

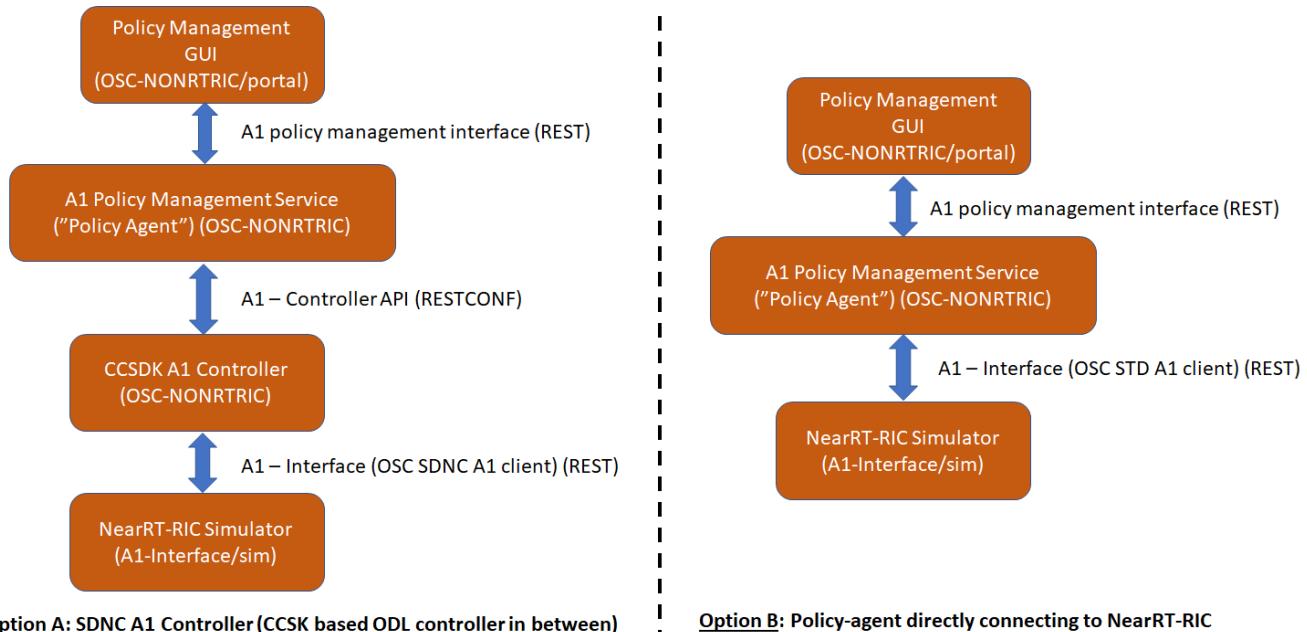
Testing End to End call in release A

This page describes how to demonstrate the entire flow from Non-Rt RIC Controlpanel -> Policy Agent -> (A1 controller in SDNC) -> Near Realtime RIC Simulator. Optionally A1 controller can be left out.

- Overview of the End to End call
- End to End call from Dashboard to NearRT-RIC simulator
 - Preparation
 - Perform Policy Operations via Dashboard
- Call from CCSDK A1 Controller to NearRT-RIC simulator
 - Preparation
 - Perform Policy Operations via Open Daylight GUI
 - Get policy types
 - Create policy
 - Get policy instances

Overview of the End to End call

Details of the architecture can be found from the following link: [Release A](#)



End to End call from Dashboard to NearRT-RIC simulator

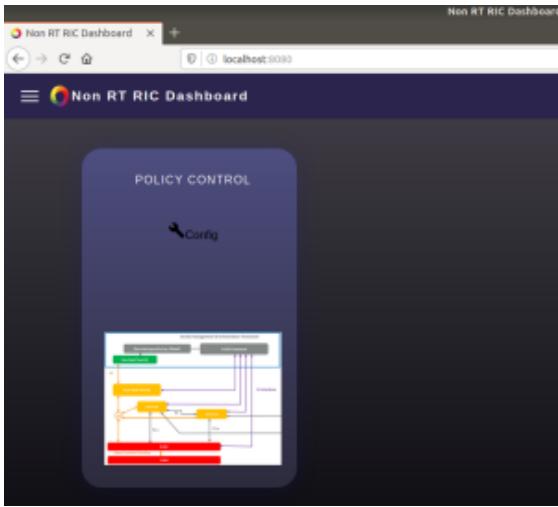
Preparation

See [Release A - Build/Run](#) for building and starting the environment.

