

# How to Streamline the Operational Experience of VMware HCI

Hyper-converged infrastructures (HCI) have come a long way since their introduction in 2014. While the benefits of HCI are clear to most IT organizations, so are the challenges around design, integration, test, deployment, operation, and maintenance. With the PRIMEFLEX for VMware vSAN Appliance, Fujitsu has introduced an integrated system that addresses these challenges by taking care of the complete lifecycle of a VMware HCI environment.

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## Intro

Hyper-converged infrastructures (HCI) have come a long way since their introduction in 2014. Their key benefits include the ability to deliver a high-performance, low-latency storage environment based on standard x86 server hardware with improved scalability, more efficient use of resources and simplified management. Nevertheless, one of the most important reasons why customers have adopted HCI is the huge cost savings factor, resulting from the consolidation of computing and storage resources in a standard x86 server.

In a user survey by industry analyst firm FreeForm Dynamics in February 2020, 33% of all customers who have deployed a hyper-converged infrastructure are reporting actual savings between 50% and 75% versus a traditional infrastructure approach. Another 46% report between 25% and 50% in savings. It is no wonder then that 83% of the top performing IT organizations are planning to increase their investments in HCI.

### Challenges in HCI lifecycle management

While the benefits of HCI are clear to most IT organizations, so are the challenges around design, integration, test, deployment, operation, and maintenance. Once your HCI is up and running, how soon will it be before it's out of date? Of course, you can go to your preferred server and HCI software vendor, get a number of server nodes and software licenses, put them all together, and deploy them in your data center. On "Day 0," when the systems are deployed, everything may be fine. But it can be a different story on "Day 1" or "Day 2," when substantial effort is required to keep the software and firmware of all systems compatible with each other.

The reality for most IT organizations is that they still have to battle increasing IT asset complexity and frequent updates or upgrades, making the day-to-day management of IT systems a nightmare for all those who have to keep all systems in a consistent and compliant state throughout their complete lifetime.

### PRIMEFLEX for VMware vSAN Appliance

With the PRIMEFLEX for VMware vSAN Appliance, Fujitsu introduced an integrated system that has been specifically engineered by VMware and Fujitsu to streamline the deployment, integration, management, upgrade, and expansion of VMware vSAN environments. As a fully integrated, pre-configured, and tested VMware HCI appliance, PRIMEFLEX for VMware vSAN delivers a turnkey experience providing IT organizations with the easiest way to deploy a hyper-converged infrastructure based on VMware vSAN. In combination with tightly integrated VMware and Fujitsu management software and a single point of contact for support, the PRIMEFLEX for VMware vSAN Appliance dramatically simplifies the complete lifecycle of a VMware-based hyper-converged IT infrastructure – from deployment to operation, scalability, and maintenance.

The PRIMEFLEX for VMware vSAN Appliance is designed to support practically any workload you may have, whether databases (SQL, Oracle, and SAP HANA) or business-critical, cloud-native, AI, or machine-learning applications as well as to run in almost every environment, from general purpose virtualization, via virtual desktop infrastructures, to containers or remote and branch offices.

## Key Drivers of HCI

Answers from 819 IT professionals worldwide, when asked about their key drivers for HCI adoption.

- **91%** – High-performance, low latency storage – Speed up performance of specific applications
- **90%** – Improved scalability – Easy, linear, and non-disruptive scalability
- **83%** – Server and storage consolidation – Fewer components, space, energy, and cooling
- **83%** – More efficient use of resources – e.g. as a result of increased component utilization
- **80%** – Simplified management – Lower admin overhead, reduced skills requirements, etc.

**"HCI is taking the next step, from 'merely' an efficient platform for business apps to a strategic building block for modern IT service delivery."**

Source: Research study, Hyper-converged has come of age, FreeForm Dynamics – March 2020



### Hardware and software stack

The computing and storage platform is delivered from Fujitsu PRIMERGY rack servers certified for VMware vSAN (i.e. vSAN ReadyNodes). For more than 25 years, PRIMERGY servers have excelled with outstanding performance and quality, as proven by leading positions in virtualization benchmarks and extremely low failure rates below market average.

For server and storage virtualization, the PRIMEFLEX for VMware vSAN Appliance is powered by VMware's leading hyper-converged infrastructure technology (VMware vSphere and VMware vSAN) with all flash performance and enterprise-class storage services including deduplication, compression and erasure coding, delivering elastic storage and drastically simplified storage management. The PRIMEFLEX for VMware vSAN Appliance supports any HCI use case, including general-purpose virtualization, VDI, big data and analytics, remote and branch offices, edge and even mission-critical workloads like SAP HANA.

