

OSC IT/DEP SMO Deployment Upgrade

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ONAP OOM Upgrade in it/dep

- it/dep project uses helm charts from the ONAP OOM project
 - By including onap_oom as a git submodule in it/dep code base
- The latest update for submodule onap_oom was in Nov 2022
 - With ONAP Jakarta release (released in June 2022)
- Problem

Before the ONAP London release, ONAP used AAF to provide certificates for all components

 - AAF is deprecated
 - The embedded certificate in ONAP OOM and image expired in Aug 2023
 - ONAP Jakarta release cannot be deployed without this certificate
- It is time to upgrade the submodule onap_oom to the latest ONAP release
 - Move onap_oom to Montreal release
 - Problem: Has ONAP Montreal finished its release cycle?

Primary Changes in onap_oom

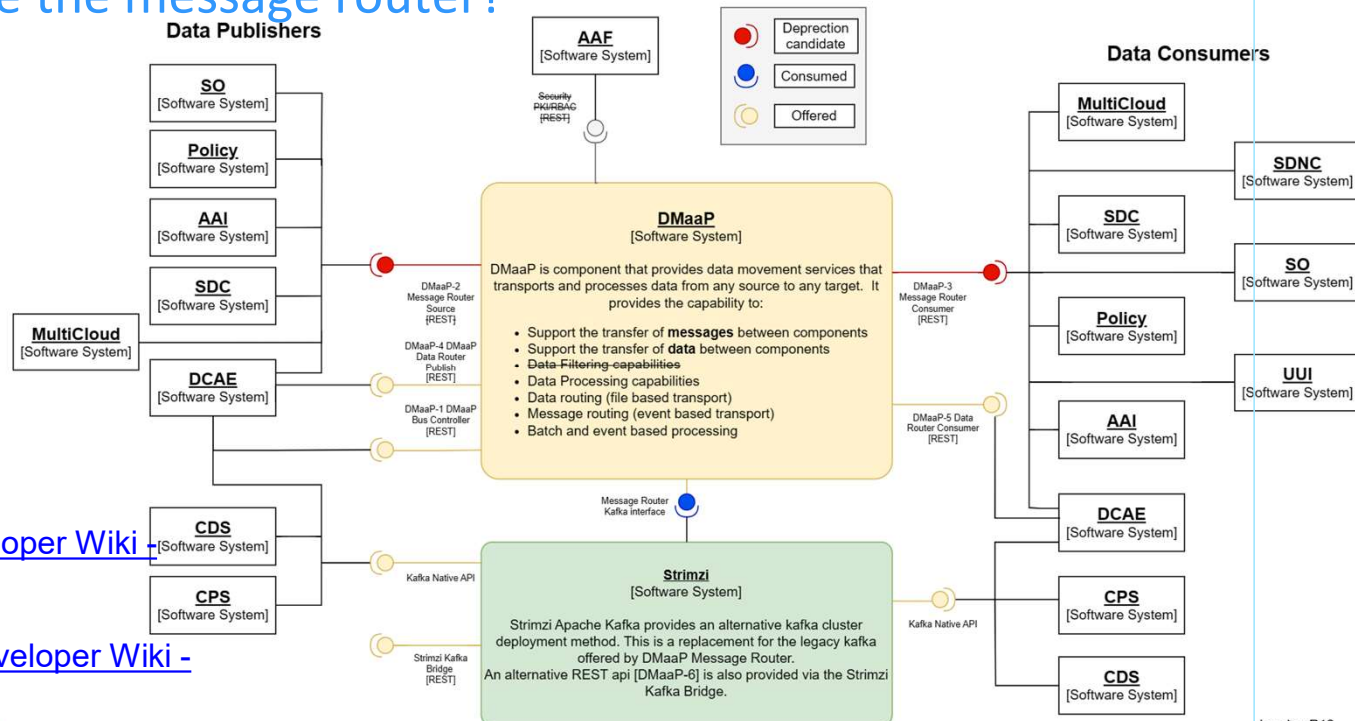
- Important change for it-dep/smo-install/onap_oom from J release to M release
 - Upgrades Kubernetes version from 1.23 to 1.27
 - Deprecates AAF
 - After the London release, ONAP deprecated AAF and used Service Mesh for TLS
 - By default, the message router no longer exposes NodePort
 - We expose this port for testing
 - Upgrades strimzi-operator from 0.28.0 to 0.36.1
 - Add podAntiAffinity to avoid deploying replica pods on the same node
 - We change strimzi replica count in helm override from 3 to 1 for single node Kubernetes
 - Introduces Mariadb-Operator for MariaDB Galera
 - We disable the usage of the mariadb operator

