

컨테이너라이제이션 (Containerization) 어디까지 왔나?

컨테이너라이제이션

집중 분석

왜 컨테이너라이제이션인가?
- 아키텍처 관점

임도영

Cloud Native Architect

Architecture Guild, Cloud Solutioning Center

IBM Global Services

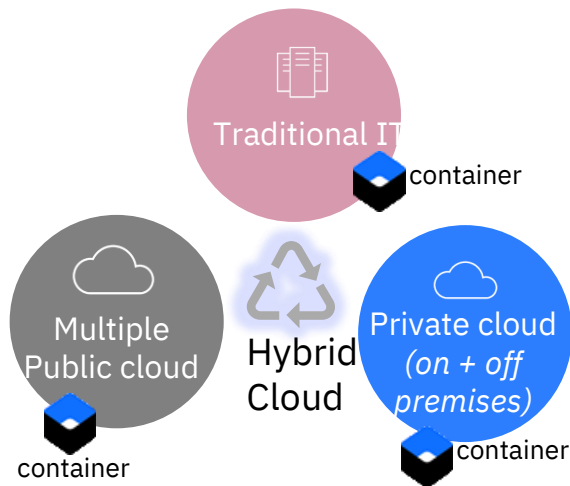


Agenda

- 왜 컨테이너인가?
- Developing open service management
- 컨테이너 관련 기술 동향
- 아키텍처 고려사항

왜 컨테이너인가?

IT 의 Hybrid cloud 환경



→ Run anywhere

Microservice Architecture 방법론

주요 특징

- Small in size
- Messaging enabled
- Bounded by contexts
- Autonomously developed
- Independently deployable
- Decentralized
- Built and released with automated processes

→ Speed and Safety at Scale

Container 와 Enterprise container orchestration의 기술

주요 특징 (Kubernetes)

- **Automating** deployment, scaling, and management of containerized applications
- **Service discovery** and load balancing
- **Storage orchestration**
- Automated rollout & rollbacks
- Batch execution
- Service topology
- Self-healing
- IPv4/IPv6 dual-stack
- **Horizontal scaling**

Developing open service management for virtual server and container platform on container platform for enterprise

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Software Defined Data Center with Red Hat Cloud and Open Source Operations Tools

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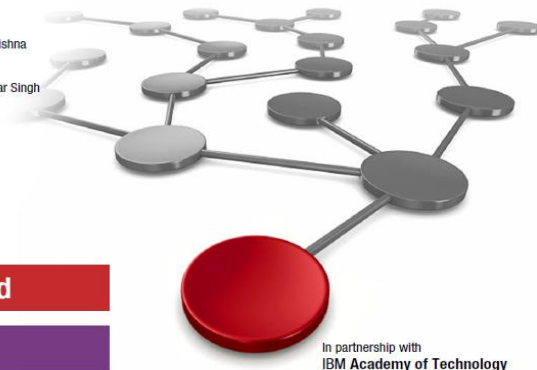
Baldeep Singh

Saurabh Srivatsava

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Sreekrishnan Venkiteswaran

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Cloud

Cloud

Requirements

- Open source based
- Using Open Source operations tools
- Site Reliability Engineering operation model
- Agile methodology
- Easy expansion
- Security

Agile project management

- Sprint 1 (1 week): mockup
- Sprint 2 (2 week): integration
- Sprint 3 (1 week): Finalization

Container 관련 기술 동향

2009

- Cloud Foundry by VMWare.
(Go, Ruby, Java) – OpenStack, AWS, MS Azure, IBM Cloud, Google, Alibaba

2013

- Red Hat과 Docker 의 Fedora, Red Hat Enterprise Linux, OpenShift에 대한 협력 발표 (OS level)

2014

- Microsoft 의 windows server에 대한 Docker engine 통합 발표
- IBM와 Docker의 IBM Cloud와의 통합에 대한 파트너십 발표
- Docker Container services on AWS EC2 발표

2016

- Docker에 대한 핵심 contributor - Docker, Red Hat, IBM, MS, Huawei, Google, Cisco**

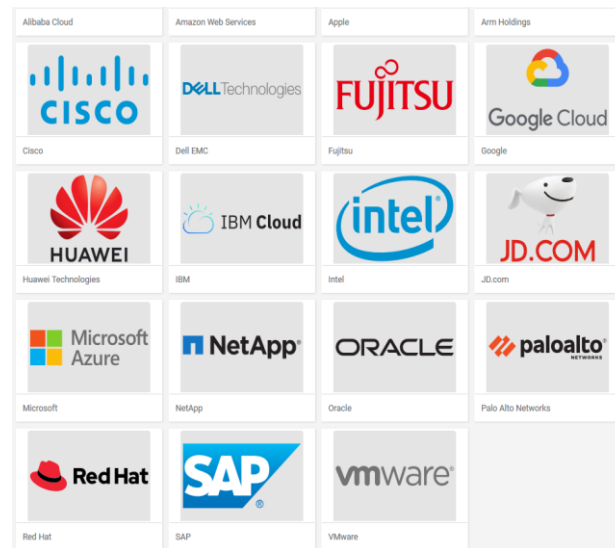
2020

- CNCF Containers – CRI-O, containerd,

2015

Linux Foundation 산하의 CLOUD NATIVE COMPUTING FOUNDATION

(<https://www.cncf.io/>)

