# R3 - API Documentation

# Introduction

5G MEC BP inherits some APIs implemented by OpenNESS, which can be used in the so-called on-premises deployment where kubernetes is not available.

In this release, APIs exposed include those related to :

1. Application Life Cycle Management
2. Edge Application API.

# API Definitions

## Application Life Cycle Management

These API provides an abstraction layer for an operations admin, enabling them to configure and manage the lifecycle of applications.

### Get a list of applications

| 1.API Name | Get a list of applications | Type | GET |
|---|---|---|---|
| Description | The GET method is used to get a list of applications from the controller | | |
| Resource URI | /apps | | |
| **Parameters-None** | | | |
| **Request Body-None** | | | |
| **Response Codes** | 200 | | |
| **Response Parameters** | | | |
| Parameter Name | Cardinality | Type | Description |
| apps | 1 | json | Application Info |

### Create a new application

| 2.API Name | Create a new application | Type | POST |
|---|---|---|---|
| Description | The POST method is used to create a new application on the controller | | |
| Resource URI | /apps | | |

| Parameters-None | | | |
|---|---|---|---|
| **Request Body** | | | |
| Parameter Name | Cardinality | Type | Description |
| id | 1 | string | The ID of the application |
| type | 1 | string | Enum:[container,vm] |
| name | 1 | string | The name of the application |
| version | 1 | string | The version of the application |
| vendor | 1 | string | The vendor of the application |
| description | 1 | string | Description of the application |
| cores | 1 | integer | The number of cores to allocate to the application |
| memory | 1 | integer | The memory in MB to allocate to the application |
| ports | 1 | complex | A list of port/protocol combinations to expose |
| source | 1 | string | Source URI of the app |
| **Response Codes** | 201 | | |
| **Response Parameters** | | | |
| Parameter Name | Cardinality | Type | Description |
| id | 1 | string | The ID of the node |

## Get an application

| **3.API Name** | **Get an application** | **Type** | **GET** |
|---|---|---|---|
| Description | The GET method is used to get an application from the controller | | |
| Resource URI | /apps/{app_id} | | |
| **Parameters** | | | |
| Parameter Name | Cardinality | Type | Description |
| app_id | 1 | string | The ID of the application |
| **Request Body-None** | | | |
| **Response Codes** | 200 | | |
| **Response Parameters** | | | |
| Parameter Name | Cardinality | Type | Description |
| id | 1 | string | The ID of the application |
| type | 1 | string | Enum:[container,vm] |
| name | 1 | string | The name of the application |
| version | 1 | string | The version of the application |
| vendor | 1 | string | The vendor of the application |
| description | 1 | string | Description of the application |
| cores | 1 | integer | The number of cores to allocate to the application |
| memory | 1 | integer | The memory in MB to allocate to the application |
| ports | 1 | complex | A list of port/protocol combinations to expose |
| source | 1 | string | Source URI of the app |
| **Response Codes** | 404 | | |
| App ID not found | | | |

## Update an existing application

| **4.API Name** | **Update an existing application** | **Type** | **PATCH** |
|---|---|---|---|
| Description | The PATCH method is used to update an existing application from the controller | | |
| Resource URI | /apps/{app_id} | | |

| Parameters | | | |
|---|---|---|---|
| Parameter Name | Cardinality | Type | Description |
| app_id | 1 | string | The ID of the application |
| **Request Body Parameters** | | | |
| Parameter Name | Cardinality | Type | Description |
| id | 1 | string | The ID of the application |
| type | 1 | string | Enum:[container,vm] |
| name | 1 | string | The name of the application |
| version | 1 | string | The version of the application |
| vendor | 1 | string | The vendor of the application |
| description | 1 | string | Description of the application |
| cores | 1 | integer | The number of cores to allocate to the application |
| memory | 1 | integer | The memory in MB to allocate to the application |
| ports | 1 | complex | A list of port/protocol combinations to expose |
| source | 1 | string | Source URI of the app |
| **Response Codes** | 200 | | |
| Application was updated | | | |
| **Response Codes** | 404 | | |
| App ID not found | | | |

