

Intel Rapid Start Technology (FFS) Guide

Technical white paper

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Intel Rapid Start Technology (FFS) Guide

Product Definition

Intel Rapid Start Technology improves the standard hibernation features by providing a simple yet powerful solution that runs independently from the operating system. In addition, this feature is significantly faster than the standard operating-system based hibernation on the same solid state device (SSD) solution.

Requirements

In order to run Intel Rapid Start Technology, your computer must have:

- Rapid Start Technology enabled in the System BIOS
- An SSD primary drive or Hard Drive (HDD) plus an mSATA module SSD
- A healthy hibernation partition that must exist on the SSD prior to installation of the software

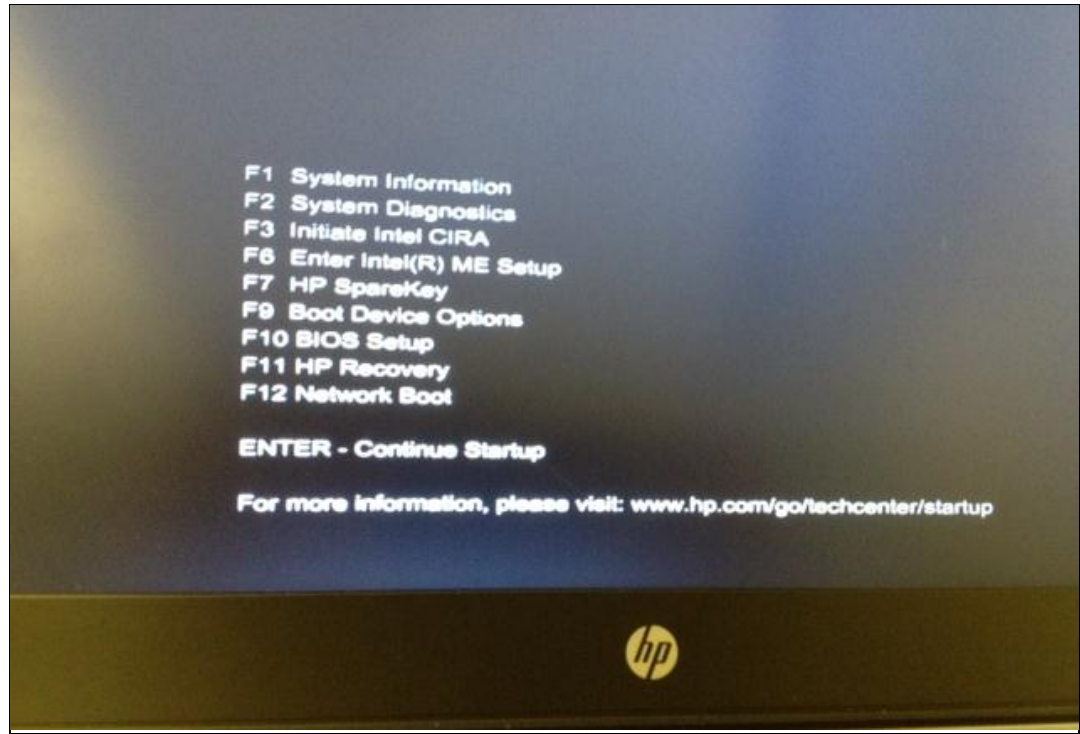
Note: Rapid Start Technology is not supported in the following configurations:

- When the computer only has a hard drive (HDD) with rotating media
- When the computer has a Self-Encrypted Drive (SED) or uses data encryption software

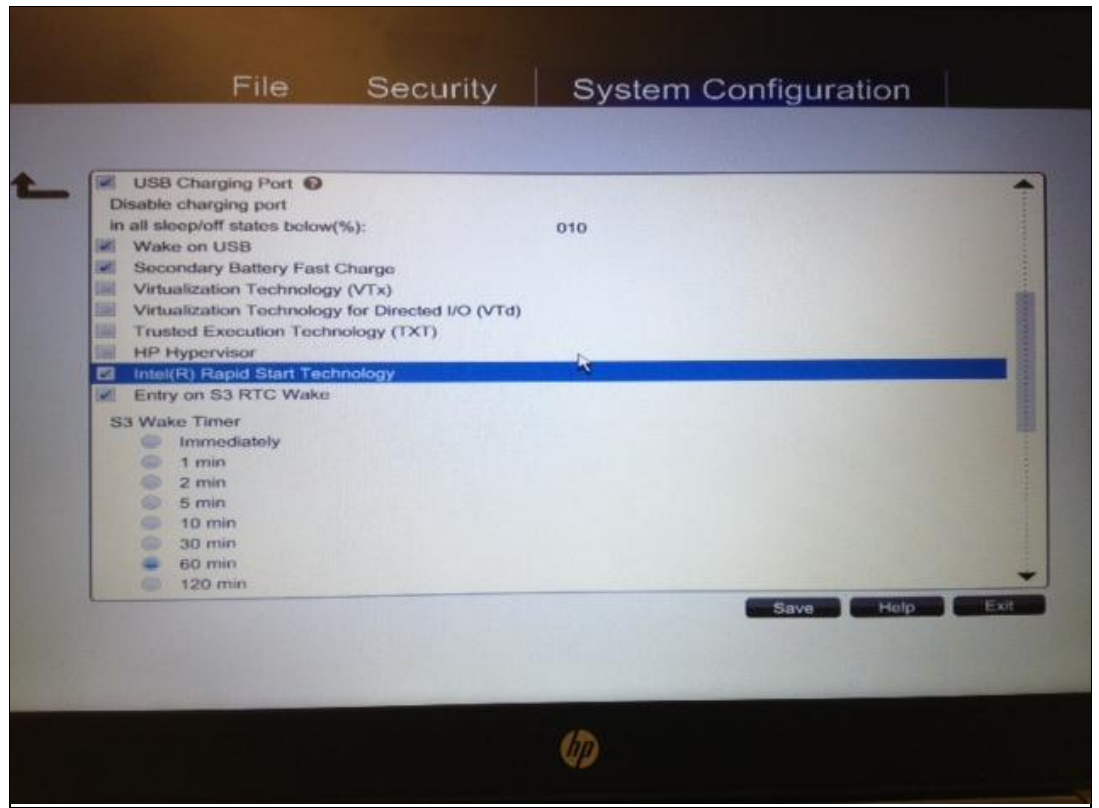
Enabling Intel Rapid Start Technology

System BIOS configuration

1. After pressing the power button to boot up the computer, press the **ESC** key to bring up the **Startup** menu. Then select the **F10** key to enter the **BIOS Setup** menu.

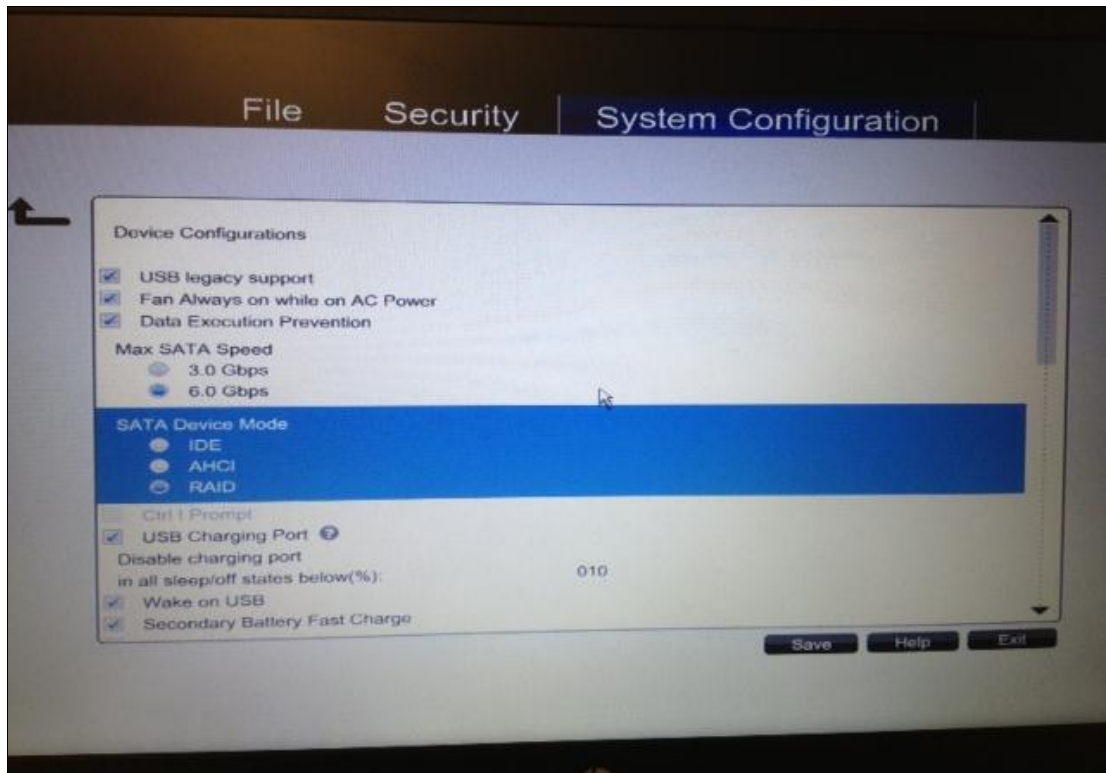


2. Next, use the arrows to move to or click to select the **System Configuration** tab.
3. Next, select the **Device Configurations** link and press **Enter**.
4. In the **Device Configuration** menu, click the **Rapid Start Technology** check box to enable this feature.
Note: If Intel Rapid Start Technology does not appear in the **Device Configuration** menu, your computer may not support Rapid Start Technology.
5. Make sure that the **S3 Wake Timer** is set to 60 minutes, which is the recommended option.



