

The background of the slide is a high-resolution satellite image of Earth from space, showing the curvature of the planet and the blue atmosphere. The top half of the image is dark, representing the blackness of space, while the bottom half shows the green and blue of the Earth's surface.

**OLF**  
NETWORKING

LFN Developer & Testing Forum

# **DCAE Release updates and future roadmap**

**Vijay Venkatesh Kumar**  
([vv770d@att.com](mailto:vv770d@att.com))

# Agenda

- ❖ Guilin Overview
- ❖ Honolulu Priorities
- ❖ DCAE Architecture
- ❖ DCAE Deployment Changes
- ❖ Cross ONAP-project Integration
- ❖ Future Roadmap

# Guilin Highlights



# Guilin - DCAE Highlight

## Functional

- Support for ONAP & 3GPP/ORAN alignment using StdDefined VES notification in DCAE
- External CMPv2 certificate integration for DCAE collectors (VES & DFC)
- VESCollector optimization
- Cloudify Container optimization (new base image + plugins loaded in-container)
- MOD(NiFi) Enhancements – Enable configuration for dynamic topic support
- Dashboard UI optimization

## Non-Functional

- K8S v1.17 support through DCAE Cloudify K8S plugins
- Python 3.8 support enabled for several DCAE components (Heartbeat mS, PMSH mS, MOD/DistributorAPI mS, MOD/OnboardingAPI mS, Policy Library; aligned to ONAP common base image)
- Stdout log compliance
- Completed Java 11 upgrade (RESTConf, PM-Mapper, DFC, VES-Mapper, SON-handler, TCA-gen2, DL-Feeder, InventoryAPI, ServiceChangeHandler, MOD/RuntimeAPI, MOD/Bp-gen)

# Guilin - DCAE Highlight (Cont.)

## Security

- Hardcoded password removed and managed dynamically through K8S secret (Cloudify, Bootstrap, DeploymentHandler, Dashboard)
- All Vulnerability updates/fixes completed
- Best practice compliance - Containers must have no more than one main process

## Performance/benchmarking

- VESCollector
- HV-VESCollector

## New DCAE Microservice

- Data Exposure Service (DES)
- Slice-Analysis MS

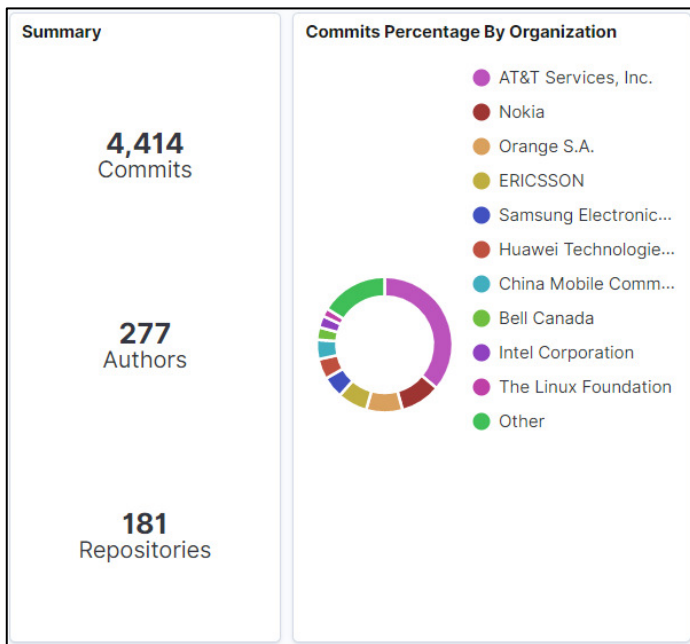
Both services are used for realizing 5g/Slicing usecase in Guilin

