# 6

# System Setup

**Topics:**



## General options

**Table 6. General options**

| Option | Description |
|---|---|
| **System Information** | This section lists the primary hardware features of your computer.<br>● System Information<br>● Memory Configuration<br>● Processor Information<br>● Device Information<br>● PCI Information |
| **Boot Sequence** | Allows you to change the order in which the computer attempts to find an operating system.<br>● Diskette Drive<br>● USB Storage Device<br>● CD/DVD/CD-RW Drive<br>● Onboard NIC<br>● Internal HDD |
| **Boot List Option** | Allows you to change the boot list option.<br>● Legacy<br>● UEFI |
| **Advanced Boot Options** | Allows you to Enable Legacy Option ROMs<br>● **Enable Legacy Option ROMs**—Default<br>● **Enable Attempt Legacy Boot** |
| **Date/Time** | Allows you to set the date and time. The changes to the system date and time take effect immediately. |

**Table 6. General options (continued)**

| Option | Description |
|---|---|
| **UEFI Boot Path Security** | Allows you to control whether the system prompts the user to enter the Admin password when booting to a UEFI boot path.<br>Click one of the following options:<br>• **Always, Except Internal HDD**—Default<br>• **Always**<br>• **Never** |

# System configuration

**Table 7. System Configuration**

| Option | Description |
|---|---|
| **Integrated NIC** | Allows you to configure the integrated network controller. The options are:<br>• Enable UEFI Network Stack<br>• Disabled<br>**NOTE:** You can use the Disabled option, only if Active Management Technology (AMT) option is disabled.<br>• Enabled<br>• **Enabled w/PXE** (Default) |
| **Integrated NIC 2** | Allows you to configure the integrated network controller. The options are:<br>• **Enabled** (Default)<br>• Enabled w/PXE<br>**NOTE:** This feature is supported only on Tower 7920. |
| **UEFI Network Stack** | Allows pre-OS and early OS networking features to use any enabled NICs.<br>• **Enabled UEFI Network Stack**<br>This option is set by default. |
| **Serial Port** | Identifies and defines the serial port settings. You can set the serial port to:<br>• Disabled<br>• **COM1** (Default)<br>• COM2<br>• COM3<br>• COM4<br>**NOTE:** The operating system may allocate resources even if the setting is disabled. |
| **SATA Operation** | |
| **7920 Tower** | Allows you to configure the internal SATA hard-drive controller. The options are:<br>• Disabled<br>• AHCI<br>• **RAID-On** (Default)<br>**NOTE:** SATA is configured to support RAID mode. |
| **Drives** | |

**Table 7. System Configuration (continued)**

| Option | Description |
|---|---|
| **7920 Tower** | • SATA–0<br>• SATA–1<br>• SATA–2<br>• SATA–3<br>• SATA–4<br>• SATA–5<br>• SATA–6<br>• SATA–7<br>• SATA–8<br>Default Setting: **All drives are enabled.**<br>**NOTE:** If the hard drives are connected to a RAID controller card, the hard drives will display {none} in all the fields. The hard drives can be seen in the RAID controller card BIOS. |
| **PCIe Drives** | Allows the enabling of Front PCIe attached Ports.<br>• MiniSAS PCIe SSD-0<br>• MiniSAS PCIE SSD-1<br>• MiniSAS PCIe SSD-2<br>• MiniSAS PCIE SSD-3<br>Default Setting: **All drives are enabled.** |
| **SMART Reporting** | This field controls if the hard drive errors for the integrated drives are reported during system startup. This technology is part of the SMART (Self Monitoring Analysis and Reporting Technology) specification.<br>• **Enable SMART Reporting** - This option is disabled by default. |
| **USB Configuration** | Allows you to enable or disable the internal USB configuration. The options are:<br>• Enable Boot Support<br>• Enable Front USB Ports<br>• Enable internal USB ports<br>• Enable rear USB Ports |
| **HDD Fans** | Allows you to control the HDD fans.<br>Default Setting: depends on the system configuration |
| **Audio** | Allows you enable or disable the audio feature.<br>• **Enable Audio** (Default) |
| **Memory Map IO above 4GB** | Allows you enable or disable Memory Map IO above 4GB.<br>• **Memory Map IO above 4GB** - This option is disabled by default. |
| **Thunderbolt** | Allows you to enable or disable Thunderbolt device support capability.<br>• **Enabled**<br>• **Disabled** (Default) |
| **Miscellaneous devices** | Allows you to enable or disable various on board devices.<br>• **Enable Secure Digital (SD) Card** (Default On)<br>• **Secure Digital (SD) Card Read Only Mode**<br>• **Secure Digital (SD) Card Boot** |
| **Intel VMD Technology** | Allows you to enable or disable VMD on the front PCIe bays. |

