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Western Digital WDS100T1R0C

Western Digital 1TB WD Red SN700 NVMe SSD

USER MANUAL (MODEL: WDS100T1R0C)

1. INTRODUCTION

This manual provides essential information for the installation, operation, maintenance, and troubleshooting of your Western Digital 1TB WD Red SN700 NVMe Internal Solid State Drive (SSD), model WDS100T1R0C. Designed specifically for Network Attached Storage (NAS) environments, this Gen3 PCIe M.2 2280 SSD offers robust performance and endurance for demanding 24/7 workloads, including virtualization and collaborative editing.



Figure 1: The Western Digital 1TB WD Red SN700 NVMe SSD. This M.2 2280 form factor SSD is designed for high-performance storage in NAS systems.

2. SETUP

2.1 What's in the Box

- Western Digital 1TB WD Red SN700 NVMe Internal Solid State Drive (WDS100T1R0C)

2.2 Installation Requirements

- Compatible NAS device with an available M.2 2280 NVMe slot.
- Small Phillips head screwdriver.
- Anti-static wrist strap (recommended).
- Your NAS device's user manual for specific M.2 slot access and installation instructions.

2.3 Installation Steps

Follow these general steps to install your WD Red SN700 NVMe SSD. Always refer to your NAS device's specific documentation for detailed instructions, as procedures may vary.

1. **Power Down NAS:** Completely shut down your NAS device and disconnect it from the power source and any network cables.
2. **Access M.2 Slot:** Open your NAS enclosure to locate the M.2 NVMe slot(s). This often involves removing a cover or drive trays.
3. **Insert SSD:** Gently insert the WD Red SN700 SSD into the M.2 slot at a slight angle. Ensure the gold contacts are fully seated.
4. **Secure SSD:** Push the SSD down until it is parallel with the motherboard, then secure it with the screw provided by your NAS manufacturer.
5. **Reassemble NAS:** Close the NAS enclosure, ensuring all covers and components are properly reinstalled.
6. **Power On:** Reconnect power and network cables, then power on your NAS device.

