

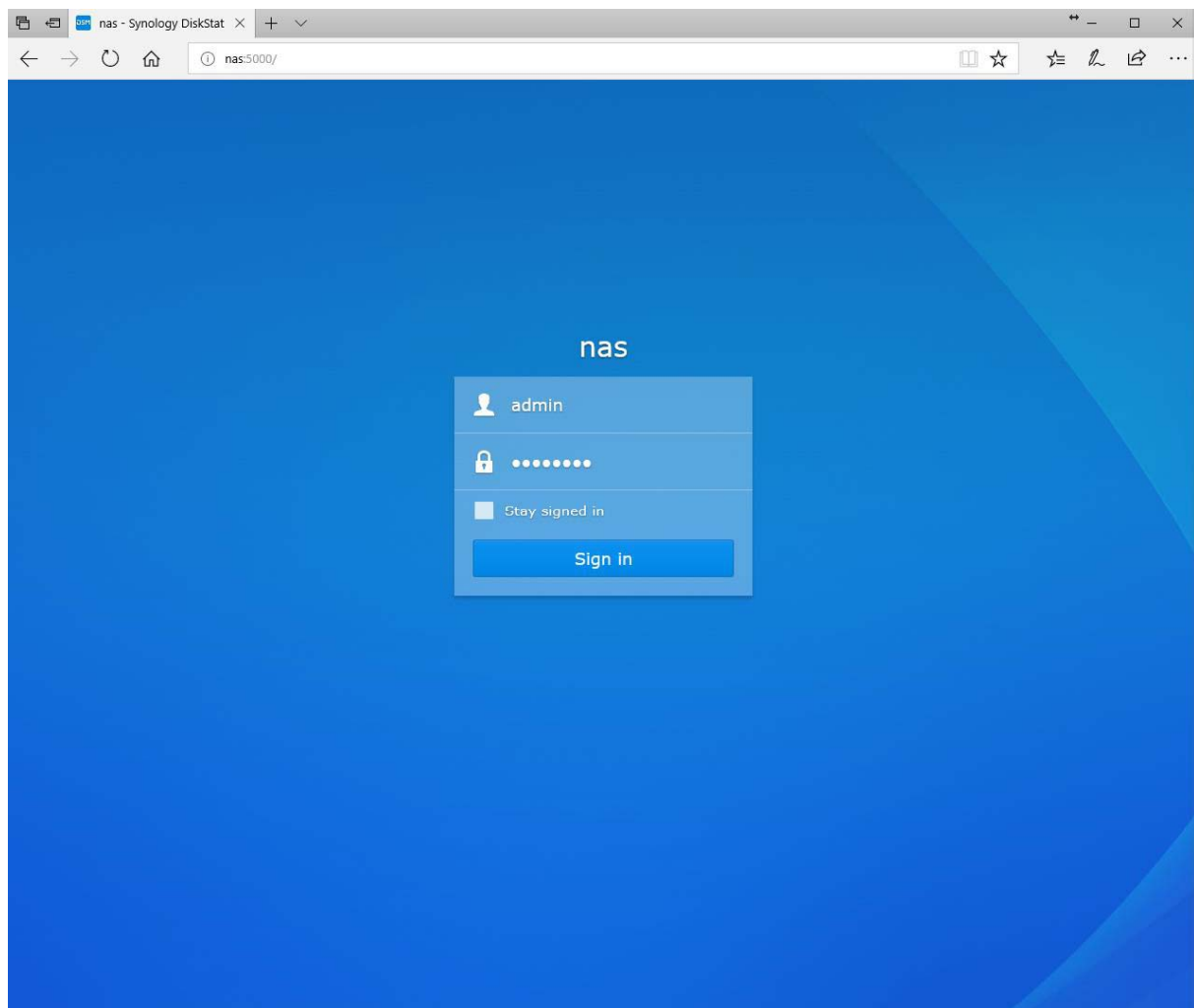
# Monitor hard disk status of Synology DS416play NAS with DSM 6.1.4