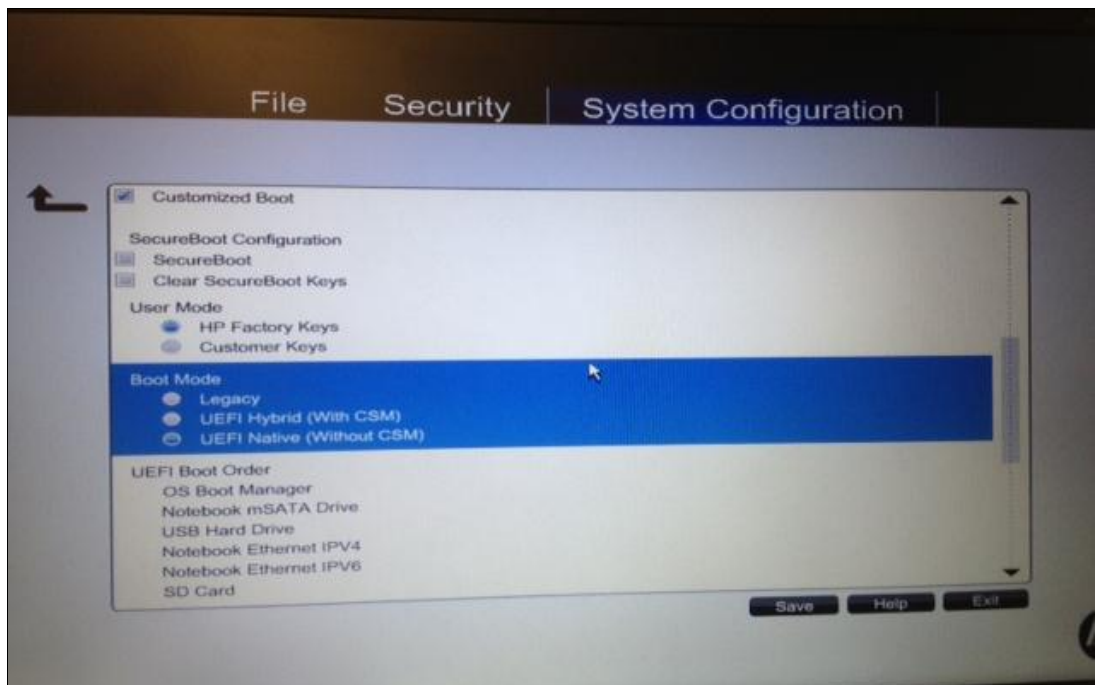
Note: If your computer uses an HDD + mSATA module, you must also enable RAID mode as follows:

1. In the Device Configuration menu, select the **RAID** as the **SATA Device Mode**.
2. If your computer uses an SSD primary drive, make sure that **AHCI** is selected.



Note: In Windows 7, you will already be in legacy mode. In Windows 8, you must also make sure that the computer is in UEFI Native mode as follows:

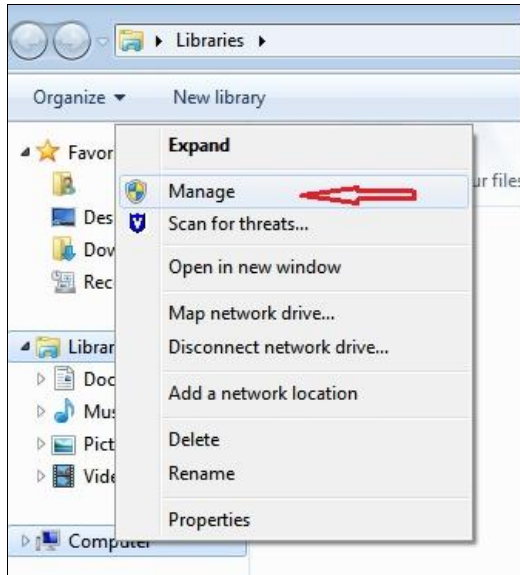
1. In the **System Configuration** tab, in the **System BIOS** section, navigate to **Boot Options**.
2. Next, select **UEFI Native (Without CSM)** as the boot mode.



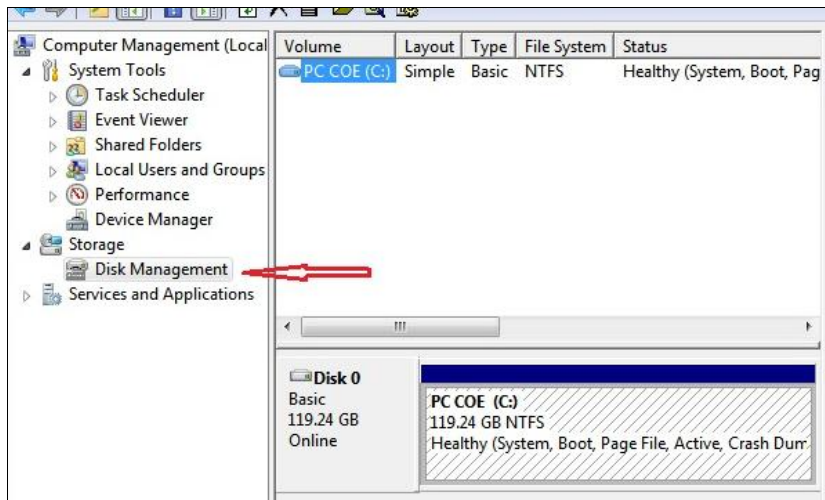
For Computers with SSD primary drives

Enabling Rapid Start Technology in Windows 7

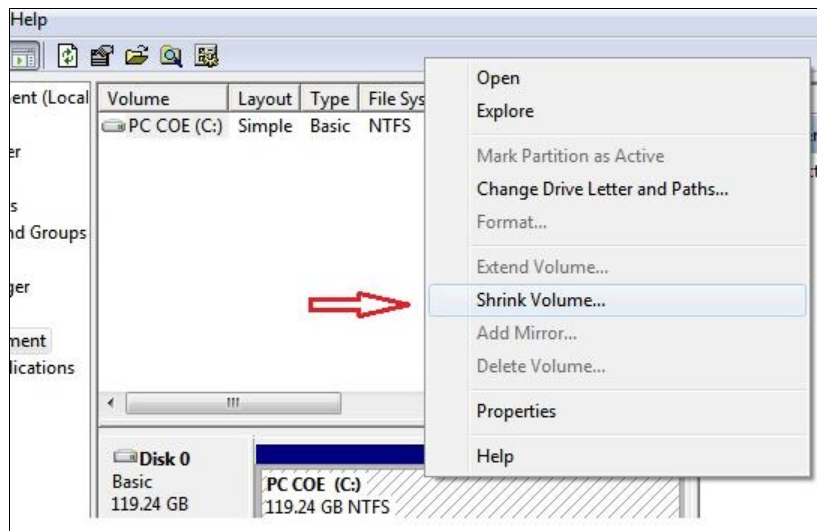
1. From the desktop, click **Start**, and then right-click **Computer**.
2. Next, select **Manage**.



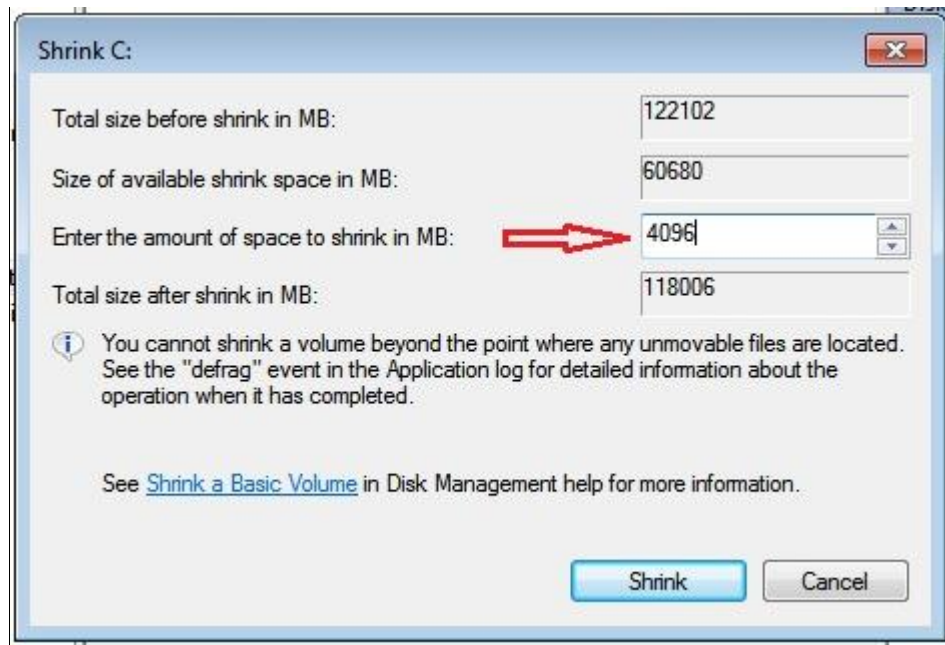
3. Select **Disk Management**.



4. Right-click the hard drive that displays (e.g. the C: drive), and then select **Shrink Volume**.



5. Enter 4096 (the amount of space recommended by HP) in the **Enter the amount of space to shrink in MB**.



6. Click the **Shrink** button.

Note: After this process is complete, make sure to leave the space as unallocated.

