

REST API documentation

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EmPOWER REST API

The EmPOWER API consists of a set of RESTful resources and their attributes. The base URL for the EmPOWER REST API is the following:

```
http{s}://{username}:{password}@{hostname}:{port}/api/v1/{resource}
```

Of course you need to replace hostname and port with the hostname/port combination for your controller.

The current (and only) version of the API is v1. EmPOWER uses HTTP basic authentication in order to control and limit access to RESTful resource. Notice that there are two kinds of accounts:

root account, which allow complete access to all resources user account, which allow access only to the resources associated to a virtual network All the URLs that do not start with /api/v1/tenants/{resource} require a root account.

AccountsHandler

Accounts handler. Used to add/remove accounts.

URLs

```
/api/v1/accounts/?  
/api/v1/accounts/([a-zA-Z0-9:.]*)/?
```

GET

List the accounts.

Args:

[0]: the username

Example URLs:

```
GET /api/v1/accounts
GET /api/v1/accounts/root
```

AllowHandler

Allow handler. Used to add/remove allowed Wi-Fi clients.

URLs

```
/api/v1/allow/?
/api/v1/allow/([a-zA-Z0-9:]+)/?
```

GET

List the allowed Wi-Fi clients.

Args:

[0]: the station address

Example URLs:

```
GET /api/v1/allow
GET /api/v1/allow/11:22:33:44:55:66
```

AuthLoginHandler

Login handler.

URLs

```
/auth/login
```

AuthLogoutHandler

Logout handler.

URLs

/auth/logout

BaseHandler

Base handler.

CPPHandler

CPP Handler. Used to view and manipulate CPPs.

Used to view and manipulate CPPs. This handler has access to the system wide CPPs Notice how a CPP is a subclass of PNFDev.

URLs

```
/api/v1/cpps/?  
/api/v1/cpps/([a-zA-Z0-9:]+)/?
```

GET

List PNFDevs.

Args:

[0]: the pnfdev address

Example URLs:

```
GET /api/v1/<wtps|cpps|vbses>  
GET /api/v1/<wtps|cpps|vbses>/11:22:33:44:55:66
```

ComponentsHandler

Components handler. Used to load/unload components.

URLs

```
/api/v1/components/?  
/api/v1/components/([a-zA-Z0-9:_-]+)/?
```

GET

Lists components.

Args:

[0]: the component id (optional)

Example URLs:

```
GET /api/v1/components
```

```
GET /api/v1/components/empower.apps.mobilitymanager.mobilitymanager
```

DocHandler

Generates MD documentation.

URLs

```
/api/v1/doc/?
```

GET

Generates MD documentation.

Args: None

Example URLs: GET /api/v1/doc

IndexHandler

Index page

URLs

```
/
/index.html
```

GET

Render page.

LVAPHandler

LVAP handler. Used to view LVAPs (controller-wide).

URLs

```
/api/v1/lvaps/?  
/api/v1/lvaps/([a-zA-Z0-9:]+)/?
```

GET

Get all LVAPs or just the specified one.

Args: lvap_id: the lvap address

Example URLs: GET /api/v1/lvaps GET /api/v1/lvaps/11:22:33:44:55:66

ModuleHandler

Tenat traffic rule queue handler.

URLs

```
/api/v1/tenants/([a-zA-Z0-9:-]+)/modules/([a-zA-Z_.*]+)/?  
/api/v1/tenants/([a-zA-Z0-9:-]+)/modules/([a-zA-Z_.*])/([0-9]+)/?
```

GET

List traffic rules .

Args:

```
tenant_id: network name of a tenant  
module_name: the name of the module  
module_id: the id of the module
```

Example URLs:

```
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/wifi_stats
```

SliceHandler

Slice handler. Used to view slices.

URLs

```
/api/v1/slices
```

GET

Lists all the slices managed by this controller.

Args: None

Example URLs: GET /api/v1/slices

TenantCPPHandler

TenantCPPHandler Handler.

Used to view and manipulate CPPs. This handler has access to the Tenant CPPs Notice how a CPP is a subclass of PNFDev.

URLs

```
/api/v1/tenants/([a-zA-Z0-9-]*)/cpps/?  
/api/v1/tenants/([a-zA-Z0-9-]*)/cpps/([a-zA-Z0-9:]*)/?
```

GET

List PNFDevs.

Args:

```
[0]: the tenant id  
[1]: the pnfdev address
```

Example URLs:

```
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/  
  <wtps|cpps|vbses>  
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/  
  <wtps|cpps|vbses>/11:22:33:44:55:66
```

TenantComponentsHandler

Components handler. Used to load/unload components.

