

Samsung Magician 7

Installation Guide

Revision 1.3

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Revision History

Revision Number	Description	Revision Date
1.0	Initial Release	Sep 2021
1.1	Bug fix, Security improvement	Dec 2021
1.2	New features included, User Instructions Improved	Mar 2022
1.3	New features included (LED Setting, Data Migration)	Sep 2022

1. Introduction

New Samsung Magician 7

Experience the new user-friendly GUI of Samsung Magician. Try our new features and enhanced functions for better user experience. Samsung Magician provides an integrated convenient solution for SSD with advanced capabilities.

Samsung Magician software is developed and distributed exclusively for users of Samsung Solid State Drives (SSDs).

New Features

New Samsung Magician features a number of improvements over the previous versions.

- New features include:
 - LED Setting – added to control LED color and mode using LED Setting.
 - Data Migration – added to clone your data to Samsung SSD using Data Migration.

2. Requirements and Support

System Requirements

Component	Requirements
Operating System	Windows 7 (32/64bit) Windows 8 & 8.1 (32/64bit) Windows 10 (32/64bit) Windows 11 (64bit)
Disk Capacity	Minimum 400MB available for installation
Supported Partition Types	MBR, GPT
Supported Languages	English, Korean, Spanish, German, Japanese, Chinese(Simplified), French, Italian, Portuguese, Russian
SSD	The following Samsung SSDs are supported*: Samsung SSD 980 PRO with Heatsink(M.2) Samsung SSD 980 (M.2) Samsung SSD 980 PRO (M.2) Samsung SSD 970 PRO (M.2) Samsung SSD 970 EVO (M.2) Samsung SSD 970 EVO Plus (M.2) Samsung SSD 960 PRO (M.2) Samsung SSD 960 EVO (M.2) Samsung SSD 950 PRO (M.2) Samsung SSD 870 QVO Samsung SSD 870 EVO Samsung SSD 860 PRO Samsung SSD 860 EVO (2.5", mSATA, M.2) Samsung SSD 860 QVO Samsung SSD 850 PRO Samsung SSD 850 Samsung SSD 850 EVO (2.5", mSATA, M.2) Samsung SSD 840 PRO Samsung SSD 840 EVO (2.5", mSATA) Samsung SSD 840 Series Samsung SSD 830 Series Samsung SSD 750 EVO Samsung Portable SSD Series

Supported Features by model

There are some limitations that exist depending on the type of storage and model.

Model	Features												
	Drive Info.	SMART	Performance Benchmark	RAPID	Performance Optimization (TRIM)	Diagnostic Scan	PSID Revert	Encrypted Drive	Overprovisioning	LED Setting	Secure Erase	Security Setting	Data Migration
840 PRO	✓	✓	✓	✓					✓		✓		✓
840	✓	✓	✓		✓				✓		✓		✓
840 EVO	✓	✓	✓	✓	✓			✓	✓		✓		✓
750 EVO	✓	✓	✓	✓	✓			✓	✓		✓		✓
850 PRO	✓	✓	✓	✓	✓			✓	✓		✓		✓
850 EVO	✓	✓	✓	✓	✓			✓	✓		✓		✓
950 PRO	✓	✓	✓		✓			✓	✓		✓		✓
960 PRO	✓	✓	✓		✓			✓	✓		✓		✓
960 EVO	✓	✓	✓		✓			✓	✓		✓		✓
850	✓	✓	✓	✓	✓			✓	✓		✓		✓
860 PRO	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓
860 EVO	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓
970 PRO	✓	✓	✓		✓			✓	✓		✓		✓
970 EVO	✓	✓	✓		✓			✓	✓		✓		✓
860 QVO	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓
970 EVO Plus	✓	✓	✓		✓	✓	✓	✓	✓		✓		✓
870 EVO	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓
870 QVO	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓
980	✓	✓	✓		✓	✓	✓	✓	✓		✓		✓
980 PRO	✓	✓	✓		✓	✓	✓	✓	✓		✓		✓
980 PRO with Heatsink	✓	✓	✓		✓	✓	✓	✓	✓		✓		✓
990 PRO	✓	✓	✓		✓	✓	✓	✓	✓		✓		✓
990 PRO with Heatsink	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓
Samsung PSSD T1	✓	✓				✓						✓	
Samsung PSSD T3	✓	✓				✓						✓	
Samsung PSSD T5	✓	✓				✓						✓	
Samsung PSSD T7	✓	✓	✓		✓	✓	✓				✓	✓	