7. Restart the computer.

Creating the healthy hibernation partition

1. From the desktop, click **Start > All Programs > Accessories**.
2. Next, right-click the **Command** prompt, and then click **Run as Administrator**.
3. In the DOS dialog box, type the following switches, making sure to allow each process line to complete before typing the next.
 - a. Diskpart
 - b. List disk
 - c. Select disk 0
 - d. Create partition primary
 - e. List Volume
 - f. Select the 4GB Volume that was just created
 - g. Set id=84 override
 - h. Exit

```
Administrator: Command Prompt - diskpart
(c) 2012 Microsoft Corporation. All rights reserved.
C:\Windows\system32>diskpart
Microsoft DiskPart version 6.2.9200
Copyright (C) 1999-2012 Microsoft Corporation.
On computer: H

DISKPART> list disk

   Disk ###  Status              Size               Free                Dyn  Gpt
   -----  -
   Disk 0    Online              119 GB             4096 MB              *

DISKPART> select disk 0

Disk 0 is now the selected disk.

DISKPART> create partition primary

DiskPart succeeded in creating the specified partition.

DISKPART> list volume

   Volume ###  Ltr  Label           Fs          Type        Size         Status       Info
   -----  -
   Volume 1    C:   Recovery        NTFS        Partition   114 GB       Healthy      Boot
   Volume 2                    Recovery        NTFS        Partition   300 MB       Healthy      Hidden
   Volume 3                    System         FAT32       Partition   100 MB       Healthy      System
   * Volume 4                    RAW           Partition   4096 MB      Healthy

DISKPART> select volume 4

Volume 4 is the selected volume.

DISKPART> SET ID=84 OVERRIDE

DiskPart successfully set the partition ID.

DISKPART>
```

4. Restart the computer.

Enter timer duration

In order to set parameters for Rapid Start Technology, the following utilities must be installed:

- Intel's Chipset utility
- Intel Rapid Storage Technology utility
- Intel Rapid Start Technology utility

Note: If you have just installed Intel Rapid Start Technology, make sure that you have restarted your computer before proceeding with the following steps.

1. From the desktop, click **Start > All Programs > Intel**.
2. Make sure the status of **Intel Rapid Start Technology** is **On**.
3. Use the slider to set the time duration for the computer to enter Rapid Start Technology hibernation.

Note: The default time is 60 minutes (recommended).



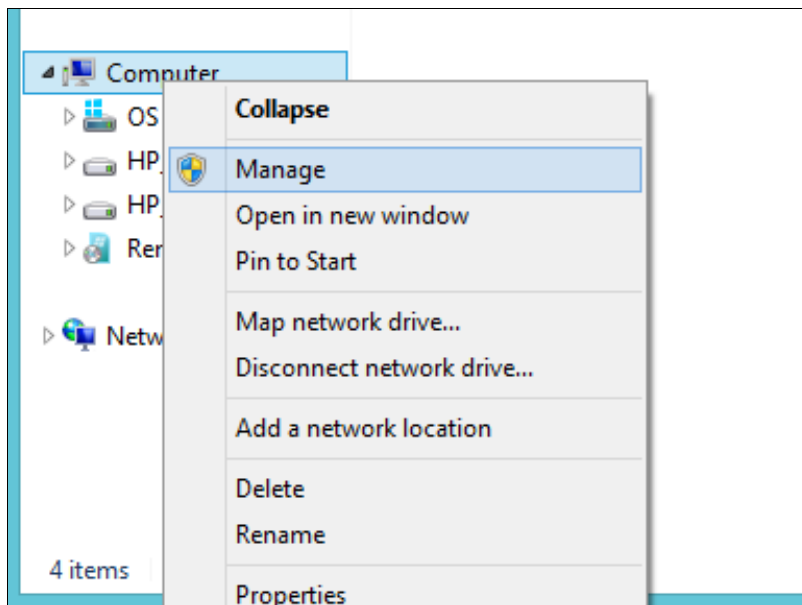
4. Click the **Save** button, and then restart the computer in order to make sure these settings are installed.

Enabling Rapid Start Technology in Windows 8

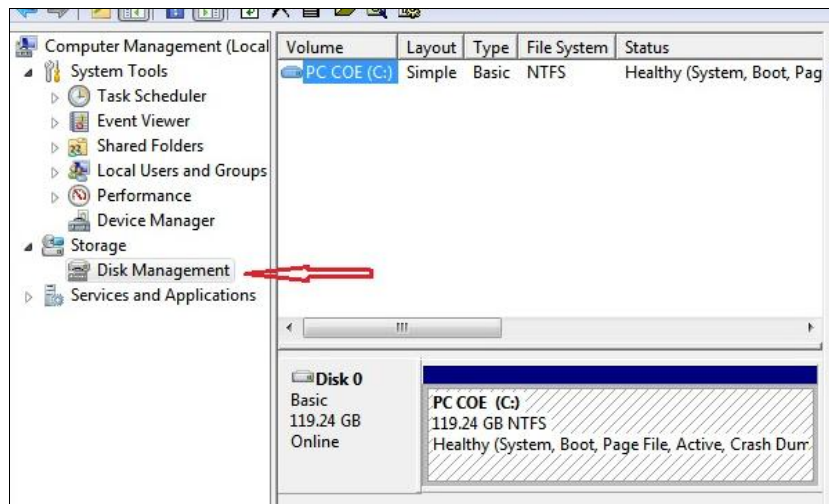
1. From the desktop, click the **File Explorer** icon.



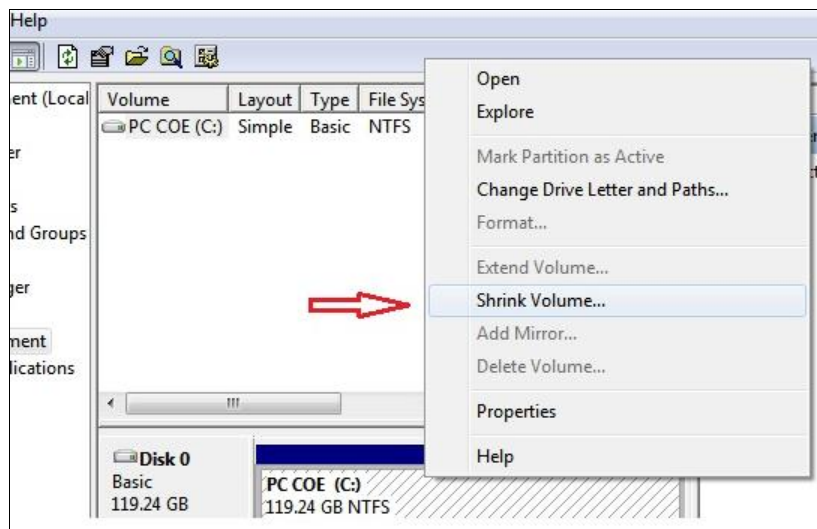
2. Right-click **Computer**, and then click **Manage**.



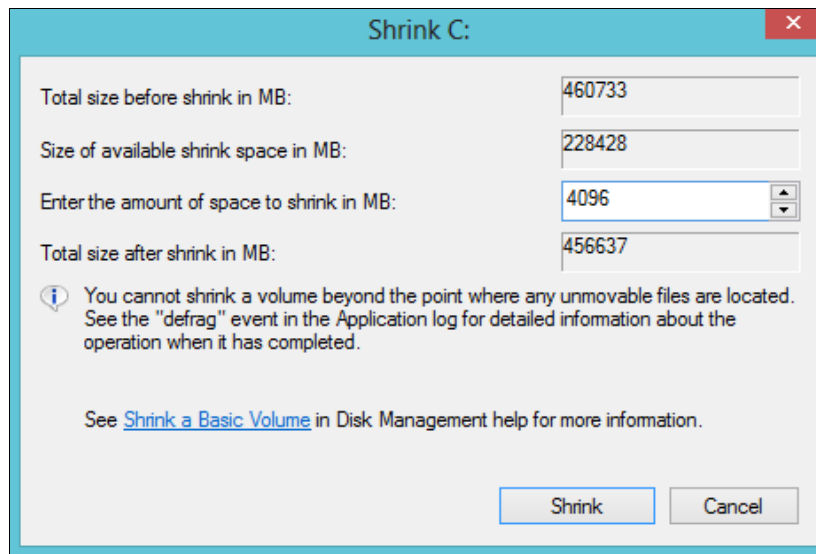
3. Select **Disk Management**.



4. Right-click the hard drive that displays (e.g. the C: drive), and then select **Shrink Volume**.



5. Enter 4096 (the amount of space recommended by HP) in the **Enter the amount of space to shrink in MB**.



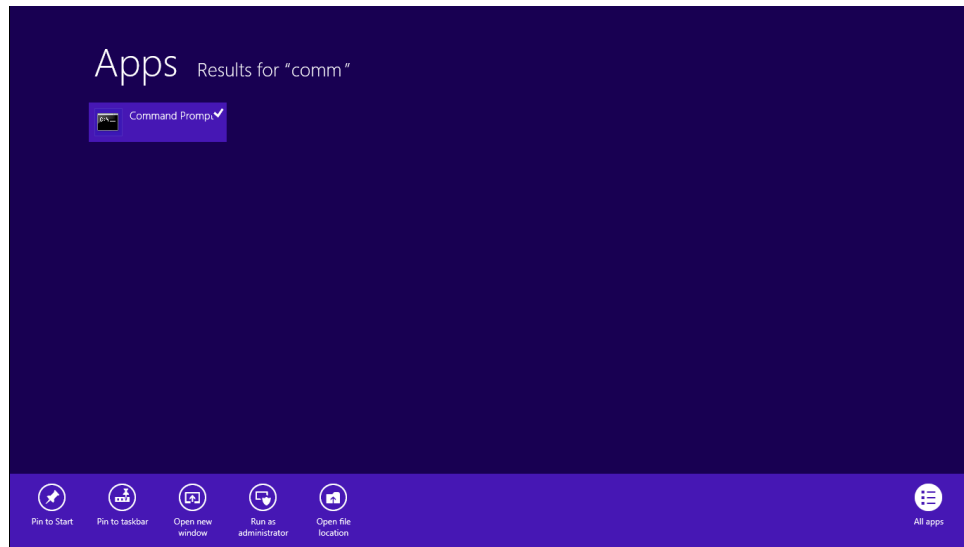
6. Click the **Shrink** button.

