airheads TECH TALK

aruba
a Hewlett Packard Enterprise company

Airheads Tech Talks: Cloud Guest SSID on Aruba Central

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Agenda

– Introduction to Cloud Guest.

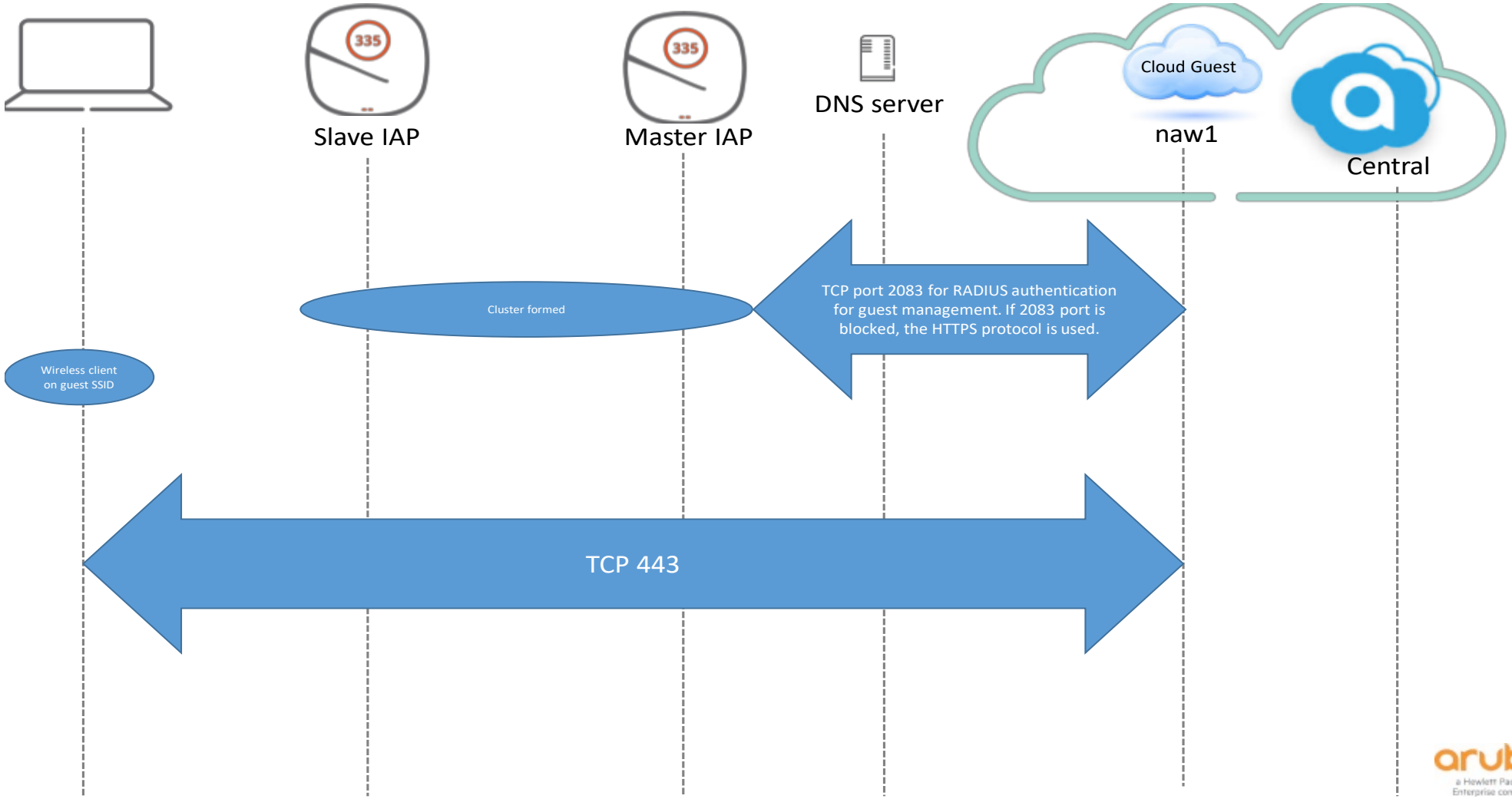
– How to configure.

– Debugging on IAP.

– Adding Visitor accounts to Cloud Guest.

– Generating Reports from Central.

Architecture



Cloud Guest Types

– Anonymous

– Authenticated

– Facebook Wifi

Cloud Guest Type - Anonymous

– No credentials required.

– Plain, simple captive portal login.

– Guest password if required can be added to the login.

– MAC Caching – No option to remove the saved mac-address as of now.

– Session limit can be set.

– URL whitelisting.

