

StarWind SAN & NAS: Bare-metal deployment

2023

TECHNICAL PAPERS



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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 SAN & NAS is designed to allow you to repurpose your existing hardware running industry-standard hypervisor into high-performing storage. The solution is a fully certified shared storage for VMware vSphere Hypervisor ESXi and Microsoft Hyper-V Server.

StarWind SAN & NAS supports hardware and software-based storage redundancy configurations. The solution allows turning your server with internal storage into a redundant storage array presented as NAS or SAN, exposing standard protocols such as iSCSI, SMB, and NFS. It comes with Web-based UI, Text-based UI, vCenter Plugin, and Command-line interface for your cluster-wide operations.

The ISO comes with the latest StarWind SAN & NAS build which can be used for the bare-metal deployment on a server to build Compute and Storage Separated environment. This option implies that StarWind SAN & NAS is installed on a physical bare-metal server directly without any hypervisor or additional virtualization abstraction layer. Such dedicated infrastructure provides sensitive control over hardware utilization. The server acts as a storage provider for the compute (hypervisor) nodes.

Starwind San & Nas Requirements

Prior to installing StarWind SAN & NAS storage appliance, please make sure that the system meets the requirements, which are available at the following link: <https://www.starwindsoftware.com/system-requirements>

Installing Starwind San & Nas

This part describes how to install StarWind SAN & NAS on a physical server.

1. Download the StarWind SAN & NAS ISO

<https://www.starwindsoftware.com/san-and-nas#download>

2. Prepare installation media using Etcher, Rufus on Windows workstation, or dd command-line tool on Linux and macOS. For Network boot, mount the ISO to your server using iDRAC, iLo, or IPMI user interfaces.

3. Connect the installation media to your server and start the host.

4. Boot into BIOS and enable the Legacy boot mode. Save changes and reboot the host.

5. On server boot, press F12 or F2 to start the one-time boot menu. Select CD\DVD-ROM as a boot device.

NOTE: see the server documentation to learn the boot menu key.

6. At this stage, the server should start booting from StarWind SAN & NAS ISO. Once the system boots, the StarWind SAN & NAS Installer launches.

```
[ OK ] Started Journal Service.
Starting Flush Journal to Persistent Storage...
[ OK ] Finished Flush Journal to Persistent Storage.
[ OK ] Finished Load Kernel Modules.
Mounting FUSE Control File System...
Mounting Kernel Configuration File System...
Starting Apply Kernel Variables...
[ OK ] Mounted FUSE Control File System.
[ OK ] Mounted Kernel Configuration File System.
[ OK ] Finished Create System Users.
Starting Create Static Device Nodes in /dev...
[ OK ] Finished Set the console keyboard layout.
[ OK ] Finished Create Static Device Nodes in /dev.
Starting udev Kernel Device Manager...
[ OK ] Finished Apply Kernel Variables.
[ OK ] Started udev Kernel Device Manager.
[ OK ] Started Dispatch Password its to Console Directory Watch.
[ OK ] Reached target Local Encrypted Volumes.
Starting Network Service...
[ OK ] Started Network Service.
Starting Wait for Network to be Configured...
[ OK ] Finished Wait for Network to be Configured.
piix4_smbus 0000:00:07.3: SMBus base address uninitialized - upgrade BIOS or use
force_addr=0xaddr
[ OK ] Listening on Load/Save RF Kill Switch Status /dev/rfkill Watch.
[ OK ] Finished Monitoring of LVM2 mirrors, snapshots etc. using dmeventd or progress polling.
[ OK ] Created slice system-lvm2\x2dtpvscan.slice.
Starting LVM event activation on device 8:4...
[ OK ] Finished udev Wait for Complete Device Initialization.
Starting Device-Mapper Multipath Device Controller...
[ OK ] Started Device-Mapper Multipath Device Controller.
[ OK ] Reached target Local File Systems (Pre).
Mounting Mount unit for core18, revision 1944...
Mounting Mount unit for core18, revision 2284...
Mounting Mount unit for core20, revision 1376...
Mounting Mount unit for lxd, revision 19188...
Mounting Mount unit for lxd, revision 22526...
Mounting Mount unit for snapp, revision 15177...
[ OK ] Mounted Mount unit for snapp, revision 15177.
[ OK ] Mounted Mount unit for lxd, revision 22526.
[ OK ] Mounted Mount unit for core18, revision 1944.
[ OK ] Mounted Mount unit for core18, revision 2284.
[ OK ] Mounted Mount unit for core20, revision 1376.
[ OK ] Mounted Mount unit for lxd, revision 19188.
[ OK ] Reached target Local File Systems.
Starting Set console font and keymap...
Starting Create final runtime dir for shutdown pivot root...
Starting Tell Plymouth To Write Out Runtime Data...
Starting Create Volatile Files and Directories...
[ OK ] Finished Create Volatile Files and Directories.
Starting Network Name Resolution...
Starting Update UTMP about System Boot/Shutdown...
```

