



SSD Guru

Installation and User Guide

Software Version 1.0



A Toshiba Group Company

Contents

Welcome!	1
Key features	1
System requirements	1
Installing SSD Guru	2
Install SSD Guru in Windows or Linux	2
Create a bootable CD or USB flash drive	2
Start SSD Guru	3
UI overview	4
Uninstall SSD Guru	4
Using SSD Guru	5
View the SSD dashboard	5
View SSD details	6
View system details	6
View SMART details	6
Trim your SSD	7
Manage over provisioning	7
Tune the SSD operating system	7
Update firmware or BIOS	8
Secure erase data from an SSD	8
Manage deterministic trim	8
Manage system settings	9
Find further information	9
Save a support package	9

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Installation Technical Support

OCZ products include free technical support for direct, expert advice. For installation technical support, you can contact us at <http://ocz.com/consumer/support>.

Welcome!

The OCZ SSD Guru replaces the OCZ Toolbox. SSD Guru enables you to manage and get the best out of your OCZ SSDs.

Key features

SSD Guru enables you to:

- see a dashboard view of the status of your SSD
- see a detailed view of SMART attributes
- update SSD firmware and BIOS
- manage over provisioning
- optimize your operating system
- trim blocks of data that are no longer in use
- secure erase data to make it unrecoverable
- assist OCZ technical support diagnose problems with views and logs of SSD, computer and SSD Guru details

System requirements

Supported OCZ SSDs include:

- RevoDrive 3 and 350 family
- Vector family
- Vertex 4n0 family
- Arc family
- Radeon family

Supported operating systems:

- Windows 8.1, 8, 7
- Linux distributions:
 - Fedora 19 and above
 - Mint 17 and above
 - Ubuntu 14.04 and above



Before using the SSD Guru:

- Windows and Linux: set the SATA controller to AHCI mode in the motherboard BIOS; for instructions see the user documentation for your computer
- you must run SSD Guru as an administrator
- for firmware or BIOS updates, your computer must be connected to the internet
- make back-up copies of any data on the SSD that you want to keep; some operations result in the complete loss of data on the SSD (you are warned if this will happen)

Installing SSD Guru

This guide assumes that you have already correctly installed your OCZ SSDs. You can:

- Install SSD Guru in Windows or Linux
- Create a bootable CD or USB flash drive. This enables you to do some things that you cannot do from within your operating system. For example, for some SSDs you cannot update the firmware if it is the system boot drive

Install SSD Guru in Windows or Linux

Windows - run the installer and follow the onscreen instructions.

Linux - copy the executable to the location on your computer from which you want to run it.

Create a bootable CD or USB flash drive

You can create a bootable CD or bootable flash drive to boot your Windows, Linux or Mac system and start SSD Guru. Before you start, ensure that you back up any data on the USB flash drive that you want to keep, as any data on the flash drive is erased during this procedure. These instructions assume that you are familiar with the applications described and have access to the relevant user documentation for the full instructions.

Create a bootable CD

To create a CD from which to boot your Windows, Linux or Mac system, you burn the ISO image onto a CD using either the standard CD burning mechanism built into your operating system, or a third party CD burning utility. Examples:

- Windows 7: right click the ISO image and select **Burn disk image**, then insert the CD drive containing your blank CD
- Mac OS X: drag the ISO image into Disk Utility and click **Burn**
- Ubuntu Linux: open the ISO image using Brasero and burn the ISO to disk

Create a bootable USB flash drive

To create a bootable USB flash drive in **Windows and Linux**, you must use a third party ISO-to-USB utility to put a syslinux bootloader onto your USB flash drive, along with the contents of the ISO image.

One suitable utility is UNetbootin; see <http://unetbootin.sourceforge.net/>. Select the **DiskImage** option and enter the path to the ISO file. Select the correct disk/device for your USB flash drive and click **OK**. If a message is shown indicating that a file already exists, click **Yes to All**.