Other Changes for it/dep SMO

- Change NONRTRIC config
 - Change message router, a1psm, sdnc endpoint from https to http
- Remove unnecessary dependency for NONRTRIC ORU helm chart
 - ORU uses following dependencies to trust AAF certificate
 - ONAP commom, certInitializer, repositoryGenerator, serviceAccount charts
 - No needed since AAF deprecated
- Remove unnecessary NONRTRIC helm charts dependency
 - NONRTRIC odu, odu-app-ics-version have unused dependencies (same as ORU)
- Disable DMaaP Data Router (DR)
 - Current SMO does not use this component
- Disable policy framework
 - Current SMO does not use this component (o1, a1)
 - NONRTRIC DME CLAMP use this component?

Does ONAP Plan to Deprecate DMaaP MR?

- DMaaP MR exposes HTTP interface for Kafka
- Strimzi introduced the Kafka bridge
 - Providing Kafka native HTTP interface
- Does ONAP plan to deprecate the message router?



[ARC DMaaP Component Description - London-R12 - Developer Wiki - Confluence \(onap.org\)](#)

[Deprecation and Removal of DMaaP Message Router - Developer Wiki - Confluence \(onap.org\)](#)



NONRTRIC helm charts Improvement

- Problems
 1. No reusable nonrtric-common templates
 2. Most contents in NONRTRIC helm charts are hard-coded
 - Need to directly modify helm charts content to config the components

- Questions: Why do two NONRTRIC helm charts exist in the it/dep project?
 - nonrtric/helm
 - smo-install/oran_oom



Fix bugs

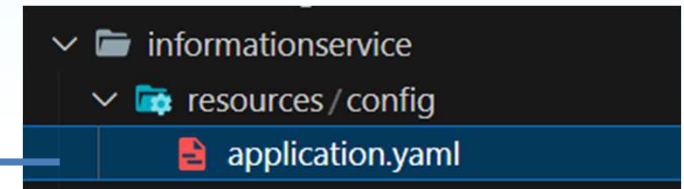
- DMaaP mediator listens to MR topics
 - MR topics can be manually created or auto-created when pushing an event
 - DMaaP mediator cannot work if any one configured topic is not created in MR
 - Add an init-container for DMaaP mediator to create all required topics
- Clean unused configuration in NONRTRIC helm charts
 - Application config file in DMaaP mediator
- Add privilege for Information coordination service (ICS) to store data in PV
 - ICS pod runs as a non-root user
 - ICS pod does not have the privilege to create files in PV
 - Add init container to change PV folder owner to ICS pod user



Move configurations to Values file

- The original application.yaml is just a YAML file including in the helm charts
 - Cannot be modified without unpack the chart
- Move config to values.yaml

The config file for ICS ←



```
apiVersion: v1
kind: ConfigMap
metadata:
  name: {{ include "common.name.informationService" . }}-configmap
  namespace: {{ include "common.namespace.nontrnc" . }}
  labels:
    app: {{ include "common.namespace.nontrnc" . }}-{{ include "common.name.informationService" . }}
    chart: {{ .Chart.Name }}-{{ .Chart.Version | replace "+" "_" }}
    release: {{ .Release.Name }}
    heritage: {{ .Release.Service }}
data:
  {{ tpl (.Files.Glob "resources/config/*").AsConfig . | indent 2 }}
```

Directly render the content of application.yaml

```
46
47 v application:
48 v   spring:
49 v     profiles:
50 v       active: prod
51 v     main:
52 v       allow-bean-definition-overriding: true
53 v     aop:
54 v       auto: false
55 v management:
```

