

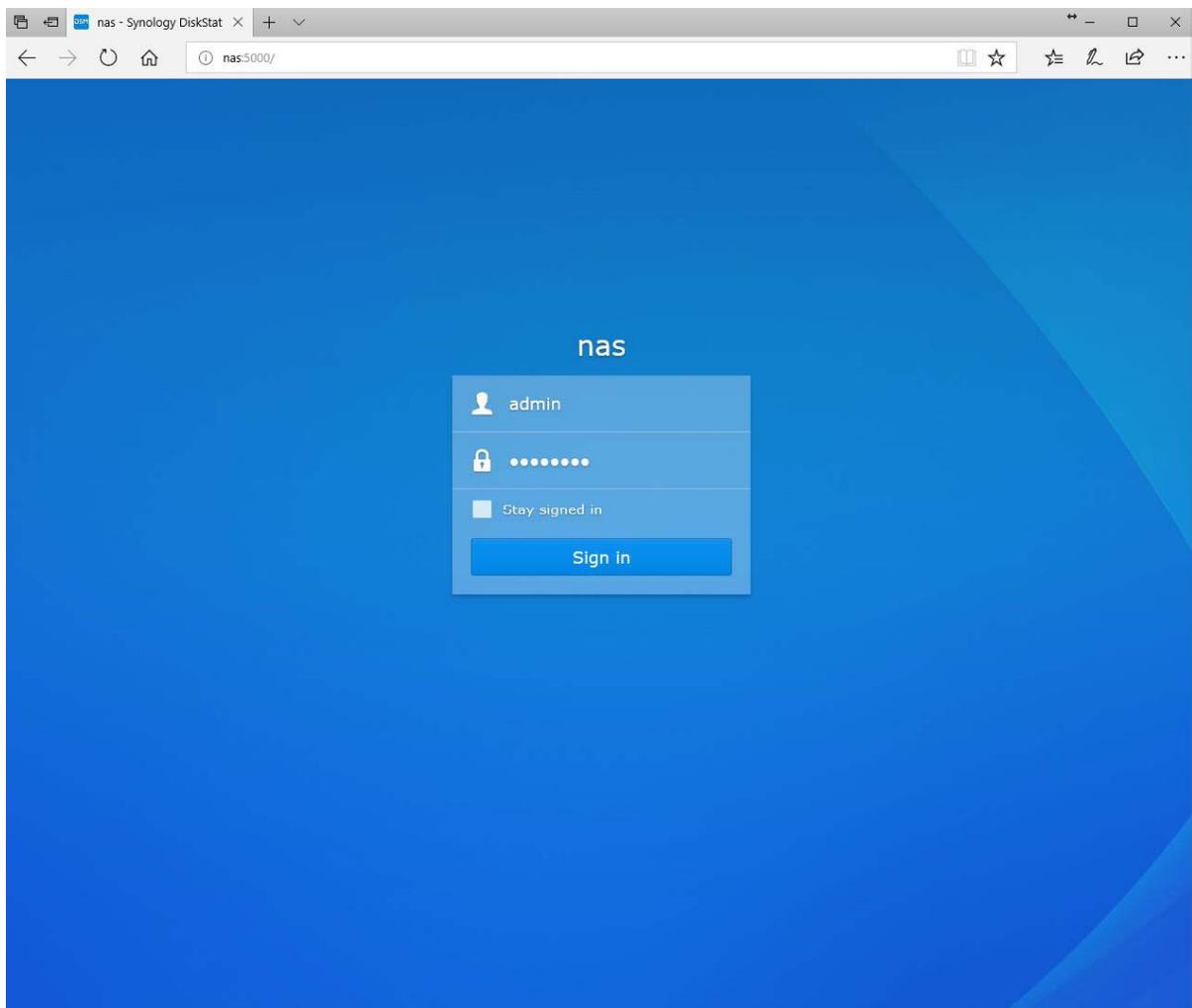
Monitor hard disk status of Synology DS416play NAS with DSM 6.1.4