## Service Deprecated

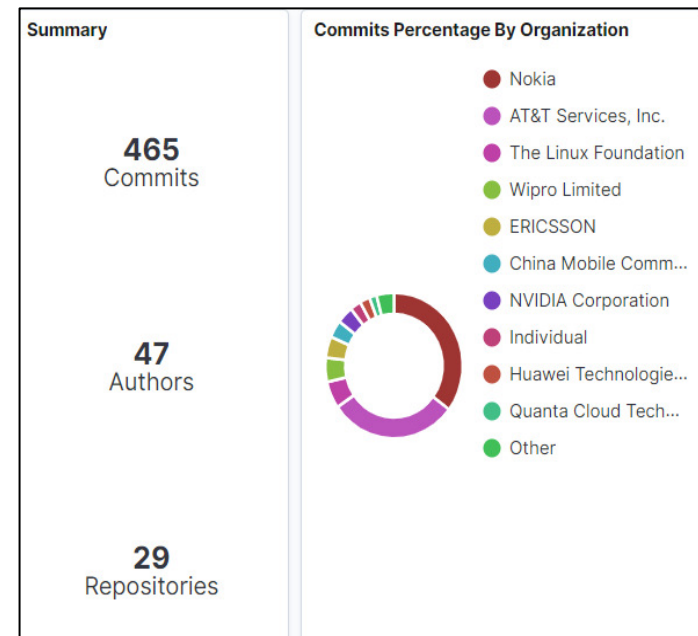
- TCA-CDAP (replaced by TCA-gen2)



# Guilin – Community Contributions



ONAP



DCAE

\* Excludes OOM & CCSDK contributions

Source - <https://insights.lfx.linuxfoundation.org>

# DCAE Honolulu Priorities



# Honolulu DCAE Focus

- ONAP R8 Usecase & Feature requirement
- TSC/SECCOM Global requirements
- DCAE Transformation to support Helm deployment for services
- General platform optimization
- Reducing DCAE backlogs + security updates

<https://wiki.onap.org/display/DW/DCAE+R8+M2+Release+Planning>



# Python 3.x journey





Migrated several components in Guilin

**DCAE Platform:** Policy-Handler\*, ConfigBindingService, Policy-library (utils), MOD-Distributor API, MOD-Onboarding API

**DCAE Services:** Heartbeat MS, PMSH Service

*Thanks to Michal Jagiello (T-mobile) & Tony Hansen (AT&T)*

# Python 3.x - Honolulu

- ❖ DCAE Bootstrap 
- ❖ Cloudify Upgrade 
  - ❖ 5.0.0 - released sep'20
  - ❖ 5.1.0 - released dec'20 (fixed: plugin load issues)
  - ❖ 5.1.1 - released jan'20 (fixed: TLS support)
  - ❖ 5.1.2 - released last week (fixed: pod restart)
- ❖ Cloudify Plugins 
  - ❖ Py3 support added in Guilin release
  - ❖ Wagon build enabled for py2 and py3 parallel for Honolulu
- ❖ SNMP trap and PH container – support latest 3.x 

# Honolulu DCAE MOD Updates

- ❖ Blueprint generator



- ❖ Refactoring

- ❖ Kafka stream support

- ❖ Config Map

- ❖ MODv2 Enhancements (POC continuation)



- ❖ Policy model distribution support

- ❖ Blueprint distribution

- ❖ Helm deployment

# New Microservices/containers

- KPI Computation MS ([REQ-440](#))
  - Repository : <https://git.onap.org/dcaegen2/services/tree/components/kpi-computation-ms> (*introduced as new subproject under existing repo*)
- VES-OpenAPI-Manager ([REQ-433](#))
  - Repository : <https://gerrit.onap.org/r/admin/repos/dcaegen2/platform/ves-openapi-manager> (*New repo*)
- DCAE-service-policy-Sync ([REQ-479](#))
  - Repository : <https://git.onap.org/dcaegen2/deployments/tree/dcae-services-policy-sync> (*introduced a new subproject/module under existing repo*)

# DCAE Helm Transformation

*Simplify DCAE architecture by offloading current Cloudfify centric workflows into generic cloud native functions and control them based on deployment configuration via helm/k8s*



Decentralization of platform function



*Standardize Configuration management*



Adopt industry standard and cloud native tools



Simplify onboarding and deployment of DCAE components



CI/CD based workflow automation

# REQ-479 DCAE Helm Transformation (POC) Phase1

*Project impacted* : DCAE , OOM, Holmes

- Migrate bootstrap service components to Helm (continue Consul/CBS)
  - Build generic dcae-service helm template
  - Helm charts for VESCollector, TCAGEN2, HV-VES, PRH, Holmes\*
  - **Separate repo under DCAE requires**
    - **ONAP/Jenkins integration for helm chart build and push into ONAP/nexus**
    - **Dependency on oom/common to be available under ONAP/nexus**
- **Design configuration management for service component outside of Consul/CBS (Design)**
- Building current DCAE platform function as sidecar/init container functionality
  - **Dynamic Topic/feed (DMAAP) provisioning through helm & K8s operator (stretch-goal)**
  - Policy Handling
- **DCAE MODv2 Enhancement for Helm support (Design)**

