

BBS-EventProcessor Service (BBS Usecase)

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Overview

The BBS-ep service is responsible for handling two types of events for the BBS use case.

The first type of event are PNF re-registration internal events that is published by PRH. The BBS-ep service processes the internal events to understand if they

actually constitute ONT(CPE) relocation events. In the relocation case, the BBS-ep service publishes an event towards unauthenticated. DCAE_CL_OUTPUT

DMaaP topic to trigger further Policy actions related to BBS use case.

The second type of event is the CPE authentication event originally published by the Edge SDN M&C component of BBS use case architecture.

Through the RestConf-Collector or VES-Collector, this event is consumed by the BBS-ep service and then forwarded towards unauthenticated. DCAE_CL_OUTPUT

DMaaP topic to trigger further Policy actions related to BBS use case.

The BBS-ep service periodically polls for the two events. The polling interval is configurable and can be changed dynamically from Consul. Its implementation

is based on Reactive Streams (Reactor library), so it is fully asynchronous and non-blocking.

Blueprint/model/image

Blueprint component file can be found in

https://gerrit.onap.org/r/gitweb?p=dcae2/services.git;a=blob_plain;f=components/bbs-event-processor/dpo/blueprints/k8s-bbs-event-processor.yaml-template;hb=refs/heads/dublin

Blueprint inputs file can be found in

https://gerrit.onap.org/r/gitweb?p=dcae2/services.git;a=blob_plain;f=components/bbs-event-processor/dpo/blueprints/bbs-event-processor-input.yaml;hb=refs/heads/dublin

Docker image metadata for component can be found in

<https://nexus3.onap.org/repository/docker.snapshot/v2/onap/org.onap.dcae2.services.components.bbs-event-processor/manifests/1.0.0>

Deployment Prerequisite/dependencies

The BBS-ep service requires DMaaP and A&AI to be functional in ONAP.

The BBS-ep service consumes/publishes messages from/to DMaaP and fetches (never updates) information from A&AI related to the BBS use-case logic.

Deployment Steps

To deploy

- Transfer blueprint component file in DCAE bootstrap POD under /blueprints directory
- Transfer blueprint component inputs file in DCAE bootstrap POD under / directory
- Log-in to the DCAE bootstrap POD's main container
- Validate blueprint

Validate Blueprint

```
cfy blueprints validate /blueprints/k8s-bbs-event-processor.yaml-template
```

- Upload validated blueprint

Upload validated blueprint

```
cfy blueprints upload -b bbs-ep /blueprints/k8s-bbs-event-processor.yaml-template
```

- Create Cloudify Deployment

Create Cloudify deployment

```
cfy deployments create -b bbs-ep -i /bbs-event-processor-input.yaml bbs-ep
```

- Deploy component

Deploy component

```
cfy executions start -d bbs-ep install
```

To un-deploy

- Uninstall running component and delete deployment

Uninstall component

```
cfy uninstall bbs-ep
```

- Delete blueprint

Delete blueprint

```
cfy blueprints delete bbs-ep
```

Initial Validation

After deployment, we can check if BBS-ep POD is running correctly

Verify BBS-ep is running

```
root@cluster-admin:~# kubectl -n onap get pods | grep -i bbs
dep-bbs-event-processor-6b6df75d94-g7jw8          2/2      Running      0          1d
```

And then check the logs to see if it can connect to DMaaP, polling for events. Even in the absence of events, we can at least verify that there is nothing to consume for both PNF re-registration messages and CPE authentication messages.

Verify BBS-ep can poll DMaaP

```
kubect1 -n onap logs dep-bbs-event-processor-6b6df75d94-g7jw8 -c bbs-event-processor
```

```
2019-04-10 09:37:58.151 INFO 1 --- [pipeline-thrd-4] o.o.b.e.p.p.ReRegistrationPipeline : Process next
Re-Registration events
2019-04-10 09:37:58.152 INFO 1 --- [pipeline-thrd-1] o.o.b.e.p.p.CpeAuthenticationPipeline : Process next
CPE Authentication events
2019-04-10 09:38:07.680 INFO 1 --- [tor-http-nio-10] o.o.b.e.p.p.CpeAuthenticationPipeline : Nothing to
consume from DMaaP
2019-04-10 09:38:07.681 INFO 1 --- [tor-http-nio-10] o.o.b.e.p.p.CpeAuthenticationPipeline : CPE
Authentication processing pipeline has been completed
2019-04-10 09:38:07.681 INFO 1 --- [tor-http-nio-10] o.o.b.e.p.p.ReRegistrationPipeline : Nothing to
consume from DMaaP
2019-04-10 09:38:07.681 INFO 1 --- [tor-http-nio-10] o.o.b.e.p.p.ReRegistrationPipeline : PNF Re-
Registration processing pipeline has been completed
2019-04-10 09:38:28.151 INFO 1 --- [pipeline-thrd-4] o.o.b.e.p.p.ReRegistrationPipeline : Process next
Re-Registration events
```

