PeerPaper Report

FlexPod and Its Impact on Patient Outcomes:

HEALTHCARE USER REFLECTIONS ON FLEXIBLE, SCALABLE CONVERGED INFRASTRUCTURE

BASED ON REAL USER REVIEWS | 2020

IT Central Station
Unbiased reviews from the tech community

CIO
FROM IDG

ABSTRACT

Healthcare is about treating illness and helping people live healthy lives. The business of healthcare, however, is digital. Healthcare IT managers are expected to handle a diverse collection of highly-complex, data-intensive workloads. Efficient but high-performing data management is an essential element of this mix. According to real user reviews, the converged architecture of FlexPod offers a solution. To bring real FlexPod user experiences in the healthcare field to life, this paper draws on reviews from IT Central Station. It delves into users' points of view on FlexPod's performance as well as its ability to enable desired patient outcomes through flexibility and reliability. It explores the cost savings and ROI aspects of the solution along with operational and management factors in the healthcare context.

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INTRODUCTION

Healthcare is a digital business. While the delivery of healthcare services is personal and human-centered, the work of managing healthcare organizations is rooted in complex, data-intensive IT workloads. Healthcare IT managers are expected to create infrastructure that supports desired patient outcomes. This requires a transformational approach to IT—building systems that can deploy quickly and scale easily, systems that can efficiently handle vast amounts of patient data. At the same time, the infrastructure must simplify healthcare IT and break down departmental silos to facilitate innovation.

To get there, healthcare IT managers need a new kind of infrastructure solution that facilitates secure access to patient data across practitioners and facilities. According to real user reviews on IT Central Station, FlexPod,
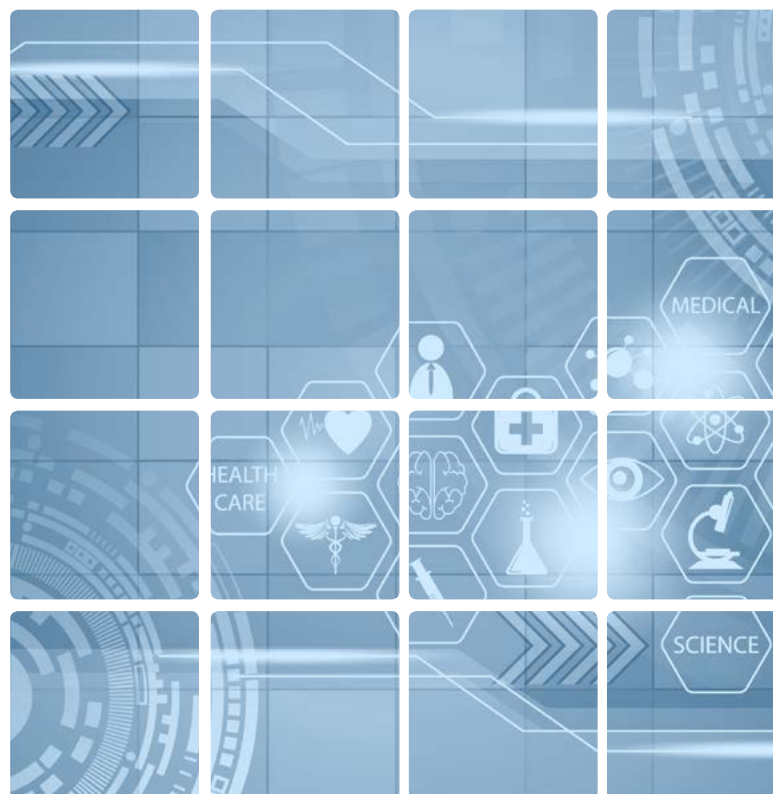
with its converged architecture model and validated designs, offers a solution. This paper seeks to bring the FlexPod experience to life in healthcare. Drawn from reviews by healthcare IT professionals on IT Central Station, it explores users' points of view on FlexPod's fit with healthcare IT requirements. In some cases, user comments come from other industries, but speak to the needs of a healthcare IT department. The paper looks at the cost savings and ROI of the solution along with operational and management factors in the healthcare context. Focus areas include:

1) Scale
2) Performance
3) Flexibility and Innovation
4) Costs/ROI Factors
5) High Availability, Stability
6) Quality of Support
7) Conclusions

FlexPod:
Solution and Partnership Overview

FlexPod is a Converged Infrastructure (CI) data center platform developed by Cisco and NetApp, working in partnership. Figure 1 illustrates a reference architecture. The platform comprises the compute, networking and storage elements required for a data center. NetApp and Cisco realized the FlexPod solution by doing extensive testing and validation of real applications on FlexPod compute (Cisco UCS servers), network (Cisco Nexus switches) and storage (NetApp storage arrays).
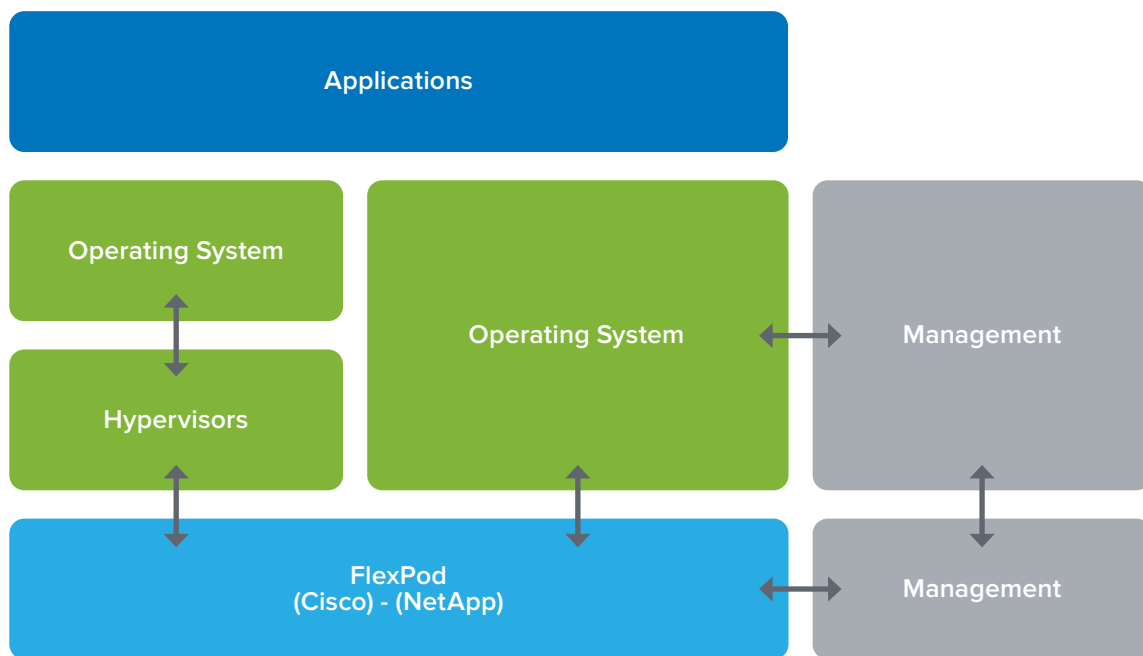
Figure 1 - FlexPod Integrated Solution

The platform has been tested and validated across enterprise data center workloads. These include multiple hypervisors and operating systems from Citrix, VMware, Red Hat and Microsoft. Once the testing concludes, the partners document end-to-end guidance in a Cisco Validated Design (CVD) or NetApp Validated Architecture (NVA).

CVDs and NVAs combine to form an "IT cookbook" or blueprint that reduces risk, increases security and delivers end-to-end availability. The CVDs and NVAs ensure that workloads can get up and running quickly without

concerns about infrastructure setup. These technical assets provide the deployment and sizing guidance so infrastructure deployment is efficient and simplified for the various workloads. In the healthcare category, FlexPod has added CVDs and NVAs for AI/ML, hybrid cloud and managed private cloud along with Epic and MEDITECH EHR.

> 66 **The CVDs and NVAs ensure that workloads can get up and running quickly without concerns about infrastructure setup.**

Healthcare IT Challenge: Using Technology to Improve Patient Outcomes

Healthcare IT resembles corporate IT, but with some notable differences. Corporate IT supports business operations and strategies that create value via earnings, share price, etc. In healthcare, IT has a similar profit-driven mission, but it is also expected to help improve patient outcomes.

Delivering high quality medical care means managing diverse patient data sets, software processes and medical image data. However, this data typically resides in heterogenous

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infrastructure, with resulting data silos. This situation translates into operational difficulties.

Different people, process and tools may be needed for each silo. Healthcare applications may also have unique requirements around performance, capacity, protocols and so forth.