### Table 7. System Configuration (continued)

| Option | Description |
|---|---|
| | • **PCIe0**<br>• **PCIe1**<br>• **PCIe0_CPU1**<br>• **PCIe1_CPU1**<br>Default Setting: **All options are enabled**.<br>Allows you to disable VMD for the PCIe Slots.<br>• **Auto** (Default On)<br>• **Disabled** |

# Video

### Table 8. Video

| Option | Description |
|---|---|
| **Primary Video Slot** | Allows you to configure primary boot video device. The options are:<br>• **Auto** (Default)<br>• SLOT 1<br>• SLOT 2: VGA Compatible<br>• SLOT 3<br>• SLOT 4<br>• SLOT 5<br>• SLOT 6<br>• SLOT1_CPU2: VGA Compatible<br>• SLOT2_CPU2 |

# Security

### Table 9. Security

| Option | Description |
|---|---|
| **Strong Password** | Allows you to enforce the option to always set strong passwords.<br>Default Setting: **Enable Strong Password** is not selected. |
| **Password Configuration** | You can define the length of your password. Min = 4 , Max = 32 |
| **Password Bypass** | Allows you to enable or disable the permission to bypass the System password, when it is set. The options are:<br>• **Disabled** (Default)<br>• Reboot bypass |
| **Password Change** | Allows you to enable the disable permission to the System passwords when the administrator password is set.<br>Default Setting: **Allow Non-Admin Password Changes** is selected |
| **UEFI Capsule Firmware Updates** | Allows you to update the system BIOS via UEFI capsule update packages.<br>• **Enable UEFI Capsule Firmware Updates**<br>This option is set by default. |
| **TPM Security** | Allows you to enable the Trusted Platform Module (TPM) during POST.<br>Default Setting: The option is disabled. |

### Table 9. Security (continued)

| Option | Description |
|---|---|
| **Computrace (R)** | Allows you to activate or disable the optional Computrace software. The options are:<br>• **Deactivate** (Default)<br>• Disable<br>• Activate |
| **Chassis Intrusion** | Allows you to control the chassis intrusion feature.<br>Click one of the following options:<br>• **Disabled**—Default<br>• **Enabled**<br>• **On-Silent** |
| **CPU XD Support** | Allows you to enable the Execute Disable mode of the processor.<br>• **Enable CPU XD Support** (Default) |
| **OROM Keyboard Access** | Allows you to determine whether users are able to enter Option ROM Configuration screens via hotkeys during boot. The options are:<br>• **Enable** (Default)<br>• One Time Enable<br>• Disable |
| **Admin Setup Lockout** | Allows you to prevent users from entering Setup when an administrator password is set.<br>• **Enable Admin Setup Lockout**<br>Default Setting: The option is disabled. |

# Secure boot

### Table 10. Secure Boot

| Option | Description |
|---|---|
| **Secure Boot Enable** | Allows you to enable or disable the Secure Boot Feature. The options are:<br>• **Disabled** (Default)<br>• Enabled |
| **Expert Key Management** | Allows you to enable or disable Custom Mode Key Management.<br>• **Disabled** (Default) |

# Performance

### Table 11. Performance

| Option | Description |
|---|---|
| **Multi Core Support** | This field specifies whether the processor will have one or all cores enabled. The performance of some applications will improve with the additional cores. This option is enabled by default. Allows you to enable or disable multi-core support for the processor. The options are:<br>• **All** (Default)<br>• 1<br>• 2<br>• 3<br>• 4 |

