

Imaging your Classmate (Veteran/Rookie Image Download)

This document describes the procedure for creating a bootable USB drive to restore the 2014 FRC image on a Classmate computer. Note that Veteran teams are not required to re-image their Classmates. If you do not wish to re-image your Classmate you will need either a USB optical drive or to copy the contents of the NI FRC Update, and optionally the LabVIEW DVD (if programming in LabVIEW) or WindRiver DVD (if programming in C++) then you can start with the appropriate document for [C++](#), [Java](#), [LabVIEW](#), or [DS only](#).

UPDATE 1/3/14: We discovered an error with the E09 Classmate Image E09_DRV_2014_161213. While we fix the image, [here's a document](#) on how you can correct the issue. E09_DRV_2014_030114 no longer has this issue.

Prerequisites



Figure 1: E09 Classmate



Figure 2: E11 Classmate



Figure 3: E12 Classmate

1. E09, E11, E12, or E14 Classmate computer
2. 8GB or larger USB drive
3. 7-Zip software installed. [Download here \(www.7zip.org\)](http://www.7zip.org) As of the writing of this document, the current released version is 9.20 (2010-11-18)

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4. RMprepUSB software installed. [Download here](#). Scroll down the page and select the full version's download link. As of 13-May-2014, the current released version is Install_RMPrepUSB_Full_v2.1.718.zip

Download the Classmate Image

Image Filename	Classmate Model	DS Capable	LabVIEW 2013	C++ (Windriver)	Java (Netbeans)
E09_DRV_2014_030114.7z	E09	YES	NO	NO	NO
E11_DRV_2014_051113.7z	E11	YES	NO	NO	NO
E11_DEV_2014_081113.7z	E11	YES	YES	YES	YES
E12_DRV_2014_171213.7z	E12	YES	NO	NO	NO
E12_DEV_2014_171213.7z	E12	YES	YES	YES	YES
E14_DRV_2014_301213.7z	E14	YES	NO	NO	NO
E14_DEV_2014_301213.7z	E14	YES	YES	YES	YES

Download the Classmate image via [the links below](#). Select the option that best fits your desired use case; as a Driver Station only, or as a Driver Station and robot code development platform. Due to the limited size of hard drive in the E09, only the Driver Station option is available. The E11 and E12 have sufficient space which allows for all the development environments to be installed at the same time along with the Driver Station software.

- [E09 - Driver Station only \(E09_DRV_2014_030114.7z\)](#)
- [E11 - Driver Station only \(E11_DRV_2014_051113.7z\)](#)
- [E11 - Driver Station and robot code development \(E11_DEV_2014_081113.7z\)](#)
- [E12 - Driver Station only \(E12_DRV_2014_171213.7z\)](#)
- [E12 - Driver Station and robot code development \(E12_DEV_2014_171213.7z\)](#)
- [E14 - Driver Station only \(E14_DRV_2014_301213.7z\)](#)
- [E14 - Driver Station and robot code development \(E14_DEV_2014_301213.7z\)](#)

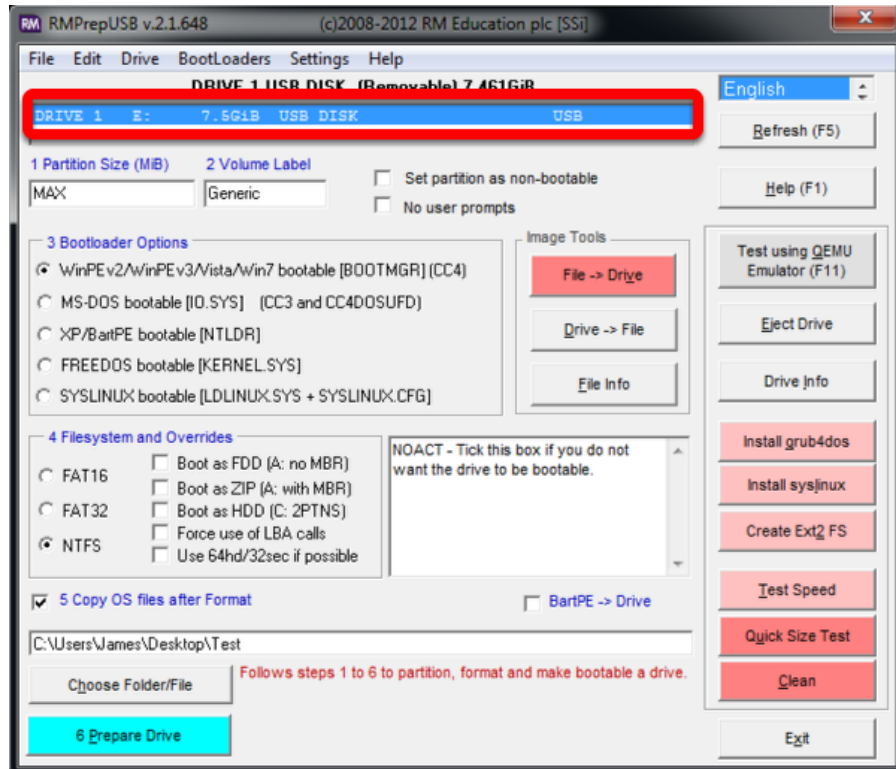
NOTE: These images only install the prerequisite core FRC software, it is still necessary to install the 2014 season-specific updates (see the Update Software step near the end of this document)

Preparation

1. Place the image file downloaded from the Intel site to a folder on your root drive (e.g. C:\2014_Image)
2. Connect USB Flash drive to the PC to use as the new restoration drive.
3. If using the E14 see the E14 Supplemental Preparation near the bottom of this document.

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RMPrep

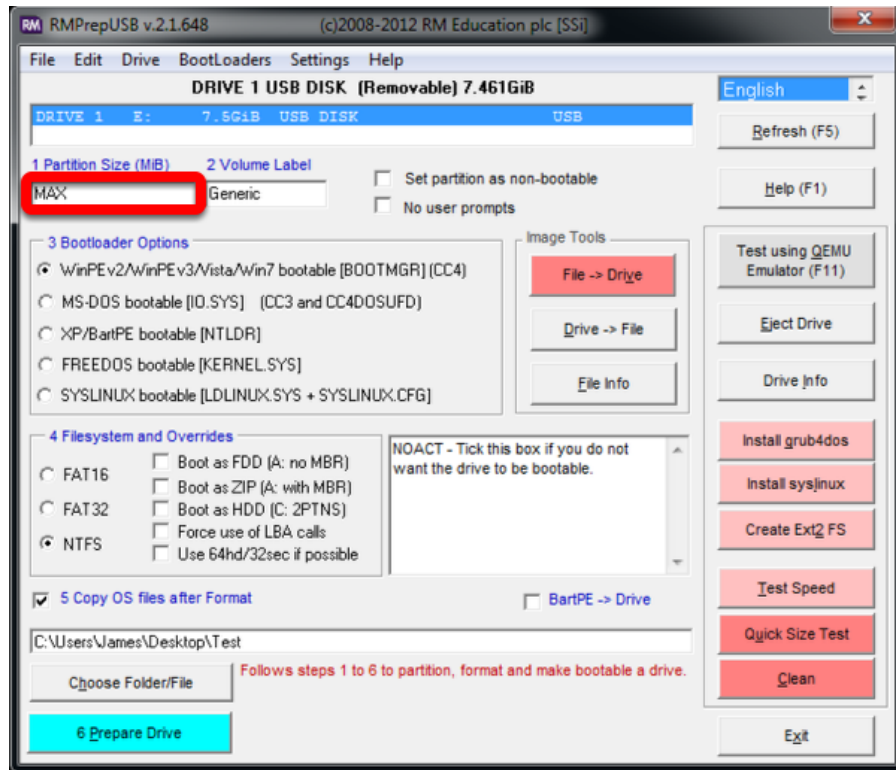


Start/Run RMPrepUSB

Select USB Drive

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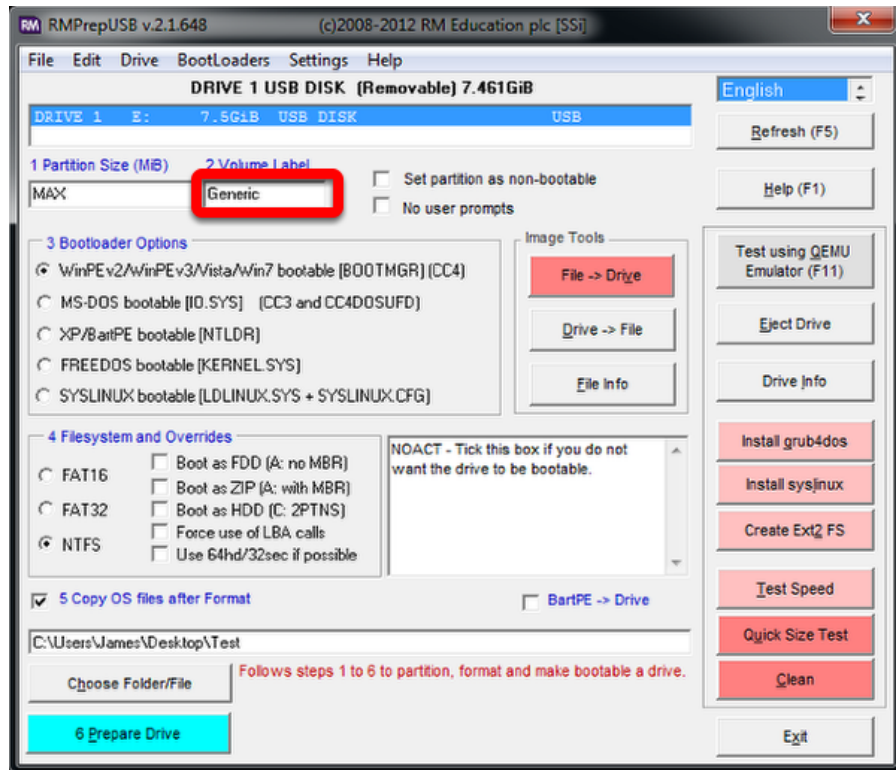
Set Partition Size