Config Pushed to Instant AP

#show network

```
--------
Profile Name  ESSID      Clients  Type   Band  Authentication Method  Key Management  IP Assignment  Status   Zone  Coding  Active
------------  -----      -------  ----   ----  --------------------  -------------  ------------  ------   ----  ------  ------
Anonymous     Anonymous  0        guest  all   External CP            WPA2-AES       NAT Mode      Enabled  -     UTF-8   Yes
```

#show network Anonymous | in ECP

```
ECP Profile             :Anonymous_#guest#_
```

#show external-captive-portal Anonymous_#guest#_

```
Name                    :Anonymous_#guest#_
Server                  :ap1.cloudguest.central.arubanetworks.com
Port                    :443
Url                     :/portal/scope.cust-00bc49df203e4281907cf158062489da/Anonymous/capture
Auth Text               :
Redirect Url            :
Server Fail Throuth     :Disable
Disable Auto Whitelist  :Disable
Use HTTPs               :Yes
Server Offload          :No
Prevent Frame Overlay   :Disable
In Used                 :Yes
Redirect Mode           :Yes
Switch IP               :No
```

Debugging on IAP

#show clients

```
Client List
-----------
Name       IP Address   MAC Address        OS      ESSID      Access Point       Channel  Type  Role                IPv6 Address
Signal     Speed (mbps)
----       ----------   -----------        --      -----      ------------       -------  ----  ----                ------------
------     ------------
ak-phone  192.168.1.3  d8:1d:72:7d:75:67  iPhone  Anonymous  f0:5c:19:ca:3c:e8  149E     AC    Anonymous_#guest#_
fe80::1cef:a90:a9aa:5342  35(good)  325(good)
Number of Clients   :1
```

Post Authenticating:

#show clients

```
Client List
-----------
Name                            IP Address   MAC Address        OS      ESSID      Access Point       Channel  Type  Role
IPv6 Address              Signal    Speed (mbps)
----                            ----------   -----------        --      -----      ------------       -------  ----  ----       -
-----------               ------    ------------
0DKsDUXsQVS+qgmftddd+w==.D3TTaA  192.168.1.3  d8:1d:72:7d:75:67  iPhone  Anonymous  f0:5c:19:ca:3c:e8  149E     AC    Anonymous
fe80::1ceaf:a90:a9aa:5342  41(good)  433(good)
Number of Clients   :1
```

There are 2 radius servers pushed from Central to Instant AP.

“AS1_#guest#_” uses RADSEC protocol – tcp 2083 to 35.154.164.176.

“AS2_#guest#_” uses https protocol – tcp 443 to 13.126.228.244.

#show radius status

```
Radius server status

-------------------------------------

Name            Server IP       Source IP     Server Name                                    Protocol    Port  NAS IP                 
Connected sockets  Status          Last connection tried at    Next connection at

----            ---------       ---------     -----------                                    --------    ----  ------         ------
-----------  ------          ----------------------    ------------------

AS2_#guest#_    13.126.228.244  192.168.1.12  ap1-elb.cloudguest.central.arubanetworks.com  RADIUS/TLS  443   192.168.1.12  1
CONNECTED  _    2019-03-21 14:08:58.184913  Not Applicable

AS1_#guest#_    35.154.164.176  192.168.1.12  ap1.cloudguest.central.arubanetworks.com      RADIUS/TLS  2083  192.168.1.12  1
CONNECTED  _    2019-03-21 14:08:58.188131  Not Applicable
```

All the radius request would be sent to AS1 as it is first in order.

In any event tcp 2083 is blocked, radius request would be redirected to AS2.

#show radius status

```
Radius server status
--------------------
Name            Server IP       Source IP     Server Name                                  Protocol    Port  NAS IP
Connected sockets  Status          Last connection tried at    Next connection at
----            ---------       ---------     -----------                                  --------    ----  ------        ------
-----------  ------          ------------------------    ------------------
AS2_#guest#_    13.126.228.244  192.168.1.12  ap1-elb.cloudguest.central.arubanetworks.com  RADIUS/TLS  443   192.168.1.12  1
CONNECTED       2019-03-21 14:08:58.184913  Not Applicable
AS1_#guest#_    35.154.164.176  192.168.1.12  ap1.cloudguest.central.arubanetworks.com      RADIUS/TLS  2083  192.168.1.12  0
INIT            2019-03-21 15:12:10.667178  2019-03-21 15:12:20.10667178
```

Client's session to the cloudguest URL:

```
# show datapath session | include 35.154.164.176
35.154.164.176    192.168.1.3     6    443   62144 0    0    0   1   dev20       6d   F
192.168.1.3       35.154.164.176  6    62144 443   0    0    0   1   dev20       6d   FC
```

IAP's attempt to contact AS1:

```
# show datapath session | include 35.154.164.176
35.154.164.176    192.168.1.12    6    2083  53511 0    0    0   1   local       51   Y
192.168.1.12      35.154.164.176  6    53511 2083  0    0    0   1   local       51   C
```

IAP communicates with AS2:

```
# show datapath session | include 13.126.228.244
13.126.228.244    192.168.1.12    6    443   57852 0    0    0   1   local       49c2
192.168.1.12      13.126.228.244  6    57852 443   0    0    0   1   local       49c2 C
```

Security debug logs from IAP:

When radsec establishes:

show log security | in AS1

```
Mar 21 15:28:02  stm[4409]: <124004> <DBUG> |AP f0:5c:19:ca:3c:e8@192.168.1.12 stm|  Starting SSL connection to server
AS1_#guest#_ ip 35.154.164.176 port 2083
Mar 21 15:28:02  stm[4409]: <124004> <DBUG> |AP f0:5c:19:ca:3c:e8@192.168.1.12 stm|  TLS connection succeeded to AS1_#guest#_
Mar 21 15:28:02  stm[4409]: <124004> <DBUG> |AP f0:5c:19:ca:3c:e8@192.168.1.12 stm|  check and send queued requests to server
AS1_#guest#_ on socket 13
Mar 21 15:28:24  stm[4409]: <124004> <DBUG> |AP f0:5c:19:ca:3c:e8@192.168.1.12 stm|  status server processed for server
AS1_#guest#_
```

When radsec fails:

show log security | in AS1

```
Mar 21 15:31:56  stm[4409]: <124004> <DBUG> |AP f0:5c:19:ca:3c:e8@192.168.1.12 stm|  SSL socket not available for server,creating:
AS1_#guest#_
Mar 21 15:31:56  stm[4409]: <124004> <DBUG> |AP f0:5c:19:ca:3c:e8@192.168.1.12 stm|  Resolve DNS for server AS1_#guest#_ with cmd
/aruba/bin/dns_resolv ap1.cloudguest.central.arubanetworks.com
Mar 21 15:31:56  stm[4409]: <124004> <DBUG> |AP f0:5c:19:ca:3c:e8@192.168.1.12 stm|  Starting SSL connection to server
AS1_#guest#_ ip 35.154.164.176 port 2083
Mar 21 15:31:56  stm[4409]: <199802> <ERRS> |AP f0:5c:19:ca:3c:e8@192.168.1.12 stm|  rc_rad_tls.c, radsec_resume_connection:1079:
TCP connect to server AS1_#guest#_ failed to establish TLS connection to server AS1_#guest#_. Retry in 320 seconds
```

When both servers are down use the option ‘Allow Internet In Failure’.

#show external-captive-portal Anonymous_#guest#_

```
Name                    :Anonymous_#guest#_
Server                  :ap1.cloudguest.central.arubanetworks.com
Port                    :443
Url                     :/portal/scope.cust-00bc49df203e4281907cf158062489da/Anonymous/capture
Auth Text               :
Redirect Url            :
Server Fail Throuth     :Disable / Enable
Disable Auto Whitelist  :Disable
Use HTTPs               :Yes
Server Offload          :No
Prevent Frame Overlay   :Disable
In Used                 :Yes
Redirect Mode           :Yes
Switch IP               :No
```

URL Whitelisting:

show access-rule Anonymous_#guest#_

```
Access Rules
------------
Dest IP  Dest Mask              Eth Type  Dest Match  Protocol (id:sport:eport)  Application  Action  Log  TOS  802.1P  Blacklist
App Throttle (Up:Down)  Mirror  DisScan  ClassifyMedia
-------  ---------              --------  ----------  -------------------------  -----------  ------  ---  ---  ------  ---------
----------------------  ------  -------  -------------
alias    cnn.com                IPv4/6    match       https                                   permit
alias    bbc.com                IPv4/6    match       https                                   permit
```