Preparing the NAS

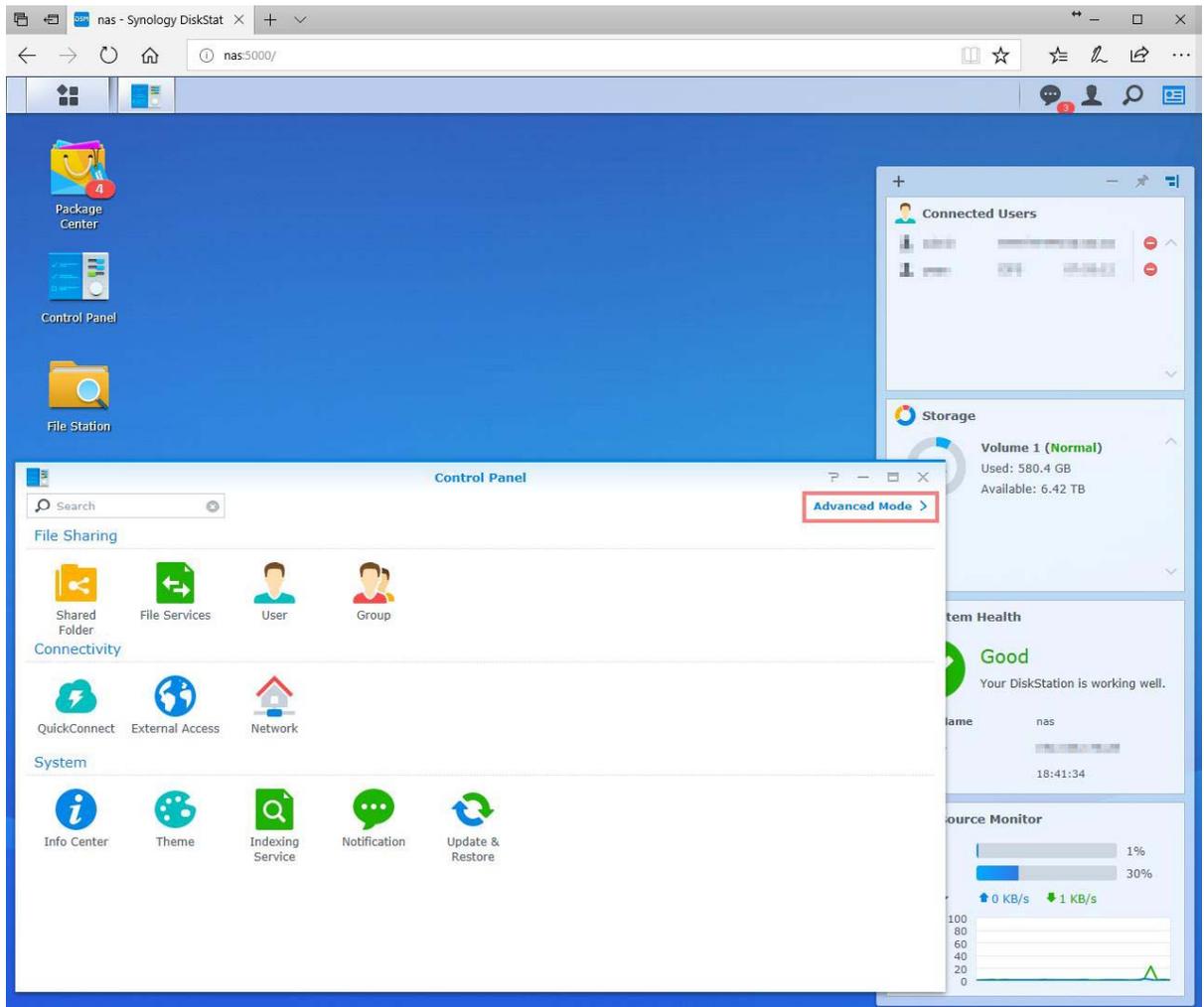
We assume that two hard disks already inserted, formatted by the NAS and they are generally readable (shared) over the network, so there are no network, user permissions or other similar issues.

In order to extend the functionality of the NAS, it is required to allow ssh access to the NAS.