Set Partition Size to MAX

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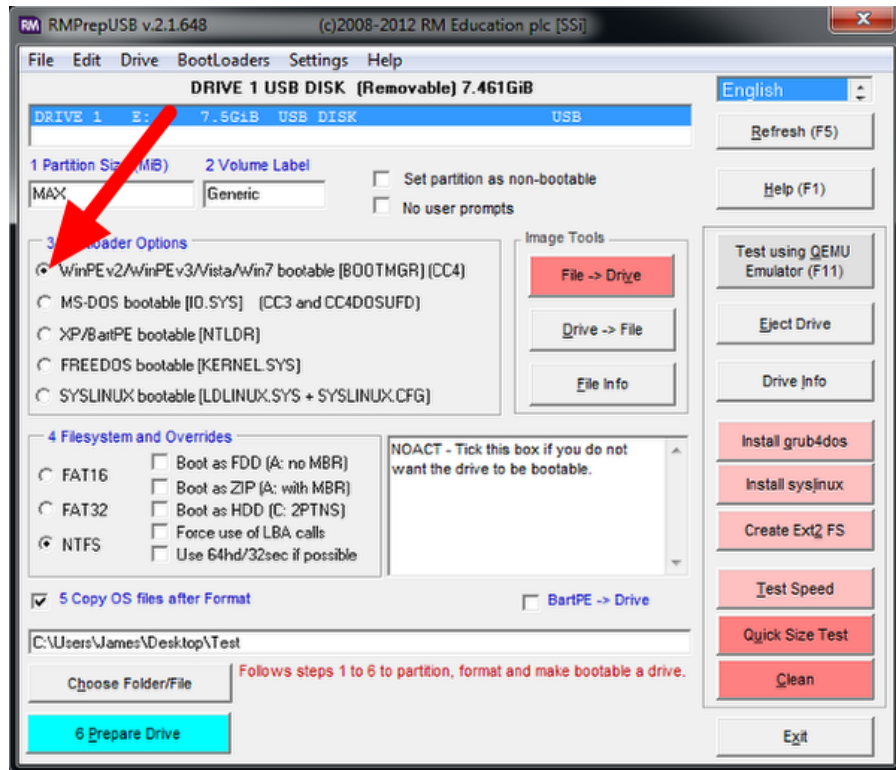
Set Volume Label



Set Volume Label to Generic

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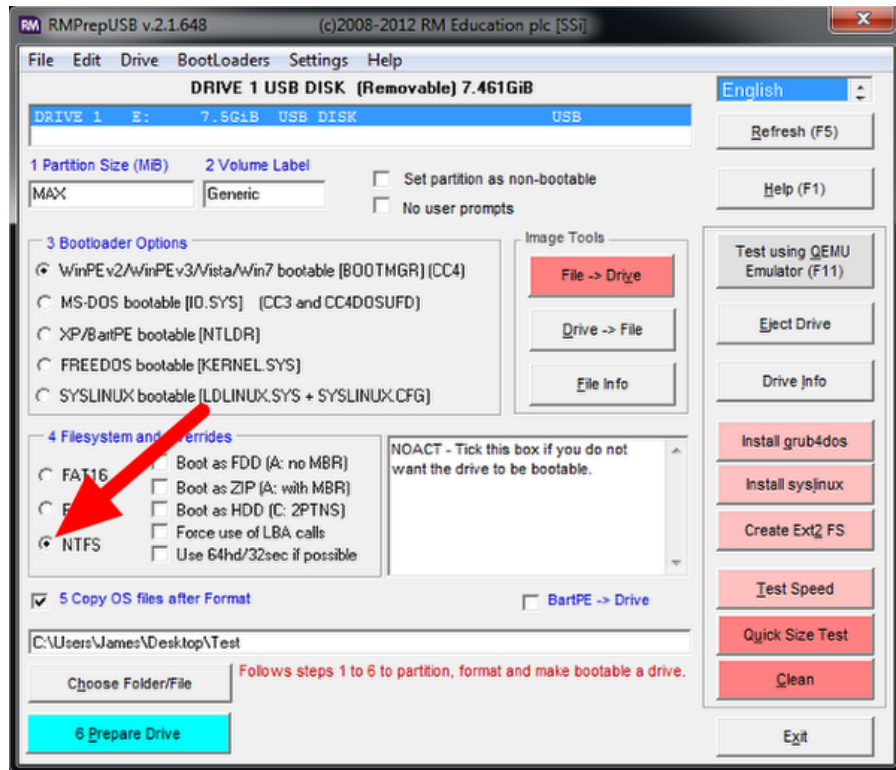
Set Bootloader Option



Select Bootloader Option “WinPE v2/WinPE v3/Vista/Win7 bootable”

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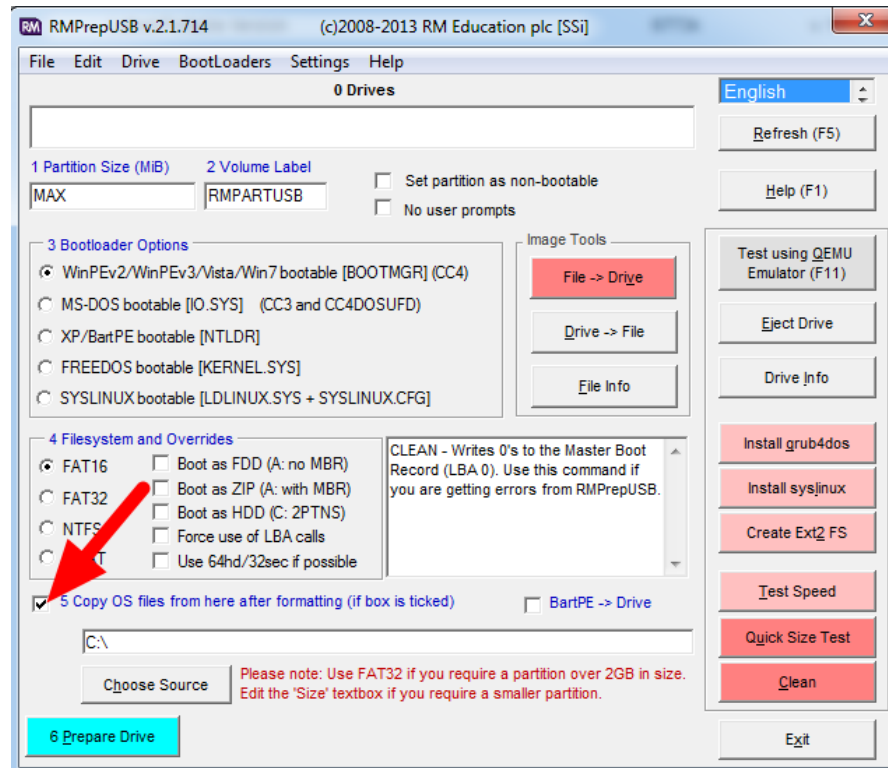
Select Filesystem



Select NTFS Filesystem

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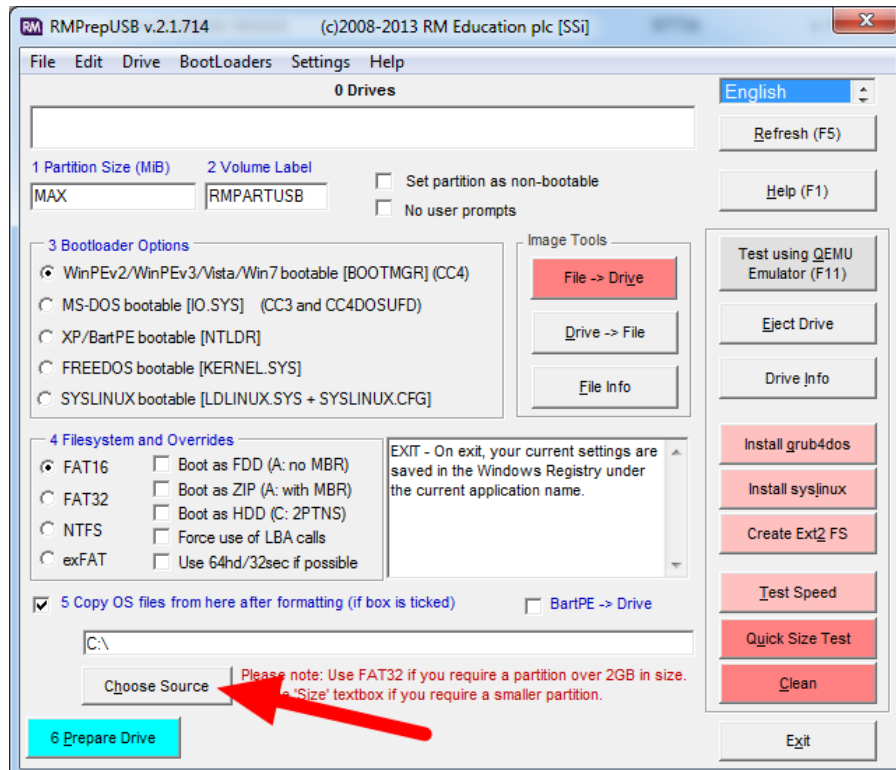
Copy OS Files Option



