

Error Handling For RESTful BMON Resources (Plugins)

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Goals

- Inform users of a problem while using API
- Provide informative solution

Outcomes of an REST API call

- Everything worked
- Caller did something wrong
- Something wrong at the plugin(server)

Error handling proposal for BMON

- **Plugin to return error codes and verbose messages**
- **Error codes**
 - Simple subset of standard HTTP error codes
 - List of error codes https://en.wikipedia.org/wiki/List_of_HTTP_status_codes
 - BMON will support following error codes
 - 200—OK— Not Used. No error means success.**
 - 400 - Bad Request (Caller error)**
 - 404 - Not found (Caller Error)**
 - 500 - Internal Server Error(Plugin/STB side error messages)**
- **Verbose Message**
 - Message which could lead to a possible solution.
- **JSON Format**
 - "error": { "code":400, "message":“SpecA unable to connect to Cable Modem”}

Plugin JSON with error included

```
{  
  "version": "0.1",  
  "name": "pmu",  
  "description": "Power readings from pmu unit",  
  "datetime": "Thu Jun 21 18:31:16 2018",  
  "timestampSec": 1529605876.684239,  
  "data": []  
  "error": {"code":404,"message":“PMU not supported.”}  
}
```

Examples: Success (not used)

URI:pmu/power/systemPowerWatt

```
{  
  "version": "0.1",  
  "name": "pmu",  
  "description": "Power readings from pmu unit",  
  "datetime": "Thu Jun 21 18:31:16 2018",  
  "timestampSec": 1529605876.684239,  
  "data": [{"power":{"systemPowerWatt":2.5}]  
  "status": {"code":200,"message":"ok"}  
}
```

Example: Success – No Error Tag (preferred)

- If API call is successful then no error code should be returned.

URI:pmu/power/systemPowerWatt

```
{  
  "version": "0.1",  
  "name": "pmu",  
  "description": "Power readings from pmu unit",  
  "datetime": "Thu Jun 21 18:31:16 2018",  
  "timestampSec": 1529605876.684239,  
  "data": [{"power":{"systemPowerWatt":2.5}}]  
}
```

Example: Success – No Error code

URI:pmu/power/systemPowerWatt

```
{  
  "version": "0.1",  
  "name": "pmu",  
  "description": "Power readings from pmu unit",  
  "datetime": "Thu Jun 21 18:31:16 2018",  
  "timestampSec": 1529605876.684239,  
  "data": [{"power":{"systemPowerWatt":2.5}]  
  "error": {"code":200,"message":"ok"}  
}
```


Example: Caller Error , Resource unavailable

URI:pmu

```
{  
  "version": "0.1",  
  "name": "pmu",  
  "description": "Power readings from pmu unit",  
  "datetime": "Thu Jun 21 18:31:16 2018",  
  "timestampSec": 1529605876.684239,  
  "data": []  
  "error": {"code":404,"message":"PMU is not available on this platform"}  
}
```

Example: Server Error

URI:hdmi_output

```
{  
  "version": "0.1",  
  "name": "hdmi_output",  
  "description": "Collect hdmi stats",  
  "datetime": "Thu Jun 21 18:31:16 2018",  
  "timestampSec": 1529605876.684239,  
  "data": []  
  "error": {"code":500,"message":"Unable to collect data, nxserver is not running"}
```

Example: Caller Error (Invalid Query)

URI:pmu?blah=something

```
{  
  "version": "0.1",  
  "name": "pmu",  
  "description": "Power readings from pmu unit",  
  "datetime": "Thu Jun 21 18:31:16 2018",  
  "timestampSec": 1529605876.684239,  
  "data": []  
  "error": {"code":400,"message":"Invalid query blah=something"}
```

Example: Server Error

URI:specA

```
{  
  "version": "0.1",  
  "name": "specA",  
  "description": "Cable Mode Spectrum Analyser",  
  "datetime": "Thu Jun 21 18:31:16 2018",  
  "timestampSec": 1529605876.684239,  
  "data": []  
  "error": {"code":500,"message":"Request timeout"}
```

Example: Server Error

URI:specA

```
{  
  "version": "0.1",  
  "name": "specA",  
  "description": "Cable Mode Spectrum Analyzer",  
  "datetime": "Thu Jun 21 18:31:16 2018",  
  "timestampSec": 1529605876.684239,  
  "data": []  
  "error": {"code":500,"message":"Unable to connect to CM with IP address  
192.x.y.z"}
```

Industry common practice in handling REST errors

Twitter REST Error handling

```
{"errors":[{"code":215,"message":"Bad Authentication data."}]}
```

Spotify Error Handling

```
"error" : { "status" : 502, "message" : "Bad gateway." }
```

Microsoft

```
"Errors":[{"Code":1001,"Message":"Required parameter is missing.", "Parameter":"SearchRequest.AppId","HelpUrl":"http\u003a\u002f\u002fmsdn.microsoft.com\u002fen-us\u002flibrary\u002f"}]
```

Industry common practice in handling REST errors

Facebook Error Handling

```
"error": { "message": "Syntax error \"Field picture specified more than once. This is only possible before version 2.1\" at character 23: id,name,picture,picture", "type": "OAuthException", "code": 2500, "fbtrace_id": "xxxxxxxxxxxx" }
```