7. Read the End-user License Agreement. Use the Tab button and arrow keys to select Accept option by pressing Enter.

License agreement

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1. Definitions.

Each of the expressions indicated below will have, in this agreement, the meaning assigned to it, namely:

1.1. "Affiliate" shall mean, with respect to a given Person, any person or entity which, directly or indirectly, controls, is controlled by, or is under common control with, the given Person; "control" (including, with its correlative meanings, "controlled by" and "under common control with") means possession, directly or indirectly, of the power to direct or cause the direction of management or policies (whether through ownership of securities or partnership or other ownership interests, by contract or otherwise).

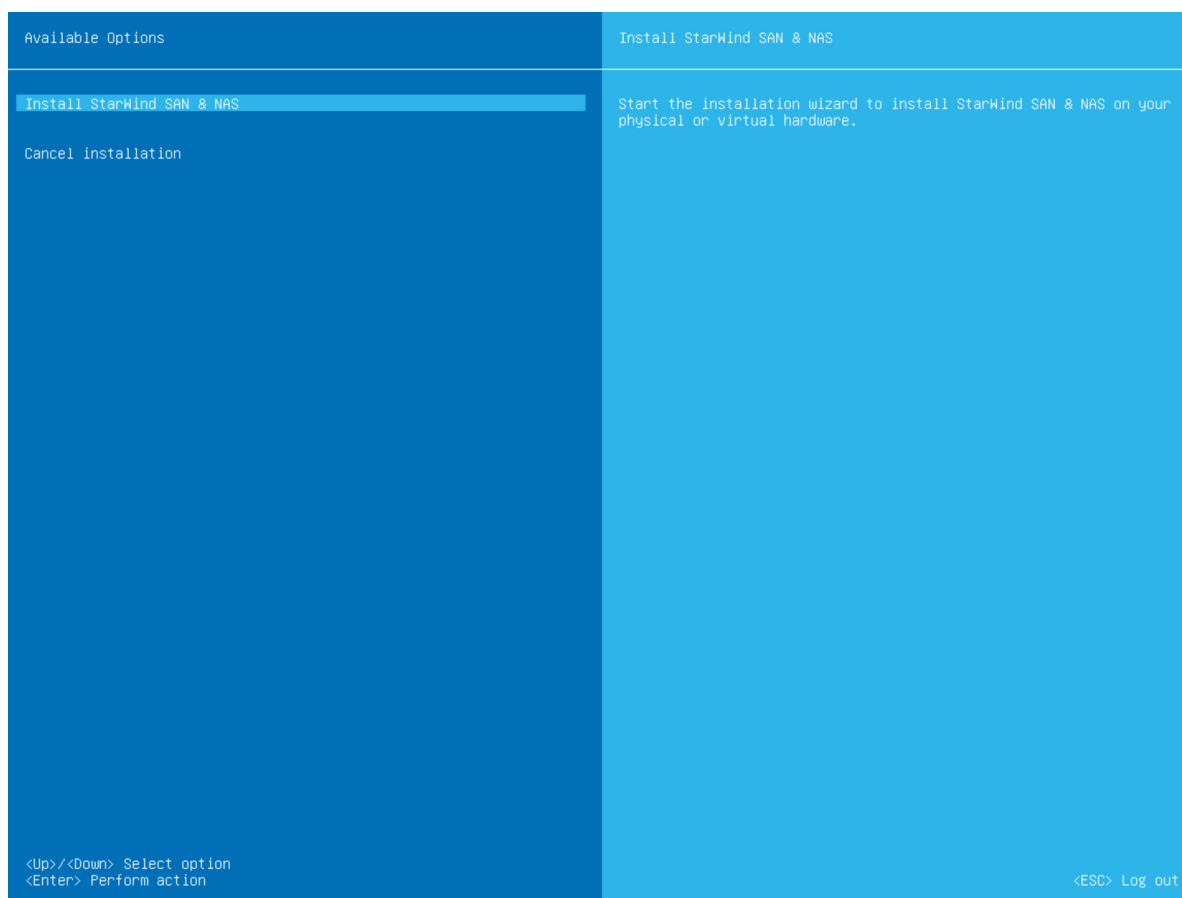
1.2. "Appliance" shall mean any and all StarWind hardware which may include a software component as listed at www.starwindsoftware.com, as may be updated from time to time, including any hardware further detailed in Exhibit C, and, as applicable, sold and/or licensed to Licensee hereunder pursuant to the applicable PO.

