

Software Defined Data Centers will Change the Way Enterprises Migrate and Deploy to Cloud-Based Applications

Software Defined Data Centers have the potential to be both truly revolutionary and safely provide the capabilities enterprises need in the cloud. Software defined data centers can free an application completely from its physical infrastructure allowing for a wide scope of uses including deploying, managing, storing, computing and networking myriad business applications in the cloud.

Highlights

Step away from industry parameters for defining the latest terminology. Follow the logic of the broader, more inclusive identification for the potentially revolutionary technology in software defined data centers.

This point of view offers CohesiveFT's insight on:

- Introductions to the Terminology of Software Defined Data Centers
- Today's Terminology Falls Short of the Capabilities
- A Fine Grained, Targeted and Agile Concept for Virtualization
- The Future of SDDC
- True Examples of Features to Come

The IT industry is abuzz with the concept of the “software defined data center.” What makes it different from a traditional data center? Is a software defined data center just existing physical assets with more virtualized aspects, or is it something revolutionary? Does the software defined data center rely on specific vendors and providers only, or is it like my physical data center where I can do what I want?

Yes, a software defined data center is an extension of existing physical assets. Yet, at its core, a software defined data center should free the application from the physical infrastructure layer. Existing industry descriptions have not fully explained the potential software defined data centers offer to take enterprise IT on the “quantum leap” some predict.

Limitations to the software defined data center concept include too many physical constraints and a lack of application-layer focus. Enterprises have been wary of sending apps to the cloud without the proper context for integration, governance and security. Software defined data centers must provide this.

Furthermore, industry buzz does not fully explain the potential that software defined data centers offer and it can be a challenge to cut through the hyperbole to understand how the software defined data center will take enterprise IT end users on the “quantum leap” some predict.

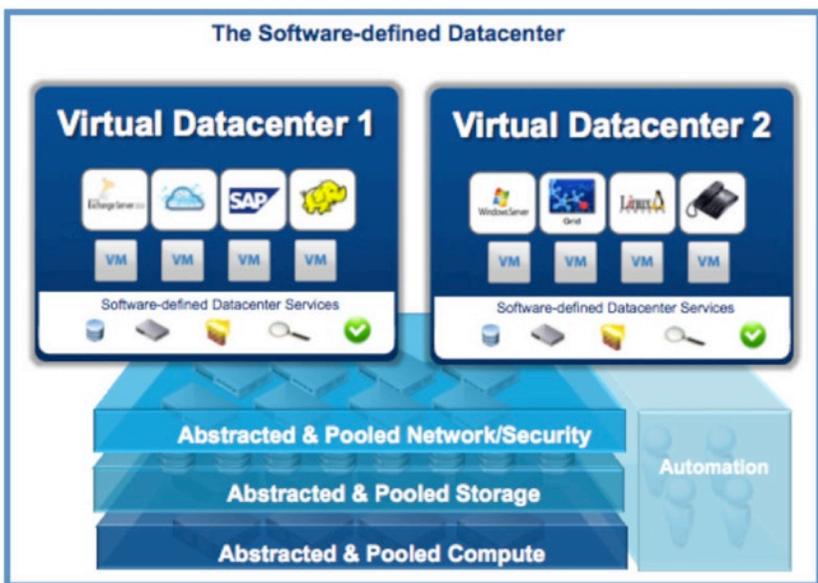
Lately, companies such as VMware¹ and now HP² have been fond of the term software defined data center (or SDDC). We at CohesiveFT think the broad concept is so important for end users, managers and developers that despite some significant differences from VMware and HP, we are adopting the term for our overall solution.

Software Defined Data Centers: Application Focus with Customization and Automation possible for each Business Application

Customers have asked us: What’s the difference between this and the hardware at the office? At its core, a software defined data center frees the application from the infrastructure layer. Eric Knorr writes³ about what a huge leap it is, “just as the world changed when isolated networks became the Internet, computing is about to make a quantum leap to ‘data centers’ abstracted from hardware that may reside in multiple physical locations.”