**Table 11. Performance (continued)**

| Option | Description |
|---|---|
| | • 5<br>• 6<br>• 7<br>• 8<br>**NOTE:**<br>• The options displayed could be different depending on the installed processor(s).<br>• The options depend on the number of cores supported by the installed processor (All, 1, 2, N-1 for N-Core Processors) |
| **Intel SpeedStep** | Allows you to enable or disable the Intel SpeedStep feature.<br>Default Setting: **Enable Intel SpeedStep** |
| **C States** | Allows you to enable or disable the additional processor sleep states.<br>Default Setting: **Enabled** |
| **Intel TurboBoost** | Allows you to enable or disable the Intel TurboBoost mode of the processor.<br>Default Setting: **Enable Intel TurboBoost** |
| **Hyper-Thread Control** | Allows you to enable or disable the HyperThreading in the processor.<br>Default Setting: **Enabled** |
| **Cache Prefetch** | Default Setting: **Enable Hardware Prefetch and Adjacent Cache Line Prefetch** |
| **Dell Reliable Memory Technology (RMT)** | Allows you to identify and isolate memory errors in system RAM..<br>Default Setting: **Enable Dell Reliable Memory Technology (RMT)** |
| **System Isochronous Mode** | Allows you to enable or disable this mode to reduce latency of memory transactions at the expense of bandwidth. :<br>Click one of the options:<br>• **Disabled**(Default)<br>• **Enabled** |
| **RAS Support** | Allows you to report or log errors caused by memory failures, the PCIe failures, CPU failures. The options are:<br>• **Enable on Memory modules**<br>• **Enable on PCIe modules**<br>• **Enable on CPU modules**<br>The options are not set by default. |

# Power management

### Table 12. Power Management

| Option | Description |
|---|---|
| **AC Recovery** | Specifies how the computer will respond when AC power is applied after a AC power loss. You can set the AC Recovery to:<br>• **Power Off** (Default)<br>• Power On<br>• Last Power State |
| **Auto On Time** | Allows you to set the time at which the computer must turn on automatically. The options are:<br>• **Disabled** (Default)<br>• Every Day<br>• Weekdays<br>• Select Days |
| **Deep Sleep Control** | Allows you to define the controls when Deep Sleep is enabled.<br>• **Disabled** (Default)<br>• Enabled in S5 only<br>• Enabled in S4 and S5 |
| **USB Wake Support** | Allows you to enable USB devices to wake the system from standby.<br>• **Enable USB Wake Support**<br>Default Setting: The option is disabled. |
| **Wake on LAN** | This option allows the computer to power up from the off state when triggered by a special LAN signal. Wake-up from the Standby state is unaffected by this setting and must be enabled in the operating system. This feature only works when the computer is connected to AC power supply.<br>• **Disabled** - Does not allow the system to power on by special LAN signals when it receives a wake-up signal from the LAN or wireless LAN.<br>• **LAN Only** - Allows the system to be powered on by special LAN signals.<br>• **LAN with PXE Boot** - Allows the system to power on and immediately boot to PXE when it receives a wake-up packet sent to the system in either the S4 or S5 state.<br>This option is Disabled by default. |
| **Block Sleep** | Allows you to block entering to sleep (S3 state) in OS Environment.<br>Default Setting: **Disabled** |

# POST behavior

### Table 13. POST Behavior

| Option | Description |
|---|---|
| **Numlock LED** | Specifies if the NumLock function can be enabled when the system boots. This option is enabled by default. |
| **Keyboard Errors** | Specifies whether keyboard related errors are reported when it boots. This option is enabled by default. |
| **Fastboot** | Allows you to speed up the boot process by bypassing some compatibility steps. The options are:<br>• Minimal<br>• **Thorough** - This option is enabled by default.<br>• Auto |

# Virtualization support

### Table 14. Virtualization Support

| Option | Description |
|---|---|
| **Virtualization** | This option specifies whether a Virtual Machine Monitor (VMM) can utilize the additional hardware capabilities provided by Intel Virtualization technology.<br>• **Enable Intel Virtualization Technology** - This option is enabled by default. |
| **VT for Direct I/O** | Enables or disables the Virtual Machine Monitor (VMM) from utilizing the additional hardware capabilities provided by Intel Virtualization technology for direct I/O.<br>• **Enable VT for Direct I/O** - This option is enabled by default. |
| **Trusted Execution** | Allows you to specify whether a Measured Virtual Machine Monitor (MVMM) can utilize the additional hardware capabilities provided by Intel Trusted Execution Program.<br>• **Trusted Execution** - This option is disabled by default. |