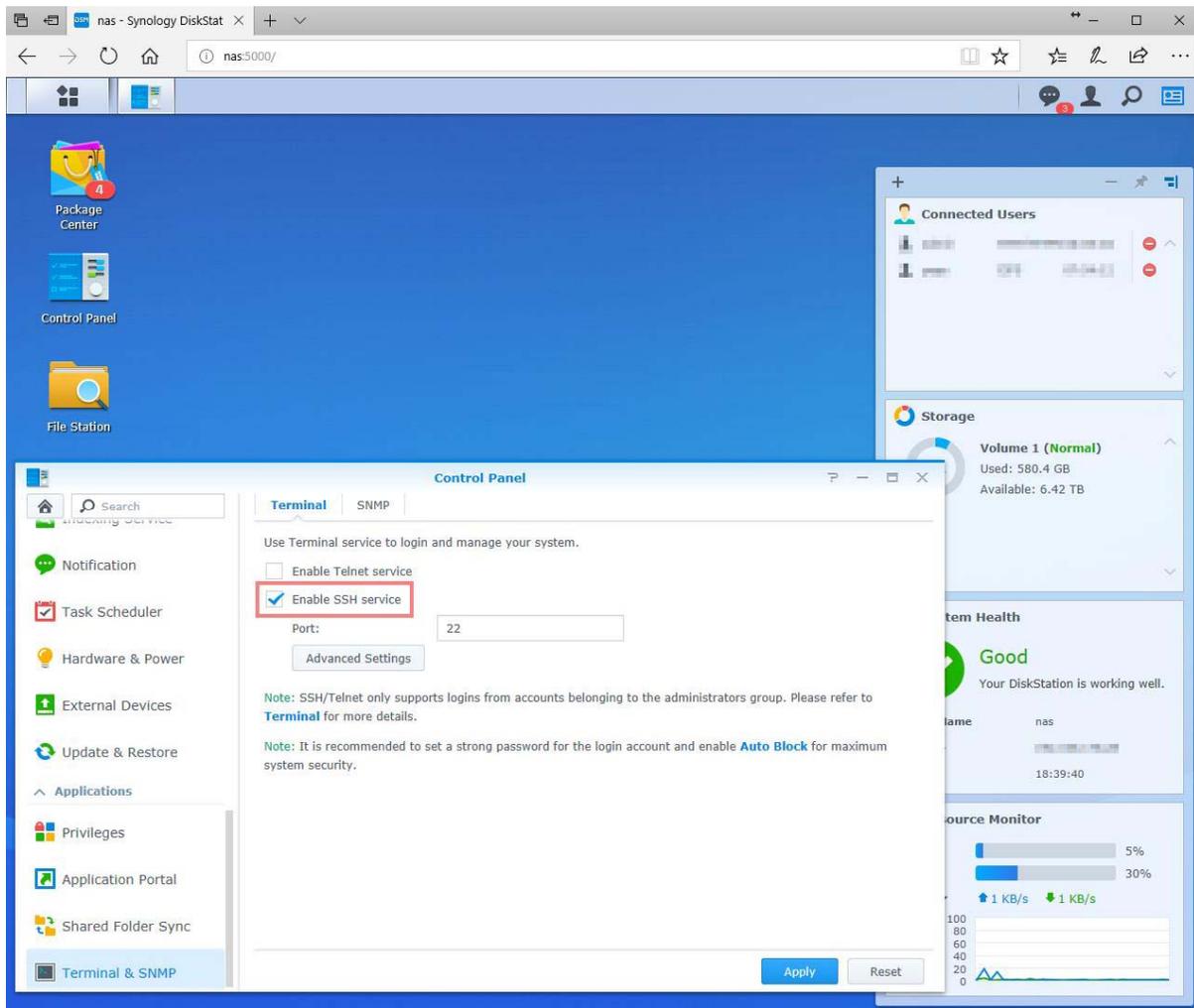
- Open the web interface of the Synology NAS by entering its IP address with port 5000 (e.g. <http://192.168.1.100:5000>) in your browser and log in with an account which belongs to the group **administrators**



- Open the Control Panel, switch to **advanced mode**, if not already done.