Samsung PSSD T7 Touch	✓	✓	✓		✓	✓	✓				✓	✓	
Samsung PSSD T7 Shield	✓	✓	✓		✓	✓	✓				✓	✓	
Samsung PSSD X5	✓	✓	✓			✓						✓	

RAPID mode Requirements

Component	Requirements
Operating System	Windows 7 (32/64bit)
	Windows 8 & 8.1 (32/64bit)
	Windows 10 (32/64bit)
	Windows 11 (64bit)
SSD	Samsung SSD 870 EVO
	Samsung SSD 870 QVO
	Samsung SSD 860 PRO
	Samsung SSD 860 EVO (2.5", mSATA, M.2)
	Samsung SSD 860 QVO
	Samsung SSD 850 PRO
	Samsung SSD 850 EVO (2.5", mSATA, M.2),
	Samsung SSD 850
	Samsung SSD 840 PRO
	Samsung SSD 840 EVO (2.5", mSATA),
	Samsung SSD 750 EVO
Processor	1GHz or faster
System memory(DRAM)	2GB RAM or more
Free Disk Space	Minimum 50MB
File System	NTFS

Driver Support

1) SATA

Chipset	Driver	Supported
Intel	Microsoft	Yes
	Intel	Yes
AMD	Microsoft	Yes
	AMD	Yes(With Latest Driver)
	NVIDIA	Yes

2) NVMe

Driver	Supported
Samsung	Yes
Microsoft	Yes

- 1) Samsung Magician does not require internet connection to run. However, the internet connection is required to get updates for the latest Firmware, Feature modules or application and to authenticate the SSDs.
- 2) If you delete some files of New Samsung Magician without internet connection, some features like certification or configuration may not work properly and cause limitations in use of New Samsung Magician.
- 3) The SSD should not be disconnected from the system while FW Update, Benchmarking, Secure Erase, Over Provisioning, Data Security, PSID Revert, Diagnostic scan, Performance Optimization or RAPID features are in progress. Doing so could result in data corruption.
- 4) All parallel operations should be terminated before executing Diagnostic scan, Performance Optimization or Benchmarking features.
- 5) Data corruption may result if the user terminates the Magician application abnormally while Benchmarking, FW Update, Secure Erase, Diagnostic scan, Over Provisioning, Data Security, PSID Revert or RAPID features are in progress.
- 6) There is always the risk of data loss when updating SSD firmware. It is imperative that the user back up any important data before performing a firmware update.
- 7) If there are some system issues for Magician to perform functions, System Compatibility in Information tab will provide guide to fix the issues.
- 8) If Samsung Magician is under a proxy network environment, it may not provide the full functionality such as firmware update.
- 9) In order for Samsung Magician to function properly, the time of the PC needs to be correctly set.

3. General Limitations

Overall

- 1) Magician does not work with SSDs connected via the SCSI controller interface.
- 2) Only MBR and GPT partition types are supported. Magician may not work with other partition types.
- 3) Magician shows only volumes mounted with letter.
- 4) Magician will not work on SSDs that are locked with a user password.
- 5) The user may need to manually refresh for Magician to accurately reflect all connected/removed disks.
- 6) RAID on mode in SATA configuration is not supported by Samsung Magician and USB bootable solution.
- 7) If you are using any custom storage driver, then Magician may not work properly. Please always use the latest storage driver or Microsoft driver.
- 8) In Windows 7, the Samsung NVMe Driver is required for Magician to fully support Samsung's NVMe device.
- 9) In Windows 7, the GUI of the Samsung Magician application may not seem normal intermittently.
- 10) In the case of the function where the progress time is displayed – Performance benchmark, Diagnostic scan, and Performance optimization, changing the system time during the function execution may cause the elapsed time to not appear normally.
- 11) Magician is signed using SHA-2 to provide a safer service. Windows updates or patches may be required to use Magician in Windows 7.
- 12) Depending on the resolution or ratio setting of your display, bottom and right side of Samsung Magician may be out of screen.
- 13) For the performance benchmark record that was performed in the previous version of Magician 7.0, some values may be marked as Unknown.
- 14) Magician might have compatibility issues with a certain IRST Driver.
- 15) When RAPID is activated, Restore point warning message is only available in English.
- 16) If Magician gets connected to or disconnected from the PSSD while performing some feature, Magician may not work properly.
- 17) If you try changing the name of security enabled PSSD T1 / T3, the name won't be changed without additional guidance when the wrong password is entered.
- 18) For Windows 8.1, update is required in order of KB2919442, KB2919355, and KB2999226.
- 19) For Windows 8.1 with update, KB2999226 update is required.
- 20) Magician icon may appear unchanged until the icon is updated by the system.
- 21) It may take up to a few seconds for to installer to start.
- 22) It may take time to move from one screen to the next screen in installer.
- 23) Connecting through remote connection will dismiss forcefully magician notification window in windows 11.
- 24) Upon abnormal termination of data migration, it may take time to restore the migration function.

