



FIRMWARE UPDATE AND MANUAL  
RECOVERY INSTRUCTIONS  
FOR  
THE X12MP/X12DP/X12SP/B12/H12/  
BH12 MOTHERBOARDS

USER'S GUIDE

Revision 1.0

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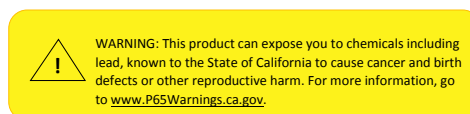
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User's Guide Revision 1.0

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# Preface


## About This Manual

This user's guide is written for system integrators, IT technicians, and knowledgeable end users. It provides firmware update and manual recovery instructions for the Supermicro X12MP/X12DP/X12SP\*/B12/H12/BH12 motherboards. (\*See Note 1 below.)

## About This User's Guide

This user's guide provides hands-on, practical instructions on how to update and perform manual recovery on the firmware used in the X12MP/X12DP/X12SP/B12/H12/BH12 motherboards that are built upon the 3rd Gen Intel® Xeon® Scalable series processors\*\* and the AMD EPYC 7000 series processors\*\*. (See Note 2 below.) This user's guide focuses on the BIOS/BMC/CPLD update and manual recovery using the Baseboard Management Controller (BMC) via WebGUI (Graphical User Interface), which is a flexible management system that allows an IT administrator to arrange the contents, page layouts, and features of a web page based on the user's skill set and needs in an effort to enhance user interface experience and maximize platform utility.


To best utilize our products, please bear in mind that all Supermicro products are intended to be installed, configured, and serviced by professional technicians only. For processor/memory updates, please refer to our website at <http://www.supermicro.com/products/>.

 **Note 1:** The X12SP series motherboards support firmware update and recovery using the BMC via WebGUI except the X12SPA-TF motherboard.

**Note 2:** The X12MP/X12DP/X12SP/B12 series motherboards support the 3rd Gen Intel Xeon Scalable series processors, while the H12/BH12 series motherboards support the AMD EPYC 7003/7002 series processors.

## Conventions Used in the Manual

Special attention should be given to the symbol below to properly configure your BIOS settings and to avoid causing damage to your system or injury to yourself:

 **Note:** Important Information is given for proper system setup or for proper firmware configuration.



**Warning!** Indicates important information is given to avoid possible damages to the system or injuries to yourself.

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# Chapter 1

## Firmware Updates for the X12MP/X12DP/X12SP/ B12/H12/BH12 Motherboards

This chapter provides hands-on, practical instructions on how to perform firmware updates for Supermicro X12MP/X12DP/X12SP/B12/H12/BH12 motherboards using the BMC (Baseboard Management Controller) firmware via WebGUI (Graphical User Interface). Section 1.1 provides the overview of firmware updates using the BMC. Section 1.2 provides instructions on how to update the BMC firmware used in a server. Section 1.3 provides instructions on how to update the BIOS firmware. Section 1.4 provides instructions on how to update the CPLD (Complex Programmable Logic device) firmware.

### 1.1 Using the BMC for Firmware Updates

There are different methods that can be used for firmware updates in a remote server. This user's guide focuses on how to update your firmware by using the remote BMC. Although considered "out-of-band", using BMC WebGUI to update the firmware may be the easiest way for manual firmware updates on certain remote servers.

#### 1.1.1 How to Update Your Firmware Using the BMC

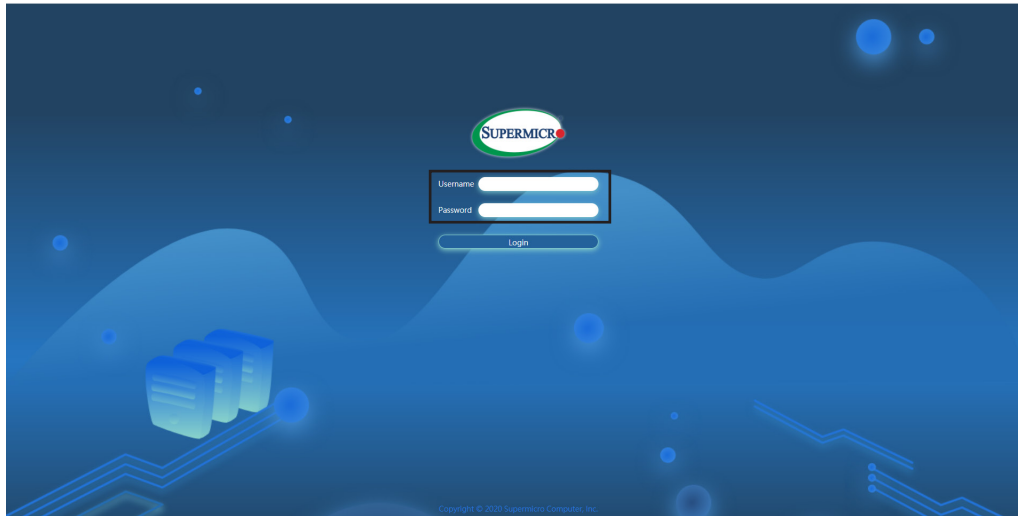
To update the firmware installed in a remote server, which is the host server, using the remote BMC, you will need to have a client browser that can be used to connect to the BMC WebGUI.

#### 1.1.2 Accessing the Remote BMC via WebGUI

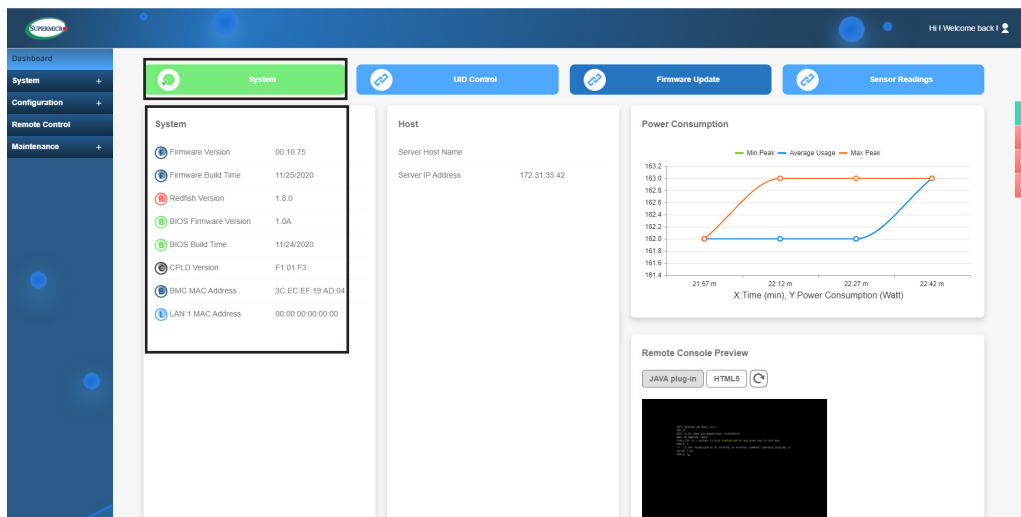
To access the remote BMC via WebGUI for firmware updates, follow the steps below.

1. Connect a client browser that supports the BMC WebGUI to the remote BMC. (See the note above).
2. Obtain the BMC IP address of the remote server whose firmware you want to update by using a Static IP address that you know of, or by obtaining an IP address using the Dynamic Host Configuration Protocol (DHCP).

3. Enter the IP address of the server that contains the remote BMC in the address bar of the (client) browser you are using to update the firmware, and press <Enter>. The BMC Login screen will display as shown below.



4. Enter your username and your unique password\* (See the note below.) in the username and password fields.
5. Click **Login** to enter the BMC home page as shown below.



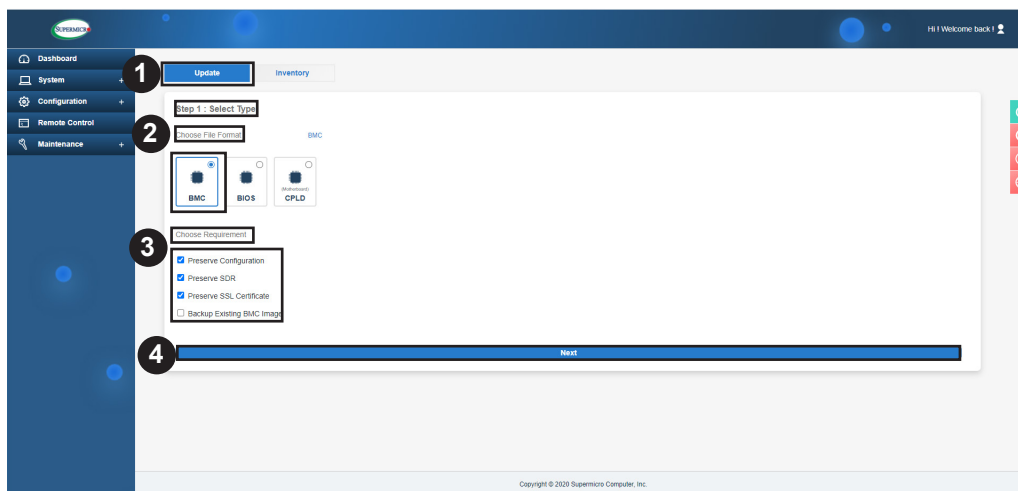
6. Click on the **System** section to check the system information and confirm the updated firmware version, making sure that it is the correct version you want to use.

**Note:** Every SMCI's standard product is shipped with a unique password for the BMC ADMIN user. This password can be found on a label on the motherboard. When logging in to the BMC for the first time, please use the unique password provided by Supermicro to log in. You can change the unique password to a password of your choice for subsequent logins. *For more information regarding BMC passwords, please visit our website at <http://www.supermicro.com/bmcpassword>.*

## 1.2 Updating the BMC Firmware

Follow the instructions given on Section 1.1.2 to access the BMC Login page. Click **<Login>** and enter the BMC home page as shown on the screen below.

### 1.2.1 Selecting the Type of Firmware (BMC) for Update

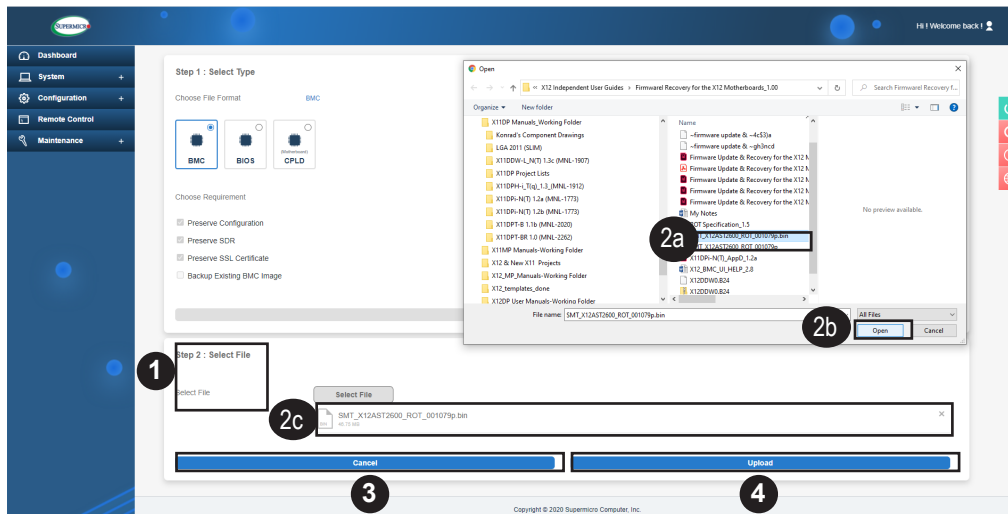


The screen above allows you to update or to recover the BMC, BIOS, or CPLD firmware used in your machine. Select **Update** to update your BMC, BIOS, or CPLD. To update your BMC, please follow the instructions below:

1. Select **Update** on top of the menu bar for firmware update as shown above.
2. Under *Step 1: Select Type*, choose **BMC** as your file format for update as shown above.
3. The screen above also allows you to choose your update requirements. Click on the box in front of a requirement item to choose it. The following items are available for you to choose from:
  - Preserve Configuration
  - Preserve SDR
  - Preserve SSL Certificate
  - Backup Existing BMC Image
4. Once you've made the selections, click **Next** and the following screen will display.



## 1.2.2 Selecting an Image File for Firmware (BMC) Update



The screen above allows you to choose an image file for your firmware (BMC) update. To update your BMC to a desired BMC version, follow the instructions below.

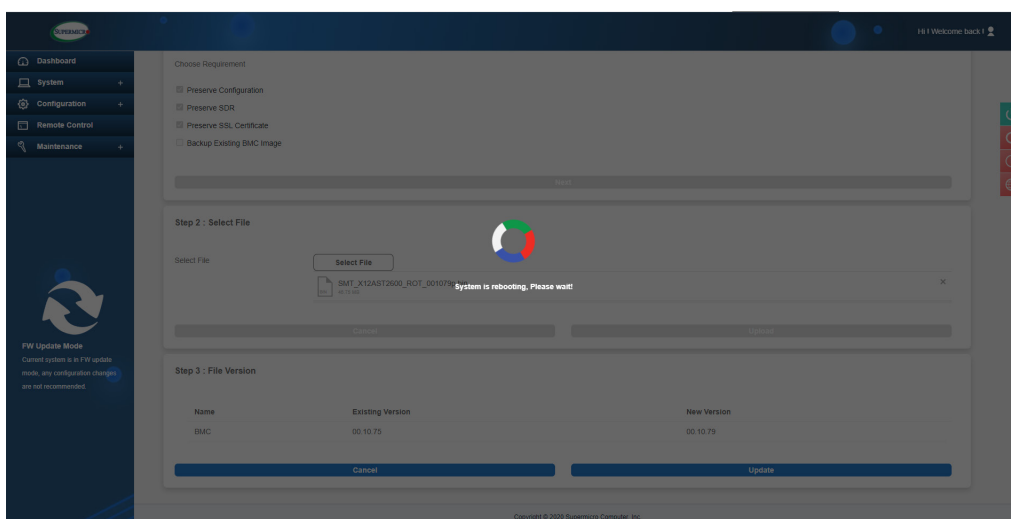
1. Click **Select File** **1** to browse the files that are available to you, including the files stored in your local hard drives.
2. Select the file that you want to use for the BMC update **2a** and click **Open** **2b**. The file you've selected will appear on the Select File field **2c** as shown above.
3. To cancel your selection, click **Cancel** **3** to de-select the file and choose another image file for your BMC update.
4. Once you've finalized your selection, click **Upload** **4** to update your BMC using the selected image file.

## 1.2.3 Updating the BMC to a Different Version of BMC



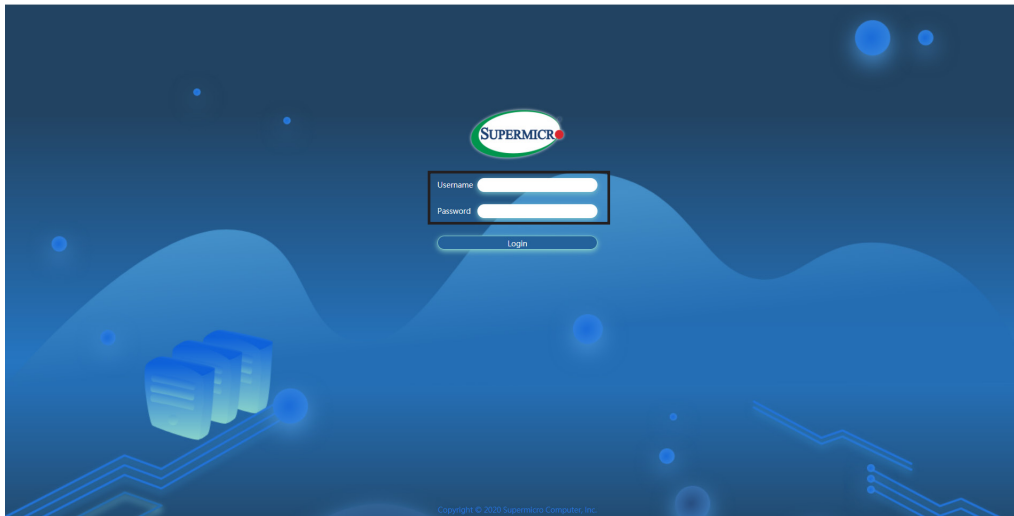
To update your BMC to a different version of BMC, follow the instructions below.

1. After you've uploaded the file you want to use for the BMC update as shown in the previous section, you are ready to update your BMC firmware to the version of your choice. **1**
2. The existing version will display as shown in the box indicated by **2a**, and the desired version that you want to update to will appear in the box indicated by **2b**.
3. To de-select the file that you've just chosen for BMC update, click **Cancel** **3** which will allow you to select another file for your BMC update.
4. Once you've finalized your selection, click **Update** **4** to update your BMC using your selected image file. Once BMC update is complete, the BMC will be reset accordingly.



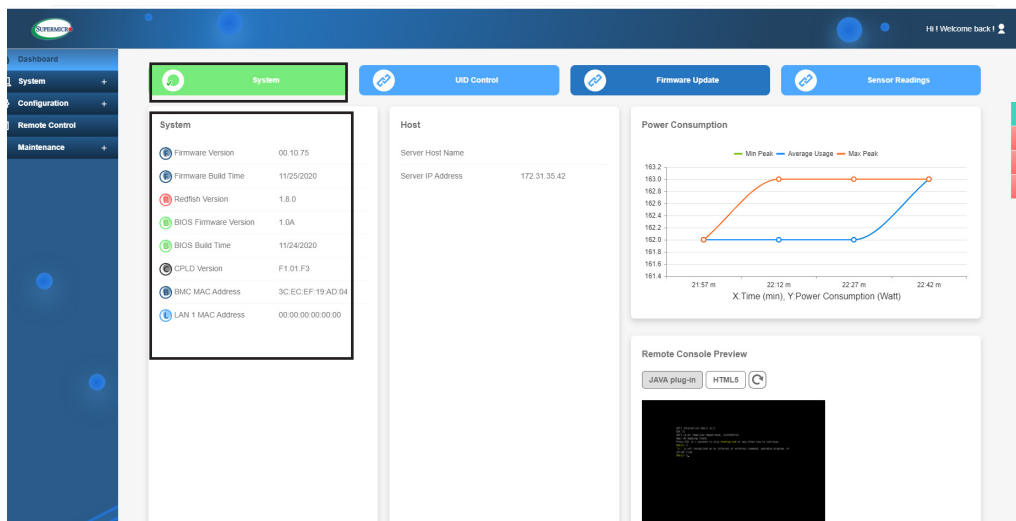
**Warning!** After BMC upgrading is complete, the BMC firmware will reset itself.

5. The system will display the BMC Login page as shown below.



6. Enter your username and password in the appropriate boxes.

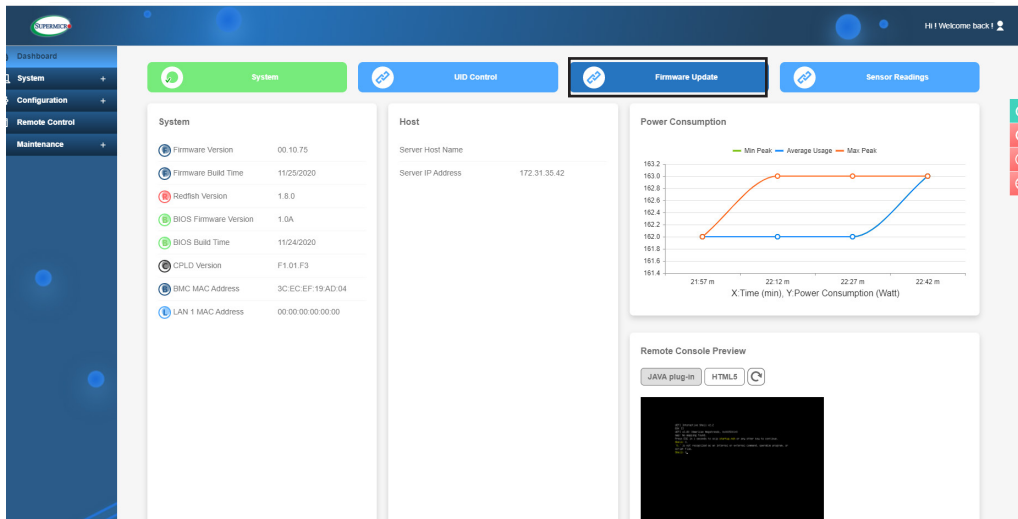
7. Click **Login** to enter the BMC home page as shown below.