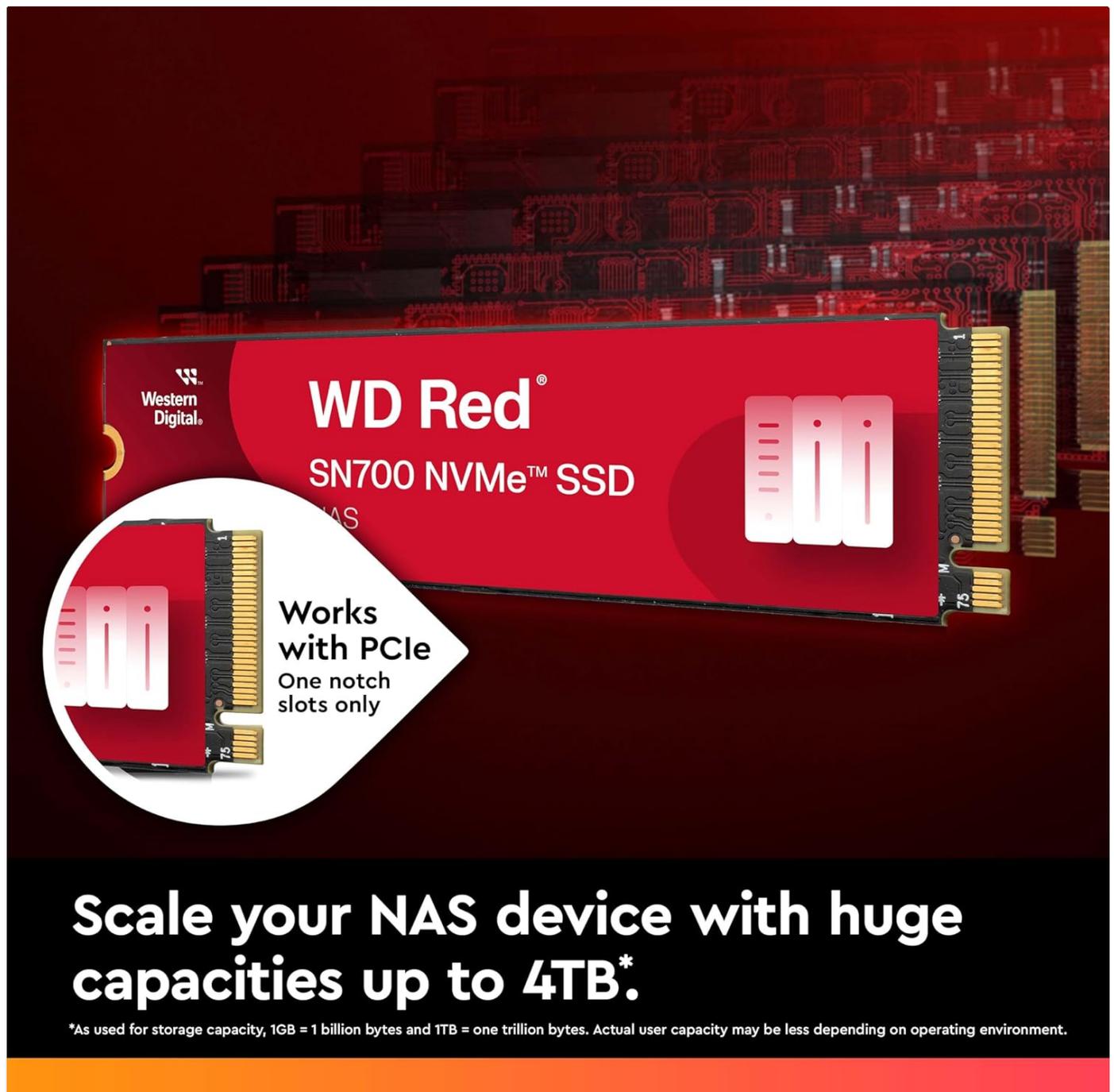


Figure 2: A close-up view of the WD Red SN700 NVMe SSD, highlighting its compatibility with PCIe one-notch slots. Ensure your NAS has

the correct M.2 slot type.

3. OPERATING

3.1 Initial Configuration (NAS Integration)

After physical installation, your NAS operating system will need to recognize and configure the new SSD. Access your NAS's web interface and navigate to the storage management section.

- **SSD Recognition:** Verify that the NAS detects the newly installed WD Red SN700 SSD.
- **Storage Pool/Volume Creation:** You can typically create a new storage pool or volume using the SSD for high-speed data storage.
- **SSD Cache Setup:** For optimal performance, many NAS devices allow you to configure the NVMe SSD as a read-only or read-write cache to accelerate access to frequently used data on traditional hard drives. Refer to your NAS documentation for specific cache setup procedures.

3.2 Performance Optimization

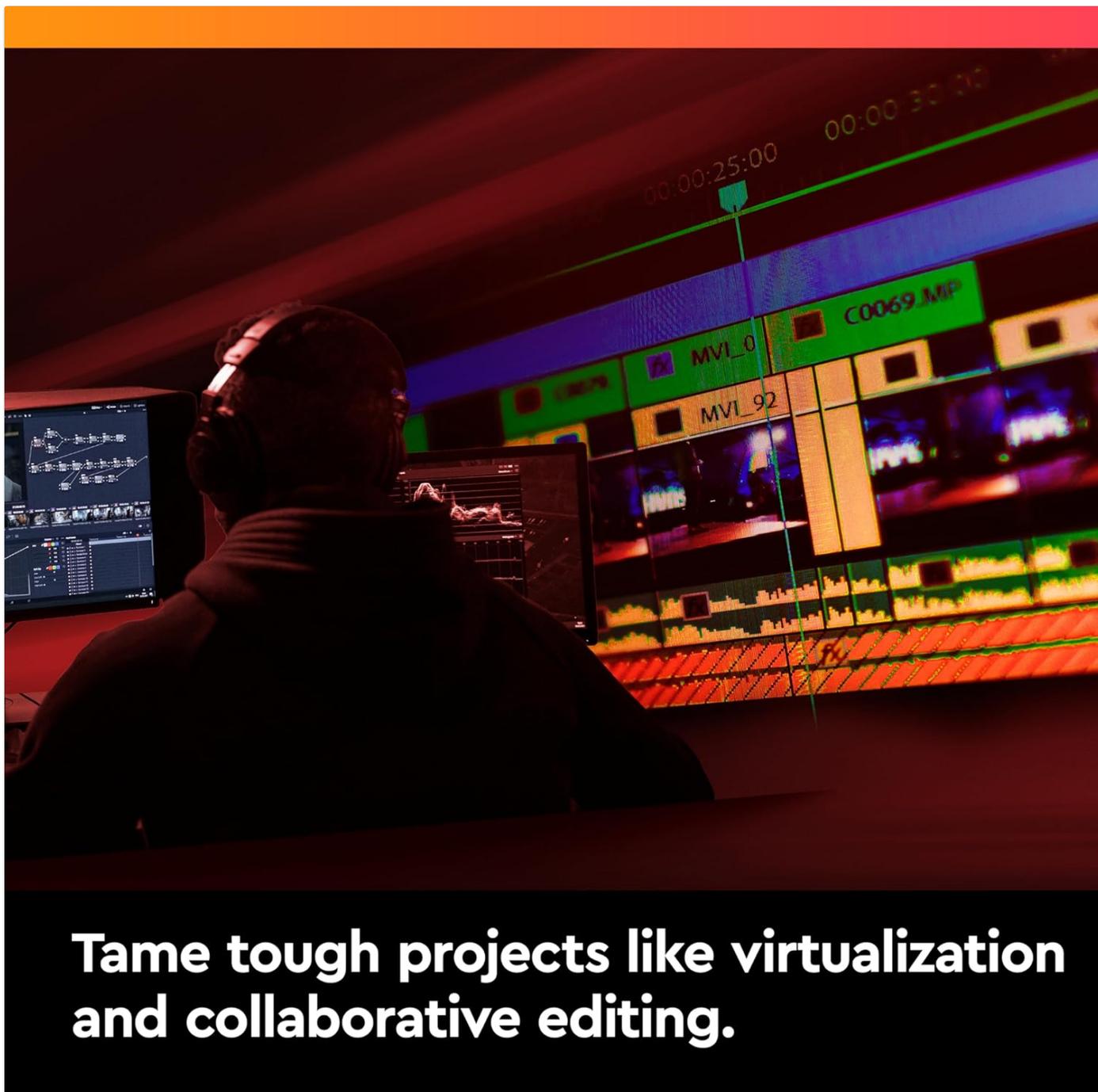
To maximize the lifespan and sustained performance of your NVMe SSD, especially when used as a cache, consider the following:

- **Avoid Full Capacity:** Do not fill the SSD to 100% capacity. It is recommended to allocate only 75-90% of the SSD's total capacity for cache or storage to maintain optimal performance and longevity.
- **Monitor Workloads:** The WD Red SN700 is designed for 24/7 NAS workloads, offering robust system responsiveness and exceptional I/O performance for multitasking applications and demanding projects like virtualization.



**Perfect for multitasking applications
with multiple users.**

Figure 3: A NAS device utilizing the WD Red SN700 SSD, illustrating its suitability for multitasking applications with multiple users, enhancing overall system responsiveness.



Tame tough projects like virtualization and collaborative editing.

Figure 4: The WD Red SN700 SSD is ideal for tackling tough projects such as virtualization and collaborative editing, providing the necessary speed and endurance.

4. MAINTENANCE

4.1 Firmware Updates

Periodically check the Western Digital support website for firmware updates for your WD Red SN700 SSD. Firmware updates can improve performance, enhance compatibility, and address potential issues. Follow the instructions provided by Western Digital for any firmware update process.

4.2 Health Monitoring

Most NAS operating systems include tools to monitor the health and lifespan of installed SSDs. Utilize these tools to keep track of your WD Red SN700's S.M.A.R.T. data, temperature, and estimated remaining lifespan. Regular monitoring helps in proactive data management and replacement planning.

5. TROUBLESHOOTING

5.1 Common Issues and Solutions

- **SSD Not Detected by NAS:**
 - Ensure the SSD is correctly seated in the M.2 slot.
 - Verify your NAS model supports NVMe SSDs and has compatible M.2 slots.
 - Check your NAS's BIOS/UEFI settings (if accessible) to ensure the M.2 slot is enabled.
 - Try the SSD in a different compatible M.2 slot or another compatible device to rule out a faulty SSD.
- **Poor Performance:**
 - Ensure the SSD is not near full capacity (maintain 10-25% free space).
 - Verify your NAS firmware and SSD firmware are up to date.
 - Check for other bottlenecks in your NAS system (e.g., CPU, RAM, network).
 - Confirm the SSD is operating within its optimal temperature range.
- **NAS Reports SSD Errors:**
 - Check the NAS system logs for detailed error messages.
 - Run a diagnostic tool provided by your NAS or Western Digital (if available) to assess SSD health.
 - If errors persist, consider backing up data and replacing the SSD.

6. SPECIFICATIONS

Feature	Detail
Model Number	WDS100T1R0C
Capacity	1TB
Interface	NVMe (PCIe Gen3)
Form Factor	M.2 2280
Sequential Read Speed (Up to)	3,430 MB/s
Dimensions (LxWxH)	3.15 x 0.87 x 0.09 inches
Item Weight	0.264 ounces
Designed For	NAS Devices
Manufacturer	Sandisk Technologies, Inc.
Color	Red

7. WARRANTY AND SUPPORT

For detailed warranty information, please refer to the official Western Digital website or the warranty card included with your product. Western Digital provides comprehensive support resources, including FAQs, knowledge bases, and contact options for technical assistance.

Western Digital Support: Visit www.westerndigital.com/support for the latest support information, drivers, and software.