Note: After this process is complete, make sure to leave the space as unallocated.

7. Restart the computer.

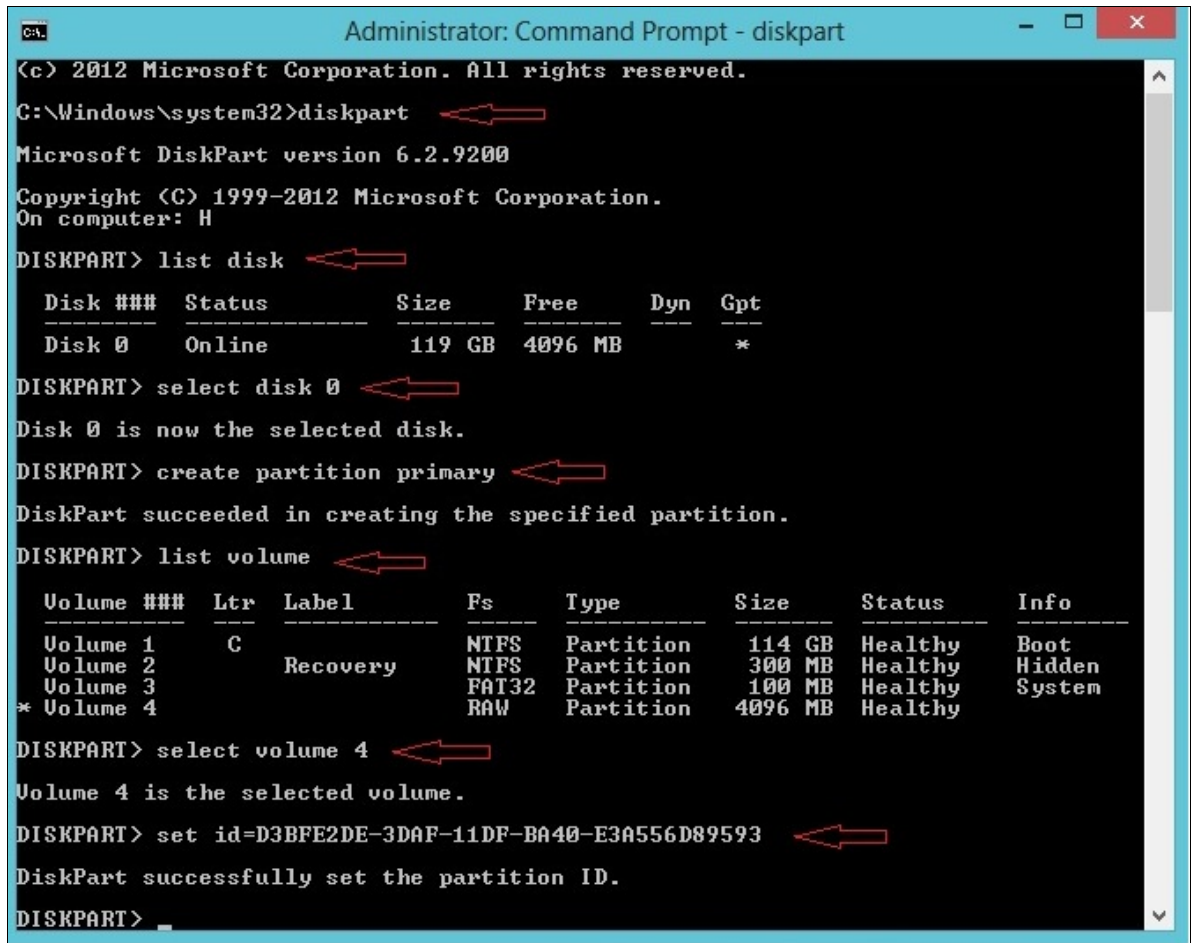
Healthy hibernation partition

1. From the Start screen, type **Command**, right-click the **Command** prompt, and then select **Run as Administrator** from the selection bar at the bottom of the screen.



2. In the DOS dialog box, type the following switches, making sure to allow each process line to complete before typing the next).
 - a. `Diskpart`
 - b. `List disk`
 - c. `Select disk 0`
 - d. `Create partition primary`
 - e. `List Volume`
 - f. `Select the 4GB Volume that was just created`
 - g. `Set id=84 override`
 - h. `Exit`

NOTE - If your primary drive is formatted as GPT instead of MBR (as is the case on most Windows 8 machines), type the following instead as shown below: [Set id=D3BFE2DE-3DAF-11DF-BA40-E3A556D89593](#).



```
Administrator: Command Prompt - diskpart
(c) 2012 Microsoft Corporation. All rights reserved.
C:\Windows\system32>diskpart
Microsoft DiskPart version 6.2.9200
Copyright (C) 1999-2012 Microsoft Corporation.
On computer: H

DISKPART> list disk

   Disk ###  Status              Size               Free                Dyn  Gpt
   -----  -
   Disk 0    Online              119 GB             4096 MB              *

DISKPART> select disk 0

Disk 0 is now the selected disk.

DISKPART> create partition primary

DiskPart succeeded in creating the specified partition.

DISKPART> list volume

   Volume ###  Ltr  Label           Fs          Type        Size         Status       Info
   -----  -
   Volume 1    C:   Recovery        NTFS        Partition   114 GB       Healthy      Boot
   Volume 2                    Recovery        NTFS        Partition   300 MB       Healthy      Hidden
   Volume 3                    System          FAT32       Partition   100 MB       Healthy      System
   * Volume 4

DISKPART> select volume 4

Volume 4 is the selected volume.

DISKPART> set id=D3BFE2DE-3DAF-11DF-BA40-E3A556D89593

DiskPart successfully set the partition ID.

DISKPART>
```

3. Restart the computer.

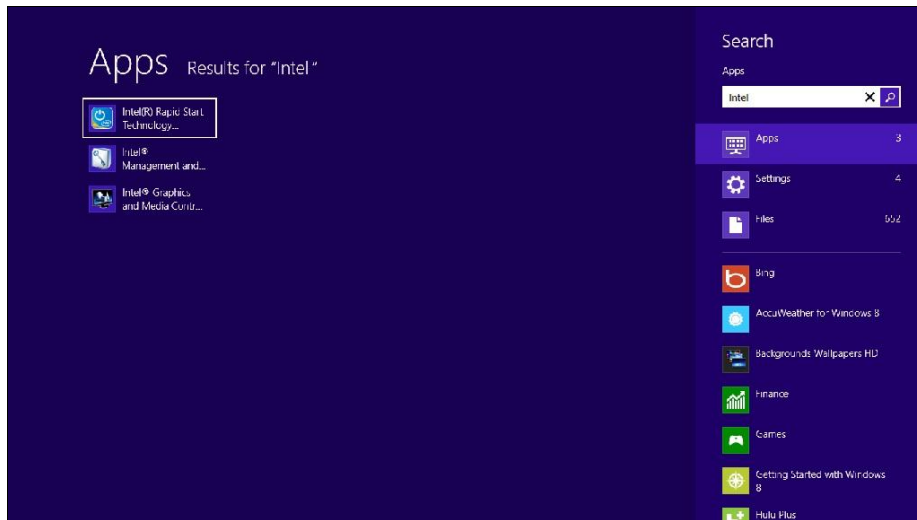
Enter timer duration

In order to set parameters for Rapid Start Technology, the following utilities must be installed:

- Intel's Chipset utility
- Intel Rapid Storage Technology utility
- Intel Rapid Start Technology utility

Note: If you have just installed Intel Rapid Start Technology, make sure that you have restarted your computer before proceeding with the following steps.

1. From the Start screen, type **Intel**, and then select **Intel Rapid Start Technology**.



2. Make sure the status of **Intel Rapid Start Technology** is set to **On**.
3. Use the slider to set the time duration for the computer to enter Rapid Start Technology hibernation.

Note: The default time is 60 minutes (recommended).



