



HP Desktop DMIFIT Step-by-Step Guide

DMIFIT Version 2.12 and later

Updated June 2017

For HP desktops, the DMI information is programmed using the HP Setup utility.

The method for updating the DMI fields depends on the BIOS version number. As the service engineer, you first need to determine which BIOS version the desktop PC is using before attempting to update the DMI information.

After you have determined the BIOS version, you should implement the correct steps to program the DMI information, Enable Vpro (if required) and Lock the system board. The following sections list the steps for the Common Core BIOS, BIOS versions 6, and 7 and later.

Note: For BIOS versions 5 and earlier, you need to update the DMI information using the legacy DMI flash utilities.

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HP Common Core BIOS Programming Steps

System Board States

For most desktop system boards, the replacement system board should be received in “Panic Mode”, meaning that Intel ME has been committed and that the MPM Lock command has been issued. However, due to multiple suppliers or accidental resetting, you may encounter a system board that may no longer be in “Panic Mode”. [Even with the replacement system board no longer in “Panic Mode”, you can still use the replacement system board to complete the repair.](#) Below is a table that outlines each of the three possible states of a replacement system board. As the Service Engineer, you will want to understand each state and the steps that will need to be taken to complete the replacement.

State:	Description:
<i>Panic Mode</i>	This is how most replacement desktop system boards should be received. Intel ME has been Committed and the lock command has been issued. When the board is booted, the system will indicate that DMI information is missing. Once the DMI information is entered, the system board will lock automatically.
<i>MPM Unlock and Intel ME Uncommitted</i>	This is a new configuration for ProDesk 600 replacement system boards where vPro is configurable (as of March 2017). In this state, MPM is Unlocked and vPro has not been committed. As outlined in this guide, you will need to program DMI using the BIOS Utility and then use the UEFI Utilities on the DOS USB Key to Commit vPro and Lock the system board.
<i>MPM Unlocked and Intel ME Committed</i>	This usually the state of a system board when the board has been knocked out of “Panic Mode” for some reason. The MPM is unlocked but vPro is in a Committed State. You will need to go into the BIOS to enter DMI information and then manually lock the system board using the lock tool on the DOS USB Key.

Unlocking the MPM

If MPM is locked, you will need to escalate to 2LS and provide the SN and UUID to get an SMC Blob, which will unlock the system board.

Note: The process for obtaining the SMC blob and unlocking MPM is the same for commercial desktops, workstations, and notebooks.

Update Intel ME Utility

As a result of an identified security issue related to Intel ME Firmware, HP has developed a small utility that will inspect and update the Intel ME Firmware if required. [This utility is located on the DOS USB Key of the DMIFIT keys.](#)

Important Note: Field technicians should run the Intel ME Update Utility on all new system boards for HP commercial desktops!

Important Note: Utility should be used after DMI process is completed!

UEFI / DOS Utility – Which Tool to Use:

Due to the age of the systems impacted, HP has developed a UEFI and DOS based utility. The utility used is based upon the age and capabilities of the system you're working on. In general, systems from 2010 – 2014 will use the DOS based utility. Systems from 2014 – 2017 will use the UEFI Based utility.



Booting to the Wrong Environment

If you boot to the wrong environment, the utility will warn you that you must reboot to the other environment to update the Intel ME Firmware.

```
DOSKey Installed
Please correct the date
Current date is Thu 06-15-2017
Enter new date (mm-dd-yy):

*****
*** Boot to "External UEFI USB Drive" to UPDATE ME Firmware ***
*****
*****
*** Boot to "External UEFI USB Drive" to commit AMT and AT ***
*****

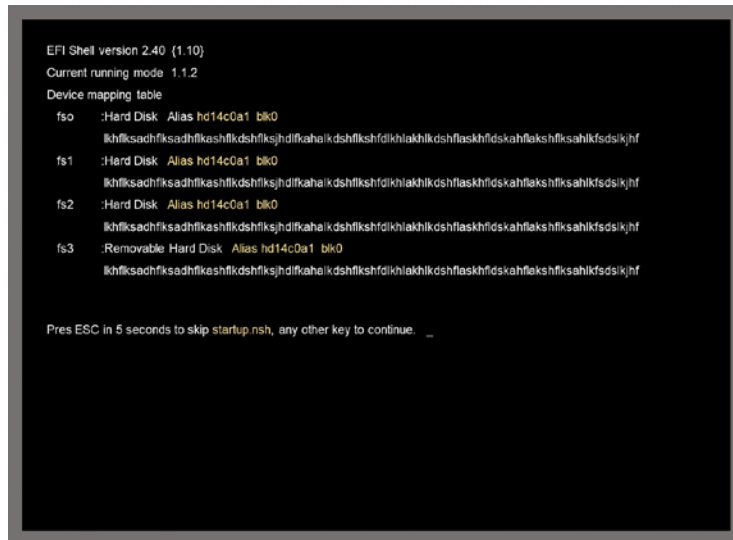
Please boot to windows and use wndmifit.exe to program DMI information
If the MPM mode is locked, escalate to 2LS to get SMC blob to unlock MPM
C:\>_
```

Important:

Tool provides a warning that you must boot to the other environment.