Session Timeout

show ap debug auth-tracebuf

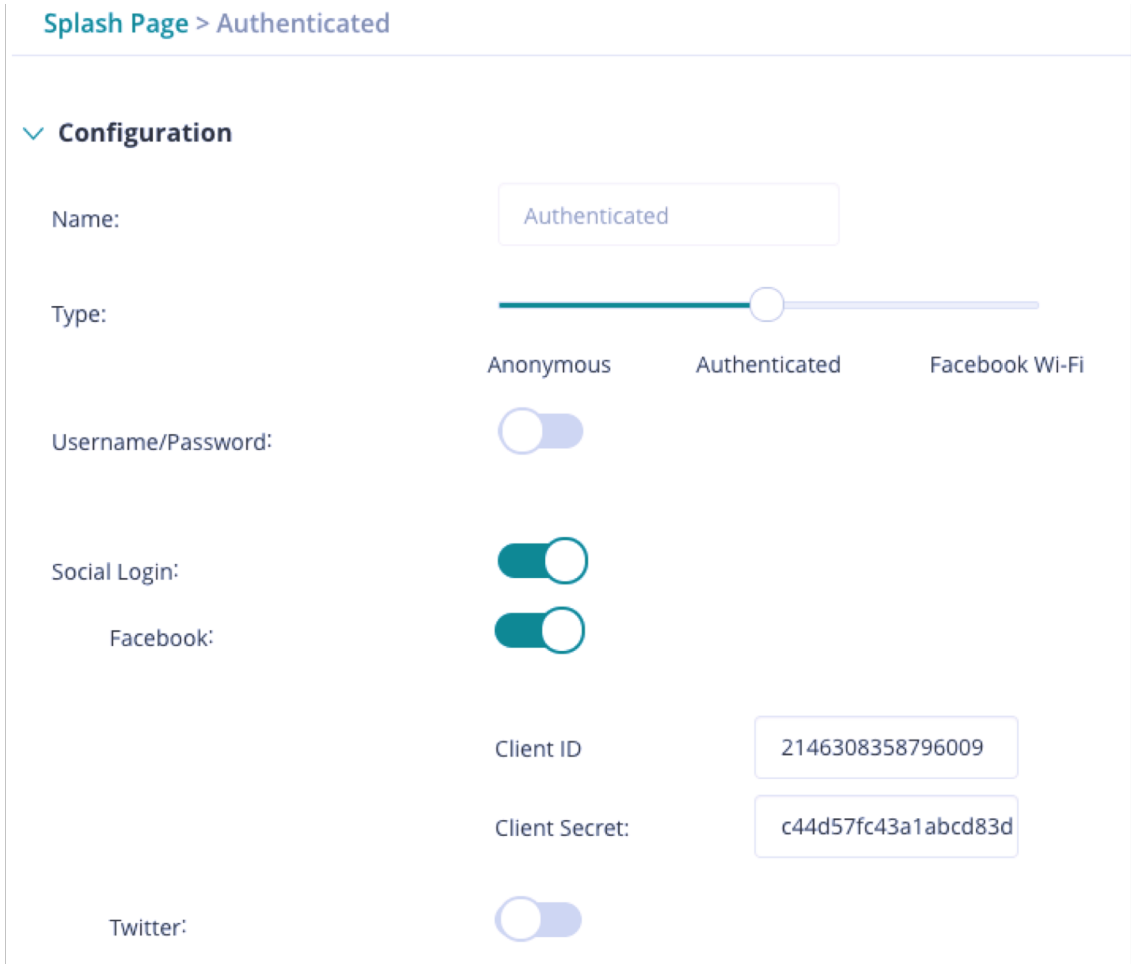
```
Mar 22 09:29:19  cp-pap-auth-request  ->   68:c4:4d:89:b8:44  f0:5c:19:23:ce:81/AS1_#guest#_  -  -
yzTmsIWkQViqzA1e2ghwKA==.D3XvFg
Mar 22 09:29:19  cp-pap-auth-success  <-   68:c4:4d:89:b8:44  f0:5c:19:23:ce:81/AS1_#guest#_  -  -  success
Mar 22 09:29:19  rad-acct-start        ->  68:c4:4d:89:b8:44  f0:5c:19:23:ce:81               -  -
Mar 22 09:29:35  rad-acct-int-update   ->  68:c4:4d:89:b8:44  f0:5c:19:23:ce:81               -  -
Mar 22 09:31:17  rad-acct-stop         ->  68:c4:4d:89:b8:44  f0:5c:19:23:ce:81               -  -
```

Cloud Guest Type - Authenticated

– Username/Password along with email and phone based verification.