*\*\* Cloudify remains primary orchestration for dynamic deployments (MOD/CLAMP flows)*



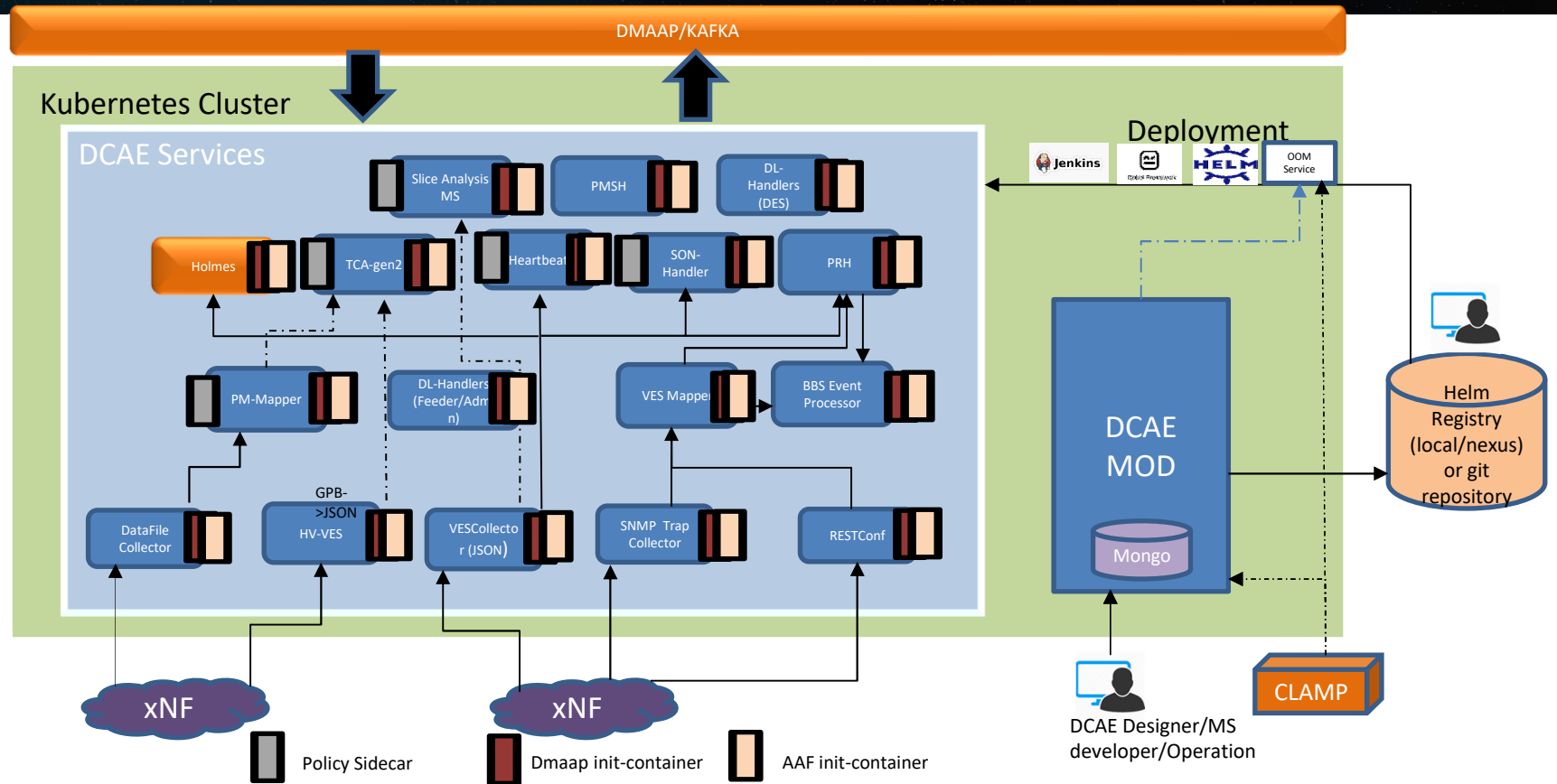
# DCAE Helm Transformation - OOM Integration Plan

