

Accelerating Real-Time Connected Care with App and Cloud Transformation

VMware Market Insights Report,
Healthcare Edition

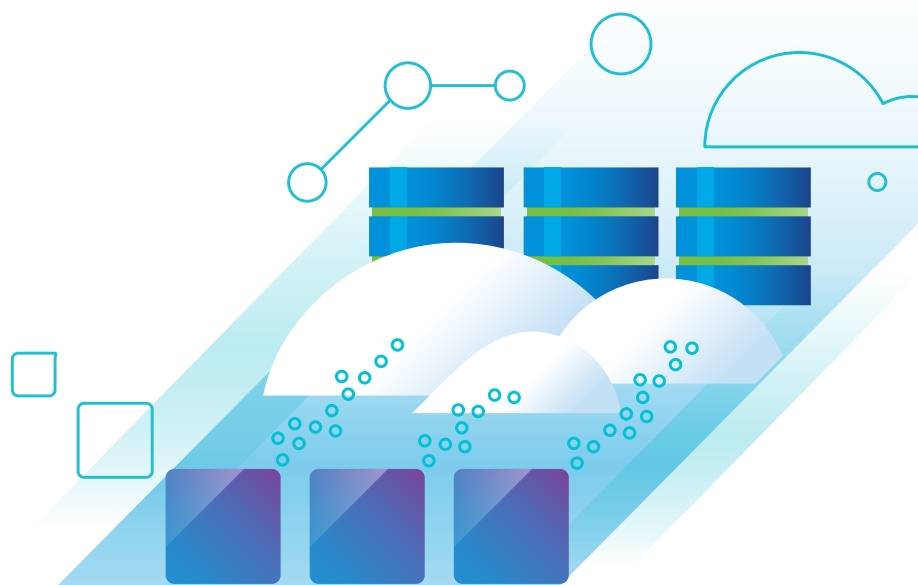
FOREWORD

Driving Digital-First Healthcare

COVID-19 reshaped healthcare delivery and redefined the patient experience. In just a few short months, organizations implemented decades' worth of digital technologies to meet the demands of the pandemic head-on—from enabling remote clinical collaboration and pop-up field hospitals to supporting a distributed administrative workforce and secure virtual services.

For a better understanding of the plans put into motion in 2020 and the future of cloud and apps in healthcare, VMware worked with Management Insight Technologies to field a global cloud and applications study between January and March 2021. We collected in-depth responses from nearly 100 healthcare C-suite and senior technology decision-makers involved in application and infrastructure platform decisions. Through this research, specific trends emerged, including the reasons why healthcare organizations are evolving IT infrastructure and operations for the cloud.

The digital transformation in healthcare has often been slowed or stalled by challenges like legacy EHR systems, regulatory and compliance barriers, as well as adjoining data and privacy concerns. This research brief features the survey results and explores how healthcare organizations are looking to modernize cloud and application infrastructure to create the digital-first future of healthcare.



MARKET FORCES

The Distributed, Multi-Cloud Era Arrives

COVID-19 made complete resistance to the cloud unsustainable. Distributed operations and demand for virtual care placed the need for agile and secure cloud infrastructure front and center. In the wake of the pandemic, 89 percent of healthcare leaders accelerated digital transformation initiatives, according to a global *MIT Technology Review Insights report* published in partnership with VMware in December 2020.¹

Cloud is the cornerstone of digital transformation, which may explain why healthcare organizations are expecting a 26 percent increase in cloud-deployed workloads over the next three years.²

When choosing a public cloud service provider, healthcare IT leaders place the highest priority on **a platform that maintains high availability and continuous uptime**, in addition to one that offers the lowest total cost of ownership, support for mission-critical workloads, and strenuous application and data security.³

Cloud-deployed healthcare workloads are **expected to increase**

26% by 2024.²

Top Healthcare Priorities When Choosing a Cloud Service Provider³



#1

High availability and continuous uptime



#2

Lowest total cost of ownership



#3

Support for mission-critical workloads



#4

Security of applications and data on platform

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The Future State of Cloud in Healthcare