8. Click on the **System** section to check the system information and confirm the updated firmware version, making sure that it is the correct version you want to use.

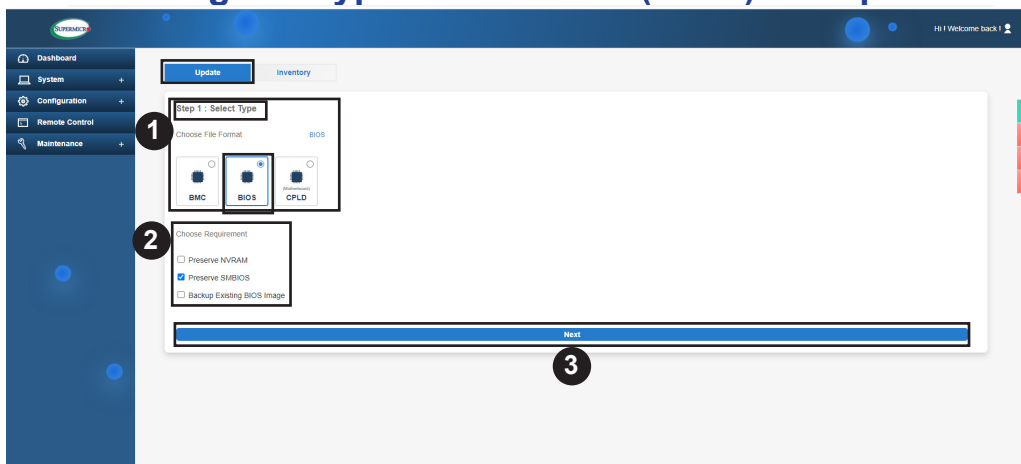
## 1.3 Updating the BIOS Firmware

Follow the instructions given on Section 1.1.2 to access the BMC Login page. Click **<Login>** and enter the BMC home page as shown on the screen below.



When the screen above displays, select Firmware Update and press **<Enter>**. The following screen will display.

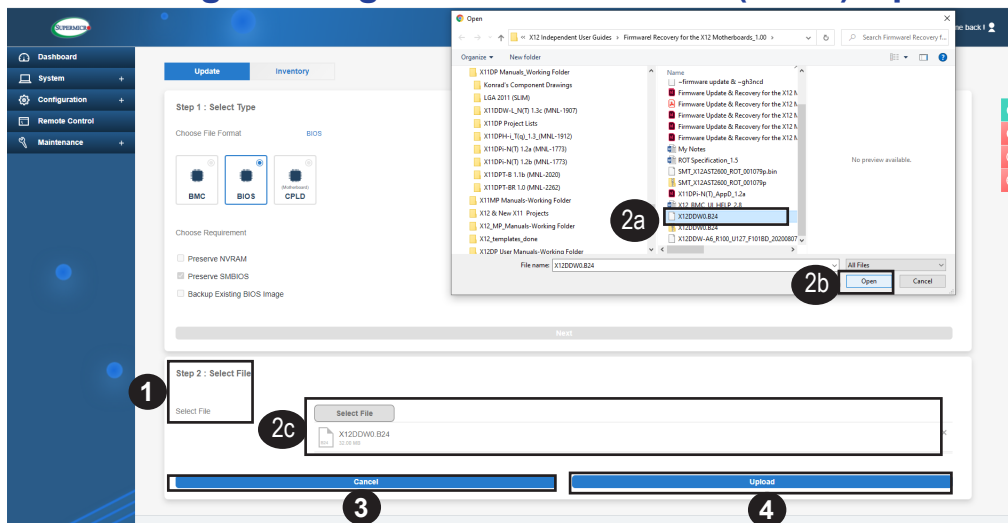
### 1.3.1 Selecting the Type of Firmware (BIOS) for Update



To update your BIOS utility, please follow the instructions below:

1. Select **Update** and choose **BIOS** as your file format for update as shown above.
2. To select your requirements for the BIOS update, click the box in front of an item to select it. The following items are available for your use.
  - Preserve NVRAM
  - Preserve SMBIOS
  - Backup Existing BIOS Image
3. Once you've made the selections, click **Next**, and the following screen will display.

## 1.3.2 Selecting an Image File for Firmware (BIOS) Update

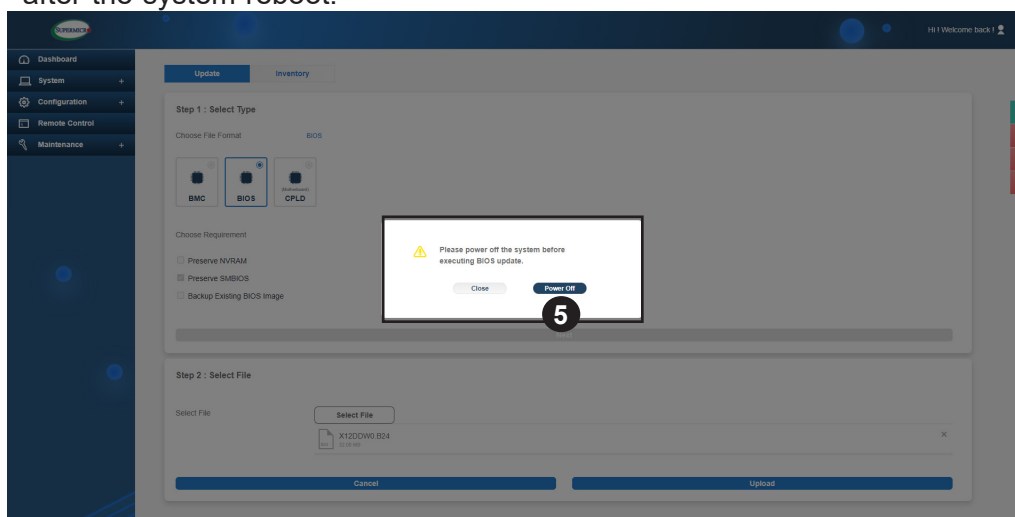


The screen above allows you to choose an image file for your firmware (BIOS) update. Follow the instructions below to update your BIOS to a desired BIOS version.

1. Click **Select File** **1** to browse the files that are available to you, including the files stored in the hard drives of your machine used to update the BIOS for the host server.
2. Select the file that you want to use for the BIOS update **2a** and click **Open** **2b**. The file you've selected will appear on the Select File field **2c** as shown above.
3. To de-select the file that you've just chosen for BIOS update, click **Cancel** **3** which will allow you to select another image file for your BIOS update.
4. Once you've finalized your selection, click **Upload** **4** to update your BIOS using your selected image file.
5. A warning will display asking you to power off the system before you proceed with BIOS update as shown below. Click **Power Off** before updating your BIOS.

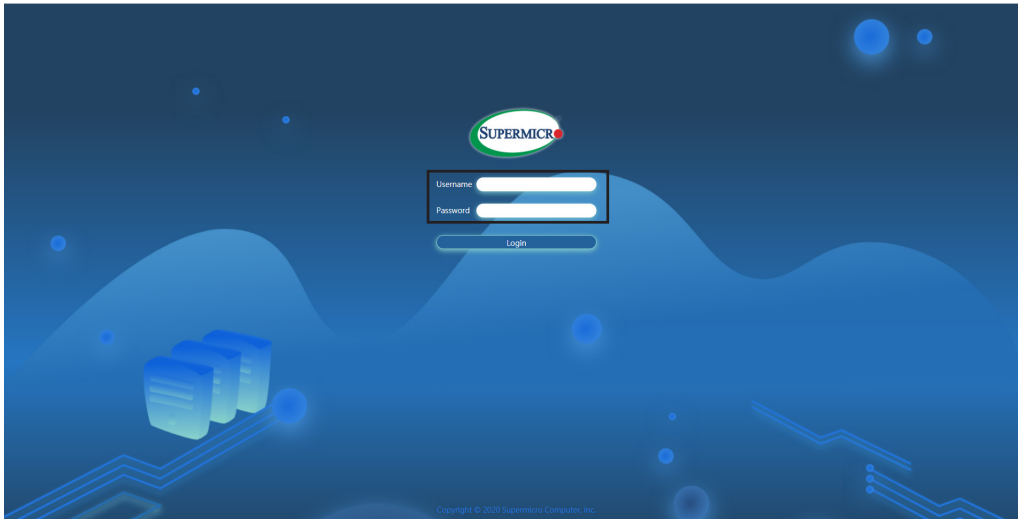


**Warning!** Be sure to power off your system before updating your BIOS! After BIOS upgrading is complete, the system will reboot, and the new BIOS utility will take effect after the system reboot.



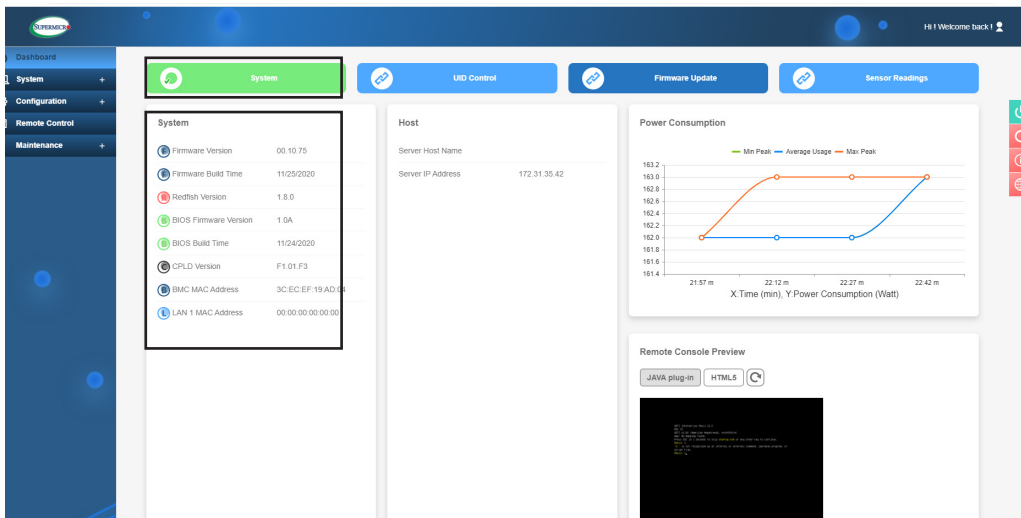
6. When BIOS upgrading is complete, the system will reboot.

7. After the system reboots, the BMC Login page will display as shown below.



8. Enter your username and password in the appropriate boxes on the BMC Login page.

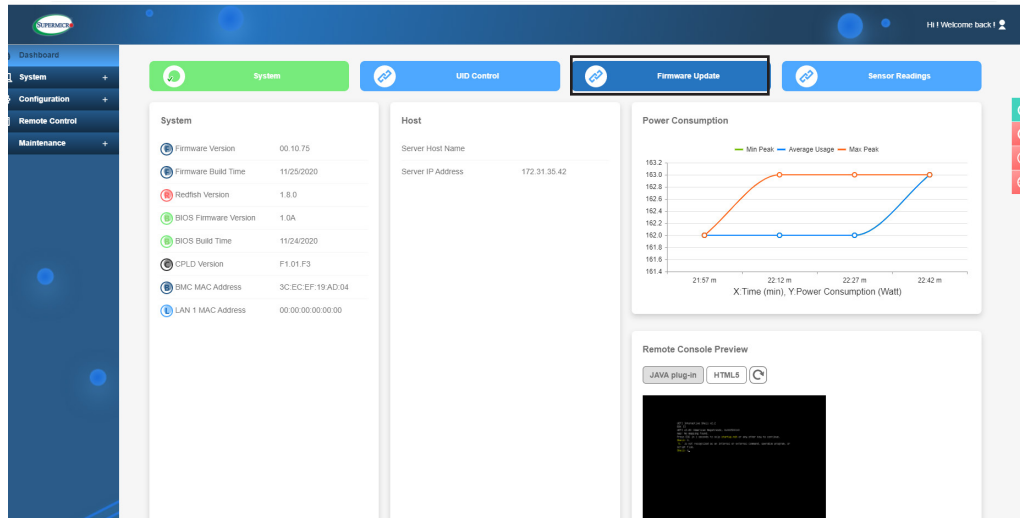
9. Click **Login** to enter the BMC home page as shown below.



10. Click on the **System** section to check the system information and confirm the updated firmware version, making sure that it is the correct version you want to use.

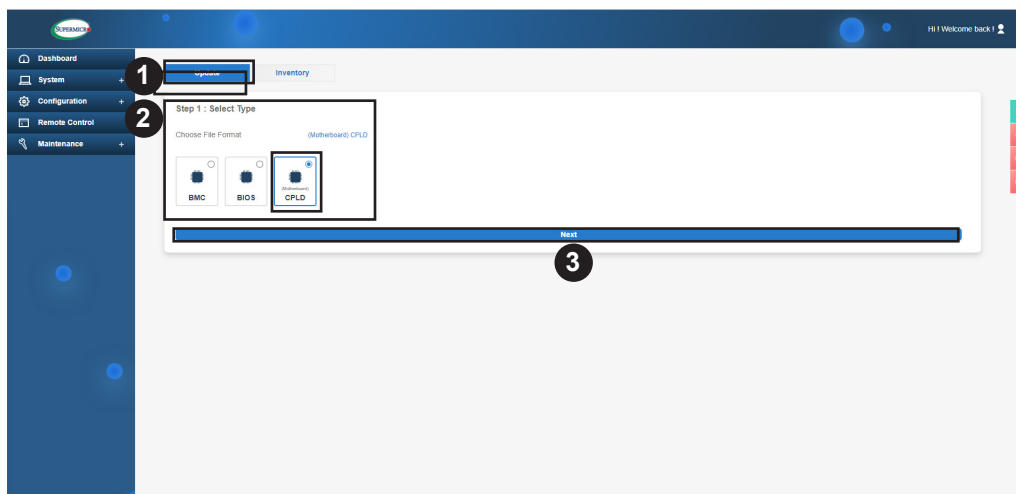
## 1.4 Updating the CPLD Firmware

Follow the instructions given on Section 1.1.2 to access the BMC Login page. Click **<Login>** and enter the BMC home page as shown on the screen below.



When the screen above displays, select **Firmware Update** and press **<Enter>**. The following screen will display.

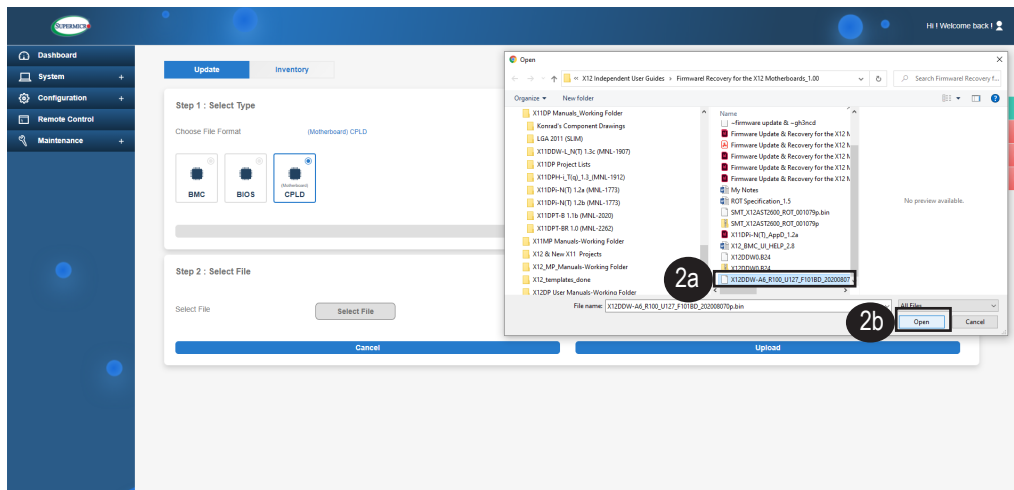
### 1.4.1 Selecting the Type of Firmware (CPLD) for Update



To update the CPLD (Complex Programmable Logic Device), follow the steps below.

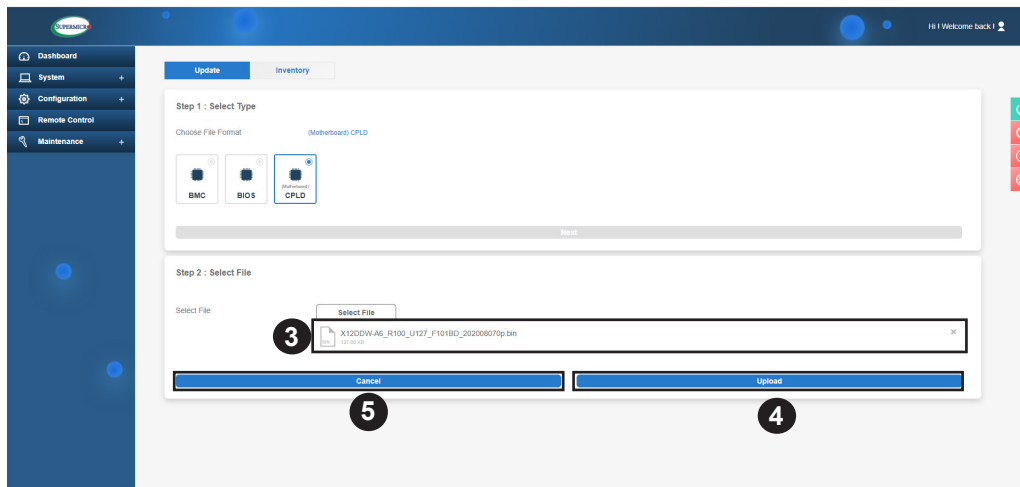
1. Select **Update** on top of the menu bar for firmware update as shown above.
2. Under **Step 1: Select Type**, choose **CPLD** as your file format for update as shown above.
3. Once you've selected CPLD for firmware update, click **Next** and the following screen will display.

## 1.4.2 Selecting an Image File for Firmware (CPLD) Update



Follow the steps below to select an image file to update your Complex Programmable Logic Device (CPLD) to a desired firmware version.

1. Click **Select File** **1** to browse the files that are available to you, including the files stored in the hard drives of the local machine which you use to update the CPLD firmware for the remote server.
2. From the screen as shown above, select the file that you want to use for your CPLD update **2a** and click **Open** **2b**.
3. The file you've selected will appear on the Select File field **3** as shown below.

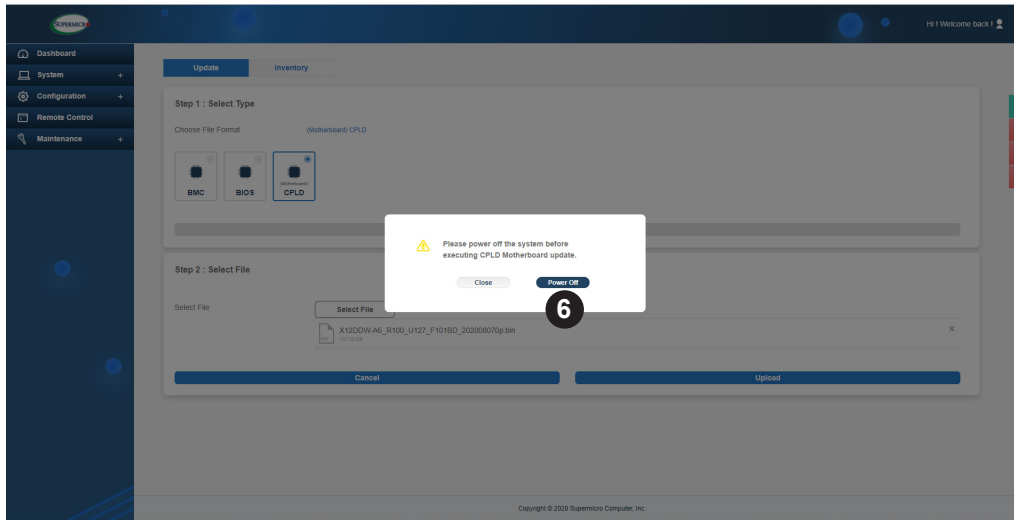


4. To de-select the file that you've just chosen for CPLD update, click **Cancel** **4** which will allow you to select another file to update your CPLD firmware.
5. Once you've finalized your selection, click **Upload** **5** to update your CPLD using the selected image file.
6. A warning will display asking you to power off the system for CPLD update. Click **Power Off** as shown below.





**Warning!** Be sure to power off your system before you start to update your CPLD with the image file that you've just uploaded to the system!

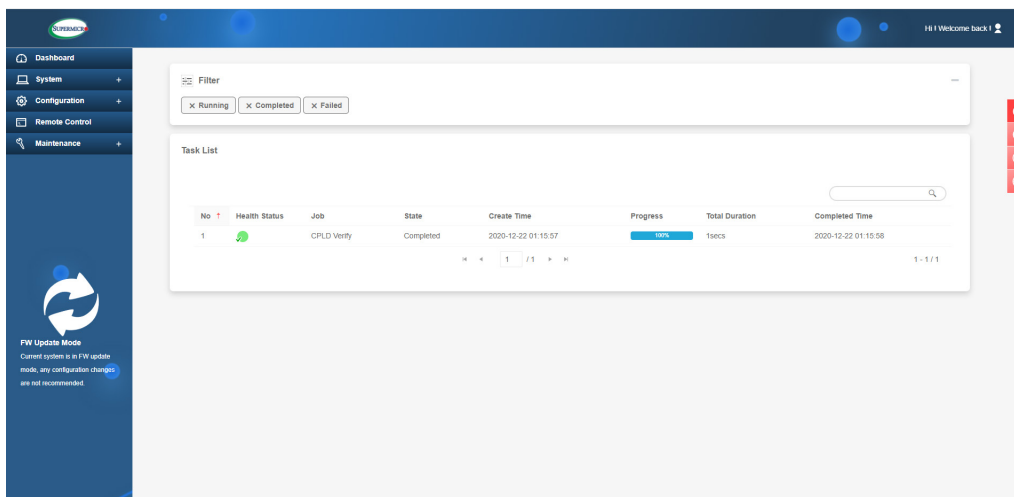


- When the CPLD update is complete, the system will reboot as indicated by a warning statement displayed on the screen.



**Warning!** After CPLD upgrading is complete, the system will reboot for the new CPLD firmware to take effect!

- After the system reboot, the health status of the system will display as shown below.




- To go back to the BMC Login page, please re-load the web-page by following the instructions given in Section 1.1.2 to access the remote BMC via WebGUI on page 6.
- Click on the **System** section (on the left side of the screen) to check the system information and confirm the updated firmware version, making sure that it is the correct version you want to use.

## Chapter 2

# Firmware Recovery for the X12MP/X12DP/X12SP/ B12/H12/BH12 Motherboards

This chapter provides practical instructions on how to manually recover the firmware installed on the Supermicro X12MP/X12DP/X12SP/B12/H12/BH12 series motherboard using the BMC (Baseboard Management Controller) firmware via WebGUI (Web Graphical User Interface). Section 2.1 provides the overview on how to perform manual firmware recovery using the BMC. Section 2.2 provides instructions on how to manually recover the BMC firmware. Section 2.3 provides instructions on how to manually recover the BIOS firmware.

 **Note 1:** Manual firmware recovery is only available only on the motherboards that support ROT (Root of Trust).

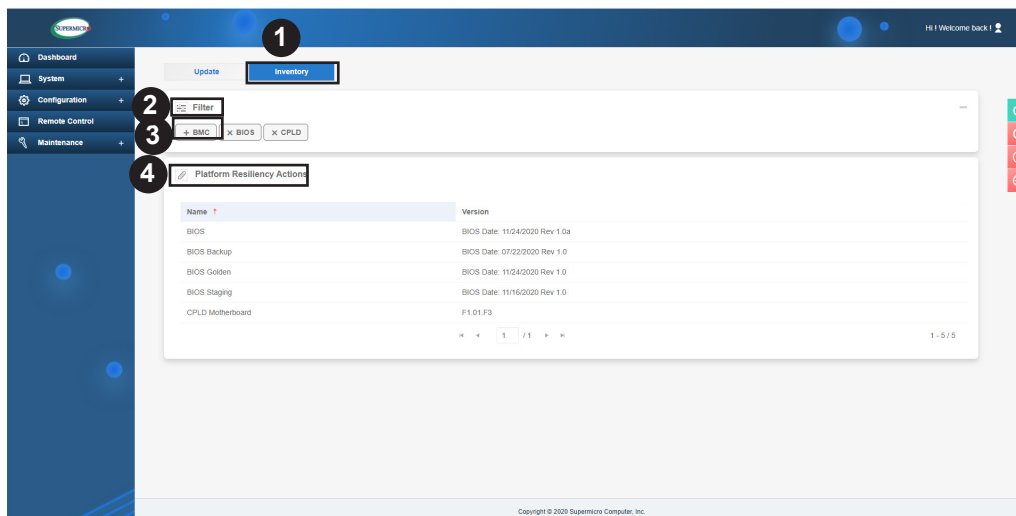
**Note 2:** To use the manual firmware recovery feature, a ***SFT-DCMS-Single license is required.***

**Note 3:** Currently, ROT support is available on *all* X12 MP/DP/UP series motherboards and the following H12 motherboards:

- H12DSG-O-CPU
- H12SSW-iNR/NTR
- H12SSL-i/C/CT/NT
- H12DSG-Q-CPU6
- H12SSFR-AN6
- H12SSFF-AN6
- M12SWA-TF
- H12DGO-6
- H12SSW-AN6
- H12DSi-6/NT6
- H12SSG-6
- BH12SSi-M25
- H12DSU-iN
- H12SSW-iN/NT
- H12DST-B
- H12SST-PS

## 2.1 Recovering the BMC Firmware

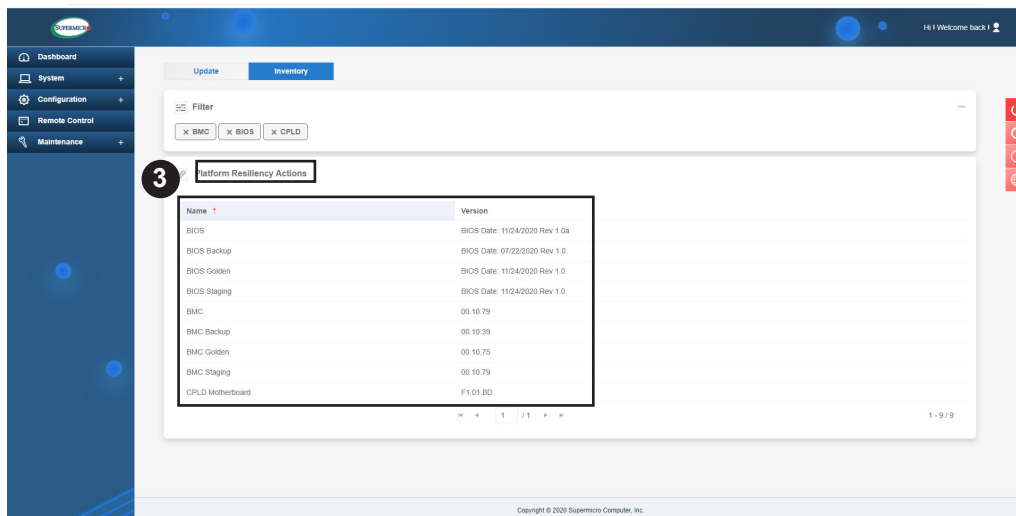
Follow the instructions given on Section 2.1.2 to access the BMC Login page. Click on **<Login>** and enter the BMC home page as shown on the screen below.



The screen above allows you to update or to recover the firmware used in a remote server. Select **Inventory** to manually recover your BMC or your BIOS.


To recover the BMC firmware manually, follow the instructions below.

1. Click **Inventory** as shown above.
2. Click **Filter** to display the type of firmware that are available for manual recovery: BMC and BIOS.
3. Click **+BMC** to display a short list of the BMC action items. If needed, click **XBMC** for a complete list of BMC action items as shown below.

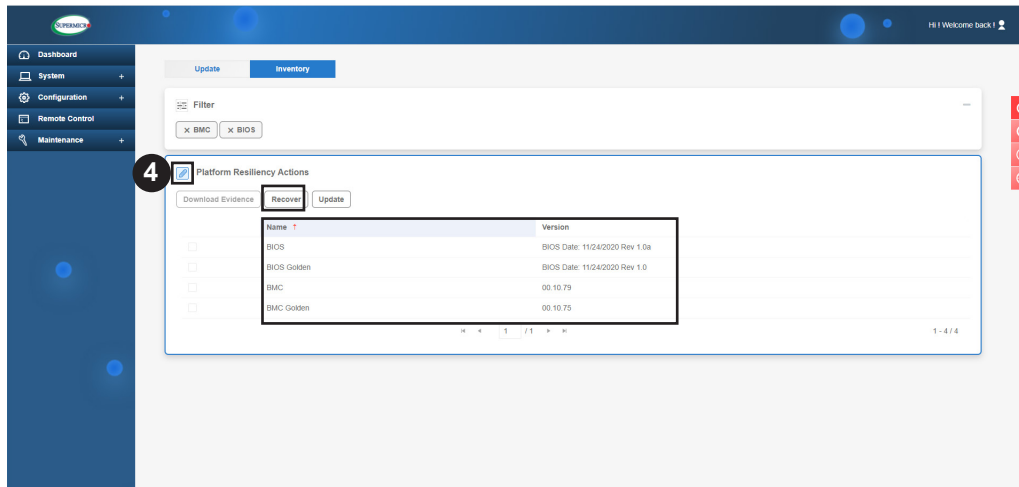


**Note:** The information shown in the table above is for illustration only. It may differ from what is displayed on your screen, which reflects the firmware used in your system.


| Platform Resiliency Actions  |                                |
|--|--------------------------------|
| Name   | Version                        |
| BIOS   | BIOS Date: 11/24/2020 Rev 1.0a |
| BIOS Backup  | BIOS Date: 11/24/2020 Rev 1.0  |
| BIOS Golden (*used to restore the BIOS to its original manufacturer default) | BIOS Date: 11/24/2020 Rev 1.0  |
| BIOS Staging   | BIOS Date: 11/24/2020 Rev 1.0  |
| BMC  | 00.10.79                       |
| BMC Backup   | 00.10.39                       |
| BMC Golden (*used to restore the BMC to its original manufacturer default)   | 00.10.75                       |
| BMC Staging  | 00.10.79                       |
| CPLD Motherboard   | F1.01.BD                       |

 **Note:** The information shown in the table above is for illustration only. It may differ from what is displayed on your screen, which reflects the firmware used in your system.