## Preparing the NAS

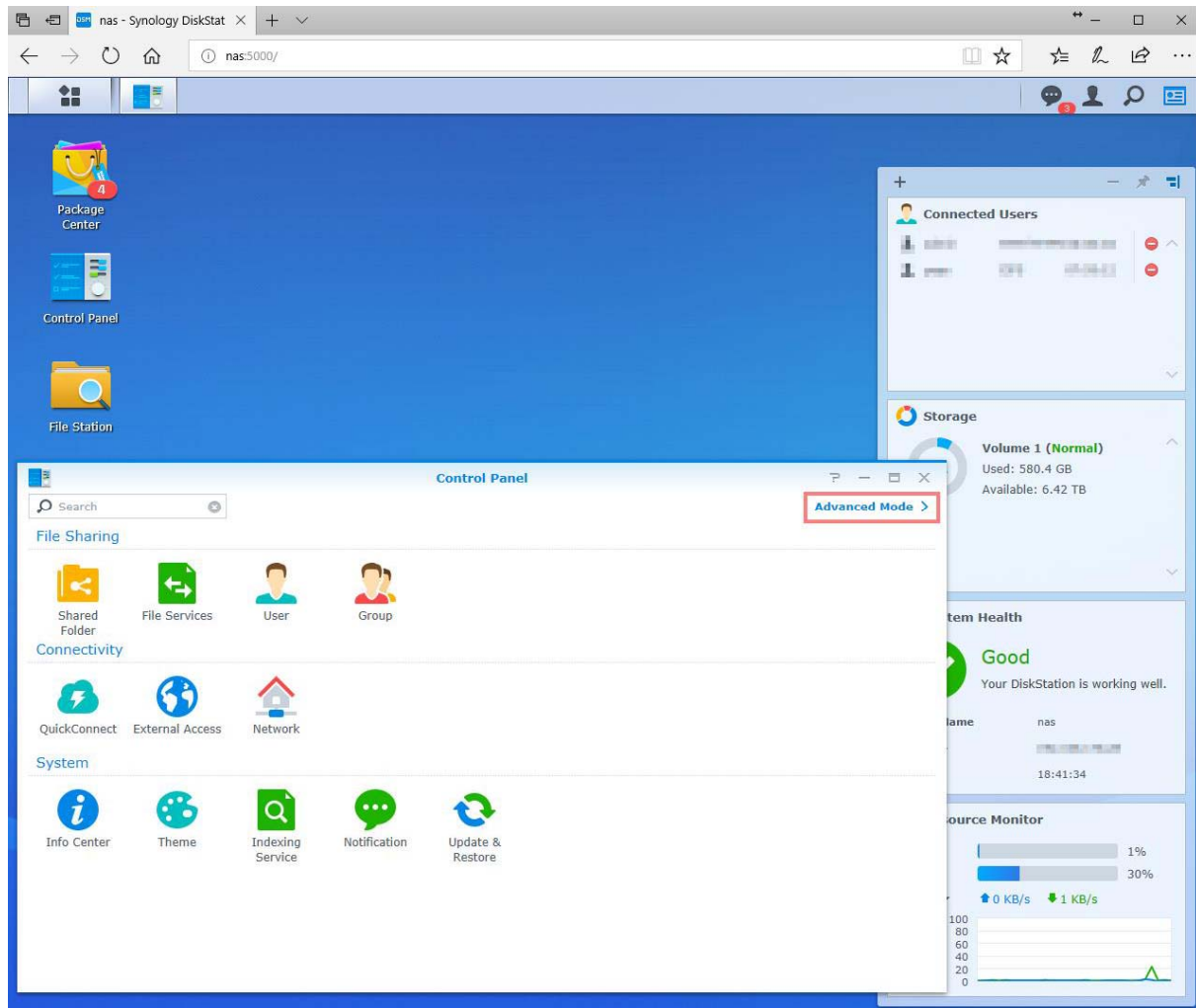
We assume that two hard disks already inserted, formatted by the NAS and they are generally readable (shared) over the network, so there are no network, user permissions or other similar issues.