– Social login – Facebook, Google+, Twitter, Linkedin

Facebook login

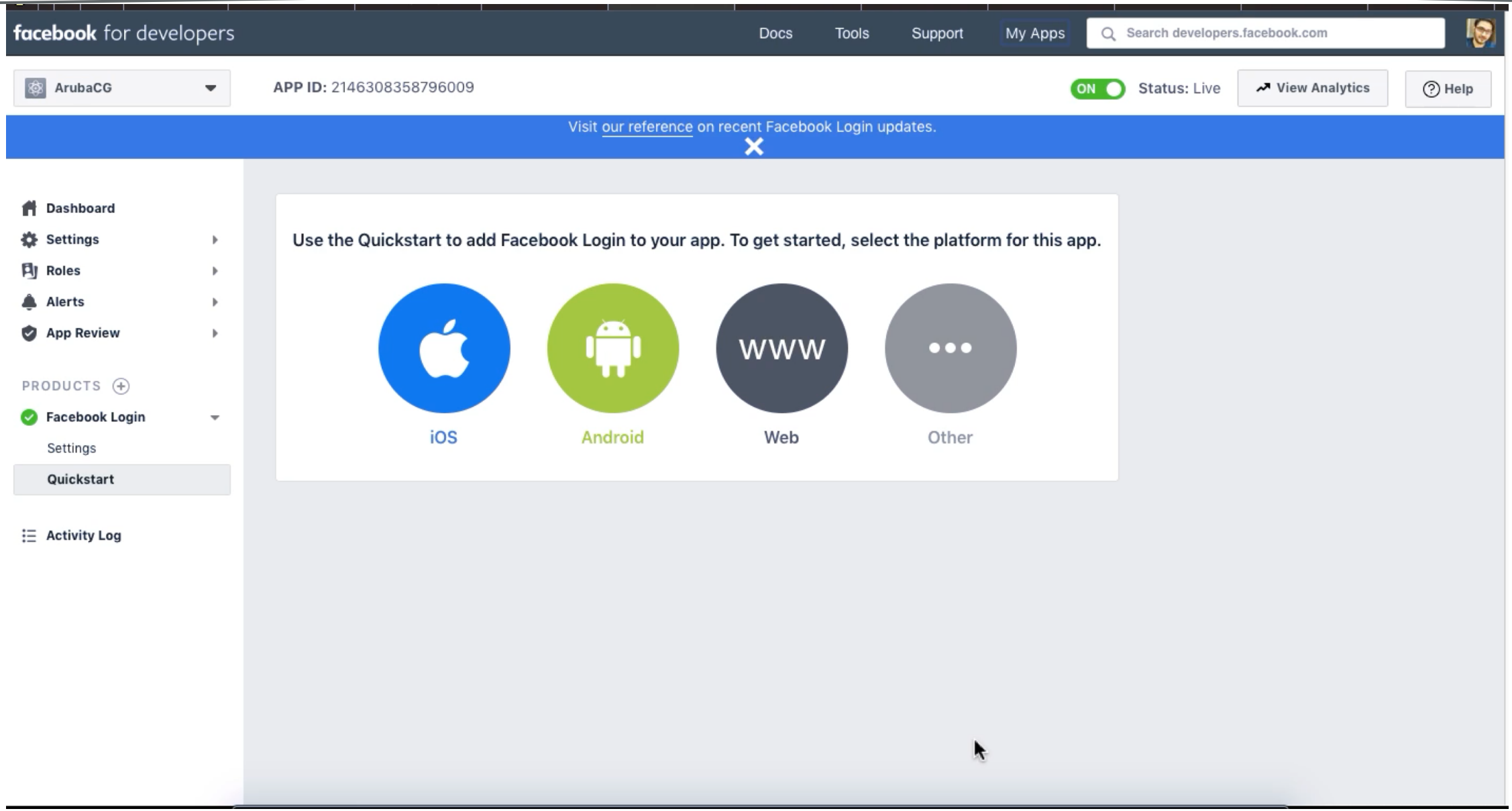


show clients

```
Client List
-----------
Name                                IP Address   MAC Address        OS     ESSID     Access Point       Channel  Type  Role      IPv6
Address                Signal    Speed (mbps)
----                                ----------   -----------        --     -----     ------------       -------  ----  ----      ----
--------                ------    ------------
5U7/JrfqQbqM7WeigqIzOw==.D3VW0A  192.168.1.5  68:c4:4d:89:b8:44  Linux  Facebook  f0:5c:19:ca:3c:e8  6        GN    Facebook
fe80::6ac4:4dff:fe89:b844  40(good)  52(good)
```

show access-rule Facebook

```
Access Rules
------------
Dest IP  Dest Mask  Eth Type  Dest Match  Protocol (id:sport:eport)  Application  Action  Log  TOS  802.1P  Blacklist  App
Throttle (Up:Down)  Mirror  DisScan  ClassifyMedia
-------  ---------  --------  ----------  -------------------------  -----------  ------  ---  ---  ------  ---------  -----------
-----------  ------  -------  -------------
any      any        IPv4/6    match       any                                     permit
```

