

DCAE Resource Optimization with Helm transformation

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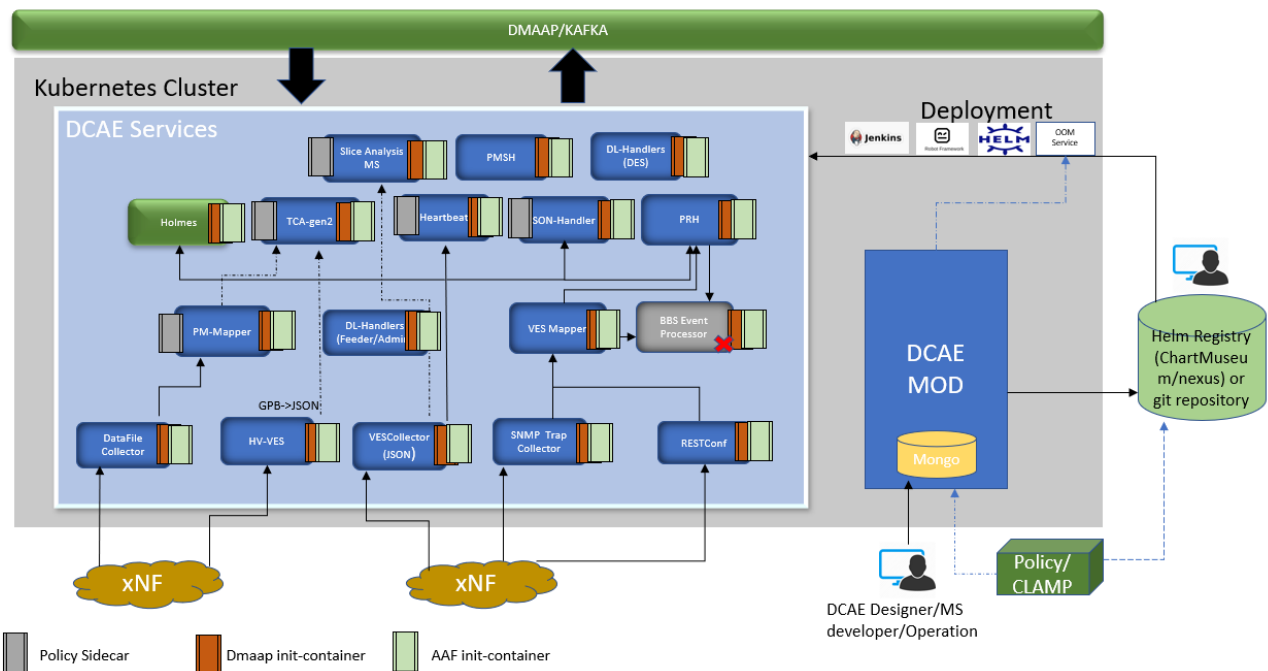
Introduction

DCAE Transformation was multi-release initiative to simplify DCAE architecture and align with Cloudnative function/technologies to manage DCAE services. With completion of DCAE Architecture transformation to Helm, several of platform components has been retired in Jakarta release. Following page capture the resource optmization/saving made with this feature.

Realization Path

- **Honolulu release (Phase 1)**
 - REQ-479 Introduction of Helm SVC template for DCAE components; migrate bootstrap services to helm (DCAEGEN-2488); Cloudify remained primary orchestration for dynamic deployments (MOD/CLAMP flows)
- **Istanbul release (Phase 2)**
 - REQ-685 Extend DCAE SVC template to provide more generic capabilities; migrate all remaining DCAE svc to helm and change default DCAE Svc deployment to Helm (instead of Cloudify)
- **Jakarta release (Phase 3)**
 - REQ-1038 Integrate MOD to support helm flows; remove Cloudify & platform components from ONAP/DCAE deployments. Extend SVC template to support add-on capabilities and complete component CBS SDK migration for removing Consul (and CBS) dependency

Architecture



Deployment Optimization

With platform dependency removed completely in Jakarta release, there is significant improvement in microservice deployment. DCAE component dependencies are identified within respective DCAE charts and install of DCAE bootstrap can now be completed under 3 min (for locally available images)