Ensure the “Copy OS files from here after formatting” box is checked

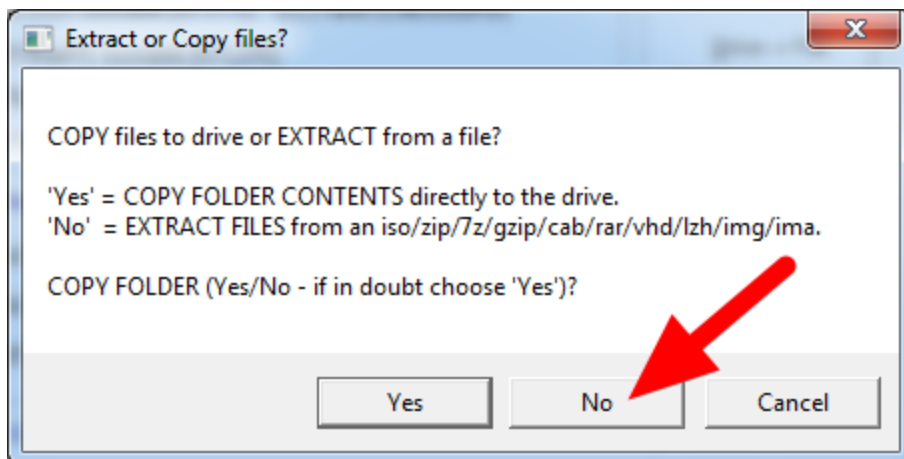
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Locate Image



Select the "Choose Source" button

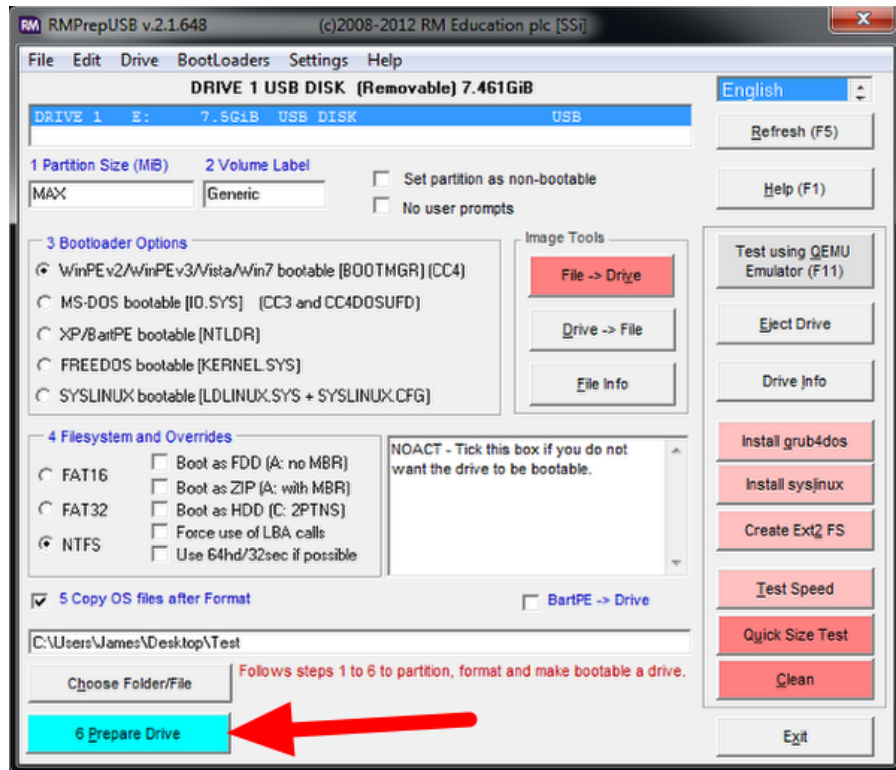
Copy Files Dialog



Choose "No" and select your .7z image

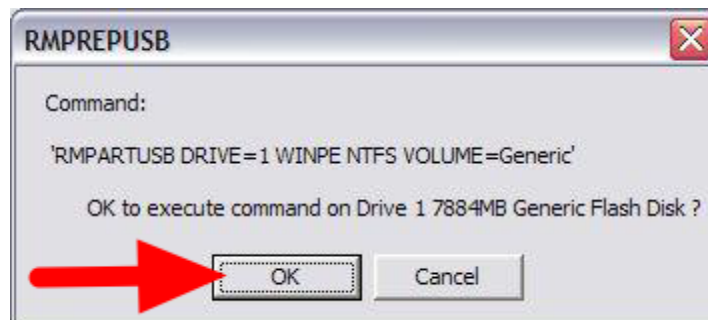
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Prepare Drive



All configuration settings are now complete. Select “Prepare Drive” to begin the process

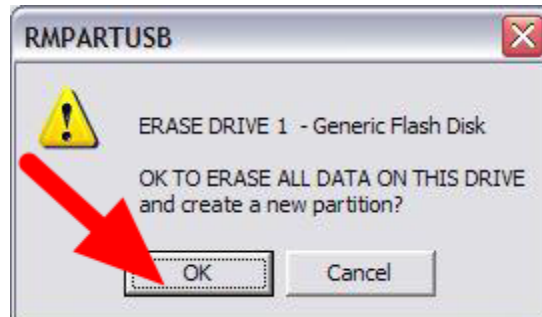
Confirmation Dialog 1



Click “OK” to execute the command on the selected USB Flash drive. A Command Prompt will open showing the progress.

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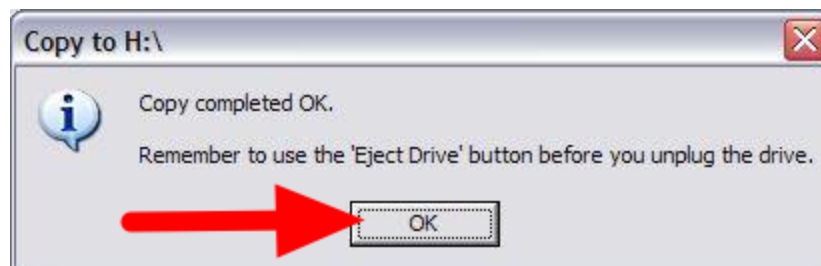
Confirmation Dialog 2



Click "OK" to format the USB drive

NOTE: ALL DATA ON THE DRIVE WILL BE ERASED!

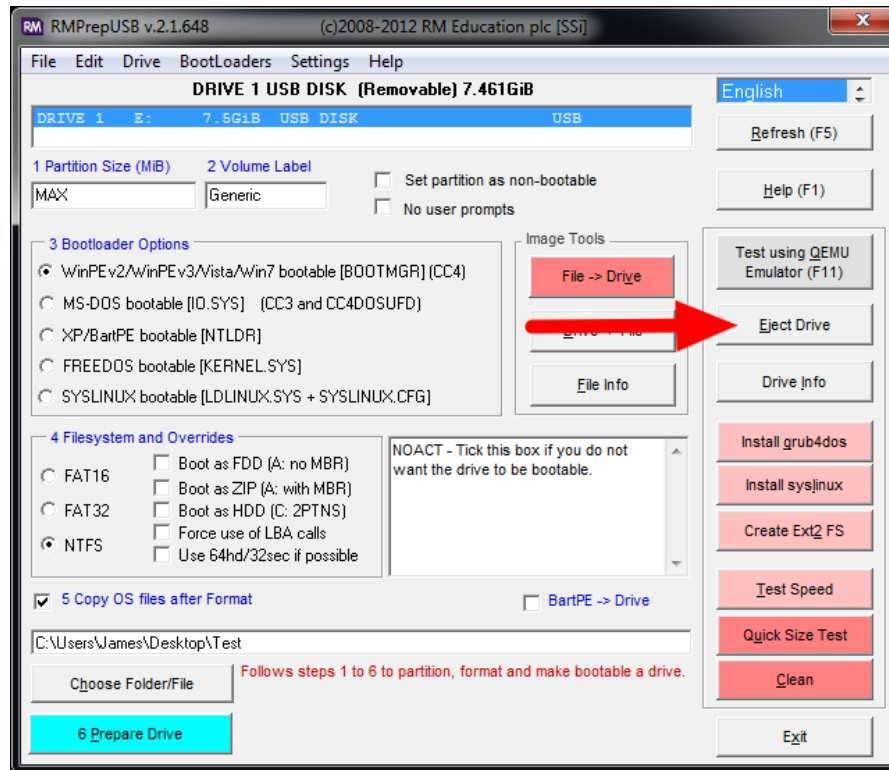
Copy Complete



Once formatting is complete, the restoration files will be extracted and copied to the USB drive. This process should take ~15 minutes when connected to a USB 2.0 port. When all files have been copied, this message will appear, press OK to continue.