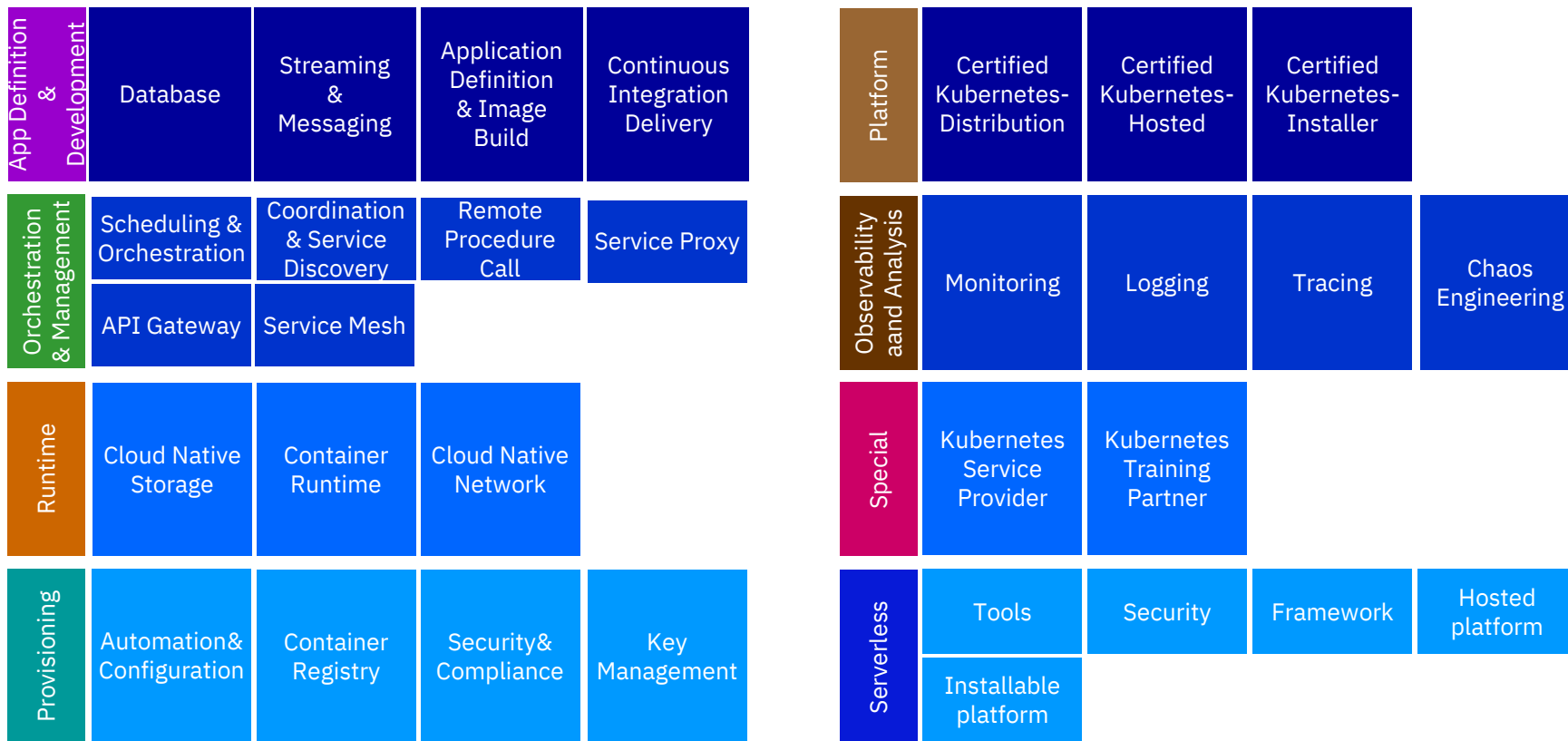


CNCF Members - Platinum (19)

*[https://en.wikipedia.org/wiki/Docker_\(software\)](https://en.wikipedia.org/wiki/Docker_(software))

** <https://gist.github.com/icecrime/18d72202f4569a0cab1ee60f7583425f>

CNCF landscape상의 다양한 컨테이너 관련 기술



운영환경을 위한 컨테이너 플랫폼을 위한 아키텍처 고려사항

운영을 고려한 일반적인 아키텍처 고려사항

- Data
- Compute
- Storage
- Network
- Security
- DevOps
- Resiliency
- Service Management
- Managed Service

컨테이너 플랫폼을 위한 아키텍처 고려사항

- Security and Governance
- Monitoring
- Container Storage
- Networking
- Container lifecycle Management
- Container orchestration
- Container Security



IBM Cloud Solutioning Center
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컨테이너라이제이션 집중 분석