



CODES IN CONTAINERS

The new-age app deployment model is revolutionizing healthcare tech as we know it

The healthcare industry is experiencing radical technology changes like never before that have the potential to directly improve patient outcomes while decreasing infrastructure costs.

Healthcare applications incorporate an intricate combination of advanced technology, combining various components and dependencies. But, their rapid growth and complexity have driven the demands for modernization to enable more flexibility, agility, and scalability.

Application modernization is an inevitable aspect of doing business - continually upgrading and optimizing applications and their underlying infrastructure and services. It is the key to reaping the absolute long-term value and benefits of running applications and IT infrastructure in the cloud.

Specifically, when we think of healthcare applications, the unfortunate (yet increasingly common) 'Big Data' challenge exists. In fact, global Big Data in healthcare was predicted to reach \$34.27 billion value by 2022, a CAGR of just over 22%!

While the proliferation and speed of incoming data hold unprecedented potential for

healthcare organizations, this trend is driving organizations to adopt technology modernization to support the secure management and storage of their data.

This is where containerization can help.

Containerization Defined

Put simply, containerization is a virtualization technique where application software code runs in isolated spaces called containers. Each container can be thought of as a portable computing environment, which can run on any infrastructure. Traditionally, errors would surface when software code was shifted to a new environment. But since a container encapsulates everything an application requires to run (binaries, config files, libraries, dependencies, etc.), its portable nature eliminates these errors.

Containers operate outside the host operating system (OS), which means the host OS does not require valuable resources to run the applications. This makes containerization a highly efficient virtualization method, enabling developers to quickly and securely build and deploy applications.



Written By

Vaidant Singh
Chief Marketing Officer,
SourceFuse

Vaidant has a decade of marketing experience and has been the CMO at SourceFuse since 2020. He has helped Healthcare Life Science enterprises identify solutions to enhance their business operations and strengthen security with local and global compliance.

Why Use Containers for Healthcare?

One thing that sets the healthcare industry apart is its stringent regulatory policies relating to data retention. Protected health information (PHI) needs to remain accessible for up to 20 years in the US, for example, and needs to remain just that - protected!

Healthcare organizations have already been moving from physical to digital environments at a rapid pace, with some now more than 95% going virtual. However,

where a hybrid combination of on-premise and cloud platforms exists, i.e., a mix of private and public cloud, there could be a compromise between retention compliance over retaining infrastructure dependencies.

This comes into sharp focus as more and more remote healthcare and telehealth applications emerge into the market - the ability to integrate new software and plug-ins at speed is critical.

Therefore, the healthcare industry's ability to leverage container technology provides the ultimate freedom when developing new cloud-native applications. Developers can choose from a wide choice of app stacks, environments, or tools, and by virtue of the portability, applications can be installed within minutes - containerization at its best!

Benefits of Containerization in Healthcare

Now that we have understood what containerization is, let's look at some of the significant benefits it offers for application modernization in the cloud:



Security

Containerized applications can be configured to have highly restricted amounts of access or no access with the Host OS or other containers. This helps provide a higher degree of security and limits the effects in case of a malicious attack.



Reduced Cost

Sometimes referred to as 'lightweight,' containers sit outside the host OS, which not only decreases server and licensing costs, as they consume minimum resources, but they also improve the speed of deployment and increase efficiencies.



Portability

Since the container is not dependent on the host OS, the application can be effortlessly and rapidly moved to any infrastructure - between clouds or on-premise locations.



Scalability and Agility

Containerization promotes flexibility. Applications can be scaled automatically to meet changes in demand, while the use of agile DevOps tools can be maximized for rapid application development.



Ease of Management

Container orchestration enables automation of installation, upgrades, deploying new application features or versions, debugging, and management of containerized workloads. This can be achieved via open-source solutions such as Kubernetes.

Common Uses of Containerization

Modern healthcare applications can benefit vastly from the rapid evolution of containers, which can efficiently run the latest microservices in production environments. In fact, microservices and containerization share similar concepts, and they both break down applications into a subset of services that are portable and easier to manage. Many such rapid application development frameworks like SourceFuse ARC (formerly known as SourceLoop) and oeCloud are accelerating the utilization of containers and microservices to develop modern cloud-native enterprise applications for the healthcare industry.

Although the concept of containers has been around for a couple of decades, it is only since the increase in the availability of open-source licenses that the use of containerization for new application builds has actually accelerated.

When it comes to the healthcare industry, we're not talking about 'nice to have' applications, but applications that are essential to the provision of continuous care. Governed by the strictest compliance, new or updated healthcare regulatory policies are ever-present. So, telehealth applications need to be able to quickly and seamlessly respond and adapt.

Therefore, increasing investments in a containerized cloud-native infrastructure will provide the necessary agility and scalability while maximizing security and supporting application modernization to accomplish long-term business goals.