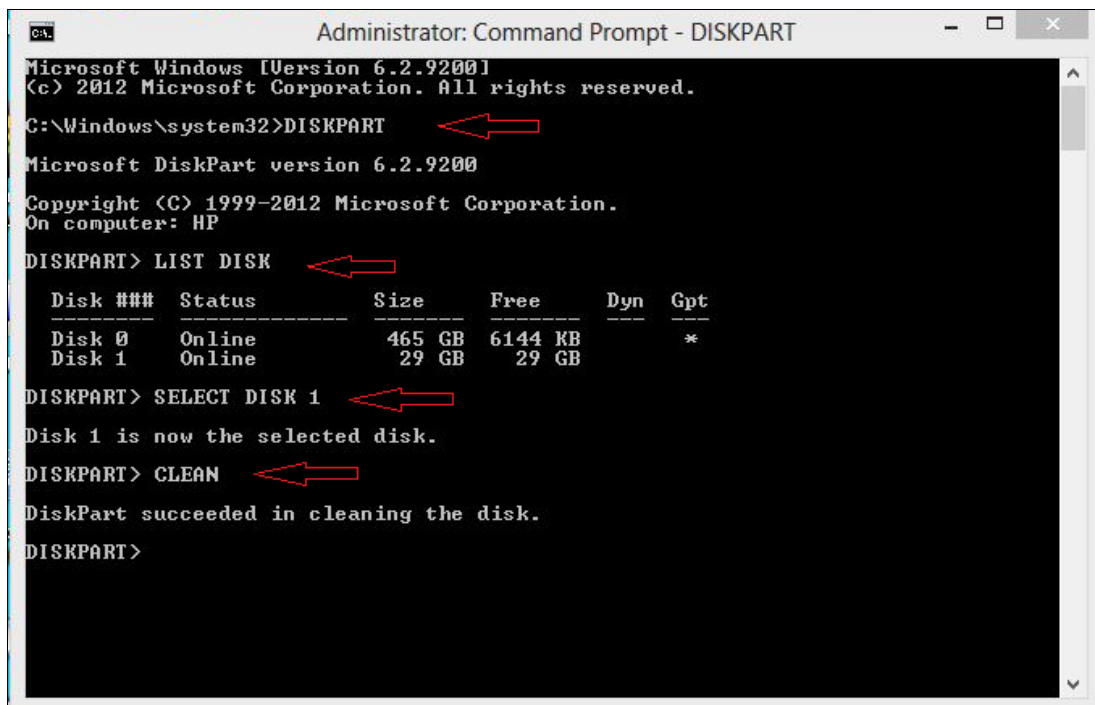
4. Click the **Save** button, and then restart the computer in order to make sure these settings are installed.

For Computers with HDD + mSATA module

Enabling Rapid Start Technology in Windows 7

1. Ensure the computer is in RAID mode. (ref. System BIOS Configuration above)
2. Prepare the mSATA module by cleaning it of any data.

Note: Save any data if needed.
3. From the desktop, click **Start > All Programs > Accessories**.
4. Next, right click **Command** prompt, and then click **Run as Administrator**.
5. At the DOS prompt, type: **DISKPART**.
6. Next, type **List Disk**.
7. Select the mSATA module by typing **SELECT DISK x** (where x is the number associated with the mSATA module. For instance, if the mSATA module is Disk 1, type **SELECT DISK 1**).
8. Type **CLEAN**, and then restart your computer.



```
Administrator: Command Prompt - DISKPART
Microsoft Windows [Version 6.2.9200]
(c) 2012 Microsoft Corporation. All rights reserved.
C:\Windows\system32>DISKPART
Microsoft DiskPart version 6.2.9200
Copyright (C) 1999-2012 Microsoft Corporation.
On computer: HP

DISKPART> LIST DISK

   Disk ###  Status      Size      Free      Dyn  Gpt
   -----  -
   Disk 0    Online     465 GB    6144 KB
   Disk 1    Online     29 GB     29 GB

DISKPART> SELECT DISK 1
Disk 1 is now the selected disk.

DISKPART> CLEAN
DiskPart succeeded in cleaning the disk.
DISKPART>
```

9. Make sure that the appropriate Intel Chipset Utility and the Intel Rapid Storage Technology software are installed.

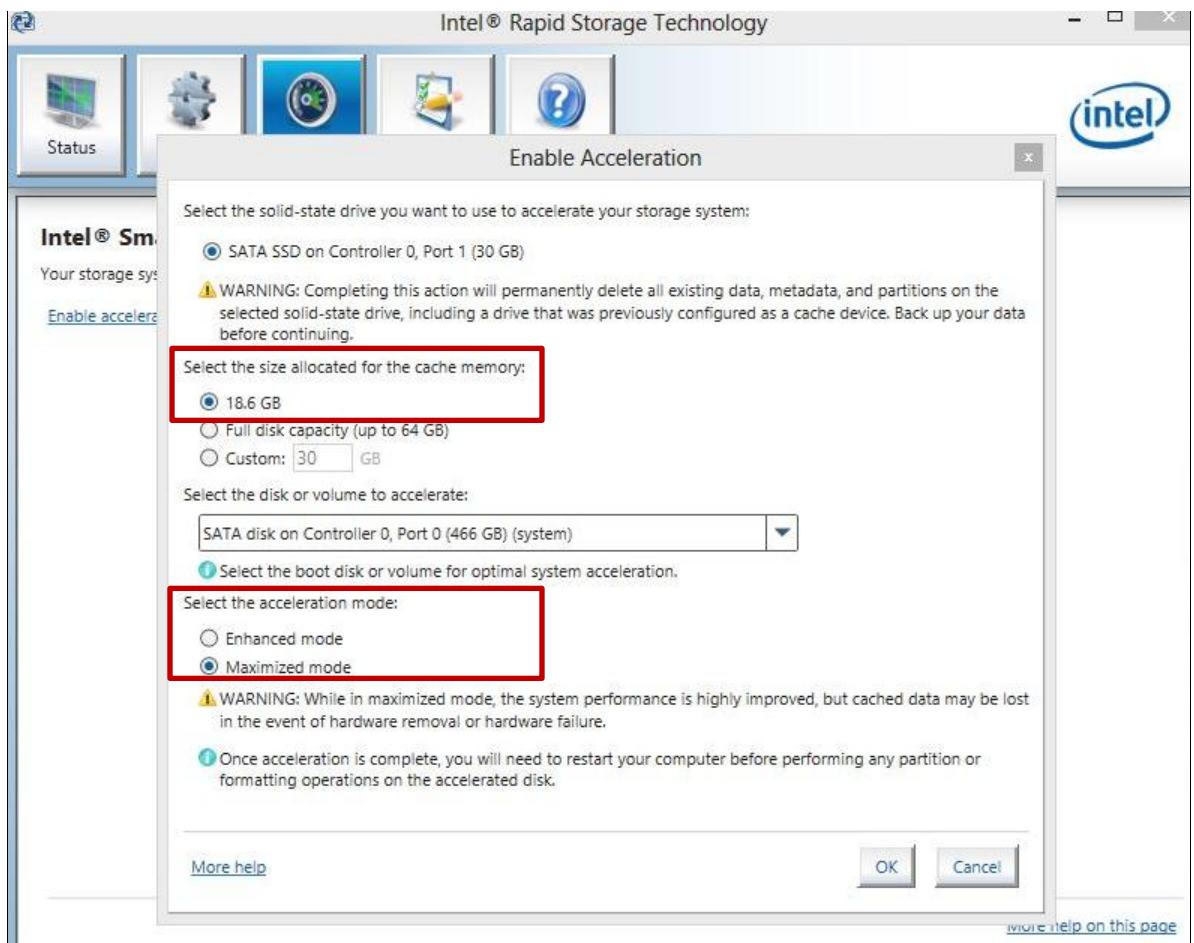
Enabling SRT

Smart Response Technology must first be enabled before enabling Rapid Start Technology as follows:

1. From the desktop, click **Start > All Programs > Intel > Intel Rapid Storage Technology**.
2. Select the **Accelerate** button, and then click **Enable Acceleration**.



3. Select **18.6 GB** for size allocated for the cache memory and **Maximized mode** for the acceleration mode.



4. Restart your computer.

Creating the healthy hibernation partition

To prepare the healthy hibernation partition on the mSATA module:

1. From the Windows 7 desktop, click **Start > All Programs > Accessories**.
2. Next, right-click **Command** prompt, and then click **Run as Administrator**.
3. At the DOS prompt, type: `DISKPART`
4. Next, type `List Disk`.
5. Select the mSATA module by typing `SELECT DISK x` (where x is the number associated with the mSATA module. For instance, if the mSATA module is Disk 1, type `SELECT DISK 1`).
6. Next, type `Create Partition Primary`.
7. Then, type `List Volume` and select the volume corresponding to the partition that was just created.
8. Finally, type: `Set ID=84 OVERRIDE`, type `EXIT` to exit the screen, and then restart the computer.

```
Administrator: Command Prompt - DISKPART
Microsoft Windows [Version 6.2.9200]
(c) 2012 Microsoft Corporation. All rights reserved.

C:\Windows\system32>DISKPART
Microsoft DiskPart version 6.2.9200
Copyright (C) 1999-2012 Microsoft Corporation.
On computer: RST12_5

DISKPART> LIST DISK

   Disk ###  Status         Size      Free      Dyn  Gpt
   -----  -
   Disk 0    Online        465 GB    1024 KB
   Disk 1    Online        11 GB     11 GB

DISKPART> SELECT DISK 1
Disk 1 is now the selected disk.

DISKPART> CREATE PARTITION PRIMARY
DiskPart succeeded in creating the specified partition.

DISKPART> LIST VOLUME

   Volume ###  Ltr  Label          Fs          Type        Size      Status      Info
   -----  -
   Volume 0    C:   OS              NTFS        Partition   449 GB    Healthy     Boot
   Volume 1    E:   HP_RECOVERY     NTFS        Partition   12 GB    Healthy
   Volume 2    D:   HP_TOOLS        FAT32       Partition   2045 MB   Healthy
   Volume 3                    WinRE           NTFS        Partition   1000 MB   Healthy     Hidden
   Volume 4                    SYSTEM          FAT32       Partition   100 MB    Healthy     System
   * Volume 5                    RAW            Partition   11 GB     Healthy

DISKPART> SELECT VOLUME 5
Volume 5 is the selected volume.

DISKPART> SET ID=84 OVERRIDE
DiskPart successfully set the partition ID.

DISKPART>
```

Enter timer duration

Install the Intel Rapid Start Technology software.

1. From the desktop, click **Start > All Programs > Intel > Intel Rapid Start Technology**.
2. Use the slider to set the time duration for the computer to enter Rapid Start Technology hibernation.

