Capgemini

TECHNO VISION Change Making 2021
BE LIKE WATER

Crouching **Tiger**, Hidden **Container**

All the complex infrastructure an application needs to run on, nothing to see but containers

Infrastructure can be intimidating, showing its claws through different versions of operating systems, devices, connections, configurations, files, middleware and other foundational elements needed to run an application. What worked yesterday may be extinct tomorrow, as even the tiniest change to infrastructure can bring the mightiest application down. Enter containers; they simply package an application with the infrastructure, middleware and platform service components needed into a sealed-off, air-tight, standardized box. Any cloud, server or PC will then be able to run these containers, making them the silent masters of infrastructure. Crouching Tiger, Hidden Container – don't underestimate what's in the background.

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Expert in Residence

WHAT

- Container Management Systems can control thousands of containers simultaneously on both private and public cloud, enabling the automated operation, management and orchestration of an extensive environment from one single control point.
- Containers provide the ability to run small to very large domains entirely autonomously, encompassing not only the operating system, but also middleware and applications.
- Operating systems and components (such as middleware and platform services) are maintained in a holistic and automated way, by managing the version and configuration information.
- Containers are paving the way to an invisible infostructure, to be able to orchestrate and support a microservices approach.

USE

- Ford Motor Company provided mobility solutions at accessible prices to its customers, dealerships and parts distributors. Using a container-based application platform to modernize legacy applications and optimize hardware use, the company has significantly reduced hardware costs, enhanced security and improved productivity.
- Pearson, a global education company, chose Docker container technology and Kubernetes orchestration as the main technology of the Pearson education platform.
- PayPal has migrated mission-critical workloads to Google Cloud providing personalized financial services such as mobile payments, credit, remittances, working capital and card processing for 300-million accounts in 10 different currencies, across 200 markets.
- Ericsson uses cloud native and several open source technologies including Kubernetes in their portfolio to address the needs of 5G networks.
- The Cloud Container Engine of the German Telekom's public cloud (the Open Telekom Cloud) is based on Docker and Kubernetes.
- With Kubernetes, PayIt's infrastructure costs are less than one percent of revenue.
- The U.S. Department of Defense is enabling DevSecOps on F-16s and battleships using Kubernetes

IMPACT

- Large and complex environments are simplified, supercharged and accelerated through the creation of modular components to the landscape.
- 'Payload' moves seamlessly from on-site to a public cloud provider – like AWS, Azure or Google – and back, without impacting end users.
- Containers pave the way to advanced automation and a truly pervasive microservices architecture approach.

TECH

- Industry standards: CoreOS Rkt, Docker software containers, 12 factor applications
- Container technologies: Helm, Kong, Istio, Knative, Zipkin
- Orchestration Platforms: Kubernetes, OpenShift, VMware Tanzu, Amazon Elastic Kubernetes Service (EKS), Azure Kubernetes Service (AKS), Google Kubernetes Engine (GKE), Amazon Elastic Container Service (Amazon ECS), Capgemini Cloud Platform (CCP), Puppet, Chef, Red Hat Ansible, CloudForms, Mesosphere DC/OS

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