dataprobe

iBCS Restful API V2
URL Control

V210406E

1. Overview

The iBoot-G2, iBoot-PoE and iBoot-PDU Family of products provides a simple Restful API (URL Control) that allows users to control them easily from their own websites and portals. This, however, requires the knowledge of the IP Address of the iBoot(s) that need to be controlled. This is not always practical. Some internet connections do not provide static IP addresses making it impossible to use the Restful API. The iBoot Cloud Services (IBCS) is a perfect solution to this problem.

iBoots make an outgoing connection to the iBCS for monitoring and control. Since the iBCS does have a static IP address as well as a domain name, this makes it the perfect solution to the aforementioned problem. This document provides a specification for the first stage of the iBCS Restful API.

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3. Restful API v2 Specifications

The addition of the ability to configure devices from the cloud is an iBCS roadmap item. In recent months we have created a G2 configuration Restful API for customers. This was built around the iBCS old technology. This effort is to use the G2 Restful API as a starting point for iBCS G2 family configuration Restful API known as Restful API v2. This version will cover all devices in the iBoot-G2 family. The iBCS will now support a Token based Restful API for controlling, monitoring and configuring iBoot-G2 family devices.

The Restful API v2 will include the following customer suggestions:

- The Restful API should be Token based.
- The Restful API should be able to get configuration data.

3.1. Token

An Authorized token is required for All Restful API communications. The token is valid until a programmable amount of inactivity has elapsed. The inactivity timer is programmable from 1 minute to 12 months. It can be programmed from the Restful API or via the Web UI. All tokens can be revoked at any time through the Restful API v2.

- Authorization Tokens **will** be acquired from:
  https://iboot.co/services/v2/auth

  Authorization Requests **will** use the following JSON Structure:

```
{
        "username":"<username>",      //Username
        "password":"<password>",      //Password
        "timeout": {                  //optional timeout
                "interval":"",        //timeout interval
                "scale":""            //Minutes, Hours, Days, Months
        },
        "revoke":"token"              //optional token to revoke
}
```

- Authorization requests will respond with the following JSON structure:

```
{

        "success":"<true|false>",     //Result code true or false
        "message":"<message>",        //Error Message from the server. See appendix
        "token":"####-####-####-####" //64 bit randomly generated token
}
```

3.2. Control

The iBCS Control Restful API will function as the same as current Control Restful API. The only change will be to use an Authorization Token.

- Control will be accessed at: https://iboot.co/services/v2/control
- Control will use the following JSON structure:

```
{
        "token":"",                   //Authorization Token
        "mac":"",                     //MAC address of the iBoot
        "outlet":"",                  //Output to control [0|1|2|3|4|5|6|7]
        "control":""                  //Action to take [cycle|on|off]
}
```

- Control will respond with the following JSON structure:

```
{
        "success":"",                 //Result code [true|false]
        "message":""                  //Message from the server
}
```

3.3. Retrieve

The iBCS Retrieve Restful API function will function same as the current version. The only change will be the username and password will be replaced with an Authorization Token.

- Retrieve will be accessed at: https://iboot.co/services/v2/retrieve
- Retrieve will use the following JSON structure:

```
{
        "token":"",                   //Valid Token
        "mac":""                      //MAC address of the iBoot
}
```

- Retrieve will respond with the following structure for iBoot-G2/PoE:

```
{
        "success":"true",                     //Result code [true|false]
        "message":"",                         //Message from the server
        "status":{                            //Status Information
               "Main":"ON",                   //Main Outlet Status
               "AP-1":"Fail",                 //Autoping-1 Status
               "AP-2":"OK"                    //Autoping-2 Status
               },
        "triggerInfo":{                       //Trigger Information
        "APT1":"0"                            //Autoping Trigger Info
               }
}
```

- Retrieve will respond with the following structure for iBoot-G2+/G2S:

```
{
        "success":"true",             //Result code [true/false]
        "message":"",                 //Message from the server
        "status":{                    //Status Information
        "Main":"On"                   //Main Outlet Status (Valid in expansion mode)
        "EXP-1":"OFF",                //EXP-1 Status (Valid in expansion mode)
        "EXP-2":"OFF",                //EXP-2 Status (Valid in expansion mode)
        "Main-2":"ON",                //Main-2 Outlet Status (Valid in Independent IO Mode)
        "Input-1":"Closed",           //Input-1 Status (Valid in Independent IO Mode)
        "Input-2":"Closed",           //Input-2 Status (Valid in Independent IO Mode)
        "Output-1":"Open",            //Output-1 Status
        "Output-2":"Open",            //Output-2 Status
        "AP-1A":"Inactive",           //Autoping-1A Status
        "AP-1B":"Inactive",           //Autoping-1B Status
        "AP-2":"Inactive",            //Autoping-2 Status
        "AP-3":"Inactive",            //Autoping-2 Status
        "HB":"OK"                     //Heartbeat Status
        },
        "triggerInfo":{               //Trigger Information
                "APT1":"0",           //Autoping-1A & 1B Trigger Info
                "APT2":"0",           //Autoping-2 Trigger Info
                "APT3":"0",           //Autoping-3 Trigger Info
                "HBT1": "0"            //Heartbeat Trigger Info
                }
}
```

- Retrieve will respond with the following JSON structure for the iBoot-PDU:

```
{
        "message": "", //Message from the server
        "status": [ //Status Information
                {
        "Outlet-1": "On" //Outlet-1 Status
        },
        {
        "Outlet-2": "On" //Outlet-2 Status
        },
        {
        "Outlet-3": "On" //Outlet-3 Status
        },
        {
        "Outlet-4": "On" //Outlet-4 Status
        },
        {
        "Outlet-5": "On" //Outlet-5 Status
        },
        {
        "Outlet-6": "On" //Outlet-6 Status
        },
        {
        "Outlet-7": "On" //Outlet-7 Status
        },
        {
        "Outlet-8": "On" //Outlet-8 Status
        }
        ],
        "success": "true", //Result code [true/false]
        "triggerInfo": [] //Future Use
}
```

3.4. Configuration Set

The Configuration Restful API will be based on the Configuration Restful API that was previously implemented. Unlike the previous Restful API, the iBCS Restful API will take a variable number of items in the JSON structures. This will allow for single variable changes. It will also allow for variables from different setup pages to be sent in a single API request. It will be up to the iBCS to place the data in the correct databases tables and send the correct HTTP post data to the selected iBoot.

- All configuration set will be done through: https://iboot.co/services/v2/configuration/iBoot/set
- The JSON structure will require at least 1 iBoot variable to configure.
- The JSON structure will allow up to the max number of variables supported by the database.
- The iBCS will save all variables in the database.
- The iBCS will group the variables by product setting pages.
- The iBCS will push all variables for each effected setup group.
- The iBCS will push the data in HTTP Post format.
- The configuration set request will use the following JSON structure:

```
{
        "token":"",                     //Authorization token
        "mac":"",                       //MAC address of the iBoot to be configured
        "table 1":{                     //The table in the shadow database
                "variable 1":""         //The first variable
                        •
                        •
                        •
                "variable n":""         //The last variable
                }
                •
                •
                •
        "table n":{                     //The table in the shadow database
                "variable 1":""         //The first variable
                        •
                        •
                        •
                "variable n":""         //The last variable
                }
}
```

- The configuration response will use the following JSON structure:

```
{
        "Success":""                    //true or false
        "message":""                    //message describing the error
}
```

3.5. Configuration Get

The Configuration Restful API will be used to get the entire configuration or any part thereof, of the selected iBoot.

- All configuration get will be done through: https://iboot.co/services/v2/configuration/iBoot/get
- The configuration get request will use the following JSON structure:

```
{
        "token":"",                     //Authorization token
        "mac":"",                       //MAC address of the iBoot to be configured
        "tables":[""]                   //optional list of tables to get
}
```

- The configuration get request will respond with the following JSON structure:

```
{
        "Success":"" //true or false
        "message":""                    //message describing the error
        "table 1":{                     //The table in the shadow database
                "variable 1":""         //The first variable
                        •
                        •
                        •
                "variable n":""         //The last variable
                }
                •
                •
                •
        "table n":{                     //The table in the shadow database
                "variable 1":""         //The first variable
                        •
                        •
                        •
                "variable n":""         //The last variable
                }
}
```

3.6. Shadow Database

It would be impractical for iBCS to process a get request by retrieving the iBoot configuration directly from iBoot. To work around this the iBCS will use a Shadow Database.

- The Shadow Database will contain 1 variable for each setup pages of the iBoot-G2 family.
- Each table will contain variable for all versions of the iBoot-G2 family.
- Each table will be blank until
    1. The iBoot sends its setting to cloud via Commit Long Poll.
    2. The Configuration Set Restful API is used.
- The Restful API Set will apply factory defaults to all unset variables.

4. iBoot-G2 Configuration Set

4.1. Device Configuration Set

The following is used to POST JSON structure that will make changes to the iBoot-G2's Device settings.
https://iboot.co/services/v2/configuration/iBoot/set

The iBCS Configuration Restful API will function same as the current version. The only change will be the username and password will be replaced by Authorization Token for all Restful API configurations.

Note: If the Location is changed a reboot is required.

```
{
        "token":"####-####-####-####",              //Authorization token
        "mac":"00-0d-ad-01-02-03",                  //MAC address of the iBoot to be configured
        "device":{                                  //Device configuration structure
                "location":""                       //1-20 characters
                "cycleTime":""                      //1-999 seconds
                "initialState":""                   //On | Off | Last
                "disableOff":""                     //1=enable | 0=disable
                "upgradeEnable":""                  //1=enable | 0=disable
                "autoLogout":""                     //0-99 seconds
        }
}
```

4.2. Network Configuration Set

```
{
        "token":"####-####-####-####",              //Authorization token
        "mac":"00-0d-ad-01-02-03",                  //MAC address of the iBoot to be configured
        "network": {                                //Network configuration structure
                "ipMode":"",                        //static | dhcp
                "ipMode":""                         //dotted decimals (192.168.1.254)
                "subnetMask":"",                    //dotted decimals (255.255.255.0)
                "gateway":"",                       //dotted decimals (192.168.1.1)
                "dns":""                            //dotted decimals (8.8.8.8)
            }
}
```

4.3. Advanced Network Configuration Set

```
{
        "token":"####-####-####-####",              //Authorization token
        "mac":"00-0d-ad-01-02-03",                  //MAC address of the iBoot to be configured
        "advancedNetwork": {                        //Advanced Network configuration structure
                "httpPort":"",                      //1-65535
                "linkbackUrl":""                    //1-64 characters
                "telnetPort":"",                    //1-65535
                "dxpPort":"",                       //1-65535
                "cloudEnabled":""                   //1=enabled | 0=disabled
                "enableTimeServer":""               //1=enabled | 0=disabled
                "timeServerAddress":""              //1-64 characters
                "timezone":""                       //-12 to 12
                "enableDst":""                      //1=enabled | 0=disabled
                "dstStartWeek":""                   //1st | 2nd | 3rd | 4th | last
                "dstStartDay":""                    //Sunday through Saturday
                "dstStartMonth":""                  //January through December
                "dstStartTime":""                   //hh:mm in 24 hour format
                "dstStopWeek":""                    //1st | 2nd | 3rd | 4th | last
                "dstStopDay":""                     //Sunday through Saturday
                "dstStopMonth":""                   //January through December
                "dstStopTime":""                    //hh:mm in 24 hour format
            }
}
```

4.4. Autoping Configuration Set

```
{
        "token":"####-####-####-####",               //Authorization token
        "mac":"00-0d-ad-01-02-03",                   //MAC address of the iBoot to be configured
        "autoping": {                                //Autoping configuration structure
                "apAAddress":"",                     //address to be pinged 1-32 characters
                "apBAddress":""                      //address to be pinged 1-32 characters
                "apAFrequency":"",                   //1-999 seconds
                "apBFrequency":"",                   //1-999 seconds
                "apAFailcount":""                    //1-999 failures
                "apBFailCount":""                    //1-999 failures
                "apAMode":""                         //and | or | single
                "apAAction":""                       //None|On-Latch|On-Follow|Off-Latch|Off-
                                                    //Follow|cycle

                "apACycles":""                       //0-999
                "apARestart":""                      //0-999 seconds
            }
}
```

4.5. Schedule Configuration Set

```
{
        "token":"####-####-####-####",              //Authorization token
        "mac":"00-0d-ad-01-02-03",                  //MAC address of the iBoot to be configured
        "schedule": {                               //Autoping configuration structure
                "date1": "",                        //mm/dd/yyyy or blank
                "date2": "",                        //mm/dd/yyyy or blank
                "date3": "",                        //mm/dd/yyyy or blank
                "date4": "",                        //mm/dd/yyyy or blank
                "date5": "",                        //mm/dd/yyyy or blank
                "date6": "",                        //mm/dd/yyyy or blank
                "date7": "",                        //mm/dd/yyyy or blank
                "date8": "",                        //mm/dd/yyyy or blank
                "time1": "",                        //hh:mm or blank
                "time2": "",                        //hh:mm or blank
                "time3": "",                        //hh:mm or blank
                "time4": "",                        //hh:mm or blank
                "time5": "",                        //hh:mm or blank
                "time6": "",                        //hh:mm or blank
                "time7": "",                        //hh:mm or blank
                "time8": "",                        //hh:mm or blank
                "repeat1": "",                      //0-999
                "repeat2": "",                      //0-999
                "repeat3": "",                      //0-999
                "repeat4": "",                      //0-999
                "repeat5": "",                      //0-999
                "repeat6": "",                      //0-999
                "repeat7": "",                      //0-999
                "repeat8": "",                      //0-999
                "repeatPeriod1": "",                //days | hours | minutes
                "repeatPeriod2": "",                //days | hours | minutes
                "repeatPeriod3": "",                //days | hours | minutes
                "repeatPeriod4": "",                //days | hours | minutes
                "repeatPeriod5": "",                //days | hours | minutes
                "repeatPeriod6": "",                //days | hours | minutes
                "repeatPeriod7": "",                //days | hours | minutes
                "repeatPeriod8": "",                //days | hours | minutes
                "action1": "",                      //on | off | cycle
                "action2": "",                      //on | off | cycle
                "action3": "",                      //on | off | cycle
                "action4": "",                      //on | off | cycle
                "action5": "",                      //on | off | cycle
                "action6": "",                      //on | off | cycle
                "action7": "",                      //on | off | cycle
                "action8": "",                      //on | off | cycle
                "enable1": "",                      //1=enabled | 0=disabled
                "enable2": "",                      //1=enabled | 0=disabled
                "enable3": "",                      //1=enabled | 0=disabled
                "enable4": "",                      //1=enabled | 0=disabled
                "enable5": "",                      //1=enabled | 0=disabled
                "enable6": "",                      //1=enabled | 0=disabled
                "enable7": "",                      //1=enabled | 0=disabled
                "enable8": ""                       //1=enabled | 0=disabled
            }
}
```

4.6. Reboot

```
{
        "token":"####-####-####-####",              //Authorization token
        "mac":"00-0d-ad-01-02-03",                  //MAC address of the iBoot to be configured
        "reboot":"1",                               //1=reboot
}
```

5. iBoot-G2+/S Configuration Set

The following is used to POST JSON structure that will make changes to the iBoot-G2’s Device settings.
https://iboot.co/services/v2/configuration/iBoot/set

The iBCS Configuration Restful API will function same as the current version. The only change will be the username and password will be replaced by Authorization Token for all Restful API configurations.

Note: If the Location is changed a reboot is required.

5.1. Device Configuration Set

```
{
        "token":"####-####-####-####",              //Authorization token
        "mac":"00-0d-ad-01-02-03",                  //MAC address of the iBoot to be configured
        "device":{                                  //Device configuration structure
                "location":"",                      //1-20 characters
                "outletName":"",                    //1-20 characters
                "exp1OutletName":"",                //1-20 characters
                "exp2OutletName":"",                //1-20 characters
                "cycleTime":"",                     //1-999 seconds
                "exp1CycleTime":"",                 //1-999 seconds
                "exp2CycleTime":"",                 //1-999 seconds
                "initialState":"",                  //on | off | last
                "exp1InitialState":"",              //on | off | last
                "exp2InitialState":"",              //on | off | last
                "disableOff":"",                    //1=enabled | 0=disabled
                "upgradeEnable":"",                 //1=enabled | 0=disabled
                "autoLogout":"",                    //0-99 seconds
                "delayTime":""                      //0-999 seconds
        }
}
```

5.2. Expansion Configuration Set

```
{
        "token":"####-####-####-####",              //Authorization token
        "mac":"00-0d-ad-01-02-03",                  //MAC address of the iBoot to be configured
        "expansion":{                               //Expansion configuration structure
                "expMode":"",                       //iBoot Expansion Unit|Independent
                                                    //I/O|PowerControl
                "exp1Hide":"",                      //1=enabled | 0=disabled
                "exp2Hide":"",                      //1=enabled | 0=disabled
                "exp1linkToMain":"",                //1=enabled | 0=disabled
                "exp2linkToMain":"",                //1=enabled | 0=disabled
                "exp1RemoteIp":"",                  //dotted decimals (192.168.1.253)
                "exp2RemoteIp":"",                  //dotted decimals (192.168.1.254)
                "exp1Relay":"",                     //1 through 8
                "exp2Relay":"",                     //1 through 8
                "exp1Username":"",                  //1-15 characters
                "exp2Username":"",                  //1-15 characters
                "exp1Password":"",                  //1-15 characters
                "exp2Password":"",                  //1-15 characters
                "input1Outlet":"",                  //main | exp1 | exp2
                "input2Outlet":"",                  //main | exp1 | exp2
                "input1Action":"",                  //on | off | cycle | toggle
                "input2Action":""                   //on | off | cycle | toggle
        }

}
```

5.3. Network Configuration Set

```
{
        "token":"####-####-####-####",               //Authorization token
        "mac":"00-0d-ad-01-02-03",                   //MAC address of the iBoot to be configured
        "network": {                                 //Network configuration structure
                "ipMode":"",                         //static | dhcp
                "ipMode":""                          //dotted decimals (192.168.1.254)
                "subnetMask":"",                     //dotted decimals (255.255.255.0)
                "gateway":"",                        //dotted decimals (192.168.1.1)
                "dns":""                             //dotted decimals (8.8.8.8)
            }
}
```

5.4. Advanced Network Configuration Set

```
{
        "token":"####-####-####-####",               //Authorization token
        "mac":"00-0d-ad-01-02-03",                   //MAC address of the iBoot to be configured
        "advancedNetwork": {                         //Advanced Network configuration structure
                "httpPort":"",                       //1-65535
                "linkbackUrl":""                     //1-64 characters
                "telnetPort":"",                     //1-65535
                "dxpPort":"",                        //1-65535
                "cloudEnabled":""                    //1=enabled | 0=disabled
                "enableTimeServer":""                //1=enabled | 0=disabled
                "timeServerAddress":""               //1-64 characters
                "timezone":""                        //-12 to 12
                "enableDst":""                       //1=enabled | 0=disabled
                "dstStartWeek":""                    //1st | 2nd | 3rd | 4th | last
                "dstStartDay":""                     //Sunday through Saturday
                "dstStartMonth":""                   //January through December
                "dstStartTime":""                    //hh:mm in 24 hour format
                "dstStopWeek":""                     //1st | 2nd | 3rd | 4th | last
                "dstStopDay":""                      //Sunday through Saturday
                "dstStopMonth":""                    //January through December
                "dstStopTime":""                     //hh:mm in 24 hour format
                "enableDxpControl":""                //1=enabled | 0=disabled
                "enableDxpQuery":""                  //1=enabled | 0=disabled
            }
}
```

5.5. Graceful Shutdown Configuration Set

```
{
        "token":"####-####-####-####",               //Authorization token
        "mac":"00-0d-ad-01-02-03",                   //MAC address of the iBoot to be configured
        "gracefulShutdown":{                         //Graceful Shutdown configuration structure
                "gsMainEnabled":"",                  //1=enabled | 0=disabled
                "gsExp1Enabled":"",                  //1=enabled | 0=disabled
                "gsExp2Enabled":"",                  //1=enabled | 0=disabled
                "gsMainIp":"                         //dotted decimals (192.168.1.254)
                "gsExp1Ip":"",                       //dotted decimals (192.168.1.254)
                "gsExp2Ip":"",                       //dotted decimals (192.168.1.254)
                "gsMainUser":"",                     //1-20 characters
                "gsExp1User":"",                     //1-20 characters
                "gsExp2User":"",                     //1-20 characters
                "gsMainPassword":"",                 //1-20 characters
                "gsExp1Password":"",                 //1-20 characters
                "gsExp2Password":"",                 //1-20 characters
                "gsMainShutdownDelay":"",            //1-999 seconds
                "gsExp1ShutdownDelay":"",            //1-999 seconds
                "gsExp2ShutdownDelay":"",            //1-999 seconds
                "gsMainRebootDelay":"",              //1-999 seconds
                "gsExp1RebootDelay":"",              //1-999 seconds
                "gsExp2RebootDelay":""               //1-999 seconds
        }
}
```

5.6. Autoping Configuration Set

```
{
        "token":"####-####-####-####",              //Authorization token
        "mac":"00-0d-ad-01-02-03",                  //MAC address of the iBoot to be configured
        "autoping":{                                //Autoping configuration structure
                "apAAddress":"",                    //address to be pinged 1-31 characters
                "apBAddress":"",                    //address to be pinged 1-31 characters
                "apAFrequency":"",                  //1-999 seconds
                "apBFrequency":"",                  //1-999 seconds
                "apAFailCount":"",                  //1-999 failures
                "apBFailCount":"",                  //1-999 failures
                "apAMode":"",                       //and | or | single
                "apAControl":"",                    //main | exp1 | exp2
                "apAAction":"",                     //none|on-latch|on-follow|off-latch|off-
                                                    //follow|cycle
                "apACycles":"",                     //0-999
                "apARestart":",                     //0-999 seconds
                "ap2Address":"",                    //address to be pinged 1-31 characters
                "ap3Address":"",                    //address to be pinged 1-31 characters
                "ap2Frequency":"",                  //1-999 seconds
                "ap3Frequency":"",                  //1-999 seconds
                "ap2FailCount":"",                  //1-999 failures
                "ap3FailCount":"",                  //1-999 failures
                "ap2Control":"",                    //main | exp1 | exp2
                "ap3Control":"",                    //main | exp1 | exp2
                "ap2Action":"",                     //none|on-latch|on-follow|off-latch|off-
                                                    //follow|cycle
                "ap3Action":"",                     //none|on-latch|on-follow|off-latch|off-
                                                    //follow|cycle
                "ap2Cycles":"",                     //0-999
                "ap3Cycles":"",                     //0-999
                "ap2Restart":"",                    //0-999 seconds
                "ap3Restart":""                     //0-999 seconds
        }
}
```

5.7. Heartbeat Configuration Set

```
{
        "token":"####-####-####-####",              //Authorization token
        "mac":"00-0d-ad-01-02-03",                  //MAC address of the iBoot to be configured
        "heartbeat":{                               //Heartbeat configuration structure
                "source":"",                        //none | usb | network
                "port":"",                          //1-65535
                "frequency":"",                     //1-999 seconds
                "failCount":"",                     //1-999 failures
                "action":""                         //none|on-latch|on-follow|off-latch|off-
                                                    //follow|cycle
                "cycle":"",                         //0-999
                "control":""                        //main | exp1 | exp2
        }
}
```

5.8. Schedule Configuration Set

```
{
        "token":"####-####-####-####",               //Authorization token
        "mac":"00-0d-ad-01-02-03",                   //MAC address of the iBoot to be configured
        "schedule": {                                //Autoping configuration structure
                "date1": "",                         //mm/dd/yyyy or blank
                "date2": "",                         //mm/dd/yyyy or blank
                "date3": "",                         //mm/dd/yyyy or blank
                "date4": "",                         //mm/dd/yyyy or blank
                "date5": "",                         //mm/dd/yyyy or blank
                "date6": "",                         //mm/dd/yyyy or blank
                "date7": "",                         //mm/dd/yyyy or blank
                "date8": "",                         //mm/dd/yyyy or blank
                "time1": "",                         //hh:mm or blank
                "time2": "",                         //hh:mm or blank
                "time3": "",                         //hh:mm or blank
                "time4": "",                         //hh:mm or blank
                "time5": "",                         //hh:mm or blank
                "time6": "",                         //hh:mm or blank
                "time7": "",                         //hh:mm or blank
                "time8": "",                         //hh:mm or blank
                "repeat1": "",                       //0-999
                "repeat2": "",                       //0-999
                "repeat3": "",                       //0-999
                "repeat4": "",                       //0-999
                "repeat5": "",                       //0-999
                "repeat6": "",                       //0-999
                "repeat7": "",                       //0-999
                "repeat8": "",                       //0-999
                "repeatPeriod1": "",                 //days | hours | minutes
                "repeatPeriod2": "",                 //days | hours | minutes
                "repeatPeriod3": "",                 //days | hours | minutes
                "repeatPeriod4": "",                 //days | hours | minutes
                "repeatPeriod5": "",                 //days | hours | minutes
                "repeatPeriod6": "",                 //days | hours | minutes
                "repeatPeriod7": "",                 //days | hours | minutes
                "repeatPeriod8": "",                 //days | hours | minutes
                "action1": "",                       //on | off | cycle
                "action2": "",                       //on | off | cycle
                "action3": "",                       //on | off | cycle
                "action4": "",                       //on | off | cycle
                "action5": "",                       //on | off | cycle
                "action6": "",                       //on | off | cycle
                "action7": "",                       //on | off | cycle
                "action8": "",                       //on | off | cycle
                "enable1": "",                       //1=enabled | 0=disabled
                "enable2": "",                       //1=enabled | 0=disabled
                "enable3": "",                       //1=enabled | 0=disabled
                "enable4": "",                       //1=enabled | 0=disabled
                "enable5": "",                       //1=enabled | 0=disabled
                "enable6": "",                       //1=enabled | 0=disabled
                "enable7": "",                       //1=enabled | 0=disabled
                "enable8": ""                        //1=enabled | 0=disabled
                "date9": ""                          //mm/dd/yyyy or blank
                "dateA": ""                          //mm/dd/yyyy or blank
                "dateB": ""                          //mm/dd/yyyy or blank
                "dateC": ""                          //mm/dd/yyyy or blank
                "dateD": ""                          //mm/dd/yyyy or blank
                "dateE": ""                          //mm/dd/yyyy or blank
                "time9": ""                          //hh:mm or blank
                "timeA": ""                          //hh:mm or blank
                "timeB": ""                          //hh:mm or blank
                "timeC": ""                          //hh:mm or blank
                "timeD": ""                          //hh:mm or blank
                "timeE": ""                          //hh:mm or blank
                "repeat9": ""                        //0-999
                "repeatA": ""                        //0-999
                "repeatB": ""                        //0-999
                "repeatC": ""                        //0-999
                "repeatD": ""                        //0-999
                "repeatE": ""                        //0-999
```

```
            "repeatPeriod9": ""                   //days | hours | minutes
            "repeatPeriodA": ""                   //days | hours | minutes
            "repeatPeriodB": ""                   //days | hours | minutes
            "repeatPeriodC": ""                   //days | hours | minutes
            "repeatPeriodD": ""                   //days | hours | minutes
            "repeatPeriodE": ""                   //days | hours | minutes
            "action9": ""                         //on | off | cycle
            "actionA": ""                         //on | off | cycle
            "actionB": ""                         //on | off | cycle
            "actionC": ""                         //on | off | cycle
            "actionD": ""                         //on | off | cycle
            "actionE": ""                         //on | off | cycle
            "enable9": ""                         //1=enabled | 0=disabled
            "enableA": ""                         //1=enabled | 0=disabled
            "enableB": ""                         //1=enabled | 0=disabled
            "enableC": ""                         //1=enabled | 0=disabled
            "enableD": ""                         //1=enabled | 0=disabled
            "enableE": ""                         //1=enabled | 0=disabled
            "outlet1": ""                         //main | exp1 | exp2
            "outlet2": ""                         //main | exp1 | exp2
            "outlet3": ""                         //main | exp1 | exp2
            "outlet4": ""                         //main | exp1 | exp2
            "outlet5": ""                         //main | exp1 | exp2
            "outlet6": ""                         //main | exp1 | exp2
            "outlet7": ""                         //main | exp1 | exp2
            "outlet8": ""                         //main | exp1 | exp2
            "outlet9": ""                         //main | exp1 | exp2
            "outletA": ""                         //main | exp1 | exp2
            "outletB": ""                         //main | exp1 | exp2
            "outletC": ""                         //main | exp1 | exp2
            "outletD": ""                         //main | exp1 | exp2
            "outletE": ""                         //main | exp1 | exp2
        }
}
```

5.9. Reboot

This JSON structure is used to reboot the iBoot-G2. It has the same effect pressing the reset button on the iBoot-G2.

```
{
        "token":"####-####-####-####",             //Authorization token
        "mac":""                                   //MAC address of the iBoot
        "reboot":"1"                               //1=reboot
}
```

6. iBoot-G2 Configuration Get

The Restful API Retrieve is a new mechanism where users can request current device configuration data from iBCS.

The following is used to POST JSON structure that will retrieve current configuration of iBoot-G2's Device settings from iBCS. https://iboot.co/services/v2/configuration/iBoot/get

```
{
        "token":"",                           //Authorization token
        "mac":"",                             //MAC address of the iBoot to be configured
        "tables":["device","network","advancedNetwork","autoping","schedule"]
}
```

Upon posting the JSON structure above to iBCS, iBCS will return current configuration for specified tables list. The response to the Restful API configuration get will be as follows:

6.1. Device Configuration Get

```
{
        "success":"",
        "device":{
                "location":"iBoot-G29ff0",
                "cycleTime":10,
                "disableOff":0,
                "initialState":"last",
                "upgradeEnable":0,
                "autoLogout":2
        }
}
```

6.2. Network Configuration Get

```
{
        "success":"",
        "network":{
              "ipMode":"dhcp",
              "ipAddress":"192.168.1.254",
              "subnetMask":"255.255.255.0",
              "gateway":"192.168.1.1",
              "dns":"8.8.8.8"
        }
}
```

6.3. Advanced Network Configuration Get

```
{
        "success":"",
        "advancedNetwork":{
              "httpPort":80,
              "linkbackUrl":"",
              "telnetPort":23,
              "dxpPort":9100,
              "cloudEnabled":0,
              "enableTimeServer":0,
              "timeServerAddress":"time.nist.gov",
              "timezone":-5,
              "enableDst":0,
              "dstStartWeek":"2nd",
              "dstStartDay":"sunday",
              "dstStartMonth":"march",
              "dstStartTime":"02:00",
              "dstStopWeek":"1st",
              "dstStopDay":"sunday",
              "dstStopMonth":"november",
              "dstStopTime":"02:00"
        }
}
```

6.4. Autoping Configuration Get

```
{
        "success":"",
        "autoping":{
              "apAAddress":"",
              "apBAddress":"",
              "apAFrequency":10,
              "apBFrequency":10,
              "apAFailCount":3,
              "apBFailCount":3,
              "apAMode":"and",
              "apAAction":"cycle",
              "apACycles":1,
              "apARestart":0
        }
}
```

6.5. Schedule Configuration Get

```
{
        "success":"",
        "schedule":{
              "date1":"",
              "date2":"",
              "date3":"",
              "date4":"",
              "date5":"",
              "date6":"",
              "date7":"",
              "date8":"",
              "time1":"",
              "time2":"",
              "time3":"",
              "time4":"",
              "time5":"",
              "time6":"",
              "time7":"",
              "time8":"",
              "repeat1":0,
              "repeat2":0,
              "repeat3":0,
              "repeat4":0,
              "repeat5":0,
              "repeat6":0,
              "repeat7":0,
              "repeat8":0,
              "repeatPeriod1":"days",
              "repeatPeriod2":"days",
              "repeatPeriod3":"days",
              "repeatPeriod4":"days",
              "repeatPeriod5":"days",
              "repeatPeriod6":"days",
              "repeatPeriod7":"days",
              "repeatPeriod8":"days",
              "action1":"on",
              "action2":"on",
              "action3":"on",
              "action4":"on",
              "action5":"on",
              "action6":"on",
              "action7":"on",
              "action8":"on",
              "enable1":0,
              "enable2":0,
              "enable3":0,
              "enable4":0,
              "enable5":0,
              "enable6":0,
              "enable7":0,
              "enable8":0
           }
}
```

7. iBoot-G2+/S Configuration Get

The Restful API Retrieve is a new mechanism where users can request current device configuration data from iBCS.

The following is used to POST JSON structure that will retrieve current configuration of iBoot-G2's Device settings from iBCS. https://iboot.co/services/v2/configuration/iBoot/get

```
{
        "token":"",                            //Authorization token
        "mac":"",                              //MAC address of the iBoot to be configured
        "tables":["device","expansion","network","advancedNetwork,"gracefulShutdown","autoping","
                                               heartbeat","schedule"]
}
```

7.1. Device Configuration Get

```
{
        "success":"",
        "device":{
              "location":"iBoot-G2P-2171",
              "cycleTime":10,
              "initialState":"last",
              "upgradeEnable":0,
              "autoLogout":2,
              "exp1CycleTime":10,
              "exp2CycleTime":10,
              "delayTime":0,
              "exp1InitialState":"last",
              "exp2InitialState":"last",
              "outletName":"Main",
              "exp1OutletName":"Exp1",
              "exp2OutletName":"Exp2",
              "disableOff":0
        }
}
```

7.2. Expansion Configuration Get

```
{
        "success":"",
        "expansion":{
              "expMode":"iboot expansion units",
              "exp1Hide":0,
              "exp2Hide":0,
              "exp1linkToMain":0,
              "exp2linkToMain":0,
              "exp1RemoteIp":"",
              "exp2RemoteIp":"",
              "exp1Relay":1,
              "exp2Relay":1,
              "exp1Username":"",
              "exp2Username":"",
              "exp1Password":"",
              "exp2Password":"",
              "input1Outlet":"main",
              "input2Outlet":"main",
              "input1Action":"on",
              "input2Action":"on"
        }
}
```

7.3. Network Configuration Get

```
{
        "success":"",
        "network":{
              "ipMode":"dhcp",
              "ipAddress":"192.168.1.254",
              "subnetMask":"255.255.255.0",
              "gateway":"192.168.1.1",
              "dns":"8.8.8.8"
        }
}
```

7.4. Advanced Network Configuration Get

```
{
        "success":"",
        "advancedNetwork":{
              "httpPort":80,
              "linkbackUrl":"",
              "telnetPort":23,
              "dxpPort":9100,
              "cloudEnabled":1,
              "enableTimeServer":0,
              "timeServerAddress":"time.nist.gov",
              "timezone":-5,
              "enableDst":0,
              "dstStartWeek":"2nd",
              "dstStartDay":"sunday",
              "dstStartMonth":"march",
              "dstStartTime":"02:00",
              "dstStopWeek":"1st",
              "dstStopDay":"sunday",
              "dstStopMonth":"november",
              "dstStopTime":"02:00",
              "enableDxpControl":0,
              "enableDxpQuery":0
        }
}
```

7.5. Graceful Shutdown Configuration Get

```
{
        "success":"",
        "gracefulShutdown":{
              "gsMainEnabled":0,
              "gsExp1Enabled":0,
              "gsExp2Enabled":0,
              "gsMainIp":"",
              "gsExp1Ip":"",
              "gsExp2Ip":"",
              "gsMainUser":"",
              "gsExp1User":"",
              "gsExp2User":"",
              "gsMainPassword":false,
              "gsExp1Password":false,
              "gsExp2Password":false,
              "gsMainShutdownDelay":120,
              "gsExp1ShutdownDelay":120,
              "gsExp2ShutdownDelay":120,
              "gsMainRebootDelay":120,
              "gsExp1RebootDelay":120,
              "gsExp2RebootDelay":120
        }
}
```

7.6. Autoping Configuration Get

```
{
        "success":"",
        "autoping":{
              "apAAddress":"",
              "apBAddress":"",
              "apAFrequency":10,
              "apBFrequency":10,
              "apAFailCount":3,
              "apBFailCount":3,
              "apAMode":"single",
              "apAControl":"main",
              "apAAction":"none",
              "apACycles":0,
              "apARestart":0,
              "ap2Address":"",
              "ap3Address":"",
              "ap2Frequency":10,
              "ap3Frequency":10,
              "ap2FailCount":3,
              "ap3FailCount":3,
              "ap2Control":"exp1",
              "ap3Control":"exp2",
              "ap2Action":"none",
              "ap3Action":"none",
              "ap2Cycles":1,
              "ap3Cycles":1,
              "ap2Restart":0,
              "ap3Restart":0
           }
}
```

7.7. Heartbeat Configuration Get

```
{
        "success":"",
        "heartbeat":{
              "source":"none",
              "port":9100,
              "frequency":999,
              "failCount":999,
              "action":"cycle",
              "cycle":999,
              "control":"main"
        }
}
```

7.8. Schedule Configuration Get

```
{
        "success":"",
        "schedule":{
              "date1":"",
              "date2":"",
              "date3":"",
              "date4":"",
              "date5":"",
              "date6":"",
              "date7":"",
              "date8":"",
              "time1":"",
              "time2":"",
              "time3":"",
              "time4":"",
              "time5":"",
              "time6":"",
              "time7":"",
              "time8":"",
              "repeat1":0,
              "repeat2":0,
              "repeat3":0,
              "repeat4":0,
              "repeat5":0,
              "repeat6":0,
              "repeat7":0,
              "repeat8":0,
              "repeatPeriod1":"days",
              "repeatPeriod2":"days",
              "repeatPeriod3":"days",
              "repeatPeriod4":"days",
              "repeatPeriod5":"days",
              "repeatPeriod6":"days",
              "repeatPeriod7":"days",
              "repeatPeriod8":"days",
              "action1":"on",
              "action2":"on",
              "action3":"on",
              "action4":"on",
              "action5":"on",
              "action6":"on",
              "action7":"on",
              "action8":"on",
              "enable1":1,
              "enable2":1,
              "enable3":1,
              "enable4":1,
              "enable5":1,
              "enable6":1,
              "enable7":1,
              "enable8":1,
              "date9":"",
              "dateA":"",
              "dateB":"",
              "dateC":"",
              "dateD":"",
              "dateE":"",
              "time9":"",
              "timeA":"",
              "timeB":"",
              "timeC":"",
              "timeD":"",
              "timeE":"",
              "repeat9":0,
              "repeatA":0,
              "repeatB":0,
              "repeatC":0,
              "repeatD":0,
              "repeatE":0,
              "repeatPeriod9":"days",
              "repeatPeriodA":"days",
              "repeatPeriodB":"days",
              "repeatPeriodC":"days",
              "repeatPeriodD":"days",
              "repeatPeriodE":"days",
              "action9":"on",
              "actionA":"on",
              "actionB":"on",
              "actionC":"on",
              "actionD":"on",
              "actionE":"on",
              "enable9":1,
              "enableA":1,
              "enableB":1,
              "enableC":1,
              "enableD":1,
              "enableE":1,
              "outlet1":"main",
              "outlet2":"main",
              "outlet3":"main",
              "outlet4":"main",
              "outlet5":"main",
              "outlet6":"main",
              "outlet7":"main",
              "outlet8":"main",
              "outlet9":"main",
              "outletA":"main",
              "outletB":"main",
              "outletC":"main",
              "outletD":"main",
              "outletE":"main"
      }
}
```

8. Examples

Below are some examples of iBoot-G2 family control, retrieve, configure get and configure set via Restful API v2.

8.1. iBoot-G2/PoE Control Example

To control an iBoot-G2/PoE to Cycle via RestFul API:

```
curl -d '{"token":"####-####-####-####","mac":"00-0d-ad-01-02-03","outlet":"0","control":"cycle"}' -X POST
https://iboot.co/services/v2/control
```

The command above will return a JSON structure as following:

```
{"success":"true","message":"Sent 'cycle' to 00-0d-ad-01-02-03 outlet 0"}
```

8.2. iBoot-G2 Retrieve Example

To query an iBoot-G2/PoE status via RestFul API:

```
curl -d '{"token":"####-####-####-####","mac":"00-0d-ad-01-02-03"}' -X POST https://iboot.co/services/v2/retrieve
```

The command above will return a JSON structure as following:

```
{"success":"true","message":"true","status":{"Main":"ON","AP-1":"OK","AP-2":"OK"},"triggerInfo":{"APT1":"0"}}
```

8.3. iBoot-G2 Configure Set Example

To Configure Device setting of iBoot-G2 via Restful API:

```
curl -d '{"token":"40a7-ee50-2b2c-3e53","mac":"00-0d-ad-01-02-03","device":{"location":"iBoot-
G2","cycleTime":"10","disableOff":"0","initialState":"Last","upgradeEnable":"1","autoLogout":"2"}}' –X POST
https://iboot.co/services/v2/configuration/iBoot/set
```

The command above will return a JSON structure as following:

```
{"success":"true","message":"Sent 'location=iBoot-G2&cycle=10&iMain=2&upg=&aLog=2' to 00-0d-ad-03-9f-f0"}
```

8.4. iBoot-G2 Configure Get Example

To Retrieve Device configuration of iBoot-G2 via Restful API:

```
curl -d '{"token":"####-####-####-####","mac":"00-0d-ad-01-02-03","tables":["device"]}' –X POST
https://iboot.co/services/v2/configuration/iBoot/get
```

The command above will return a JSON structure as following:

```
{"success":"true","device":{"location":"iBoot-
G2","cycleTime":10,"disableOff":0,"initialState":"Last","upgradeEnable":1,"autoLogout":2}}
```

8.5. iBoot-G2+/S Control Example

To control an iBoot-G2/PoE to Cycle via RestFul API:

```
curl -d '{"token":"####-####-####-####","mac":"00-0d-ad-01-02-03","outlet":"0","control":"cycle"}' -X POST
https://iboot.co/services/v2/control
```

The command above will return a JSON structure as following:

```
{"success":"true","message":"Sent 'cycle' to 00-0d-ad-01-02-03 outlet 0"}’
```

8.6. iBoot-G2+/S Retrieve Example

To query an iBoot-G2/PoE status via RestFul API:

```
curl -d '{"token":"####-####-####-####","mac":"00-0d-ad-01-02-03"}' -X POST https://iboot.co/services/v2/retrieve
```

The command above will return a JSON structure as following:

```
{"success":"true", "status":{"Main":"ON","EXP-1":"ON","EXP-2":"ON","Main-2":"ON","Input-1":"Open","Input-
2":"Open","Output-1":"Closed","Output-2":"Closed","AP-1A":"Inactive","AP-1B":"Inactive","AP-2":"Inactive","AP-
3":"Inactive","HB":"OK"},"triggerInfo":{"APT1":"0","APT2":"0","APT3":"0","HBT1":"0"}}
```

8.7. iBoot-G2+/S Configure Set Example

To Configure Device setting of iBoot-G2 via Restful API:

```
curl -d ' {"token":"ff3e-30f9-ce13-89f8","mac":"00-0d-ad-01-02-03","device":{"location":"iBoot-
G2S","outletName":"Main","exp1OutletName":"Exp-1","exp2OutletName":"Exp-
2","cycleTime":"10","exp1CycleTime":"10","exp2CycleTime":"10","initialState":"Last","exp1InitialState":"Last","exp2Ini
tialState":"Last","disableOff":"0","upgradeEnable":"1","autoLogout":"2","delayTime":"1"}}' –X POST
https://iboot.co/services/v2/configuration/iBoot/set
```

The command above will return a JSON structure as following:

```
{"success":"true","message":"Sent'location=iBoot-G2S&outname0=Main&outname1=Exp-1&outname2=Exp-
2&cycle0=10&cycle1=10&cycle2=10&iMain=2&iExp1=2&iExp2=2&upg=&aLog=2&delay=1' to 00-0d-ad-03-21-71"}
```

8.8. iBoot-G2+/S Configure Get Example

To Retrieve Device configuration of iBoot-G2 via Restful API:

```
curl -d '{"token":"####-####-####-####","mac":"00-0d-ad-01-02-03","tables":["device"]}' –X POST
https://iboot.co/services/v2/configuration/iBoot/get
```

The command above will return a JSON structure as following:

```
{"success":"true","device":{"location":"iBoot-
G2S","cycleTime":10,"initialState":"Last","upgradeEnable":0,"autoLogout":2,"exp1CycleTime":10,"exp2CycleTime":10,"d
elayTime":1,"exp1InitialState":"last","exp2InitialState":"last","outletName":"Main","exp1OutletName":"Exp-
1","exp2OutletName":"Exp-2","disableOff":0}}
```

8.9. iBoot-PDU Control Example

To control an iBoot-PDU Outlet-1 to Cycle via RestFul API:

```
curl -d '{"token":"####-####-####-####","mac":"00-0d-ad-01-02-03","outlet":"0","control":"cycle"}' -X POST
https://iboot.co/services/v2/control
```

The command above will return a JSON structure as following:

```
{"success":"true","message":"Sent 'cycle' to 00-0d-ad-01-02-03 outlet 0"}
```

8.10. iBoot-PDU Retrieve Example

To query an iBoot-PDU status via RestFul API:

```
curl -d '{"token":"####-####-####-####","mac":"00-0d-ad-01-02-03"}' -X POST https://iboot.co/services/v2/retrieve
```

The command above will return a JSON structure as following:

```
{"success":"true","message":"","status":[{"Outlet-1":"On"},{"Outlet-2":"On"},{"Outlet-3":"On"},{"Outlet-4":"On"},{"Outlet-5":"On"},{"Outlet-6":"On"},{"Outlet-7":"On"},{"Outlet-8":"On"}],"triggerInfo":[]}
```