The 2022 Cloud-Native Applications Guide

One of the hottest topics in the world of software development right now is cloud-native. This trend has been brought about by the popularization of cloud computing and its adoption by organizations around the world. Some developers believe that cloud-native is the future (and we agree), while others think that it is just another fad. According to the State of Cloud-Native Development report, 6.5 million cloud-native developers, or 44% backend developers, exist around the globe. This implies significant global validation of cloud-native services.

With so much discussion about cloud-native and cloud-native applications, it is essential to know the basics to understand this design paradigm.

What Are Cloud-Native And Cloud-Native Applications?

Cloud-native is the term used to refer to the making and administration of applications that use the cloud delivery model for its distributed computing. A cloud provides scale, flexibility, and resilience, and cloud-native applications take advantage of these features.

Cloud-native technologies are operated by organizations to create and run applications in private, public, and hybrid clouds. The features that illustrate this approach are microservices, service meshes, APIs (application programming interfaces), immutable infrastructure, robust automation, and containers that allow software engineers to put in minimal effort in making high-impact changes.

Agile product development is the modern landscape in the business system. Users expect steady novelty and responsiveness from organizations. As a result of this, organizations have to be flexible as well as more tactical with cloud-native.

Cloud-native technologies such as Docker, Kubernetes, APIs, Kafka, and serverless functions orchestrate modern application development. These tools and services help developers in building applications more rapidly and reduce operational tasks. Developers get an all-inclusive and standard-based platform with cloud-native services to build and manage cloud-native applications.

Benefits Of Cloud-Native Applications

- **Resilience** – Cloud-native applications have microservices architecture and Kubernetes that make them fault-tolerant. The applications built with cloud-native have in-built self-healing and resilience. This is beneficial for the organization because it improves the user experience.
- **Speed** – With cloud-native applications, software delivery is made much faster. Automation across the software delivery process is made possible with the use of modern DevOps. Limited survey-based software delivery, as well as Local development, can never compare with the automation and collaboration of these cloud-native applications.
- **Cost-effectiveness** – Cloud-native applications offer flexibility in cost through containers and cloud standards. Applications are managed and secured by containers. These containers are independent of the platform. The open-source model and standardization of infrastructure and tools for cloud-native apps significantly drop the cost.

How Do You Build Cloud-Native Applications?

The process of building a cloud-native app involves 4 key requirements – DevOps Automation, Service-based architecture, API- based communication, and containers and orchestration.

DevOps Automation requires collaboration between the development and operations teams of an organization. This unification also allows the whole process to be automated. The two sectors that had been previously separated come together for their shared purpose of creating and deploying cloud-native software. The cloud-native development model has a necessity for regular, iterative updates to an application. This depends on the clear communication between the developers who write the code and the operators who implement the code.

With DevOps, software creation, testing, and release happen quickly, constantly, and harmoniously. Delays and miscommunications are avoided by the mature DevOps team, which makes shipping software easier and simpler. DevOps' collaborative culture and automation allow the development, deployment, securing, and management of software smoother.

Agile product development methods are a fast and frequent way of making well-planned iterations. Agile requires highly collaborative and cross-functional teams to succeed. The benefits of adopting Agile in your organization while developing cloud-native apps are better transparency, predictability, and flexibility.

It also focuses on business values, users, and quality, making it a robust methodology that drives productivity. The next important step in creating a cloud-native app is the creation of a service-based architecture. The most common way of transitioning to a service-based architecture is by adopting a microservice architecture. A microservice architecture breaks down the application into compact parts independent of one another.

The third requirement is an API-driven interface. An API is a well-defined interface where communication between services takes place. An API-first design methodology needs to be embraced to build a successful cloud-native application. This is because an API-first design prepares the organization for the complex microservice architecture.

Microservice architectures are small, independent services that accelerate an organization's development processes. APIs help many microservices to work together in one application. The design and description of APIs accelerate the development and ongoing consumption of services that are created to solve a business use case.

Next in line for the development of cloud-native applications

is containers. Containers are holders that allow you to deploy applications in a cloud without worrying about the nuances of the cloud provider's virtual server or cloud instances. They

improve handoffs between development and operations teams hence facilitating DevOps. Containers also add another layer of isolation between the application and the platform where it is hosted. This also provides extra security benefits to the application.

Focaloid Technologies And Cloud-Native Applications

Focaloid Technologies can help you in embracing cloud-native applications for your organization. Focaloid has been working consistently since 2013 to provide cutting-edge digital solutions that help our clients to adapt and thrive in the digital economy. We provide DevOps consulting, implementation, and management services that will help your software teams in managing workloads efficiently with ease of operation and faster release cycles. Our deep expertise in Cloud and DevOps will help in accelerating your cloud journey.

Conclusion

Digital transformation is indispensable for businesses in today's world. Cloud-native applications can help your businesses succeed in the fast-paced digital world through their speed, flexibility, and scale. If you are ready to embrace a cloud-native application model in your business, you have to add cloud-related services, technologies, and processes into the complete project lifecycle from its inception to deployment.