Note: The default time is 60 minutes (recommended).



3. Restart your computer.

Enabling Rapid Start Technology in Windows 8

1. Ensure the computer is in RAID mode.

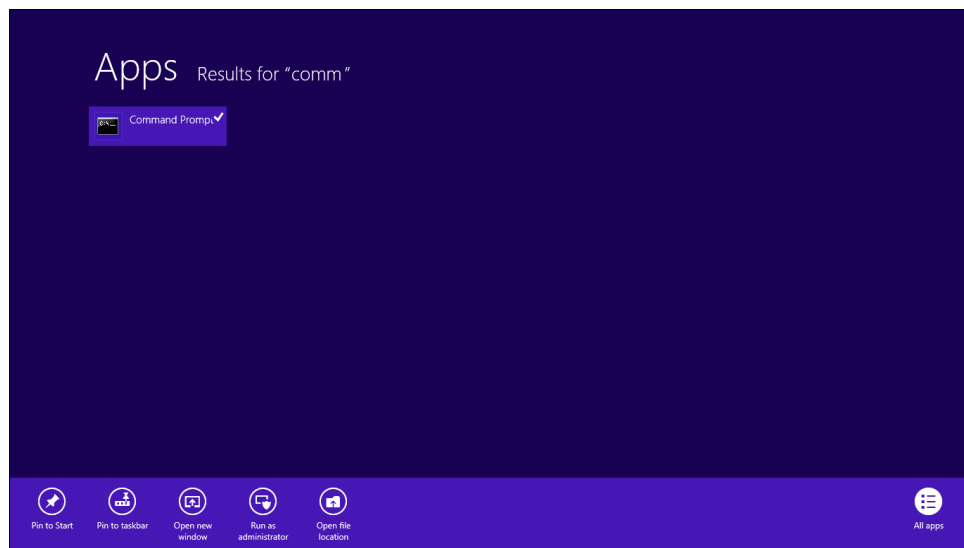
Note: For more information, see the System BIOS Configuration section.

2. Prepare the mSATA module by cleaning it of any data.

Note: Save any data if needed.

3. From the Start screen, type **Command**.

4. Right-click **Command**, and then select **Run as Administrator**.



5. At the DOS prompt, type: **DISKPART**

6. Next, type **List Disk**.

7. Select the mSATA module by typing **SELECT DISK x** (where x is the number associated with the mSATA module. For instance, if the mSATA module is Disk 1, type **SELECT DISK 1**).

8. Type **CLEAN**, and then restart your computer.

```
Administrator: Command Prompt - DISKPART
Microsoft Windows [Version 6.2.9200]
(c) 2012 Microsoft Corporation. All rights reserved.
C:\Windows\system32>DISKPART
Microsoft DiskPart version 6.2.9200
Copyright (C) 1999-2012 Microsoft Corporation.
On computer: HP

DISKPART> LIST DISK

   Disk ###  Status         Size      Free      Dyn  Gpt
   -----  -
   Disk 0    Online         465 GB    6144 KB
   Disk 1    Online         29 GB     29 GB

DISKPART> SELECT DISK 1
Disk 1 is now the selected disk.

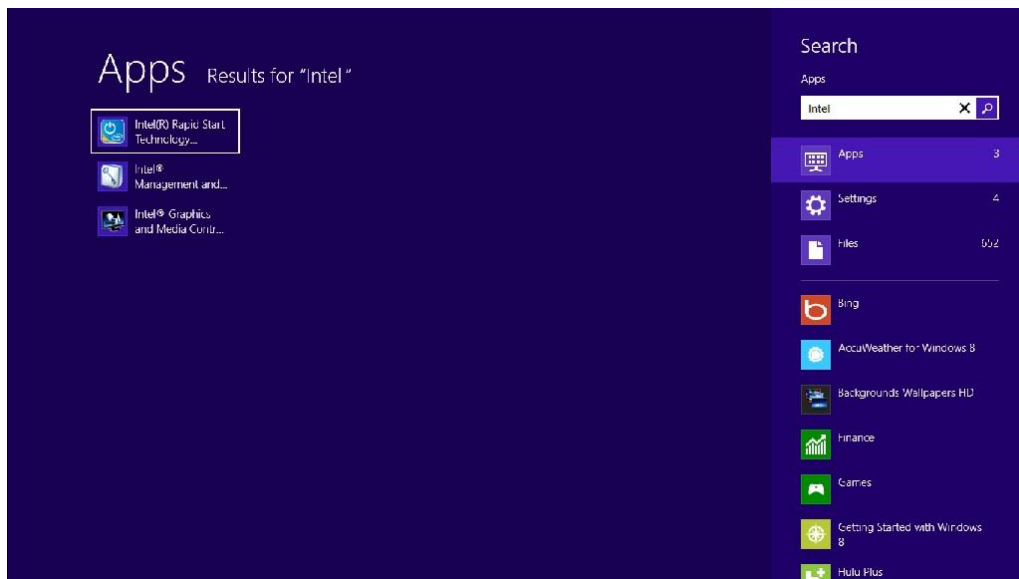
DISKPART> CLEAN
DiskPart succeeded in cleaning the disk.
DISKPART>
```

9. Ensure that the appropriate Intel Chipset Utility and the Intel Rapid Storage Technology software are installed.

Enabling Smart Response Technology

Smart Response Technology must first be enabled before enabling Rapid Start Technology.

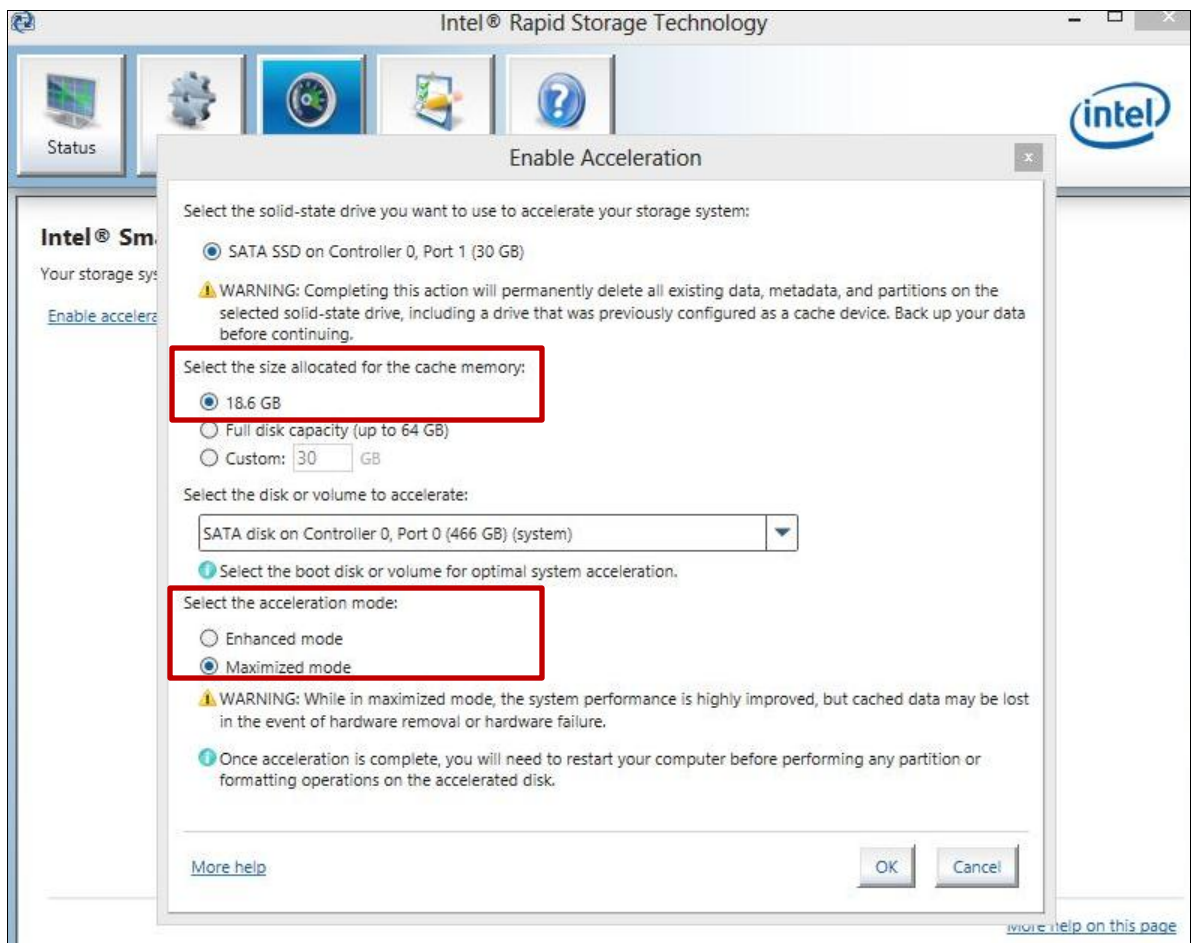
1. From the Start screen, type [Intel](#) and then select **Intel Rapid Storage Technology**.



