It has never been easier to explore how containers can accelerate AI development and DX

Glenn Fitzgerald, Chief Data Officer, Platform Business, Europe at Fujitsu

Containers are at the heart of cloud-native platforms and AI development, which makes them integral to digital transformation, says Glenn Fitzgerald. The launch of a new, free Kubernetes "test drive" platform by Fujitsu ensures enterprises can review their current and future containerization landscape.

Some say that software containers go right back to the 1960s, but they actually emerged in 2013 with the launch of Dockers, followed a year later by Kubernetes. Within a month of its first test release, Docker was explored by 10,000 developers. By 2014, the software had been downloaded 2.75 million times, and this figure hit 100 million less than a year later.

Since then, it's been continuous growth, too. According to market research published In February 2023 by Global Market Estimates, the global software container market is expected to generate $3.2 billion in 2023 and is projected to grow at a CAGR of 11.2% from 2023 to 2028.

Containers underpin cloud-native development

There's a lot to like about containers. From the business's perspective, they result in lower costs, higher productivity, faster development, enhanced security, and better continuity. That's quite a list of benefits - let's explore why.

Compared with virtual machines (VMs), containers have a significantly smaller resource footprint, are faster to spin up and down, and require less overhead to manage. Whereas VMs abstract software from the underlying hardware and allow multiple instances of that software on one device, containers decouple the underlying operating environment and hardware from services. You can have as many containerized "microservices" on top as you want - and change them on the fly. And that comes with no burden of additional licensing costs for Oracle, SQL Server, or other applications, as there would be with VMs.

But there's more to the popularity of containers than that. They are fully aligned with new trends in software development. They dovetail perfectly with DevOps and Agile development, which require developers to work in a way divorced from the platform. Containers mean that a developer's working environment is uniform wherever they are. For example, you no longer need to worry about ensuring consistency through hardware mapping.

They are perfect for remote working, which now predominates in development environments. And they make business continuity and resilience easier to deliver. They help ensure that applications are isolated from each other, which can help reduce the risk of application conflicts and improve overall system stability.

Containers can also help ensure that applications are portable and run on any infrastructure. This can help reduce the risk of vendor lock-in and make it easier to move applications between different environments.

Looked at like this, containers are the fundamental underpinning of cloud-native development.

An opensource hegemony

Given this emphasis on portability and cross-platform interoperability, it makes sense that containers have developed as open-source software since the early 2000s. Google began using containers at scale with Cgroups in 2004 and merged this into LXC in 2008 – Linux containers based on Cgroups.

While Docker is Linux-based, Kubernetes is not. It is, however, also an open-source container orchestration platform that can run on any operating system that supports containers.

Things took off in 2017. In April of that year, Microsoft enabled Linux containers on Windows Server. And companies such as Pivotal, Rancher (SUSE), AWS and even Docker started to support Kubernetes, cementing its position as the default container orchestration technology.

Fujitsu is wholly on-board with this open-source hegemony. It is a long-time member of the Linux Foundation and founding member of the Open Container Initiative (OCI) and the Cloud Native Computing Foundation (CNCF). For example, we offer RedHat and SUSE Rancher options integrated into our hybrid cloud and SAP offerings. Availability is via our consumption-based uSCALE model, where, in this case, customers pay by the container, making affordability high and CAPEX commitments low.

Where next for containers?

The rollout of containers across the IT landscape continues to gather pace. An emerging area of development is their use in data protection solutions. All the major vendors now have containerized offerings to address specific aspects of protection, such as NetApp's Astra and Veritas' NetBackup. Similarly, Veeam is integrating the K10 platform, acquired when it bought Kasten, into its cloud data management platform.

In other words, there are plenty of options here for those seeking containerized solutions to data protection. We don't see a single solution that addresses all needs. Which, if any, is right in which business circumstance is a better way of framing things. And then, how do you orchestrate all the working parts?

Containers and AI

It's the same for AI too. Currently, there is particular interest in using containers for AI development. They can help ensure that AI models are isolated from each other, which can help reduce model conflicts and improve stability.

That's why the Fujitsu Kubernetes Test Drive platform is based on our existing AI Test Drive facility. It is designed to demonstrate that container technology is relatively simple to manage, implement, and operate. Tools provided by the container vendors reinforce that, and the Test Drive includes moderation and consultancy by Fujitsu's experts to help get customers started and deal with any questions along the way.

The fact that any customer opting to try out the Kubernetes Test Drive is likely to have a unique environment is entirely the point. Containers are relatively neutral to all of them, so customers can do as they please.

Embrace the possibilities

Despite the popularity of containers running microservices, many organizations — perhaps up to 30% worldwide — have yet to adopt the technology.

These organizations should remain open to exploring various options to drive innovation. Fujitsu's Test Drive platform offers an excellent opportunity to evaluate container-based solutions and make informed decisions. With their ability to accelerate AI development, foster digital transformation and unparalleled flexibility, containers hold tremendous potential to unlock new possibilities and propel your journey towards success. It makes sense to keep all your options open and take unbiased advice on which options to investigate. The test drive is an excellent opportunity to do just that.

For further information visit the Fujitsu Kubernetes Test Drive.

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Glenn joined ICL in 1979 as an apprentice and has worked for the company, now Fujitsu, throughout a varied career. He has gained expertise in a wide range of IT fields, including manufacturing and production test, hardware, software, and firmware design, infrastructure implementation, project management, and business and ITC architecture.

In his role, Glenn is responsible for the development of the technical aspects of the Data-Driven Transformation Strategy within the Fujitsu Product Business, ensuring that the technologies utilized within that strategy have the necessary capacities to resolve customer business issues.

He is also developing the solution consulting capability within Product Business to assure the delivery of industry-leading solutions that support clients' varied businesses with the "art of the possible" at any point in time; a balance of technical feasibility, cost, timescales, risk, and flexibility.