Feed test data

To perform functional tests for BBS-ep, we must first populate test data to A&AI. This can be done by running the following Postman collection along with the required input file.

Postman Collection	 BBS-ep-te...tion.json
JSON Input	 bbs-ep-te...puts.json

Import the Collection JSON file into Postman and then execute it via the Runner utility after changing appropriately the external test-data input (for example give the appropriate A&AI IP address)

Populated objects inside A&AI are:

- New business customer
- New HSIA CFS service instance
- New logical-link
- New PNF related to logical-link and to the HSIA CFS service instance

Please note that new UUIDs for the test objects are automatically generated by the script.

Functional tests

With the test data successfully inside A&AI, we can perform two functional tests for BBS-ep

PNF re-registration handling

Send a triggering event to DMaaP topic 'unauthenticated.PNF_UPDATE'

Before sending, make sure you have the

- Correct DMaaP address
- correlationId matches the 'pnf-name' in test data
- attachment-point is different than the one found in test-data (otherwise it will not be considered as a true ONU relocation)

Trigger a PNF re-registration event

```
curl -X POST http://10.133.115.190:30227/events/unauthenticated.PNF_UPDATE -H 'Content-Type: application/json' -d '{
  "nf-role": "gNB",
  "equip-type": "Unit-type-3",
  "equip-vendor": "Nokia",
  "equip-model": "SN-1",
  "serial-number": "",
  "sw-version": "SW-version-2",
  "correlationId": "pnf-11",
  "additionalFields": {
    "attachment-point": "olt11-1-1",
    "cvlan": "1005",
    "svlan": "100",
    "remote-id": "some-remote-id"
  }
}'
```