Either option A or B can be setup and all end to end actions from Dashboard should work same way.

Perform Policy Operations via Dashboard

- Open Dashboard UI at <http://localhost:8080/>



- Click on Config and the screen below with STD_QoSNudging_0.2.0 policy type should open

Policy Type	Description	Action
STD_QoSNudging_0.2.0	QoS policy type	

No records found.

- Click on '+' icon to create new policy

STD_QoSNudging_0.2.0

QoS policy type

Select RIC
ric1

Properties

Scope

QoS id *
123

Ue id *
234

Statement

Priority Level *
2

Submit Close

Copyright (C) 2019 AT&T Intellectual Property. Licensee's Copyright (C) 2019 Nokia Foundation

- Choose your ric (ric1 or ric2) from drop-down menu and provide any arbitrary values for QoS Id, Ue Id and Priority

Properties

Scope

Qos Id *
123

Ue Id *
234

Statement

Priority Level *
-2

JSON

JSON Schema

Policy

STD_QoSNUdging_0.2.0:8b1286

✓ 6d-
8f7d-4d99-84d2-5341e8d79600
submitted

- Submit the policy (you then need to also press Close to return from creation view)
- An entry to the chosen nearRT-RIC simulator console/log should appear (see, for example, **docker logs ric1** in case ric1 policy was created):

```
172.18.0.3 - - [02/Apr/2020 07:33:57] "PUT /A1-P/v1/policies/ac3e914a-b39c-4d93-b77c-d2ebac756267?policyTypeId=STD_QoSNUdging_0.2.0 HTTP/1.1" 201 -
```

- You may repeat the creation process a few times for different rics - below we see one policy created to ric1 and two to ric2

Policy Type	Description	Action
STD_QoSNUdging_0.2.0	QoS policy type	[Edit]
fbf586cd-6839-4057-914f-4fff385f6da4	ric2	[Edit]
ac96b6cf-12da-43a4-8d0c-89f277f2a89a	ric1	[Edit]
0f3539c2-4977-41eb-a5fd-dcdeaeff50c	ric2	[Edit]

- Click the pen icon to modify any policy

Properties

Scope

Qos Id *
123

Ue Id *
234

Statement

Priority Level *
3

JSON

JSON Schema

Policy

STD_QoSNUdging_0.2.0:8b1286

✓ 6d-
8f7d-4d99-84d2-5341e8d79600
submitted

- Even though the dashboard allows changing any value, the simulator will only accept Priority changes
- Modifications are submitted in the same way as in creation, and the resulting simulator log should also be identical to the one we saw in creation

```
172.18.0.3 -- [02/Apr/2020 07:51:19] "PUT /A1-P/v1/policies/ac3e914a-b39c-4d93-b77c-d2ebac756267?policyTypeId=STD_QoSNUdg_0.2.0" 201 -
```

Non RT RIC Dashboard

Policy Control

Policy Type	Description
^ STD_QoSNUdg_0.2.0	QoS policy type

Instance	Ric	Owner	Last modified	Action
fbf586cd-6839-4057-914f-4fff385f6da4	ric2	dashboard	4/1/2020, 6:37:27 PM	
ac96b6cf-12da-43a4-8d0c-89f277f2a89a	ric1	dashboard	4/1/2020, 6:37:02 PM	
0f3539c2-4977-41eb-a5fd-dcdeaeffd50c	ric2	dashboard	4/1/2020, 6:36:47 PM	

- Delete any policy by clicking the red trashcan icon

Non RT RIC Dashboard

Policy Control

Policy Type	Action			
^ STD_QoSNUdg_0.2.0	<div style="border: 1px solid #ccc; padding: 5px; text-align: center;"> Are you sure you want to delete this policy instance? </div> <div style="text-align: center; margin-top: 10px;"> Cancel OK </div>			