## Delete an existing application

| 5.API Name | Delete an existing application | Type | DELETE |
|---|---|---|---|
| Description | The DELETE method is used to delete an existing application from the controller | | |
| Resource URI | /apps/{app_id} | | |
| **Parameters** | | | |
| Parameter Name | Cardinality | Type | Description |
| app_id | 1 | string | The ID of the application |
| **Request Body-None** | | | |
| **Response Codes** | 204 | | |
| Application was deleted | | | |
| **Response Codes** | 404 | | |
| App ID not found | | | |

## Get a list of applications on a node

| 6.API Name | Get a list of applications on a node | Type | GET |
|---|---|---|---|
| Description | The GET method is used to get a list of applications on a node from the controller | | |
| Resource URI | /nodes/{node_id}/apps | | |
| **Parameters** | | | |
| Parameter Name | Cardinality | Type | Description |
| node_id | 1 | string | The ID of the node |
| **Request Body-None** | | | |
| **Response Codes** | 200 | | |
| **Response Parameters** | | | |
| Parameter Name | Cardinality | Type | Description |
| apps | 1 | json | Application Info |
| **Response Codes** | 404 | | |

| Node ID not found |
| --- |

## Deploy an application to a node

| 7.API Name | Deploy an application to a node | Type | POST |
| --- | --- | --- | --- |
| Description | The POST method is used to deploys an application to a node from the controller | | |
| Resource URI | /nodes/{node_id}/apps | | |
| **Parameters** | | | |
| Parameter Name | Cardinality | Type | Description |
| node_id | 1 | string | The ID of the node |
| **Request Body** | | | |
| Parameter Name | Cardinality | Type | Description |
| id | 1 | string | The ID of the application |
| **Response Codes** | 200 | | |
| Deployed the application to the specified node | | | |
| **Response Codes** | 404 | | |
| Node ID or app ID not found | | | |

## Get an application on a node

| 8.API Name | Get an application on a node | Type | GET |
| --- | --- | --- | --- |
| Description | The GET method is used to get an application on a node from the controller | | |
| Resource URI | /nodes/{node_id}/apps/{app_id} | | |
| **Parameters** | | | |
| Parameter Name | Cardinality | Type | Description |
| node_id | 1 | string | The ID of the node |
| app_id | 1 | string | The ID of the application |
| **Request Body-None** | | | |
| **Response Codes** | 200 | | |
| Parameter Name | Cardinality | Type | Description |
| id | 1 | string | The ID of the application |
| status | 1 | string | The status of the application<br><br>Enum:[unknown, deploying, ready, starting, running, stopping, stopped, error] |
| command | 1 | string | The lifecycle command for the application<br><br>Enum:[start, stop, restart] |
| **Response Codes** | 404 | | |
| Node ID or app ID not found | | | |

## Update an application on a node

| 9.API Name | Update an application on a node | Type | PATCH |
| --- | --- | --- | --- |
| Description | The PATCH method is used to update an application on a node from the controller | | |
| Resource URI | /nodes/{node_id}/apps/{app_id} | | |
| **Parameters** | | | |
| Parameter Name | Cardinality | Type | Description |
| node_id | 1 | string | The ID of the node |
| app_id | 1 | string | The ID of the application |
| **Request Body** | | | |
| Parameter Name | Cardinality | Type | Description |

| id | 1 | | string | The ID of the application |
|---|---|---|---|---|
| status | 1 | | string | The status of the application<br><br>Enum:[unknown, deploying, ready, starting, running, stopping, stopped, error] |
| command | 1 | | string | The lifecycle command for the application<br><br>Enum:[start, stop, restart] |
| **Response Codes** | 200 | | | |
| Updated application for the specified node and application | | | | |
| **Response Codes** | 404 | | | |
| Node ID or app ID not found | | | | |

## Delete an application on a node

| 10.API Name | Delete an application on a node | Type | DELETE |
|---|---|---|---|
| Description | The DELETE method is used to delete an application on a node from the controller | | |
| Resource URI | /nodes/{node_id}/apps/{app_id} | | |
| **Parameters** | | | |
| Parameter Name | Cardinality | Type | Description |
| node_id | 1 | string | The ID of the node |
| app_id | 1 | string | The ID of the application |
| **Request Body-None** | | | |
| **Response Codes** | 204 | | |
| Deleted the application for the specified node and application | | | |
| **Response Codes** | 404 | | |
| Node ID or app ID not found | | | |

# Edge Application API

Edge Application APIs enable developers to build edge compute services capable of taking advantage of tactile applications that respond to the changing user, network or resource scenarios.

## Connection Establishment

| 1.API Name | Connection Establishment | Type | GET |
|---|---|---|---|
| Description | The GET method is used to connect to a secure WebSocket to receive streaming notifications | | |
| Resource URI | /notifications | | |
| **Parameters-None** | | | |
| **Request Body-None** | | | |
| **Response Codes** | 101 | | |
| Upgrade to Websockets | | | |
| **Response Codes** | 403 | | |
| Unauthorized | | | |

## Publish Notification

| 2.API Name | Publish Notification | Type | POST |
|---|---|---|---|
| Description | The POST method is used to push a single notification to all subscribed application | | |
| Resource URI | /notifications | | |
| **Parameters** | | | |
| Parameter Name | Cardinality | Type | Description |
| body | 1 | json | The information of the notification |

| Request Body-None | |
|---|---|
| **Response Codes** | 202 |
| Notification was received and will be forwarded | |
| **Response Codes** | 403 |
| Unauthorized | |

## Service Discovery

| **3.API Name** | **Service Discovery** | | **Type** | **GET** |
|---|---|---|---|---|
| Description | The GET method is used to list all currently activated producers on the local appliance and get their status, subscribable notification types, and address | | | |
| Resource URI | /services | | | |
| **Parameters-None** | | | | |
| **Request Body-None** | | | | |
| **Response Codes** | 200 | | | |
| Parameter Name | Cardinality | | Type | Description |
| service | 1 | | json | The information of the service |
| **Response Codes** | 403 | | | |
| Unauthorized | | | | |

## Service Deactivation

| **4.API Name** | **Service Deactivation** | **Type** | **DELETE** |
|---|---|---|---|
| Description | The DELETE method is used to unregister a producer for all of its notification types in the local MEC environment | | |
| Resource URI | /services | | |
| **Parameters-None** | | | |
| **Request Body-None** | | | |
| **Response Codes** | 204 | | |
| Service registration removed | | | |
| **Response Codes** | 403 | | |
| Unauthorized | | | |

## Service Activation

| **5.API Name** | **Service Activation** | **Type** | **POST** |
|---|---|---|---|
| Description | The POST method is used to register a producer to begin publishing notifications in the local MEC environment | | |
| Resource URI | /services | | |
| **Parameters** | | | |
| Parameter Name | Cardinality | Type | Description |
| body | 1 | json | The information of the service |
| **Request Body-None** | | | |
| **Response Codes** | 200 | | |
| OK | | | |
| **Response Codes** | 400 | | |
| Invalid content, a required property is missing | | | |
| **Response Codes** | 403 | | |
| Unauthorized | | | |

## List Subscriptions

| 6.API Name | List Subscriptions | | Type | GET |
|---|---|---|---|---|
| Description | The GET method is used to list all producers currently subscribed to and their registered notification types | | | |
| Resource URI | /subscriptions | | | |
| **Parameters-None** | | | | |
| **Request Body-None** | | | | |
| **Response Codes** | 200 | | | |
| Parameter Name | Cardinality | | Type | Description |
| Subscription | 1 | | json | The information of the subscription |
| **Response Codes** | 400 | | | |
| Invalid content, a required property is missing | | | | |
| **Response Codes** | 403 | | | |
| Unauthorized | | | | |