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Eject Drive



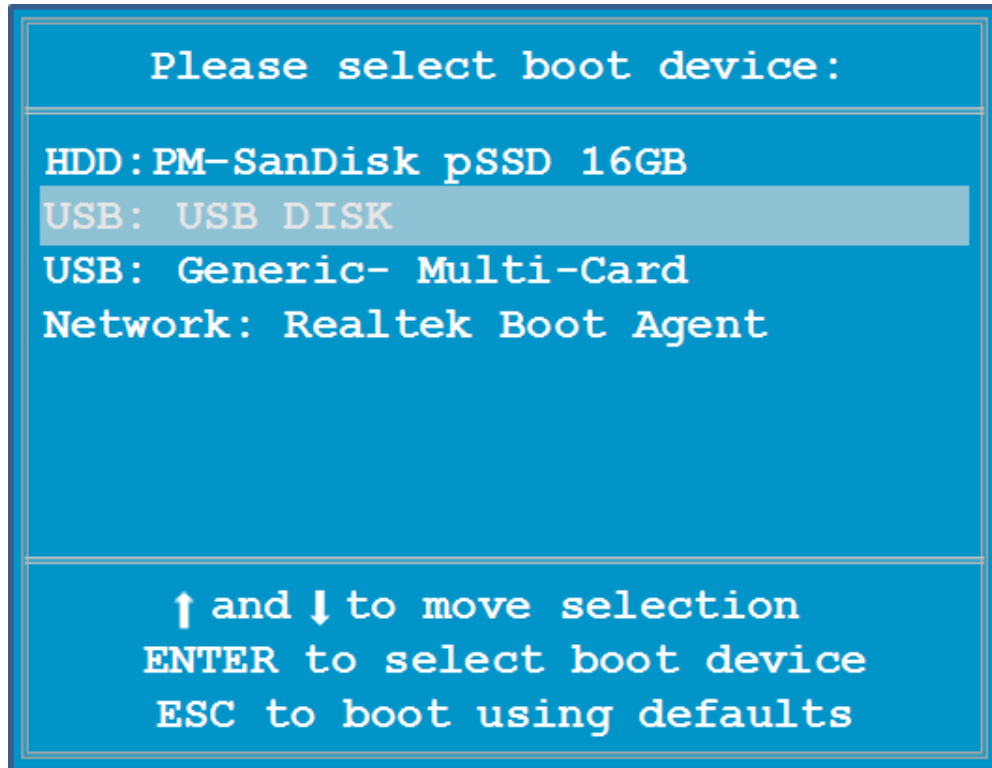
Press the “Eject Drive” button to safely remove the USB drive. The USB drive is now ready to be used to restore the image onto the Classmate PC.

Applying the Image

1. With the Classmate turned ‘Off’; insert the USB Flash drive with the Restoration image into a USB port on the Classmate
2. Turn the Classmate ‘On’; when the “2Go PC” splash screen appears, repeatedly press/release (as if typing) the F11 key until the Boot Options screen appears

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Select USB Drive

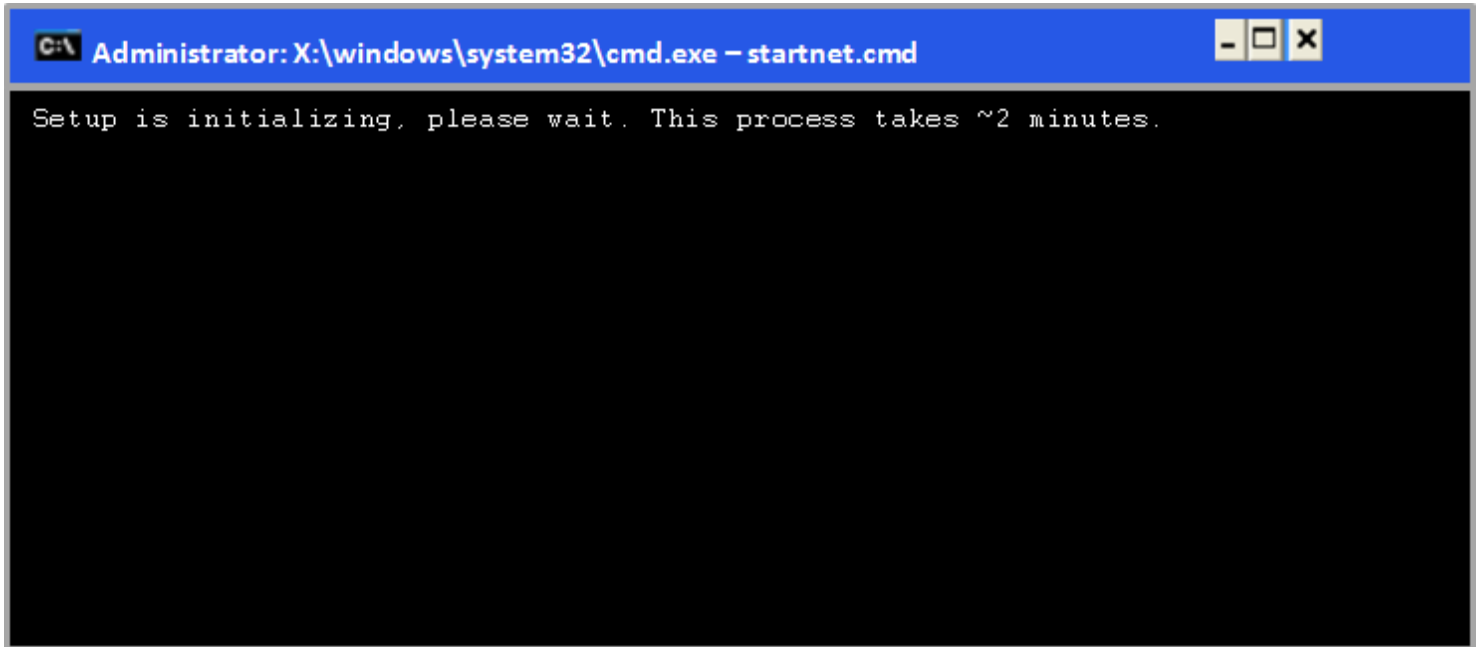


Using the arrow keys scroll down to the USB Device and press Enter .

Note, the USB drive used to create this document came up listed only as "USB DISK". Your USB device may be listed under a different name.

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Setup Initializing

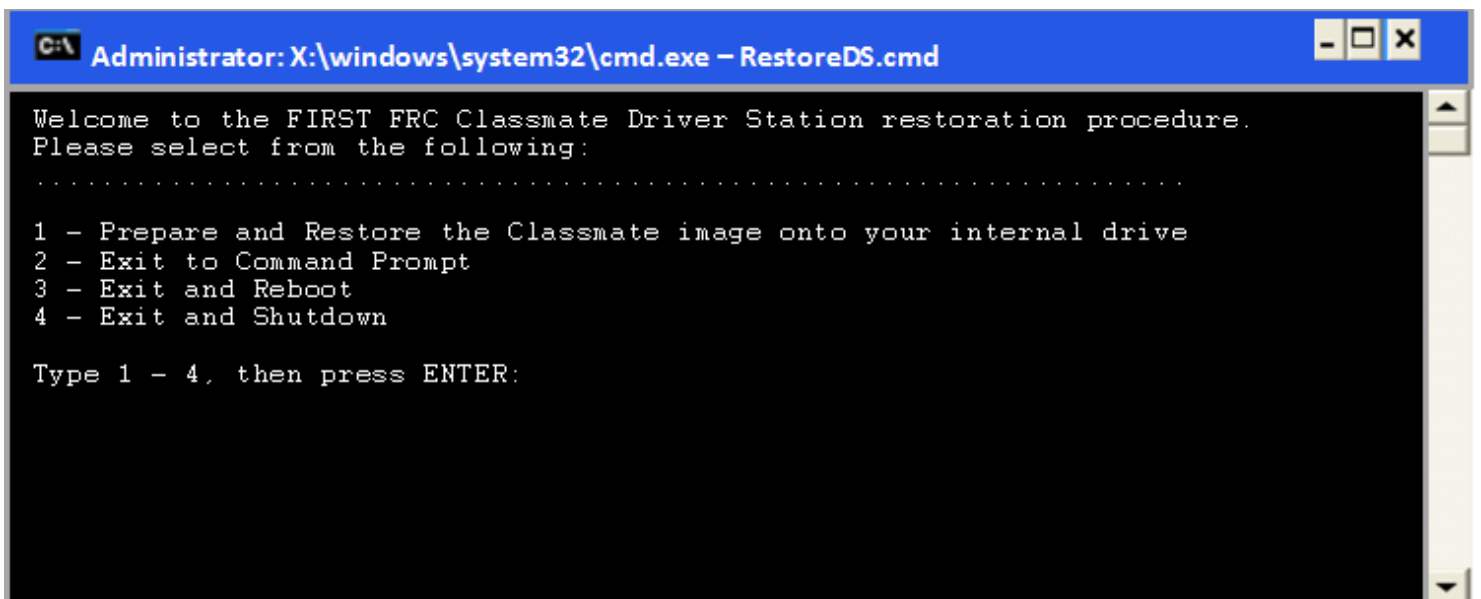


```
C:\> Administrator: X:\windows\system32\cmd.exe - startnet.cmd

Setup is initializing, please wait. This process takes ~2 minutes.
```