CohesiveFT agrees with VMware on the significance of the potential impact, but would add, not only would the data centers reside in multiple physical locations - but also at multiple service providers - with the application for the most part unconcerned with its location.

While the technology can allow applications to be deployed structurally without regard to the location, of course the laws of network physics and data privacy will still be of significance to the application owner.



In VMware's words¹, "The Software-Defined Data Center is a **unified data center platform** that will help you transform the way you deliver IT with unprecedented automation, flexibility, and efficiency." A software defined data center is built for the cloud and geared toward modern applications.

Not only would the data centers reside in multiple physical locations - but also at multiple service providers - with the application for the most part unconcerned with its location.

A unified data center platform geared toward modern applications is ideal for businesses looking to modernize without the costs of a physical overhaul. Enterprises can clearly see the benefits of outsourced IT features, either as the SaaS applications they use or IaaS based in the cloud.

However, VMware's "unified data center platform" has an awful lot of hardware in it. Like the beginning of a 12-step program for people who want to be virtual - but only if it involves a lot of expensive physical infrastructure below it. The focus of our discussion is above the infrastructure, where application-centric computing takes place.

Defined in Software

We believe software defined data center means exactly that - defined in software. Use software to define the compute, storage and networking needs for your business apps. Let someone else own the hardware, the guards, the glass, the gas, the batteries, the generators, and the costs of a physical data center.

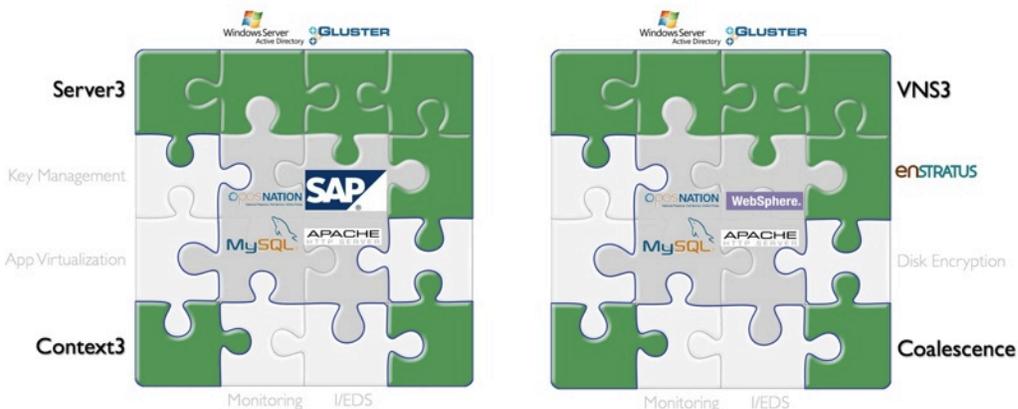
In the world of enterprise IT - we would even advise considering managing infrastructure IT and application IT as very different organizations - and to the extreme, never the two shall meet, except for in the form of APIs and the contractual relationships created for their use.

At CohesiveFT, we believe software defined data center means exactly that - defined in software.

The good news is that most organizations do not need to take such dramatic action. The ubiquity of APIs, automation, Internet, and “fast, flat, and fat” physical resources means software defined data center can be pursued now and deliver ROI one application at a time, not one physical data center at a time.

Don't Migrate Data Centers, Deploy Specific Applications Ranging from Production to Proof of Concept

We don't see customers migrating data centers to the cloud. We see customers migrating applications to the cloud; where an application is the 5, 10, or 50 computer servers that collectively perform a business function. When IT teams use the application as the target they get almost instant ROI upon deployment or migration of their first cloud application.



A cloud container, allows enterprises to use the virtualization principles of pooling, abstraction and automation in a cloud-ready format that works “out of the box.”

CohesiveFT’s concept of software defined data center is much finer grained, more targeted, more agile and is possible to deliver without a monolithic approach involving your existing physical assets and infrastructure. We call our software defined data centers “**cloud containers.**”

For CohesiveFT, software defined data centers allow for the “containerization” of a businesses’ systems of record and systems of engagement, within the context of strong integration, governance, and security. A cloud container allows enterprises to use the virtualization principles of pooling, abstraction and automation in a cloud-ready format that works “out of the box.”