Logs showing PNF re-registration event handling

```
2019-04-24 10:40:10.334 TRACE 1 --- [ctor-http-nio-8] .u.ReRegistrationDmaapConsumerJsonParser : Event from
DMaaP to be parsed:
{"nf-role":"gNB","equip-type":"Unit-type-3","equip-vendor":"Nokia","equip-model":"SN-1","additionalFields":
{"remote-id":"some-remote-id","attachment-point":"olt11-1-1","cvlan":"1005","svlan":"100"},"serial-number":"","
sw-version":"SW-version-2","correlationId":"pnf-11"}
2019-04-24 10:40:10.342 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.p.ReRegistrationPipeline : Processing Step:
Retrieve PNF. Url: (/aai/v14/network/pnfs/pnf/pnf-11?depth=all)
2019-04-24 10:40:10.343 INFO 1 --- [ctor-http-nio-8] o.o.b.e.p.tasks.AaiClientTaskImpl : Executing task (PNF
Retrieval) for retrieving PNF object
2019-04-24 10:40:10.343 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Will issue
Reactive GET request to URL (/aai/v14/network/pnfs/pnf/pnf-11?depth=all) for object (org.onap.bbs.event.
processor.model.PnfAaiObject)
2019-04-24 10:40:10.469 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Request: GET
https://10.133.115.190:30233/aai/v14/network/pnfs/pnf/pnf-11?depth=all
2019-04-24 10:40:10.485 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : X-FromAppId=bbs
2019-04-24 10:40:10.488 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Accept=application
/json
2019-04-24 10:40:10.489 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient :
Authorization=Basic QUJfJOKFBSQ==
2019-04-24 10:40:10.492 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Content-
Type=application/json
2019-04-24 10:40:10.493 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Real-Time=true
2019-04-24 10:40:10.493 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : X-
TransactionId=9999
2019-04-24 10:40:11.961 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Response status
200 OK
2019-04-24 10:40:12.079 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Response body
{"pnf-name":"pnf-11","in-maint":true,"resource-version":"1551889263181","relationship-list":{"relationship":
[{"related-to":"service-instance","relationship-label":"org.onap.relationships.inventory.ComposedOf","related-
link":"/aai/v14/business/customers/customer/766162a3-53a9-42b8-8fe2-ebaa2213a6dd/service-subscriptions/service-
subscription/BBS-CFS11/service-instances/service-instance/1923eaa8-8ab7-49ef-b4c2-e185efbbe832","relationship-
data":[{"relationship-key":"customer.global-customer-id","relationship-value":"766162a3-53a9-42b8-8fe2-
ebaa2213a6dd"}],{"relationship-key":"service-subscription.service-type","relationship-value":"BBS-CFS11"}},
```

```

{"relationship-key":"service-instance.service-instance-id","relationship-value":"1923eaa8-8ab7-49ef-b4c2-e185efbbe832"}],{"related-to-property":[{"property-key":"service-instance.service-instance-name"}]},{"related-to":"logical-link","relationship-label":"org.onap.relationships.inventory.BridgedTo","related-link":"/aai/v14/network/logical-links/logical-link/olt11-11-11","relationship-data":[{"relationship-key":"logical-link.link-name","relationship-value":"olt11-11-11"}]}]}
2019-04-24 10:40:12.198 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.p.ReRegistrationPipeline : Processing Step: Retrieve HSI CFS Service. Url: (/aai/v14/nodes/service-instances/service-instance/1923eaa8-8ab7-49ef-b4c2-e185efbbe832?depth=all)
2019-04-24 10:40:12.198 INFO 1 --- [ctor-http-nio-8] o.o.b.e.p.tasks.AaiClientTaskImpl : Executing task (HSI CFS Service Instance Retrieval) for retrieving Service Instance object
2019-04-24 10:40:12.198 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Will issue Reactive GET request to URL (/aai/v14/nodes/service-instances/service-instance/1923eaa8-8ab7-49ef-b4c2-e185efbbe832?depth=all) for object (org.onap.bbs.event.processor.model.ServiceInstanceAaiObject)
2019-04-24 10:40:12.200 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Request: GET https://10.133.115.190:30233/aai/v14/nodes/service-instances/service-instance/1923eaa8-8ab7-49ef-b4c2-e185efbbe832?depth=all
2019-04-24 10:40:12.200 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : X-FromAppId=bbs
2019-04-24 10:40:12.200 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Accept=application/json
2019-04-24 10:40:12.200 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Authorization=Basic QUJJKFBSQ==
2019-04-24 10:40:12.200 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Content-Type=application/json
2019-04-24 10:40:12.201 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Real-Time=true
2019-04-24 10:40:12.201 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : X-TransactionId=9999
2019-04-24 10:40:12.495 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Response status 200 OK
2019-04-24 10:40:12.500 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Response body {"service-instance-id":"1923eaa8-8ab7-49ef-b4c2-e185efbbe832","resource-version":"1551889260591","orchestration-status":"assigned","relationship-list":{"relationship":[{"related-to":"pnf","relationship-label":"org.onap.relationships.inventory.ComposedOf","related-link":"/aai/v14/network/pnfs/pnf/pnf-11","relationship-data":[{"relationship-key":"pnf.pnf-name","relationship-value":"pnf-11"}]}],"metadata":{"metadatum":[{"metaname":"cvlan","metaval":"1005","resource-version":"1551889260599"},{"metaname":"svlan","metaval":"100","resource-version":"1551889260608"},{"metaname":"oltName","metaval":"olt1","resource-version":"1551889260616"},{"metaname":"xgw-mac-address","metaval":"01:02:03:04:05:06","resource-version":"1551889260624"}]}}
2019-04-24 10:40:12.523 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.p.ReRegistrationPipeline : Processing Step: Publish for Policy
2019-04-24 10:40:12.525 TRACE 1 --- [ctor-http-nio-8] o.o.b.e.p.p.ReRegistrationPipeline : Trigger Policy event: (ControlLoopPublisherDmaapModel{closedLoopEventClient=DCAE.BBS_event_processor_mSInstance, policyVersion=1.0.0.5, policyName=Nomadic_ONT, policyScope=policyScope, targetType=VM, aaiEnrichmentData={attachmentPoint=olt11-1-1, service-information.hsia-cfs-service-instance-id=1923eaa8-8ab7-49ef-b4c2-e185efbbe832, cvlan=1005, svlan=100, remoteId=some-remote-id}, closedLoopAlarmStart=1556102412, closedLoopEventStatus=ONSET, closedLoopControlName=controName, version=1.0.2, target=vserver.vserver-name, requestId=f96abe95-fb8c-4edf-9b9a-4ad922ae5aa9, originator=DCAE-bbs-event-processor})
2019-04-24 10:40:12.541 INFO 1 --- [ctor-http-nio-8] o.o.b.e.p.tasks.DmaapPublisherTaskImpl : Executing task for publishing control loop message
2019-04-24 10:40:12.546 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.tasks.DmaapPublisherTaskImpl : CL message ControlLoopPublisherDmaapModel{closedLoopEventClient=DCAE.BBS_event_processor_mSInstance, policyVersion=1.0.0.5, policyName=Nomadic_ONT, policyScope=policyScope, targetType=VM, aaiEnrichmentData={attachmentPoint=olt11-1-1, service-information.hsia-cfs-service-instance-id=1923eaa8-8ab7-49ef-b4c2-e185efbbe832, cvlan=1005, svlan=100, remoteId=some-remote-id}, closedLoopAlarmStart=1556102412, closedLoopEventStatus=ONSET, closedLoopControlName=controName, version=1.0.2, target=vserver.vserver-name, requestId=f96abe95-fb8c-4edf-9b9a-4ad922ae5aa9, originator=DCAE-bbs-event-processor}
2019-04-24 10:40:12.940 INFO 1 --- [ctor-http-nio-8] o.o.b.e.p.p.ReRegistrationPipeline : PNF Re-Registration event successfully handled. Publishing to DMAAP for Policy returned a status code of (200 OK)
2019-04-24 10:40:12.940 INFO 1 --- [ctor-http-nio-8] o.o.b.e.p.p.ReRegistrationPipeline : PNF Re-Registration processing pipeline has been completed
2019-04-24 10:40:19.263 INFO 1 --- [ctor-http-nio-7] o.o.b.e.p.p.CpeAuthenticationPipeline : Nothing to consume from DMAAP
2019-04-24 10:40:19.264 INFO 1 --- [ctor-http-nio-7] o.o.b.e.p.p.CpeAuthenticationPipeline : CPE Authentication processing pipeline has been completed