Windows setup will begin to install. This Command Prompt window will be displayed:

Main Menu



```
C:\> Administrator: X:\windows\system32\cmd.exe - RestoreDS.cmd

Welcome to the FIRST FRC Classmate Driver Station restoration procedure.
Please select from the following:
.....

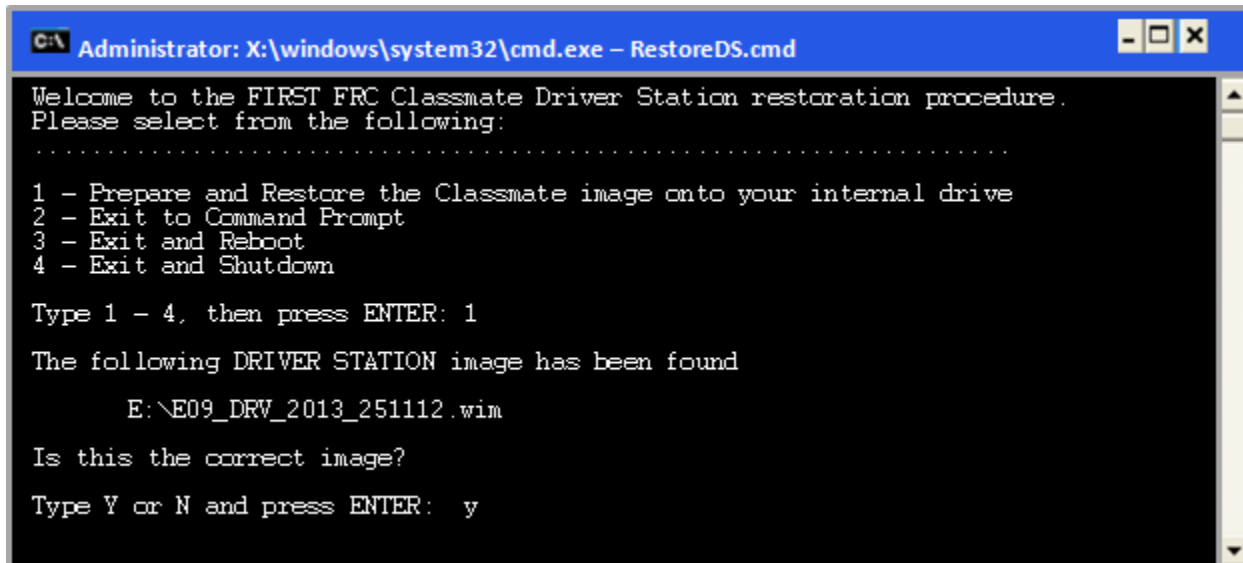
1 - Prepare and Restore the Classmate image onto your internal drive
2 - Exit to Command Prompt
3 - Exit and Reboot
4 - Exit and Shutdown

Type 1 - 4, then press ENTER:
```

When Setup completes, the Main menu will display. Type 1 to restore the Classmate then press Enter

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Image Confirmation



```
C:\ Administrator: X:\windows\system32\cmd.exe - RestoreDS.cmd

Welcome to the FIRST FRC Classmate Driver Station restoration procedure.
Please select from the following:
.....
1 - Prepare and Restore the Classmate image onto your internal drive
2 - Exit to Command Prompt
3 - Exit and Reboot
4 - Exit and Shutdown

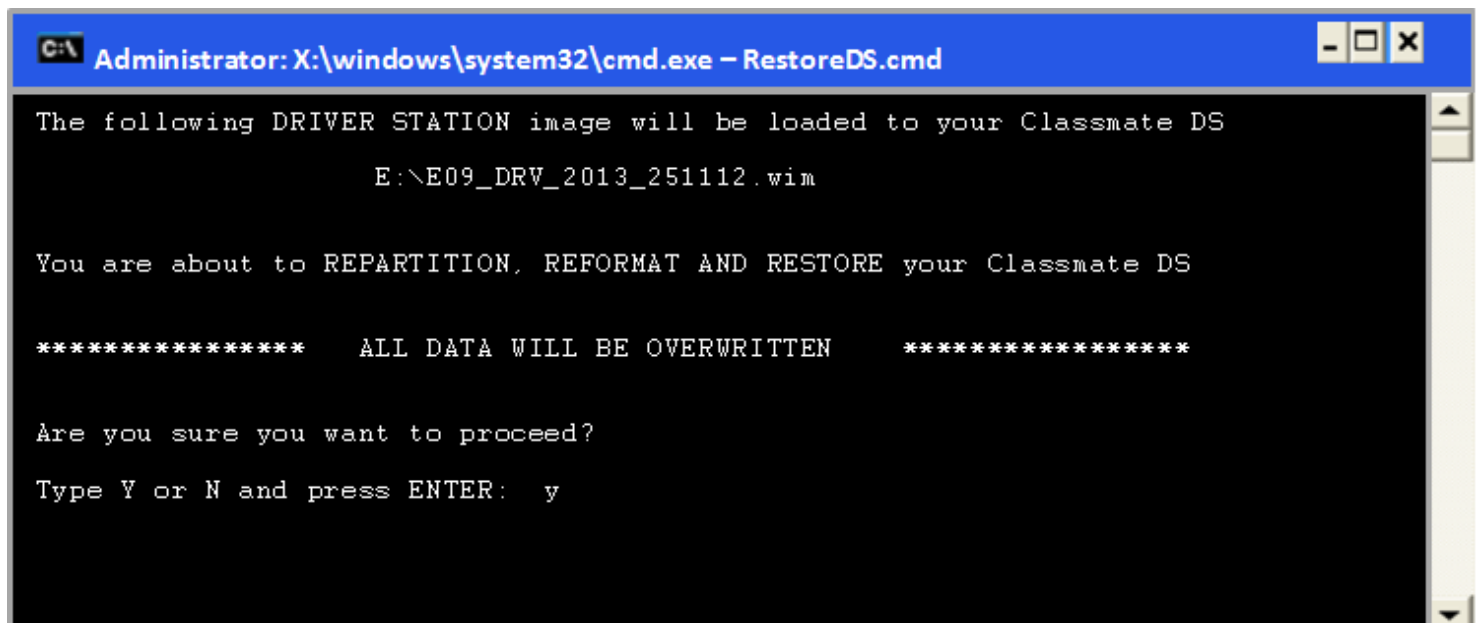
Type 1 - 4, then press ENTER: 1

The following DRIVER STATION image has been found
      E:\E09_DRV_2013_251112.wim

Is this the correct image?
Type Y or N and press ENTER:  y
```

Confirm the Image is correct for your model Classmate and desired image type. Then type “Y” and press Enter. The screenshot below shows the installation for the Driver Station-only image for the E09.

Confirm Restore



```
C:\ Administrator: X:\windows\system32\cmd.exe - RestoreDS.cmd

The following DRIVER STATION image will be loaded to your Classmate DS
      E:\E09_DRV_2013_251112.wim

You are about to REPARTITION, REFORMAT AND RESTORE your Classmate DS

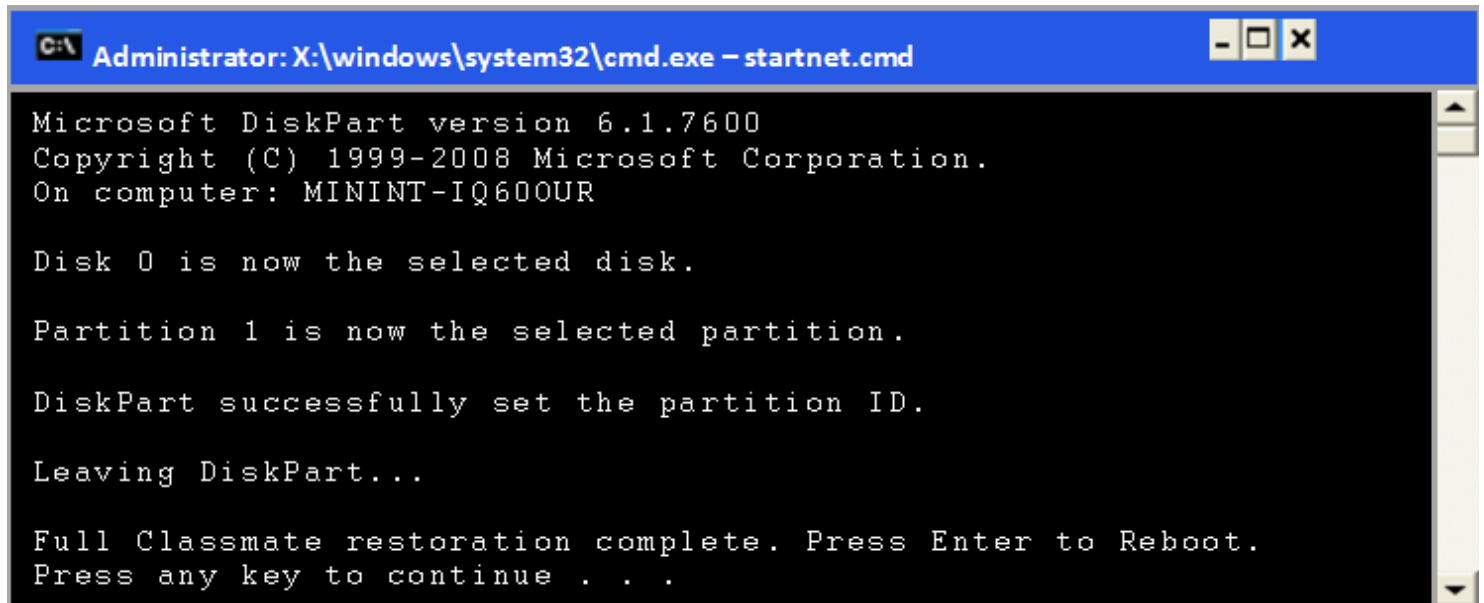
***** ALL DATA WILL BE OVERWRITTEN *****

Are you sure you want to proceed?
Type Y or N and press ENTER:  y
```

Confirm the Restoration by typing “Y” then press Enter

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Restoration Complete



```
C:\> Administrator: X:\windows\system32\cmd.exe - startnet.cmd

Microsoft DiskPart version 6.1.7600
Copyright (C) 1999-2008 Microsoft Corporation.
On computer: MININT-IQ600UR

Disk 0 is now the selected disk.

Partition 1 is now the selected partition.

DiskPart successfully set the partition ID.

Leaving DiskPart...

Full Classmate restoration complete. Press Enter to Reboot.
Press any key to continue . . .
```

When the Restoration is complete, press any key to reboot

Remove USB Drive

Remove the USB Flash Drive while the Classmate is rebooting.

Initial Driver Station Boot

The first time the Classmate is turned on, there are some unique steps, listed below, that you'll need to take. The initial boot may take several minutes; make sure you do not cycle power during the process.

Please note that these steps are only required during original startup.

Enter Setup

1. Log into the Developer account.
2. Click "Ask me later".
3. Click "OK". The computer now enters a Set Up that may take a few minutes.

Activate Windows

1. Establish an Internet connection.

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2. Once you have an Internet connection, click the Start menu, right click "Computer" and click "Properties".
3. Scroll to the bottom section, "Windows activation", and Click "Activate Windows now"
4. Click "Activate Windows online now". The activation may take a few minutes.
5. When the activation is complete, close all of the windows.

Microsoft Security Essentials

1. Navigate through the Microsoft Security Essentials Setup Wizard. Once it is complete, close all of the windows.

Select a theme

1. Set a theme for your computer by right clicking anywhere on the Desktop and clicking "Personalize".
2. Scroll within the themes and select a theme. We recommend "Windows 7 Basic". Note that using any of the "Aero" themes has been shown to slow down processing when using the Microsoft Kinect.

Update Software

In order for the Classmates to arrive at Kickoff locations in time, they were shipped before the final version of the software was ready. It is essential that you update your classmate software before proceeding so that you are using the most updated software throughout this set up and during competition. For instructions on software updates see:

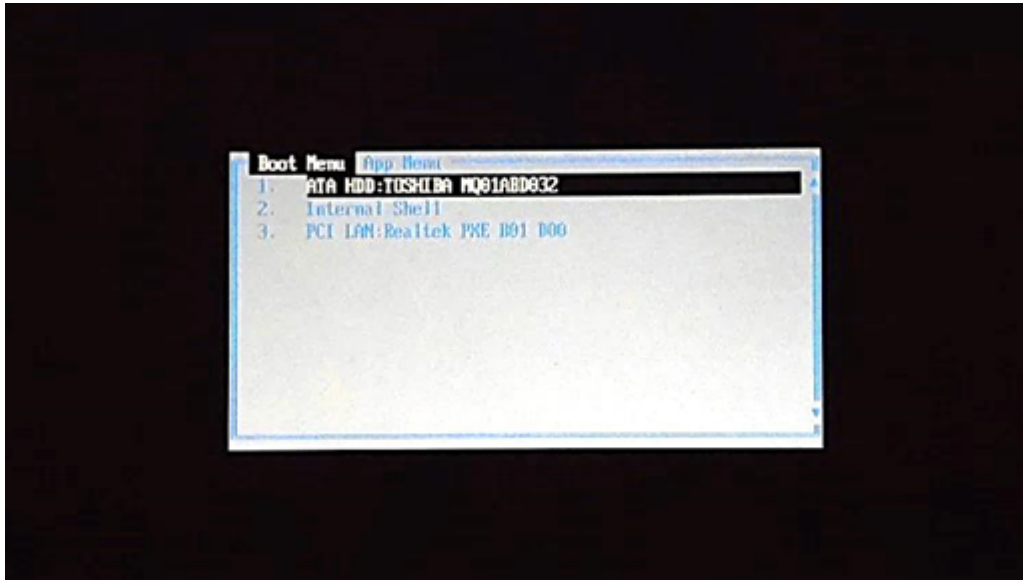
- Java: [Installing the Java Development Tools \(Installing the NetBeans plugins\)](#) then [Installing the 2014 FRC NI Update](#)
- C++: [Activating Windriver Workbench on an Imaged Classmate](#) then [Installing the FRC Specific C++ Components](#) then [Installing the 2014 FRC NI Update](#)
- LabVIEW: [Installing the 2014 FRC NI Update](#)
- DS Only: [Installing the 2014 FRC NI Update](#)

E14 Supplemental Preperation

The E14 Classmate ships with UEFI SecureBoot enabled which needs to be disabled before the machine can be imaged with the FIRST provided image.

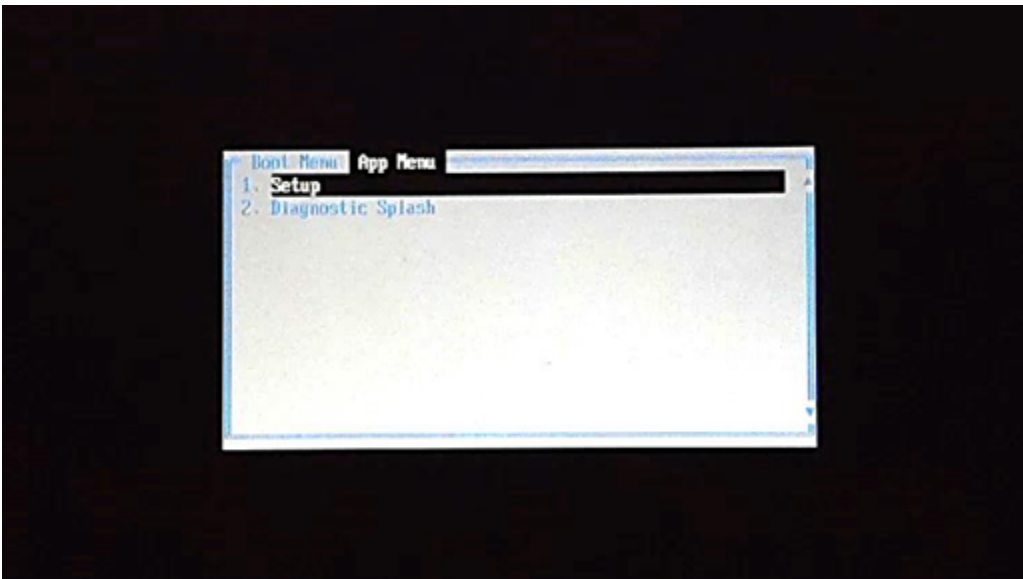
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Boot Menu



Power-up the Classmate; when the CTL splash screen appears repeatedly press the F11 key to get to the *Boot Menu*