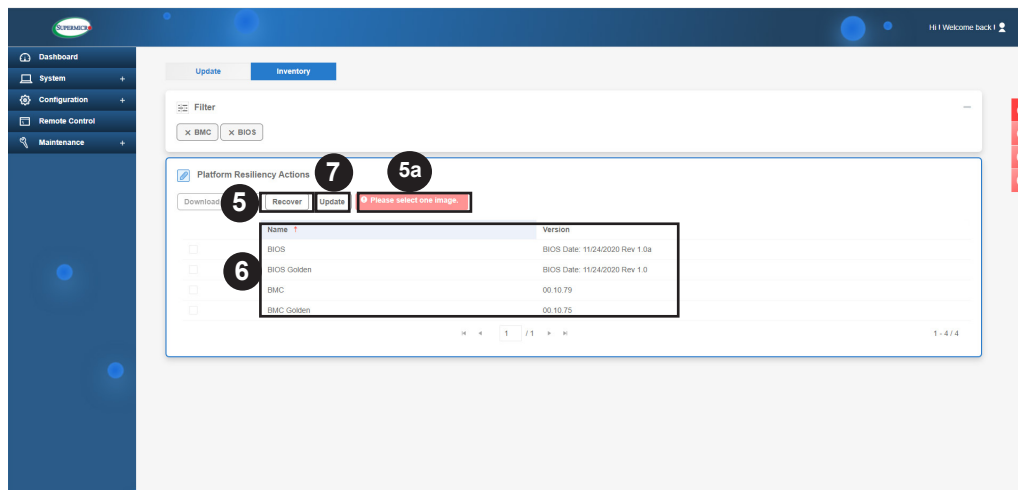
- Click on the **pencil icon** in front of "**Platform Resiliency Actions**" to display your firmware items as listed in the table below.



| Platform Resiliency Actions  |                                |
|--|--------------------------------|
| Name   | Version                        |
| BIOS   | BIOS Date: 11/24/2020 Rev 1.0a |
| BIOS Golden (*used to restore the BIOS to its original manufacturer default) | BIOS Date: 11/24/2020 Rev 1.0  |
| BMC  | 00.10.79                       |
| BMC Golden (*used to restore the BMC to its original manufacturer default)   | 00.10.75                       |

 **Note:** The information shown in the table above is for illustration only. It may differ from what is displayed on your screen, which reflects the firmware used in your system.

5. To recover your BMC firmware, click on **Recover**.
6. From the available image files, select the image file you want to use for BMC recovery as instructed in the red text box **5a** displayed below.



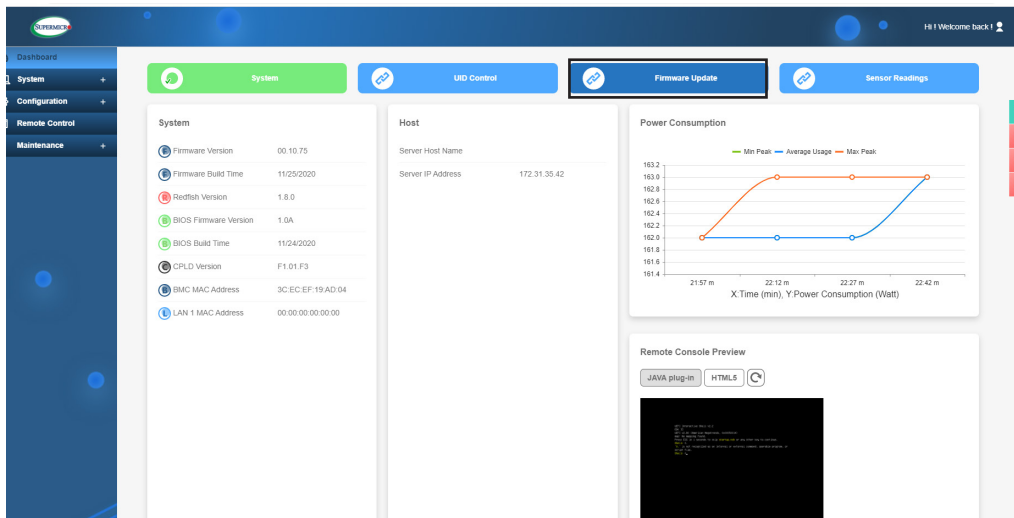
**Note 1:** Select **BMC** to use the latest BMC image file for BMC Recovery.

**Note 2:** Select **BMC Golden** to use the original manufacturer default BMC image file for BMC Recovery.

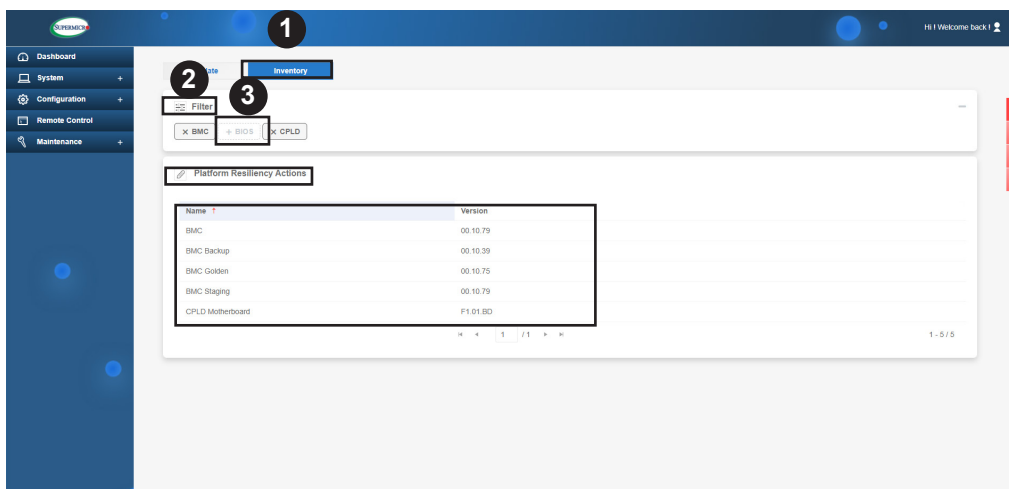
7. After recovering your BMC firmware, please click on the **System** Information section on the left side of the screen to confirm that the BMC version you wanted to recover has been properly recovered.

## 2.2 Recovering the BIOS Firmware

Follow the instructions given on Section 1.1.2 to access the BMC Login page. Click on <**Login**> and enter the BMC home page as shown on the screen below.

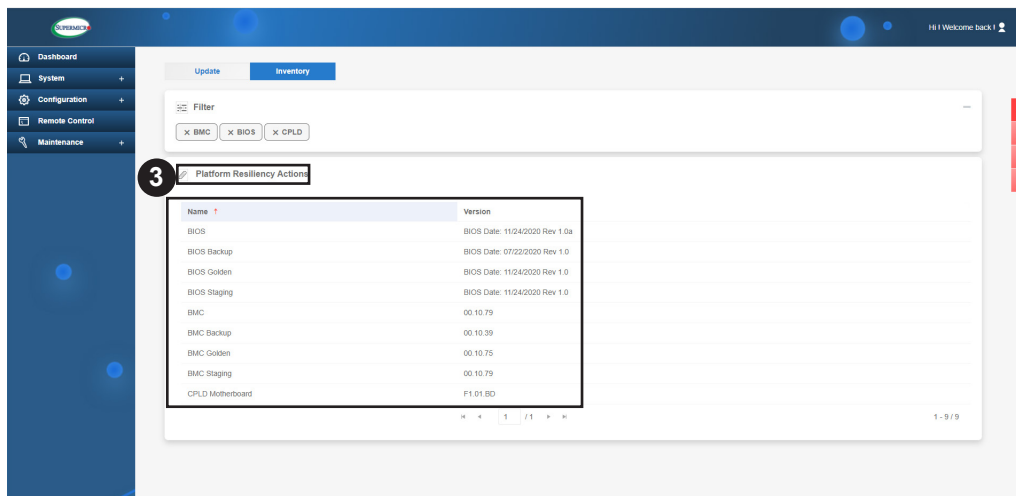


When the screen above displays, click **Firmware Update**. The following screen will display.




To manually recover your BIOS, follow the instructions below.