- DCAE service template
- Complete Chart Versioning and release in nexus (DCAE chart hosting to be revisited for next release)
- OOM/Helm service for supporting dynamic deployment (from external registry after main ONAP).  
K8Splugin/EMCO in Multicloud project being explored
- ONAP deployed helm registry (*consensus to include under onap/platform charts*)
- Plugin or adapter for ONAP complaint helm chart generation (MOD support)  
Pre-requisite – Come up generic ONAP Helm template

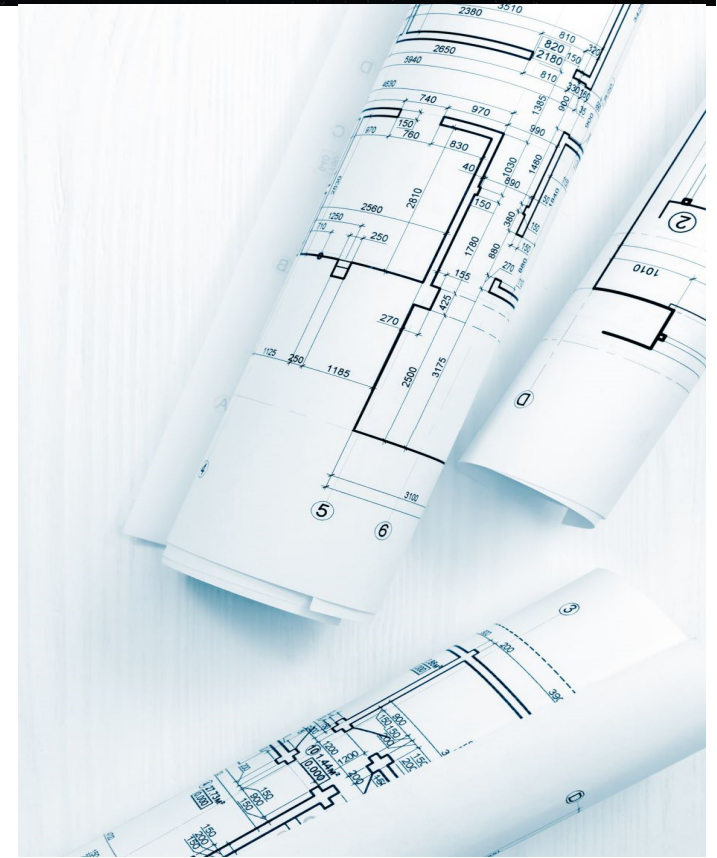
# ONAP Cross project impact

- Holmes
  - Migrate from blueprint to Helm chart based deployment
- CLAMP/Policy
  - Design integration through MOD for Helm deployed component
  - Deployment integration through MOD (for Helm flow)
  - Helm override support in CLAMP GUI
- DMAAP
  - Support of K8s operator for DMAap topic/feed provisioning
  - Support for Native/Kafka integration
  - Topic/feed provisioning in ONAP independent of AAF