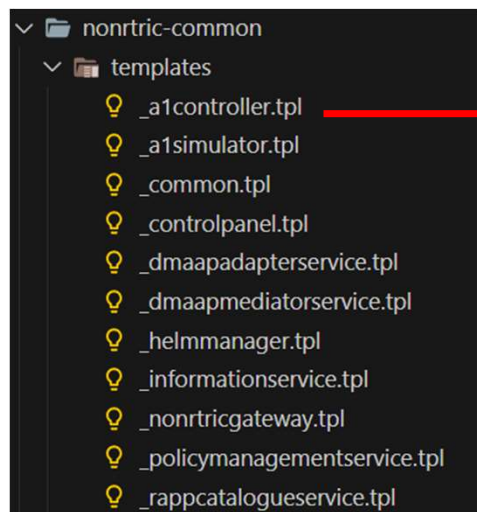
Values.yaml

```
apiVersion: v1
kind: ConfigMap
metadata:
  name: {{ include "common.name" $dot }}-application-configmap
  namespace: {{ include "common.namespace" . }}
  labels: {{- include "common.labels" . | nindent 2 }}
data:
  application.yaml: |
    {{- toYaml .Values.application | nindent 4 }}
  {{ end -}}
```




No reusable nonrtric-common chart

- nonrtric-common is a subchart shared by all NONRTRIC helm charts
 - Define templates for those harts
- Current templates just move the named template to nonrtric-common
 - All templates are indepeneted



nonrtric-common/templates/_a1controller.tpl

```
16
17 {{- define "common.name.a1controller" -}}
18   {{- printf "a1controller" -}}
19   {{- end -}}
20
21 {{- define "common.containername.a1controller" -}}
22   {{- $name := ( include "common.name.a1controll
23   {{- printf "container-%s" $name | trunc 63 | t
24   {{- end -}}
```

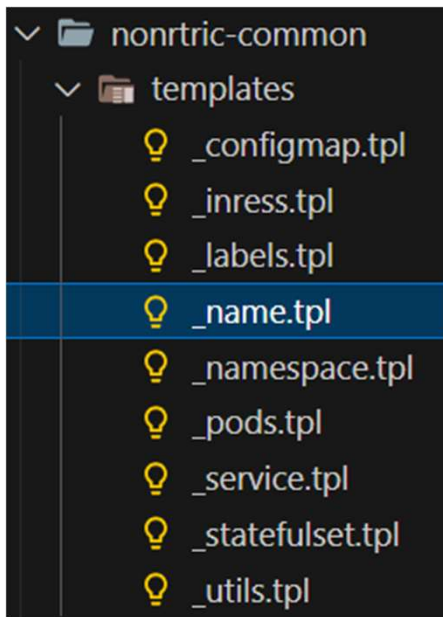
A1controller/templates/deployment.yaml

```
17 kind: Deployment
18 apiVersion: apps/v1
19 metadata:
20   name: {{ include "common.name.a1controller" . }}
21   namespace: {{ include "common.namespace.nonrtric" . }}
22   generation: 1
```



Common Templates

- Reference the approach of onap oom
 - Define template that can reused by all charts



```
kind: Deployment
apiVersion: apps/v1
metadata: {{- include "common.resourceMetadata" . | nindent 2 }}
spec:
```

Chart: a1controller

```
{{- define "common.resourceMetadata" -}}
{{- $dot := default . .dot -}}
{{- $suffix := default "" .suffix -}}
{{- $labels := default (dict) .labels -}}
{{- $annotations := default (dict) .annotations -}}
name: {{ include "common.name" (dict "suffix" $suffix "dot" $dot )}}
namespace: {{ include "common.namespace" $dot }}
labels: {{- include "common.labels" (dict "labels" $labels "ignoreHel
{{- if $annotations }}
annotations: {{- include "common.tplValue" (dict "value" $annotation
{{- end
```

```
{{- define "common.name" -}}
  {{- default .Chart.Name .Values.nameOverride | trunc 63 | trimSuffix "-" -}}
{{- end -}}
```



