Troubleshooting IoT Services: Access Point

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How do I check the gRPC connection status on the access point?

Run the command: **show cloud connector connection detail**

This command returns information about the connection. ***Connection State*** should be READY. ***Connection Url*** should be the IP address of the Cisco Spaces: Connector on port 8000. ***Certificate Available*** should be true. ***Controller Ip*** should be the controller the AP is associated with.

```
AP# show cloud connector connection detail
Connection State           : READY
Connection Url             :  10.22.243.33:8000
Certificate Available      :  true
Controller Ip              :  10.22.243.31
Stream Setup Interval      :  30
Keepalive Interval         :  30
Last Keepalive Rcvd On     :  2020-04-01 00:32:47.891433113 +0000 UTC m=+345985.338898246
Number of Dials               :  2
Number of Tx Pkts             :  2788175
Number of Rx Pkts             :  11341
Number of Dropped Pkts        :  0
Number of Rx Keepalive        :  11341
Number of Tx Keepalive        :  11341
Number of Rx Cfg Request      :  0
Number of Tx AP Cfg Resp      :  0
Number of Tx APP Cfg Resp     :  0
Number of Tx APP state pkts   :  5
Number of Tx APP data pkts    :  2776829
```

How do I check the stream token on the access point?

Run the command: **show cloud connector key access**

This command returns information about the stream token. ***Token Valid*** should be Yes. The ***Last Success on*** time should be more recent than the ***Last Failure on*** time. If there are failures, the ***Last Failure reason*** field details the reason for the failure.

```
AP# show cloud connector key access
Token Valid : Yes
Token Stats :
        Number of Attempts  : 44
        Number of Failures  : 27
        Last Failure on     : 2020-03-28 02:02:15.649556818 +0000 UTC m=+5753.097022576
        Last Failure reason : curl: SSL connect error
        Last Success on     : 2020-04-01 00:48:37.313511596 +0000 UTC m=+346934.760976625
        Expiration time     : 2020-04-02 00:48:37 +0000 UTC
Connection Retry Interval : 30
```

Also run the command: **show cloud connector key authentication**.

This command returns the authentication token used initially to set up the connection. ***Token Valid*** should be Yes. ***Token Endpoint*** should be the IP address of the Cisco Spaces connector on port 8000. ***Token Content*** should be the token set on the wireless controller using this configuration command: **ap cisco-dna token 0** *token-content*.

```
AP# show cloud connector key authentication
Token Valid    : Yes
Token Endpoint : 10.22.243.33:8000
Token Content  :
----------------------------------------
eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJ
0aWQiOjEwMTM3LCJjaWQiOjExNTM5MzM4MDQ5NDM
3MzM2MDAwLCJlcCI6IjEwLjIyLjI0My4zMzo4MDA
wIiwiaWF0IjoxNTg1MzYwNzk5fQ.tj0LQDzXorHz
30Q_ffRWWY6Ege3xyF_tgQOmVFBkG3k
----------------------------------------
```

How do I view the gRPC server logs on the access point?

Run the command: **show grpc server log**

```
AP# show grpc server log
time="2020-04-01T01:36:52Z" level=info msg="[DNAS] spaces conn url 10.22.243.33:8000"
time="2020-04-01T01:36:52Z" level=info msg="[DNAS] entering stopDNAspacesTmpTokenRoutine"
time="2020-04-01T01:36:52Z" level=info msg="[DNAS] exiting stopDNAspacesTmpTokenRoutine"
time="2020-04-01T01:36:52Z" level=info msg="[DNAS] entering startDNAspacesTmpTokenRoutine"
time="2020-04-01T01:36:52Z" level=info msg="[DNAS] launching token request cycle"
time="2020-04-01T01:36:52Z" level=info msg="[DNAS] exiting startDNAspacesTmpTokenRoutine"
time="2020-04-01T01:36:52Z" level=info msg="[DNAS] spaces token expiration time 2020-04-02
 01:36:52 +0000 UTC"
time="2020-04-01T01:36:52Z" level=info msg=" Calling startDNASpacesConn routine "
time="2020-04-01T01:36:52Z" level=info msg="[DNAS] Receive Success status"
time="2020-04-01T01:36:52Z" level=info msg="[DNAS] Connection not in ready state sleeping
for 10 seconds"
time="2020-04-01T01:37:02Z" level=info msg="[DNAS] Setup Stream for the gRPC connection"
time="2020-04-01T01:37:02Z" level=info msg="[DNAS] Connect RPC Succeeded."
time="2020-04-01T01:37:02Z" level=info msg="[DNAS] RX  routine got enabled "
time="2020-04-01T01:37:02Z" level=info msg="[DNAS] TX routine got enabled "
```

How do I view the beacons scanned by an access point running in Native Mode?