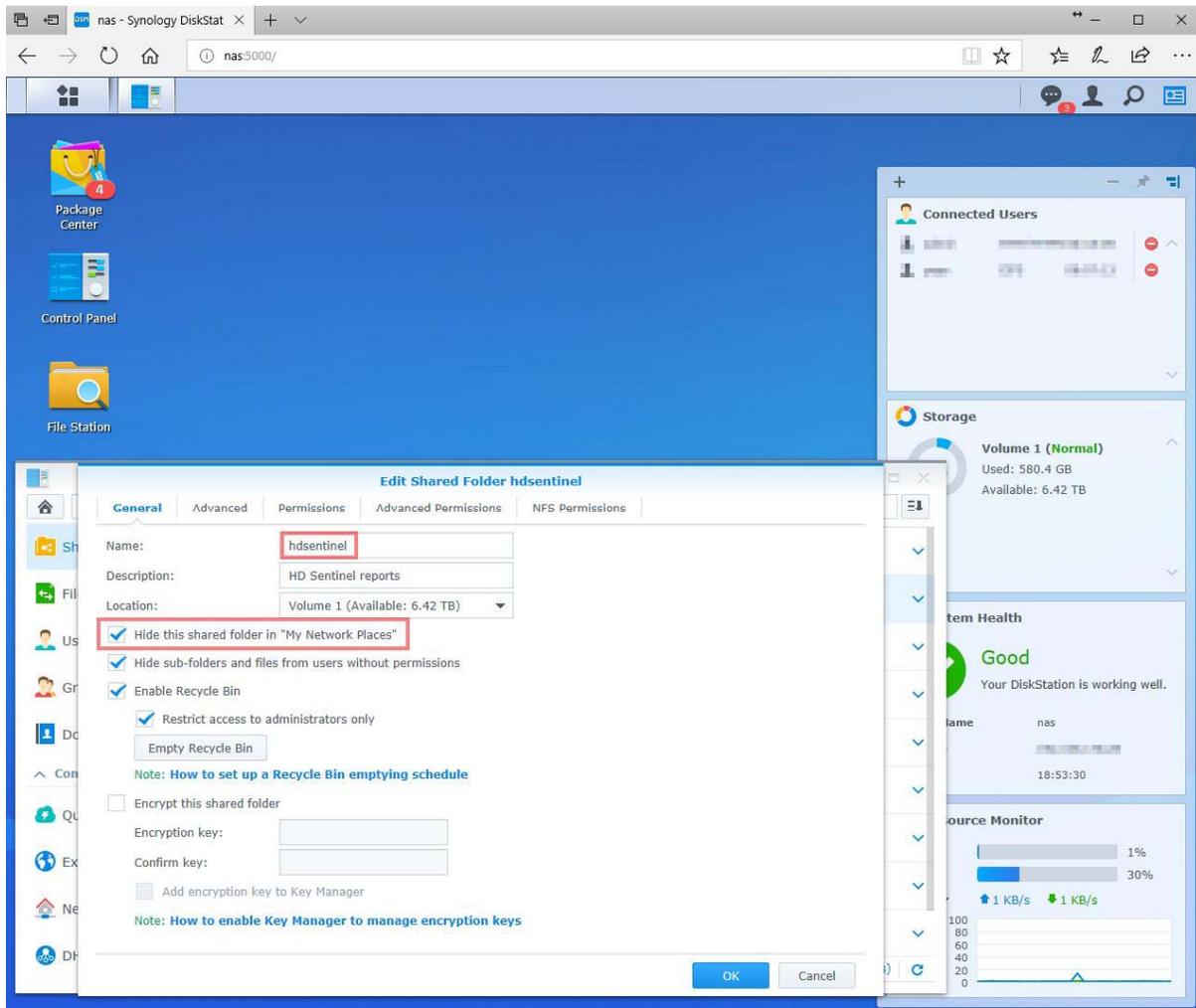


- In the search field type **ssh** and click on **Terminal & SNMP**
- Tick **Enable SSH service**.



Creating the Status Source by Hard Disk Sentinel Linux

- We now need a folder, where we will place the report from HD Sentinel. I chose to create a new Shared Folder, named **hdsentinel**, which is hidden in „My Network Places“, such that it not disturbs, when browsing the NAS shared folders. You can later safely access this folder from Windows directly. For this, in the Control Panel click on Shared Folder and then click on Create. The folder must be accessible (in my case readonly) by the user, which will run HD Sentinel on the Windows system.



nas - Synology DiskStat x + v

nas:5000/

Package Center
Control Panel
File Station

Edit Shared Folder hdsentinel

General Advanced **Permissions** Advanced Permissions NFS Permissions

Local users Search

Name	Preview	Group permis...	No access	Read/Write	Read only	Custom
	Read/Write	Read/Write	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	No access	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	No access	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	No access	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	No access	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Read only	-	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

7 item(s)

OK Cancel

Connected Users

Storage

Volume 1 (Normal)
Used: 580.4 GB
Available: 6.42 TB

System Health

Good
Your DiskStation is working well.