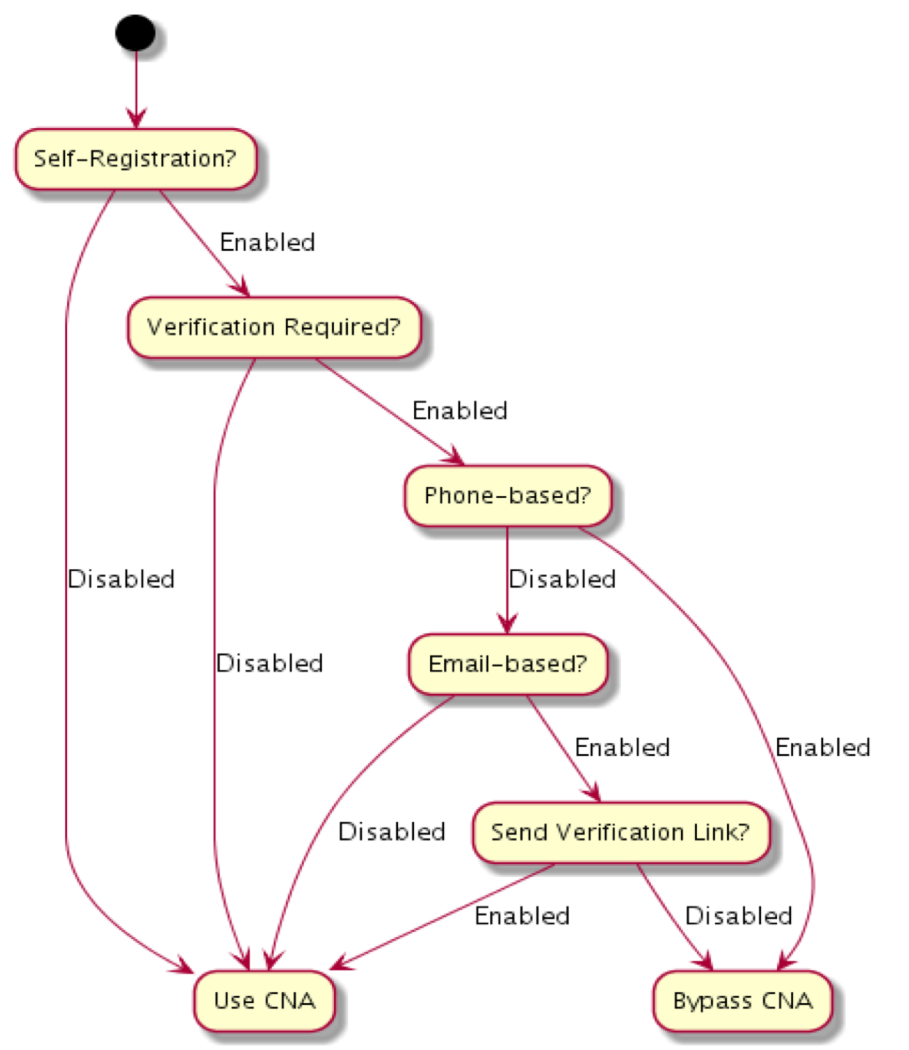

facebook for developers
Docs
Tools
Support
My Apps
Search developers.facebook.com
ArubaCG
APP ID: 2146308358796009
ON
Status: Live
View Analytics
Help
Visit our reference on recent Facebook Login updates.
Dashboard
Settings
Roles
Alerts
App Review
PRODUCTS
Facebook Login
Settings
Quickstart
Activity Log
Use the Quickstart to add Facebook Login to your app. To get started, select the platform for this app.
iOS
Android
Web
Other

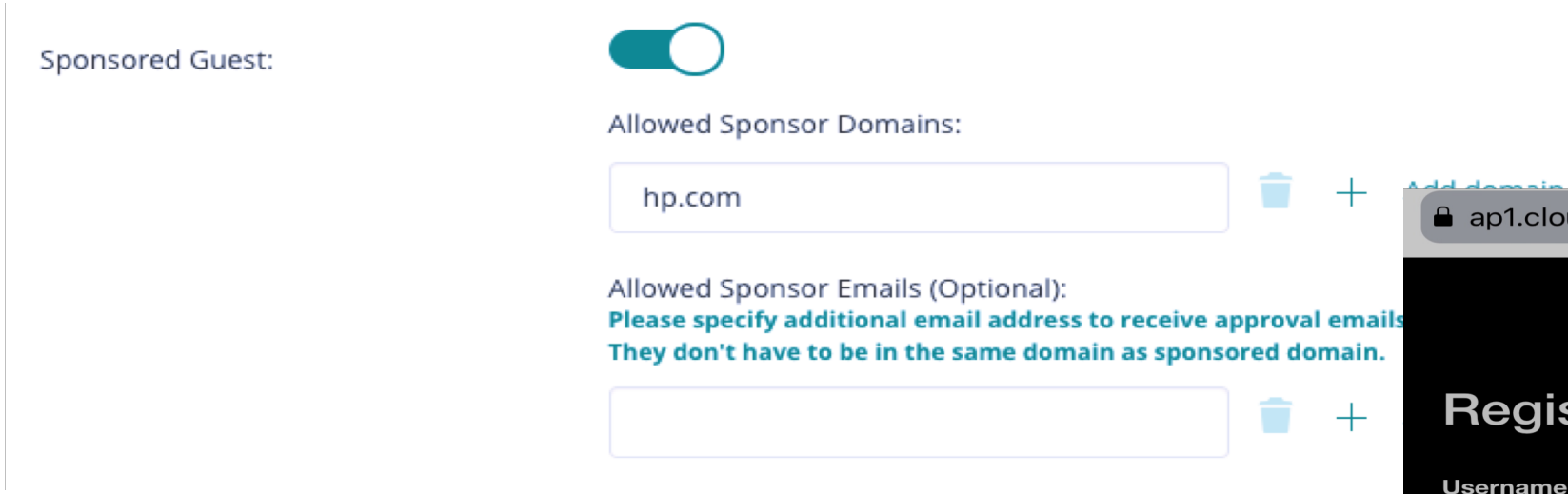
Self Registration Workflow for Apple CNA

Captive portal detection URL's:

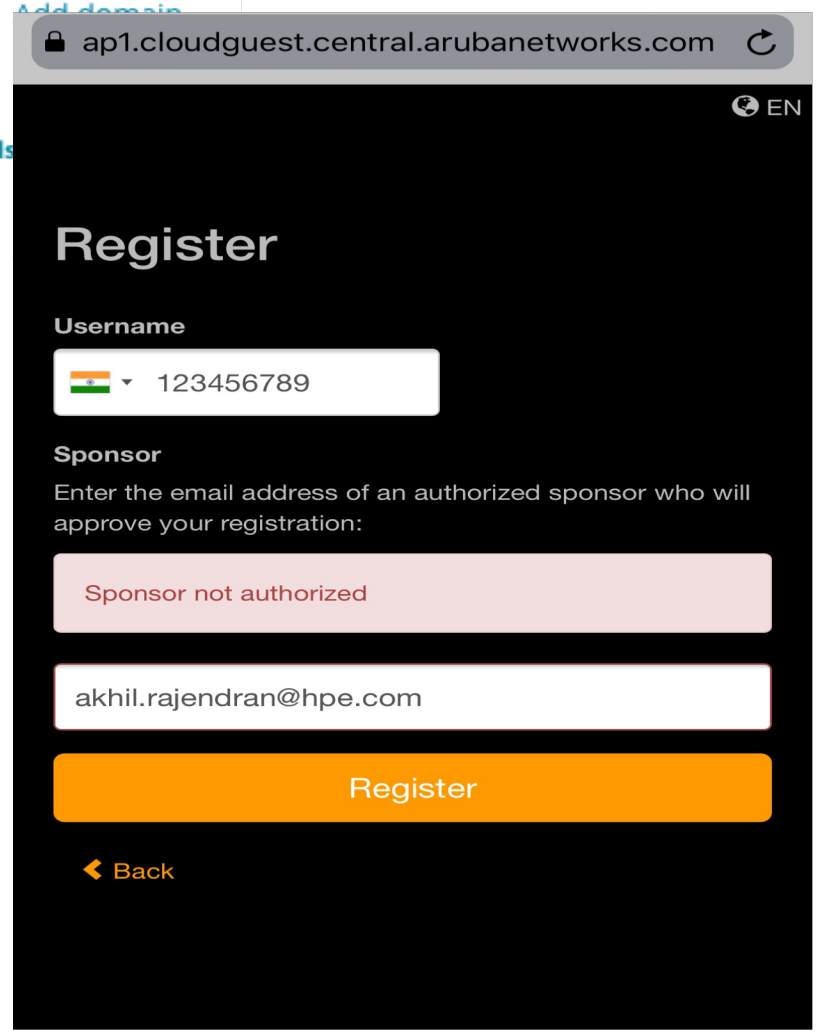
– http://www.apple.com/library/test/success.html

– http://captive.apple.com/hotspot-detect.html





Error: ’Sponsor not authorized’



Session Limit / Data Limit

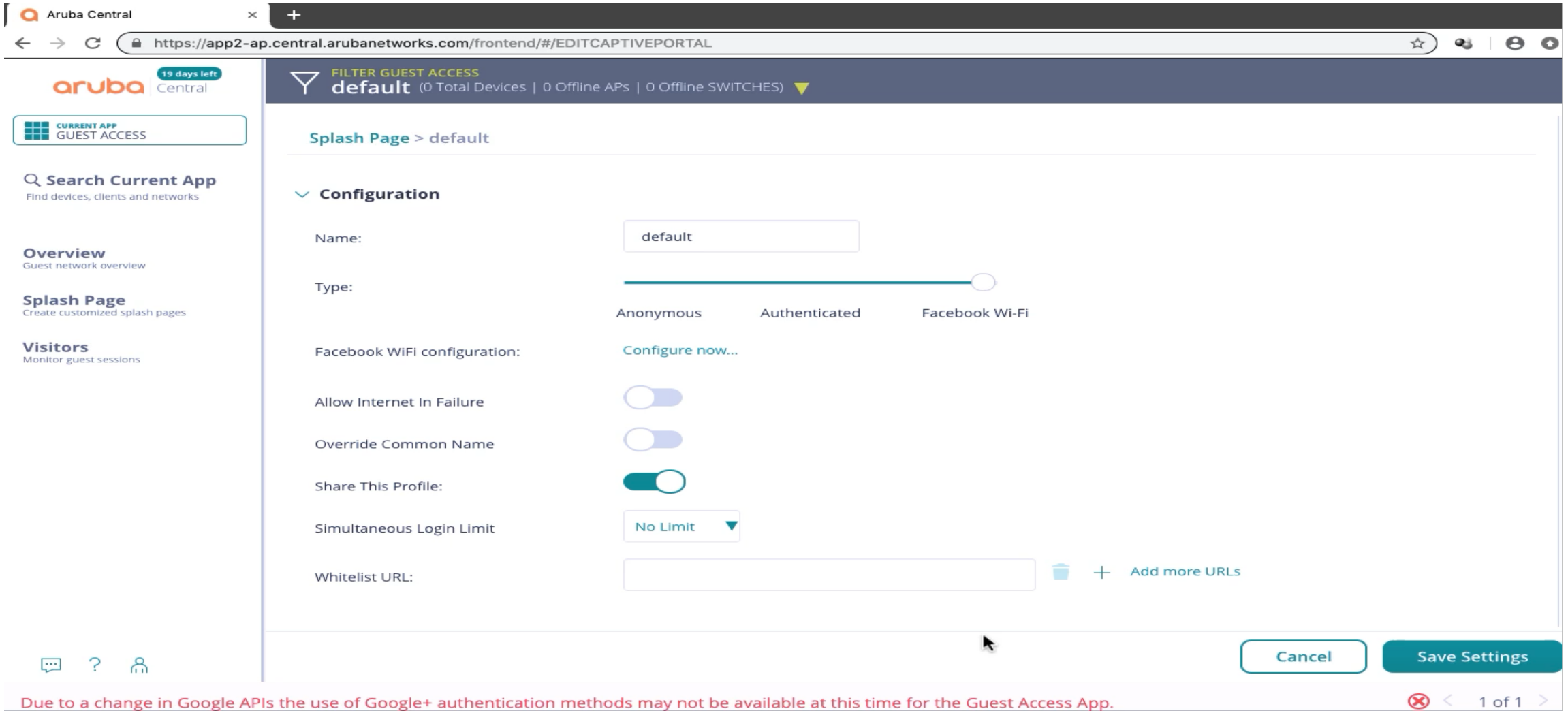
show ap debug auth-trace-buf

```
Mar 22 13:13:07  cp-pap-auth-request  ->   d8:1d:72:7d:75:67  f0:5c:19:23:ce:93/AS1_#guest#_  -  -
T2jV0x48TAuTCk/7KYNn6g==.D3Yjig
Mar 22 13:13:07  cp-pap-auth-success  <-   d8:1d:72:7d:75:67  f0:5c:19:23:ce:93/AS1_#guest#_  -  -  success
Mar 22 13:13:07  rad-acct-start        ->  d8:1d:72:7d:75:67  f0:5c:19:23:ce:93               -  -
Mar 22 13:15:17  rad-acct-int-update   ->  d8:1d:72:7d:75:67  f0:5c:19:23:ce:93               -  -
Mar 22 13:15:25  rad-acct-stop         ->  d8:1d:72:7d:75:67  f0:5c:19:23:ce:93               -  -
```