1.3. "ASM" shall mean the terms and details of StarWind Annual Support and Maintenance located at

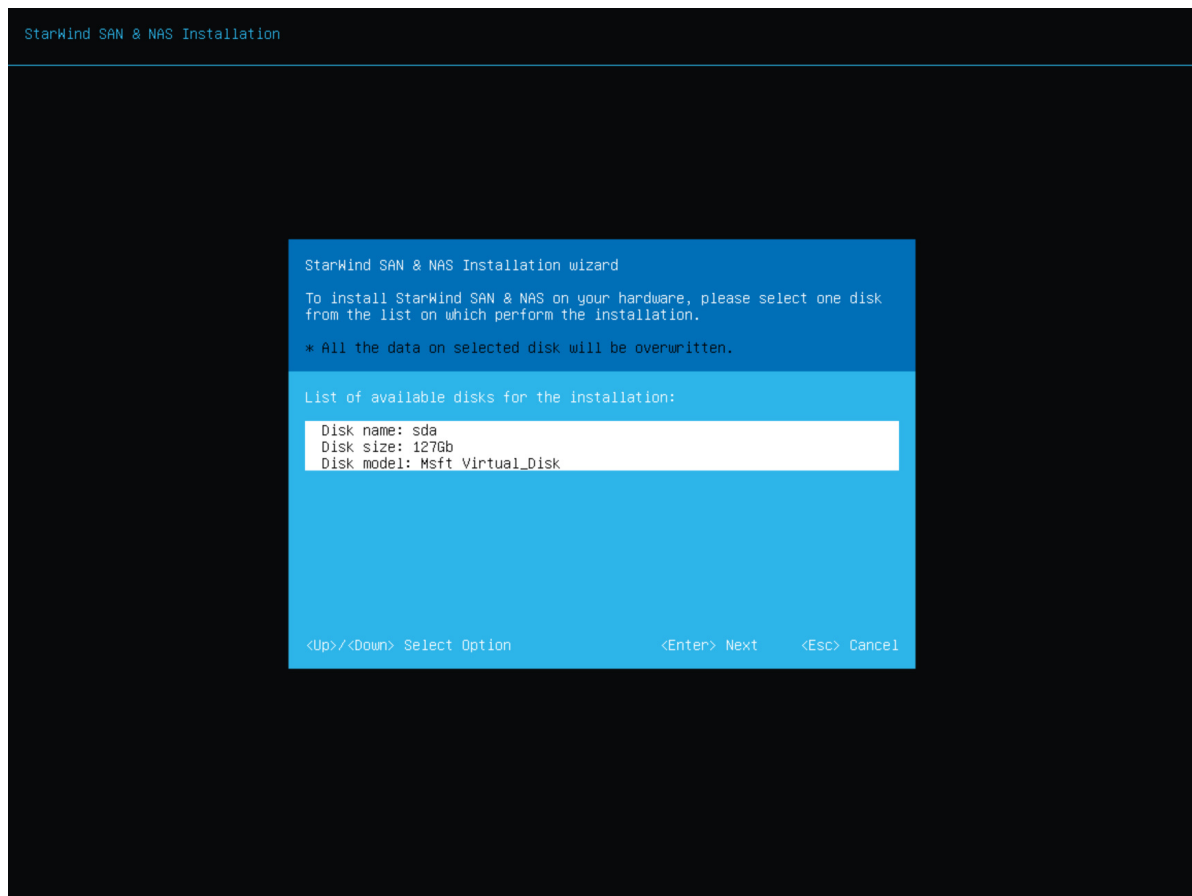