URLs

```
/api/v1/tenants/([a-zA-Z0-9-]*)/components/?  
/api/v1/tenants/([a-zA-Z0-9-]*)/components/([a-zA-Z0-9:\-\.]*)/?
```

GET

Lists all the components running in a tenant.

Args: [0]: the tenant id [0]: the component id

Example URLs: GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26 GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/

TenantEndpointHandler

TenantEndpointHandler Handler.

URLs

```
/api/v1/tenants/([a-zA-Z0-9-]+)/eps/?  
/api/v1/tenants/([a-zA-Z0-9-]+)/eps/([a-zA-Z0-9-]+)/?
```

GET

List all Functions.

Args: tenant_id: the network names of the tenant endpoint_id: the endpoint uuid

Example URLs:

```
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/eps  
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/  
eps/49313ecb-9d00-4a7c-b873-b55d3d9ada34
```

TenantEndpointNextHandler

Tenant/Endpoint/Port/Next Handler.

URLs

```
/api/v1/tenants/([a-zA-Z0-9-]+)/eps/([a-zA-Z0-9-]+)/ports/([0-9]+)/next/?  
/api/v1/tenants/([a-zA-Z0-9-]+)/eps/([a-zA-Z0-9-]+)/ports/([0-9]+)/next/([a-zA-Z0-9_:=]+)/?
```

GET

List next associations.

Args: [0]: the tenant id [1]: the endpoint id [2]: the port id [3]: match

Example URLs:

```
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/eps/49313ecb-9d00-4a7c-b873-b55d3d9ada34/ports/1/next
```

```
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/eps/49313ecb-9d00-4a7c-b873-b55d3d9ada34/ports/1/next/in_port=1,d1_type=800,nw_proto=84
```

TenantEndpointPortHandler

Tenant/Endpoint/Port Handler.

URLs

```
/api/v1/tenants/([a-zA-Z0-9-]*)/eps/([a-zA-Z0-9-]*)/ports/?  
/api/v1/tenants/([a-zA-Z0-9-]*)/eps/([a-zA-Z0-9-]*)/ports/([0-9]*)/?
```

GET

List all ports.

Args: [0]: the tenant id [1]: the endpoint id [2]: the port id

Example URLs:

```
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/eps/49313ecb-9d00-4a7c-b873-b55d3d9ada34/ports
```

```
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/eps/49313ecb-9d00-4a7c-b873-b55d3d9ada34/ports/1
```

TenantHandler

Tenat handler. Used to view and manipulate tenants.

URLs

```
/api/v1/tenants/?  
/api/v1/tenants/([a-zA-Z0-9-]*)/?
```

GET

Lists all the tenants managed by this controller.

Args: [0]: network name of a tenant

Example URLs: GET /api/v1/tenants GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26

TenantLVAPHandler

TenantLVAP handler. Used to view and manipulate LVAPs in tenants.

URLs

```
/api/v1/tenants/([a-zA-Z0-9-]+)/lvaps/?  
/api/v1/tenants/([a-zA-Z0-9-]+)/lvaps/([a-zA-Z0-9-:]+)/?
```

GET

Get all LVAPs in a Pool or just the specified one.

Args: pool_id: the network name lvap_id: the lvap address

Example URLs: GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/lvaps GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/ lvaps/11:22:33:44:55:66

TenantLVNFHandler

Tenant Function Handler. Used to view and manipulate Functions.

URLs

```
/api/v1/tenants/([a-zA-Z0-9-]+)/lvnfs/?  
/api/v1/tenants/([a-zA-Z0-9-]+)/lvnfs/([a-zA-Z0-9-:]+)/?
```

GET

List all Functions.

Args: tenant_id: the network names of the tenant lvnf_id: the address of the cpp

Example URLs:

```
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/lvnfs  
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/  
lvnfs/49313ecb-9d00-4a7c-b873-b55d3d9ada34
```

TenantLVNFNextHandler

Tenant/LVNF/Port/Next Handler.

URLs

```
/api/v1/tenants/([a-zA-Z0-9-]+)/lvnfs/([a-zA-Z0-9-]+)/ports/([0-9]+)/next/?  
/api/v1/tenants/([a-zA-Z0-9-]+)/lvnfs/([a-zA-Z0-9-]+)/ports/([0-9]+)/next/([a-zA-Z0-9_:=]*)/?
```

GET

List next associations.

Args: [0]: the tenant id [1]: the lvnf id [2]: the port id

Example URLs:

```
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/  
lvnfs/49313ecb-9d00-4a7c-b873-b55d3d9ada34/ports/1/next
```

```
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/  
lvnfs/49313ecb-9d00-4a7c-b873-b55d3d9ada34/ports/1/next/  
in_port=1,d1_type=800,nw_proto=84
```

TenantLVNFPortHandler

Tenant/LVNF/Port Handler.

