CISCO ISE API

Cisco ISE (Identity Service Engine)

‣ ISE is not just **RADIUS/TACACS** server but **total authentication solution** including device the profiling, the endpoint posture service and more.

‣ MAB (MAC Auth. Bypass) or 802.1X for the endpoint, PC

‣ Q: How can I add and delete **every MAC of every PC** ???

‣ A: API !!! Especially for SDA.

Useful Link

- ▸ https://community.cisco.com/t5/security-documents/ise-ers-api-examples/ta-p/3622623#toc-hId--1848670580

- ▸ https://developer.cisco.com/docs/identity-services-engine/#!setting-up/cisco-ise

- ▸ https:// IP_ADDRESS:9060/ers/SDK

what is cURL?

▸ cURL = Client URL

  ▸ multi protocol

  ▸ command in line tool

  ▸ Free

#00 - test api

▸ curl -k -X GET -H 'ACCEPT: application/json' --user admin:1234Qwer
  'https://10.72.80.186:9060/ers/config/node'

```
==> Converted Python Code

import requests

headers = {

    'ACCEPT': 'application/json',

}

response = requests.get('https://10.72.80.186:9060/ers/config/node', headers=headers, verify=False,

auth=('admin', '1234Qwer'))
```

cURL to Python

▸ curl -k -X GET -H 'ACCEPT: application/json' --user admin:1234Qwer
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```

MAC

- ▶ MAC creation
  - ▶ step1) GROUP (VLAN) ID
  - ▶ step2) MAC insert
- ▶ GROUP MOVE
  - ▶ step1) group ID and end point ID
  - ▶ step2) move
- ▶ MAC delete
  - ▶ step1) MAC ID
  - ▶ step2) delete MAC

#1-1 MAC insert : GROUP ID {yame1}

▸ **curl -k --header 'Accept: application/json' --user admin:1234Qwer https://10.72.80.186:9060/ers/config/endpointgroup/name/{yame1}**

```
▸ {
▸   "EndPointGroup" : {
▸     "id" : "690e3550-c9d4-11ea-892d-8a9574f231bf",
▸     "name" : "yame1",
▸     "description" : "yame1",
▸     "systemDefined" : false,
▸     "link" : {
▸       "rel" : "self",
▸       "href" : "https://10.72.80.186:9060/ers/config/endpointgroup/name/yame1",
▸       "type" : "application/json"
▸     }
▸   }
```

YAME KIM SENSE 야매 김선생

#1-1 MAC insert : GROUP ID {yame2}

▸ curl -k --header 'Accept: application/json' --user admin:1234Qwer https://10.72.80.186:9060/ers/
config/endpointgroup/name/{yame}
▸ {
▸   "EndPointGroup" : {
▸   "id" : "6f4034f0-c9d4-11ea-892d-8a9574f231bf",
▸   "name" : "yame2",
▸   "description" : "yame2",
▸   "systemDefined" : false,
▸   "link" : {
▸   "rel" : "self",
▸   "href" : "https://10.72.80.186:9060/ers/config/endpointgroup/name/yame2",
▸   "type" : "application/json"
▸   }
▸   }
▸ }

#1-2 MAC insert : Insert MAC

```
curl -k  --include --header 'Content-
Type:application/json' --header 'Accept: application/
json' --user admin:1234Qwer --request POST
https://10.72.80.186:9060/ers/config/endpoint  --
data '
{
  "ERSEndPoint" : {
    "name" : "00:00:00:00:11:11",
    "description" : "API-INPUT",
    "mac" : "00:00:00:00:11:11",
    "groupId" : "690e3550-
c9d4-11ea-892d-8a9574f231bf",
    "staticGroupAssignment" : true
  }
}'
```

HTTP/1.1 201 Created
Set-Cookie:
JSESSIONIDSSO=ADC450ABB6500E8B02E4CFC7352DEFE8; Path=/;
Secure; HttpOnly
Set-Cookie:
APPSESSIONID=51166A0122ADE9E27B1B419CB6FB337E; Path=/ers;
Secure; HttpOnly
Cache-Control: no-cache, no-store, must-revalidate
Pragma: no-cache
Expires: Thu, 01 Jan 1970 00:00:00 GMT
X-Frame-Options: SAMEORIGIN
Strict-Transport-Security: max-age=31536000; includeSubDomains
X-Content-Type-Options: nosniff
X-Content-Security-Policy: default-src 'self'; script-src 'self' 'unsafe-inline'
'unsafe-eval'; style-src 'self' 'unsafe-inline'; img-src 'self' data:;
X-WebKit-CSP: default-src 'self'; script-src 'self' 'unsafe-inline' 'unsafe-
eval'; style-src 'self' 'unsafe-inline'; img-src 'self' data:;
Content-Security-Policy: default-src 'self'; script-src 'self' 'unsafe-inline'
'unsafe-eval'; style-src 'self' 'unsafe-inline'; img-src 'self' data:;
X-XSS-Protection: 1; mode=block
Location: https://10.72.80.186:9060/ers/config/endpoint/4f3a0180-
c9d5-11ea-892d-8a9574f231bf
Date: Sun, 19 Jul 2020 15:34:18 GMT
Content-Type: application/json;charset=utf-8
Content-Length: 0
Server:

MAC

▸ MAC creation

  ▸ step1) GROUP (VLAN) ID

  ▸ step2) MAC insert

▸ GROUP MOVE

  ▸ step1) group ID and end point ID

  ▸ step2) move

▸ MAC delete

  ▸ step1) MAC ID

  ▸ step2) delete MAC

#2-1 MAC move : MAC ID

```
 curl -k -X GET -H 'ACCEPT: application/json' --user admin:1234Qwer 'https://10.72.80.186:9060/ers/
config/endpoint?filter=mac.EQ.00:00:00:00:11:11'
{
 "SearchResult" : {
  "total" : 1,
  "resources" : [ {
    "id" : "da4c8f20-c9dc-11ea-892d-8a9574f231bf",
    "name" : "00:00:00:00:11:11",
    "link" : {
     "rel" : "self",
     "href" : "https://10.72.80.186:9060/ers/config/endpoint/4f3a0180-c9d5-11ea-892d-8a9574f231bf",
     "type" : "application/json"
    }
  } ]
 }
}
```

#2-2 MAC move yame1 to yame2

```
curl -k  --include --header 'Content-Type:application/json' --header 'Accept: application/json' --user admin:1234Qwer --request
PUT https://10.72.80.186:9060/ers/config/endpoint/{da4c8f20-c9dc-11ea-892d-8a9574f231bf}  --data '
 {
  "ERSEndPoint" : {
    "name" : "00:00:00:00:11:11",
    "description" : "API-INPUT",
    "mac" : "00:00:00:00:11:11",
    "groupId" : "6f4034f0-c9d4-11ea-892d-8a9574f231bf",
    "staticGroupAssignment" : true
  }
}'


{
 "UpdatedFieldsList" : {
   "updatedField" : [ {
    "field" : "groupId",
    "oldValue" : "690e3550-c9d4-11ea-892d-8a9574f231bf",
    "newValue" : "6f4034f0-c9d4-11ea-892d-8a9574f231bf"
   } ]
 }
```

MAC

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  - ▶ step1) GROUP (VLAN) ID
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#3 delete MAC

```
curl -k  --include --header 'Content-Type:application/json' --header 'Accept: application/
json' --user admin:1234Qwer --request DELETE https://10.72.80.186:9060/ers/config/endpoint/
{da4c8f20-c9dc-11ea-892d-8a9574f231bf}
```

HTTP/1.1 204 No Content
Cache-Control: no-cache, no-store, must-revalidate
Expires: Thu, 01 Jan 1970 00:00:00 GMT
Set-Cookie: JSESSIONIDSSO=6CF7B14558E64AF78C50C0CD80A0D3E5; Path=/; Secure; HttpOnly
Set-Cookie: APPSESSIONID=9A83568DEB1EE9A7BD800A4E14DC0BAF; Path=/ers; Secure; HttpOnly
Pragma: no-cache
X-Frame-Options: SAMEORIGIN
Strict-Transport-Security: max-age=31536000; includeSubDomains
X-Content-Type-Options: nosniff
X-Content-Security-Policy: default-src 'self'; script-src 'self' 'unsafe-inline' 'unsafe-eval'; style-src 'self' 'unsafe-inline'; img-src 'self' data:;
X-WebKit-CSP: default-src 'self'; script-src 'self' 'unsafe-inline' 'unsafe-eval'; style-src 'self' 'unsafe-inline'; img-src 'self' data:;
Content-Security-Policy: default-src 'self'; script-src 'self' 'unsafe-inline' 'unsafe-eval'; style-src 'self' 'unsafe-inline'; img-src 'self' data:;
X-XSS-Protection: 1; mode=block
Date: Sun, 19 Jul 2020 15:59:33 GMT
Content-Type: application/json;charset=utf-8
Server: