

Six Ways Application Requirements Drive Your Healthcare Organization's Infrastructure Decisions

**QUESTIONS TO ASK ABOUT
YOUR APPLICATION STRATEGY**

- How will these applications be managed and scaled?
- What value does or will this app have to your organization's goals?
- What are the unique requirements of each application?
- What is the best infrastructure to match the needs of the applications?

Introduction

Applications touch nearly every aspect of the modern healthcare organization. And the dependency on using applications to streamline processes and drive new revenue sources is only growing stronger. Thanks to new tools and platforms, more developers, agile development methods, and lots of code reuse, IDC predicts that from 2018 to 2023, 500 million new logical apps will be created, equal to the number built over the past 40 years.¹ Healthcare organizations must decide how to optimize, manage, and support this expanding portfolio of applications.

The range of new application architecture options is driving more complex infrastructure and workload placement decisions to enable those applications. As healthcare IT teams migrate applications from traditional on-premises data centers to the cloud, they need confidence in their ability to deliver quality application services wherever workloads are deployed.

But what does this transition look like? How do you guarantee the successful migration of an application before you invest?

This paper outlines the six pathways healthcare IT teams should consider as part of their application strategy, and offers insight into the situation in which each pathway is recommended.

¹ IDC. "IDC FutureScape, Doc #US44403818." October 2018.

What is hybrid cloud?

The industry defines hybrid cloud as the combination of private cloud, public cloud, and edge environments unified with consistent infrastructure and consistent operations. All layers of the stack—compute, storage, networking—are defined in software, with integrated management, governance, and security.

Consider six possible pathways when making decisions about the evolution of your infrastructure, including your cloud strategy. You may require one or several of these paths depending on your unique investments and challenges. No matter your plan or application portfolio, your cloud strategy will be bespoke to the needs of your organization.

1. Maintain in the Data Center

Situation: Your team is pursuing a hybrid cloud approach, but there's an application in your data center that can't be moved due to security concerns or performance requirements.

Healthcare IT teams often choose to maintain applications in the data center to support data protection and patient privacy regulations, deliver on security or performance requirements, or in the case of highly complex apps, provide access to unique services. But even highly virtualized data centers have opportunities for enhanced performance, capacity, and efficiency in order to support the needs of the app today and in the future. While maintaining an app in the data center, consider hyperconverged infrastructure (HCI) as the method for achieving this. HCI enables your team to leverage consistent infrastructure and consistent operations in a hybrid cloud environment without moving critical on-premises systems.

2. Replatform to the Cloud

Situation: Your application is already in the cloud or a highly virtualized environment and you need to move it to a different cloud platform.

Every organization has a goal or target to move a certain percentage of applications to the cloud. Replatforming is the process of keeping the application unchanged, while moving it from a highly virtualized environment to a cloud. Consider hybrid cloud solutions that support cloud migration for bi-directional application migration with consistent policies and unified visibility and monitoring. This path is ideal for unalterable apps that require moving without expensive refactoring.

3. Deploy as Hybrid

Situation: An application requires resources from multiple locations within a private or public cloud environment and it is unclear where to deploy it.

Hybrid apps have some portion continuing to run in the data center, while other parts run in the cloud. In other uses, applications may remain in their current environment while consuming services from a variety of clouds. Consider this design when you need a unified management platform that provisions applications to a number of cloud endpoints, and you want a single operational view that helps optimize network performance.

4. Refactor

Situation: An app is outdated or needs rewriting before it can be migrated to newer architectures.

Refactoring an app means changing or rewriting an existing application code so it is optimized to fit modern cloud architecture, container environments, microservices, and cloud services. The cost of this method depends primarily on the development time required to rewrite code for the app, and any necessary re-skilling. Choose this path when no other option exists to migrate, or when it is cost-justified to update the application to take advantage of modern hyperscale cloud services.

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5. Develop Cloud-Native Apps

Situation: You require a new app to sit natively on your cloud environment.

Cloud-native applications are designed from inception to leverage unique cloud services and commodity infrastructure in a pay-per-use environment. Those building cloud-native applications typically use microservice architectures and utilize Kubernetes for container orchestration to enable scale and availability of those microservices. Consider this as the primary path for all new applications deployed in a highly automated data center or in the cloud.

6. Choose SaaS

Situation: A commercially available SaaS application exists that meets your needs.

Software-as-a-service (SaaS) applications are a viable option to replace many internally deployed and managed applications. SaaS reduces the burden of installing and maintaining infrastructure, middleware, and the application itself. The most frequent limitation of this path is a requirement for where sensitive data collected or used by the app is stored. Target apps to be replaced by SaaS are applications that don't deliver differentiation to your stakeholders and don't need a high degree of customization.

Conclusion

Your applications play a huge role in developing your cloud strategy and offer many challenges to overcome when migrating apps in future cloud environments. You will need a plan to know how your applications will need to be migrated before committing to expensive platform and refactoring costs. Industry studies show customers are spending \$1M and countless resource hours to move 1,000 VMs, simply to have the exact app rewritten for a new cloud environment.^{2,3,4} Regardless of the resulting platform decisions, your organization will be well served to take an approach that ensures consistent infrastructure and consistent operations no matter the platform. Wherever your path takes you, when you're building a cloud strategy, VMware can help.

2 Forrester. "The Total Economic Impact" of VMware Cloud on AWS." August 2019.

3 Taneja Group. "When Comparing Cloud Alternatives, For the Best TCO Leverage VMware Cloud Foundation." April 2019.

4 IDC. "The Business Value of Hybrid Cloud with VMware." August 2019.