Accept

Decline

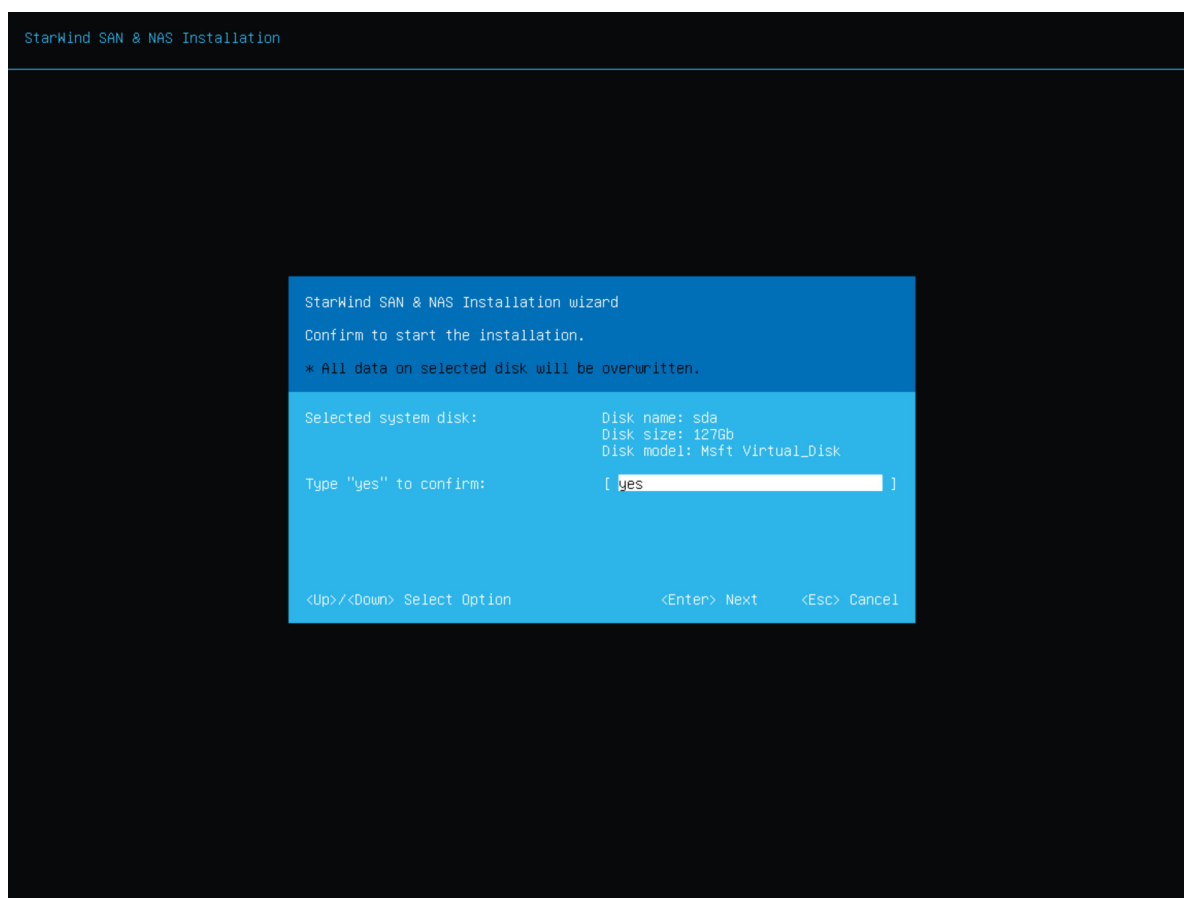
8. In the menu, select the "Install Start SAN & NAS" option and press Enter.



