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Mobility- Kubernetes

Introduction:

The need for application mobility is a major requirement because of the continuous change in customer demand, regulatory requirements, and operational needs like moving from one cloud vendor to another. Kubernetes is an open-source framework for managing containerized workloads and services that enables declarative setup as well as automation. It boasts a diverse and rapidly expanding ecology. Service, support, and tools for Kubernetes are widely accessible. Kubernetes are easily portable and extensible. Kubernetes also has the feature of API which makes the deployment of applications easy. Containerization is a package of software code and dependency libraries along with operating system. All these are encapsulated into lightweight executable file that is more consistent and stand alone. Containerization help in developing and deploying software more securely and faster.

Edge Technology:

[1]The author discusses the deployment on kubernetes engine. The kubernetes engine run on the cluster of containers. So it provides a container-centric management. There are API that help in authorizing the users to access the application. The author has also mentioned benefits of kubernetes. As the kubernetes engine is virtual it can be accessed any where and any amount of resources can be allotted to the user from the resource pool. The application are abstracted into a container and can be deployed on machine irrespective of the operating system. The article highlights the some kubernetes feature that solves problem of IT industry. Service discovery and load balancing help in managing communication between multiple micoservices that are on the kubernetes. Horizontal scaling is useful when the load on the application is increased abruptly, in this it creates multiple replicas. Self healing is one of the property when service goes down because of the fatal error it creates replicas. The roll back to older version and roll out unstable new version of the application can be done easily on kubernetes. Configuration made can be stored and managed across different environments, it can also keep a data secret hiding preventing from accidental exposure. The storage in kubernetes is different it first it configures and the application can claim whenever needed. Kubernetes can also be integrated with other solutions. The Kubernetes can not be mistaken for continuous integration, delivery and deployment. They also don't give services like message, data processing, databases, cache. The can be separate severs or can be integrated with other servers. They also don't collect logging, monitoring the can be integrated other services.

Challenges in Kubernetes:

[2]The author of the second source support the use of kubernetes. He also mentioned the significance of the kubernetes. According to the second author there are four major reason why kubernetes is useful. Management is better because of the modularity of application. In this approach the application is divided and each container will have a part of application. This is achieved in kubernetes using pods. Deployment at scale. Scalability means software can scale out or in across pods any time. Deployment can be paused and restored any time. They also help in version control.

Kubernetes is breakthrough for devops because it allows team to deploy easily otherwise they have to write scripts. Kubernetes enables us to maximize the usefulness of containers and create cloud-native apps that can operate anywhere, regardless of cloud-specific needs. This is undoubtedly the efficient paradigm for application development and operations that we have been looking for. Another source point out some challenges that can be faced through Kubernetes. [3]According to the source Kubernetes has emerged as the preferred method for application deployment. By deploying your configuration to a Kubernetes cluster, you can rapidly deploy your whole micro-service infrastructure and service mesh in minutes. But what if you need to relocate or switch to a different cloud vendor due to changing business requirements? How can you relocate all of your data to a new location without disrupting customer service? The major topic of consideration is data. The data storage that is used for container are not appropriate for the kubernetes engine. The kubernetes based application are mobile only when the data is not involved in the application architecture. Storing and transforming large amount of data easily for analysis and getting insights about the business is essential. Data agility is significant in making the stateful application mobile, because there no API or common platform where data can be transferred from cloud to another easily just like a kubernetes based application. To make a stateful application mobile with its state is a task. Making use of storage given on kubernetes this make the application mobile.

Conclusion:

I agree that Kubernetes very essential for complex application. It helps in distributing application on various container and each team will focus on their container. The kubernetes is also better solution for single point failure. It is automated to handle the software failure and workloads. It also integrates with the cloud native application. But they are not good option for simple software. As third author has mentioned that to store data you have learn the kubernetes storage and portability is hampered if integrated with normal databases so there are scenario where kubernetes can be complex and reduce productivity. Since legacy software are build in normal pattern moving to Kubernetes can be taxing. The cost is also major issue in Kubernetes. Kubernetes engine can be widely use only when most of the drawbacks are solved. There is a big future for Kubernetes Engine.

References:

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