- Istanbul: Platform component/Handlers required to be up & running prior to DCAE Services component deployment
- Jakarta: MS deployment are uniquely handled and controlled via independent charts

Resource Optimization

Below table captures resource saving with DCAE transformation completed in Jakarta release

Deployment	Istanbul		Jakarta		Overall Resource Savings
	CPU (milliunits)	Memory (mebibytes)	CPU (milliunits)	Memory (mebibytes)	
DCAE Bootstrap	~48	~3300	-	-	CPU utilization reduction 100% Memory utilization reduction 100%
DCAE Bootstrap + DCAE Microservices	~60	~4500	~15	~1470	CPU utilization reduced by ~75% Memory utilization reduced by ~73%
DCAE Bootstrap + DCAE Microservices + DCAE MOD	~85	~6700	~40	~3500	CPU utilization reduced by ~63% Memory utilization reduced by ~53%

(kubecttl top stats below)

DCAE Jakarta release deployment can be done on single node/cluster (8 core and 16GB) along with other ONAP component dependencies (e.g DMAAP, AAF)

Stats Report

UNH Lab

NAME	CPU (CORES)	MEMORY (bytes)
dev-dcae-hv-ves-collector-779c4b87-phz5r	1m	218Mi
dev-dcae-mongo-0	10m	73Mi
dev-dcae-ms-healthcheck-646697d498-l6r6j	1m	16Mi
dev-dcae-prh-85ddc47c75-vrt4p	1m	371Mi
dev-dcae-tcagen2-6db79b7869-f82cv	1m	549Mi
dev-dcae-ves-collector-5bd78756d5-jfvcn	1m	243Mi
dev-dcaemod-db-primary-65c8645fbd-mg28l	2m	69Mi
dev-dcaemod-db-replica-84874765bd-nmcnj	1m	32Mi
dev-dcaemod-designtool-6678fcd64f-fps2f	12m	1241Mi
dev-dcaemod-distributor-api-9f4df985c-nhm5h	1m	25Mi
dev-dcaemod-genprocessor-7c6955779c-zfcz9	1m	142Mi
dev-dcaemod-healthcheck-54d7f78f5d-dmb29	1m	15Mi

dev-dcaemod-nifi-registry-74f678df8-27kgb	2m	486Mi
dev-dcaemod-onboarding-api-6d8ff449f4-x5zr2	1m	46Mi
dev-dcaemod-runtime-api-654d5b7b48-sf6vr	1m	221Mi
	37	3747
dev-dcae-bootstrap-6b8f8f6446-z5jj9	0m	9Mi
dev-dcae-cloudify-manager-6846d9546c-xz242	33m	1849Mi
dev-dcae-config-binding-service-656b67b67d-88fb2	2m	84Mi
dev-dcae-dashboard-ff89ddcd4-sf7bg	1m	502Mi
dev-dcae-dashboard-pg-primary-7bdfc95c7-lfcmh	1m	66Mi
dev-dcae-dashboard-pg-replica-b5947dc8f-bwsjb	1m	39Mi
dev-dcae-db-primary-677847f688-q44kl	1m	46Mi
dev-dcae-db-replica-7479f9f568-cltpc	1m	38Mi
dev-dcae-deployment-handler-56cb87f596-ct5lk	1m	27Mi
dev-dcae-healthcheck-6b78f9f9d7-jfwrf	1m	16Mi
dev-dcae-hv-ves-collector-779c4b87-phz5r	2m	218Mi
dev-dcae-inv-pg-primary-869dfdb946-gcm9x	1m	55Mi
dev-dcae-inv-pg-replica-54685968db-8d7fm	1m	43Mi
dev-dcae-inventory-api-6c8cf94f57-bfpzq	2m	258Mi
dev-dcae-mongo-0	9m	73Mi
dev-dcae-ms-healthcheck-646697d498-l6r6j	1m	16Mi
dev-dcae-prh-85ddc47c75-vrt4p	1m	371Mi
dev-dcae-tcagen2-6db79b7869-f82cv	1m	549Mi
dev-dcae-ves-collector-5bd78756d5-jfvcn	1m	243Mi
dev-dcaemod-db-primary-65c8645fbd-mg28l	2m	73Mi
dev-dcaemod-db-replica-84874765bd-nmcnj	1m	32Mi
dev-dcaemod-designtool-6678fcd64f-fps2f	13m	1241Mi
dev-dcaemod-distributor-api-9f4df985c-nhm5h	1m	25Mi
dev-dcaemod-genprocessor-7c6955779c-zfcz9	1m	142Mi
dev-dcaemod-healthcheck-54d7f78f5d-dmb29	1m	15Mi
dev-dcaemod-nifi-registry-74f678df8-27kgb	2m	486Mi
dev-dcaemod-onboarding-api-6d8ff449f4-x5zr2	2m	46Mi
dev-dcaemod-runtime-api-654d5b7b48-sf6vr	1m	221Mi
	85	6783