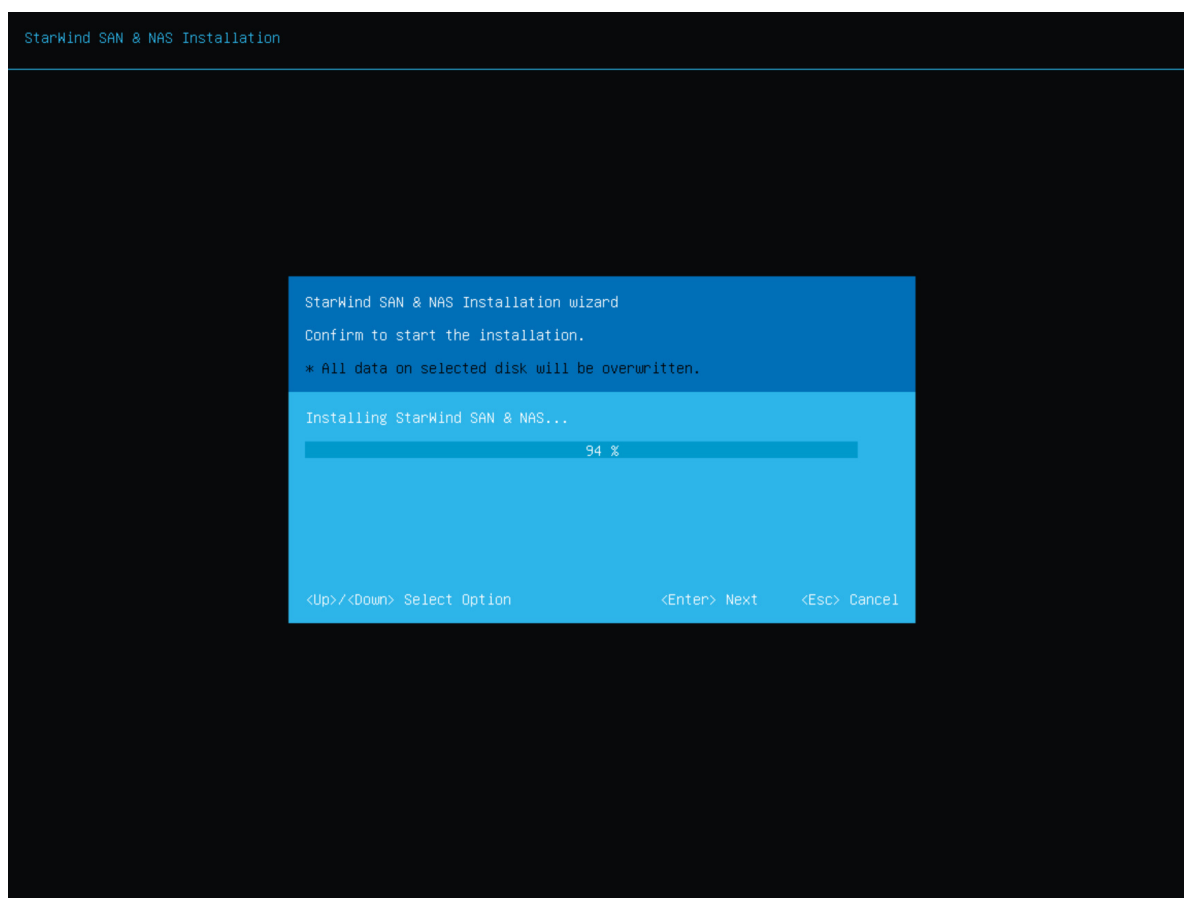
9. Select one of the available disks on which to install SAN & NAS. Press Enter