URLs

```
/api/v1/tenants/([a-zA-Z0-9-]+)/lvnfs/([a-zA-Z0-9-]+)/ports/?  
/api/v1/tenants/([a-zA-Z0-9-]+)/lvnfs/([a-zA-Z0-9-]+)/ports/([0-9]+)/?
```

GET

List all ports.

Args: [0]: the tenant id [1]: the lvap id [2]: the port id

Example URLs:

```
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/  
lvnfs/49313ecb-9d00-4a7c-b873-b55d3d9ada34/ports
```

```
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/  
lvnfs/49313ecb-9d00-4a7c-b873-b55d3d9ada34/ports/1
```

TenantSliceHandler

Tenat slice handler.

URLs

```
/api/v1/tenants/([a-zA-Z0-9-]+)/slices/?  
/api/v1/tenants/([a-zA-Z0-9-]+)/slices/([a-zA-Z0-9-]+)/?
```

GET

List slices.

Args: tenant_id: network name of a tenant dscp: the slice DSCP

Example URLs:

```
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/slices  
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/slices/0x40
```

TenantTrafficRuleHandler

Tenat traffic rule queue handler.

URLs

```
/api/v1/tenants/([a-zA-Z0-9-]+)/trs/?  
/api/v1/tenants/([a-zA-Z0-9-]+)/trs/([a-zA-Z0-9_-,]+)/?
```

GET

List traffic rules .

Args: tenant_id: network name of a tenant match: the openflow match rule (e.g. dl_vlan=100;tp_dst=80)

Example URLs:

```
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/trs  
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/trs/  
dl_vlan=100;tp_dst=80
```

TenantUEHandler

TenantUE handler. Used to view and manipulate UEs in tenants.

URLs

```
/api/v1/tenants/([a-zA-Z0-9-]+)/ues/?  
/api/v1/tenants/([a-zA-Z0-9-]+)/ues/([a-zA-Z0-9-]+)/?
```

GET

Get all USe in a Pool or just the specified one.

Args: pool_id: the network name ue_id: the ue address

Example URLs: GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/ues GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/ues/12345

TenantVBSHandler

TenantVBS Handler.

URLs

```
/api/v1/tenants/([a-zA-Z0-9-]+)/vbses/?  
/api/v1/tenants/([a-zA-Z0-9-]+)/vbses/([a-zA-Z0-9-]+)/?
```

GET

List PNFDevs.

Args:

```
[0]: the tenant id  
[1]: the pnfdev address
```

Example URLs:

```
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/  
  <wtps|cpps|vbses>  
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/  
  <wtps|cpps|vbses>/11:22:33:44:55:66
```

TenantWTPHandler

TenantWTPHandler Handler.

URLs

```
/api/v1/tenants/([a-zA-Z0-9-]*)/wtps/?  
/api/v1/tenants/([a-zA-Z0-9-]*)/wtps/([a-zA-Z0-9:]*)/?
```

GET

List PNFDevs.

Args:

```
[0]: the tenant id  
[1]: the pnfdev address
```

Example URLs:

```
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/  
    <wtps|cpps|vbses>  
GET /api/v1/tenants/52313ecb-9d00-4b7d-b873-b55d3d9ada26/  
    <wtps|cpps|vbses>/11:22:33:44:55:66
```

TrafficRuleHandler

TrafficRule handler. Used to view traffic rules.

URLs

```
/api/v1/trs/?
```

GET

Lists all the traffic rules managed by this controller.

Args: None

Example URLs: GET /api/v1/trs

UEHandler

UE handler. Used to view UEs (controller-wide).

URLs

```
/api/v1/ues/?  
/api/v1/ues/([a-zA-Z0-9-]*)/?
```

GET

Get all UEs or just the specified one.

Args: ue_id: the lvap address

Example URLs: GET /api/v1/ues GET /api/v1/ues/123345

VBSHandler

VBS Handler.

URLs

```
/api/v1/vbses/?  
/api/v1/vbses/([a-zA-Z0-9:]+)/?
```

GET

List PNFDevs.

Args:

[0]: the pnfdev address

Example URLs:

```
GET /api/v1/<wtps|cpps|vbses>  
GET /api/v1/<wtps|cpps|vbses>/11:22:33:44:55:66
```

WTPHandler

WTP Handler.

URLs

```
/api/v1/wtps/?  
/api/v1/wtps/([a-zA-Z0-9:]+)/?
```

GET

List PNFDevs.

Args:

[0]: the pnfdev address

Example URLs:

```
GET /api/v1/<wtps|cpps|vbse>
```

```
GET /api/v1/<wtps|cpps|vbse>/11:22:33:44:55:66
```

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