Every PRIMEFLEX for VMware vSAN Appliance deployment requires a pair of redundant network switches. Customers can provide their own switches or acquire them from Fujitsu.

### Management

For managing the PRIMEFLEX for VMware vSAN, the appliance uses the familiar VMware vCenter tool. In combination with FUJITSU Infrastructure Manager for PRIMEFLEX (in short, "ISM for PRIMEFLEX") customers manage the complete software and hardware stack of a VMware vSAN environment from a single interface. ISM for PRIMEFLEX streamlines the deployment of a VMware vSAN environment by automating the setup process based on pre-defined templates. Central monitoring of critical hardware components provides you with deep insight into a VMware vSAN environment – this covers not only the server nodes, but also the involved network switches. ISM for PRIMEFLEX provides automated firmware updates of a single server or a complete vSAN cluster, which helps IT organizations to reduce admin efforts and keep the complete vSAN environment compliant to the hardware compatibility list of VMware, the support matrix of the server systems or standards that have been defined by the customer IT organization. And finally, ISM for PRIMEFLEX helps to easily expand a vSAN environment by automating many of the configuration steps necessary to bring additional server nodes into a vSAN cluster.

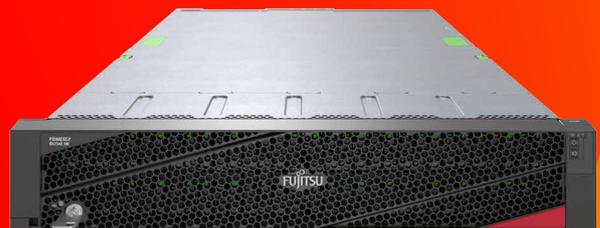
### Licensing

The PRIMEFLEX for VMware vSAN Appliance comes with a special VMware vSAN license that is bound to the lifetime of the server system. It's available with a 1-, 3-, or 5-year lifecycle, but if a customer likes to extend he can do so. Besides this license, perpetual OEM / ELA licenses are also possible. Both types of licenses are delivered with equal support conditions and are eligible for updates. License costs are determined on a per physical CPU basis. For the required vCenter Server tool, customers can bring their existing license or acquire it from Fujitsu. The license model for ISM for PRIMEFLEX consists of a license for the management server and additional licenses for each managed server node and switch. Server node licenses are available per node or as license bundles for 5, 10, and 50 nodes.

## Discover Fujitsu Built4You Bundles

**Fujitsu Built4You Bundles for PRIMEFLEX for VMware vSAN include everything you need to deploy a VMware HCI environment**

- Hybrid and all-flash PRIMERGY rack server models for a wide range of performance and capacity needs
- Tailored to run from 20 to 120 VMs per node with capacities varying from 1.7 to 11.6 TB of usable storage per node
- 3-node base packages – extensible with additional 1-node packages
- Choice of 24x7 maintenance and support options (3 or 5 years) for the complete hardware and software stack – with a single point of contact
- On-site implementation service included



## Data protection

**A backup solution within the same system does not protect your data against disaster, system failure, data corruption, or deletion. Therefore, it is necessary to store business-critical data separately. Fujitsu offers a broad data protection portfolio to protect your business against outages and cyberattacks. This includes advanced storage management capabilities like deduplication, replication, archiving, and a cross-media mix. We provide a solution for every business, whether small, medium-size, or enterprise-scale.**

### Modern data management and protection

Fujitsu offers a comprehensive data protection portfolio with a wide range of products (appliances, tape storage, backup software) and various service levels depending on your needs. Quickly protecting and consolidating your business-critical data across edge, core, or cloud. Our portfolio provides comprehensive functionality for multi-cloud platforms, physical, and virtual environments, including backup, archiving, deduplication, disaster recovery, replication, snapshot, and tape support.

### Automated backup and recovery

Our solutions automate backup, disaster recovery, and testing across multiple platforms (clouds, physical or VMs) with reduced cost, effort, and risk. Advanced automation of repetitive or highly complex tasks streamlines operations and minimizes human error and data loss. Granular recovery gives you the flexibility to restore your environment from full databases, VMs, or a single file. Data protection software from our partners Commvault, Veritas, and Veeam leverages deep integration for all modern hypervisors and many cloud storage options across public and private clouds. Making the recovery of mission-critical applications fast and easy to manage.

### Rich data lifecycle management

Our policy-based data protection offers you a rich lifecycle management and ensures that all your business-critical data remains protected. You can define storage policies and retention periods to archive or remove outdated data. For example, you can include or exclude VMs for data protection, shut them down, relocate them to secondary storage, or automatically archive stale VMs. Different kinds of data must be protected with different SLAs, determining how many copies have to be kept for how long, and whether the strongest protective measures are always necessary. This is why you can also optimize the recovery speed and retention period of the backup data, combining multiple storage media (disk, dedupe disk, flash, tape, or in the cloud) according to your requirements.