Run the command: **show controllers ioTRadio ble 0 scan brief**

```
<access-point># show controllers ioTRadio ble 0 scan brief

      Profile               MAC  RSSI(-dBm)  RSSI@1meter(-dBm)        Last-heard
      Unknown 3C:1D:AF:62:EC:EC          88                  0 0000D:00H:00M:01S
      iBeacon 18:04:ED:04:1C:5F          86                 65 0000D:00H:00M:01S
      Unknown 18:04:ED:04:1C:5F          78                 65 0000D:00H:00M:01S
      Unknown 04:45:E5:28:8E:E7          85                 65 0000D:00H:00M:01S
      Unknown 2D:97:FA:0F:92:9A          91                 65 0000D:00H:00M:01S
      iBeacon E0:7D:EA:16:35:35          68                 65 0000D:00H:00M:01S
      Unknown E0:7D:EA:16:35:35          68                 65 0000D:00H:00M:01S
      iBeacon 04:EE:03:53:74:22          45                256 0000D:00H:00M:01S
      Unknown 04:EE:03:53:74:22          45                256 0000D:00H:00M:01S
              04:EE:03:53:6A:3A          72                N/A 0000D:00H:00M:01S
      Unknown 04:EE:03:53:6A:3A          72                 65 0000D:00H:00M:01S
      iBeacon E0:7D:EA:16:35:35          68                 65 0000D:00H:00M:01S
      Unknown E0:7D:EA:16:35:35          67                 65 0000D:00H:00M:01S
      iBeacon 04:EE:03:53:74:22          60                256 0000D:00H:00M:01S
      Unknown 04:EE:03:53:74:22          60                256 0000D:00H:00M:01S
Eddystone URL 04:EE:03:53:6A:3A          72                N/A 0000D:00H:00M:01S
```

How do I view the beacon broadcast setting for an access point running in Native Mode?

Run the command: **show controllers ioTRadio ble 0 broadcast**

Following is an example of two *iBeacons* configured in the v-iBeacon profile. Beacon 1 has ***UUID***: 11111111-1111-1111-1111-111111111111 ***Major***: 22222***Minor***: 33 ***Transmit Power***: -21 and ***Advertisement Power***: -60 ***Interval***: 100. Beacon 1 has ***UUID***: 22222222-2222-2222-2222-222222222222 ***Major***: 3333 ***Minor***: 44 ***Transmit Power***: -21 and ***Advertisement Power***: -65 ***Interval***: 100.

```
AP# show controllers ioTRadio ble 0 broadcast

BLE Profile Config
-------------------
Active profile           : v-iBeacon
Profile 0 (iBeacon)
UUID                     : 00001000000000000000000000000000
Interval (ms)            : 100
Power (dBm)              : -21
Advertised Power (dBm)   : -65
Minor                    : 0
Major                    : 0
TxPower byte             : bfbfbfbfbfbfbfbfbfbfbfbfbf

Profile 1 (Eddystone UID)
Namespace (hex)          : 0000000000005446089c
Instance-ID (hex)        : 7f0000001f00

Profile 2 (Eddystone URL)
URL                      : http://www.
```

```
Profile 3 (v-iBeacon)
v-iBeacon status         : Chirping
Chirping interval (ms)   : 100
Profile 4 (Custom Profile)
Adv Data                 :
0000001800000000000000ecb255ad550000000c0000000000000000000000
Scan Data                :
00000000ae0100000000000005446089c7f00000019000000000000004cb5
Simulator mode           : Disabled
Beacon-ID               Mac                              UUID Major Minor Status
        1 C0:64:E4:23:7F:2F 11111111111111111111111111111111 22222    33      1
        2 C0:64:E4:23:7F:2E 22222222222222222222222222222222 33333    44      1
        3 C0:64:E4:23:7F:2D 00000000000000000000000000000000     0     0      0
        4 C0:64:E4:23:7F:2C 00000000000000000000000000000000     0     0      0
        5 C0:64:E4:23:7F:2B 00000000000000000000000000000000     0     0      0

Beacon-ID Transmit power(dBm) Advertised power(dBm)
        1                 -21                   -60
        2                 -21                   -65
        3                 -21                   -65
        4                 -21                   -65
        5                 -21                   -65
```