Nevertheless, the objective of delivering good patient outcomes demands that patient data be quickly and easily accessible in virtually any location. That way, providers can collaborate and make better care decisions in real time. This is a big challenge for healthcare IT, one that converged infrastructure can address.

How Healthcare IT Departments are Benefiting from FlexPod Today

IT Central Station members in the healthcare field are finding that FlexPod simplifies their IT. It provides a scalable, flexible foundation for demanding healthcare workloads. For instance, a Systems Administrator at a healthcare company with over 1,000 employees uses FlexPod for storing medical imagery. He shared, "It certainly has increased the speed of operations." He also felt that FlexPod's reliability and user convenience were its most valuable features.

He attributed their success with FlexPod to the solution's validated designs for major enterprise apps. This user also praised FlexPod because, "The solution has made our staff more efficient because it is easier to manage. This has enabled them to spend time on tasks that drive our business forward. From a management perspective, the interface is much easier to use."

"We're using the Epic [Electronic Health Record (EHR)] environment on-demand workflow," explained a Senior Data Storage Administrator at a healthcare company with more than 5,000 employees. He added, "That has saved us quite literally thousands of man-hours by helping us refresh, back up, and create new instances. We wouldn't have been able to do so if it wasn't for all of that time-saving. Being able to have SUP, REL, and REL VAL DR instances, we would need to double our staff, at least, to be able to do that."

A Systems Engineer at a healthcare company with more than 5,000 employees uses FlexPod for his hospital's virtual desktop infrastructure (VDI). He values the solution, noting, "Essentially, it's reduced some of the overhead from our team of administrators, so they can focus on other areas." This result has come about because "the solution has simplified infrastructure from edge to core to cloud, which has given us some bandwidth to focus on some other core initiatives that we have."

> 66 **[It] has saved us quite literally thousands of man-hours.**

His IT organization is now able "to spend time on tasks that drive our business forward." He shared, "With the administration, it's given us a bit more time to do research and process development, even investing some time in automation." These are initiatives that will likely benefit patient outcomes.

The Principal Infrastructure Engineer uses FlexPod to run Virtual Machines (VMs) and all of their SQL databases. The databases run on VMs, so, as he put, "Everything is virtualized. Once the FlexPod is built, managers provision additional VMs. So, it's pretty simplified." Use of an all-flash storage array further improves application performance for his company.

A Healthcare Infrastructure Platform That Scales

Healthcare companies tend to grow, sometimes quite rapidly. This translates into a need for highly scalable infrastructure. The Systems Engineer quoted earlier praised FlexPod's scalability, saying, "We had everything that we needed to start it, stand it up, and get it working, then develop a proof of concept to see how it works. We could also scale it out to meet our business needs over time."

Users in other verticals similarly praised FlexPod's scalability. A Solution Architect compared FlexPod favorably to a comparable solution by stating, "We can expand any single component of the solution without having to expand the entire solution. So if we want to add disk or add blades, compute nodes, we don't have to add everything at once. Incremental expansion is less costly."

A TSE at a tech services company with over 5,000 employees noted, "It is definitely scalable. This is a great platform that you can build from. If you need to think about scalability in the future, this is the solution because you can stay small and build it out as you go, as you grow, and stay ahead of the market."

People are relying on FlexPod's scalability for a range of data-oriented processes. A Director of Integration Services at a tech consulting company with over 1,000 employees shared that FlexPod has worked as a service platform for data. In terms of scalability, he said, "FlexPods have been able to grow, build, and change how they [his customers] look at data analytics by setting up the system and enabling them to grow as they need. We can add them to additional NetApp domains allowing them to scale quite large and collect as much information on their data plane as they need."

Delivering Performance at Scale

A busy healthcare organization needs application and data performance at scale. Delays in data and image delivery can affect the productivity of treatment staff. In some cases, under-performing apps could even affect patient health. According to real users, FlexPod offers the level

> 66 **FlexPod is exactly what we're looking for as far as performance is concerned.**

of performance at scale that healthcare users want. "Its performance is great," said a Network Systems Specialist at a healthcare company with over 1,000 employees. He added, "We have had two FlexPods for five years now. We're currently purchasing a third one. We have never had any problems with them in that time. We are using it for hosting COREmanager and Unity Connection."