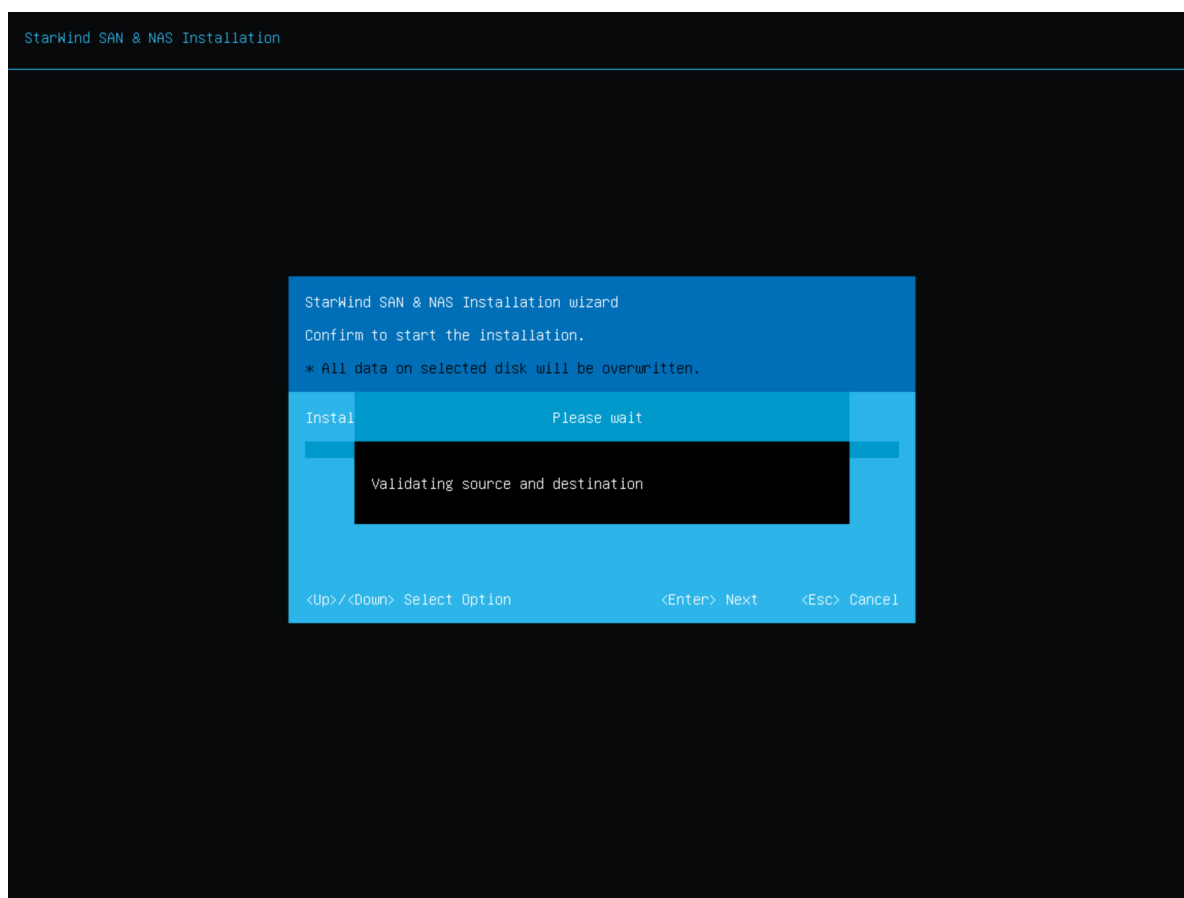


10. All the data on the selected disk will be overwritten. Confirm the installation by typing "yes" and pressing Enter.

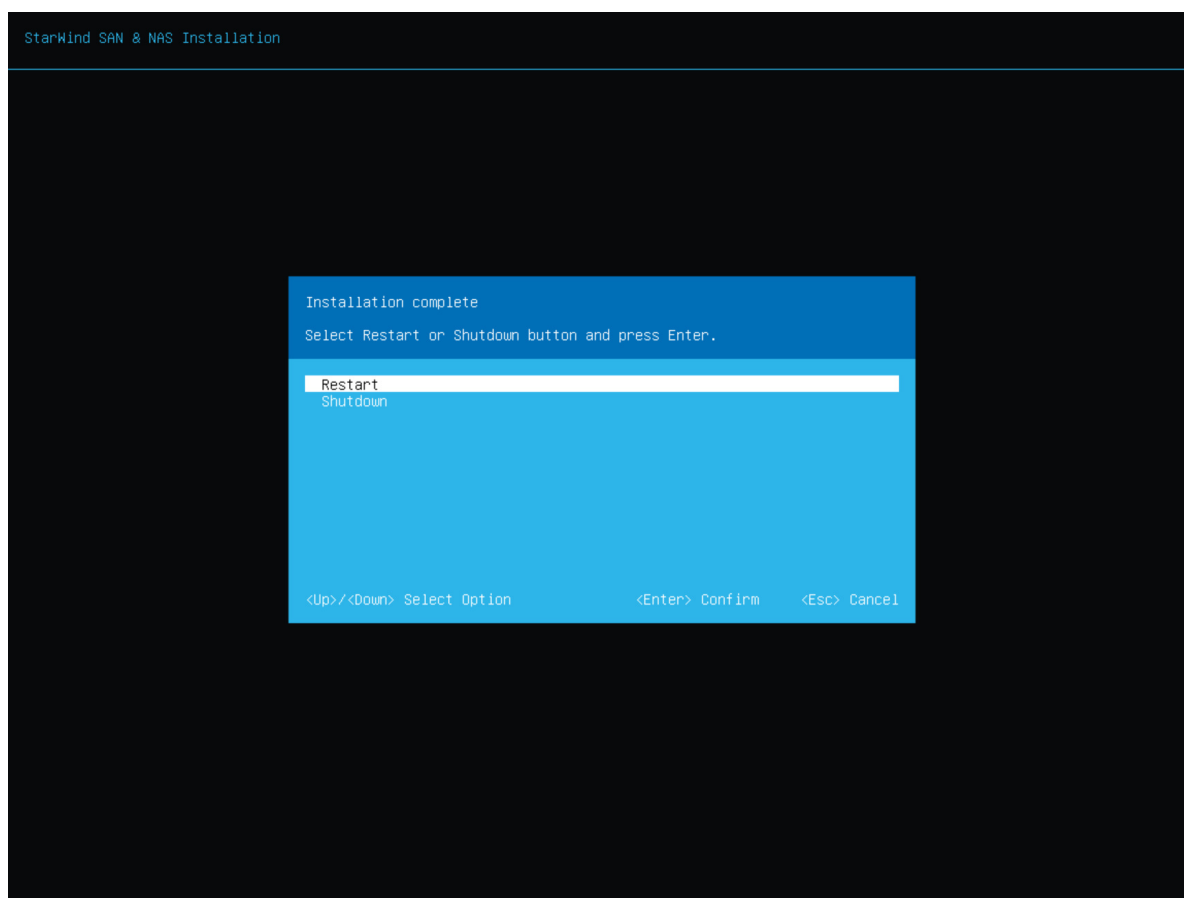


11. Wait until the installation finish.





12. The installation is finished. Now you can select "Reboot" to reboot the server.



13. Eject the installation media.








14. The server now boots StarWind SAN & NAS.

15. Continue the SAN & NAS configuration using the [Web-based user interface](#) and [Text-based user interface](#).

The full set of up-to-date technical documentation can always be found [here](#).

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

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