# 105 - EMS Panel Controller API

# Brief

Communication API between **Panel Controller** + **EMS Server** and **M2M Platform**.

# Controller + EMS Server API

**SEMUA REQUEST DI DOKUMEN INI HANYA CONTOH AJA, SLA BEBAS GIMANA GENERATENYA. YANG PENTING RESPONSENYA SESUAI.**

REST API.

1. Register Panel Controller
   1. Request: **CONTOH**
      1. **192.168.128.69/emma/register?mac=18fe349936be&hmac=94ecb03413ae05c0af6202e6f8e7eea1**
      2. Notes:
         1. 192.168.128.69 is IP address of EMS server
         2. 18fe349936be is WiFi MAC address of Controller
         3. 94ecb03413ae05c0af6202e6f8e7eea1 is MD5 hash code
   2. Response:
      1. Success (200): **[{"platformDomain":"(2da0575fc6dacf4205ce8174e7b3163b)","platformKey":"(5980e444-81dd-47ba-8222-6a40bc94fdce)","platformSecret":"(3ca8ec0239fda2b6d12ba1580c91a052)","registrationKey":"(abc123)"}]**
      2. Failed (400): if parameter "hmac" not exist and if MD5 hash not valid
      3. Notes:
         1. Format in JSON
         2. Parameter platformDomain, platformKey, and platformSecret are generated by M2M platform(**2lemetry**) and also saved by EMS Server
         3. Those parameters are permanent for app (supposedly), except registrationKey
2. Verify Registration
   1. Request: **CONTOH**
      1. **192.168.128.69/emma/verify?mac=18fe349936be&registrationKey=abc123&hmac=77cea1525e9ed70f4ce4e972feb1b104**
      2. Notes:
         1. 18fe349936be is WiFi MAC address of Controller
         2. abc123 is registration key
         3. 77cea1525e9ed70f4ce4e972feb1b104 is MD5 hash code
   2. Response:
      1. Success (200): **[{"status":"registered"}]**
      2. Success (200): **[{"status":"not registered"}]** if registration not verified yet
      3. Failed (400): if parameter "mac" or "hmac" or "registrationKey" not exist or MD5 hash not valid
      4. Notes:
         1. Format in JSON
3. Send Device (IR&RF Remote) List - **Not yet**
   1. Request:
   2. Response:

# Controller + M2M Platform API

**SEMUA REQUEST DI DOKUMEN INI HANYA CONTOH AJA, SLA BEBAS GIMANA GENERATENYA. YANG PENTING RESPONSENYA SESUAI.**

**M2M Platform yang dipakai** [**2lemetry.com**](2lemetry.com) **. Jadi, nanti untuk kirim data dan dapet command, panel controller akses dari 2lemetry. 2lemetry juga menyediakan API untuk dapat data dan publish command dari EMS Server (backend server yang dibikin SLA). Nanti aplikasi web akses data dari EMS Server.**

MQTT API.

1. Subscribe Command
   1. Topic:
      1. **<platformDomain>/<WiFi MAC>/command**
   2. Response:
      1. Example
         1. **[{"id":”123”,"dType":1,"dAddr":"00262903424E","nType":21,"cmd":1}]**
         2. **[{"id":”456”,"dType":1,"dAddr":"00262903424F","nType":11,"cmd":20}]**
         3. **[{"id":"789","dType":0,"dAddr":"8","nType":0,"cmd":1}]**
      2. Notes:
         1. id is command id
         2. dType is device type
            1. dType = 0 is for switch on Panel Controller
            2. dType = 1 is for device with MAC address (IR&RF Remote)
         3. dAddr is device address
            1. If dType = 0 → dAddr is switch channel (0-15)
            2. If dType = 1 → dAddr is MAC address
         4. nType is node type
            1. Node type. If dType = 0 → Ignore, dType = 1 → node(e.g. AC, TV, RF Switch)

|  |  |
| --- | --- |
| **nType** | **node** |
| 0 | Ignore |
| 10 | AC LG |
| 11 | AC Sharp |
| 1x | ... |
| 20 | TV LG |
| 21 | TV Sharp |
| 2x | ... |
| 90 | RF Switch |

* + - 1. cmd
         1. 0 is turn OFF
         2. 1 is turn ON
         3. 18 - 30 are specific for Air Conditioner (it represents temperature in Celcius)

1. Publish Execution Status
   1. Topic:
      1. **<platformDomain>/<WiFi MAC>/cmdExecution**
   2. Payload:
      1. Success: **[{"id":”123”,"dType":1,"dAddr":"00262903424E","nType":21,"cmd":1,"status":"success"}]**
      2. Failed: **[{"id":”123”,"dType":1,"dAddr":"00262903424E","nType":21,"cmd":1,"status":"failed"}]**
2. Publish Data
   1. Topic:
      1. **<platformDomain>/<WiFi MAC>/<sensor>**
      2. Sensor example: temperature, humidity, gas, energy1,energy2, energy3, etc.
   2. Payload
      1. **[{"time":”20150609-12:32:12”,"value":12.34}]**