Remove nested chart variables

- Most NONRTRIC helm charts put variables under a key <chartname>
 - Need another outer <chartname> key in nonrtric/values to pass the variables to the chart
 - “.Values.imagePullPolicy” is enough

policymanagementservice/values.yaml

nonrtric/values.yaml

```
# Need to check the external port Availability
```

```
policymanagementservice:  
  policymanagementservice:  
    imagePullPolicy: Always  
  image:
```

```
policymanagementservice:  
  imagePullPolicy: IfNotPresent  
  image:  
    registry: "nexus3.o-ran-sc.org:10002/o-ran-sc"  
    name: nonrtric-plt-a1policymanagementservice  
    tag: 2.7.0
```

```
containers:
```

```
- name: {{ include "common.container.policymanagementservice" . }}  
  image: {{ .Values.policymanagementservice.image.registry }}/{{ .Values  
  imagePullPolicy: {{ .Values.policymanagementservice.imagePullPolicy }}  
  ports:
```



YAML File Comparison

Original version

```
nonrtric.charts.a1controller.templates.deployment.yaml-0:  
  apiVersion: apps/v1  
  kind: Deployment  
  metadata:  
    annotations:  
      deployment.kubernetes.io/revision: '1'  
    generation: 1  
    labels:  
      app: nonrtric-a1controller  
      chart: a1controller-2.0.0  
      heritage: Helm  
      release: nonrtric  
  
  name: a1controller  
  namespace: nonrtric  
  spec:  
    replicas: 1  
    selector:  
      matchLabels:  
        app: nonrtric-a1controller  
        release: nonrtric  
  template:  
    metadata:  
      labels:  
        app: nonrtric-a1controller  
        release: nonrtric
```

Remove labels that maintained by Kubernetes

Use helm/K8S recommend labels

Modified version

```
nonrtric.charts.a1controller.templates.deployment.yaml-0:  
  apiVersion: apps/v1  
  kind: Deployment  
  metadata:  
  
  labels:  
    app.kubernetes.io/instance: nonrtric  
    app.kubernetes.io/managed-by: Helm  
    app.kubernetes.io/name: a1controller  
    app.kubernetes.io/version: 2.0.0  
    helm.sh/chart: a1controller-2.0.0  
  
  name: a1controller  
  namespace: nonrtric  
  spec:  
    replicas: 1  
    selector:  
      matchLabels:  
        app.kubernetes.io/instance: nonrtric  
        app.kubernetes.io/name: a1controller  
  template:  
    metadata:  
      labels:  
        app.kubernetes.io/instance: nonrtric  
        app.kubernetes.io/managed-by: Helm  
        app.kubernetes.io/name: a1controller  
        app.kubernetes.io/version: 2.0.0  
        helm.sh/chart: a1controller-2.0.0  
    name: a1controller
```

No changes to the resource names



Values File Changes

- The current trend is to use service mesh to provide TLS
 - Pod built-in TLS might be removed if we introduces service mesh

Original version

```
✓ policymanagementservice: Remove nearest variable
  imagePullPolicy: IfNotPresent
  image:
    registry: "nexus3.o-ran-sc.org:10002/o-ran-sc"
    name: nonrtric-plt-a1policymanagementservice
    tag: 2.7.0
  service:
    type: NodePort
    allowHttp: true
    httpName: http
    internalPort1: 8081
    targetPort1: 8081
    nodePort1: 30094
    httpsName: https
    internalPort2: 8433
    targetPort2: 8433
    nodePort2: 30095
    Modify service format
```

Modified version

```
imagePullPolicy: IfNotPresent
image:
  registry: "nexus3.o-ran-sc.org:10002/o-ran-sc"
  name: nonrtric-plt-a1policymanagementservice
  tag: 2.6.0
service:
  type: NodePort
  ports:
    - name: http
      internalPort: "8081"
      targetPort: "8081"
      nodePort: "30094"
      internalPort_tls: "8433"
      targetPort_tls: "8433"
      nodePort_tls: "30095"
liveness:
  initialDelaySeconds: 20
  periodSeconds: 10
```