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

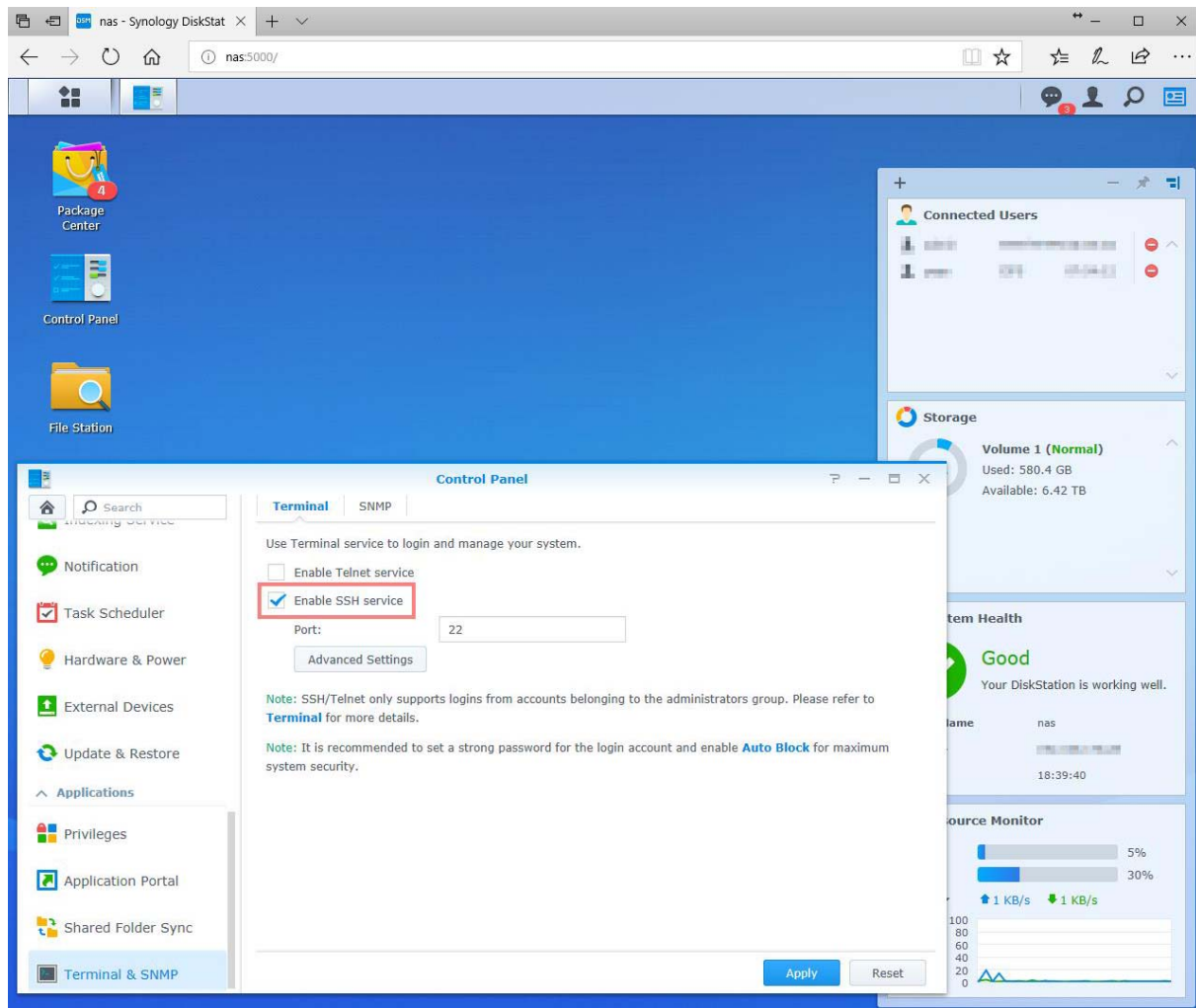
- Open the web interface of the Synology NAS by entering its IP address with port 5000 (e.g. <http://192.168.1.100:5000>) in your browser and log in with an account which belongs to the group **administrators**



