

BKM Ver:- 1.0

Date: 05-April-2020

Author: Suresh Sakthi (11724273)

Perquisites:

Network connection is required.

For static ip DDI request should be raised.

Setup:

Ensure That flask server script is in Desktop of Raspberry pi `flask_server.py` `sudo python3 flask_server.py`

In the newer version of rpi image `sudo nano /etc/rc.local` make sure this line is `sudo python3 /home/pi/Desktop/flask_server.py` & not commented.

This in-turn provides an advantage of automatically starting the service if the pi is rebooted or powered off and turned on.

And from your laptop cmd terminal or putty or python subprocess module you can control.

For Identifying Version

Syntax:- `Curl -X GET http://rpi_ipaddress or rpi_hostname/`

This rpi_address is of the pi which is running the flask service, which the user can either use hostname if it gets registered in dns or directly rpi ip address.

Example:

```
C:\Users\ssuresh2>curl -X GET http://10.190.155.176/  
FLASH 1.6 march-23-2020 revision
```

Description of the cmd:

This gives you an idea of which release version you are using in your rpi. so that you get to update the newer version for taking advantage of new features.

For Knowing What are all the Options Available

Syntax:- Curl -X GET http://rpi_ipaddress or [rpi_hostname/options](http://rpi_hostname)

This rpi_address is of the pi which is running the flask service, which the user can either use hostname if it gets registered in dns or directly rpi ip address.

Example:-

```
C:\Users\ssuresh2>curl -X GET http://10.190.155.176/options
read_chip ----- Reads the Current image Flashed and Stores it under "/home/pi/public/frimware/chipread" folder
write_chip/ ----- Flashes the latest image under "/home/pi/public/frimware/chipwrite" folder
identify_chip ----- Detection of the chip and connection verification
dcpower/0 ----- To DC Turn Off Platform
dcpower/1 ----- To DC Turn On Platform
acpower/0 ----- To AC Power Turn Off Platform
acpower/1 ----- To AC Power Turn On Platform
camera/0 ----- If a pi camera is connected it will initialize camera Off
camera/1 ----- If a pi camera is connected it will Turn On Camera
execute/xxx
clearcmos
reboot
postcode
usb2host ----- USB Device TO HOST Machine
usb2sut ----- USB Device TO HOST Machine
usbdisct ----- USB DISCONNECT FROM BOTH SUT AND HOST
dcdetect
acdetect
s3detect
s4detect
progjmp ----- set/unset pin_number timeout
setbootorder ---- setbootorder\bootorder name add $ incase of any space use getbootorder to know the name
getbootorder
defaultbios
currentknobval ---- currentknobval\knob_name if any space add $ WHEA Support ==> WHEA$Support
getoptions ---- getoptions\knob_name if any space add $ ==> Driver$Strength
setoptions ---- setoptions\knob_name if any space add $\option_name if any space add $ eg==>setoptions\WHEA$Support\Enable
```

Description of the cmd:

This gives you an idea of what are all the options that are available that can be performed to control and make changes to platform.

AC POWER SUPPLY CONTROL

To 'Turn OFF' AC power Supply in Platform

syntax:- Curl -X GET http://rpi_ipaddress or rpi_hostname/acpower/0

```
C:\Users\ssuresh2>curl -X GET http://10.190.155.176/acpower/0  
Power Turned OFF and Verified
```

Description of the cmd:-

It cuts the ac power supply to the platform. Results in G3 state.

In some platform it may take longer time to completely remove the ACPOWER OFF in such cases timeout can be specified.

syntax:- Curl -X GET http://rpi_ipaddress or rpi_hostname/acpower/0/timeout

```
C:\Users\ssuresh2>curl -X GET http://10.190.155.176/acpower/0/6  
Power Turned OFF and Verified
```

To 'Turn ON' AC power Supply in Platform

syntax:- Curl -X GET http://rpi_ipaddress or rpi_hostname/acpower/1

```
C:\Users\ssuresh2>curl -X GET http://10.190.155.176/acpower/1  
Power Turned ON and Verified
```

Description of the cmd :-

ac power supply is connected to the platform.

DC POWER SUPPLY CONTROL

To 'Turn OFF' (Shutdown) DC power Supply in Platform

syntax:- Curl -X GET http://rpi_ipaddress or rpi_hostname/dcpower/0

```
C:\Users\ssuresh2>curl -X GET http://10.190.155.176/dcpower/0  
DC Power Turned OFF and Verified
```

Description of the cmd:-

It makes contact in front-panel headers and puts the platform to dc power off state. S5 state.

To 'Turn ON' (Wake-up) DC power Supply in Platform

syntax:- Curl -X GET http://rpi_ipaddress or rpi_hostname/dcpower/1

```
C:\Users\ssuresh2>curl -X GET http://10.190.155.176/dcpower/1  
Dc Power Turned ON and Verfied
```

Description of the cmd :-

It wakes up the platform from S5 state Results in S0 state.

To Reboot Platform

syntax:- Curl -X GET http://rpi_ipaddress or rpi_hostname/reboot

```
C:\Users\ssuresh2>curl -X GET http://10.190.155.176/reboot  
Reboot Command Issued
```

Description of the cmd :-

It makes contact in front-panel headers and does reboot of the platform.

To Do ClearCmos in Platform

syntax:- Curl -X GET http://rpi_ipaddress or rpi_hostname/clearcmos

```
C:\Users\ssuresh2>curl -X GET http://10.190.155.176/clearcmos
ClearCmos Command Issued
```

Description of the cmd :-

It makes contact on the cmos jumper on the plaform to reset the register that internally clear the information that stored bios settings.

To verify Dc and AC Power Detection

syntax:- Curl -X GET http://rpi_ipaddress or rpi_hostname/dcdetect

```
C:\Users\ssuresh2>curl -X GET http://10.190.155.176/dcdetect
DC power detected
```

If the dcpower is off then it should say N/A

```
C:\Users\ssuresh2>curl -X GET http://10.190.155.176/dcdetect
N/A
```

Description of the cmd :-

It takes the input from front panel header and checks dc volt is getting detected or not usually it will be 3.3v if detected it will say DC power detected else N/A

syntax:- Curl -X GET http://rpi_ipaddress or rpi_hostname/acdetect

```
C:\Users\ssuresh2>curl -X GET http://10.190.155.176/acdetect
AC power detected
```

```
C:\Users\ssuresh2>curl -X GET http://10.190.155.176/acdetect
N/A
```

Description of the cmd :-

It takes the input from front panel header and checks ac identified gpio pin from platform if 3.3V is getting detected AC power detected else N/A

USB SWITCHING OPERATIONS

To switch Pendrive or usb hard-disk To 'PLATFORM'

From HOST TO SUT(Platform)

syntax:- Curl -X GET http://rpi_ipaddress or rpi_hostname/usb2sut

```
C:\Users\ssuresh2>curl -X GET http://10.190.155.176/usb2sut
USB Switch to SUT Done
```

Description of the cmd :-

When you are done with copying the content from your host to pendrive, you wanted to execute it on your platform, you will use this cmd to switch the pendrive from host to sut (platform)

To switch Pendrive or usb hard-disk To 'HOST'

From SUT(Platform) TO HOST

syntax:- Curl -X GET http://rpi_ipaddress or rpi_hostname/usb2host

```
C:\Users\ssuresh2>curl -X GET http://10.190.155.176/usb2host
USB Switch to Host Done
```

Description of the cmd :-

When you want to copy the content(os boot image etc) to pendrive by using this cmd switch the pendrive from sut (platform) to host.

BMC/IFWI IMAGE FLASHING

To Detect Spi chip

Make to ac power off the platform and then try otherwise spi chip will not get detected

syntax:- Curl -X GET http://rpi_ipaddress or rpi_hostname/identify_chip

```
C:\Users\ssuresh2>curl -X GET http://10.190.155.176/identify_chip  
( 'True', 'flash chip "W2', ' Winbond ', '32768 ' )
```

Description of the cmd :-

This cmd is to ensure spi chip is getting detected from the platform so tha tis can be programmed.

16,32,64mb chips from winbond and macronix are widely used spi speed is 2000 set in default if the user wants to change the spi speed identify_chip/spispeed.

To Program Spi chip

Make to ac power off the platform and then try otherwise spi chip will not get detected, and copy the image in ["/home/pi/Public/firmware/chipwrite"](/home/pi/Public/firmware/chipwrite) of Rpi use winscp application or curl itself to file transfer the image.

syntax:- Curl -X GET http://rpi_ipaddress or rpi_hostname/write_chip/imagename.bin

```
C:\Users\ssuresh2>curl -X GET http://10.190.155.176/write_chip/xeon-d.bin  
(True, '/home/pi/Public/firmware/chipwrite/xeon-d.bin', '2.0 Min 31 Sec')
```

Description of the cmd :-

This cmd is to write the image on spi chip, it will automatically erase and write the new content.

Note: time taken for the chips to get programmed.

16mb chip → 1 to 2 mins || 32mb chip → 2 to 3mins || 64mb chip 6 to 9 min

READING PLATFORM POSTCODE

Reading postcode in 2 method, via LPG front bus by connecting LPC Glider card another is via camera interface.

syntax:- Curl -X GET http://rpi_ipaddress or rpi_hostname/postcode

```
C:\Users\ssuresh2>curl -X GET http://10.190.155.174/postcode
00
```

Description of the cmd :-

This cmd reads platform postcode and sends the detected postcode.

To read via camera interface

syntax:- Curl -X GET http://rpi_ipaddress or rpi_hostname/camera/1

if not connected

```
C:\Users\ssuresh2>curl -X GET http://10.190.155.176/camera/1
False, Pi Camera Not Connected
```

For camera purchase and connection refer [rpi_item_required.pdf](#)