Other relevant IT Central Station reviews touching on performance include:

- "The benefit is the speed, it's the performance. That's what it comes down to is the performance of the solution." - Senior IT Analyst at an energy/utilities company

- "FlexPod is exactly what we're looking for as far as performance is concerned. For our use cases, this is more than ample. It has all the flexibility and the performance capabilities that we're looking for right now." - Infrastructure Engineer at a large financial services firm

Flexibility and Innovation

Innovative technologies spur improved patient outcomes and better healthcare in general. To this point, FlexPod is proving valuable to healthcare IT departments in terms of flexibility and innovation. As the Senior Data Storage Administrator noted, "It has also been very versatile. We have others that do not exactly conform with it and yet we still benefit from the collaborative support model. And we're not required to go to a certain thing if it doesn't work well or isn't the best case for our situation. That's been wonderful."

> ❝ **NetApp was a lot more flexible. It didn't require a forklift approach.**

This user shared his product selection process, saying, "We looked at Dell EMC VCE very seriously as a converged product. NetApp was a lot more flexible. It didn't require a forklift approach. We had a really great experience with NetApp specifically. We were already using Cisco, for both network as well as compute, and it just seemed like just a great play, to have that flexibility and to have the support model to help us. And it has proven to be great." He added, "In terms of FlexPod being innovative when it comes to compute, storage and networking, it stays current. We're not five versions back because we're having to be conformed with other solutions."

Costs/ROI Factors

Healthcare is a business, so cost is a major factor in the decision to invest in FlexPod. Healthcare IT users commented on how FlexPod helps them cut costs and run their IT departments more efficiently. A Network Systems Specialist at a healthcare company with over 1,000 employees stated, "It definitely streamlines things." For the Senior Data Storage Administrator, the savings arose from support. He explained, "We get a unified, collaborative support model. It conforms with the CVD and it helps us with maintaining supportability. All of our vendors give us the support that we need in a timely and effective manner."

A Systems Engineer at another healthcare company with more than 5,000 employees further related, "We have absolutely been able to save space. I am comparing it to my previous experience because we did not have a FlexPod solution, so we had everything working piecemeal. That's very hard to manage and, if anything would go wrong, I'd always feel like it's me to blame. Here, I feel like I have an insurance policy."

Other users remarked about FlexPod's potential to cut costs as well. "We invested in this solution because we were trying to lower our costs and improve the time to implement and upgrade," said an Advisory Engineer at a large transportation company. A Storage Administrator at a consultancy with over 1,000 employees simply said, "Our footprint is lower than it used to be," while a Sr. Network Solution Engineer at a tech services company with over 200 employees commented, "Our data center costs have been reduced by means of less power, cooling, and space."

IT Operations, High Availability and Stability

Unreliable or unavailable healthcare apps and data can be big problems in delivering high quality care. In critical care situations, an outage can be fatal. In less life-threatening circumstances, outages and slowdowns affect team productivity and morale. The Systems Engineer framed the issue by commenting, "It's basically become critical to our organization to have that system functioning a 100 percent of the time. If that system is not functional, then our doctors and nurses can't provide the care to the patients in an effective way. So, it's important that it is stable, works, and easy to understand." Figure 2 shows a simple example of how FlexPod enables high availability (HA) with failover across many different elements of its architecture.

This user found that FlexPod "has decreased unplanned downtime incidents in our organization. So far, it's been very stable. We haven't really had any issues with it." The Senior Data Storage Administrator said, "From a resilience perspective, we've set it and we've been able to forget it for the most part."

The Principal Infrastructure Engineer noted, "So far, the stability has been good. We haven't had downtime or issues since I built it." A Network Systems Specialist at a healthcare company with over 1,000 employees simply said, "It has never gone down."

Quality of Support

Support is critical in healthcare IT. With treatment staff and business stakeholders relying on the infrastructure, IT people are under pressure to solve problems quickly. According to real users, FlexPod earns high marks in this department. The Senior Data Storage Administrator said FlexPod offered "just fantastic tech support."