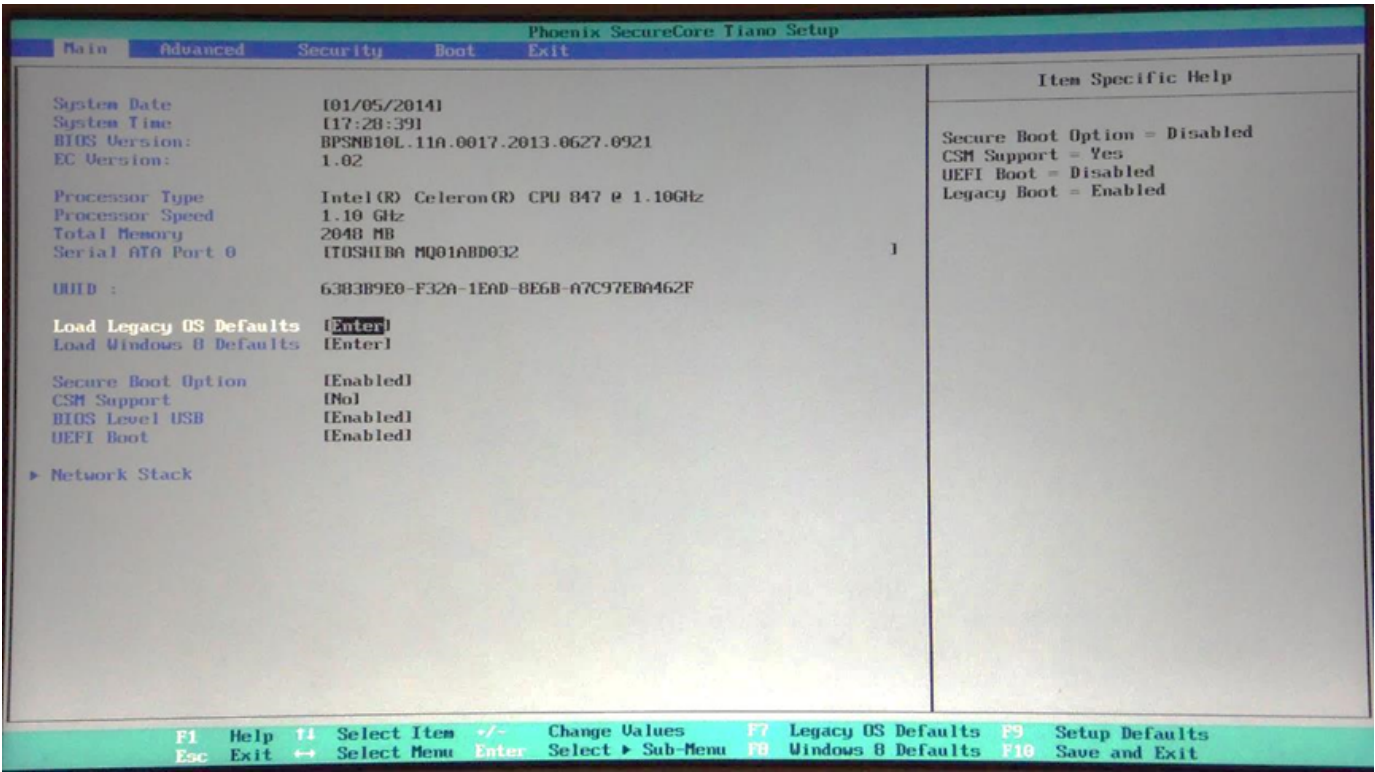
App Menu



Press the **Tab** key to get to the *App Menu*. Leave the *Setup* line highlighted and press **Enter** to continue

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Load Legacy OS Defaults

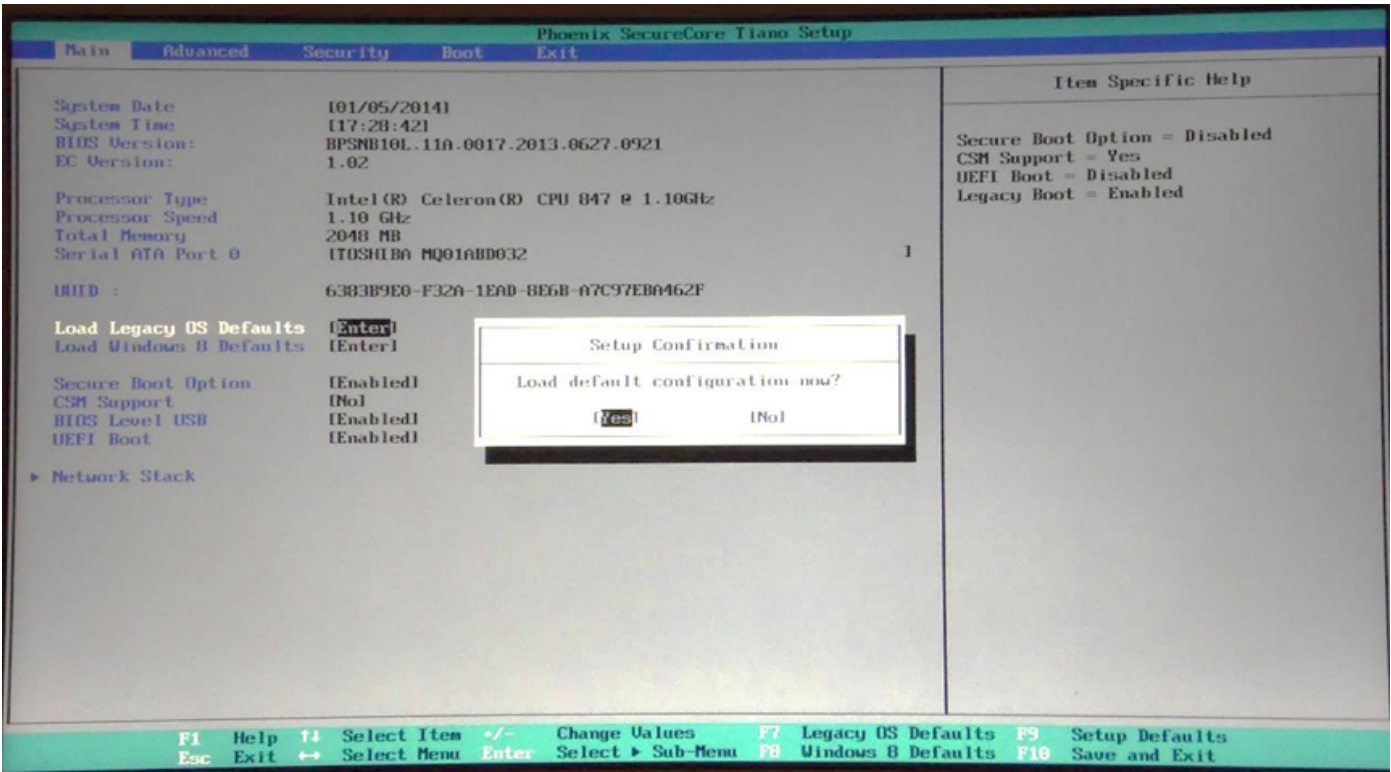


On the **Main** page of the **Phoenix SecureCore Tiano Setup**, use the arrow keys to move the cursor to the *Load Legacy OS Defaults* setting. Press **Enter**

Note: The changes being made are listed in the **Item Specific Help** column at the right side of the screen

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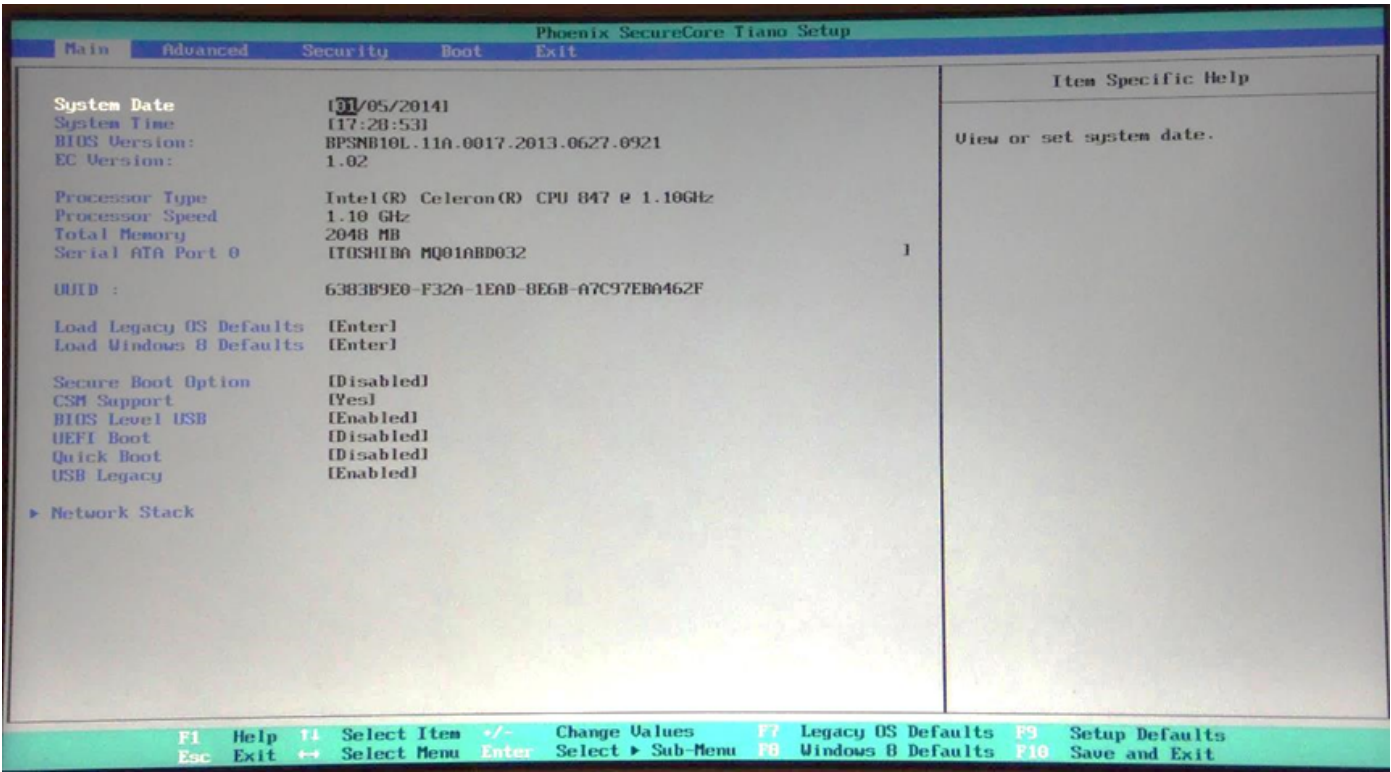
Confirm



