Mac Manager Requirements

1. Allocate vip mac (virtual mac address) for all the tenants/vpcs

* e.g) (VPC 1, Port 1) 🡪 MAC 1

1. Release (port, mac) association when a port is released
2. Guarantee unique of mac address in region scope
3. Algorithm with random, but less conflict possibility
4. Fail back mechanism if conflict
5. Allow onboarding a list of mac ranges
6. Delete a list of mac ranges.
7. APIs to activate and deactivate a mac address
8. Working together with other services including api gateway, vpc manager, and route manager.

(10) Concurrency control mechanism should be provided to process multiple mac allocation requests.

Rest APIs

**(1) Get(Verify) Mac State By MacAddress**

* Method: GET
* Request: /macs/{mac}
* Request Parameter:
  + @PathVariable String mac,
* Response: mac address state
* Example

Request:

http://127.0.0.1:8080/macs/00-14-2A-3B-47-37

Response:

{

"mac\_state": {

"project\_id": "3dda2801-d675-4688-a63f-dcda8d327f50",

"vpc\_id": "9192a4d4-ffff-4ece-b3f0-8d36e3d88038",

"port\_id": "f37810eb-7f83-45fa-a4d4-1b31e75399df",

"mac": "00-14-2A-3B-47-37"

}

}

**(2) Create Mac State (= Allocate Mac Address to Port)**

* Method: POST
* Request: /mac
* Request Parameter:
* Response: mac state
* Example

Request:

http://127.0.0.1:8080/mac

Body:

{

"mac\_state": {

"project\_id": "3dda2801-d675-4688-a63f-dcda8d327f50",

"vpc\_id": "9192a4d4-ffff-4ece-b3f0-8d36e3d88038",

"port\_id": " f37810eb-7f83-45fa-a4d4-1b31e75399df"

"mac": “null”

}

}

Response:

{

"mac\_state": {

"project\_id": "3dda2801-d675-4688-a63f-dcda8d327f50",

"vpc\_id": "9192a4d4-ffff-4ece-b3f0-8d36e3d88038",

"port\_id": " f37810eb-7f83-45fa-a4d4-1b31e75399df",

"mac": "00-14-2A-3B-47-37"

}

}

**(3) Delete (Release) Mac State By Mac Address**

* Method: DELETE
* Request: /mac/{macaddress}
* Request Parameter: String macaddress
* Response: Mac state
* Example

Request:

http://127.0.0.1:8080/mac/{00-14-2A-3B-47-37}

Body:

{

"mac\_state": {

"project\_id": "3dda2801-d675-4688-a63f-dcda8d327f50",

"vpc\_id": "9192a4d4-ffff-4ece-b3f0-8d36e3d88038",

"port\_id": " f37810eb-7f83-45fa-a4d4-1b31e75399df",

"mac": "00-14-2A-3B-47-37"

}

}

Response:

{

"mac\_state": {

"project\_id": "null",

"vpc\_id": "null",

"port\_id": " null",

"mac": "00-14-2A-3B-47-37"

}

}

**(4) Create Mac Range By VPC**

* Method: POST
* Request: /mac/range
* Request Parameter:
* Response:  mac range list of VPC
* Example

Request:

http://127.0.0.1:8080/mac/range

Body:

{

"oui\_state": {

"project\_id": "3dda2801-d675-4688-a63f-dcda8d327f50",

"vpc\_id": "9192a4d4-ffff-4ece-b3f0-8d36e3d88038",

“mac\_range”: {

“from”: “00-14-2A-3B-47-00”,

“to”: “00-14-2A-3B-47-FF”}

}

}

Response:

{

"oui\_state": {

"project\_id": "3dda2801-d675-4688-a63f-dcda8d327f50",

"vpc\_id": "9192a4d4-ffff-4ece-b3f0-8d36e3d88038",

“mac\_range”: [{

“from”: “00-14-2A-3B-47-00”,

“to”: “00-14-2A-3B-47-FF”},

{

“from”: “00-14-2A-3B-50-00”,

“to”: “00-14-2A-3B-50-FF”}

]

}

}

**(5) Delete Mac Range By VPC**

* Method: PUT
* Request: /mac/range
* Request Parameter:
* Response: mac range list of VPC
* Example

Request:

http://127.0.0.1:8080/mac/range

Body:

{

"oui\_state": {

"project\_id": "3dda2801-d675-4688-a63f-dcda8d327f50",

"vpc\_id": "9192a4d4-ffff-4ece-b3f0-8d36e3d88038",

“mac\_range”: {

“from”: “00-14-2A-3B-47-00”,

“to”: “00-14-2A-3B-47-FF”}

}

}

Response:

{

"oui\_state": {

"project\_id": "3dda2801-d675-4688-a63f-dcda8d327f50",

"vpc\_id": "9192a4d4-ffff-4ece-b3f0-8d36e3d88038",

“mac\_range”: {

“from”: “00-14-2A-3B-50-00”,

“to”: “00-14-2A-3B-50-FF”}

}

}

Mac Address Structure

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 |
| OU (Organization Unit), (Project\_id/Vpc\_id) in Alcor  ( 0 ~ 16383\*1024) | | | NIC (Network Interface Card), Port\_id  ( 0 ~ 16383\*1024) | | |

Redis / Mac Address Mapping