### Efficient disaster recovery

Our data protection portfolio enables flexible local, central, and remote backup and disaster recovery concepts – allowing you to backup to disk, tape or cloud, or copy data to another remote appliance with the integrated replication feature. All these capabilities guarantee uninterrupted operations, minimize planned and unplanned downtime, and ensure business continuity should disaster strike.

### Compliance regulations

For compliance issues, your administrator can establish customized policies to prevent unauthorized access as well as define the persons who can access and share specific files and folders. Analytics and reporting features provide data insights to ensure that your sensitive business data remains safe while fulfilling compliance regulations (including GDPR), and built-in data encryption minimizes the risk of information being stolen or lost.

For more information about Fujitsu Data Protection Solutions, see: [www.fujitsu.com/dataprotection](http://www.fujitsu.com/dataprotection)



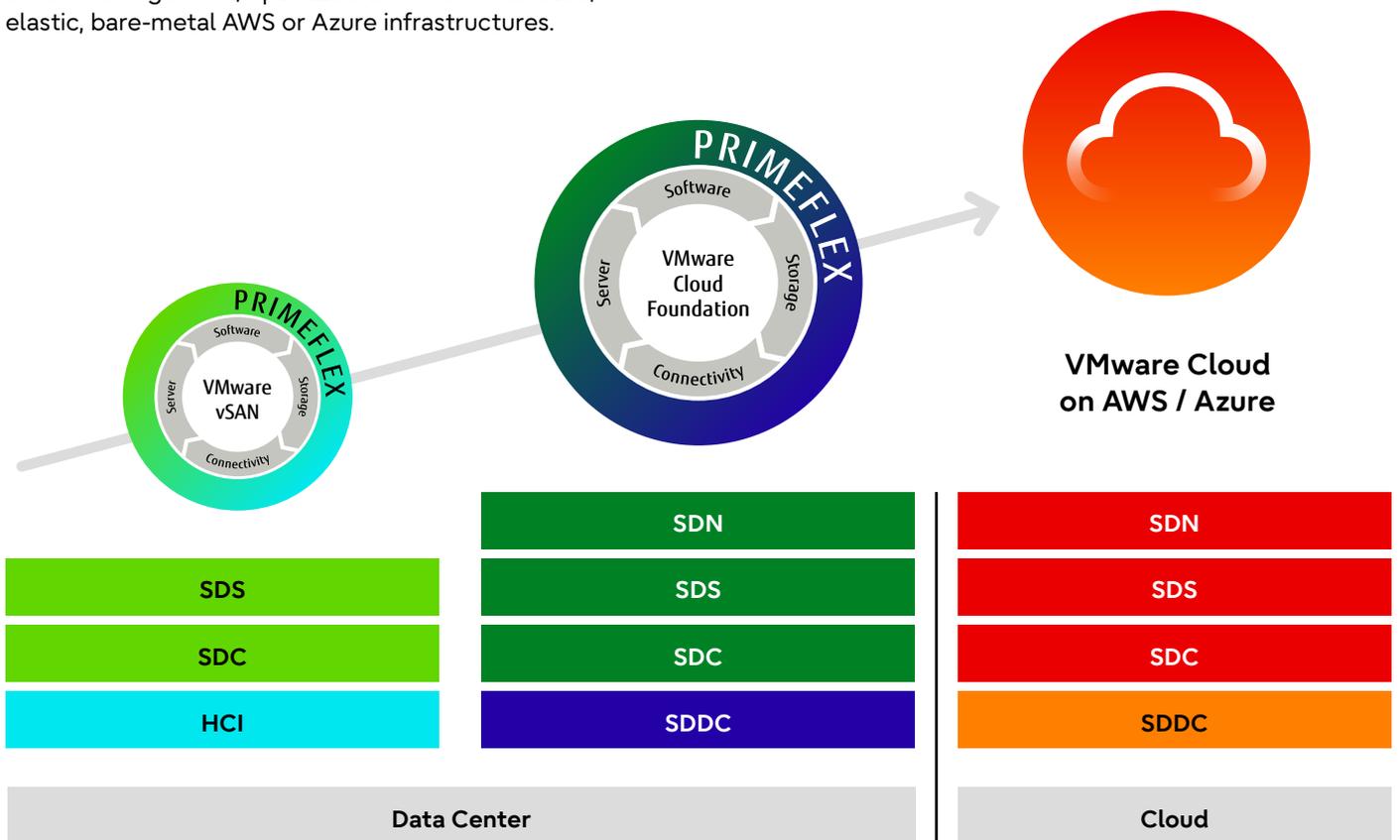
## Take advantage of full SDDC and cloud

In a recent survey by industry analyst firm FreeForm Dynamics, 66% of all customers agreed that hyper-converged infrastructures provide an ideal foundation for Hybrid IT use cases. And in fact, the PRIMEFLEX for VMware vSAN Appliance dramatically simplifies the path to hybrid IT by delivering a common platform for on-premises and off-premises deployments, enabling a consistent operational experience and the ability to quickly and easily move workloads at scale across clouds without re-architecting applications.