Under **Mac OS X**, do not use any third party utility. To put the required files on your USB flash drive:

- 1 Open Disk Utility and insert your USB flash drive.
- 2 Select the USB flash drive and click the Erase tab to display it.
- 3 Select format **MS-DOS (FAT)** and click **Erase**.
- 4 Double-click the ISO file to mount the ISO image.
- 5 Use drag-and-drop to copy all the files from the mounted ISO to the USB flash drive.

Start SSD Guru

Windows operating system

A shortcut to SSD Guru is installed along with the application, for example in the Start menu under **OCZ Storage Solutions - SSD Guru**. Click this to run SSD Guru.

Linux operating system

Navigate to the folder you copied SSD Guru to and double click the executable.

Windows or Linux bootable media

- 1 Insert your CD or USB flash drive into your system, then restart your system.
- 2 Set your BIOS to boot from your CD or USB flash drive; see the relevant user documentation for your system. If your BIOS supports both UEFI and legacy boot, select legacy boot.
- 3 Once the system has booted, SSD Guru automatically starts; see [UI overview on page 4](#).
- 4 To update your SSD firmware or BIOS from the internet when your PC is connected using a wireless interface, you must configure your wireless settings to allow the update.

Apple Macintosh bootable media

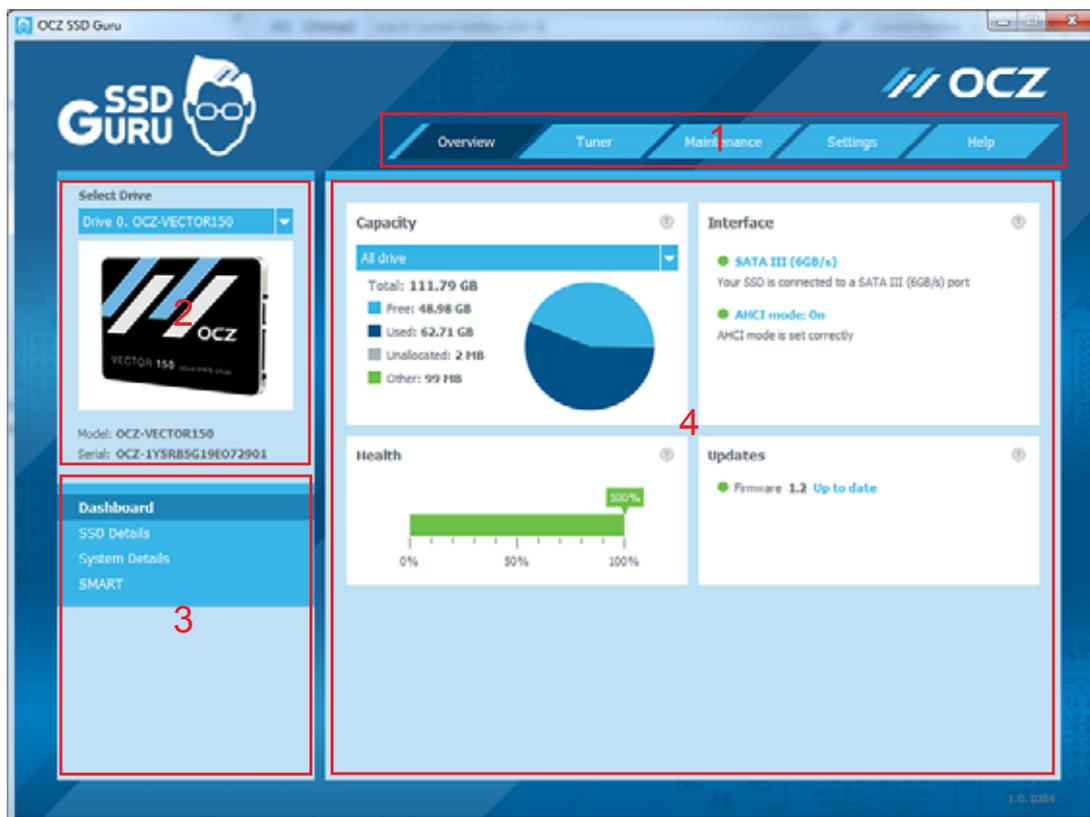
- 1 Shut down your system.
- 2 Insert the bootable CD or USB flash drive and start up your Mac.
- 3 Immediately after the chime, or when the screen switches on (indicated by the black screen becoming gray), hold down the **Option (Alt)** key until the bootable drives are listed. When using a USB flash drive, a USB icon (example below) is shown. This can take from several seconds up to several minutes: you must continue to press the **Option (Alt)** key.



