**Configure Existing PaaS services with Application-related Configurations for a functional IoT Workflow**

1. **Create value descriptors for temperature & humidity**

curl --location --request POST http://tandem\_node\_ip:edgex-core-data\_node\_port\_of\_48080/api/v1/valuedescriptor --header 'Content-Type: application/json' --data-raw '{

"name": "humidity",

"description": "Ambient humidity in percent",

"min": "0",

"max": "100",

"type": "Int64",

"uomLabel": "humidity",

"defaultValue": "0",

"formatting": "%s",

"labels": [

"environment",

"humidity"

]

}'

curl --location --request POST http://tandem\_node\_ip:edgex-core-data\_node\_port\_of\_48080/api/v1/valuedescriptor --header 'Content-Type: application/json' --data-raw '{

"name": "temperature",

"description": "Ambient temperature in Celsius",

"min": "-50",

"max": "100",

"type": "Int64",

"uomLabel": "temperature",

"defaultValue": "0",

"formatting": "%s",

"labels": [

"environment",

"temperature"

]

}'

1. **Upload the device profile**

curl --location --request POST http:// tandem\_node\_ip:edgex-core-metadata\_node\_port/api/v1/deviceprofile --form 'file=@"path\_of\_file/createSensorCluster.yaml"'

1. **Create the device profile \* only from file not raw data**

curl --location --request POST http://tandem\_node\_ip:edgex-core-metadata\_node\_port/api/v1/deviceprofile/uploadfile --header 'Content-Type: application/json' --data-raw '{

"name": "SensorCluster",

"manufacturer": "Raspberry Pi Foundation",

"model": "Raspberry Pi 3b+",

"labels": [

"rpi"

],

"description": "Sensor cluster providing metrics for temperature and humidity",

"deviceResources": [

{

"name": "temperature",

"description": "Sensor cluster temperature values",

"properties": {

"value": {

"type": "Int64",

"readWrite": "RW",

"minimum": "-50",

"maximum": "100",

"size": "4",

"LSB": "true",

"defaultValue": "9"

}

}

},

{

"name": "humidity",

"description": "Sensor cluster humidity values",

"properties": {

"value": {

"type": "Int64",

"readWrite": "RW",

"minimum": "0",

"maximum": "100",

"size": "4",

"LSB": "true",

"defaultValue": "9"

}

}

}

]

}'

1. **Create the device**

curl --location --request POST http://tandem\_node\_ip:edgex-core-metadata\_node\_port/api/v1/device --header 'Content-Type: application/json' --data-raw '{

"name": "Temp\_and\_Humidity\_sensor\_cluster\_01",

"description": "Raspberry Pi sensor cluster",

"adminState": "unlocked",

"operatingState": "enabled",

"protocols": {

"example": {

"host": "dummy",

"port": "1234",

"unitID": "1"

}

},

"labels": [

"Humidity sensor",

"Temperature sensor",

"DHT11"

],

"location": "Peania",

"service": {

"name": "edgex-device-rest"

},

"profile": {

"name": "SensorCluster"

}

}'

1. **Create the stream pipeline**

curl --location --request POST http://tandem\_node\_ip:edgex-kuiper\_node\_port/streams --header 'Content-Type: application/json' --data-raw '{

"sql": "create stream iot\_mon() WITH (FORMAT=\"JSON\", TYPE=\"edgex\")"

}'

1. **Create the rules**

curl --location --request POST http://tandem\_node\_ip:edgex-kuiper\_node\_port/rules --header 'Content-Type: application/json' --data-raw '{

"id": "mqtt\_exporter\_rule",

"sql" : "SELECT \* FROM iot\_mon",

"actions": [

{

"mqtt": {

"server": "tcp://iotmonitoring-mqtt:1883",

"topic": "edgex-tutorial"

}

},{

"log": {}

}

]

}'