Resource Monitor

1%
30%

0 KB/s 1 KB/s

- Starting with DSM 6 it is not possible anymore to login directly as root. But this hinders us not to become root .
- So, login as an user, which belongs to the administrators group, in my case **admin**. After logging in, type **sudo -i** and use the same password as before. As this user is an administrator, he is allowed to become root.
- I chose to store hdsentinel in the folder, where the report will be saved, in this case **/volume1/hdsentinel**. So enter **cd /volume1/hdsentinel**.
- Download [Hard Disk Sentinel Linux x64 version](https://www.hdsentinel.com/hdslin/hdsentinel-017-x64.gz) by entering **wget https://www.hdsentinel.com/hdslin/hdsentinel-017-x64.gz**
- Uncompress hdsentinel by typing **gunzip hdsentinel-017-x64.gz**
- Use chmod to enable executable permissions: **chmod 0755 hdsentinel-017-x64**

```

login as: admin
admin@nas:~$ sudo -i
Password:
root@nas:~# cd /volume1/hdsentinel/
root@nas:/volume1/hdsentinel# wget https://www.hdsentinel.com/hdslin/hdsentinel-017-x64.gz
--2017-12-16 20:09:09-- https://www.hdsentinel.com/hdslin/hdsentinel-017-x64.gz
Resolving www.hdsentinel.com... 87.229.73.241
Connecting to www.hdsentinel.com[87.229.73.241]:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 1374484 (1.3M) [application/x-gzip]
Saving to: 'hdsentinel-017-x64.gz'

100%[=====>] 1,374,484  1.42MB/s  in 0.9s

2017-12-16 20:09:10 (1.42 MB/s) - 'hdsentinel-017-x64.gz' saved [1374484/1374484]

root@nas:/volume1/hdsentinel# gunzip hdsentinel-017-x64.gz
root@nas:/volume1/hdsentinel# chmod 0755 hdsentinel-017-x64
root@nas:/volume1/hdsentinel#

```

- We need now to edit the crontab. As vim is already installed on the NAS, but nano is not, we will use vim. It is a bit more complicated, but I will give you step by step directions.
- Type **vim /etc/crontab**, go down four lines (with the arrow keys), type **o** and in the new line ***/10 * * * * root /volume1/hdsentinel/hdsentinel-017-x64 -r /volume1/hdsentinel/hdsreport.html -html**

- Now every 10 minutes, the complete status of the hard disk drives gets detected and report saved to the shared hdsentinel folder. If things are fine, in 10 minutes the **hdsreport.html** file should appear there and if you open the contents in a browser, you may see something like this:

The screenshot shows a web browser window with the address bar displaying `file://nas/hdsentinel/hdsreport.html`. The page title is "Hard Disk Sentinel" with a link to www.hdsentinel.com.

General Information

Application Information

- Installed Version : Hard Disk Sentinel 0.17x64
- Current Date And Time : 16-12-17 20:20:01

Computer Information

- Computer Name : nas
- MAC Address : 00:11:32:5D:53:43

System Information

- OS Version : Linux : 3.10.102 (#15217 SMP Thu Dec 14 14:33:51 CST 2017)
- Process ID : 18737
- Uptime : 3323 sec (0 days, 0 hours, 55 min, 23 sec)

Physical Disk Information - Disk: #0: WDC WD80EFZX-68UW8N0

Hard Disk Summary

- Hard Disk Number : 0
- Hard Disk Device : /dev/hda
- Interface : S-ATA Gen3, 6 Gbps
- Hard Disk Model ID : WDC WD80EFZX-68UW8N0
- Firmware Revision : 83.H0A83
- Hard Disk Serial Number : VK0HSL5Y
- Total Size : 7630884 MB
- Current Temperature : 36 °C (97 °F)
- Maximum Temperature (during Entire Lifespan) : 47 °C (117 °F)
- Power On Time : 306 days, 19 hours
- Estimated Remaining Lifetime : more than 1000 days
- Health :  ◆ 100 % (Excellent)
- Performance :  ◆ 100 % (Excellent)

The hard disk status is PERFECT. Problematic or weak sectors were not found and there are no spin up or data transfer errors.

No actions needed.