```

We can check that a new DCAE_CL_OUTPUT event has been published (make sure you target the correct DMAAP IP address)

Fetch events from DCAE_CL_OUTPUT topic

```
curl -X GET http://10.133.115.190:30227/events/unauthenticated.DCAE_CL_OUTPUT/foo/bar
```

Published event

```
[
  "{ \"closedLoopEventClient\": \"DCAE.BBS_event_processor_mSInstance\", \"policyVersion\": \"1.0.0.5\", \"policyName\": \"Nomadic_ONT\", \"policyScope\": \"policyScope\", \"target_type\": \"VM\", \"AAI\": { \"attachmentPoint\": \"olt11-1-1\", \"service-information.hsia-cfs-service-instance-id\": \"1923eaa8-8ab7-49ef-b4c2-e185efbbe832\", \"cvlan\": \"1005\", \"svlan\": \"100\", \"remoteId\": \"some-remote-id\" }, \"closedLoopAlarmStart\": 1556102412, \"closedLoopEventStatus\": \"ONSET\", \"closedLoopControlName\": \"controName\", \"version\": \"1.0.2\", \"target\": \"vserver.vserver-name\", \"requestID\": \"f96abe95-fb8c-4edf-9b9a-4ad922ae5aa9\", \"from\": \"DCAE-bbs-event-processor\" }",
]
```

CPE authentication handling

Send a triggering event to DMaaP topic 'unauthenticated.CPE_AUTHENTICATION'

Before sending, make sure you have the

- Correct DMaaP address
- sourceName matches the 'pnf-name' in test data
- macAddress matches the 'rgw-mac-address' in test data

Trigger a PNF re-registration event

```
curl -X POST http://10.133.115.190:30227/events/unauthenticated.CPE_AUTHENTICATION -H 'Content-Type: application/json' -d '{
  "event": {
    "commonEventHeader": {
      "version": 7.1,
      "eventName": "StateChange_cpe_authentication",
      "domain": "stateChange",
      "eventId": "ab305d54-85b4-a31b-7db2fb6b9e546015",
      "eventType": "applicationNf",
      "sourceId": "",
      "sourceName": "pnf-11",
      "reportingEntityId": "",
      "reportingEntityName": "thirdparty-sdnc-idfromesrrequest",
      "priority": "Normal",
      "startEpochMicrosec": 1.413378172e+15,
      "lastEpochMicrosec": 1.413378172e+15,
      "sequence": 0,
      "internalHeaderFields": {},
      "vesEventListenerVersion": "",
      "timeZoneOffset": ""
    },
    "stateChangeFields": {
      "stateChangeFieldsVersion": 1,
      "oldState": "outOfService",
      "newState": "inService",
      "stateInterface": "",
      "additionalFields": {
        "macAddress": "01:02:03:04:05:06",
        "swVersion": "1.2.3"
      }
    }
  }
}'
```