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

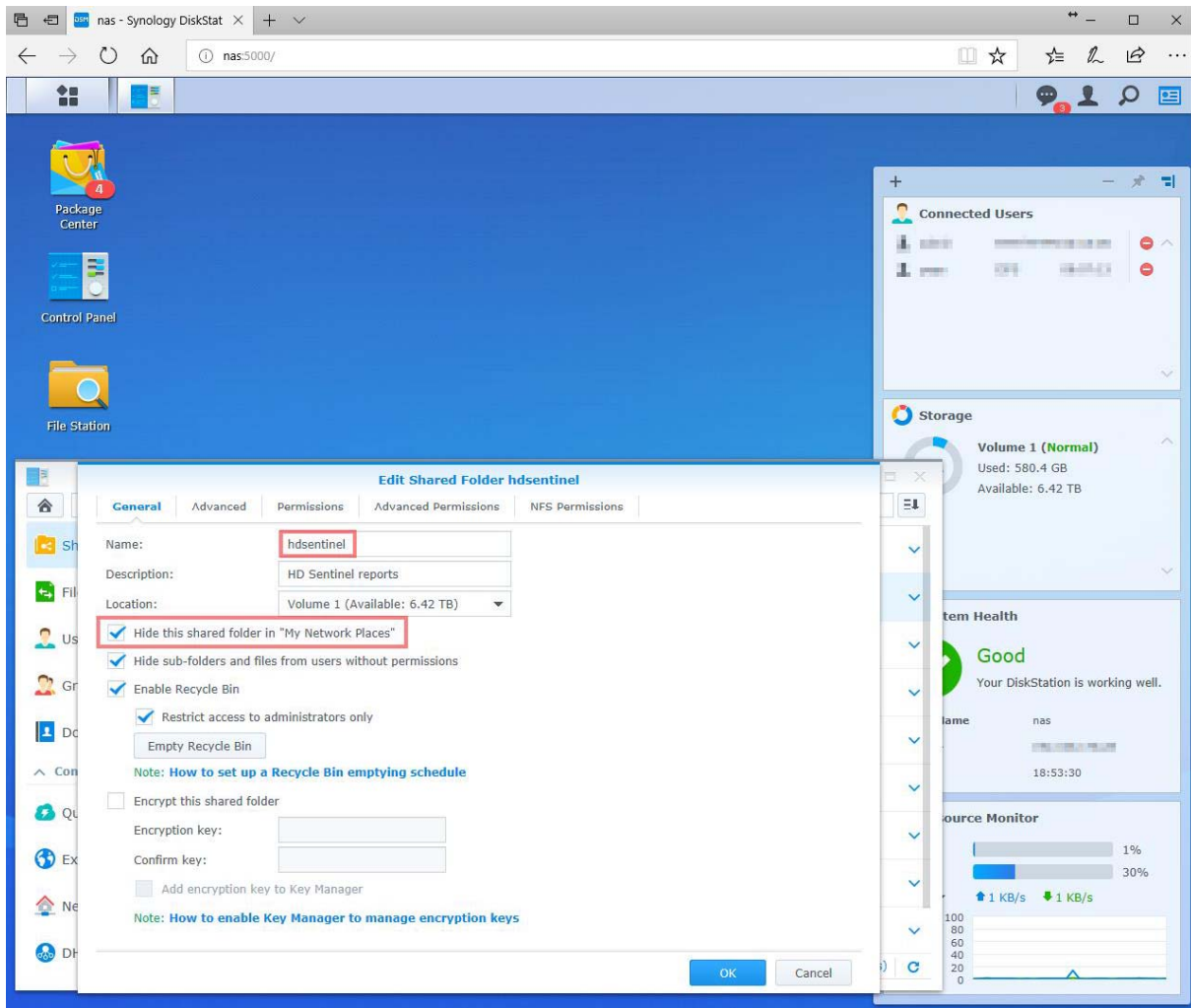


- In the search field type **ssh** and click on **Terminal & SNMP**
- Tick **Enable SSH service**.



# 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

nas:5000/

Package Center

Control Panel

File Station

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.