Performance Benchmark

- 1) Benchmarking may not work with some removable storage devices.
- 2) Performance Benchmark may get timed-out on ASMedia controllers if the driver does not handle multi thread operations (IOs)

Performance Optimization

- 1) Performance Optimization supports only the NTFS file system.
- 2) Magician does not support TRIM operation for Standard Performance Optimization on Windows 8 and above, as they support native TRIM.

Diagnostic Scan

- 1) Short scan supports only the NTFS file system.
- 2) If the device is locked, both short scan and full scan are not supported.
- 3) When performing Short scan, secure sufficient space of 5GB or more.
- 4) Samsung NVMe driver v3.3 is required to use SMART Self-test in 970 EVO Plus. In case of 980, 980 PRO, 980 PRO with Heatsink NVMe driver is not required for it.

PSID Revert

- 1) SSD supporting PSID Revert is 860 EVO 860 EVO M.2, 860 EVO MSATA, 860 PRO, 860 QVO, 970 EVO Plus, 870 QVO, 870 EVO, 980, 980 PRO, 980 PRO with Heatsink, PSSD T7, PSSD T7 Touch, PSSD T7 Shield.
- 2) The PSID Revert function can release the encrypted drive using the PSID of the label. After performing PSID Revert, all data on the drive is deleted.

Secure Erase & Linux Bootable Solution

- 1) While making a bootable solution for Secure Erase, please make sure the Device Manager window is closed.
- 2) In some of the PCs, Bootable Solution may not work properly as expected because of compatibility issue.
- 3) The Bootable solution is not compatible with pure SCSI or SATA NVIDIA/LSI/AMD chipset drivers.
- 4) AHCI or ATA mode must be enabled in the BIOS during PC boot up.
- 5) The Bootable solution may hang if the SSD is removed on PCs that do not support the hot plug feature (e.g. ICH5/6 chipsets).
- 6) The Bootable solution will not work with devices attached via SATA 6Gbps (SATA III) operating in IDE mode.
- 7) Secure Erase may not work on systems where SECURITY FREEZE LOCK is issued by the BIOS.

Encrypted Drive

- 1) Class 0, TCG Opal and Encrypted Drive cannot be enabled simultaneously. Only one mode can be enabled at a time and all other modes must be disabled.
- 2) Security mode (Class 0, TCG/Opal or Encrypted Drive) must be disabled (unlocked) before removing and installing onto another PC.

Over Provisioning

- 1) Over Provisioning only supports NTFS and raw (Unformatted) partitions.
- 2) Over Provisioning does not support dynamic disks or disks that require 'Chkdsk' operation.
- 3) Magician cannot guarantee that Over Provisioning scans disk's partition layout properly, if partition information had been changed during scanning.
- 4) Over Provisioning may fail, even though enough free space is available, if your system suffers from cluster misalignment.
- 5) If user cannot span or shrink volume size through disk management of OS administration tool, it is possible not to work dynamic over-provisioning properly.
- 6) Windows 'Disk Partition Service' and 'Virtual disk Service' should not be disabled in order to perform Over Provisioning.
- 7) Over Provisioning can only be performed on the last accessible partition (NTFS or raw)
- 8) If a device with more than 4TB applied to the MBR partition is used, the function may not operate normally.

LED Setting

- 1) Depending on the status of the SSD, LED setting may not be possible.

