WD WD4002FYYZ

WD Gold 4TB Enterprise Class Hard Disk Drive User Manual

Model: WD4002FYYZ

1. INTRODUCTION

The WD Gold 4TB Enterprise Class Hard Disk Drive (Model: WD4002FYYZ) is engineered for demanding data center environments, offering high reliability, capacity, and performance. Designed for 24x7x365 operation, this 3.5-inch SATA 6 Gb/s drive features a 7200 RPM class rotational speed and 128MB cache, making it suitable for server, NAS, and SAN applications requiring robust and consistent data access.

- Designed for 24x7x365 reliability at workloads up to 550TB per year.
- High level of reliability with up to 2.5 million hours Mean Time Before Failure (MTBF).
- Performance-optimized for heavy application workloads.
- RAID-specific Time-Limited Error Recovery (TLER) for enhanced data integrity in RAID environments.
- Compatibility with Windows, Windows Server, Linux, and Mac OS.

2. SETUP

2.1. Pre-installation Considerations

Before installing the WD Gold hard drive, ensure your system's power supply can accommodate the drive's power requirements. Verify that your system's motherboard or RAID controller supports SATA 6 Gb/s. This product includes the hard drive only; mounting screws, SATA data cables, and power cables are not included and must be acquired separately.

2.2. Physical Installation

1. **Power Off:** Completely shut down your computer or server and disconnect the power cord from the wall outlet.
2. **Open Case:** Open the computer or server case to access the drive bays.
3. **Mount Drive:** Securely mount the WD Gold drive into an available 3.5-inch drive bay using appropriate mounting screws. Ensure proper airflow around the drive for optimal cooling.
4. **Connect Cables:** Connect a SATA data cable from the drive to an available SATA port on your motherboard or RAID controller. Connect a SATA power cable from your power supply to the drive.

5. **Close Case:** Close the computer or server case and reconnect the power cord.

2.3. Initial System Setup

After physical installation, power on your system. The operating system may detect the new drive automatically. You will need to initialize, partition, and format the drive before it can be used for data storage. Refer to your operating system's documentation for detailed instructions on disk management.

Figure 1: Top view of the WD Gold 4TB Enterprise Class Hard Disk Drive, showing the product label with capacity and model number.

3. OPERATING THE DRIVE

The WD Gold drive is designed for continuous operation in high-workload environments. Its enterprise-class features

ensure stable performance and data integrity under constant read/write cycles.

- **Data Storage:** Once formatted, the drive functions as standard storage. For optimal performance, especially with large files or frequent access, ensure your operating system and applications are configured to utilize the drive efficiently.
- **RAID Environments:** The drive's RAID-specific TLER (Time-Limited Error Recovery) helps prevent drive drop-outs due to extended error recovery processes common in desktop drives. This feature is crucial for maintaining array integrity and performance in RAID configurations.
- **Compatibility:** The drive is compatible with various operating systems, including Windows, Windows Server, Linux, and Mac OS, making it versatile for different server and workstation setups.

Figure 2: Angled view of the WD Gold 4TB Enterprise Class Hard Disk Drive, highlighting its 3.5-inch form factor.

4. MAINTENANCE

Proper maintenance ensures the longevity and reliability of your WD Gold hard drive.

- **Cooling:** Maintain adequate airflow within your system's chassis to keep the drive operating within its recommended temperature range. Excessive heat can reduce drive lifespan.
- **Vibration Control:** Ensure the drive is securely mounted to minimize vibration. Excessive vibration can affect performance and reliability.
- **Data Backup:** While WD Gold drives offer high reliability, regular data backups are essential to protect against unforeseen data loss. Implement a robust backup strategy.
- **SMART Monitoring:** Utilize Self-Monitoring, Analysis, and Reporting Technology (SMART) tools to monitor the drive's health and predict potential failures. Most operating systems and RAID controllers offer built-in SMART monitoring capabilities.
- **Firmware Updates:** Periodically check the Western Digital support website for any available firmware updates for your specific model. Firmware updates can improve performance, reliability, and compatibility.

5. TROUBLESHOOTING

This section addresses common issues you might encounter with your hard drive.

5.1. Drive Not Detected

- **Check Connections:** Ensure both the SATA data and power cables are securely connected to the drive and the motherboard/power supply.

- **BIOS/UEFI Settings:** Verify that the SATA port the drive is connected to is enabled in your system's BIOS/UEFI settings.
- **Power Supply:** Confirm your power supply provides sufficient wattage for all installed components, including the new drive.
- **Driver Updates:** Ensure your motherboard's SATA controller drivers are up to date.

5.2. Performance Issues

- **Cable Quality:** Use high-quality SATA 6 Gb/s cables.
- **System Resources:** Ensure your system has adequate RAM and CPU resources for the tasks being performed.
- **Drive Health:** Check SMART data for any indicators of degrading drive health.
- **Fragmentation:** While less critical for modern file systems, severe fragmentation can impact performance. Consider defragmenting if necessary (for traditional HDDs).

5.3. Unusual Noises

Clicking, grinding, or repetitive noises from the drive may indicate a mechanical issue. Immediately back up any critical data and consider replacing the drive. Contact Western Digital support if the issue persists.

6. SPECIFICATIONS

Feature	Specification
Model Number	WD4002FYYZ
Capacity	4 TB
Form Factor	3.5 Inch
Interface	SATA 6 Gb/s
Rotational Speed	7200 RPM Class
Cache	128 MB
Workload Rating	Up to 550 TB per year
MTBF (Mean Time Before Failure)	2.5 Million Hours
Dimensions (LxWxH)	5.79 x 4 x 1.03 inches
Weight	1.58 pounds
Compatible Platforms	PC, Mac, Linux

7. WARRANTY AND SUPPORT

The WD Gold series hard drives are backed by a robust warranty, reflecting their enterprise-class reliability. For specific warranty terms and conditions, please refer to the official Western Digital website or the warranty information provided with your purchase.

For technical support, driver downloads, firmware updates, and additional resources, please visit the official Western Digital support portal. You may also find a comprehensive user manual in PDF format on the product's Amazon page under the 'Documents' section, which can provide further detailed information.