Instance	Ric	Owner	Last modified	Action
1a4d7485-9165-4a26-9a10-412ad5a618c8	ric2	dashboard	4/1/2020, 6:12:31 PM	

- Confirm deletion and verify the log on simulator side:

```
172.18.0.3 -- [02/Apr/2020 08:02:21] "DELETE /A1-P/v1/policies/ac3e914a-b39c-4d93-b77c-d2ebac756267" HTTP/1.1
204 -
```

Call from CCSDK A1 Controller to NearRT-RIC simulator

Limited tests to verify just OSC CCSDK A1 Controller calls towards NearRT-RIC simulator can be done by using ODL GUI. Dashboard and policy-agent are not needed in this case.

Preparation

See [Release A - Build/Run](#) for building and starting the environment. If following those instructions, just **skip the following steps**:

- [Release A - Build/Run#RunPolicy-agentDockerContainer](#)
- [Release A - Build/Run#RunNon-RT-RICDashboardDockerContainer](#)

Now only "**a1-controller-container**" and "**sdnc_db_container**" and simulators are running.

Perform Policy Operations via Open Daylight GUI

- Open GUI: [Release A - Build/Run#OpenDaylightGUI](#)
- Click Sub API: [A1-ADAPTER-API\(2020-01-22\)](#)



Controller Resources

Mounted Resources

Below are the list of APIs supported by the Controller.

A1-ADAPTER-API(2020-01-22)[Show/Hide](#) | [List Operations](#) | [Expand Operations](#) | [Raw](#)**POST** /restconf/operations/A1-ADAPTER-API:deletePolicy**POST** /restconf/operations/A1-ADAPTER-API:getPolicyTypeIdentities**POST** /restconf/operations/A1-ADAPTER-API:putPolicy**POST** /restconf/operations/A1-ADAPTER-API:getPolicyType**POST** /restconf/operations/A1-ADAPTER-API:getPolicyIdentities**ASDC-API(2017-02-01)**[Show/Hide](#) | [List Operations](#) | [Expand Operations](#) | [Raw](#)**DataChange(2015-05-19)**[Show/Hide](#) | [List Operations](#) | [Expand Operations](#) | [Raw](#)**Get policy types**

Payload

POST /restconf/operations/A1-ADAPTER-API:getPolicyTyp identities

```
{  
    "A1-ADAPTER-API:input": {  
        "near-rt-ric-url": "http://ric1:8085/"  
    }  
}
```

POST /restconf/operations/A1-ADAPTER-API:getPolicyTypeIdentities

Response Class

Model | Model Schema

```
(getPolicyTypeIdentities)output-TOP {  
    A1-ADAPTER-API:output (object[(getPolicyTypeIdentities)output], optional)  
}  
  
(getPolicyTypeIdentities)output {  
    A1-ADAPTER-API:policy-type-id-list (array[Optional.empty], optional)  
}
```

Response Content Type

Parameters

Parameter	Value	Description	Parameter Type	Data Type
(getPolicyTypeIdentities)input-TOP	{ "A1-ADAPTER-API:input": { "near-rt-ric-url": "http://ric1:8085/" } }		body	Model Model Schema (getPolicyTypeIdentities)input-TOP { A1-ADAPTER-API:input (object[(getPolicyTypeIdentities)input], optional) } (getPolicyTypeIdentities)input { A1-ADAPTER-API:near-rt-ric-url (Optional.empty, optional) }

[Hide Response](#)

Request URL

Response Body

```
{  
    "output": {  
        "policy-type-id-list": [  
            "STD_QoSNudging_0.2.0"  
        ]  
    }  
}
```

Response Code

Response Headers

```
{  
    "Access-Control-Allow-Credentials": "true",  
    "Access-Control-Allow-Origin": "http://localhost:8282",  
    "Content-Length": "59",  
    "Content-Type": "application/json"  
}
```

