CMC Blade BIOS Profile Cloning

This white paper describes the detailed capabilities of the Chassis Management Controller’s Blade BIOS Profile Cloning feature.

Author
Corey Farrar
CMC Blade BIOS Profile Cloning

Contents

Executive summary ..................................................................................................... 4
Introduction ............................................................................................................. 4
Setup and Minimum System Requirements .............................................................. 4
Navigating the GUI .................................................................................................. 5
Adding a Profile ..................................................................................................... 6
Managing BIOS Profiles ......................................................................................... 7
Applying BIOS Profiles ......................................................................................... 7
Profile logs and Lifecycle job .................................................................................. 8
Conclusion or Summary .......................................................................................... 9

Figures

Figure 1. Main BIOS Profiles Page ........................................................................... 5
Figure 2. Add BIOS Profile Page ............................................................................. 6
Figure 3. Manage BIOS Profile Page ....................................................................... 7
Figure 4. Apply BIOS Profile .................................................................................. 8
Figure 5. Recent Profile Log ................................................................................... 8
Figure 6. Lifecycle Controller Jobs Page ................................................................. 9
Executive summary
This paper provides information for administrators on the new Chassis Management Controller Blade BIOS cloning feature. This capability provides a faster and easier way to deploy or change BIOS settings while keeping the settings consistent across multiple blades.

Introduction
The CMC Blade BIOS profile cloning feature allows the user to apply all cloneable BIOS settings from a specified blade to one or more blades. Cloneable BIOS settings are those BIOS settings that can be modified and are intended to be replicated across servers. The Blade BIOS cloning feature is performed only from the CMC GUI interface.

This document covers:

- Setup and Minimum System requirements
- Adding a profile
- Managing profiles
- Applying profiles
- Lifecycle job and logs

The CMC uses WSMAN commands to communicate with the Lifecycle Controller on each blade in order to retrieve or push the BIOS settings. The user selects one blade, with its BIOS settings already configured, to create a profile that is stored on the CMC’s Extended Storage card. This profile can then be pushed to other blades to change their BIOS settings.

Setup and Minimum System Requirements

- CMC
  - CMC FW 4.0
  - Extended Storage media installed and configured
  - Chassis Configuration Administrator Privilege to Add, Modify, Delete, or Apply Profiles
  - Server Administrator Privilege to view BIOS settings from a blade or saved profile

- 11G Blades
  - iDRAC6 FW 3.2
  - Lifecycle Controller 1.5
  - Collect System Inventory On Reboot enabled

- 12G Blades
  - iDRAC 7 FW 1.0.0
  - Lifecycle Controller 2 1.0.0
  - Collect System Inventory On Reboot enabled
Navigating the GUI

To access the BIOS profile page navigate to Server Overview -> Setup -> Profiles. This page is the central GUI page that allows you to view current BIOS settings, apply and manage profiles, and view profile logs. If a blade does not support Lifecycle Controller then that blade is shown but grayed out.

Figure 1. Main BIOS Profiles Page
Adding a Profile

A prerequisite step before creating the BIOS profile is configuring the BIOS on a blade that you want to replicate to the other blades. To accomplish this step, reboot the source blade, enter the BIOS setup (F2 during POST), and configure the BIOS settings to your desired settings. Save the settings and allow the blade to reboot so that a new system inventory can be taken by the Lifecycle Controller.

From the main BIOS Profile page, click on the link labeled Add Profile under the Options of the Apply Profile section, which takes you to the screen shot shown in Figure 2. From here you can create the BIOS Profile(s).

The Profile Name field is a short, unique, meaningful name for the profile. You can edit the name (maximum of 32 characters) any time in the future. The Description field is an optional field with a maximum character limit of 132. You can also edit this field any time in the future. Clicking on the View link will show the current values set on the corresponding blade. Selecting the radio button from the source blade and clicking Save will save the current BIOS settings to the CMC extended storage media. You can save up to 16 BIOS profiles.

Figure 2. Add BIOS Profile Page
Managing BIOS Profiles

From the main BIOS Profile page, click on the link labeled Manage Profile under the Options of the Apply Profile section, which takes you to the screen shot shown in Figure 3. From here you can manage the BIOS Profile(s). You can edit the name or description of the profile and you can view what the saved BIOS settings are for the profile and you can delete the profile.

![Figure 3. Manage BIOS Profile Page](image)

Applying BIOS Profiles

From the main BIOS Profile page, you can apply BIOS profiles to the target blade(s) as shown in figure 4. To apply a profile, first select the desired profile in the Profile drop-down box. Next, check the box next to the blades that you want to apply the profile and then click on the Apply button. If the server is powered off, when a profile is applied, it automatically powers up; otherwise, if it is already powered up, it reboots automatically to start the Lifcycle Controller Job. The blade boots into the Lifecycle Controller and execute the Config BIOS job. Once the job is complete, the blade reboots with the newly set BIOS configurations. You need the blade to complete the Lifecycle Controller inventory collection during reboot in order for the new BIOS settings to be visible by external applications.

When a profile is created from the source blade, all readable BIOS settings are collected and stored in the profile. When you apply the profile, not all of these settings are writeable to the target blade because of support for all of the various models and generations of blades and various versions of BIOS and Lifecycle Controller. The Profile log (figure 5) demonstrates how many settings were writeable out of the number of settings in the profile.
Profile logs and Lifecycle job

On the Main BIOS Profile page you can view the profile log section. This section describes when profiles are created, edited, deleted, applied to blades, and any errors that occur during the apply process. The Recent Profile Log displays the last 10 entries as shown in Figure 5. You can expand the listing to view the previous 100 entries. Clearing the CMC log also clears the Profile Log.
The Lifecycle Controller Job Page shows the status of the Reboot and BIOS Config jobs for each target blade (Figure 6). The Reboot job is for the first reboot to enter Lifecycle Controller to begin the BIOS configuration. The `Config.BIOS.BIOS.Setup.1-1` is the FQDD (Fully Qualified Device Descriptor) name for the job that configures the BIOS. A manual refresh is required to get the latest status because this page does not refresh automatically.

**Figure 6. Lifecycle Controller Jobs Page**

---

**Conclusion or Summary**

This document provides information on (A) the minimum requirements on both the CMC and blade and (B) how to Add, Delete, Modify, and Apply Profiles to multiple blades at once. Completing these processes in one central location enables you to be more productive and efficient.