2. Select the **Accelerate** button, and then click **Enable Acceleration**.



3. Select **18.6 GB** for size allocated for the cache memory and **Maximized mode** for the acceleration mode.

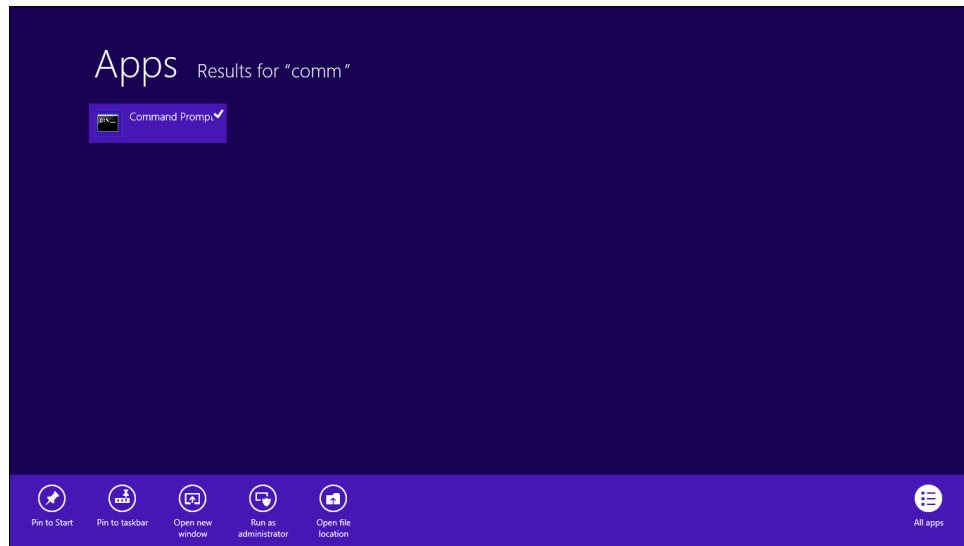


4. Restart your computer.

Creating the healthy hibernation partition

To prepare the healthy hibernation partition on the mSATA module:

1. From the Start screen, type [Command](#).
2. Right-click **Command**, and then select **Run as Administrator**.



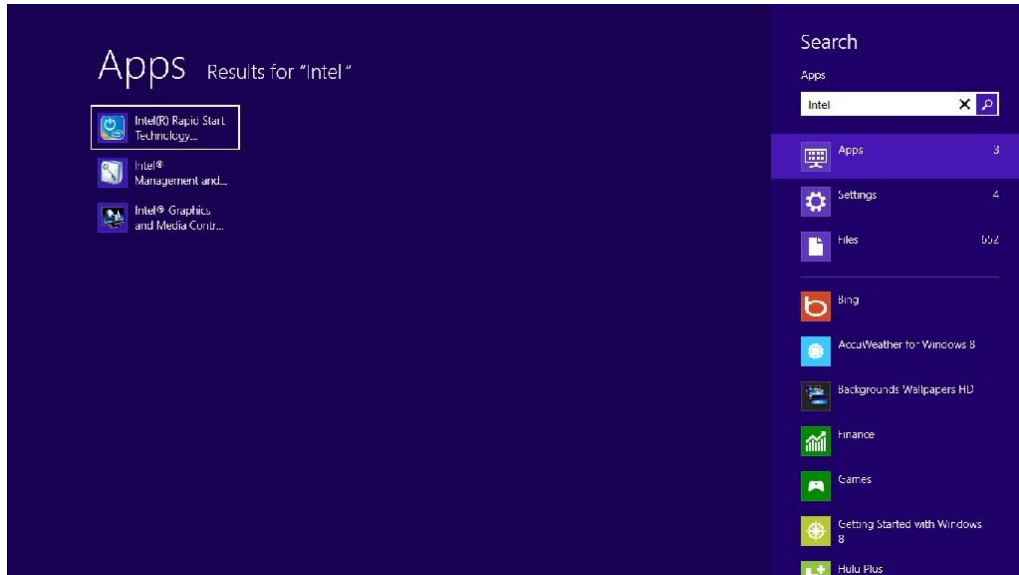
3. At the DOS prompt, type: [DISKPART](#)
4. Next, type [List Disk](#).
5. Select the mSATA module by typing [SELECT DISK x](#) (where x is the number associated with the mSATA module. For instance, if the mSATA module is Disk 1, type [SELECT DISK 1](#)).
6. Next, type: [Create Partition Primary](#), and then type [SET ID=84 OVERRIDE](#).
7. Click **Exit** to exit the screen, and then restart your computer.


```
Administrator: Command Prompt - DISKPART
Microsoft Windows [Version 6.2.9200]
(c) 2012 Microsoft Corporation. All rights reserved.
C:\Windows\system32>DISKPART
Microsoft DiskPart version 6.2.9200
Copyright (C) 1999-2012 Microsoft Corporation.
On computer: HP
DISKPART> LIST DISK
Disk ###  Status              Size               Free               Dyn  Gpt
-----  -
Disk 0    Online              465 GB             1024 KB             *
Disk 1    Online              11 GB              11 GB
DISKPART> SELECT DISK 1
Disk 1 is now the selected disk.
DISKPART> CREATE PARTITION PRIMARY
DiskPart succeeded in creating the specified partition.
DISKPART> SET ID=84 OVERRIDE
DiskPart successfully set the partition ID.
DISKPART>
```

Enter timer duration

To install the Intel Rapid Start Technology software:

1. From the Start screen, type [Intel](#).
2. Select **Intel Rapid Start Technology**.



3. Use the slider to set the time duration for the computer to enter Rapid Start Technology hibernation.

Note: The default time is 60 minutes (recommended).



3. Restart the computer.

Issues related to replacing the operating system

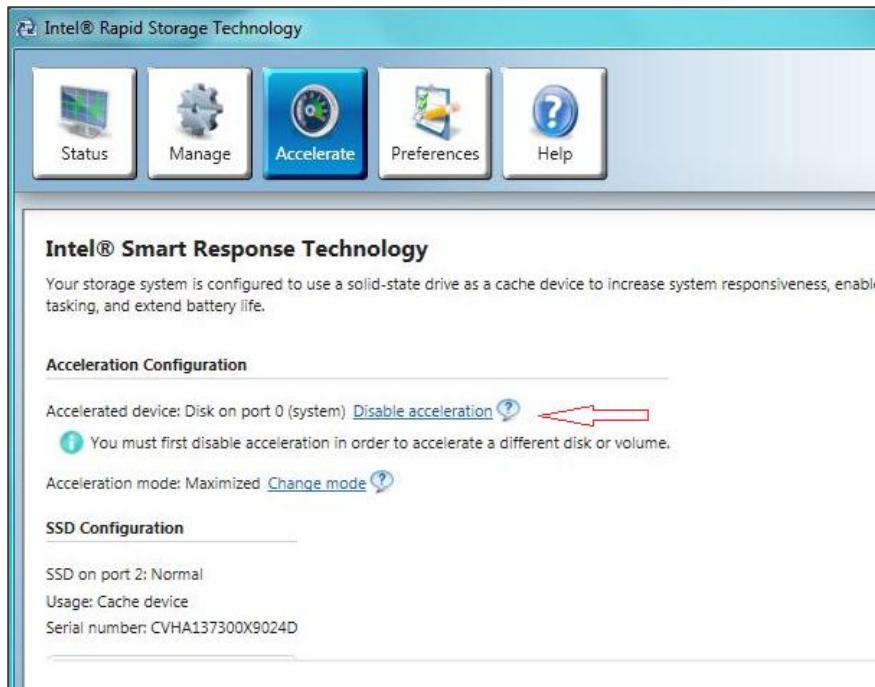
Removing data from mSATA module

If it becomes necessary to reinstall the original operating system, Smart Response Technology and Rapid Start Technology should first be disabled using their respective user interfaces before the operating system is removed.

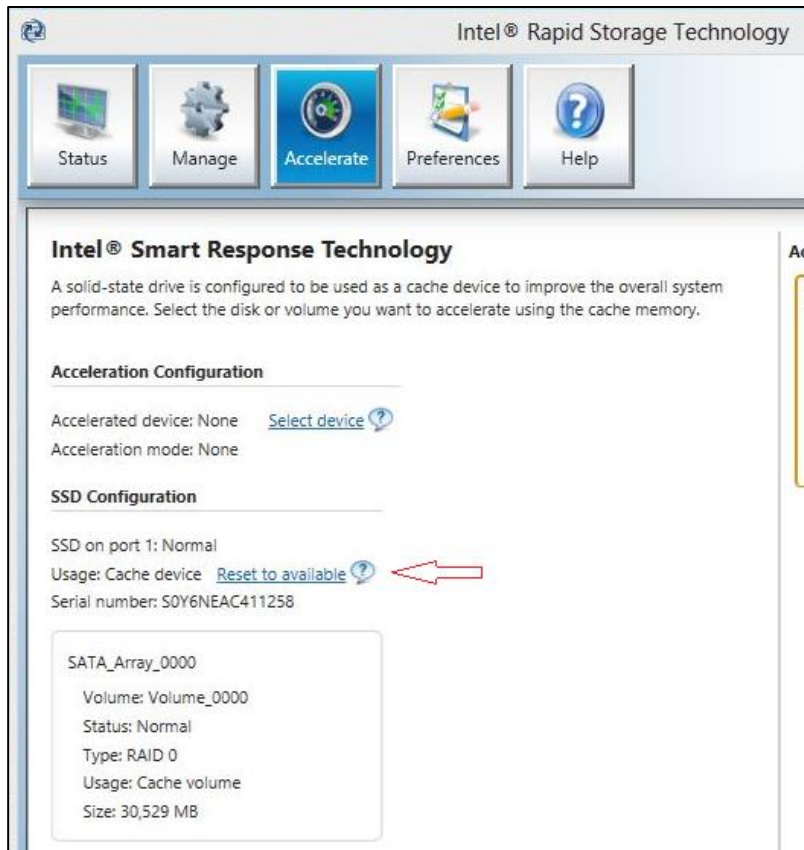
Note: Save any personal data you may have stored on the mSATA module before starting this process.