A Systems Engineer put the matter in context, saying, "We're a team of people working for a hospital and everybody has their own areas of expertise. If you're ever in a bind and there's a NetApp issue, there's practically nobody there with another specialization. They could call up FlexPod and handle the issue. We can hold the person selling us FlexPod accountable anytime we're in a bind."
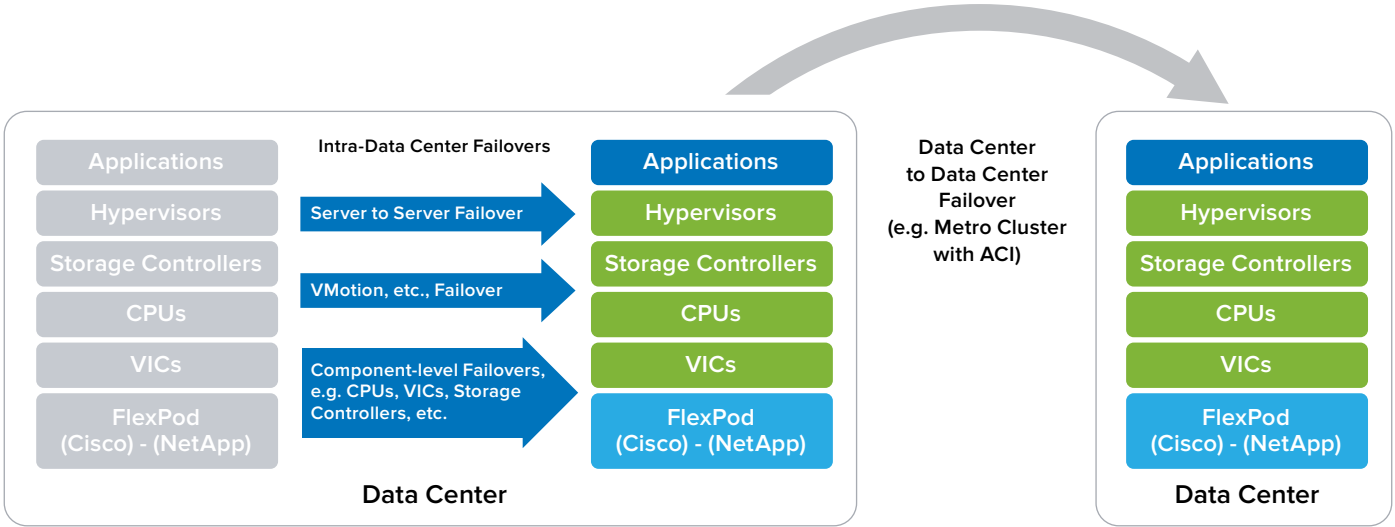

Figure 2 - Failover with FlexPod can accommodate virtually any failure scenario, including component-level failover (e.g. CPUs, VICs) as well as server-to-server or even data center to data center failovers

CONCLUSION

IT Central Station reviewers in the healthcare industry shared how FlexPod enables them to deliver the kind of app/data performance and availability they need to drive improved patient outcomes. They noted how well FlexPod scales and how easily it can accommodate diverse workloads—including industry-specific applications for EHR and so forth. The solution enables streamlined IT and cost savings. IT is a stable solution, with proven resiliency. Healthcare IT challenges are certainly not getting any simpler. FlexPod, with its innovation and versatility, offers a workable solution for many different healthcare use cases. The solution provides efficient, versatile infrastructure today while building a foundation for flexible, economical expansion for healthcare organizations in the future.

ABOUT IT CENTRAL STATION

User reviews, candid discussions, and more for enterprise technology professionals.

The Internet has completely changed the way we make buying decisions. We now use ratings and review sites to see what other real users think before we buy electronics, book a hotel, visit a doctor or choose a restaurant. However, in the world of enterprise technology, most of the information online and in your inbox comes from vendors when what you really want is objective information from other users. IT Central Station provides technology professionals with a community platform to share information about enterprise solutions.

IT Central Station is committed to offering user-contributed information that is valuable, objective and relevant. We validate all reviewers with a triple authentication process, and protect your privacy by providing an environment where you can post anonymously and freely express your views. As a result, the community becomes a valuable resource, ensuring you get access to the right information and connect to the right people, whenever you need it.

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ABOUT FLEXPOD

FlexPod is a portfolio of prevalidated, converged infrastructure solutions that combine the Cisco Unified Computing System integrated infrastructure, Cisco networking, and NetApp All Flash data management components. FlexPod simplifies and modernizes IT with continuous innovation, delivering unmatched application performance, broad support for any cloud strategy, and improved operational efficiency to accelerate data center transformation and business evolution. The portfolio is validated with leading hypervisors, operating systems, systems management tools, and cloud management platforms.

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NetApp is the data authority for hybrid cloud. We provide a full range of hybrid cloud data services that simplify management of applications and data across cloud and on-premises environments to accelerate digital transformation. Together with our partners, we empower global organizations to unleash the full potential of their data to expand customer touchpoints, foster greater innovation and optimize their operations. For more information, visit www.netapp.com. #DataDriven