Security Setting

- 1) Finding my password is unavailable on Samsung Magician.
- 2) Up to four fingerprints can be registered on Samsung Magician

Data Migration

- 1) Data Migration supports the Windows operating systems listed in the System Requirement only.
- 2) Data Migration supports the Samsung SSDs listed in the System Requirement only. OEM storage devices provided through a computer manufacturer or supplied through another channel are not supported.
- 3) Data Migration can only clone a Source Drive on which an operating system has been installed. It cannot clone a drive without an operating system installed on it.
- 4) When the Source Drive has two or more volumes (e.g. volumes to which drive letters, such as C:, D:, or E:, are assigned), Data Migration can clone the C: volume on which an operating system is installed and two more volumes. The System Reserved Partition, which is created automatically during Windows installation, is cloned automatically.
- 5) The OEM Partition, which is created by the computer manufacturer when shipped from the factory, is not cloned. However, it will be automatically cloned if the computer manufacturer is Samsung and SRS (Samsung Recovery Solution) 5, SRS 6, or SRS 7 has been installed. (Versions lower than SRS 5 are not supported.)
- 6) After cloning the Source Drive to the Target Drive, their data sizes may differ by a few gigabytes. This is normal. During cloning, Data Migration does not copy virtual memory (page files, hibernation files, etc.) automatically created and managed by the operating system.
- 7) Data Migration cannot clone encrypted drives. In order to clone an encrypted drive, you must remove its password first.

- 8) If the motherboard chipset drivers are not up to date when cloning, Data Migration may not function properly.
- 9) If you have multiple operating systems installed on your computer (e.g. Windows 7 installed on the C: volume and Windows 8 installed on the D: volume), then the cloned drive may not function properly in some cases.
- 10) If the Source Drive is damaged (e.g. it has bad sectors), then the cloned drive may not function properly.
- 11) Before attempting to clone a drive using Data Migration, it is recommended that you close all open programs and allocate sufficient memory first.
- 12) If you have instant recovery software installed on your computer, then Data Migration may not function properly.
- 13) If the Source Drive has been converted to a dynamic disk, then Data Migration may not function properly.
- 14) If a portable device (e.g. an external USB device) is connected to the Target Drive for cloning, then Data Migration may not function properly because of the USB adapter.
- 15) If the OS version installed in the original drive does not support the GPT partition and when it is duplicated in a drive exceeding 2TB, the MBR partition type will be applied to the duplicated drive. As MBR does not support large drives, the space exceeding 2TB will remain unallocated.

Firmware Update

- 1) PC will be shut down automatically after firmware update (Magician counts down 20 seconds before shutdown).
- 2) Firmware Update may fail on Samsung brand SSDs connected to AMD Controller. Please retry using default SATA AHCI controller (Microsoft drivers).

Settings

- 1) When booting the PC, users can decide whether to auto run Samsung Magician. If auto run is turned off, updates cannot be received in real time.
- 2) The device scan proceeds immediately after the language is changed.
- 3) Scaling size varies depending on the resolution.

4. RAPID mode Limitations

- 1) RAPID mode accelerates only one SSD even though user has several Samsung SSDs (870 QVO, 870 EVO, 860 QVO, 860 EVO, 860 PRO, 850 PRO, 850 EVO, 850, 750 EVO, 840 EVO, and 840 PRO regardless of form factor).
- 2) If there are two identical SSDs connected, RAPID mode may accelerate the incorrect SSD.
- 3) RAID Mode sets is not supported as an accelerated drive.
- 4) After uninstalling RAPID mode, if the system is restored to a prior state in which RAPID mode was installed, RAPID mode will be started in a disabled state.
- 5) NVIDIA Storage controller is not supported.
- 6) During RAPID mode Enable/Disable operation: Do not disconnect the target SSD, Do not kill the application.

