HVAC

Problem Statement:-

Mode= 0=Off, 1=Cool, 2=Heat, 3=Auto

Fan= 0=Off, 1=On

SetTemp=60

Single Command to update all settings together:-

{

"device=AC101",

"mode":1,

"fan":0,

"settemp":60

}

Whenever we want to update any settings there will be only one command. no individual command.

HVAC STATUS and whenever any changes made device will send updated status in /Notification/{"mode"=1,"fan":1,"settemp":60,"room temp":64}

Notes:

1. whenever Temp, or mode change thermostat will post current status

2. Every 30 minutes the thermostat will post the current status as a heartbeat

3. Whenever we send {Get Status} command it will post the current status

"HVAC" : {

"Attribute" : [

{

"name" : "Device ID",

"key" : "0x10",

"is\_writeable" : false,

"size" : 6,

"type" : "macaddr"

},

{

"name" : "Firmware Version",

"key" : "0x20",

"is\_writeable" : false,

"size" : 2,

"type" : "verstr"

},

{

"name" : "Location",

"key" : "0x30",

"is\_writeable" : true,

"size" : 15,

"type" : "string"

},

{

"name" : "Telemetry Sampling Interval",

"key" : "0x40",

"is\_writeable" : true,

"size" : 2,

"type" : "u\_short"

}

],

"State" : [

{

"name" : "mode",

"key" : "0x10",

"is\_writeable" : true,

"size" : 1,

"type" : "hvacmode"

},

{

"name" : "temperature",

"key" : "0x20",

"is\_writeable" : true,

"size" : 2,

"type" : "short"

},

{

"name" : "room\_temperature",

"key" : "0x30",

"is\_writeable" : false,

"size" : 2,

"type" : "short"

},

{

"name" : "fan",

"key" : "0x40",

"is\_writeable" : true,

"size" : 1,

"type" : "bool"

}

],

"Alarm" : [],

"Telemetry" : [

{

"name" : "mode",

"key" : "0x10",

"is\_writeable" : false,

"size" : 1,

"type" : "hvacmode"

},

{

"name" : "temperature",

"key" : "0x20",

"is\_writeable" : false,

"size" : 2,

"type" : "short"

},

{

"name" : "room\_temperature",

"key" : "0x30",

"is\_writeable" : false,

"size" : 2,

"type" : "short"

},

{

"name" : "fan",

"key" : "0x40",

"is\_writeable" : true,

"size" : 1,

"type" : "bool"

}

]

}

|  |  |
| --- | --- |
| **MQTT Topic** | {Device Id}/CMD |
| **JSON Payload** | {  “Command” : “**set\_config**”,  “Seq” : <integer>,  “Params” : {  "mode" : “heating” | “cooling” | “auto” | “off”  "temperature” : <unsigned int>,  “fan”: “fan\_on” | “fan\_off”  } |
| **Description** | In MQTT topic, {Device Id} is set with the user-readable string as listed in CloudExt’s UI (for example: F1-R101-HVAC), indicating that the response corresponds to that HVAC controller.  The JSON payload contains three fields: command, seq, and params.  The command field contains the name of the command for which the response is associated.  The Seq field contains an integer that should be returned back as is in the response payload.  The params object contains multiple fields:   * *mode* - can be heating, cooling, auto and off * *temperature* - unsigned integer. * *Fan* – on and off |

|  |  |  |
| --- | --- | --- |
| **Byte:Length** | **Field Value** | **Description** |
| 1:4 | <Req Id> | Request ID. Signed int (4 bytes). This request id must be the request id that was sent in the *Get Status* request message. |
| 5:1 | 0x11 | Key = mode, Length = 1 |
| 6:1 | 0x01 or 0x02 or 0x03 or 0x04 | Configure mode of operation. 0x01 means Heating, 0x02 - Cooling, 0x03 - Auto, 0x04 - OFF. |
| 7:1 | 0x21 | Key = temperature, Length = 1 |
| 8:1 |  | Byte. Represents the current temperature setting on the HVAC unit between 0 and 255 |
| 9:1 | 0x41 | Key = fan, Length = 1 |
| 10:1 | 0x01 or 0x02 | Configure Fan operation. 0x01 means ON and 0x02 means OFF |
| 11:1 | 0x00 | End of Packet Marker |