Windriver Lab

NAME	CPU (CORES)	MEMORY (bytes)
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dev-dcae-config-binding-service-58b88c78b-pv5wl	6m	90Mi
dev-dcae-healthcheck-5f5584d777-x4kxd	1m	15Mi
dev-dcaemod-db-primary-844dc85bf8-krijl9	15m	62Mi
dev-dcaemod-db-replica-6bd7445778-5gh6r	2m	34Mi
dev-dcaemod-designtool-887b6c995-qb6rh	23m	1005Mi
dev-dcaemod-distributor-api-fd8b49589-p6fh5	1m	24Mi
dev-dcaemod-genprocessor-5586f8645c-4g9fp	3m	165Mi
dev-dcaemod-healthcheck-688bd8cff6-gcsg9	1m	15Mi
dev-dcaemod-nifi-registry-5789ccdc74-kbl7c	2m	500Mi
dev-dcaemod-onboarding-api-bd54688c8-m4whc	6m	47Mi
dev-dcaemod-runtime-api-757bbb6489-cxfnq	1m	264Mi
	61	2221
dev-dcae-bootstrap-5c46b685b5-g8x8m	0m	41Mi
dev-dcae-cloudify-manager-766f86ff88-kzbgc	129m	2540Mi
dev-dcae-config-binding-service-58b88c78b-hkkvd	4m	79Mi
dev-dcae-dashboard-7b4bdf4d4c-7sd6q	158m	354Mi
dev-dcae-dashboard-pg-primary-7668779cf5-9kw4l	1m	50Mi
dev-dcae-dashboard-pg-replica-57bbd47f55-4sgfx	2m	32Mi
dev-dcae-db-primary-7b698bfc66-4zfzs	1m	50Mi
dev-dcae-db-replica-c669b8446-qbvjd	3m	28Mi
dev-dcae-deployment-handler-5c967554bc-8h2sw	1m	28Mi
dev-dcae-healthcheck-5f5584d777-2pls7	1m	8Mi
dev-dcae-inv-pg-primary-7d95b5499b-m9d2l	1m	50Mi
dev-dcae-inv-pg-replica-57788fcb6d-cgh7h	1m	33Mi
dev-dcae-inventory-api-648db5bfbb-n2ldv	1m	213Mi
dev-dcaemod-db-primary-844dc85bf8-krijl9	21m	74Mi
dev-dcaemod-db-replica-6bd7445778-5gh6r	2m	34Mi
dev-dcaemod-designtool-887b6c995-qb6rh	22m	1005Mi
dev-dcaemod-distributor-api-fd8b49589-p6fh5	1m	24Mi
dev-dcaemod-genprocessor-5586f8645c-4g9fp	2m	165Mi
dev-dcaemod-healthcheck-688bd8cff6-gcsg9	1m	16Mi
dev-dcaemod-nifi-registry-5789ccdc74-kbl7c	2m	501Mi
dev-dcaemod-onboarding-api-bd54688c8-m4whc	13m	47Mi
dev-dcaemod-runtime-api-757bbb6489-cxfnq	1m	264Mi
	368	5636