Logs showing CPE authentication event handling

```
2019-04-24 10:42:09.513 INFO 1 --- [pipeline-thrd-5] o.o.b.e.p.p.ReRegistrationPipeline : Process next
Re-Registration events
2019-04-24 10:42:09.513 INFO 1 --- [pipeline-thrd-3] o.o.b.e.p.p.CpeAuthenticationPipeline : Process next
CPE Authentication events
2019-04-24 10:42:09.514 DEBUG 1 --- [pipeline-thrd-3] t.DmaapCpeAuthenticationConsumerTaskImpl : Executing task
for CPE-Authentication with name "Consume CPE Authentication DMAAP message"
2019-04-24 10:42:09.514 DEBUG 1 --- [pipeline-thrd-5] .p.t.DmaapReRegistrationConsumerTaskImpl : Executing task
for Re-Registration with name "Consume Re-registration DMAAP message"
2019-04-24 10:42:09.521 TRACE 1 --- [pipeline-thrd-3] o.o.b.e.p.p.CpeAuthenticationPipeline : Reactive CPE
Authentication pipeline subscribed - Execution started
2019-04-24 10:42:09.525 TRACE 1 --- [pipeline-thrd-5] o.o.b.e.p.p.ReRegistrationPipeline : Reactive PNF
Re-registration pipeline subscribed - Execution started
2019-04-24 10:42:10.301 TRACE 1 --- [ctor-http-nio-7] CpeAuthenticationDmaapConsumerJsonParser : Event from
DMAAP to be parsed:
{"event":{"commonEventHeader":{"sourceId":"","startEpochMicrosec":1.413378172E15,"eventId":"ab305d54-85b4-a31b-
7db2fb6b9e546015","timeZoneOffset":"","reportingEntityId":"","internalHeaderFields":{},"eventType":"
applicationNf","priority":"Normal","version":7.1,"reportingEntityName":"thirdparty-sdnc-idfromesrrequest","
sequence":0,"domain":"stateChange","lastEpochMicrosec":1.413378172E15,"eventName":"
StateChange_cpe_authentication","vesEventListenerVersion":"","sourceName":"pnf-11"},"stateChangeFields":
{"additionalFields":{"macAddress":"01:02:03:04:05:06","swVersion":"1.2.3"},"oldState":"outOfService","
stateChangeFieldsVersion":1,"stateInterface":"","newState":"inService"}}}
2019-04-24 10:42:10.304 DEBUG 1 --- [ctor-http-nio-7] o.o.b.e.p.p.CpeAuthenticationPipeline : Processing
Step: Retrieve PNF. Url: (/aai/v14/network/pnfs/pnf/pnf-11?depth=all)
2019-04-24 10:42:10.307 INFO 1 --- [ctor-http-nio-7] o.o.b.e.p.tasks.AaiClientTaskImpl : Executing task
(PNF Retrieval) for retrieving PNF object
2019-04-24 10:42:10.307 DEBUG 1 --- [ctor-http-nio-7] o.o.b.e.p.utilities.AaiReactiveClient : Will issue
Reactive GET request to URL (/aai/v14/network/pnfs/pnf/pnf-11?depth=all) for object (org.onap.bbs.event.
```

```
processor.model.PnfAaiObject)
2019-04-24 10:42:10.308 DEBUG 1 --- [ctor-http-nio-7] o.o.b.e.p.utilities.AaiReactiveClient : Request: GET
https://10.133.115.190:30233/aai/v14/network/pnfs/pnf/pnf-11?depth=all
2019-04-24 10:42:10.309 DEBUG 1 --- [ctor-http-nio-7] o.o.b.e.p.utilities.AaiReactiveClient : X-FromAppId=bbs
2019-04-24 10:42:10.309 DEBUG 1 --- [ctor-http-nio-7] o.o.b.e.p.utilities.AaiReactiveClient :
Accept=application/json
2019-04-24 10:42:10.309 DEBUG 1 --- [ctor-http-nio-7] o.o.b.e.p.utilities.AaiReactiveClient :
Authorization=Basic QUfJOKFBSQ==
2019-04-24 10:42:10.309 DEBUG 1 --- [ctor-http-nio-7] o.o.b.e.p.utilities.AaiReactiveClient : Content-
Type=application/json
2019-04-24 10:42:10.309 DEBUG 1 --- [ctor-http-nio-7] o.o.b.e.p.utilities.AaiReactiveClient : Real-Time=true
2019-04-24 10:42:10.309 DEBUG 1 --- [ctor-http-nio-7] o.o.b.e.p.utilities.AaiReactiveClient : X-
TransactionId=9999
2019-04-24 10:42:10.934 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Response
status 200 OK
2019-04-24 10:42:10.937 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Response body
{"pnf-name":"pnf-11","in-maint":true,"resource-version":"1551889263181","relationship-list":{"relationship":
[{"related-to":"service-instance","relationship-label":"org.onap.relationships.inventory.ComposedOf","related-
link":"/aai/v14/business/customers/customer/766162a3-53a9-42b8-8fe2-ebaa2213a6dd/service-subscriptions/service-
subscription/BBS-CFS11/service-instances/service-instance/1923eaa8-8ab7-49ef-b4c2-el85efbbe832","relationship-
data":[{"relationship-key":"customer.global-customer-id","relationship-value":"766162a3-53a9-42b8-8fe2-
ebaa2213a6dd"}, {"relationship-key":"service-subscription.service-type","relationship-value":"BBS-CFS11"},
{"relationship-key":"service-instance.service-instance-id","relationship-value":"1923eaa8-8ab7-49ef-b4c2-
el85efbbe832"}],"related-to-property":[{"property-key":"service-instance.service-instance-name"}]},{ "related-
to":"logical-link","relationship-label":"org.onap.relationships.inventory.BridgedTo","related-link":"/aai/v14
/network/logical-links/logical-link/olt11-11-11","relationship-data":[{"relationship-key":"logical-link.link-
name","relationship-value":"olt11-11-11"}]}}]}