show clients

```
Client List
-----------
Name                      IP Address    MAC Address        OS     ESSID   Access Point       Channel  Type  Role              IPv6
Address                Signal    Speed (mbps)
----                      ----------    -----------        --     -----   ------------       -------  ----  ----              ------
------                ------    ------------
ak-iphone                 192.168.1.3  d8:1d:72:7d:75:67         Social  f0:5c:19:ca:3c:e8  52E      AC    Social_#guest#_
fe80::c77:cc59:6a3f:df9    25(good)  433(good)
```

Facebook Wifi



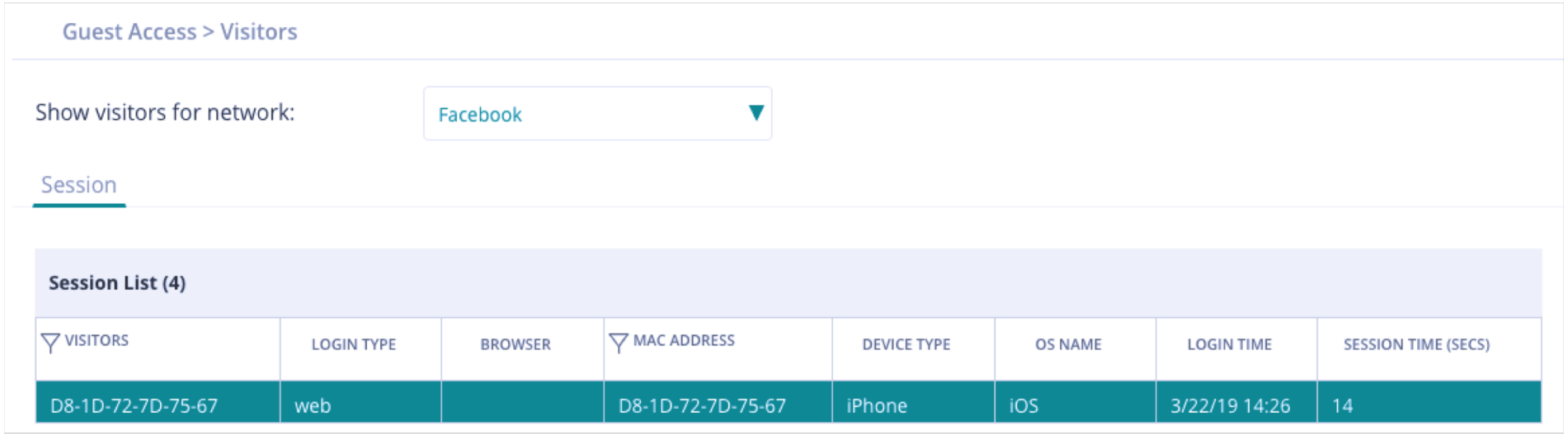
Cloud Guest - Visitors

– Generate accounts that can be given to guests.

– Cannot be configured at MSP level.

– Visitor accounts can be created for username/password login.

– Visitor accounts can be modified and new password can be sent via SMS or email.



Reports

- Reports can be pulled from Central to have track of various parameters like:
  - Client usage
  - Application usage
  - Client sessions
- Can be automated or ran as and when required.
- Report can be downloaded or sent to any email addresses.

Thank You

Q & A