Today's cloud infrastructure is increasingly distributed—in fact, **69 percent** of the global healthcare organizations surveyed use a combination of public clouds, on-premises private clouds, data center, and edge environments to deploy applications and data.²

69% of healthcare IT organizations deploy apps and data to multiple environments across public cloud, on-premises private cloud, and edge environments.²

Distributed multi-cloud emerging as the dominant cloud model

Healthcare CIOs are challenged with meeting the diverse needs of patients, clinical teams, and administrative staff, and a distributed, multi-cloud operating model holds several key advantages. Executives surveyed agreed that avoiding dependence on a single vendor and meeting the diverse needs and requests of end users are top drivers of their multi-cloud strategy.⁴

Healthcare providers are pursuing multi-cloud strategies to



Avoid dependence on a single vendor



Maximize existing cloud provider/vendor relationships



Meet the diverse needs of clinical and administrative teams

While multi-cloud operations lead to new opportunities, they often also lead to a decentralized system of infrastructure and resources that grows in siloes, thus creating challenges for managing and securing applications across clouds. Organizations with an existing multi-cloud strategy, defined as using two or more public clouds, cite increased or unplanned costs, securing identities and compliance across environments, and maintaining data security and privacy as top operational challenges.

HEALTHCARE PROVIDERS Top Concerns When Operating a Multi-Cloud Environment⁵



Clearly, a new model for cloud infrastructure is required. But first, we must address applications.

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The Transformations Powering App Modernization in Healthcare

The apps powering healthcare systems are evolving to power the healthcare delivery of tomorrow. This modernization is pervasive—healthcare technology decision-makers anticipate that **modern apps will grow 34 percent on average across the cloud and data center by 2024²**—surpassing other industries' average growth by 14 percent.

When asked about their organization's application initiatives, healthcare leaders cite three top goals for app modernization:

- Build and run applications without the constraints of the underlying environment
- Move applications between the public cloud and data center without risk
- Reduce the time it takes to deliver code to production

The future of healthcare applications aligns to a multi-cloud vision, and three transformations are powering app modernization in the healthcare industry:



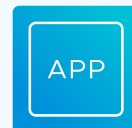
Infrastructure transformation

Data centers today are software-defined, hyperconverged and automated. Cloud migrations are accelerating, and IT organizations are looking at ways to further optimize operations, reduce costs and access elastic capacity with minimal friction.



DevOps transformation

Alongside data center transformation comes the need to support a shift in operating models. DevOps practices and continuous delivery ensure that higher-quality code is delivered to production faster and more frequently. These practices depend on a tremendous amount of automation, for which an ecosystem of container-centric technology, the so-called “cloud native” ecosystem, has emerged.



Application transformation

Atop the evolving data center infrastructure and DevSecOps platform are the applications themselves. To support more frequent changes, security best practices, and novel uses of data, applications need to follow modern patterns, such as microservices architectures and API-first design. But this is easier said than done. Many organizations are struggling with application modernization because of the complexity that comes with modernizing their large application portfolio.



THE VMWARE VISION

A Path Forward: Delivering Multi-Cloud Services for All Apps

Market and technological forces are reshaping how apps are developed and delivered. Not only do healthcare organizations need to build modern clinician and patient-centered apps at speed and scale, but they also must be able to run any app in any environment—cloud, data center and edge.

As organizations add more clouds, the need for platform consistency also increases. To support both traditional and cloud-native applications, IT organizations need an underlying infrastructure that is optimized for the unique needs of all apps across multi-cloud environments.