Desktop Systems (UEFI)

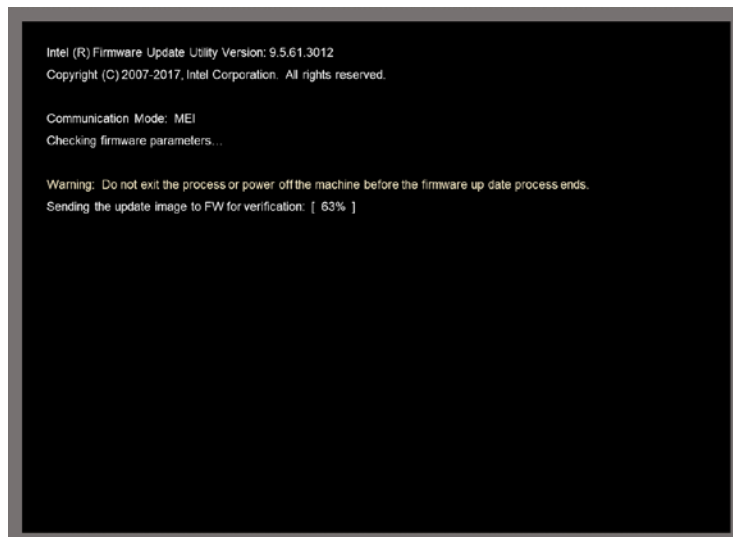
1. After completing the DMI process, insert the DOS USB Key. Boot the system.
2. Press F9 for Boot Options Menu.
3. Select External USB Hard Drive (UEFI).
4. The screen will flash and the following will be displayed:



```
EFI Shell version 2.40 (1.10)
Current running mode 1.1.2
Device mapping table
fs0 :Hard Disk Alias hd14c0a1 blk0
      lkhfksadhfkasdhfkashfkdsfhfksjhdifkahaikdshfkshfdikhiakhikdshflaskhfdskahflakshfhksahikfedsikjhf
fs1 :Hard Disk Alias hd14c0a1 blk0
      lkhfksadhfkasdhfkashfkdsfhfksjhdifkahaikdshfkshfdikhiakhikdshflaskhfdskahflakshfhksahikfedsikjhf
fs2 :Hard Disk Alias hd14c0a1 blk0
      lkhfksadhfkasdhfkashfkdsfhfksjhdifkahaikdshfkshfdikhiakhikdshflaskhfdskahflakshfhksahikfedsikjhf
fs3 :Removable Hard Disk Alias hd14c0a1 blk0
      lkhfksadhfkasdhfkashfkdsfhfksjhdifkahaikdshfkshfdikhiakhikdshflaskhfdskahflakshfhksahikfedsikjhf

Pres ESC in 5 seconds to skip startup.nsh, any other key to continue. _
```

5. Press any key to continue
6. The Intel ME Update Utility will begin to inspect the firmware on the system. Do not exit the process or power off the machine.



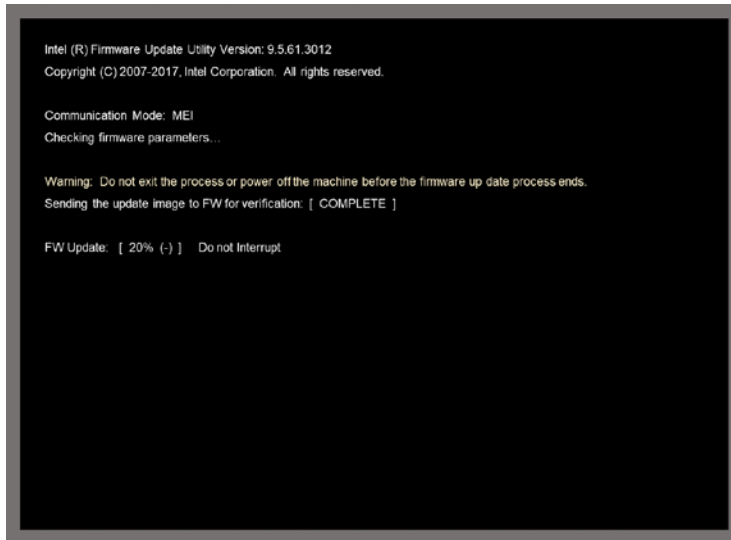
```
Intel (R) Firmware Update Utility Version: 9.5.61.3012
Copyright (C) 2007-2017, Intel Corporation. All rights reserved.

Communication Mode: MEI
Checking firmware parameters...

Warning: Do not exit the process or power off the machine before the firmware up date process ends.
Sending the update image to FW for verification: [ 63% ]
```

7. Once complete, the utility will automatically begin to update the Intel ME Firmware. Do not exit the process or power off the machine.

