



Platform Services – Beyond IaaS/CaaS for Cloud Infrastructure

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Agenda



- Why look beyond ...
- Introduction
- Which Common Services
- CNCF Landscape
- Recommendations and Next Steps

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Why Look Beyond IaaS/CaaS?



- IaaS/CaaS deal primarily with Cloud Infrastructure resources and their orchestration
- Software Developers need more than just these resources to develop, say, network functions
- Operators need management and other tools to configure and manage the workloads as well as the Cloud Infrastructure software
- [CNCF Landscape](#) consists of many projects for use by Developers & Operators
- Vendors making independent choices:
 - May select different projects for the same service need
 - For same selected project, chose different version or configuration
 - Cloud Service Provider or Telco burdened with extra costs and time because of the need for custom integrations

- Who
 - Primarily Network Function Developers
 - Operators will need to support
- What would this look like
 - Interoperable set of basic platform services
 - Reduces integration and operational cost
 - Reduces conformance validation and verification effort

In current Anuket specs



In RM:

- Observability and Telemetry
 - Mentions RabbitMQ, Apache Kafka, Apache Pulsar, gRPC, ElasticSearch, Jaeger
- (discussed adding) Load Balancing

In RA2:

- Mentions Observable and requires "Secure logging"
- *Application service meshes are not in scope*
- Includes
 - OCI (Open Container Initiative), CRI (Container Runtime Interface)
 - CSI
 - Networking: CNI, Multus, DANM, TF, NSM
 - Kubernetes incl. etcd

Which Common Services (CNCF projects)



Cloud Platform Services

- Data Stores/Database
- Ingress/Egress
- Load Balancing
- Messaging (MQ)
- Service Mesh
- Cache
- Events

Operations and LCM Services

- Software Definition
- Configuration management
- Security Policy
- Telemetry
- Logging, Monitoring, Analytics (LMA)
- Service Proxy

CNCF Landscape (<https://l.cncf.io>)



File Edit View History Bookmarks Tools Help

CNCF Cloud Native Interactive Land X +

https://landscape.cncf.io

CNCF Cloud Native Interactive Landscape

CLOUD NATIVE COMPUTING FOUNDATION

The Cloud Native Trail Map (png, pdf) is CNCF's recommended path through the cloud native landscape. The cloud native landscape (png, pdf), serverless landscape (png, pdf), and member landscape (png, pdf) are dynamically generated below. Please open a pull request to correct any issues. Greyed logos are not open source. Last Updated: 2021-01-29 00:38:59Z

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CNCF Relation: Any

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Example filters:

- Cards by age
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- Certified K8s/KCSP/KTP
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KubeCon | CloudNativeCon Europe 2021

Virtual

Landscape Card Mode Serverless Members

100%

Database Streaming & Messaging Application Definition & Image Build Continuous Integration & Delivery

App Definition & Development

Orchestration & Management

Scheduling & Orchestration Coordination & Service Discovery Remote Procedure Call Service Proxy API Gateway Service Mesh