# Maintenance

### Table 15. Maintenance

| Option | Description |
|---|---|
| **Service Tag** | Displays the service tag of your computer. |
| **Asset Tag** | Allows you to create a system asset tag if an asset tag is not already set. This option is not set by default. |
| **SERR Messages** | Controls the SERR message mechanism. This option is not set by default. Some graphics cards require that the SERR message mechanism be disabled. |

# System logs

### Table 16. System Logs

| Option | Description |
|---|---|
| **BIOS events** | Displays the system event log and allows you to clear the log.<br>• Clear Log |

# Engineering configurations

### Table 17. Engineering configurations

| Option | Description |
|---|---|
| **ASPM** | • **Auto** (Default)<br>• L1 Only<br>• Disabled<br>• L0s and L1<br>• L0s Only |
| **Pcie LinkSpeed** | • **Auto** (Default)<br>• Gen1<br>• Gen2<br>• Gen3 |

# Updating the BIOS

## Updating the BIOS in Windows

**CAUTION: If BitLocker is not suspended before updating the BIOS, the BitLocker key is not recognized the next time you reboot the computer. You will then be prompted to enter the recovery key to proceed, and the computer displays a prompt for the recovery key on each reboot. Failure to provide the recovery key can result in data loss or an operating system reinstall. For more information, see the Knowledge Base Resource Updating the BIOS on Dell systems with BitLocker enabled.**

**CAUTION: Do not turn off the computer during the BIOS flash update process. The computer may not boot if you turn off your computer.**

1. Go to Dell Support Site.
2. Go to **Identify your product or ask support**. In the box, enter the product identifier, model, service request or describe what you are looking for, and then click **Search**.

   **NOTE:** If you do not have the Service Tag, click **Detect This PC**. The site automatically detects your device, and you can then click **Explore Product Support** to go to the support page for your device. You can also use the product ID or manually browse for your computer model.

3. Click **Drivers & Downloads**.
4. Select the operating system installed on your computer.
5. In the **Category** drop-down list, select **BIOS**.
6. Select the latest version of BIOS, and click **Download** to download the BIOS file for your computer.
7. After the download is complete, navigate to the folder where the BIOS update file has been saved.
8. Double-click the BIOS update file and follow the on-screen instructions.

   For more information, search in the Knowledge Base Resource at Dell Support Site.

## Updating the BIOS in Linux and Ubuntu

To update the system BIOS on a computer that is installed with Linux or Ubuntu, see the Dell Knowledge Base article 000131486 at Dell Support Site.

## Updating the BIOS using the USB drive in Windows

**CAUTION: If BitLocker is not suspended before updating the BIOS, the BitLocker key is not recognized the next time you reboot the computer. You will then be prompted to enter the recovery key to proceed, and the computer displays a prompt for the recovery key on each reboot. Failure to provide the recovery key can result in data loss or an operating system reinstall. For more information, see the Knowledge Base Resource Updating the BIOS on Dell systems with BitLocker enabled.**

**CAUTION: Do not turn off the computer during the BIOS flash update process. The computer may not boot if you turn off your computer.**

1. Go to Dell Support Site.
2. Go to **Identify your product or ask support**. In the box, enter the product identifier, model, service request or describe what you are looking for, and then click **Search**.

   **NOTE:** If you do not have the Service Tag, click **Detect This PC**. The site automatically detects your device, and you can then click **Explore Product Support** to go to the support page for your device. You can also use the product ID or manually browse for your computer model.

3. Click **Drivers & Downloads**.
4. Select the operating system installed on your computer.
5. In the **Category** drop-down list, select **BIOS**.

6. Select the latest version of BIOS, and click **Download** to download the BIOS file for your computer.
7. Create a bootable USB drive. For more information, search the Knowledge Base Resource at Dell Support Site.
8. Copy the BIOS Setup program file to the bootable USB drive.
9. Connect the bootable USB drive to the computer that needs the BIOS update.
10. Restart the computer and press **F12**.
11. Select the USB drive from the **One Time Boot Menu**.
12. Type the BIOS Setup program filename and press **Enter**.
    The **BIOS Update Utility** appears.
13. Follow the on-screen instructions to complete the BIOS update.