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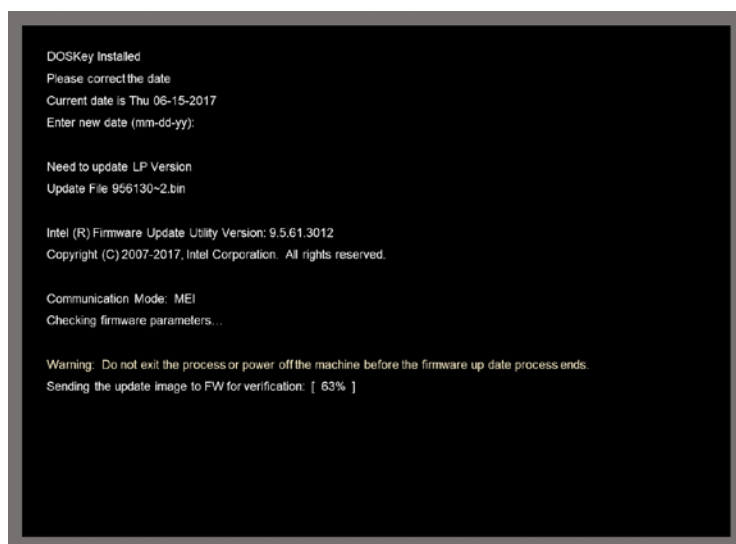


8. Once the utility has updated the Intel ME Firmware, you will manually need to reboot the system to complete the process.

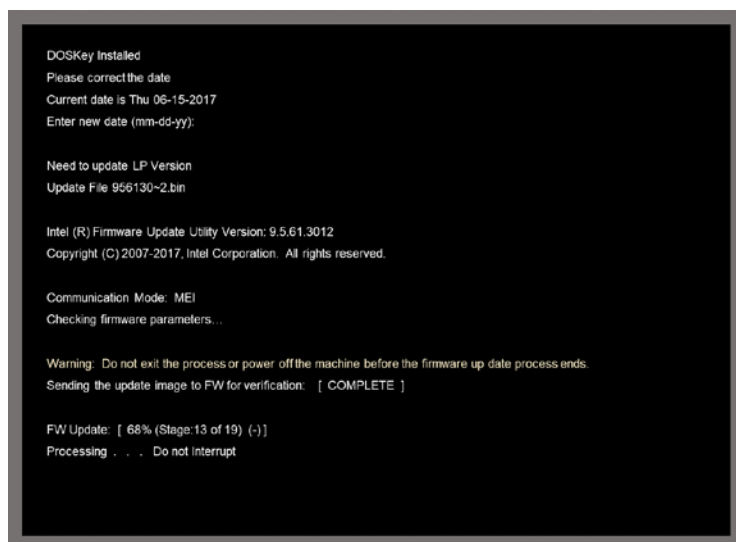
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Desktop Systems (DOS)

1. After completing the DMI process, insert the DOS USB Key. Boot the system.
2. Press F9 for Boot Options Menu.
3. Select External USB Hard Drive (DOS / Legacy).
4. The Intel ME Update Utility will begin to inspect the firmware on the system. Do not exit the process or power off the machine.



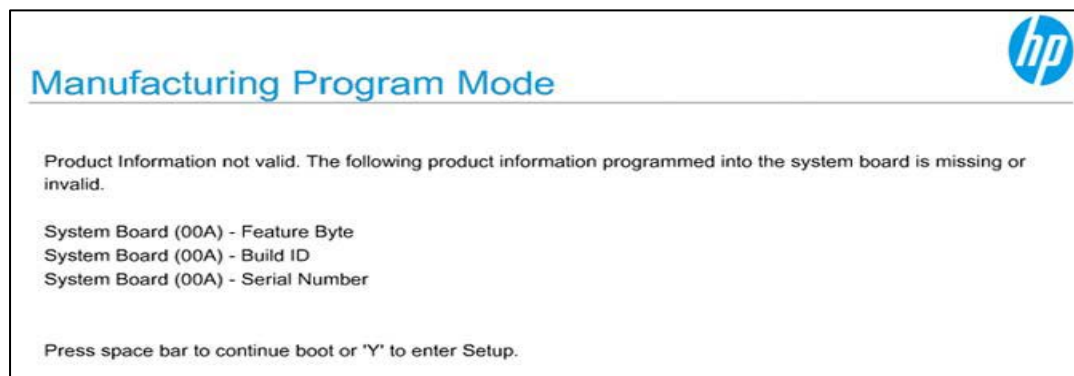
5. Once complete, the utility will automatically begin to update the Intel ME Firmware. Do not exit the process or power off the machine.



6. Once the utility has updated the Intel ME Firmware, you will manually need to reboot the system to complete the process.

Panic mode

This is how most replacement desktop system boards should be received. vPro has been Committed and the lock command has been issued. When the board is booted, the system will indicate that DMI information is missing. Once the DMI information is entered, the system board will lock automatically. When booting, the system should display an image similar to the one below indicating that the DMI information needs to be updated:



To complete the DMI Programming process, please follow the following steps:

1. Select “y” to enter set-up and input the required or missing information.
2. Once each field has been entered, select F10 to exit and save changes.
3. The system will reboot a couple of times and automatically lock MPM.
 - (confirm the information if asked during reboot)

MPM Unlocked / vPro Uncommitted

As noted, beginning in March of 2017, replacement system boards for the HP ProDesk 600 desktop platforms using the HP Common Core BIOS are shipped to the field with MPM Unlocked and vPro Uncommitted. They will no longer be sent in “Panic Mode”. This is because the HP ProDesk 600 can now be purchased with or without vPro on the system.

You may also receive a replacement system board that, by error, has been shipped with MPM Unlocked and vPro Uncommitted, even if it is for a different series. Even in this state, you can still use the DMIFIT Utility to Commit vPro and Lock the system board to complete the repair.

Determining Intel ME (vPro) (HP ProDesk 600)

As the HP field engineer, you will now need to determine if the system was purchased with or without Intel ME (vPro). This can be done by:

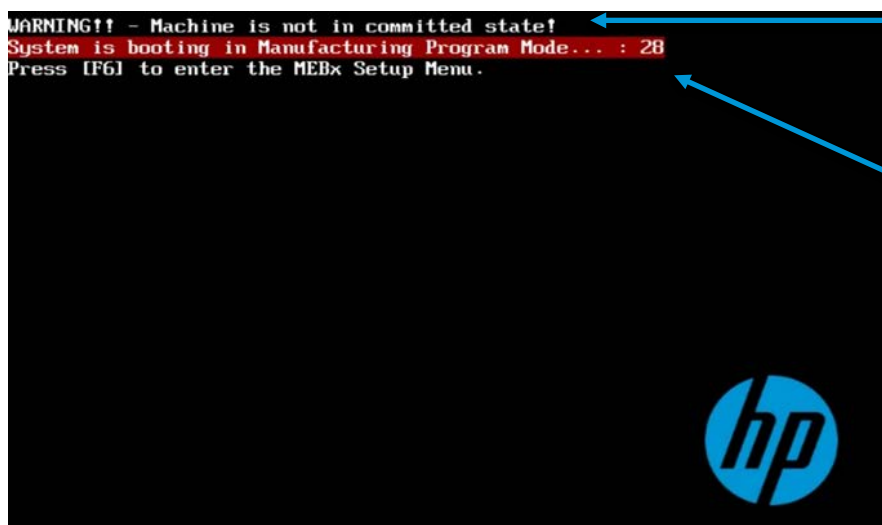
Asking the customer: Most large commercial / enterprise accounts will know if they purchased systems with or without vPro. Especially if they are using some of the manageability features that vPro provides.

Identify vPro Status from Current System Board: If you are able to boot the current system (or an identical system from the customer) and access the BIOS, you can determine if the board has vPro before you replace it.

Look up the Unit in Serial Number Repository: If you have internet access, you can look up the system in the Serial Number Repository to see if the customer purchased a specific SKU with vPro or without.

MPM Unlocked / vPro Uncommitted

You will be able to tell if MPM is Unlocked and if vPro is Uncommitted by reviewing the messages that appear during the boot process. If MPM is unlocked and vPro has not been Committed, the system will display an image similar to the one below while booting:



Important: This means that vPro has not been Committed

Important: This means you that MPM is unlocked and the board is in Manufacturing Program Mode

Process Overview

To complete the replacement of the system board, you will need to complete the following steps:

1. Program DMI Information
2. Commit vPro
3. Lock the system board

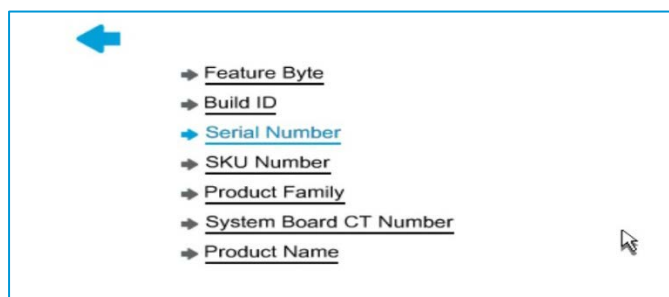
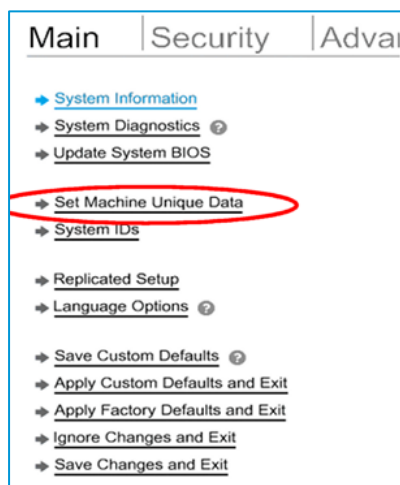
Step-by-Step Guide

To complete the process, you must:

1. Set the System Clock in Windows, at the UEFI Prompt or using a bootable EFI shell. See steps at the end of this section.

Note: Important! The system clock must be set correctly to generate a valid UUID.

2. Start the HP Setup Utility, and then select **Main** → **Set Machine Unique Data**.

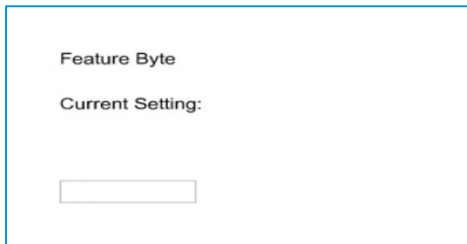


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3. Select each of the DMI fields and enter the appropriate information.

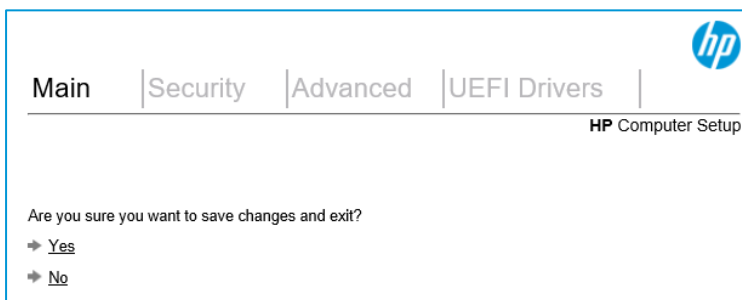
Note: If the Feature Byte field is already populated, overwrite it with the information found on the label.

4. Program each field:



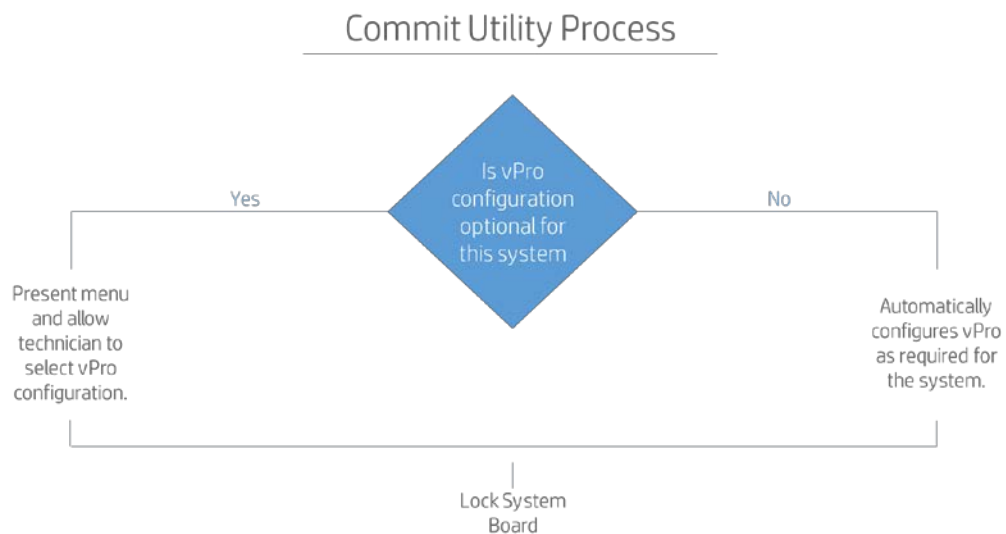
The screenshot shows a BIOS screen with the title "Feature Byte". Below the title, it says "Current Setting:". There is a single-line text input field below the label.

5. When finished, select **Main** → **Save Changes and Exit**.



The screenshot shows the "HP Computer Setup" main menu. At the top, there are tabs for "Main", "Security", "Advanced", and "UEFI Drivers". The "Main" tab is selected. Below the tabs, there is a question: "Are you sure you want to save changes and exit?". There are two options: "Yes" and "No", each preceded by a right-pointing arrow.

6. Once all the DMI fields have been populated, you will be prompted to confirm the data. Click **Confirm** to complete the programming.
7. Insert the DOS USB Key
8. Press the **Enter** key to exit the BIOS and restart the computer.
9. With the DOS USB Key inserted, the system should boot to UEFI and initiate the Commit vPro Utility. Here, the utility will review the system information and either:
 - a) Automatically configure vPro on those systems where vPro configuration is not an option (meaning all products in that series either comes with vPro Committed or all products in that series do not support vPro).
 - b) Determine that the system under repair offers vPro configuration as an option and present a menu for you to select if vPro should be Committed or not (new HP ProDesk 600 as of March 2017).



10. If vPro configuration is not an option for the specific system (meaning all products in that series either comes with vPro Committed or all products in that series does not support vPro), the utility will automatically configure vPro based upon the predetermined system requirements and reboot the system. This process will take place quickly and requires no input from the technician.
11. If vPro configuration is an option, the utility will present the technician with a menu similar to the one shown below:

```
ME Firmware Type      : Corporate/Full ME.
Discrete UGA Only     : NO.

ME Status = 0
Menu to commit the system as
D1- vPro.
D3- Std.

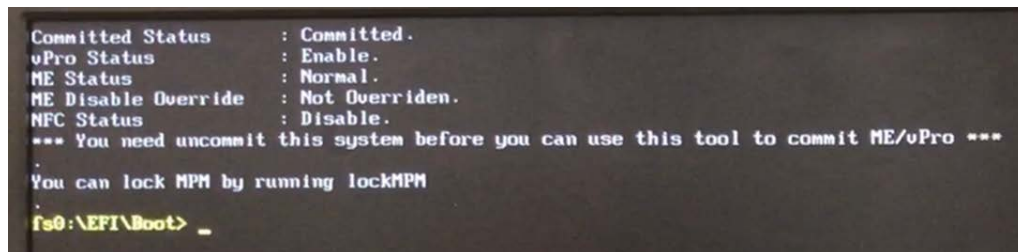
*** All the files must be in folder EFI\BOOT ***
Enter choice and press Enter
fs0:\EFI\Boot> _
```

The screenshot shows a command-line interface for the Commit Utility. It displays system information: "ME Firmware Type : Corporate/Full ME." and "Discrete UGA Only : NO.". Below this, it shows "ME Status = 0" and a menu to commit the system with options "D1- vPro." and "D3- Std.". A warning message states: "*** All the files must be in folder EFI\BOOT ***". It prompts the user to "Enter choice and press Enter". The prompt "fs0:\EFI\Boot>" is shown with an underscore character entered.

Here, the technician enters "D1" to Commit vPro or "D3" to set the system to "Standard Configuration" (meaning the system does not support vPro).

- a) If you select "D1", the system will reboot twice and then ask you to lock the system board as shown below.
- b) If you select "D3", the system will reboot once and then ask you to lock the system board as shown below.

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```
Committed Status      : Committed.  
vPro Status           : Enable.  
ME Status             : Normal.  
ME Disable Override   : Not Overriden.  
NFC Status            : Disable.  
*** You need uncommit this system before you can use this tool to commit ME/vPro ***  
.  
You can lock MPM by running lockMPM  
.  
fs0:\EFI\Boot> _
```

12. Type “lockmpm” to lock the system board.
13. Remove USB Key after system completes the locking process and reboot.

Caution! Customers should receive locked systems only.

MPM Unlocked / vPro Committed

Although unlikely, there is a scenario where a board that was shipped in “Panic Mode” has been received and was accidentally knocked out of “Panic Mode” during installation. This system board will appear to be in the new configuration (MPM Unlocked and vPro Uncommitted).

However, if a system board has been knocked out of “Panic Mode”, it will have vPro already Committed and you will not be able to Commit vPro during the process. You can tell if vPro has already been committed by inspecting the warning messages that are displayed during boot. If MPM is unlocked but vPro has been committed, the system will display an image similar to the one below while booting:



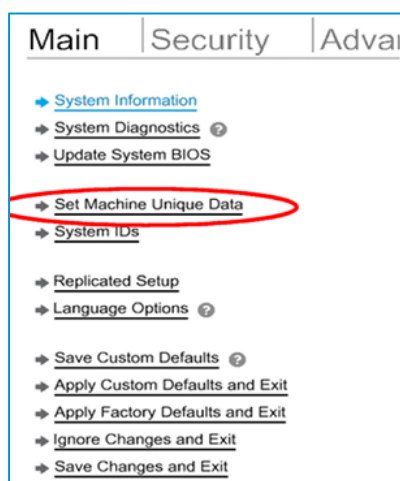
Important: There is no message that states “Machine is not in Committed State”. This means the board has been committed and you cannot Commit the board.

To complete the DMI Programming process in this case, you must:

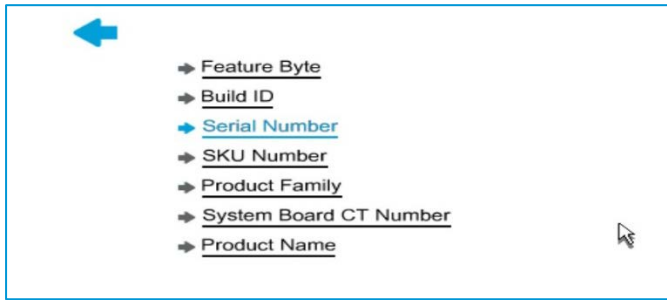
1. Set the System Clock in Windows, at the UEFI Prompt or using a bootable EFI shell. See steps at the end of this section.

Note: Important! The system clock must be set correctly to generate a valid UUID.

2. Start the HP Setup Utility, and then select **Main** → **Set Machine Unique Data**.



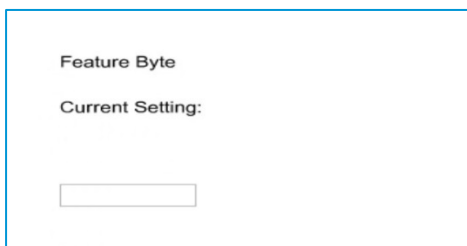
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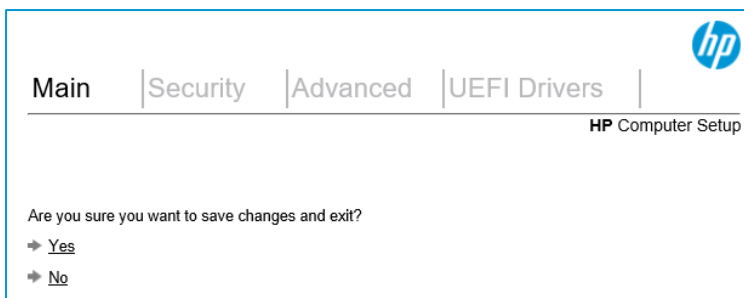
3. Select each of the DMI fields and enter the appropriate information.

Note: If the Feature Byte field is already populated, overwrite it with the information found on the label.

4. Program each field:



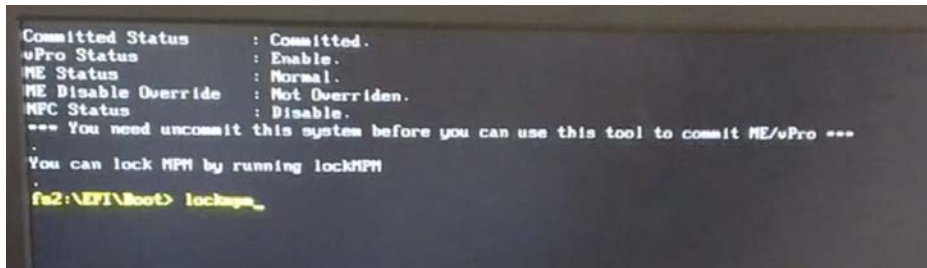
5. When finished, select **Main** → **Save Changes and Exit**.



6. Once all the DMI fields have been populated, you will be prompted to confirm the data. Click **Confirm** to complete the programming.
7. Insert the DOS USB Key
8. Press the **Enter** key to exit the BIOS and restart the computer.

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9. System should display a short status display as shown below:



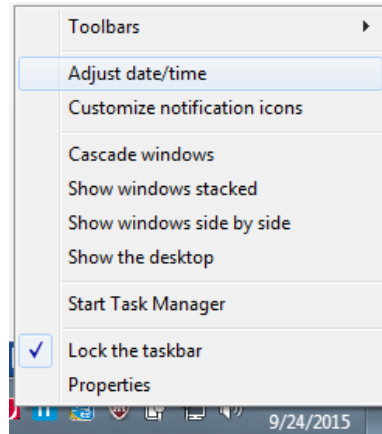
```
Committed Status      : Committed.  
vPro Status           : Enable.  
ME Status             : Normal.  
ME Disable Override   : Not Overriden.  
MPC Status            : Disable.  
*** You need uncommit this system before you can use this tool to commit ME/vPro ***  
You can lock MPN by running lockMPN  
fs2:\EFI\Boot> lockmpn
```

10. Type “lockmpm” to lock the system board.
11. Remove USB Key after system completes the locking process and reboot.

Caution! Customers should receive locked systems only.

Setting Date and Time

1. Set the System Clock in Windows, at the UEFI prompt or using a bootable EFI shell.
2. To set the system clock in Windows, right-click the clock on the bottom right corner of the screen and select Adjust Date and Time.



3. To set the system clock using an EFI-bootable shell:
 - To make a bootable EFI Shell Key:
 - On a FAT32-formatted DOK, create a directory called **EFI\boot**
 - Copy **shellfull.efi** to it. (See <http://tianocore.sourceforge.net/wiki/Efi-shell>)
 - Rename **shellfull.efi** to **bootx64.efi**.
 - Boot to EFI and select the shell. Use the date and time commands to set the system clock. There is help at the command line for exact syntax.

Version 7 Programming Process

This is the process for BIOS version 7:

Version 7 and later

1. Start the computer.
2. Press and hold the **F10** key to access the BIOS.
3. In the BIOS, press **Ctrl + A** to enter 'configuration mode'. If you do **not** press **Ctrl + A**, you will only be able to view the DMI fields, and you will **not** be able to edit them.
4. Select **Security** → **System IDs**.



5. Select each of the DMI fields and enter the appropriate information.



6. Press the **F10** key to accept the changes.
7. Select **File** → **Save Changes and Exit**.

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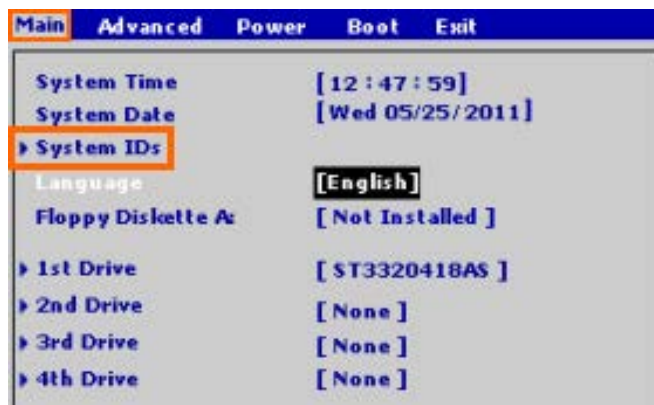


8. Press the **Enter** key to exit the BIOS and restart the computer.

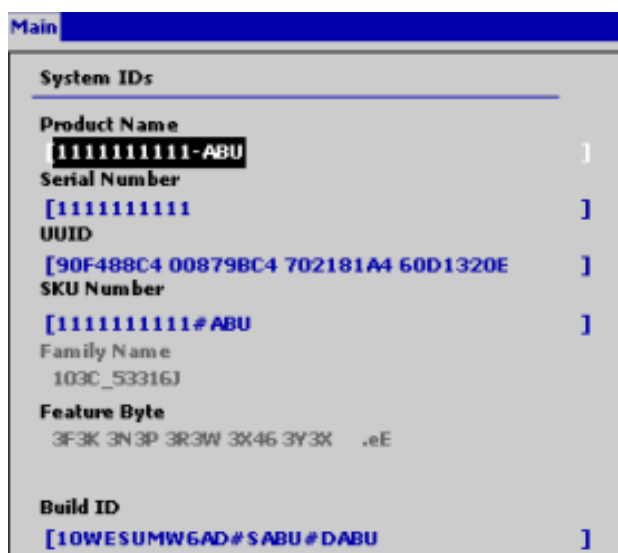
Version 6 Programming Process

This is the process for BIOS version 6:

1. Start the computer.
2. Press and hold **Ctrl + F10** to access the BIOS in 'configuration mode'. If you do **not** hold the **Ctrl** key, you will only be able to view the DMI fields, and you will **not** be able to edit them.
3. On the Main screen, click **System IDs**.

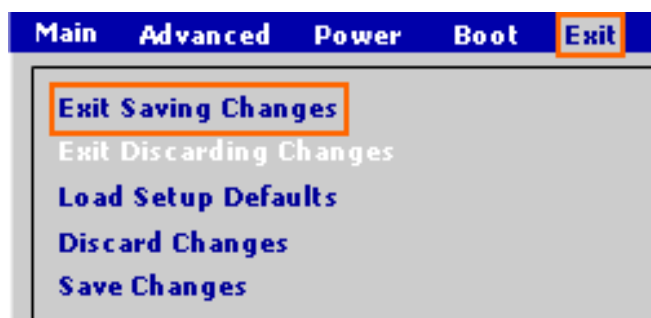


4. Select each of the DMI fields and enter the appropriate information.



5. Press the **F10** key to accept the changes.

6. Select **Exit** → **Exit Saving Changes**.



7. Press the **Enter** key to exit the BIOS and restart the computer.