## Mass Unsubscription

| 7.API Name | Mass Unsubscription | | Type | DELETE |
|---|---|---|---|---|
| Description | The DELETE method is used to unsubscribe from all producers except the platform defaults | | | |
| Resource URI | /subscriptions | | | |
| **Parameters-None** | | | | |
| **Request Body-None** | | | | |
| **Response Codes** | 204 | | | |
| Non-default subscriptions removed | | | | |
| **Response Codes** | 403 | | | |
| Unauthorized | | | | |

## Service Unsubscription

| 8.API Name | Service Unsubscription | Type | DELETE |
|---|---|---|---|
| Description | The DELETE method is used to unsubscribe from a particular or entire namespace of producers | | |
| Resource URI | /subscriptions/{urn.namespace} | | |
| **Parameters** | | | |
| Parameter Name | Cardinality | Type | Description |
| urn.namespace | 1 | string | The non-unique portion of the URN that identifies the class excluding a trailing separator |
| urn.id | 1 | string | The per-namespace unique portion of the URN that when appended to the namespace with a separator forms the complete URN |
| **Request Body-None** | | | |
| **Response Codes** | 204 | | |
| Subscription removed | | | |
| **Response Codes** | 403 | | |
| Unauthorized | | | |

## Service Subscription

| 9.API Name | Service Subscription | Type | POST |
|---|---|---|---|
| Description | The POST method is used to subscribe to a set of notification types, optionally specifying the exact producer by URN | | |
| Resource URI | /subscriptions/{urn.namespace} | | |
| **Parameters** | | | |

| Parameter Name | Cardinality | | Type | Description |
|---|---|---|---|---|
| urn.namespace | 1 | | string | The non-unique portion of the URN that identifies the class excluding a trailing separator |
| body | 1 | | json | The list of all notification types registered by all producers in this namespace |
| **Request Body-None** | | | | |
| **Response Codes** | 204 | | | |
| Subscription added | | | | |
| **Response Codes** | 403 | | | |
| Unauthorized | | | | |

## Service Unsubscription

| **10.API Name** | **Service Unsubscription** | **Type** | **DELETE** |
|---|---|---|---|
| Description | The DELETE method is used to unsubscribe from a particular or entire namespace of producers | | |
| Resource URI | /subscriptions/{urn.namespace}/{urn.id} | | |
| **Parameters** | | | |
| Parameter Name | Cardinality | Type | Description |
| urn.namespace | 1 | string | The non-unique portion of the URN that identifies the class excluding a trailing separator |
| urn.id | 1 | string | The per-namespace unique portion of the URN that when appended to the namespace with a separator forms the complete URN. |
| **Request Body-None** | | | |
| **Response Codes** | 204 | | |
| Subscription removed | | | |
| **Response Codes** | 403 | | |
| Unauthorized | | | |

## Service Subscription

| **11.API Name** | **Service Subscription** | **Type** | **POST** |
|---|---|---|---|
| Description | The POST method is used to subscribe to a set of notification types, optionally specifying the exact producer by URN | | |
| Resource URI | /subscriptions/{urn.namespace}/{urn.id} | | |
| **Parameters** | | | |
| Parameter Name | Cardinality | Type | Description |
| urn.namespace | 1 | string | The non-unique portion of the URN that identifies the class excluding a trailing separator |
| urn.id | 1 | string | The per-namespace unique portion of the URN that when appended to the namespace with a separator forms the complete URN. |
| body | 1 | json | The list of all notification types registered by all producers in this namespace |
| **Request Body-None** | | | |
| **Response Codes** | 201 | | |
| Subscription added | | | |
| **Response Codes** | 403 | | |
| Unauthorized | | | |