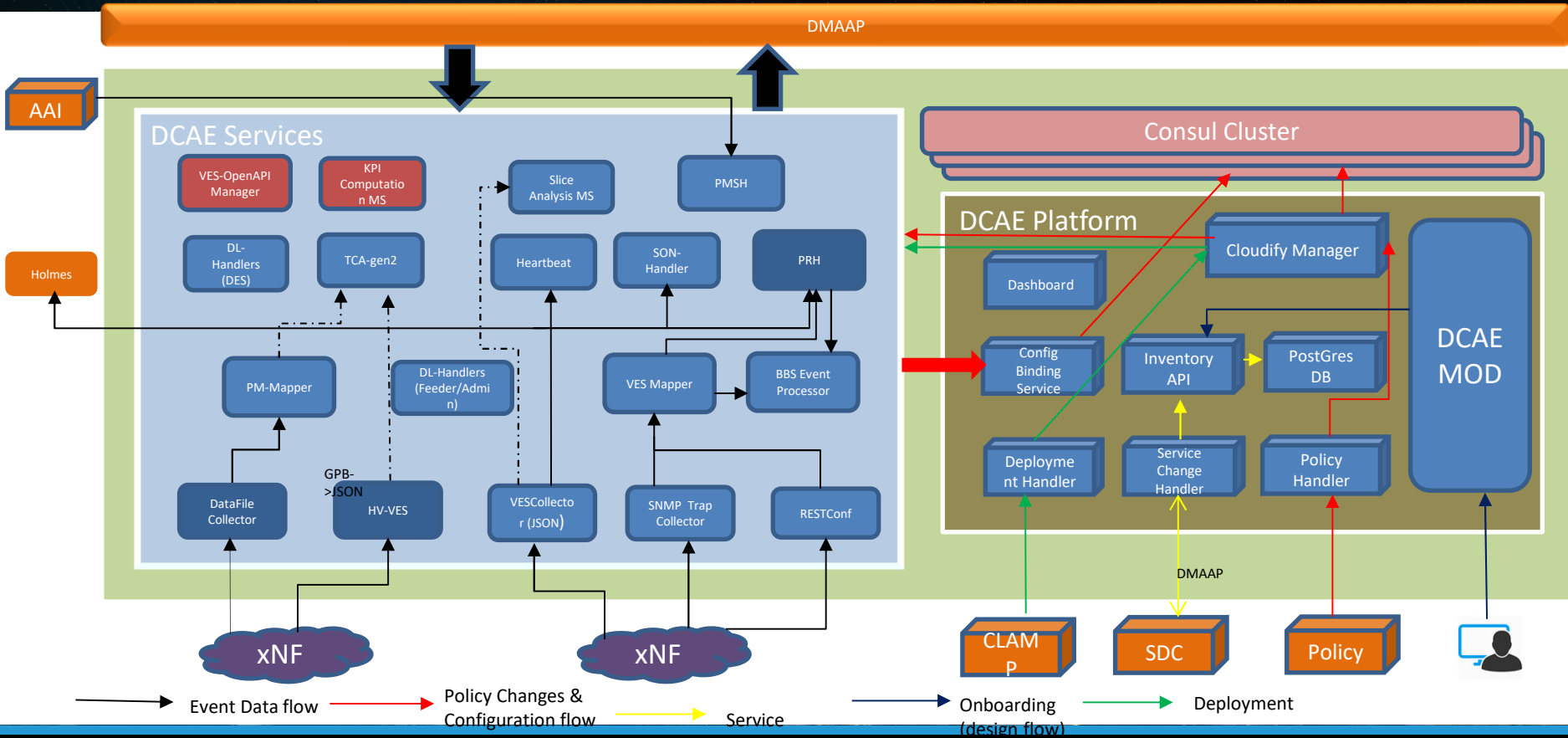
# ONAP DCAE Architecture (Target View)