2019-04-24 10:42:10.942 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.p.CpeAuthenticationPipeline : Processing
Step: Retrieve HSI CFS Service. Url: (/aai/v14/nodes/service-instances/service-instance/1923eaa8-8ab7-49ef-b4c2-
el85efbbe832?depth=all)
2019-04-24 10:42:10.942 INFO 1 --- [ctor-http-nio-8] o.o.b.e.p.tasks.AaiClientTaskImpl : Executing task
(HSI CFS Service Instance Retrieval) for retrieving Service Instance object
2019-04-24 10:42:10.942 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Will issue
Reactive GET request to URL (/aai/v14/nodes/service-instances/service-instance/1923eaa8-8ab7-49ef-b4c2-
el85efbbe832?depth=all) for object (org.onap.bbs.event.processor.model.ServiceInstanceAaiObject)
2019-04-24 10:42:10.944 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Request: GET
https://10.133.115.190:30233/aai/v14/nodes/service-instances/service-instance/1923eaa8-8ab7-49ef-b4c2-
el85efbbe832?depth=all
2019-04-24 10:42:10.944 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : X-FromAppId=bbs
2019-04-24 10:42:10.944 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient :
Accept=application/json
2019-04-24 10:42:10.945 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient :
Authorization=Basic QUfJOKFBSQ==
2019-04-24 10:42:10.945 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Content-
Type=application/json
2019-04-24 10:42:10.947 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Real-Time=true
2019-04-24 10:42:10.947 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : X-
TransactionId=9999
2019-04-24 10:42:11.230 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Response
status 200 OK
2019-04-24 10:42:11.239 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.utilities.AaiReactiveClient : Response body
{"service-instance-id":"1923eaa8-8ab7-49ef-b4c2-el85efbbe832","resource-version":"1551889260591","orchestration-
status":"assigned","relationship-list":{"relationship":[{"related-to":"pnf","relationship-label":"org.onap.
relationships.inventory.ComposedOf","related-link":"/aai/v14/network/pnfs/pnf/pnf-11","relationship-data":
[{"relationship-key":"pnf.pnf-name","relationship-value":"pnf-11"}]},"metadata":{"metadatum":[{"metaname":"
cvlan","metaval":"1005","resource-version":"1551889260599"}, {"metaname":"svlan","metaval":"100","resource-
version":"1551889260608"}, {"metaname":"oltName","metaval":"olt1","resource-version":"1551889260616"},
{"metaname":"rgw-mac-address","metaval":"01:02:03:04:05:06","resource-version":"1551889260624"}]}}
2019-04-24 10:42:11.253 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.p.CpeAuthenticationPipeline : Processing
Step: Publish for Policy
2019-04-24 10:42:11.253 TRACE 1 --- [ctor-http-nio-8] o.o.b.e.p.p.CpeAuthenticationPipeline : Trigger Policy
event: (ControlLoopPublisherDmaapModel{closedLoopEventClient=DCAE.BBS_event_processor_msInstance,
policyVersion=1.0.0.5, policyName=CPE_Authentication, policyScope=policyScope, targetType=VM, aaiEnrichmentData=
{cpe.old-authentication-state=outOfService, cpe.new-authentication-state=inService, cpe.swVersion=1.2.3,
service-information.hsia-cfs-service-instance-id=1923eaa8-8ab7-49ef-b4c2-el85efbbe832},
closedLoopAlarmStart=1556102531, closedLoopEventStatus=ONSET, closedLoopControlName=controlName, version=1.0.2,
target=vserver.vserver-name, requestId=205f5550-37a0-4be7-be63-efefel81b37, originator=DCAE-bbs-event-
processor})
2019-04-24 10:42:11.253 INFO 1 --- [ctor-http-nio-8] o.o.b.e.p.tasks.DmaapPublisherTaskImpl : Executing task
for publishing control loop message
2019-04-24 10:42:11.254 DEBUG 1 --- [ctor-http-nio-8] o.o.b.e.p.tasks.DmaapPublisherTaskImpl : CL message
```



```
ControlLoopPublisherDmaapModel{closedLoopEventClient=DCAE.BBS_event_processor_mSInstance, policyVersion=1.0.0.5, policyName=CPE_Authentication, policyScope=policyScope, targetType=VM, aaiEnrichmentData={cpe.old-authentication-state=outOfService, cpe.new-authentication-state=inService, cpe.swVersion=1.2.3, service-information.hsia-cfs-service-instance-id=1923eaa8-8ab7-49ef-b4c2-e185efbbe832}, closedLoopAlarmStart=1556102531, closedLoopEventStatus=ONSET, closedLoopControlName=controlName, version=1.0.2, target=vserver.vserver-name, requestId=205f5550-37a0-4be7-be63-effefe181b37, originator=DCAE-bbs-event-processor}
2019-04-24 10:42:11.631 INFO 1 --- [ctor-http-nio-7] o.o.b.e.p.p.CpeAuthenticationPipeline : CPE
Authentication event successfully handled. Publishing to Dmaap for Policy returned a status code of (200 OK)
2019-04-24 10:42:11.633 INFO 1 --- [ctor-http-nio-7] o.o.b.e.p.p.CpeAuthenticationPipeline : CPE
Authentication processing pipeline has been completed
```