## Updating the BIOS from the One-Time boot menu

To update the BIOS from the One-Time boot menu, see Knowledge base article 000128928 at Dell Support Site.

# MegaRAID controller options

During bootup, press <Ctrl> + <R> when prompted by the BIOS screen to get to the BIOS configuration utility.

**Table 18. MegaRAID configuration utility**

| Option | Description |
|---|---|
| **VD Mgmt (Virtual Device Management)** | This option is used to import the existing configuration to the RAID controller or clear the existing configuration. The right-hand panel of the screen lists attributes of the virtual drive or other device selected in the left panel.<br>• Virtual Drives<br>• Drives<br>• Available size<br>• Hot spare drives |
| **PD Mgmt (Physical Drive Management)** | This screen displays basic information about existing physical drives connected to the selected controller, including drive ID, vendor, size, type, and state and allows you to manage physical drives.<br>Press F2 to show the context menu:<br>• Rebuild<br>• Copyback<br>• Locate<br>• Place Drive online<br>• Place drive offline<br>• Make Global HS<br>• Remove Hot Spare drive<br>• Make JBOD<br>• Make unconfigured good<br>• Prepare for Removal |
| **Ctrl Mgmt (Control Management)** | This screen allows you to change the settings for controller options such as Enable Controller BIOS, Enable BIOS Stop on Error and others. It also allows you to select a bootable virtual drive, restore default controller settings. |
| **Properties** | The Properties screen displays the controller properties like current versions of the controller BIOS, the MegaRAID firmware the Configuration Utility and the Boot block. |

**NOTE:** Press <Ctrl> + <N> to move to the next screen and Press <Ctrl> + <P> to go back to the previous screen.

# System and setup password

**Table 19. System and setup password**

| Password type | Description |
|---|---|
| System password | Password that you must enter to log on to your system. |
| Setup password | Password that you must enter to access and make changes to the BIOS settings of your computer. |

You can create a system password and a setup password to secure your computer.

**CAUTION: The password features provide a basic level of security for the data on your computer.**

**CAUTION: Anyone can access the data stored on your computer if it is not locked and left unattended.**

**NOTE:** System and setup password feature is disabled.

## Assigning a system setup password

You can assign a new **System or Admin Password** only when the status is in **Not Set**.

To enter the system setup, press F2 immediately after a power-on or reboot.

1. In the **System BIOS** or **System Setup** screen, select **Security** and press **Enter**.
   The **Security** screen is displayed.
2. Select **System/Admin Password** and create a password in the **Enter the new password** field.
   Use the following guidelines to assign the system password:
   - A password can have up to 32 characters.
   - The password can contain the numbers 0 through 9.
   - Only lower case letters are valid, upper case letters are not allowed.
   - Only the following special characters are allowed: space, ("), (+), (,), (-), (.), (/), (;), ([), (\), (]), (`).
3. Type the system password that you entered earlier in the **Confirm new password** field and click **OK**.
4. Press **Esc** and a message prompts you to save the changes.
5. Press **Y** to save the changes.
   The computer reboots.

## Deleting or changing an existing system setup password

Ensure that the **Password Status** is Unlocked (in the System Setup) before attempting to delete or change the existing System and Setup password. You cannot delete or change an existing System or Setup password, if the **Password Status** is Locked.

To enter the System Setup, press **F2** immediately after a power-on or reboot.

1. In the **System BIOS** or **System Setup** screen, select **System Security** and press **Enter**.
   The **System Security** screen is displayed.
2. In the **System Security** screen, verify that **Password Status** is **Unlocked**.
3. Select **System Password**, alter or delete the existing system password and press **Enter** or **Tab**.
4. Select **Setup Password**, alter or delete the existing setup password and press **Enter** or **Tab**.

   **NOTE:** If you change the System and/or Setup password, re enter the new password when prompted. If you delete the System and Setup password, confirm the deletion when prompted.

5. Press **Esc** and a message prompts you to save the changes.

6. Press **Y** to save the changes and exit from System Setup.
   The computer restarts.