- 4 SSD Guru starts; see [UI overview on page 4](#).
- 5 To update your SSD firmware or BIOS from the internet when your Mac is connected using a wireless interface, you must configure your wireless settings to allow the update.

UI overview

The SSD Guru window is divided into panes.



- 1 options bar - main tasks you can carry out; what you click here changes what is shown in the main pane and further tasks are listed in the drive list pane
- 2 select drive list - a list of SSDs attached to the current computer. If you only have one SSD attached to your computer, it is automatically selected. When you have more than one SSD attached, ensure that you select the SSD you want before you click an option in the options bar
- 3 task list - tasks you can carry out; task status information
- 4 main pane - displays information you request, or fields for a task

Uninstall SSD Guru

To uninstall from Windows, use the standard uninstall facility in Control Panel, or run the installer again and select **Remove**.

To uninstall from Linux, delete the application executable file from your computer.

Using SSD Guru

You can:

- View the SSD dashboard
- View SSD details
- View system details
- View SMART details
- Trim your SSD
- Manage over provisioning
- Tune the SSD operating system
- Update firmware or BIOS
- Secure erase data from an SSD
- Manage deterministic trim
- Manage system settings
- Find further information
- Save a support package

View the SSD dashboard

In the options bar, click **Overview**, then in the task list, click **Dashboard**. See the following descriptions of what is shown.

Capacity

Select **All Drive** to show a summary of capacity details for all partitions on your SSD, including space that is unallocated to any partition and other partitions such as those reserved by your system.

To show the amount of free and used space for a specific volume, select the volume from the list.

Interface

Interface:

Shows the connection type and speed as well as the interface connection status and suggestions for possible improvements.

● = interface connection is working optimally

● = interface connection is not working at the optimal speed. Check that the SSD is installed in a port of the correct speed

AHCI Mode (SATA SSDs only):

AHCI mode is required for optimal SSD performance and for certain features such as firmware updates.

● = AHCI mode is set and is working optimally

● = AHCI mode is not set. Enable AHCI mode in your BIOS

Warning: (Windows only) changing AHCI mode can affect your Windows system boot drive and prevent Windows from booting. Check whether your BIOS supports AHCI mode, and whether setting it affects your system boot drive. If your Windows cannot boot with AHCI mode enabled, do the following:

- 1 Click **Start**, type **regedit** in the Start Search box, then press Enter.
- 2 Locate and then click one of the following registry subkeys:
HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\Msahci
HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\IastorV
- 3 In the right-hand pane, right-click **Start** in the **Name** column, then click **Modify**.
- 4 In the **Value** field, type **0**, then click **OK**.
- 5 Reboot your computer, enter the BIOS and set ACHI mode as described in your BIOS documentation.

For more information please refer to Microsoft Knowledge Base article 922976.

Drive Health

The percentage life left for the SSD.

-  = SSD operating optimally
-  = consider replacing your SSD to prevent future data loss
-  = replace your SSD urgently

Temperature

Only shown when your SSD type reports its temperature.

-  = within the standard safe operating temperature range
-  = the SSD is reaching the maximum safe operating temperature
-  = urgent temperature reduction required to prevent data loss and damage to your SSD

Updates

If your computer is connected to the internet and your operating system permits updates while it is running, you can update firmware and BIOS here. Otherwise, see [Update firmware or BIOS on page 8](#).

-  = the latest version is installed
-  = an update has been applied but is not active; restart or shut down your system to complete the activation
-  = an update is available

Update - only shown when an update is available.

Click to download and install the update from the internet: your computer must be connected to the internet. A confirmation message is shown, click **OK** to download and install the update.

View SSD details

Shows details about your SSD, which may be needed when requesting help from OCZ technical support.