The VMware Vision for Modern Multi-Cloud Apps and Operations

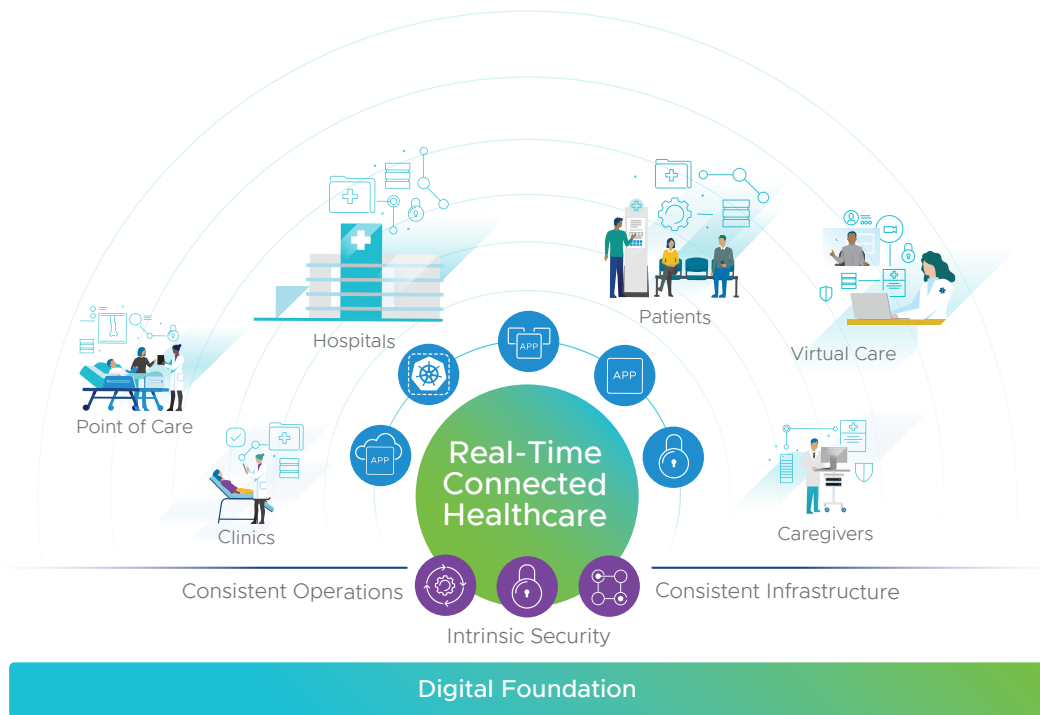
VMware has a unique vision for the cloud market and a unique solution built for today's distributed, multi-cloud world. The VMware Digital Foundation for Healthcare, built on VMware Cloud™, delivers multi-cloud services and a single platform for apps that spans the data center, edge and any cloud. VMware's globally consistent cloud operating model unifies environments, delivering the reliability, resiliency and governance healthcare organizations need across clouds while significantly reducing total cost of ownership.

With VMware, healthcare organizations can incrementally modernize traditional applications while accelerating the delivery of modern apps and services across hybrid, multi-cloud and edge environments.

CONCLUSION

Multi-Cloud Means Freedom

A multi-cloud environment will give healthcare organizations the freedom to deploy apps anywhere and the ability to move apps freely to the best environment. With infrastructure and operations solutions that can build, run, manage, connect and protect any app on any cloud, VMware enables healthcare organizations to operate a flexible, agile IT infrastructure that builds on existing investments to support new care models, regulatory requirements, and the future of healthcare delivery.



Together, VMware and healthcare organizations are transforming IT and application strategies to safely accelerate digital-first, patient-centered experiences and build innovation, agility and resiliency into the core of the organization.

Learn more at www.vmware.com/go/healthcare.

1 VMware & MIT Technology Review Insights. "MIT Executive Study Uncovers Top Healthcare Trends Shaping IT Resilience." December 2020.

2 VMware FY22 H1 Benchmark, Cloud and Applications, March 2021. "Considering all of your organization's applications, approximately what percentage is deployed on each type of Infrastructure platform today? What percentage mix do you expect in three years?" N=83 Global Healthcare Technology Decision Makers

3 VMware FY22 H1 Benchmark, Cloud and Applications, March 2021. "Which of these capabilities are most important in selecting a [multi-cloud] infrastructure platform for your organization?" N=36 Global Healthcare Technology Decision Makers

4 VMware FY22 H1 Benchmark, Cloud and Applications, March 2021. "What are the primary drivers for your multi-cloud strategy?" N=36 Global Healthcare Technology Decision Makers

5 VMware FY22 H1 Benchmark, Cloud and Applications, March 2021. "What are the biggest obstacles to achieving the benefits associated with a multi-cloud future state? What challenges have you encountered regarding utilization of multiple Public Clouds?" N=36 Global Healthcare Technology Decision Makers