Create policy

Payload

POST /restconf/operations/A1-ADAPTER-API:putPolicy

```
{  
    "A1-ADAPTER-API:input": {  
        "near-rt-ric-url": "http://ric1:8085/",  
        "policy-id": "my-policy-instance1",  
        "policy-type-id": "STD_QoSNUdg_0.2.0",  
        "policy": '{  
            "scope": {  
                "qosId": "999",  
                "ueId": "5001"  
            },  
            "statement": {  
                "priorityLevel": 5  
            }  
        }'  
    }  
}
```

POST /restconf/operations/A1-ADAPTER-API:putPolicy

Response Class

Model | Model Schema

```
(putPolicy)output-TOP {  
    A1-ADAPTER-API:output (object[(putPolicy)output], optional)  
}  
  
(putPolicy)output {  
    A1-ADAPTER-API:returned-policy (Optional.empty, optional)  
}
```

Response Content Type application/json ▾

Parameters

Parameter	Value	Description	Parameter Type	Data Type
(putPolicy)input-TOP	{ "A1-ADAPTER-API:input": { "near-rt-ric-url": "http://rid1:8085/", "policy-id": "my-policy-instance1", "policy-type-id": "STD_QoSNUdging_0.2.0", "policy": { "scope": { "qosId": "999", "ueId": "5001" }, "statement": { "priorityLevel": 5 } } } }		body	Model Model Schema

```
(putPolicy)input-TOP {  
    A1-ADAPTER-API:input  
    (object[(putPolicy)input],  
     optional)  
}  
  
(putPolicy)input {  
    A1-ADAPTER-API:near-rt-  
    ric-url (Optional.empty,  
             optional),  
    A1-ADAPTER-API:policy-  
    id (Optional.empty,  
         optional),  
    A1-ADAPTER-API:policy-  
    type-id (Optional.empty,  
             optional),  
    A1-ADAPTER-API:policy  
    (Optional.empty, optional)  
}
```

Parameter content type: application/json ▾

Try it out!

[Hide Response](#)

Request URL

http://localhost:8282/restconf/operations/A1-ADAPTER-API:putPolicy

Response Body

```
{  
    "output": {  
        "returned-policy": "{\"scope\":{\"qosId\":\"999\",\"ueId\":\"5001\"},\"statement\":{\"priorityLevel\":5}}\n    }  
}
```

Response Code

200

Response Headers

```
{  
    "Access-Control-Allow-Credentials": "true",  
    "Access-Control-Allow-Origin": "http://localhost:8282",  
    "Content-Length": "120",  
    "Content-Type": "application/json"  
}
```

Get policy instances

Payload

POST /restconf/operations/A1-ADAPTER-API:getPolicyIdentities

```
{  
    "A1-ADAPTER-API:input": {  
        "near-rt-ric-url": "http://ric1:8085/"  
    }  
}
```

POST /restconf/operations/A1-ADAPTER-API:getPolicyIdentities

Response Class

Model | Model Schema

```
(getPolicyIdentities)output-TOP {  
    A1-ADAPTER-API:output (object[(getPolicyIdentities)output], optional)  
}  
(getPolicyIdentities)output {  
    A1-ADAPTER-API:policy-id-list (array[Optional.empty], optional)  
}
```

Response Content Type application/json ▾

Parameters

Parameter	Value	Description	Parameter Type	Data Type
(getPolicyIdentities)input-TOP	<pre>{ "A1-ADAPTER-API:input": { "near-rt-ric-url": "http://ric1:8085/" } }</pre>		body	Model Model Schema (getPolicyIdentities)input-TOP { A1-ADAPTER-API:input (object[(getPolicyIdentities)input], optional) } (getPolicyIdentities)input { A1-ADAPTER-API:near-rt-ric-url (Optional.empty, optional) }

Try it out!

[Hide Response](#)

Request URL

http://localhost:8282/restconf/operations/A1-ADAPTER-API:getPolicyIdentities

Response Body

```
{  
    "output": {  
        "policy-id-list": [  
            "my-policy-instance1",  
            "bbab23de-8979-45fe-9458-f0167c721a11"  
        ]  
    }  
}
```

Response Code

200

Response Headers

```
{  
    "Access-Control-Allow-Credentials": "true",  
    "Access-Control-Allow-Origin": "http://localhost:8282",  
    "Content-Length": "92",  
    "Content-Type": "application/json"  
}
```