In the options bar, click **Overview**, then in the task list, click **SSD details**.

View system details

Shows technical information about your computer, which may be needed when requesting help from OCZ technical support.

In the options bar, click **Overview**, then in the task list, click **System details**.

View SMART details

Shows Self-Monitoring, Analysis and Reporting Technology (SMART) attributes. These can help you decide whether there is a problem with an SSD.

The SMART attribute types include:

- endurance - items that indicate or affect the lifetime of the SSD
- functionality - general SSD operation while the SSD is being used
- information - the environment that the SSD is being used in

To view the SMART attributes for an SSD:

- 1 In the options bar, click **Overview**, then in the task list, click SMART.
- 2 Select one of:
 - Decimal - identifiers and all values are given in decimal form
 - Hexadecimal - identifiers and all values are given in hexadecimal form

To view the current value or state for an attribute, move your mouse over the relevant row.
To show a description of an attribute, click in the row of the attribute.

Trim your SSD

You can manually send a trim command to your SSD to clear blocks of data that are no longer used by the file system.

This option is only enabled when available for your SSD.

- 1 In the options bar, click **Tuner**, then in the tasks list click **SSD Tuner**.
- 2 In the trim pane, read the warnings about permanently deleting data and the length of time this option takes to run, then click **Trim**. A message is shown when the trim is complete.

Manage over provisioning

To improve the lifetime and performance of your SSD you can reserve additional space in the largest partition on your SSD, up to the amount your operating system permits.

- 1 In the options bar, click **Tuner**, then in the tasks list click **SSD Tuner**.
- 2 In the over provisioning pane, the largest partition is automatically selected. The amount of used and free space is shown, along with any space already allocated for over provisioning.
- 3 Use the slider bar to set the amount of space you want to reserve for additional over provisioning, or enter the amount, then click **Apply**. The process can take several minutes; a message is shown when it is complete.

Tune the SSD operating system

Only available if you are using your SSD as the system boot drive in Windows; the operating system tuner optimizes performance when booting from an OCZ SSD.

- 1 In the options bar, click **Tuner**, then in the task list, click **OS Tuner**.
- 2 Use the **Optimization strategy** list to select the strategy you want. Features are automatically checked or unchecked according to the strategy you choose.

Optimization strategies are:

- Reliability - extend the life of your SSD
- Performance - optimize the performance of your system
- Capacity - maximize the space on your SSD
- Custom - choose any or all of the features you want
- Default - restores all options to the standard settings for the operating system

Optimization options are:

- Disable Boot Graphics - reduces system boot time by hiding UI animations during the boot
- Disable Pre/SuperFetch - (not available and not required in Windows 8 or later) stops the operating system caching items unnecessarily when using an SSD
- Disable Search Indexing - reduces SSD writes, but can increase search times
- Do not use hiberfil.sys - increases the available capacity and reduces SSD writes by removing the system file hiberfil.sys. When selected, you cannot use Windows hibernate, hybrid sleep or fast boot/hybrid shutdown features

Update firmware or BIOS

If your computer is connected to the internet and your operating system permits updates while it is running, you can update firmware and BIOS from the [Updates](#) pane; see [page 6](#). Otherwise you use the Maintenance option. Before updating the firmware or BIOS, back up all data on the SSD.

You can create bootable media if needed for an SSD used as the primary boot drive. The BIOS pane is only shown when relevant for your SSD type.

- 1 In the options bar, click **Maintenance**, then in the task list, click **Tools**.
- 2 In the relevant pane, select one of:
 - **Update from Web** - looks for any relevant firmware or BIOS update; your computer must be connected to the internet
 - **Update from File** - to navigate to and select the firmware or BIOS update file you want to use; the file must be supplied by OCZ and you must place it in a folder that your computer can access
- 3 If the firmware or BIOS file found or selected is a later version than the one on your SSD, a ● is shown.
- 4 If your SSD is used as a system boot drive, you may not be able to update your SSD directly. If this is the case, you need to create bootable media to perform the update; additional fields are shown for you to do so. See [Create bootable media](#) below.
- 5 Otherwise, click **Update**. A progress bar is shown and a confirmation message shown when the update is complete. A message is shown if you need to restart or shut down your computer to complete the update.