- 7) If fast startup is enabled on windows 8, 8.1 and 10 machines, RAPID mode enable/disable requires system restart. Shutdown followed by turning-on the power will not activate RAPID mode enable/disable. By default fast startup is enabled.
- 8) Flush command of operating system and/or application may cause variation in performance when RAPID mode is enabled.
- 9) Sometimes on AMD PC with AMD and ASMedia storage controllers it was found that the IOs takes a longer time to complete. In such cases if Rapid was enabled, it may get automatically disabled due to such IO errors. It may display "Rapid is in inactive state". User has to reboot the PC to enable the Rapid back.
- 10) If multiple iterations of Read and Write are performed, RAPID mode may become inactive due to system internal errors on some of the AMD / ASMedia Controller or Driver.
- 11) RAPID mode can't be guaranteed on the target SSD with non-NTFS file system.
- 12) If user deletes some files on RAPID folder, RAPID may not be uninstalled properly.
- 13) If the msixec.exe is either unstable or corrupted, RAPID mode enable fails with the error message "The Windows Installer service failed to start. Start the Windows Installer service manually, upgrade the Windows Installer service, and check if the last updated or installed program in Windows was successful. If the problem persists, contact the A/S center."

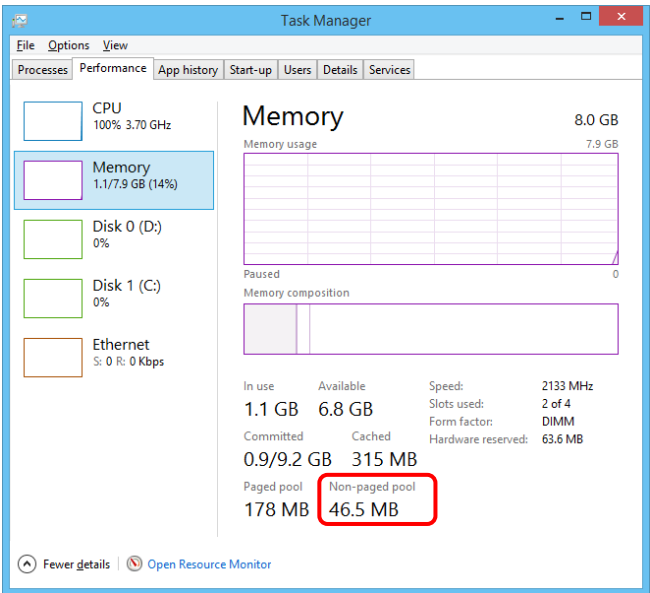
The issue can be fixed by:

- Unregister and reregister Windows Installer service / MSI service.
 - ♦ On the Start menu, click Run.
 - ♦ In the Open box, type "msiexec /unreg". And then press ENTER.
 - ♦ On the Start menu, click Run
 - ♦ In the Open box, type "msiexec /regserver". And then press ENTER.
 - ♦ Try enabling RAPID mode again.If RAPID mode does not enable, follow the steps below.
- Updating Windows Installer
 - ♦ If your Windows Installer is not the latest version, corrupted or msiexec is missing, please install the latest version of Windows Installer, then try enabling RAPID mode again.
- If none of the above procedures work, we recommend reinstalling Windows.

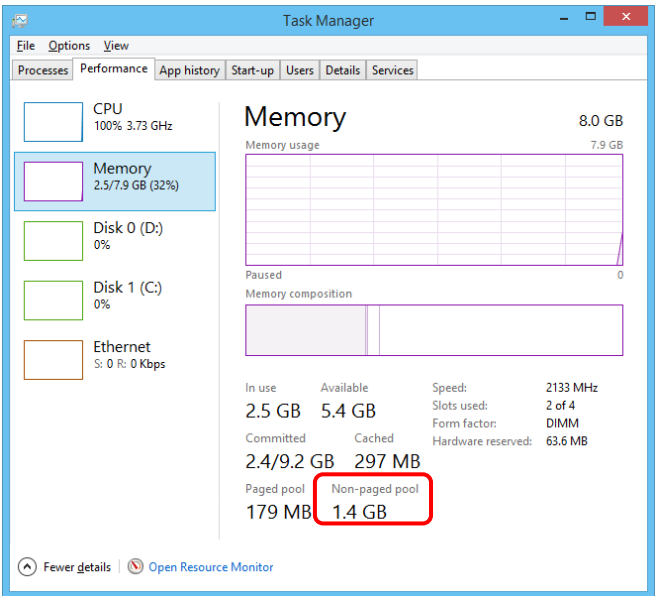
Operational Check of RAPID mode

RAPID mode starts its operation 45 seconds after OS booting. Please make sure the increased size of non-paged pool using “task manager → performance → memory tab” to ensure it is fully operational.

* Before RAPID mode enabling



* After RAPID mode enabling



End of Document

Sep 2022

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