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If you have questions about installing or using this software, check this and other documents first - you will find answers to most of your questions on the Technical Papers webpage or in StarWind Forum. If you need further assistance, please contact us.

About StarWind
StarWind is a pioneer in virtualization and a company that participated in the development of this technology from its earliest days. Now the company is among the leading vendors of software and hardware hyper-converged solutions. The company’s core product is the years-proven StarWind Virtual SAN, which allows SMB and ROBO to benefit from cost-efficient hyperconverged IT infrastructure. Having earned a reputation of reliability, StarWind created a hardware product line and is actively tapping into hyperconverged and storage appliances market. In 2016, Gartner named StarWind “Cool Vendor for Compute Platforms” following the success and popularity of StarWind HyperConverged Appliance. StarWind partners with world-known companies: Microsoft, VMware, Veeam, Intel, Dell, Mellanox, Citrix, Western Digital, etc.

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Introduction

**StarWind Virtual SAN®** is a native Windows hypervisor-centric hardware-less VM storage solution. It allows creating VM-centric and high performing storage pool purpose-built for the virtualization workloads. StarWind Virtual SAN delivers supreme performance compared to any dedicated SAN solution since it runs locally on the hypervisor and all IO is processed by local RAM, SSD cache, and disks and is never bottlenecked by storage fabric. Also, StarWind Virtual SAN includes the Log-Structuring File System (LSFS) technology which coalesces small random writes, typical for virtualized environment, into the stream of big sequential writes. As the result the performance is increased.

This guide is intended for experienced Windows system administrators and IT professionals who would like to configure StarWind Virtual SAN solution. It provides detailed instructions on how to create, mount, and delete the snapshots that were taken using Log-Structured File System device. Please note that this document assumes that the LSFS device is already created. In case of information on LSFS device creation is required, navigate to the StarWind Virtual SAN built-in **Help** menu or refer to the corresponding guide from the technical papers section on StarWind website.

A full set of up-to-date technical documentation can always be found [here](#), or by pressing the Help button in the StarWind Management Console.

For any technical inquiries please visit our [online community, Frequently Asked Questions](#) page, or use the [support form](#) to contact our technical support department.
Snapshot Creation

1. Launch StarWind Management Console and connect to the server. Right-click on LSFS device and select Snapshot Manager from the dropdown menu.

2. Click the Create Snapshot button.
3. Enter the snapshot name and write the description. Click **Create**.

4. Snapshot is now created.
Snapshot Mounting

Snapshot mounting may come in handy when restoring the data that has been lost or deleted from the device. In addition, this option is beneficial for backup procedures. Mounting the snapshot and backing up the data from it is better than doing it directly from the LSFS device which has its own workload.

5. To mount the snapshot, open **Snapshot Manager** by right-clicking on the LSFS device. Choose the snapshot and click the **Mount Snapshot** button.

![Snapshot Manager interface](image-url)
6. Configure the cache settings for the snapshot if required and click **Next**.

7. Choose Target Attachment Method. It is possible to **Create new Target** or **Attach the snapshot to existing Target**.

8. To **Create new Target**, specify the target alias and click **Next**.
9. Click **Create**.

10. Click **Close** to complete the Wizard.
11. The new target with the snapshot will appear in StarWind Management Console.
11.1 To connect the recently created target, if the device is formatted with NTFS, open MS iSCSI Initiator and connect the corresponding target with the snapshot.

**NOTE:** the connected device acquired from the mounting of snapshot will have the same identifier as the original device, so Windows will show an error if both devices are connected using the same client. To avoid this, different clients should be used, or the main device should be turned off before the snapshot target connection.
11.2 Open **Disk Management** and bring the device online.

11.3 The LSFS snapshot will be available in **Read Only** mode and the necessary data can be copied.
12. In case of mounting the snapshot and selecting “Attach to existing Target” method, select the target to which the snapshot should be attached and click Next.

12.1 Snapshot will be attached to the existing target and connected to the client via the same iSCSI sessions.
12.2 In case the snapshot is connected to the same machine as the original LSFS device, to see its content, the original device should be set offline in Disk Management and only after that the snapshot device can be set online.

**WARNING:** The snapshot device has the same technical identifiers as the original device. It is not recommended to bring online the connected target with the snapshot which is presented to the system as a disk device and an original disk device at the same time.
The mounted snapshot is available in **Read Only** mode in the **Disk Management**.

![Disk Management Screenshot](image_url)
Snapshot Deletion

13. To delete the snapshot, it must not be mounted since it is impossible to delete the snapshot which is in a mounted state. Also, make sure that the snapshot target is disconnected in iSCSI Initiator.

To unmount the snapshot, remove the corresponding device in StarWind Management console by right-clicking on the snapshot device and click Remove Device.

14. Once the mounted device is removed, the snapshot can be deleted.

15. Right-click on the LSFS device and select Snapshot Manager from the dropdown menu.
16. In **Snapshot Manager**, select the snapshot and click the **Delete Snapshot** button.
Conclusion

This guide provides the information on creating, mounting, and deleting the LSFS snapshots. It covers specific circumstances with the snapshots mounting process. The procedures are straightforward and simply to follow.
## Contacts

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