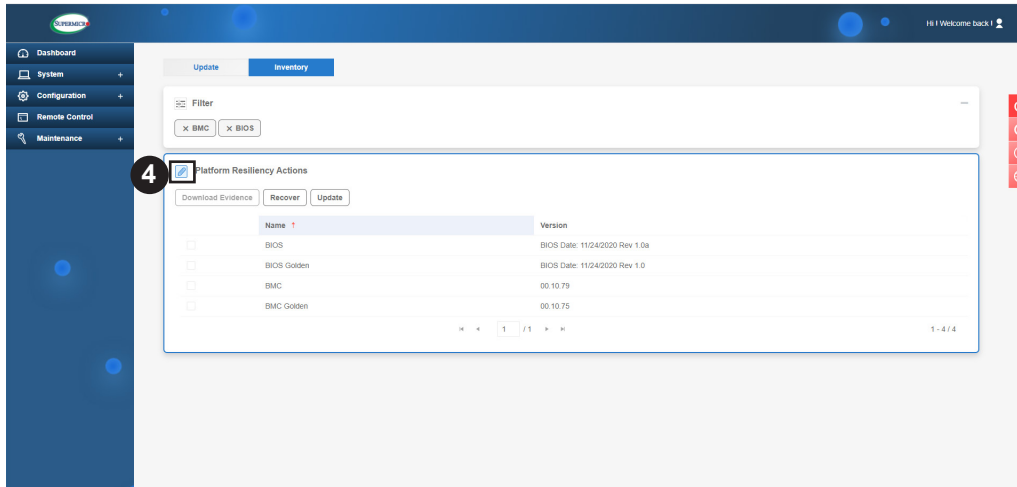
1. Click **Inventory** as shown above.
2. Click **Filter** to display the type of firmware that are available for recovery: BMC and BIOS.
3. Click **+BIOS** to display a short list of the BIOS action items. If needed, click on **XBIOS** for a complete list of BIOS action items as shown below.





| Platform Resiliency Actions  |                                |
|--|--------------------------------|
| Name   | Version                        |
| BIOS   | BIOS Date: 11/24/2020 Rev 1.0a |
| BIOS Backup  | BIOS Date: 11/24/2020 Rev 1.0  |
| BIOS Golden (*used to restore the BIOS to its original manufacturer default) | BIOS Date: 11/24/2020 Rev 1.0  |
| BIOS Staging   | BIOS Date: 11/24/2020 Rev 1.0  |
| BMC  | 00.10.79                       |
| BMC Backup   | 00.10.39                       |
| BMC Golden (*used to restore the BMC to its original manufacturer default)   | 00.10.75                       |
| BMC Staging  | 00.10.79                       |
| CPLD Motherboard   | F1.01.BD                       |

 **Note:** The information shown in the table above is for illustration only. It may differ from what is displayed on your screen, which reflects the firmware used in your system.

- Click on the **pencil icon** in front of "**Platform Resiliency Actions**" to display your firmware items as listed in the table below.

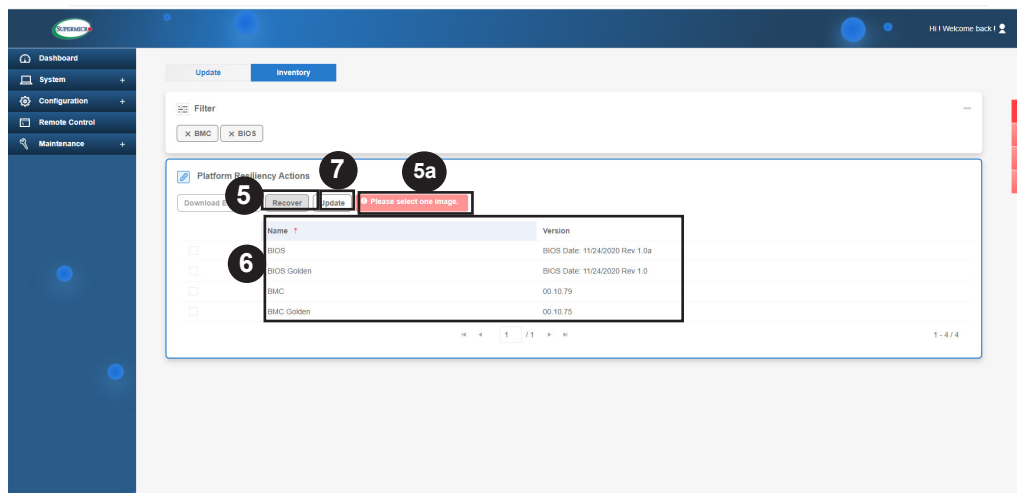


|  <b>Platform Resiliency Actions</b> |  |                                |
|--|--|--------------------------------|
| <b>Download Evidence</b>   | <b>Recover</b>   | <b>Update</b>                  |
|  | <b>Name</b>  | <b>Version</b>                 |
|  | BIOS   | BIOS Date: 11/24/2020 Rev 1.0a |
|  | BIOS Golden (*used to restore the BIOS to its original manufacturer default) | BIOS Date: 11/24/2020 Rev 1.0  |
|  | BMC  | 00.10.79                       |
|  | BMC Golden (*used to restore the BMC to its original manufacturer default)   | 00.10.75                       |

 **Note:** The information shown in the table above is for illustration only. It may differ from what is displayed on your screen, which reflects the firmware used in your system.



5. To recover your BIOS firmware, click on **Recover**.
6. From the available image files, select the image file you want to use for BIOS recovery as instructed in the red text box **5a** displayed below.



**Note 1:** Select **BIOS** to use the latest BIOS image file for BIOS Recovery.

**Note 2:** Select **BIOS Golden** to use the original manufacturer default BIOS image file for BIOS Recovery.

7. After recovering your BIOS firmware, please click on the **System** Information section on the left side of the screen to confirm that the BIOS version you wanted to recover has been properly recovered.

## Chapter 3

# Updating the Golden Image for the X12MP/ X12DP/X12SP/B12/H12/BH12 Motherboards

This chapter provides instructions on how to update the BIOS golden image and the BMC golden image for the Supermicro X12MP/X12DP/X12SP/B12/H12/BH12 motherboard using the BMC via WebGUI (Web Graphical User Interface). Section 3.1 provides an overview on how to update the golden image using the BMC. Section 3.2 provides instructions on how to update the BIOS golden image. Section 3.3 provides information on how to update the BMC golden image.

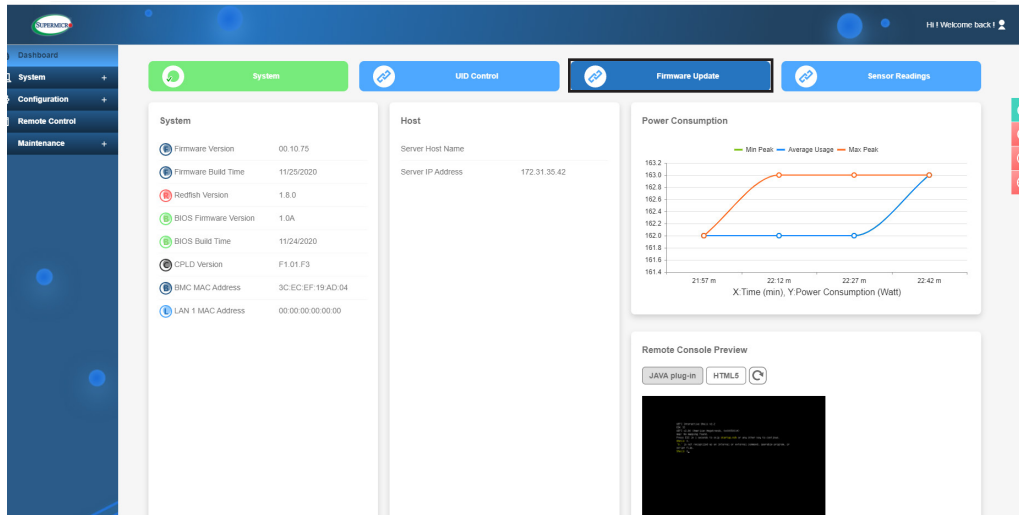
### 3.1 Updating the Firmware Golden Image

Every SMCI motherboard or server is shipped with a manufacturer golden image built in. A golden image is used for automatic recovery by ROT when the active (current) image or the backup image are corrupted. While the user is allowed to update the golden image, the administrator has the privilege to set the current active image as a golden image as well.

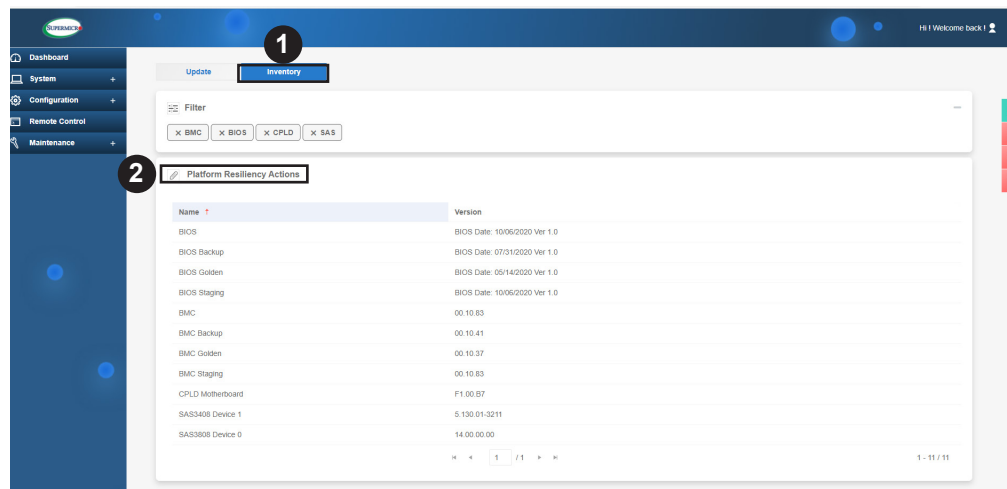
When recommended by Supermicro or if preferred by the administrator, a current image can be used as a golden image. The following sections provide instructions on how to update the golden image with a current active image for the BIOS or BMC firmware.

## 3.2 Updating the BIOS Golden Image

Follow the instructions given on Section 1.1.2 to access the BMC Login page. Click on **<Login>** and enter the BMC home page as shown on the screen below.

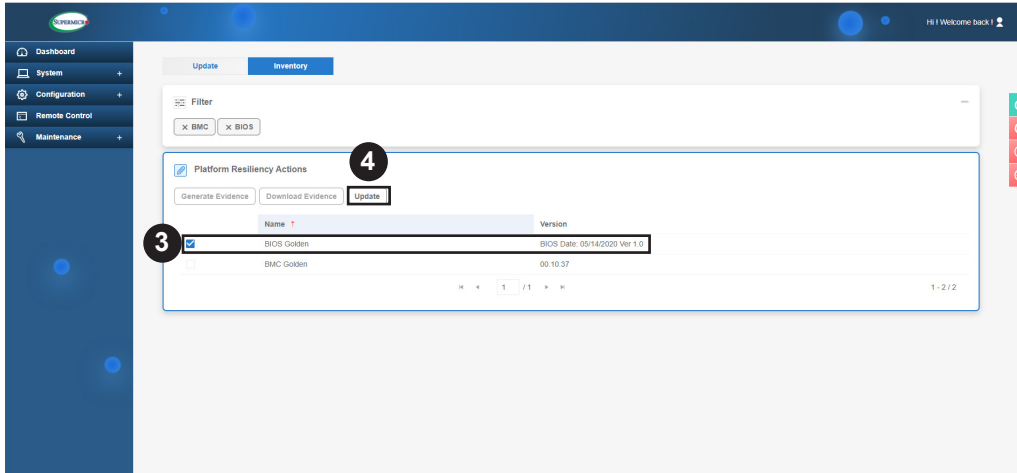


When the screen above displays, click **Inventory**. The following screen will display.