With the Fujitsu service offering for VMware Cloud on AWS or Microsoft Azure, Fujitsu helps organizations on VMware enterprise environments to unlock the benefits of Amazon Web Services (AWS) or Azure – without the need for large or costly transformation projects. Powered by VMware Cloud Foundation, both service offerings integrate VMware's computing, storage, and network virtualization products (VMware vSphere, VMware vSAN, and VMware NSX) along with VMware vCenter Server management, optimized to run on dedicated, elastic, bare-metal AWS or Azure infrastructures.

The key enabling feature to connect the VMware Cloud with your on-premises data center instance is VMware Hybrid Cloud Extension (HCX), an application mobility platform designed to simplify application migration, workload rebalancing, and business continuity across data centers and clouds.

In combination with VMware vRealize Cloud Management, you get consistent operations from an intelligent hybrid cloud management solution. It enables you to deploy and operate your apps, infrastructure, and platform services – from the data center to the cloud to the edge – so you can scale and grow.



## Flexible service options

All PRIMEFLEX solutions are supplemented by flexible services options throughout all lifecycle phases, which cover consulting, design, on-site deployment, integration of the new infrastructure into your existing environment and migration services, lifecycle management, and maintenance. And for those lacking the resources to operate their own data center infrastructure, Fujitsu can provide managed data center as well as hosting services. In addition, we offer a complete range of financing solutions, such as IT leasing, trade-in, buy back or even cloud-like financing models. The choice is yours – simply select the services you need.

### Fujitsu uSCALE pay-per-use

With uSCALE, the pay-per-use model is no longer a domain of the cloud. Fujitsu is now helping organizations to achieve pay-per-use agility across their entire IT landscape, including their on-premises data center. For more information on Fujitsu uSCALE, see <https://www.fujitsu.com/global/microsite/uscale/>

### Infrastructure solution support

Fujitsu is your single point of contact for all support matters related to PRIMEFLEX. The Fujitsu SolutionPacks for integrated systems provide you with end-to-end, 24/7 infrastructure support covering the complete hardware and software stack including third-party components. Both service options relieve you of headaches caused by unpredicted problems during operation, while ensuring operational efficiency. A unique solution identifier for all PRIMEFLEX systems allows our support teams to make solution-level decisions when working with these often-complex systems. For example, this enables us to route support calls to specialized, solution-aware support engineers, resulting in smoother support interactions with shorter resolution times. In addition to reactive services based on optimized processes, Fujitsu also offers optional proactive services. These comprise a regular system health check to detect critical system conditions at an early stage such that preventive maintenance measures can be initiated. Just as there are various service level options available, which differ in service scope, response and recovery time, you can also define the frequency of proactive services. Due to Fujitsu's international capabilities, we can deliver consistent support services around the globe.

## Summary

As businesses increasingly depend on agile, resilient, and cost-efficient hyper-converged infrastructures to form the foundation of their digital transformation, their ability to mitigate any associated complexity is the key to their future success. With the PRIMEFLEX for VMware vSAN Appliance, Fujitsu and VMware have come up with a new way of simplifying HCI lifecycle management to increase the operational experience of managing hyper-converged infrastructures.

## PRIMEFLEX for VMware vSAN Appliance – At a glance

### Best VMware virtualization platform

Accelerate your application performance with Fujitsu x86 servers holding leading positions in many VMmark benchmark categories.

### Simplify lifecycle management

Leverage tightly integrated VMware and Fujitsu lifecycle management software covering the complete software and hardware stack.

### First-class support

Get 24/7 infrastructure support with a single point of contact for the complete hardware and software stack to dramatically improve the incident resolution response time.

### VMware experience

Profit from 20+ years of strategic partnership with VMware, one-stop shopping for the entire VMware portfolio, and hundreds of certified VMware professionals across the globe.

### Fast time to production

Eliminate complex processes around system design, testing, and configuration with a certified expert-integrated system providing a turnkey deployment experience.

### Seamless path to SDDC and Hybrid Cloud

Fujitsu offers a migration path to VMware Cloud Foundation and additional services for customers, who want to use VMware Cloud on AWS.



White Paper

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