nas

18:54:55

Resource Monitor

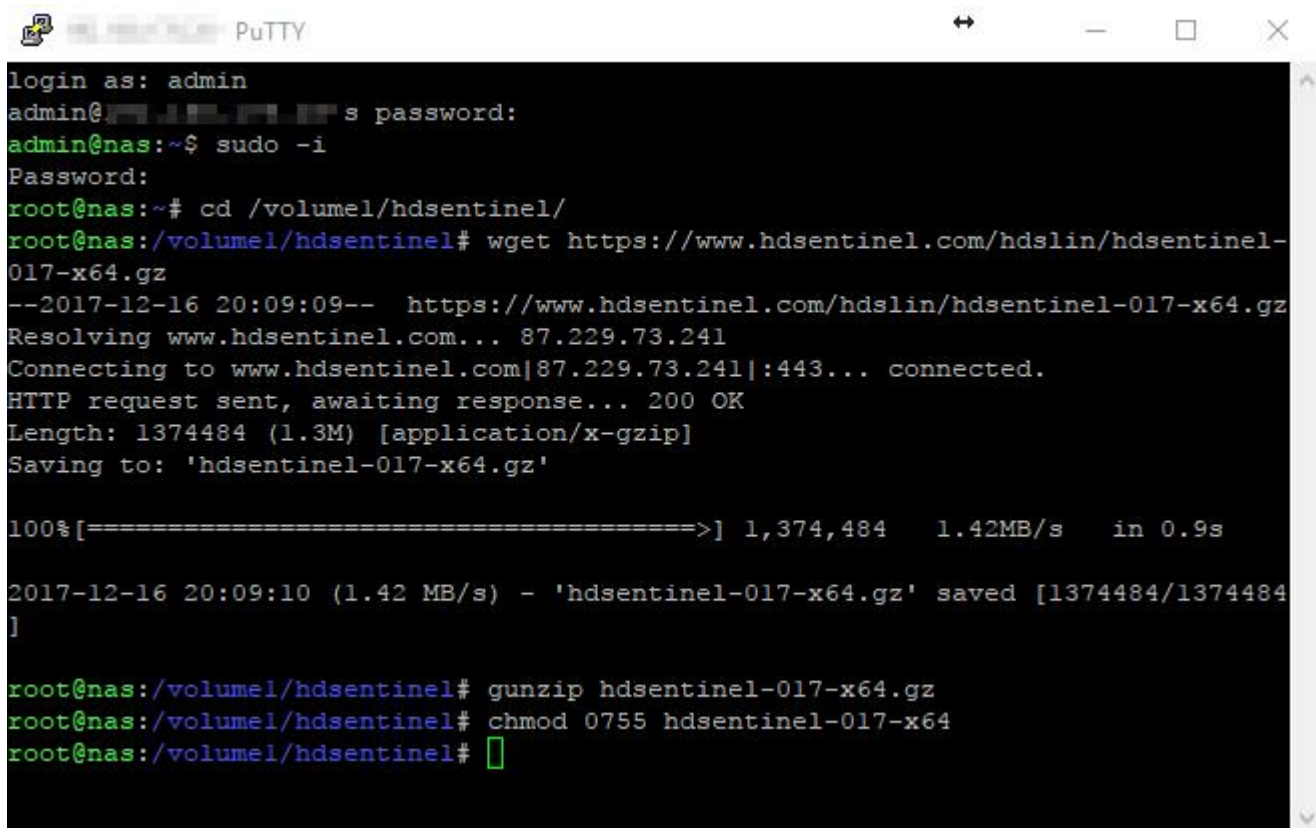
1%

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'