Press Enter to confirm

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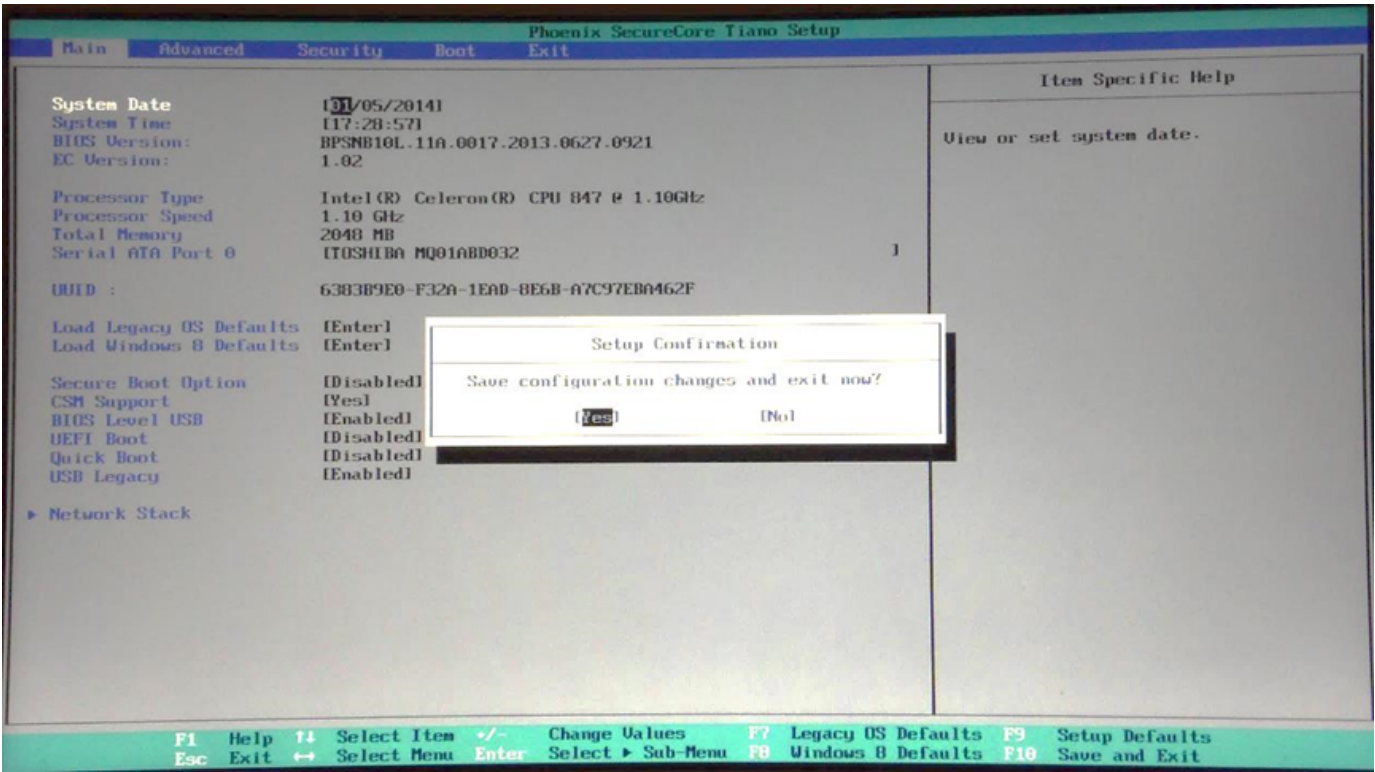
Save Changes



Press F10 to Save the changes and Exit the Setup application

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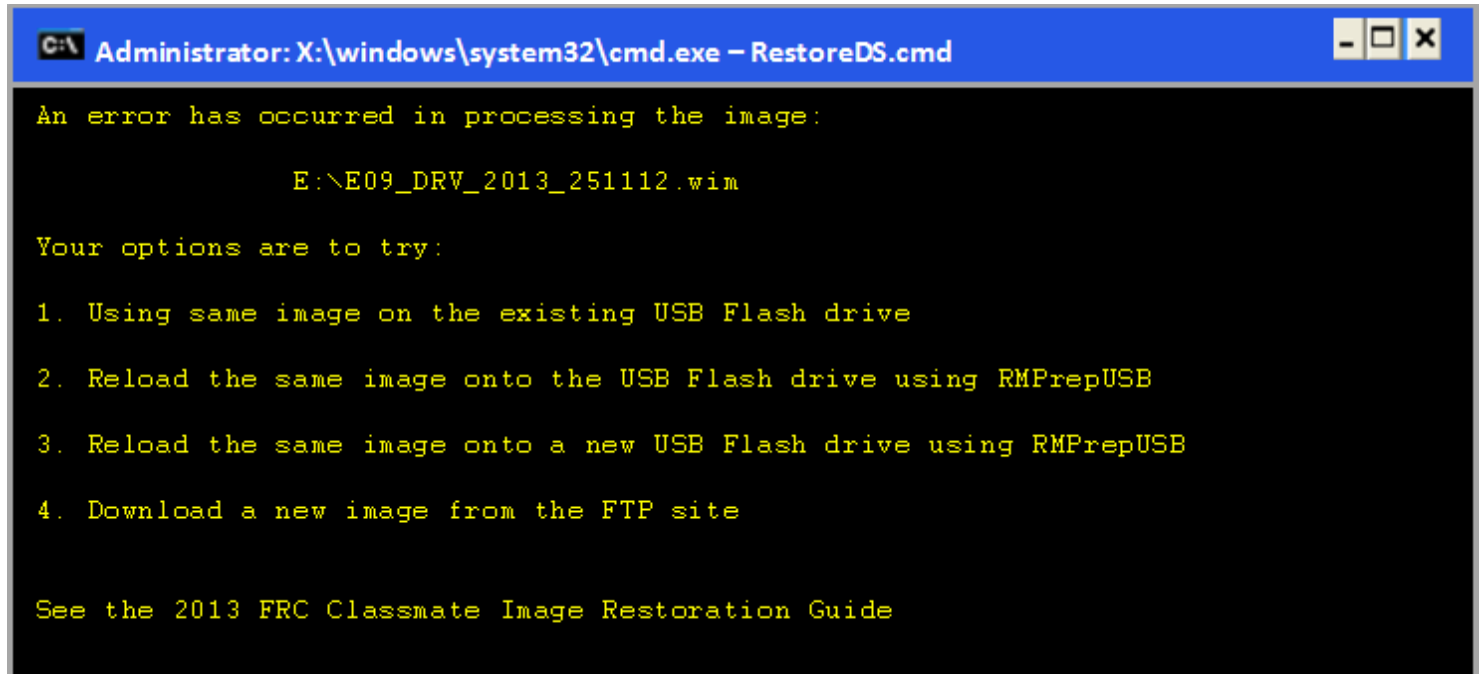
Confirm



Press Enter to confirm. The Classmate will now reboot. Scroll back up and proceed from the RMPrep section.

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Errors during Imaging Process



If an error is detected during the imaging process, the following screen will appear. Note that the screenshot below shows the error screen for the Driver Station-only image for the E09. The specific image filename shown will vary depending on the image being applied.

The typical reason for the appearance of this message is due to an error with the USB device on which the image is stored. Each option is listed below with further details as to the actions you can take in pursuing a solution. Pressing any key once this error message is shown will return the user to the menu screen shown in Step 4 on page 10.

Option 1

Using same image on the existing USB Flash drive: To try this option, press any key to return to the main menu and select #1. This will run the imaging process again.

Option 2

Reload the same image onto the USB Flash drive using RMPrepUSB: It's possible the error message was displayed due to an error caused during the creation of the USB Flash drive (e.g. file copy error, data corruption, etc.) Press any key to return to the main menu and select #4 to safely shutdown the Classmate then follow the steps outlined starting on page 3 of this document to create a new USB Restoration Key using the same USB Flash drive.

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Option 3

Reload the same image onto a new USB Flash drive using RMPrepUSB: The error message displayed may also be caused by an error with the USB Flash drive itself. Press any key to return to the main menu and select #4 to safely shutdown the Classmate. Select a new USB Flash drive and follow the steps outlined starting on page 3 of this document.

Option 4

Reload the same image onto a new USB Flash drive using RMPrepUSB: The error message displayed may also be caused by an error with the USB Flash drive itself. Press any key to return to the main menu and select #4 to safely shutdown the Classmate. Select a new USB Flash drive and follow the steps outlined starting on page 3 of this document.