Following is an example of *Eddystone UID* profile. Beacon has ***Namespace***: 44444444444444444444 ***Instance-ID***: 555555555555 ***Transmit Power***: -21and ***Advertisement Power***: -65 ***Interval***: 100.

```
AP# show controllers ioTRadio ble 0 broadcast

BLE Profile Config
-------------------
Active profile           : Eddystone UID
Profile 0 (iBeacon)
UUID                     : 00001000000000000000000000000000
Interval (ms)            : 100
Power (dBm)              : -21
Advertised Power (dBm)   : -65
Minor                    : 0
Major                    : 0
TxPower byte             : bfbfbfbfbfbfbfbfbfbfbfbfbf

Profile 1 (Eddystone UID)
Namespace (hex)          : 44444444444444444444
Instance-ID (hex)        : 555555555555

Profile 2 (Eddystone URL)
URL                      : http://www.

Profile 3 (v-iBeacon)
v-iBeacon status         : Chirping
Chirping interval (ms)   : 100
Profile 4 (Custom Profile)
Adv Data                 :
0000001800000000000000ecb255ad550000000c0000000000000000000000
Scan Data                :
00000000ae0100000000000005446089c7f00000019000000000000004cb5
Simulator mode           : Disabled
Beacon-ID               Mac                              UUID Major Minor Status
        1 C0:64:E4:23:7F:2F 11111111111111111111111111111111 22222    33      1
        2 C0:64:E4:23:7F:2E 22222222222222222222222222222222  3333    44      1
        3 C0:64:E4:23:7F:2D 00000000000000000000000000000000     0     0      0
        4 C0:64:E4:23:7F:2C 00000000000000000000000000000000     0     0      0
        5 C0:64:E4:23:7F:2B 00000000000000000000000000000000     0     0      0
```

```
Beacon-ID Transmit power(dBm) Advertised power(dBm)
        1                -21                  -60
        2                -21                  -65
        3                -21                  -65
        4                -21                  -65
        5                -21                  -65
```

Following is an example of *Eddystone URL* profile. Beacon has ***URL***: http://www.cisco.com/ ***Transmit Power***: -21 and ***Advertisement Power***: -65 ***Interval***: 100.

```
AP# show controllers ioTRadio ble 0 broadcast

BLE Profile Config
-------------------
Active profile           : Eddystone URL
Profile 0 (iBeacon)
UUID                     : 00001000000000000000000000000000
Interval (ms)            : 100
Power (dBm)              : -21
Advertised Power (dBm)   : -65
Minor                    : 0
Major                    : 0
TxPower byte             : bfbfbfbfbfbfbfbfbfbfbfbfbf

Profile 1 (Eddystone UID)
Namespace (hex)          : 44444444444444444444
Instance-ID (hex)        : 555555555555

Profile 2 (Eddystone URL)
URL                      : http://www.cisco.com/

Profile 3 (v-iBeacon)
v-iBeacon status         : Chirping
Chirping interval (ms)   : 100
Profile 4 (Custom Profile)
Adv Data                 :
000000180000000000000ecb255ad550000000c0000000000000000000
Scan Data                :
00000000ae01000000000000005446089c7f00000019000000000000004cb5
Simulator mode           : Disabled
Beacon-ID               Mac                              UUID Major Minor Status
        1 C0:64:E4:23:7F:2F 11111111111111111111111111111111 22222    33      1
        2 C0:64:E4:23:7F:2E 22222222222222222222222222222222  3333    44      1
        3 C0:64:E4:23:7F:2D 00000000000000000000000000000000     0     0      0
        4 C0:64:E4:23:7F:2C 00000000000000000000000000000000     0     0      0
        5 C0:64:E4:23:7F:2B 00000000000000000000000000000000     0     0      0

Beacon-ID Transmit power(dBm) Advertised power(dBm)
        1                -21                  -60
        2                -21                  -65
        3                -21                  -65
        4                -21                  -65
        5                -21                  -65
```

How do I view the beacon broadcast setting for an access point running in Native Mode?