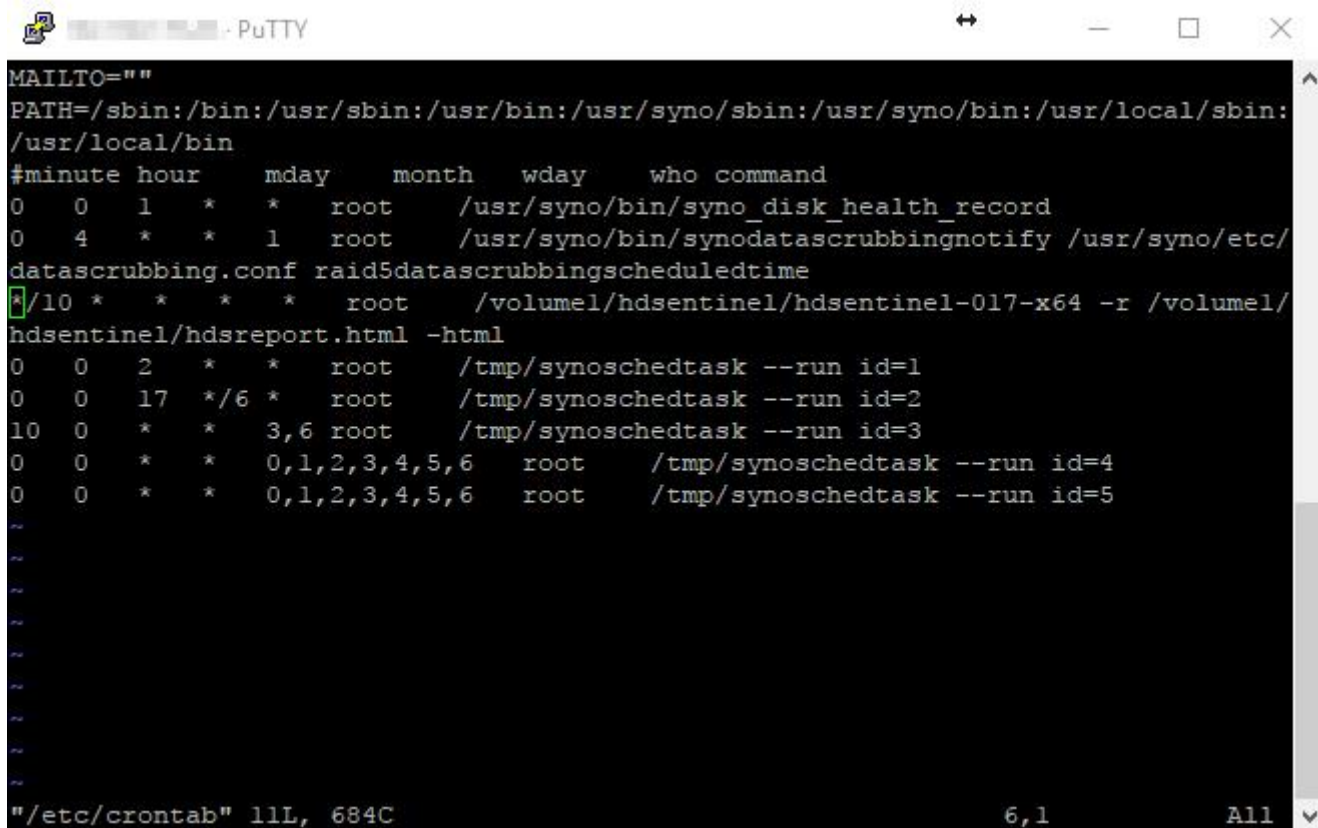
100%[=====>] 1,374,484  1.42MB/s  in 0.9s

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**



```
MAILTO=""
PATH=/sbin:/bin:/usr/sbin:/usr/bin:/usr/syno/sbin:/usr/syno/bin:/usr/local/sbin:
/usr/local/bin
#minute hour    mday    month    wday     who command
0 0 1 * * root    /usr/syno/bin/syno_disk_health_record
0 4 * * 1 root    /usr/syno/bin/synodatascrubbingnotify /usr/syno/etc/
datascrubbing.conf raid5datascrubbingscheduledtime
*/10 * * * * root    /volume1/hdsentinel/hdsentinel-017-x64 -r /volume1/
hdsentinel/hdsreport.html -html
0 0 2 * * root    /tmp/synoschedtask --run id=1
0 0 17 */6 * root    /tmp/synoschedtask --run id=2
10 0 * * 3,6 root    /tmp/synoschedtask --run id=3
0 0 * * 0,1,2,3,4,5,6 root    /tmp/synoschedtask --run id=4
0 0 * * 0,1,2,3,4,5,6 root    /tmp/synoschedtask --run id=5
~
~
~
~
~
~
~
~
"/etc/crontab" 11L, 684C 6,1 All
```

- It should now look like this or similar:
- Press **ESC** and then **:wq** and **ENTER**
- Another way would be to use echo and STDOUT redirection to append the line to the crontab.
- Type **echo „\*/10 \* \* \* \* root /volume1/hdsentinel/hdsentinel-017-x64 -r /volume1/hdsentinel/hdsreport.html -html“ >> /etc/crontab**
- This should also suffice



- 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:

nas - Synology DiskStation | Hard Disk Sentinel

file://nas/hdsentinel/hdsreport.html

## Hard Disk Sentinel

[www.hdsentinel.com](http://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	: <div><div></div></div>	◆	100 % (Excellent)
Performance	: <div><div></div></div>	◆	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	: 15504019