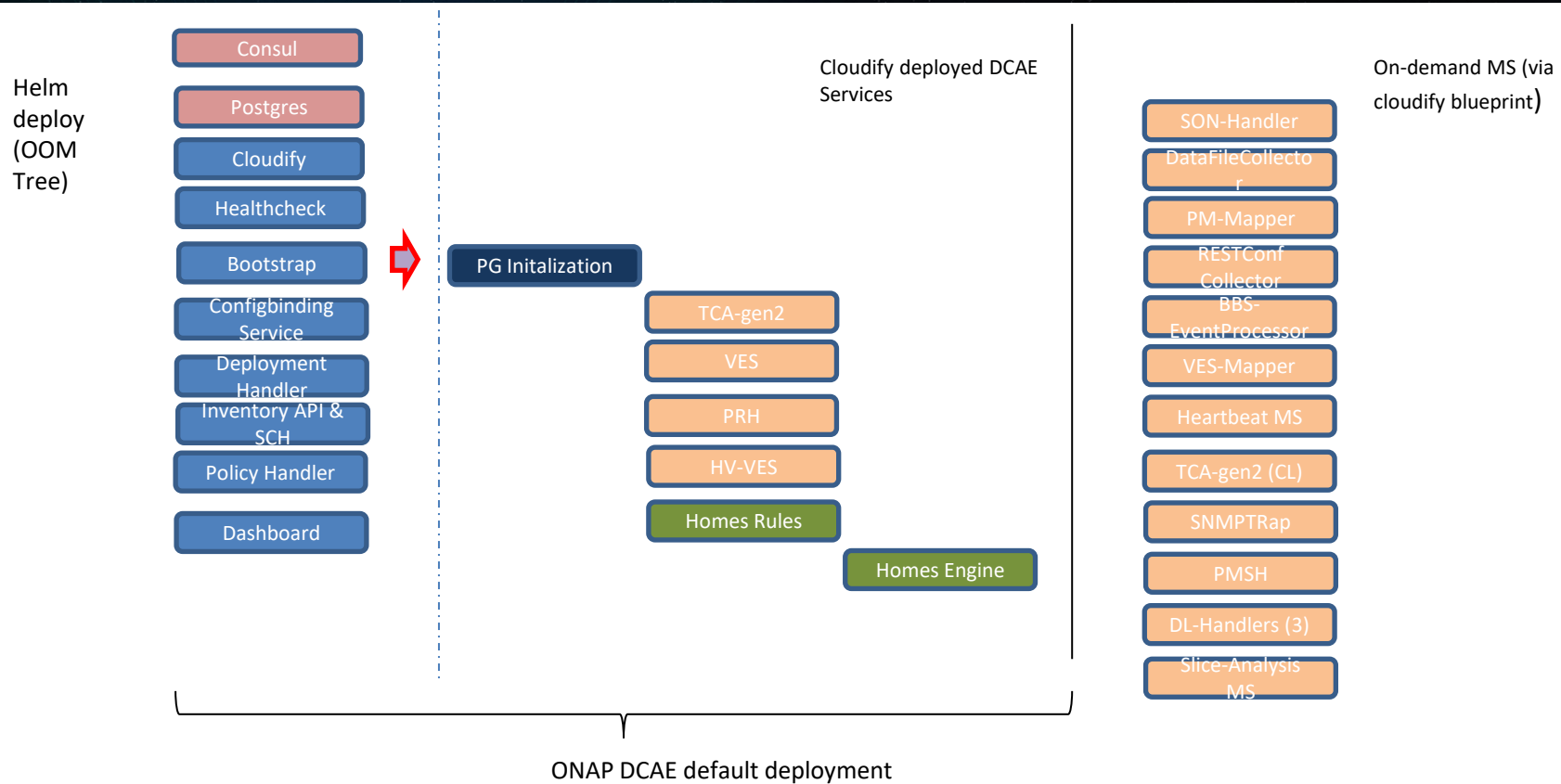
# Honolulu Architecture & Deployment



# DCAE Architecture (Honolulu)

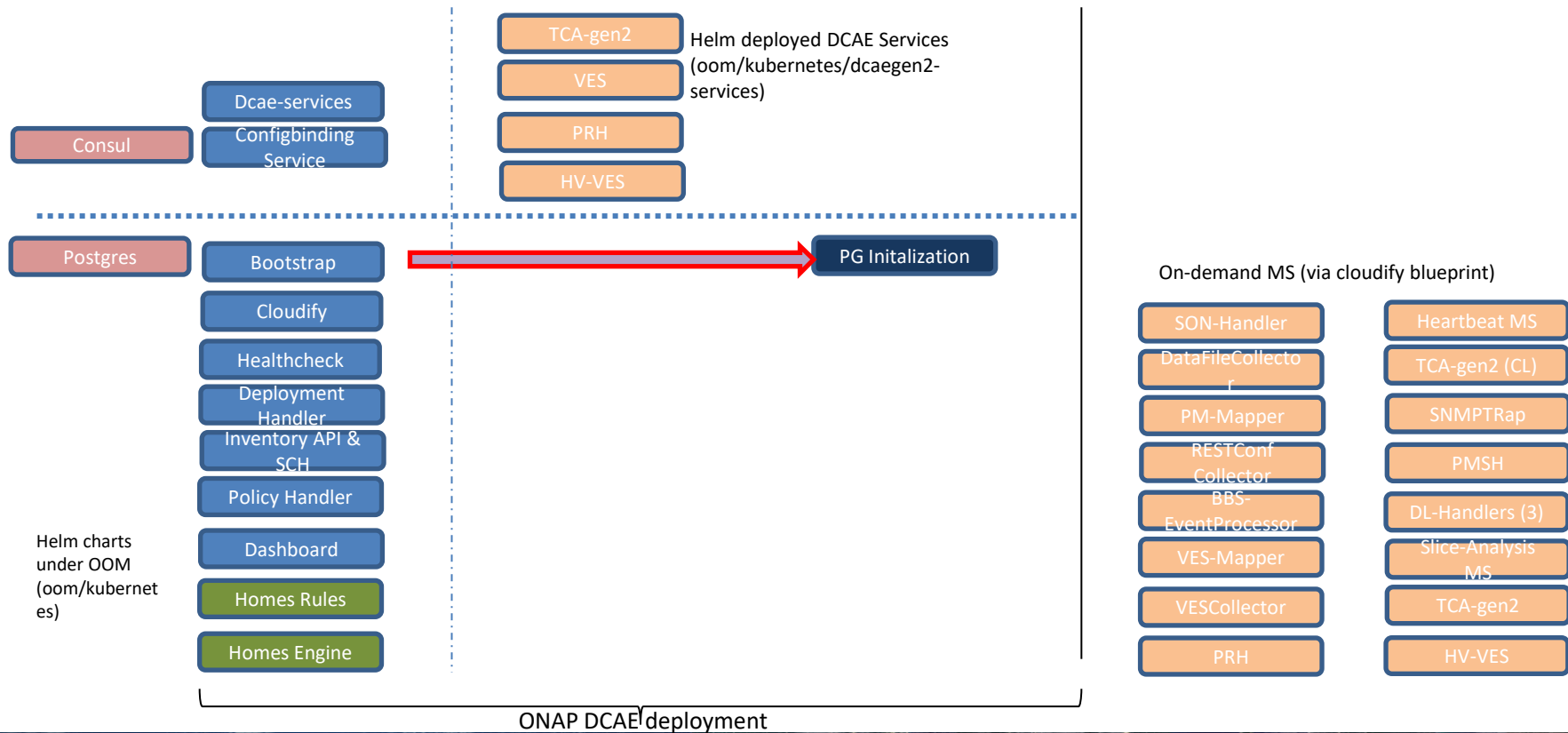