Create bootable media

- 1 To create a bootable CD, select **CD ISO file**, save the ISO file to your computer and use your operating system tools to burn the file onto a CD.
To create a bootable USB flash drive, select **USB drive**, select the USB flash drive to use and click **Create**. If your USB flash drive is not listed, click **Refresh** to update the list.
- 2 When finished, go into your computer's BIOS and change the boot settings. For instructions, see the user documentation for your system.
- 3 Reboot your computer from the USB flash drive or CD. The firmware update process normally starts automatically. A message is shown indicating when the firmware update is finished.
- 4 Reset your BIOS settings to boot from the SSD, remove the USB flash drive, then restart your computer.

Secure erase data from an SSD

You can delete data from your SSD in a way that makes it unrecoverable and return your SSD to an uninitialized state. The SSD is returned to an out-of-box state. If you want to retain the data, copy it somewhere else before you secure erase. Secure erase is disabled for system boot drives.

- 1 In the options bar click **Maintenance**, then in the task list click **Tools**.
- 2 In the secure erase pane, click **Erase**. A message is shown asking you to confirm the erase.
- 3 Click **Yes**. When completed a message is shown indicating that the secure erase has succeeded.

Manage deterministic trim

For some SSDs, you can configure your SSD to advertize whether it returns zeros after a trim is performed (see [Trim your SSD on page 7](#)), known as **RZAT**. You may need to enable this if you want to use your SSD behind certain RAID controllers. Enabling RZAT may impact performance in some benchmark measurements due to the additional processing required to perform trim. However, RZAT has less impact in normal use.

- 1 In the options bar click **Maintenance**, then in the task list click **Tools**.
- 2 In the deterministic trim pane, check **Enable RZAT**. A message is shown indicating that you must power cycle your SSD for this to take effect.

Manage system settings

You can set a proxy server, start logging and manage monitoring.

Proxy Server

By default SSD Guru does not use a proxy server. If you are in a network environment that uses a proxy server to access the internet, and you want to update firmware or BIOS from the web (see [page 8](#)), you must specify which proxy server to use.

- 1 In the options bar, click **Settings**.
- 2 In the proxy server pane, check **Enable proxy server**.
- 3 Enter the server name and port identifier.
- 4 Click **Apply**. A message is shown indicating success or failure.

Monitoring

Monitoring tells you when firmware and BIOS updates are available. By default SSD Guru does not monitor SSDs when you close SSD Guru. You can enable continuous monitoring.

- 1 In the options bar, click **Settings**.
- 2 In the monitoring pane, check **Run SSD Guru in background when window closed**.
- 3 (Windows only) To automatically start SSD Guru when you start Windows, check **Run SSD Guru at startup**.

Logging

If you contact OCZ technical support to request help with an SSD Guru fault, the technical support team may ask you to provide and send to us a log file for your installation. For instructions on saving a log regarding possible SSD problems, see [Save a support package](#) below.

The log file is stored in the active directory. For example, in the folder that the SSD Guru application file is located. The file name is in the format **OCZSSDGuruddmmmyyy.log**.

- 1 In the options bar, click **Settings**.
- 2 In the logging pane, check **Log SSD Guru operations to file**.
- 3 To enable logging as soon as you start SSD Guru, check **Enable logging from startup**.

Find further information

To view instructions for a task or information about what is shown in a pane, click . The Help is shown in a separate window that you can move, scroll through and close when finished.

If you do not find the information you need in the Help or in this guide, you can contact our technical support team; for details, see inside the front cover of this guide.

Save a support package

If you contact OCZ technical support to request help with a possible fault on your SSD, the technical support team may ask you to save and send to us a zip file containing details about your computer and your SSD. The zip file also contains SSD operational logs for any SSDs that provide them.

- 1 In the options bar, click **Help**.
- 2 In the support package pane, click **Save Support package** and choose the location and file name to save the zip file to.