We can check that a new DCAE_CL_OUTPUT event has been published (make sure you target the correct Dmaap IP address)

Fetch events from DCAE_CL_OUTPUT topic

```
curl -X GET http://10.133.115.190:30227/events/unauthenticated.DCAE_CL_OUTPUT/foo/bar
```

Published event

```
[
  "{ \"closedLoopEventClient\": \"DCAE.BBS_event_processor_mSInstance\", \"policyVersion\": \"1.0.0.5\", \"policyName\": \"CPE_Authentication\", \"policyScope\": \"policyScope\", \"target_type\": \"VM\", \"AAI\": { \"cpe.old-authentication-state\": \"outOfService\", \"cpe.new-authentication-state\": \"inService\", \"cpe.swVersion\": \"1.2.3\", \"service-information.hsia-cfs-service-instance-id\": \"1923eaa8-8ab7-49ef-b4c2-e185efbbe832\" }, \"closedLoopAlarmStart\": 1556102531, \"closedLoopEventStatus\": \"ONSET\", \"closedLoopControlName\": \"controlName\", \"version\": \"1.0.2\", \"target\": \"vserver.vserver-name\", \"requestID\": \"205f5550-37a0-4be7-be63-effefe181b37\", \"from\": \"DCAE-bbs-event-processor\" }"
]
```