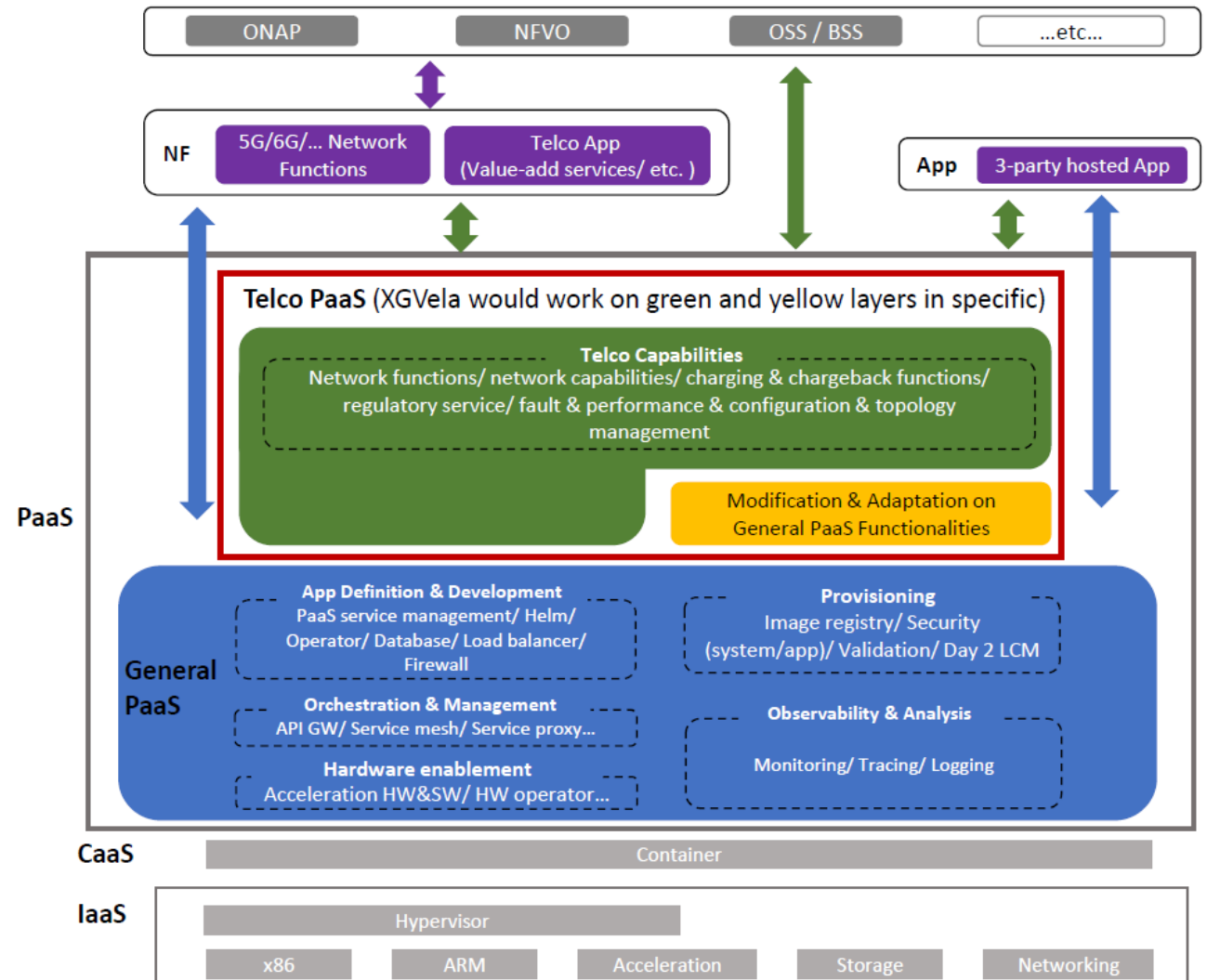
Cloud Native Storage Container Runtime Cloud Native Network

Related community: XGVela



Project definition

An open source cloud native PaaS for applications and telco network functions, which is to enable new services and help mobile operators to seize the business opportunity from vertical industries in the 5G era



Source:

<https://raw.githubusercontent.com/XGVela/XGVela/master/doc/meeting-slides/NGMN%20%26%20XGVela%20Joint%20Meeting.pdf> , 14Dec2020

Recommendations and Next Steps



- Phased Approach
 - Prioritize Platform Services: Easily agreed upon, Implementable now – select with versions
 - Common Data Model
- Proposed Steps
 - Define Platform Services stack
 - Survey operators and vendors for projects and versions
 - Analyze survey results and prioritize Platform Service choices and projects
 - Define workstreams, leads and members, timelines

and sync on all this with XGVela teams



Anuket

Appendix

Example Telco Operator Platform



- Brokers for Multi-cloud support:
 - Cloud Services: for example, Network Services and Functions, other Applications;
 - Platform Services: for example, data stores/DBMS, Messaging; and
 - Infrastructure Resources: Compute, Storage and Networking
- Utilises cloud-agnostic declarative style APIs for automated creation, configuration and management of Cloud Infrastructure resources and Cloud Platform Services
 - Cloud agnostic APIs orchestrate cloud provider APIs



Developer



Users

* Strictly layered

Operations & Management Framework*
(Provisioning, Orchestration, Fault, Capacity, Accounting, Performance, Policy, ... Management)

Logging, Monitoring, Alerting (LMA) Framework*

Security Management Framework*

Service and Application Layer
(Network Service and Functions, other Applications and Application Control)

Platform Services Layer
(datastore, messaging...)

Virtual Infrastructure Layer
(VM, Cont. in VM and BM)

HW Infrastructure Layer

Cloud Services Broker (CSB)
(Service Intermediation, Aggregation, Integration, Customization)

Cloud Resources Broker (CRB)
(Intra-/Inter-operator resource management)

To CSB of other Cloud Platforms

To CRB of other Cloud Platforms

