate functions. This means that IT resources are freed up to spend their time solving other problems, resulting in greater agility. In addition, SDDCs help businesses increase their ROI so they have more funds to spend on long-term strategy.

Reduced cost

In general, it costs less to operate an SDDC compared with housing data in brick-and-mortar data centers. Traditional data centers, due to the nature of the business, have to charge more to cover the cost of round-the-clock employees, security and operational needs like building leases and hardware.

Organizations that house their data in-house, require additional IT manpower, expensive equipment, time and maintenance. Those that have not put much thought into data storage may suffer the possible costs of a potential data breach. An expensive hardware malfunction, is yet another possibility that could cause loss of data. SDDCs operate similarly to SAAS platforms that charge a recurring monthly cost. This is usually an affordable rate, making an SDDC accessible to all types of businesses, even those who may not have a large technology budget.

Increased scalability

By design, SDDCs can easily expand along with your business. Increasing your storage space or adding functions is usually as easy as contacting the data facility to get a revised monthly service quote. This offers a significant advantage compared to organizations who have to scale by making more room for additional servers, purchasing hardware and software, not to mention bringing in manpower to make the transition.

The appeal of data centers has always been that they ease the burden off an organization's shoulders, leaving their in-house IT team to focus on strategy as they scale. But SDDCs take this benefit a step further, offering potentially unlimited scalability.

Which organizations are best equipped to make the switch to an SDCC?

While SDDCs offer many benefits, not every organization stands ready to make the transition. Only the most innovative organizations and those in the DevOps space should be racing to implement SDDCs.

Here are some key considerations in order to determine whether your organization is ready:

- **Assess company culture:** Ensuring a collaborative company culture is critical to the adoption of new technology. It can be difficult for legacy businesses to transition to an SDDC without carefully considering long-term strategy and employee skillsets.
- **Pay attention to timing:** For your organization, the transition to an SDDC could be years away

but that doesn't mean that key stakeholders shouldn't be considering it, today. Leadership should evaluate solutions and start by transitioning software one piece at a time. Ultimately, CIOs and CTOs should implement a basic infrastructure of software that can link with an SDDC.

- **Understand the capabilities and limitations of your DevOps Team:** Adding a platform like SDDC requires a commitment from DevOps. Before making this leap, assess whether you have the right DevOps team in place, or if you will need to add additional skilled employees, or outsource implementation assistance.

If your organization hasn't aligned the above requisites, now may not be the best time to make the switch. Instead, start with preparing your basic software infrastructure, bolstering your DevOps team and paying close attention to timing. CTOs should keep their focus on a long-term goal where they ultimately convert to an SDDC by 2020.

What is the outlook for SDDCS?

SDDCs are not yet commonplace in today's digital economy, but technology trends suggest that they will be.

Until then, as more businesses virtualize automated IT functions, demand for both products like SDDCs and DevOps professionals who can code them will continue to increase. Indeed, SDDCs offer an innovative way to store data suitable for enterprise organizations interested in successfully using DevOps to advance digital transformation.

Cloud management is key

Overall, organizations face pressure for continual innovation in the digital enterprise that drives the need to deliver IT services faster and support agile application development and deployment. More specifically, to gain a competitive advantage, enterprises must:

- Power digital innovation with fast, automated provisioning of multi-tier applications.
- Drive down costs by managing complex, heterogeneous environments at scale.
- Reduce risk with automated cloud compliance and governance.

These business outcomes can be achieved by implementing a cloud management strategy that can support business agility while managing risk across complex environments.

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