ATA Information

- Hard Disk Cylinders : 15504019
- Hard Disk Heads : 16
- Hard Disk Sectors : 63
- ATA Revision : 9, ATA8-ACS version 4
- Transport Version : SATA Rev 2.6
- Total Sectors : 1563851055

Load status source in Hard Disk Sentinel Pro

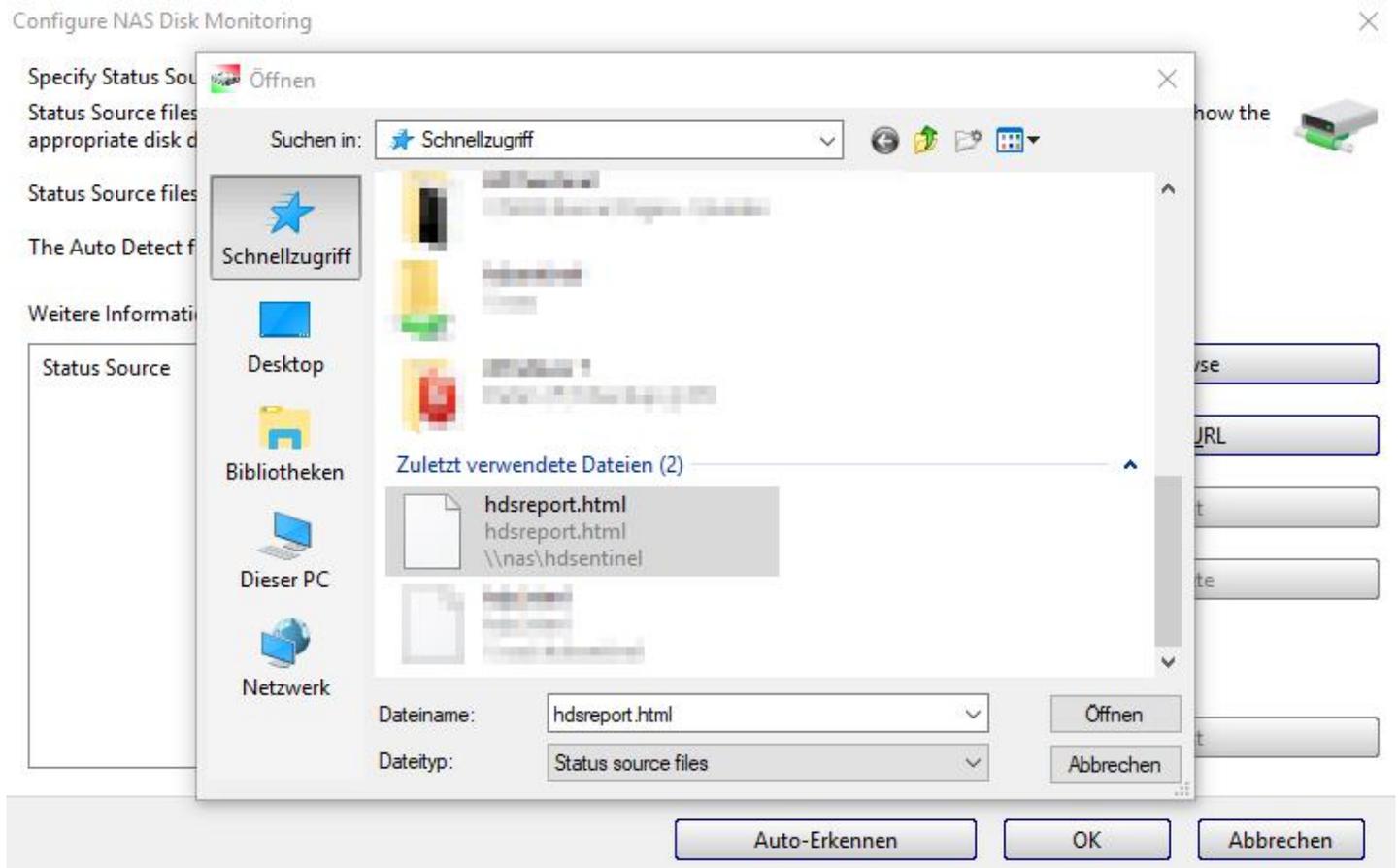
In Hard Disk Sentinel Professional, please select **File menu -> Configure NAS Disk Monitoring**.

If we'd have the network shared path (`\\nas\hdsentinel`) already mapped as a network drive, then we'd only need to click on the **Auto Detect button**: then Hard Disk Sentinel Professional could automatically use the created `hdsreport.html` file as status source.