# ONAP DCAE Deployment (Guilin Release)





# ONAP DCAE Honolulu Deployment Plan



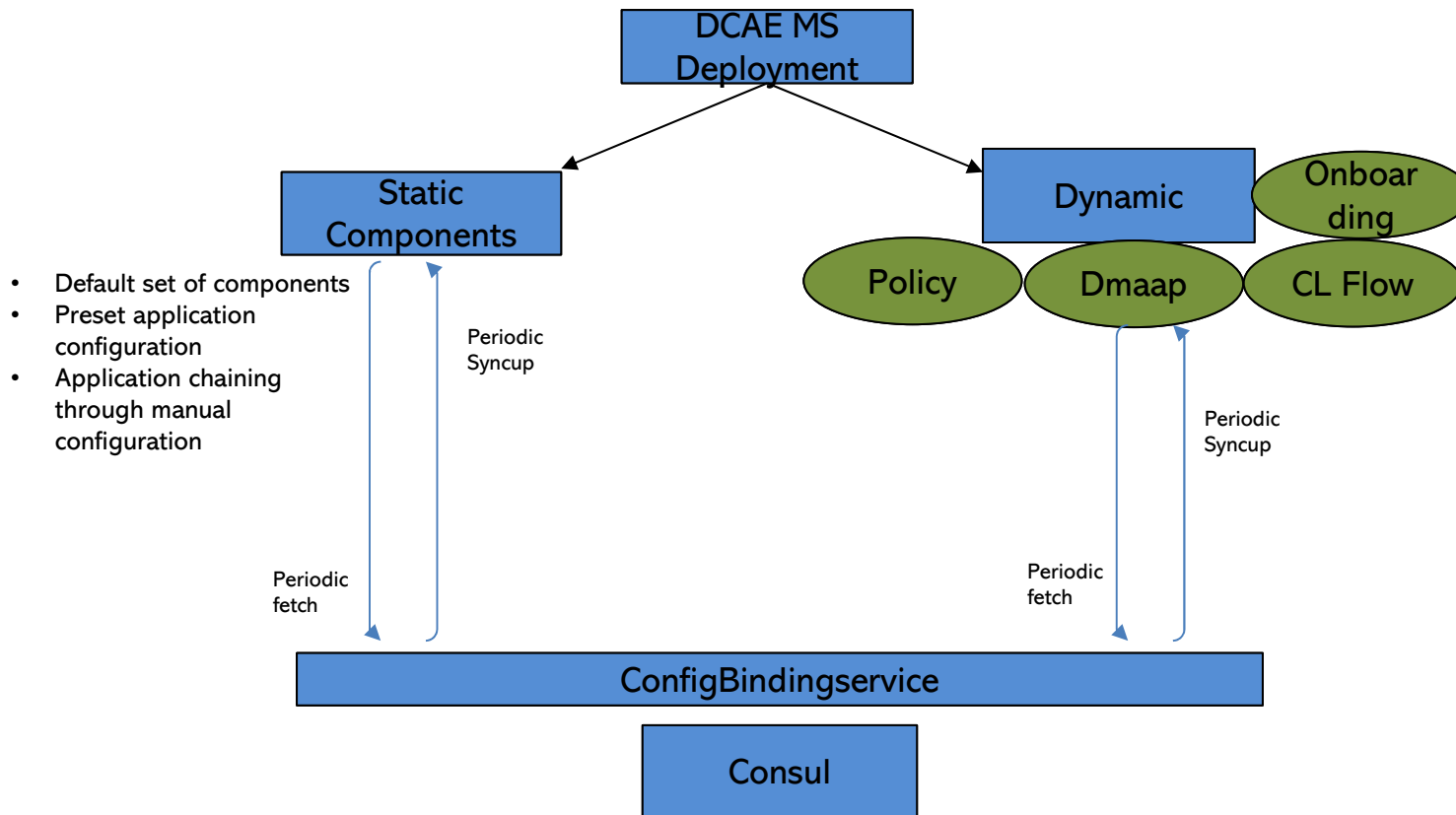
# DCAE Features Comparison between MS Deployment