To update the BIOS golden image, follow the instructions below.

1. Click **Inventory** as shown above.
2. Click **Platform Resiliency Actions** and the following screen will display.

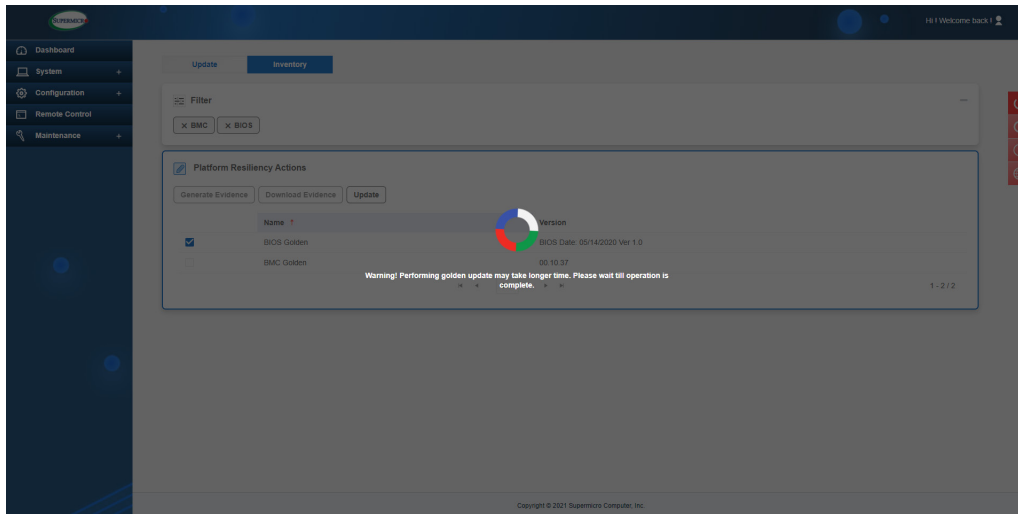


3. When the screen above displays, click **BIOS Golden** for BIOS golden image update.

4. Click **Update** to update the BIOS golden image.

 **Note:** For your BIOS golden image update to work properly, be sure to power off the system before starting BIOS golden image update.

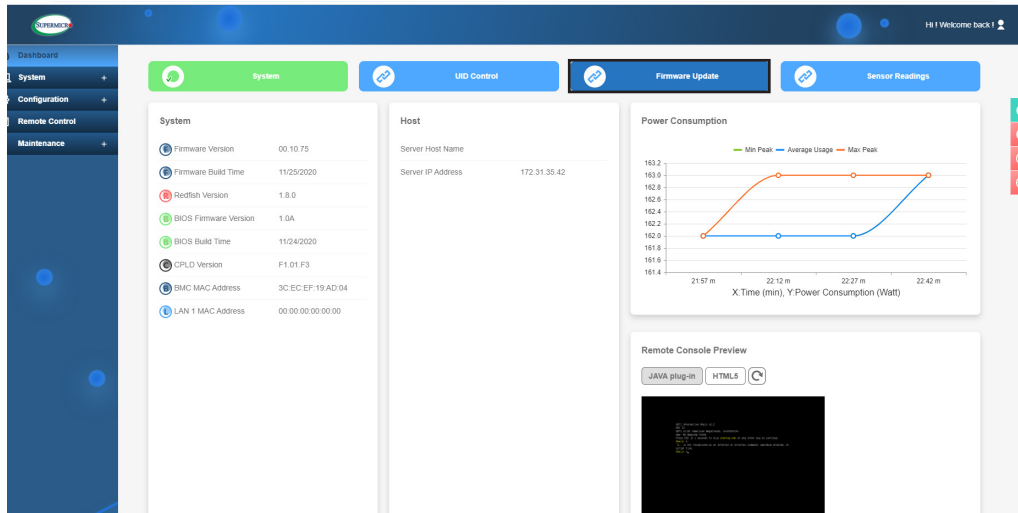
The process of updating the BIOS golden image may take a few minutes to complete.



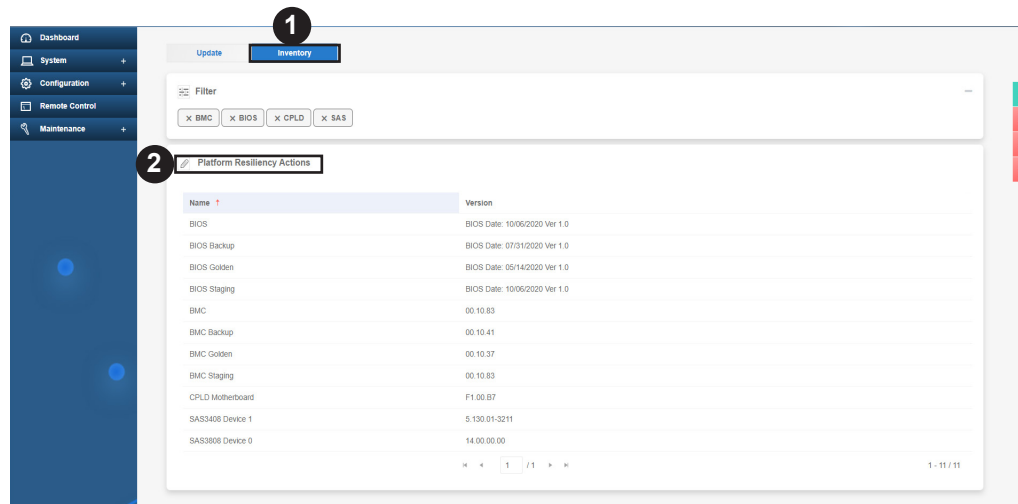
5. Once BIOS golden image update is complete, you can navigate to the Inventory page under Firmware Management to confirm the golden image version that has just being updated.

### 3.3 Updating the BMC Golden Image

Follow the instructions given on Section 1.1.2 to access the BMC Login page. Click on **<Login>** and enter the BMC home page as shown on the screen below.

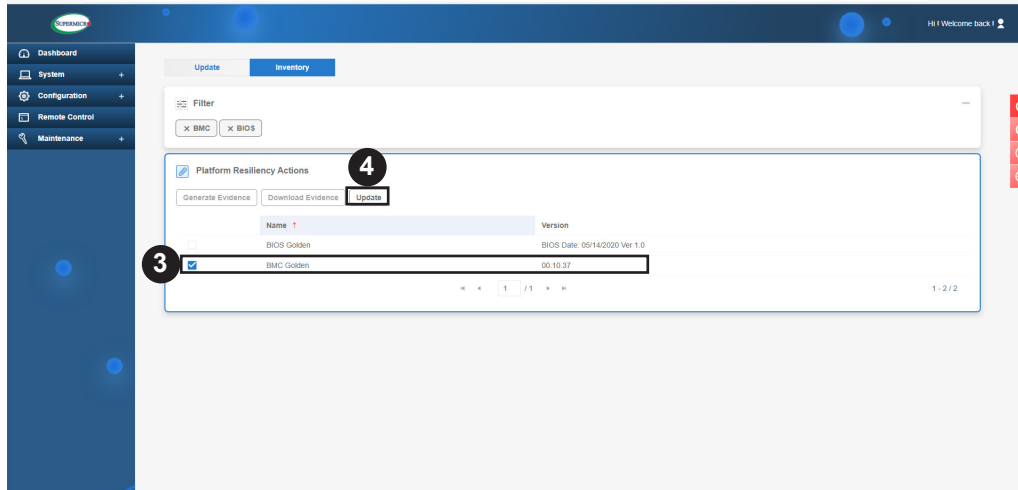


When the screen above displays, click **Inventory**. The following screen will display.

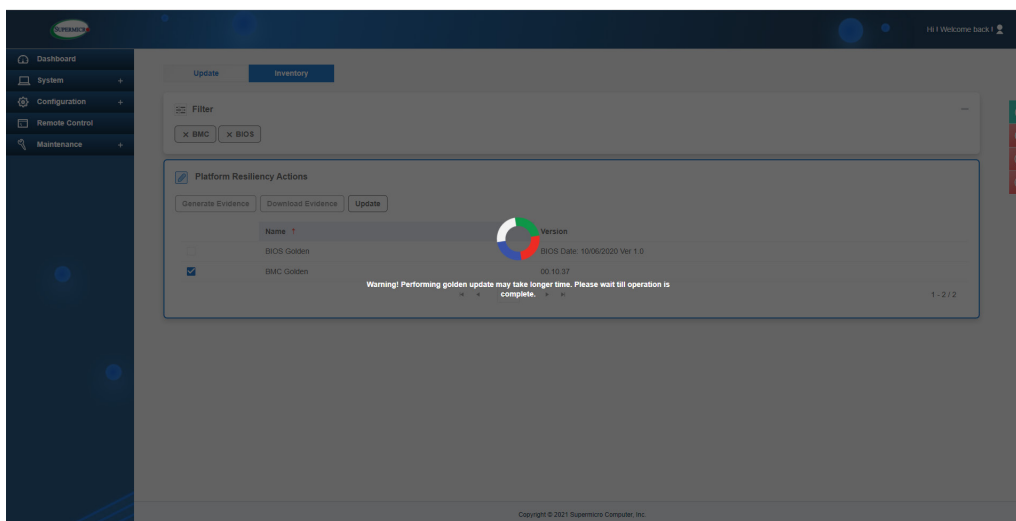


To update the BMC golden image, follow the instructions below.

1. Click **Inventory** as shown above.
2. Click **Platform Resiliency Actions** and the following screen will display.



3. When the screen above displays, click **BMC Golden** to update the BMC golden image.
4. Click **Update** to update the golden image as shown in the screen below. This process will take a few minutes to complete.



5. Once BMC golden image update is complete, you can navigate to the Inventory page under Firmware Management to confirm the golden image version that has just being updated.