Disabling Smart Response Technology

1. Launch Intel Rapid Storage Technology.
2. Click the **Acceleration** tab
3. Click the **Disable Acceleration** link and wait for completion



4. Click the **Reset To Available** link when it displays in the tab.



Disabling Rapid Start Technology

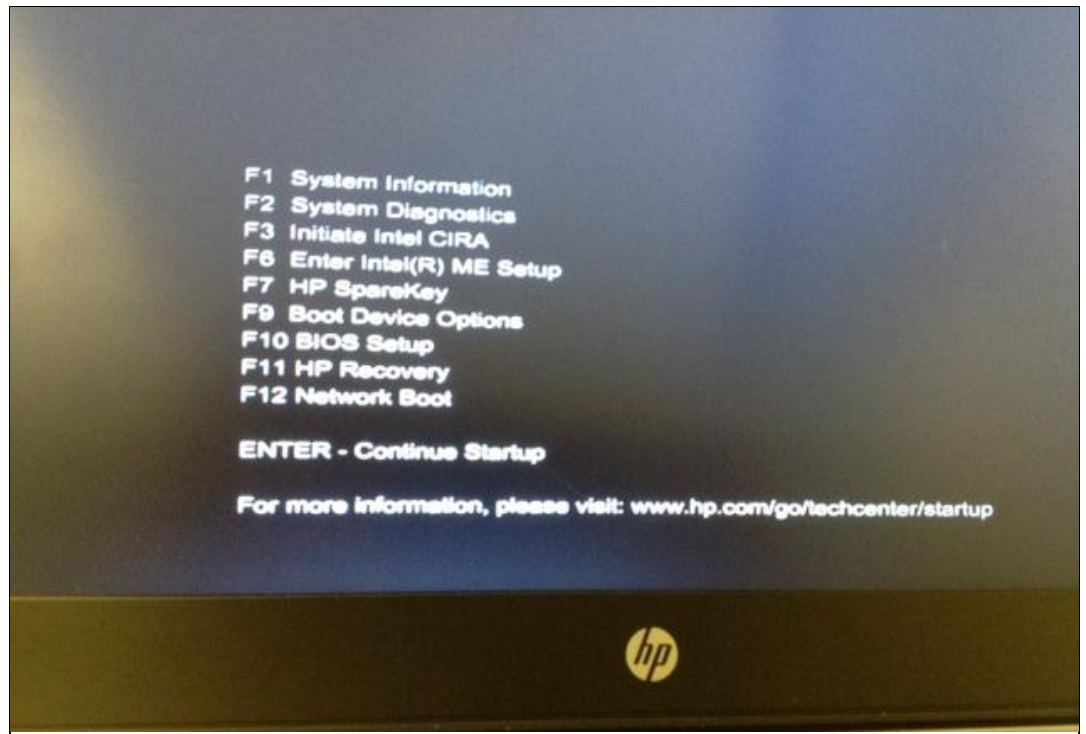
1. Launch Intel Rapid Start Technology.
2. Click **Off** in the **Intel Rapid Start Technology** field.



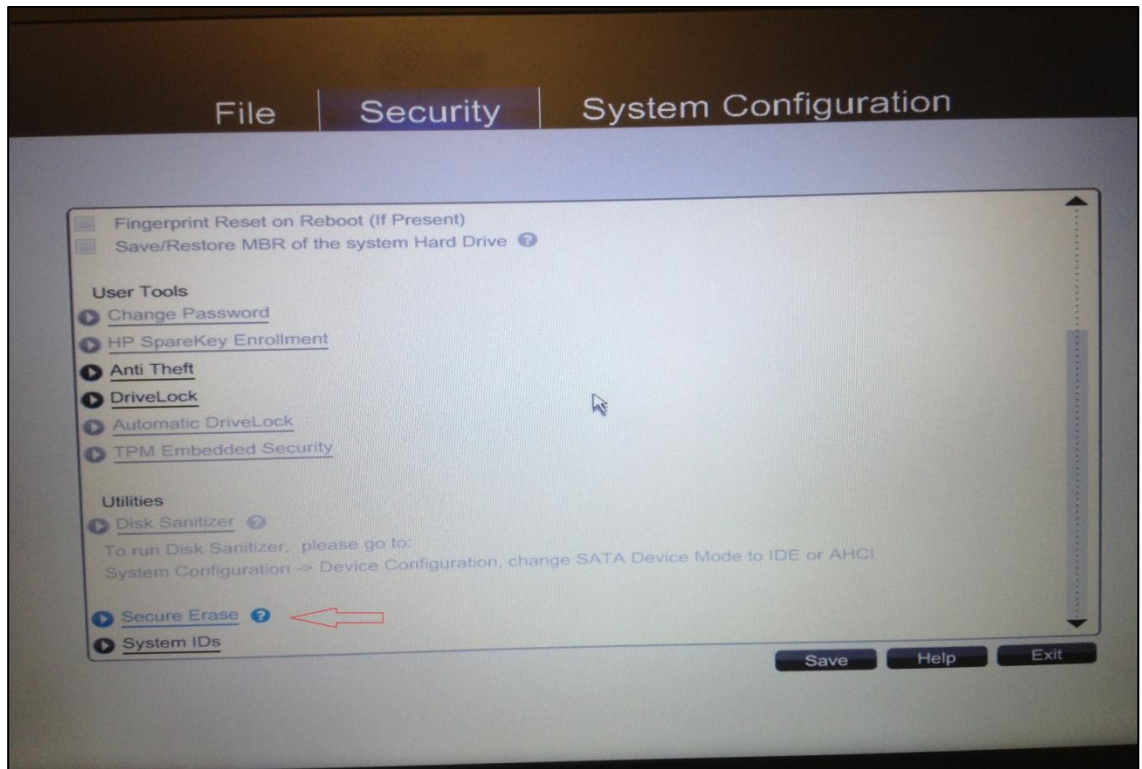
Preparing the mSATA module for the operating system reinstallation

To ensure that all data and partitions have been removed from the mSATA module, follow the steps below.

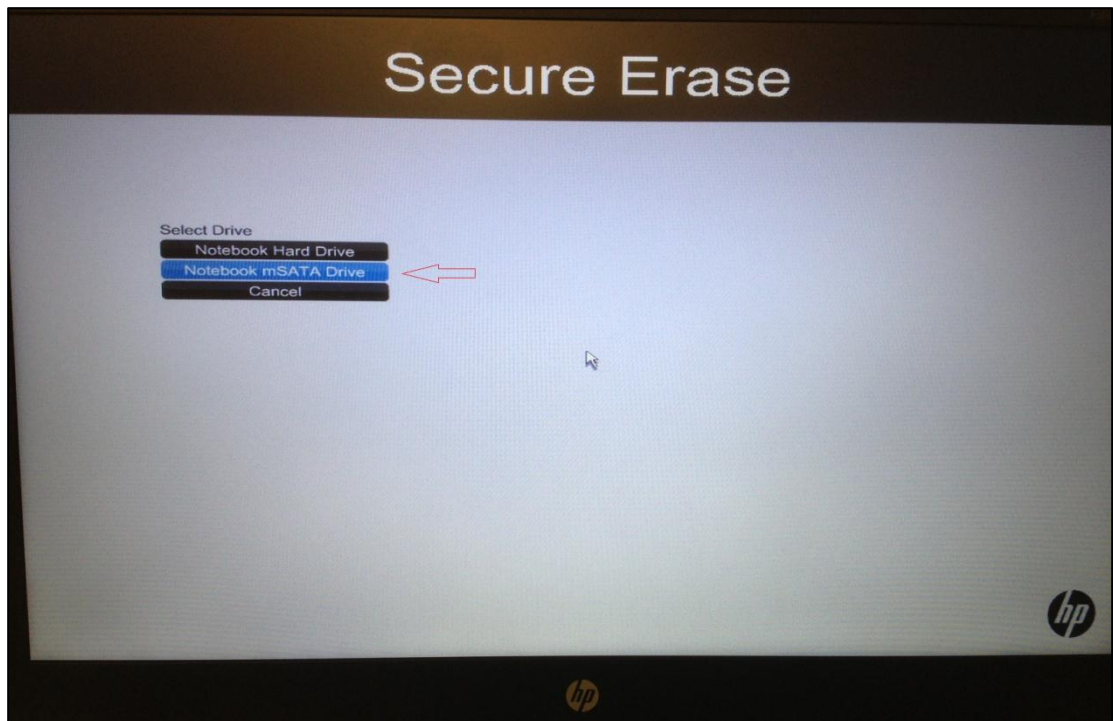
1. Power off the computer.
2. Press the power button to start up the computer, and then press the **ESC** key to bring up the **Startup** menu.
3. Next, select the **F10** key to enter the **BIOS Setup** menu.



4. Next, use the arrows to move to or click to select the **Security** tab. Next, use the arrows to move to **Secure Erase**, and then press **Enter**.



5. In the **Secure Erase** page, use the arrows to select **Notebook mSATA Drive**, and then press **Enter**.



6. Follow the on-screen instructions to erase the mSATA drive.

Secure Erase

There is no progress information available.
Interrupting this process may render the drive unusable.
Please wait for confirmation of completion.
Estimated wait time is :
32 minutes

Do you want to continue?

7. Once complete, exit the **BIOS** Menu, and then restart the computer to proceed with the reinstallation of the operating system.

For more information

For U.S. support, go to <http://www.hp.com/go/contactHP>. For worldwide support, go to http://welcome.hp.com/country/us/en/wwcontact_us.html.

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Follow on  >>



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