Additionally, as we chose a hidden shared folder, from Hard Disk Sentinel Pro you cannot choose this path, as it not allows to insert a direct path. A workaround is to open the `hdsreport.html` file once from the explorer. So open the explorer and in the address line type `\\nas\hdsentinel`

Double click on `hdsreport.html`. A new tab in your browser will open with the report. The advantage is, that in the quick access of the explorer, `hdsreport.html` will be one of the last used files. We will use this to create the source in Hard Disk Sentinel Pro.

Now assume there is no mapped network drive, so click on **Browse** and in the network locations, we would need to manually select the network path where the `hdsreport.html` file is located. But we can already find the file in the quick access.



OK, my fault, just detected the way how one can enter the direct path. Instead of **Browse**, choose **Add URL** and enter there the path: `\\nas\hdsentinel\hdsreport.html`

Configure NAS Disk Monitoring



Specify Status Source(s) to monitor Network Attached Storage (NAS) disk drives.

Status Source files contain complete status of hard disk drives, SSDs, storage devices and Hard Disk Sentinel reads them to show the appropriate disk drives like if they would be connected directly.



Status Source files saved and updated on the NAS device, created by (for example) Hard Disk Sentinel Linux version.

The Auto Detect function automatically detects possible Status Source files (HDSReport.html) on available network drives.

Weitere Informationen [How to: monitor Network Attached Storage \(NAS\) status](#)

The screenshot shows the 'Configure NAS Disk Monitoring' dialog box. The 'Status Source' tab is selected, and a modal dialog is open for adding a new status source. The path '\\nas\hdsentinel\hdsreport.html' is entered in the text field. The modal dialog has 'OK' and 'Cancel' buttons. To the right of the main dialog are buttons for 'Browse', 'Add URL', 'Edit', 'Delete', and 'Test'. At the bottom of the main dialog are buttons for 'Auto-Erkennen', 'OK', and 'Abbrechen'.

After the detection (or manual adding the Status Source), the configured network path displayed, indicating that 3 hard disks found in it:

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Status Source	Physikalische Laufwerke	
\\nas\hdsentinel\hdsreport.html	3	<input type="button" value="Browse"/>
		<input type="button" value="Add URL"/>
		<input type="button" value="Edit"/>
		<input type="button" value="Delete"/>
		<input type="button" value="Test"/>

In fact, there are only two disks, one is the RAID device. Hard Disk Sentinel Pro will only monitor the „real“ disks. And after clicking OK, Hard Disk Sentinel Professional reads the status source and displays the hard disks just like other internal hard disks:

The screenshot displays the Hard Disk Sentinel 5.01.9b PRO interface. The title bar reads "Laufwerk: 6, WDC WD80EFZX-68UW8N0 [VK0HSL5Y] - Hard Disk Sentinel 5.01.9b PRO". The menu bar includes "Datei", "Laufwerk", "Ansicht", "Bericht", "Konfiguration", and "Hilfe". The toolbar contains various icons for navigation and settings.

The main window is divided into two panes. The left pane shows a list of drives with their status (green checkmarks) and temperature (36°C). The right pane provides detailed information for the selected drive (Laufwerk 6):

- Laufwerk Leistungsfähigkeit** (Drive Performance): 100% **Exzellent**
- Zustand** (Status): 100% **Exzellent**

A green message box states: "Der Festplattenstatus ist PERFEKT. Problematische oder schwache Sektoren wurden nicht gefunden und es gibt keine Datentransfer-Fehler beim Hochfahren der Platte. Keine Aktionen erforderlich." (The hard drive status is PERFECT. Problematic or weak sectors were not found and there are no data transfer errors when starting the drive. No actions are required.)

Operational statistics are shown below:

- Betriebszeit: 306 Tag(e), 20 Stunde(n)
- Geschätzte verbl. Lebenszeit: Mehr als 1000 Tag(e)
- Gesamtzahl Starts/Stopps: 1.303

A "Test wiederholen" button is available. Below this is a text input field for comments: "Klicken, um Kommentar hinzuzufügen ...".

A line graph titled "Zustand (%)" shows the drive's health percentage over time. The y-axis is labeled "Zustand (%)" and has a "100" marker. The x-axis shows dates "15.12.2017" and "16.12.2017". The graph shows a constant horizontal line at 100% health.

At the bottom left, the status is updated: "Status zuletzt aktualisiert: 16.12.2017 Samstag 20:47:45".