GIGABYTE Firmware Upgrade Guide

GIGABYTE Software

Document No.: GFUG-v0.01

Authors:

Kate Cheng

Approved By:

TS Hwang

Storm Chen

Sam Huang

PROPRIETARY INFORMATION -- NOT FOR PUBLICATION

The information contained herein is the property of Gigabyte Technology Co., Ltd. and is supplied without liability for errors or omissions. No part may be reproduced or used except as authorized by contract or other written permission. The copyright and the foregoing restriction on reproduction and use extend to all media in which the information may be embodied.

© Copyright Gigabyte 2020 All Rights Reserved

Contents

0. General Information 3

0.1. Issue Control 3
0.2. Record of Changes 3
0.3. References 3
0.4. Acronyms 3

1. Supported Upgrade Firmware Method 4

2. Upgrade Firmware Form BMC WebUI 5

2.1. Upgrade Active/Backup BMC 5
2.2. Upgrade Active/Backup BIOS 7
2.3. Upgrade CPLD 9

3. Upgrade Firmware Form IPMI 12

3.1. Upgrade Active/Backup BMC 12
3.2. Upgrade Active/Backup BIOS 12

4. Upgrade Firmware Form Redfish (HTTP) 13

4.1. Upgrade Active/Backup BMC 13
4.2. Upgrade Active/Backup BIOS 14
4.3. Multipart Push BMC_FW Update 15

5. Upgrade Firmware Form Restful 17

5.1. Upgrade Active/Backup BMC 17
5.1.1 Preserve BMC Configuration 17
5.1.2 Upgrade Active/Backup BMC 18
5.1.3 Restore BMC Configuration 20
5.2. Upgrade Active/Backup BIOS 20

6. Upgrade Firmware Form Gigaflash 22

6.1. Upgrade Active/Backup BMC 22

© Copyright Gigabyte 2020 All Rights Reserved

0. General Information

0.1. Issue Control

This document was edited with **Microsoft Word, Version 2010**. The graphic drawings are originally sketched in **Microsoft PowerPoint Version 2010**.

0.2. Record of Changes

Table 0-1. Record of Changes

Issue	Date	Authors	Reason for Changes
0.01	2022/2/16	Sam Huang	First create for AMI Backup configure by curl
0.02	2022/3/16	Kate Cheng	First create for Upgrade Firmware by WebUI, IPMI, Gigaflash

0.3. References

NO	Document title

0.4. Acronyms

© Copyright Gigabyte 2020 All Rights Reserved

1. Supported Upgrade Firmware Method

BMC WebUI (BMC/BIOS/CPLD)
IPMI HPM (BMC/BIOS)
Restful API (BMC/BIOS)
Redfish (BMC/BIOS)
Gigaflash (BMC)

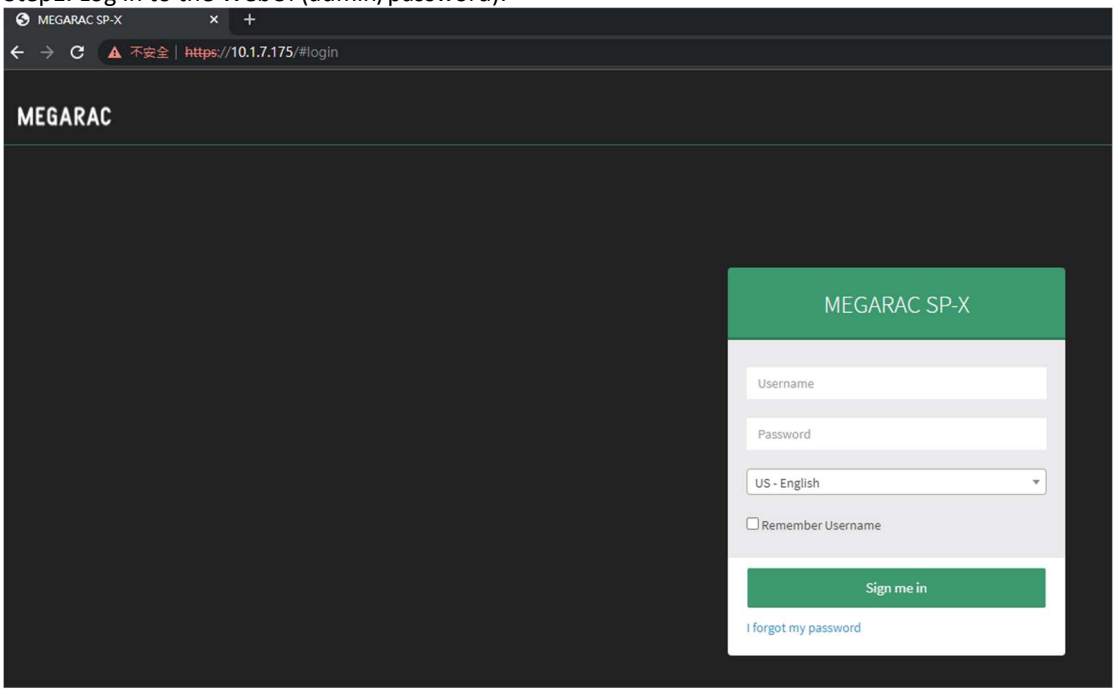
© Copyright Gigabyte 2020 All Rights Reserved

2. Upgrade Firmware Form BMC WebUI

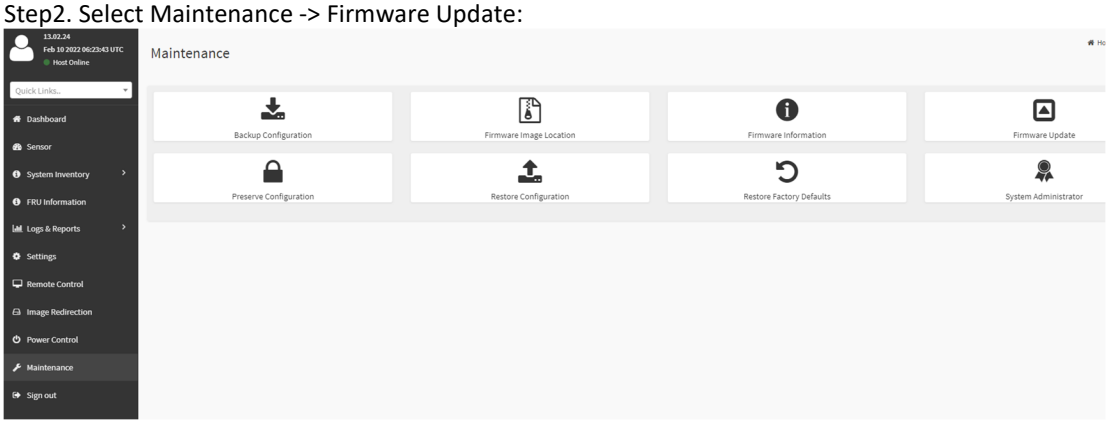
2.1. Upgrade BMC Image-1 / Image-2

Divided into six steps to explain updating FW with WEBUI:

Step1. Log in to the WebUI (admin/password):

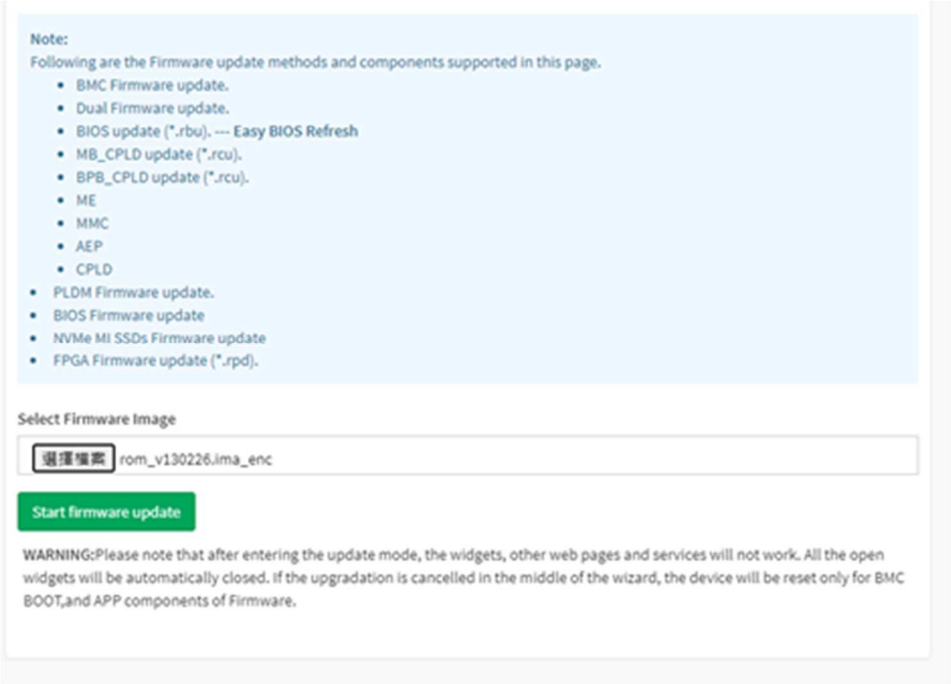


Step2. Select Maintenance -> Firmware Update:

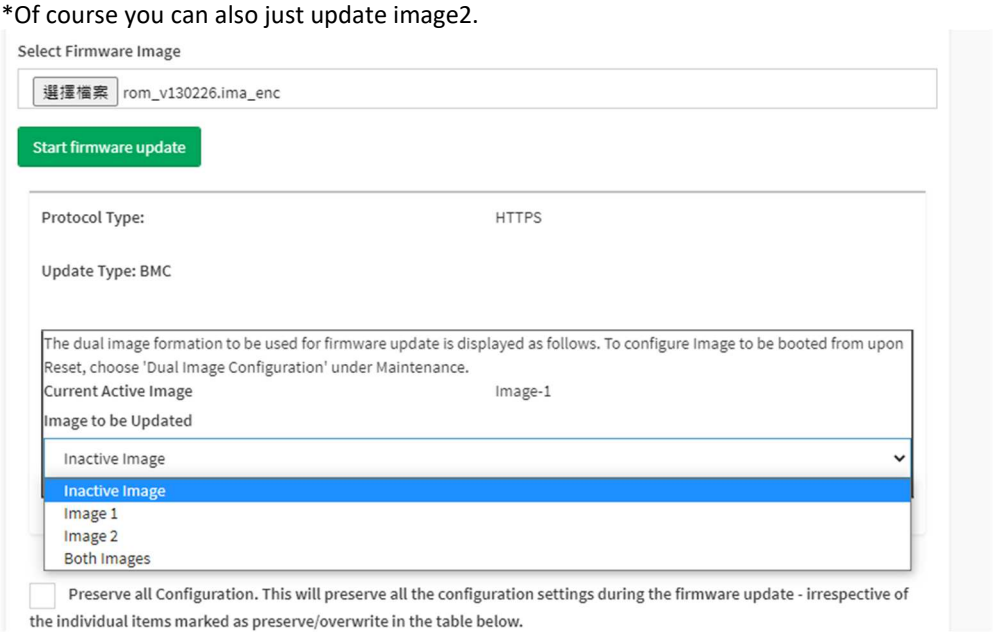


Step3. Select a “xxxxx.ima_enc” file:

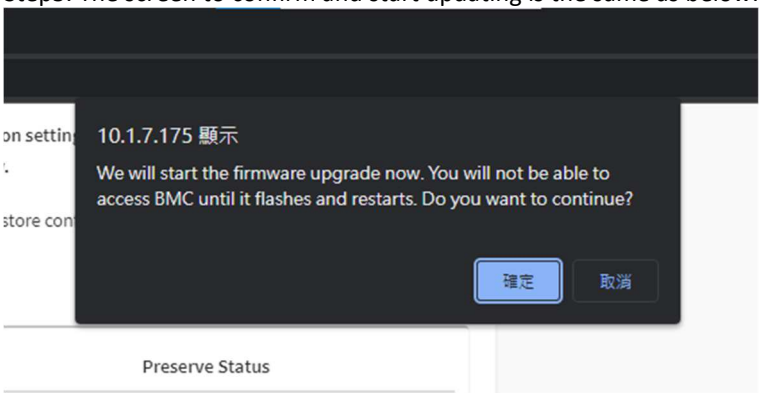
© Copyright Gigabyte 2020 All Rights Reserved



Step4. Choose image1 or both image because image2 will only be used when image1 broken.
*Of course you can also just update image2.

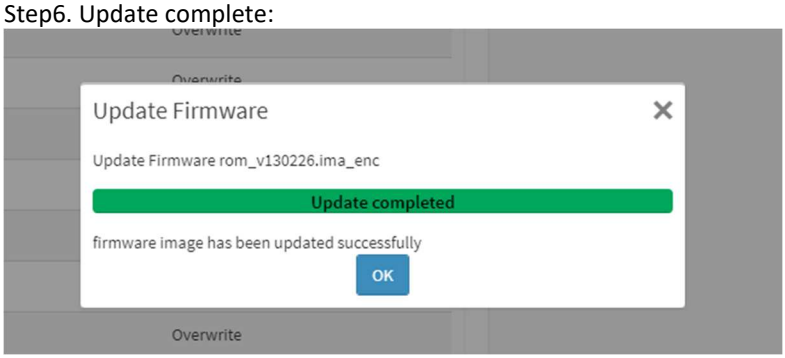


Step5. The screen to confirm and start updating is the same as below:



© Copyright Gigabyte 2020 All Rights Reserved

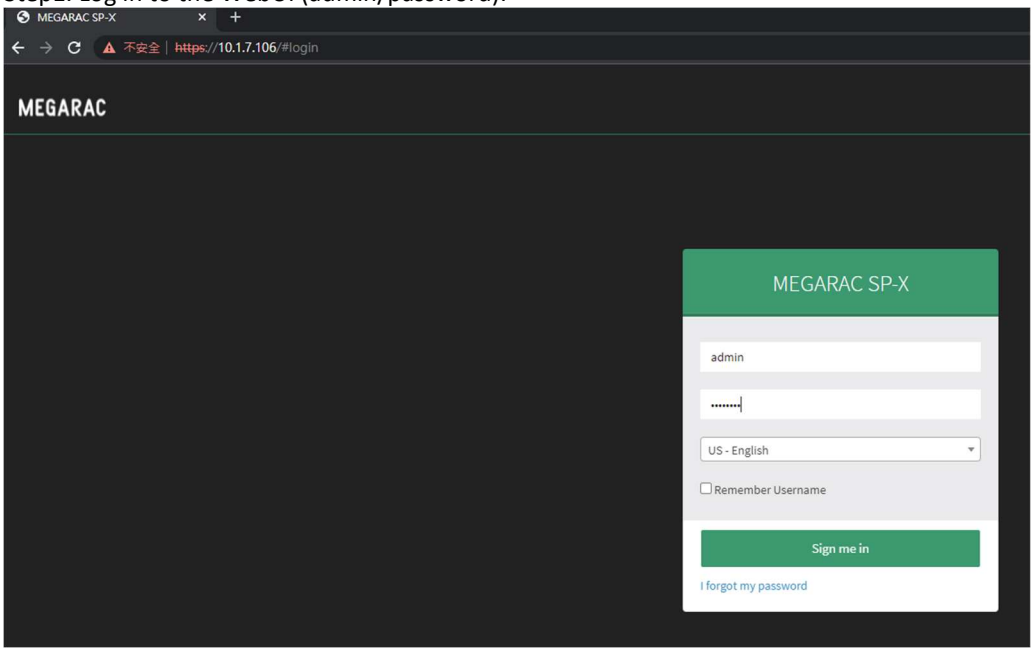
Step6. Update complete:



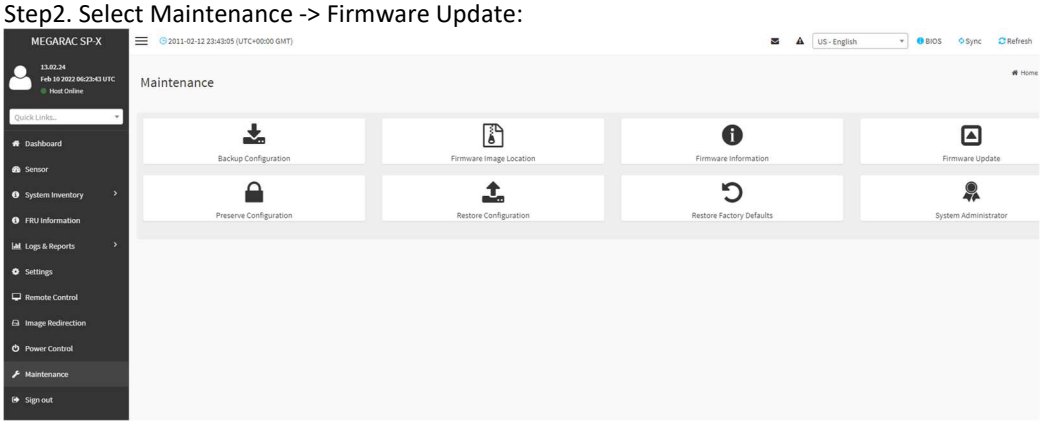
2.2. Upgrade BIOS Image-1 / Image-2

Divided into six steps to explain updating FW with WEBUI:

Step1. Log in to the WebUI (admin/password):

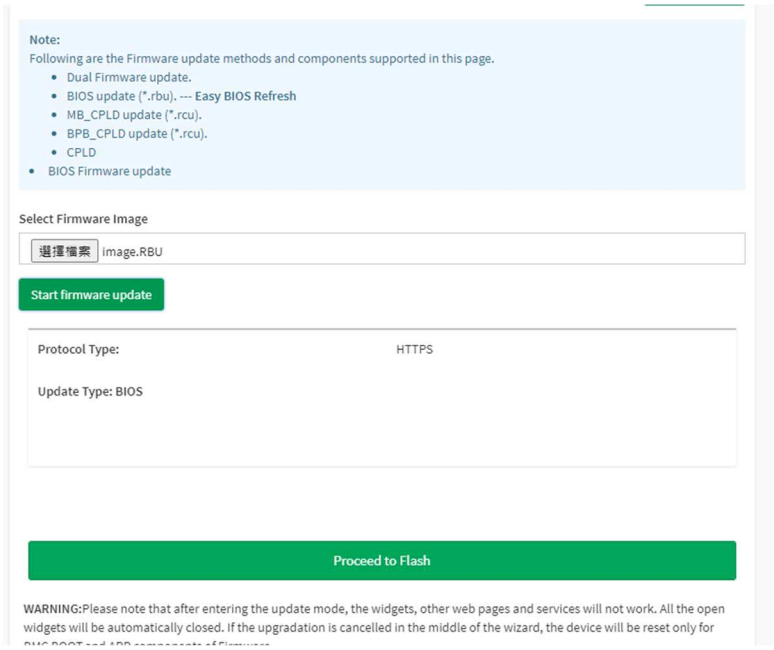


Step2. Select Maintenance -> Firmware Update:

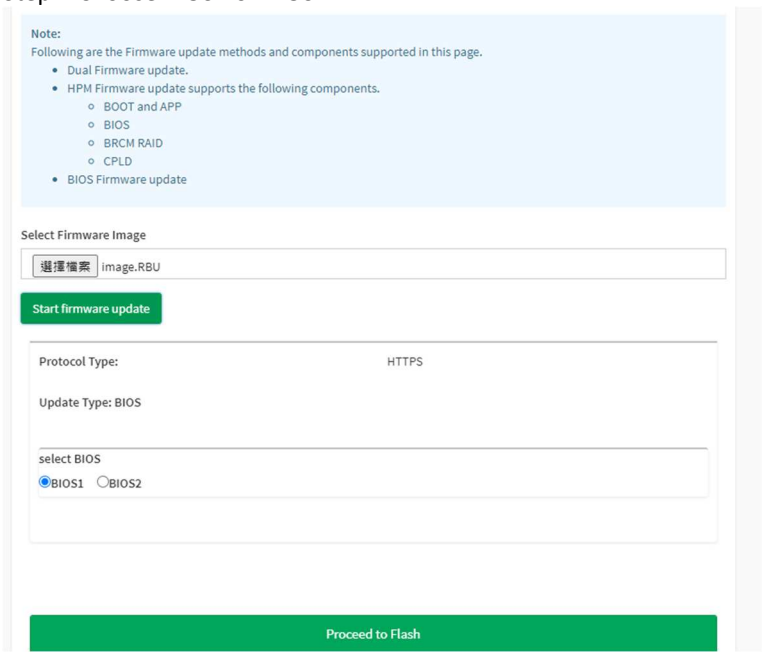


Step3. Select a “image.RBU” file:

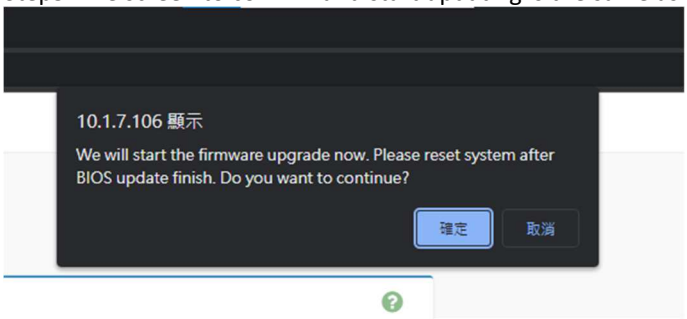
© Copyright Gigabyte 2020 All Rights Reserved



Step4. Choose BIOS1 or BIOS2:

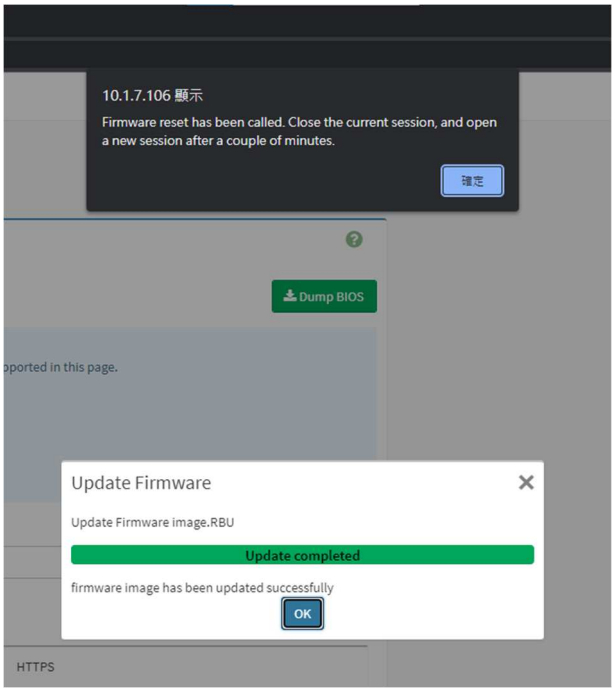


Step5. The screen to confirm and start updating is the same as below:



Step6. Update complete:

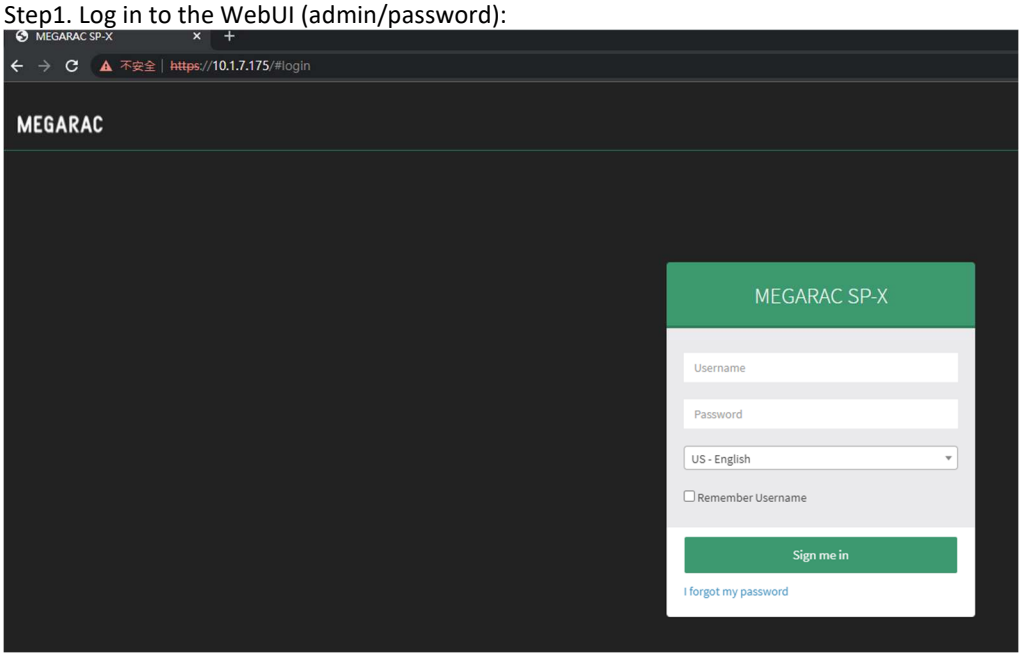
© Copyright Gigabyte 2020 All Rights Reserved



2.3. Upgrade CPLD

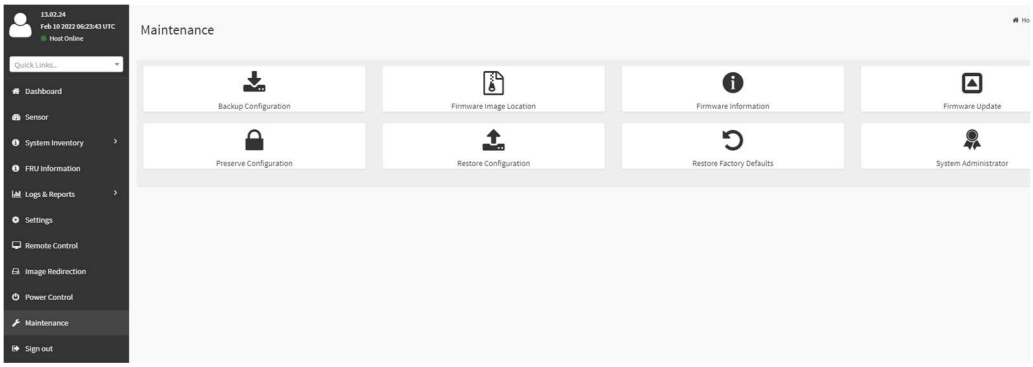
Divided into five steps to explain updating FW with WEBUI:

BMC IP: 10.1.7.175
Step1. Log in to the WebUI (admin/password):

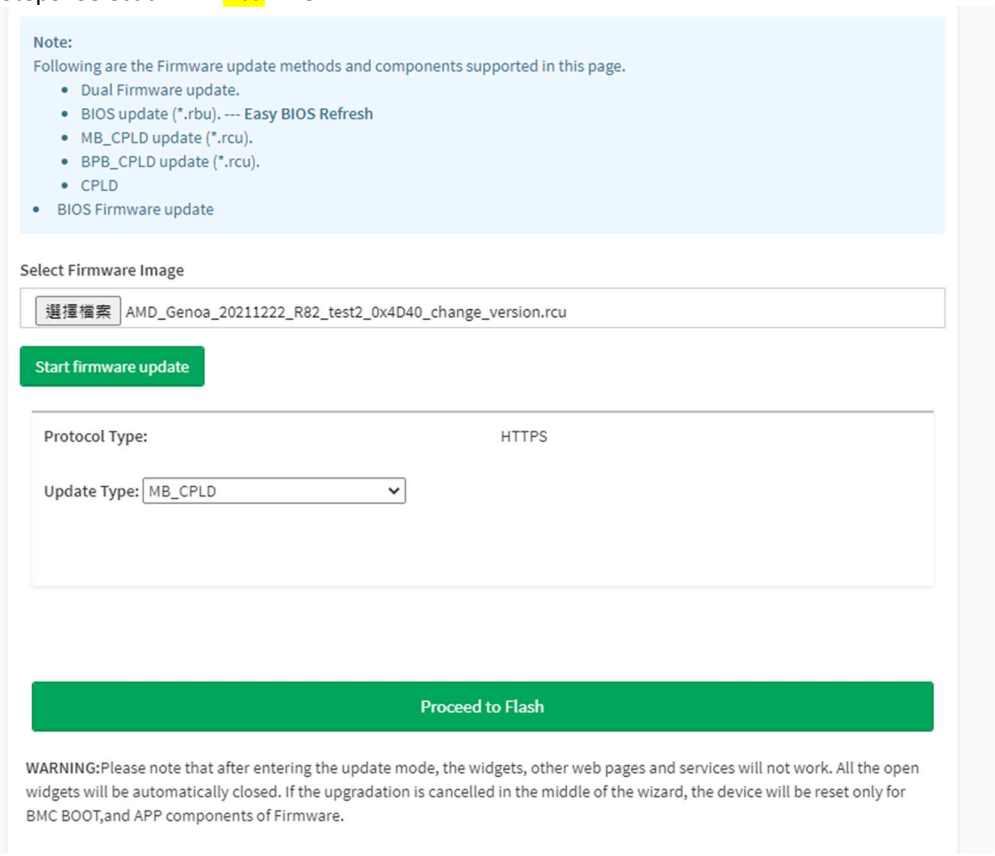


Step2. Select Maintenance -> Firmware Update:

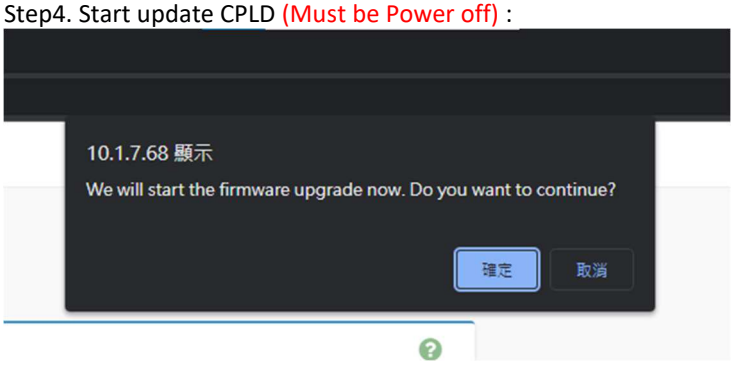
© Copyright Gigabyte 2020 All Rights Reserved



Step3. Select a “xxxx.rcu” file:

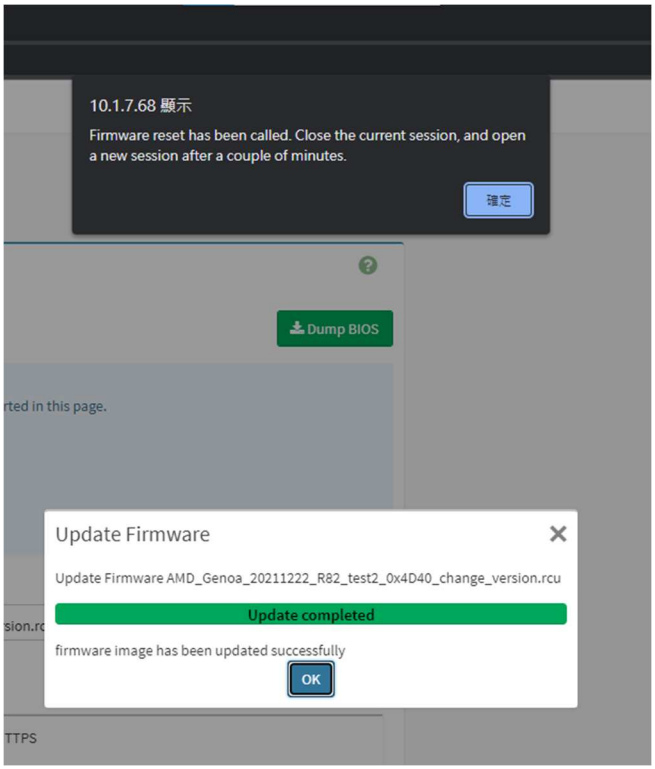


Step4. Start update CPLD (Must be Power off) :



Step5. Update complete:

© Copyright Gigabyte 2020 All Rights Reserved



© Copyright Gigabyte 2020 All Rights Reserved

2.4. Upgrade Firmware Form IPMI

Using Utility:

- IPMI

2.5. Upgrade BMC Image-1 / Image-2

2.5.1.1. Update BMC Image-1 form IPMI with HPM

1. $ ipmitool -H <BMC IP> -U <username> -P <password> -I lanplus hpm upgrade <BMC HPM image path> -z 8192 force

Example:
$ ipmitool -H 10.1.7.137 -U admin -P password -I lanplus hpm upgrade rom_v12.52.05.hpm -z 8192 force

Result:

```
kate@NFE2-229:/project/kate/v13$ ipmitool -H 10.1.7.68 -U admin -P password -I lanplus hpm upgrade rom_v130224.hpm -z 8192 force
Setting large buffer to 8192

PICMG HPM.1 Upgrade Agent 1.0.9:

Validating firmware image integrity...OK
Performing preparation stage...
    Invalid image file for product 4165

    Image Information
        Device Id : 0x20
        Prod   Id : 0x0201
        Manuf  Id : 0x000000
    Board Information
        Device Id : 0x20
        Prod   Id : 0x1045
        Manuf  Id : 0x003c0a
 Continue ignoring DeviceID/ProductID/ManufacturingID (Y/N): Y

Services may be affected during upgrade. Do you wish to continue? (y/n): y
OK

Performing upgrade stage:

--------------------------------------------------------------------------------
|ID  | Name        |                  Versions                        | %  |
|    |             |      Active     |      Backup     |      File       |    |
|----|-------------|-----------------|-----------------|-----------------|----|
|*  0|BOOT         |  13.01 00000000 | ---.-- -------- |  13.01 00000000 |100%|
|    |Upload Time: 00:00            | Image Size: 1114264 bytes                    |
|*  1|APP          |  13.02 1A000000 | ---.-- -------- |  13.02 18000000 |100%|
|    |Upload Time: 00:24            | Image Size: 64946464 bytes                   |
--------------------------------------------------------------------------------
(*) Component requires Payload Cold Reset

Firmware upgrade procedure successful
```

2.5.1.2. Update BMC Image-2 form IPMI with HPM

1. <Switch to BMC 2st SPI by IPMI>
   $ ipmitool -H <BMC IP> -U <username> -P <password> -I lanplus raw 0x2e 0x20 0x0a 0x3c 0 132 0x0 0x59
2. $ ipmitool -H <BMC IP> -U <username> -P <password> -I lanplus hpm upgrade <BMC HPM image path> -z 8192 force

2.6. Upgrade BIOS Image-1 / Image-2

2.6.1.1. Update BIOS Image-1 form IPMI with HPM

1. $ipmitool -H <BMC IP> -U <username> -P <password> -I lanplus hpm upgrade <BIOS HPM image path> -z 8192 force

2.6.1.2. Update BIOS Image-2 form IPMI with HPM

1. <Switch to BIOS 2st SPI by IPMI>
   $ ipmitool -H <BMC IP> -U <username> -P <password> -I lanplus raw 0x2e 0x20 0x0a 0x3c 0 132 0x0 0x52
2. $ ipmitool -H <BMC IP> -U <username> -P <password> -I lanplus hpm upgrade <BIOS HPM image path> -z 8192 force

© Copyright Gigabyte 2020 All Rights Reserved

3. Upgrade Firmware Form Redfish (HTTP)

Please logout all BMC WebGUI connection and don't try to login BMC WebGUI when doing follow steps.

Need Setup a HTTP Server and upload new BMC firmware to HTTP Server.

3.1. Upgrade BMC Image-1 / Image-2

3.1.1.1. Export Environment Parameter

Export BMC IP, HTTP Server IP and firmware path:

```
export bmc_ip=10.1.7.193
export http_server_ip=10.1.7.86:8080
export firmware_path=rom_v13.01.16.ima_enc
```

3.1.1.2. Call Redfish do the upgrade BMC job

Run below command to call Redfish do upgrade BMC job:

```
curl -k -X POST https://$bmc_ip/redfish/v1/UpdateService/Actions/SimpleUpdate   -H 'Content-Type:
application/json' -H 'cache-control: no-cache' -d '{"UpdateComponent": "BMC", "TransferProtocol":"HTTP",
"ImageURI":"http://$http_sever_ip/$firmware_path"}' -u admin:password
```

Can get below Redfish response:

```
{"@odata.type":"#UpdateService.v1_6_0.UpdateService",
"Messages":[{"@odata.type":"#Message.v1_0_8.Message",
"Message":"A new task /redfish/v1/TaskService/Tasks/1 was created.",
"MessageArgs":["/redfish/v1/TaskService/Tasks/1"],
"MessageId":"Task.1.0.New","Resolution":"None","Severity":"OK"},
{"@odata.type":"#Message.v1_0_8.Message",
"Message":"Device is prepareing flash firmware for action SimpleUpdate.",
"MessageArgs":["SimpleUpdate"],
"MessageId":"UpdateService.1.0.PrepareUpdate",
"Resolution":"None","Severity":"OK"}]}
```

3.1.1.3. Check BMC update status by Redfish

wait about 180 secs for Redfish prepare flash area, upgrade file and verify firmware.
Run below command to check BMC update process:

```
curl -k -X GET https://$bmc_ip/redfish/v1/UpdateService -u admin:password
```

Can get below Redfish response:

```
{"@odata.context":"/redfish/v1/$metadata#UpdateService.UpdateService",
"@odata.etag":"W/\"1609498363\"","@odata.id":"/redfish/v1/UpdateService",
"@odata.type":"#UpdateService.v1_6_0.UpdateService","Description":"Redfish Update Service",
"FirmwareInventory":{"@odata.id":"/redfish/v1/UpdateService/FirmwareInventory"},"Id":"UpdateService",
"MaxImageSizeBytes":190910464,"MultipartHttpPushUri":"/redfish/v1/UpdateService/upload",
```

© Copyright Gigabyte 2020 All Rights Reserved

"Name":"Update Service",
"Oem":{"AMIUpdateService":{"@odata.type":"#AMIUpdateService.v1_0_0.AMIUpdateService",
"FlashPercentage":"3% done.","UpdateStatus":"Flashing","UpdateTarget":"BMC"},
"BMC":{"@odata.type":"#AMIUpdateService.v1_0_0.BMC"}},"ServiceEnabled":true,
"Status":{"Health":"OK","State":"Enabled"}}

3.2. Upgrade BIOS Image-1 / Image-2

3.2.1.1. Export Environment Parameter

Export BIOS IP, HTTP Server IP and firmware path:

```
export bmc_ip=192.168.100.51
export http_server_ip=192.168.100.47
export firmware_name=image_MR92_F09
export redfish_username=admin
export redfish_password=password
```

3.2.1.2. Call Redfish do the upgrade BIOS job

Run below command to call Redfish do upgrade BIOS job:

```
curl -k -X POST https://$bmc_ip /redfish/v1/UpdateService/Actions/SimpleUpdate -H 'Content-Type:
application/json' -H 'cache-control: no-cache' -d '{"UpdateComponent": "BIOS", "TransferProtocol":"HTTP",
"ImageURI":"http://$http_server_ip /$firmware_name.RBU"}' -u $redfish_username:$redfish_password
```

Can get below Redfish response:

{"@odata.type":"#UpdateService.v1_6_0.UpdateService","Messages":[{"@odata.type":"#Message.v1_0_8.Message","Message":"A new task /redfish/v1/TaskService/Tasks/1 was created.","MessageArgs":["/redfish/v1/TaskService/Tasks/1"],"MessageId":"Task.1.0.New","Resolution":"None","Severity":"OK"},{"@odata.type":"#Message.v1_0_8.Message","Message":"Device is prepareing flash firmware for action SimpleUpdate.","MessageArgs":["SimpleUpdate"],"MessageId":"UpdateService.1.0.PrepareUpdate","Resolution":"None","Severity":"OK"}]}

Example:

```
sysadmin [~]# curl -k -X POST https://192.168.100.51/redfish/v1/UpdateService/Actions/SimpleUpdate -H 'Content-Type: application/json' -H 'cache-control: no-cache' -d '{"UpdateComponent": "BIOS", "TransferProtocol":"HTTP", "ImageURI":"http://192.168.100.47/image_MR92_F09.RBU"}' -u admin:password
{"@odata.type":"#UpdateService.v1_6_0.UpdateService","Messages":[{"@odata.type":"#Message.v1_0_8.Message","Message":"A new task /redfish/v1/TaskService/Tasks/1 was created.","MessageArgs":["/redfish/v1/TaskService/Tasks/1"],"MessageId":"Task.1.0.New","Resolution":"None","Severity":"OK"},{"@odata.type":"#Message.v1_0_8.Message","Message":"Device is prepareing flash firmware for action SimpleUpdate.","MessageArgs":["SimpleUpdate"],"MessageId":"UpdateService.1.0.PrepareUpdate","Resolution":"None","Severity":"OK"}]}sysadmin [~]#
```

3.2.1.3. Check BIOS update status by Redfish

wait about 180 secs for Redfish prepare flash area, upgrade file and verify firmware.
Run below command to check BIOS update process:

```
curl -k -X GET https://$bmc_ip/redfish/v1/UpdateService -u $redfish_username:$redfish_password
```

Can get below Redfish response:

{"@odata.context":"/redfish/v1/$metadata#UpdateService.UpdateService","@odata.etag":"W/\"1647409528\"","@odata.id":"/redfish/v1/UpdateService","@odata.type":"#UpdateService.v1_6_0.UpdateService","Actions":{"#UpdateService.SimpleUpdate":{"@Redfish.ActionInfo":"/redfish/v1/UpdateService/SimpleUpdateActionInfo","target":"/redfish/v1/UpdateService/Actions/SimpleUpdate"},"Oem":{"#UpdateService.UploadCABundl

© Copyright Gigabyte 2020 All Rights Reserved

e":{"@Redfish.ActionInfo":"/redfish/v1/UpdateService/UploadCABundleActionInfo","target":"/redfish/v1/UpdateService/Actions/Oem/UpdateService.UploadCABundle"}}},"Description":"Redfish Update Service","FirmwareInventory":{"@odata.id":"/redfish/v1/UpdateService/FirmwareInventory"},"Id":"UpdateService","MaxImageSizeBytes":188981248,"MultipartHttpPushUri":"/redfish/v1/UpdateService/upload","Name":"Update Service","Oem":{"AMIUpdateService":{"@odata.type":"#AMIUpdateService.v1_0_0.AMIUpdateService","FlashPercentage":null,"PreserveConfiguration":{"Authentication":true,"FRU":true,"IPMI":true,"KVM":true,"NTP":true,"Network":true,"REDFISH":true,"SDR":true,"SEL":true,"SNMP":true,"SSH":true,"Syslog":true,"WEB":true},"UpdateStatus":"Completed","UpdateTarget":"BIOS"},"BMC":{"@odata.type":"#AMIUpdateService.v1_0_0.BMC","DualImageConfigurations":{"ActiveImage":"1","BootImage":"1","FirmwareImage1Name":"Image1","FirmwareImage1Version":"13.03.01","FirmwareImage2Name":"Image2","FirmwareImage2Version":"13.03.1216"}}},"ServiceEnabled":true,"Status":{"Health":"OK","State":"Enabled"}}

3.3. Multipart Push BMC_FW Update

3.3.1.1. Request

Example Request

POST /redfish/v1/UpdateService/upload

Please prepare below file.

1. FW image. The image filename extension should be *.hpm or *.rcu or *.ima_enc
2. Create a JSON file parameters.json with content like below.

```
{
  "Targets":[
        "/redfish/v1/UpdateService/FirmwareInventory/BMC"
  ]
}
```

3. Create a JSON file oem_parameters.json with content like below.

```
{
  "ImageType":"BMC"
}
```

3.3.1.2. Parameters of Multipart Push

The details of UpdatdParameters and OemParameter are given in the Tables below.

File	Parameter name	Type	Allowed value
UpdateParameters	Targets	Array of uri	/redfish/v1/UpdateService/FirmwareInventory/BIOS /redfish/v1/UpdateService/FirmwareInventory/BIOS2 /redfish/v1/UpdateService/FirmwareInventory/BMC /redfish/v1/UpdateService/FirmwareInventory/BMCImage1 /redfish/v1/UpdateService/FirmwareInventory/MB_CPLD1 /redfish/v1/UpdateService/FirmwareInventory/BPB_CPLD1 /redfish/v1/UpdateService/FirmwareInventory/SCP
OemParatemeters	ImageType	String	BMC BIOS HPM_BMC HPM_BIOS HPM_SCP MB_CPLD BPB_CPLD

© Copyright Gigabyte 2020 All Rights Reserved

	Targets	ImageType
Mapping	/redfish/v1/UpdateService/FirmwareInventory/BIOS	BIOS
	/redfish/v1/UpdateService/FirmwareInventory/BIOS2	HPM_BIOS
	/redfish/v1/UpdateService/FirmwareInventory/ BMCImage1	BMC
	/redfish/v1/UpdateService/FirmwareInventory/ BMC	HPM_BMC
	/redfish/v1/UpdateService/FirmwareInventory/ MB_CPLD1	MB_CPLD
	/redfish/v1/UpdateService/FirmwareInventory/ BPB_CPLD1	BPB_CPLD
	/redfish/v1/UpdateService/FirmwareInventory/SCP	HPM_SCP

It is able to look up the list of available Targets URI with GET FirmwareInventory Collection.

Request:
GET /redfish/v1/UpdateService/FirmwareInventory

Response:


```
{
    "@odata.context": "/redfish/v1/$metadata#SoftwareInventoryCollection.SoftwareInventoryCollection",
    "@odata.etag": "W/\"1262888059\"",
    "@odata.id": "/redfish/v1/UpdateService/FirmwareInventory",
    "@odata.type": "#SoftwareInventoryCollection.SoftwareInventoryCollection",
    "Description": "Collection of Firmware Inventory resources available to the UpdateService",
    "Members": [
        {
            "@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/BMCImage1"
        },
        {
            "@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/BPB_CPLD1"
        },
        {
            "@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/BIOS"
        },
        {
            "@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/BIOS2"
        },
        {
            "@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/BMCImage2"
        },
        {
            "@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/SCP"
        },
        {
            "@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/MB_CPLD1"
        }
    ],
    "Members@odata.count": 7,
    "Name": "Firmware Inventory Collection"
}
```


3.3.1.3. Command

Example command

curl -k -L -X POST https://{BMC_IP}/redfish/v1/UpdateService/upload -u ${account}:${password} -F "UpdateParameters=@parameters.json;type=application/json" -F "OemParameters=@oem_parameters.json;type=application/json" -F UpdateFile=@{ local_image_path } -H 'Expect:'

© Copyright Gigabyte 2020 All Rights Reserved

4. Upgrade Firmware Form Restful

Using Utility:

- Curl
- IPMI

4.1. Upgrade Active/Backup BMC

Please logout all BMC WebGUI connection and don't try to login BMC WebGUI when doing follow steps.

4.1.1 Preserve BMC Configuration

4.1.1.1. Get Session CSRF Token

Example:
BMC IP: 10.1.27.31

Run below command to get CSRF Token:

curl -s -c cookie -k -H "Content-Type: application/x-www-form-urlencoded" -X POST -d "username=**admin**&password=**password**" https://10.1.27.31/api/session

Can get below response:

{ "ok": 0, "privilege": 4, "extendedpriv": 259, "racsession_id": 16, "remote_addr": "10.1.112.223", "server_name": "10.1.27.31", "server_addr": "10.1.27.31", "HTTPSEnabled": 1, "CSRFToken": "83FYT2La", "channel": 1, "passwordStatus": 0 }

Recode CSRFToken value.

4.1.1.2. Set Backup flag

Choice backup item if you want:

- "snmp":1,
- "kvm":1,
- "network":1,
- "ipmi":1,
- "ntp":1,
- "authentication":1,
- "syslog":1,
- "id":1 (reserve)

Run below command to set backup config:

curl -c cookie -b cookie -k -H "Content-Type: application/json" -H "X-CSRFTOKEN: 83FYT2La " -X PUT -d '{"snmp":1,"kvm":1,"network":1,"ipmi":1,"ntp":1,"authentication":1,"syslog":1,"id":1}' https://10.1.27.31/api/maintenance/backup_config

Note: X-CSRFTOKEN value from session 1.2 CSRFToken

4.1.1.3. Download Backup file

Run below command to download Backup file:
curl -c cookie -b cookie -k -H "X-CSRFTOKEN: 83FYT2La " -X GET https://10.1.27.31/api/maintenance/download_config --output conf.bak

© Copyright Gigabyte 2020 All Rights Reserved

Note: X-CSRFTOKEN value from session 1.2 CSRFToken

4.1.2 Upgrade Active/Backup BMC

4.1.2.1. Export Environment Parameter

Export BMC IP and new firmware binary path:

```
export bmc_ip=10.1.7.193
export bmc_file=./v13.01.16/fw/rom.ima_enc
```

4.1.2.2. Reboot BMC by IPMITool

Reboot BMC by ipmi command:

```
ipmitool -I lanplus -H $bmc_ip -U admin -P password mc reset cold
```

4.1.2.3. Get Session CSRF Token

Run below command to get CSRF Token:

```
curl -s -c cookie -k -H "Content-Type: application/x-www-form-urlencoded" -X POST -d
"username=admin&password=password" https://$bmc_ip/api/session
```

Need using administrator user name and password

Can get below response:

```
{ "ok": 0, "privilege": 4, "extendedpriv": 259, "racsession_id": 1, "remote_addr": "10.1.112.229",
"server_name": "10.1.7.193", "server_addr": "10.1.7.193", "HTTPSEnabled": 1, "CSRFToken": "SgRUJUg0" }
```

4.1.2.4. Export CSRF Token

Export CSRF Token:

```
export csrf_token=SgRUJUg0
```

4.1.2.5. Set BMC Prepare to Flash BMC

Run below command to setup BMC:

```
curl -s -c cookie -b cookie -k -H "X-CSRFTOKEN:$csrf_token" -H "Content-Type: application/json" -X PUT -d
'{"flash_type":"BMC"}' "https://$bmc_ip/api/maintenance/flash"
```

BMC need about 30 sec. to prepare

Can get below response:

```
{ "flash_type": "BMC" }
```

4.1.2.6. Upload new BMC firmware

Run below command to upload new BMC firmware:

```
curl -s -c cookie -b cookie -k -H "X-CSRFTOKEN:$csrf_token" -H "Expect:" -X POST -F "fwimage=@$bmc_file"
"https://$bmc_ip/api/maintenance/firmware"
```

© Copyright Gigabyte 2020 All Rights Reserved

Can get below response:

{ "cc": 0 }

4.1.2.7. Verify new BMC firmware

Run below command to verify new BMC firmware:

curl -s -c cookie -b cookie -k -H "X-CSRFTOKEN:$csrf_token" -X GET
"https://$bmc_ip/api/maintenance/firmware/verification"

Can get below response and check current_image_version1、new_image_version

[{ "id": 1, "current_image_name": "boot", "current_image_version1": "2.4.000000",
"current_image_version2": "0.0.", "new_image_version": "2.4.000000", "section_status": 0,
"verification_status": 69 }, { "id": 2, "current_image_name": "conf", "current_image_version1": "2.4.000000",
"current_image_version2": "0.0.", "new_image_version": "2.4.000000", "section_status": 0,
"verification_status": 69 }, { "id": 3, "current_image_name": "conf", "current_image_version1": "2.4.000000",
"current_image_version2": "0.0.", "new_image_version": "2.4.000000", "section_status": 0,
"verification_status": 69 }, { "id": 4, "current_image_name": "root", "current_image_version1": "2.4.000000",
"current_image_version2": "0.0.", "new_image_version": "2.4.000000", "section_status": 1,
"verification_status": 69 }, { "id": 5, "current_image_name": "osimage", "current_image_version1":
"2.4.000000", "current_image_version2": "0.0.", "new_image_version": "2.4.000000", "section_status": 1,
"verification_status": 69 }, { "id": 6, "current_image_name": "dre", "current_image_version1": "11.7.000000",
"current_image_version2": "0.0.", "new_image_version": "11.7.000000", "section_status": 1,
"verification_status": 69 }, { "id": 7, "current_image_name": "www", "current_image_version1":
"2.4.000000", "current_image_version2": "0.0.", "new_image_version": "2.4.000000", "section_status": 1,
"verification_status": 69 }, { "id": 8, "current_image_name": "testapps", "current_image_version1":
"2.4.000000", "current_image_version2": "0.0.", "new_image_version": "2.4.000000", "section_status": 1,
"verification_status": 69 }, { "id": 9, "current_image_name": "ast2500e", "current_image_version1": "8.10.1",
"current_image_version2": "0.0.", "new_image_version": "8.29.1", "section_status": 0, "verification_status":
69 }]

4.1.2.8. Start Update BMC

Run below command to start BMC update procress:

With preserving BMC setting:
curl -s -c cookie -b cookie -k -H "X-CSRFTOKEN:$csrf_token" -H "Content-Type: application/json" -X PUT -d
'{"preserve_config":1,"flash_status":1,"flash_type":"BMC"}'
"https://$bmc_ip/api/maintenance/firmware/upgrade"

Without preserving BMC setting:
curl -s -c cookie -b cookie -k -H "X-CSRFTOKEN:$csrf_token" -H "Content-Type: application/json" -X PUT -d
'{"preserve_config":0,"flash_status":1,"flash_type":"BMC"}'
"https://$bmc_ip/api/maintenance/firmware/upgrade"

Can get below response:

With preserving BMC setting:
{ "preserve_config": 1, "flash_status": 1, "flash_type": "BMC" }
Without preserving BMC setting:
{ "preserve_config": 0, "flash_status": 1, "flash_type": "BMC" }

© Copyright Gigabyte 2020 All Rights Reserved

4.1.2.9. Check BMC update status

Run below command to check BMC update process:

curl -s -c cookie -b cookie -k -H "X-CSRFTOKEN:$csrf_token" -X GET "https://$bmc_ip/api/maintenance/firmware/flash-progress"

Can get below response:

In Flashing:
{ "id": 1, "action": "Flashing...", "progress": "13% done ", "state": 0 }
Flash completed:
{ "id": 1, "action": "Firmware Update ", "progress": "Completed.", "state": 2 }

BMC will auto reboot after flash completed.

4.1.3 Restore BMC Configuration

4.2. Upgrade Active/Backup BIOS

4.2.1.1. Export Environment Parameter

Export BMC IP and new firmware binary path:

export bmc_ip=10.1.7.193
export bios_file=./bios/fw/image.RBU

4.2.1.2. Get Session CSRF Token

Run below command to get CSRF Token:

curl -s -c cookie -k -H "Content-Type: application/x-www-form-urlencoded" -X POST -d "username=**admin**&password=**password**" https://$bmc_ip/api/session

Need using administrator user name and password

Can get below response:

{ "ok": 0, "privilege": 4, "extendedpriv": 259, "racsession_id": 1, "remote_addr": "10.1.112.229", "server_name": "10.1.7.193", "server_addr": "10.1.7.193", "HTTPSEnabled": 1, "CSRFToken": "SgRUJUg0" }

4.2.1.3. Export CSRF Token

Export CSRF Token:

export csrf_token=SgRUJUg0

4.2.1.4. Set BMC Prepare to Flash BIOS

Run below command to setup BMC:

curl -s -c cookie -b cookie -k -H "X-CSRFTOKEN:$csrf_token" -H "Content-Type: application/json" -X PUT -d '{"flash_type":"BIOS"}' "https://$bmc_ip/api/maintenance/flash"

© Copyright Gigabyte 2020 All Rights Reserved

Can get below response:

{ "flash_type": "BIOS" }

4.2.1.5. Upload new BIOS firmware

Run below command to upload new BIOS firmware:

curl -s -c cookie -b cookie -k -H "X-CSRFTOKEN:$csrf_token" -H "Expect:" -X POST -F "fwimage=@$bios_file" "https://$bmc_ip/api/maintenance/firmware"

upload file need take a few seconds.

Can get below response:

{ "cc": 0 }

4.2.1.6. Verify new BIOS firmware

Run below command to verify new BIOS firmware:

curl -s -c cookie -b cookie -k -H "X-CSRFTOKEN:$csrf_token" -X GET "https://$bmc_ip/api/maintenance/firmware/verification"

Can get below response:

[ ]

4.2.1.7. Start Update BIOS

Run below command to start BIOS update procress:

curl -s -c cookie -b cookie -k -H "X-CSRFTOKEN:$csrf_token" -H "Content-Type: application/json" -X PUT -d '{"preserve_config":0,"flash_status":0,"flash_type":"BIOS"}' https://$bmc_ip/api/maintenance/firmware/upgrade

Can get below response:

{ "preserve_config": 0, "flash_status": 0, "flash_type": "BIOS" }

4.2.1.8. Check BIOS update status

Run below command to check BIOS update process:

curl -s -c cookie -b cookie -k -H "X-CSRFTOKEN:$csrf_token" -X GET "https://$bmc_ip/api/maintenance/firmware/flash-progress"

Can get below response:

In Flashing:
{ "id": 1, "action": "Flashing...", "progress": "13% done ", "state": 0 }
Flash completed:
{ "id": 1, "action": "Firmware Update ", "progress": "Completed.", "state": 2 }

© Copyright Gigabyte 2020 All Rights Reserved

5. Upgrade Firmware Form Gigaflash

5.1. Upgrade Active/Backup BMC

5.1.1.1. Upgrade BMC Fireware in Linux

1. Get Linux root permission.
2. Change path to the root directory of Upgrade Package.
3. Run “bmc_fw_update_linux.sh cs 0 flashall”.

```
kate@NFE2-229:/project/kate/130223$ ./bmc_fw_update_linux.sh cs 0 flashall
gigaflash v1.8.1
Loading Firmware...
```

User command:
NAME
bmc_fw_update_linux.sh - Update script
SYNOPSIS
bmc_fw_update_linux.sh [OPTION]
DESCRIPTION
Update BMC flash script. Below is option item:
cs
Select to update Active/Backup BMC firmware. (CS=1 only support on GBT Dual Platform).
0: Active
1: Backup
Default value is 0.
flashall
Flash entire BMC without warning message.
Default: Ask user preserve configuration or not
x32
Set update tool to 32-bit mode
Default x86 64-bit mode
arm
Set update tool to arm mode (arm Linux only support 64-bit)
Default x86 64-bit mode

Example for flash entire BMC and select BMC address in address 0:
bmc_fw_update_linux.sh cs 0 flashall

5.1.1.2. Upgrade BMC Fireware in Windows

1. Open Command line with Windows Administrator permission.
2. Change path to the root directory of Upgrade Package.
3. Run “bmc_fw_update_win.bat cs 0 flashall”.

```
C:\Users\kate.cheng\Desktop\130223>bmc_fw_update_win.bat cs 0 flashall
0
"Tools\gigaflash_x64.exe fw\130223.bin -a -cs 0 -2600"
gigaflash v1.8.1
Loading Firmware...
```

User command:
NAME
bmc_fw_update_win.bat - Update script
SYNOPSIS
bmc_fw_update_win.bat [OPTION]
DESCRIPTION
Update BMC flash script. Below is option item:
cs
Select to update Active/Backup BMC firmware. (CS=1 only support on GBT Dual Platform).
0: Active

© Copyright Gigabyte 2020 All Rights Reserved

1: Backup
Default value is 0.
flashall
Flash entire BMC without warning message.
Default: Ask user preserve configuration or not
x32
Set update tool to 32-bit mode
Default x86 64-bit mode

Example for flash entire BMC and select BMC address in address 0:
bmc_fw_update_win.bat cs 0 flashall

5.1.1.3. Upgrade BMC Fireware in UEFI

1. Change path to the root directory of Upgrade Package.
2. Run "bmc_fw_update_uefi.nsh cs 0 flashall"

```
FS0:\130226\> bmc_fw_update_uefi.nsh cs 0 flashall
FS0:\130226\> echo -off
gigaflash v1.8.1
```

User command:
NAME
bmc_fw_update_uefi.nsh - Update script
SYNOPSIS
bmc_fw_update_uefi.nsh [OPTION]
DESCRIPTION
Update BMC flash script. Below is option item:
cs
Select to update Active/Backup BMC firmware. (CS=1 only support on GBT Dual Platform).
0: Active
1: Backup
Default value is 0.
flashall
Flash entire BMC without warning message.
Default: Ask user preserve configuration or not

Example for flash entire BMC and select BMC address in address 0:
bmc_fw_update_uefi.nsh cs 0 flashall

© Copyright Gigabyte 2020 All Rights Reserved