Data Center Limitations Become A Thing of the Past

Cloud computing means no more scarcity of compute, network, or storage. The cloud brings the benefits of cost savings, efficiency, and more raw capacity than most organizations could ever use. Cloud

containers are the means by which you can capitalize on all of this power. Cloud containers go further by letting IT teams migrate, deploy and control applications in the cloud, with the desired context. Ultimately, IT teams can evolve their applications within the cloud as an innovation platform instead of merely a migration platform.

The software defined cloud container concept is the one we find has the most customer traction because of the concrete metaphor for an otherwise ambiguous concept. Customers put their applications “in a box” and that box can be moved between clouds or span across clouds. We use the words “Cloud Container Solution” to describe not only our core products and services, but also the interoperability with our partners and existing enterprise assets. The integration and agility offered by a cloud container offers application users the best, most promising features of the cloud.

A true example of software defined data center will have features of network virtualization, image automation, file system virtualization, and topology centric services for IDS, logging, etc.

One of our most recent container solutions involved a UK private - public partnership. As part of their mission to reduce CO² and promote sustainability, they had created huge amounts of data to analyze and display graphically. The project required enterprise-size analytics and compute power to cope with data from all 26 million UK homes. They worked with IBM and partners including CohesiveFT to migrate, connect and automate their data analysis in the cloud. The customer did not need to learn all of the internal implementation features to get their result. Instead, the cloud container masked the complexities.

True examples of software defined data center

Software defined data center need not be yet another vendor-backed jargon term⁴, but can be a proper solution for cloud customization and integration. Enterprises can use the growing number of virtualized servers, virtualized networks and APIs to expand their data centers beyond their physical walls - one secure cloud container at a time.

In order to make software defined data centers a reality for enterprises, there are certain objectives that must be met and features provided. A true software defined data center will be¹:

- Standardized (mostly indifferent to underlying cloud infra)
- Holistic (allows integration to existing centers and assets)
- Adaptive (can be incrementally scaled and evolved)
- Automated (no more “by hand” deployments)
- Resilient (can span locations and providers)

All software defined data center should have features of:

- Network virtualization,
- Image automation,
- Topology automation,
- File system virtualization,
- A myriad of topology centric services

A true example of a software defined data center will hold the key to automating, customizing, and taking control of the application-focused features. With these, enterprises can securely make the transition to the cloud. Enterprises will be able to use software defined data centers to innovate with greater utilization, resiliency, and cost savings on a unified platform for their applications.

Software defined data centers will free the application from the physical infrastructure layer to allow enterprises to deploy, manage, store, compute and network their business applications in a cloud environment. The software defined data center of the future will be like a container plugged into a federated, cross-cloud matrix that includes cloud-deployed data centers, existing data centers and every virtualized thing in between.

We urge industry leaders to think of software defined data centers in the broadest terms possible. Our broad view of software defined data center parameters captures the wide scope of features that identify the capabilities that make a software defined data center truly revolutionary.



About the Author

Patrick Kerpan is the CEO and CTO of CohesiveFT. Mr. Kerpan is responsible for directing product, technology and sales strategy. Mr. Kerpan brings more than 20 years of software experience to the role of CTO and was one of CohesiveFT's founders in 2006. Previously he was the CTO of Borland Software Corp which he joined in 2000 through the acquisition of Bedouin, Inc., a company that he founded. Mr. Kerpan was also the vice president and general manager of the Developer Services Platform group at Borland, where he was instrumental in leading the Borland acquisition of StarBase in 2003. Before founding Bedouin, Inc., Mr. Kerpan was a managing director responsible for derivatives technology at multiple global investment banks.

About CohesiveFT

CohesiveFT enables enterprises to run business operations in the cloud. Our solutions help migrate, transform and extend both customer facing systems and internal operational platforms. CohesiveFT lets enterprises build on existing IT resources, save money on a single, upfront migration and focus on an application-centric view of integration, governance and security. Learn more at www.cohesiveft.com

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See Also:

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