Features	Classic deployment (Cloudify)	Helm Deployment (Honolulu)
Consul KV store (via CBS)	Yes (Run-time)	Yes (Run-time)
DMAap Topic/Feed provisioning	Yes (Deployment)	No
Dynamic MS onboarding and deployment artifact generation (MOD)	Yes (Run-time)	No
REST endpoint for deployment	Yes (Run-time)	No
Postgress Initialization	Yes (Deployment)	Yes
CLAMP/SDC Interface	Yes (Runtime)	No

# Future Roadmap



# Classic Deployment Category



# DCAE Helm Transformation – To Do

- ❖ Secure Topic/feed (DMAAP) provisioning under helm deployment
- ❖ On-demand DCAE helm services deployments through OOM/Helm service (or K8Splugin/EMCO integration)
- ❖ Standardized App Configuration (including Policy, Dmaap etc.) management
- ❖ DCAE MOD support for composite flows creation and helm artifact generation
- ❖ CLAMP/Control Loop design for Helm based deployment

Priority to be assessed based by ONAP Community feedback & support

# ONAP Future Release Plan for DCAE Transformation

## Option 1:

- Continue DCAE controller (cloudify) based orchestration while build dynamic functions required under helm/K8S
- Migration DCAE services in phased manner. Pilot DCAE service components (TCA) to leverage new feature such as Policy-sidecar and Bulk-PM components for Helm based topic/feed assignment
- DCAE-MODv2 enhancement for helm service component onboarding and deployment integration through OOM/helm service or Multicloud K8splugin

## Option 2:

- Hold-off usecase and functional enhancements for next release
- Migrate all existing/active DCAE services to helm and support them as “static” helm services (like all other ONAP components); Bulk PM component require helm based topic/feed assignment
- Update Integration & gating test to leverage DCAE service component helm charts for functional/usecase validation
- DCAE-MODv2 enhancement for helm service component onboarding and deployment integration through OOM/helm service or Multicloud K8splugin





The background of the slide is a high-quality image of Earth as seen from space. The horizon of the planet is visible, with a bright, glowing light source (likely the sun) just above it, creating a lens flare effect. The Earth's surface shows a mix of green landmasses, blue oceans, and white clouds. The sky above the horizon is a deep, dark blue, dotted with stars.

# QLF NETWORKING

---

LFN Developer & Testing Forum