## Load status source in Hard Disk Sentinel Pro

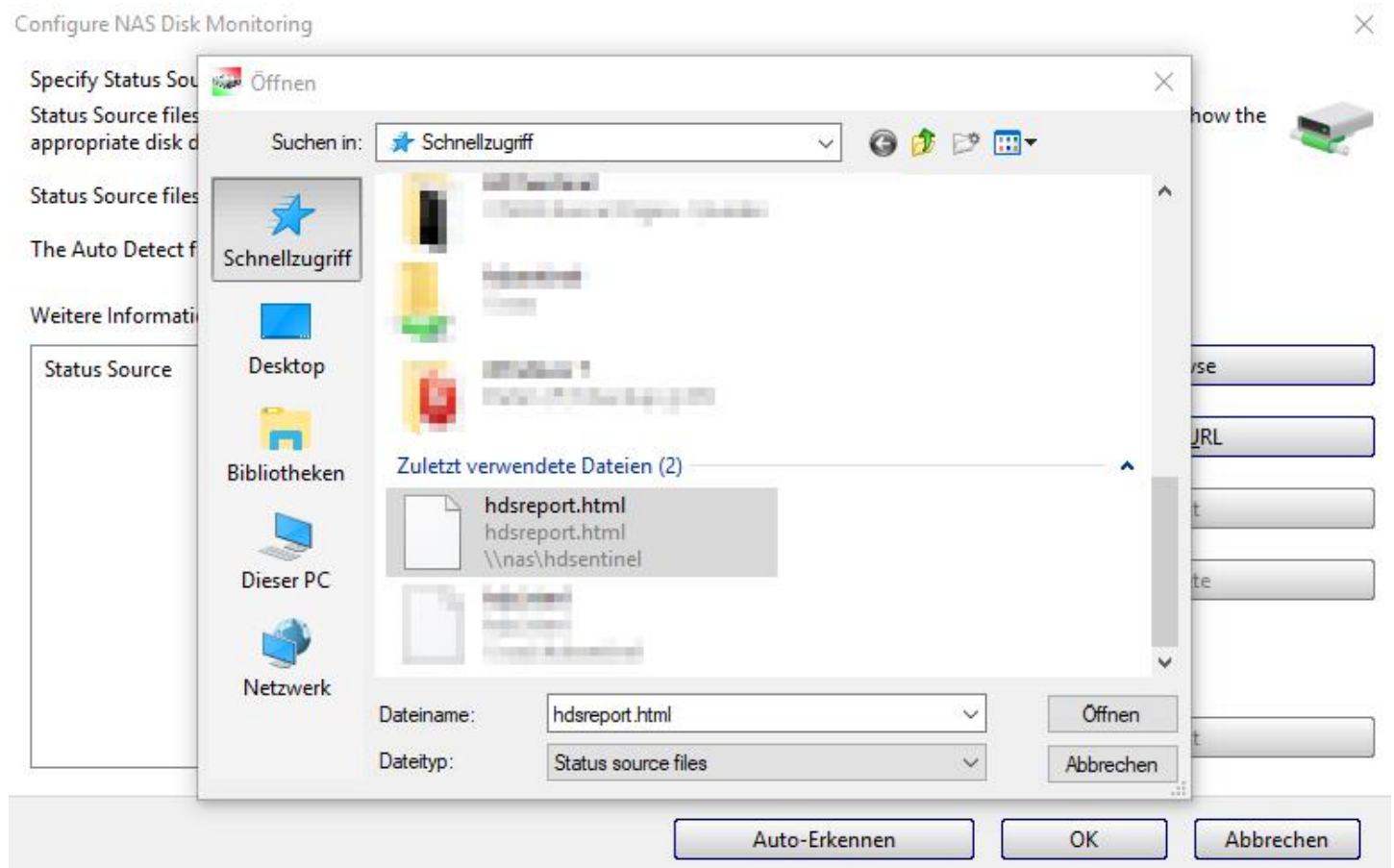
In Hard Disk Sentinel Professional, please select **File menu -> Configure NAS Disk Monitoring**.

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](#)

Status Source

Physikalische Laufwerke

Status Source

Status Source :

\\nas\hdsentinel\hdsreport.html

OKCancel

Browse

Add URL

Edit

Delete

Test

Auto-Erkennen

OK

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

Browse

Add URL

Edit

Delete

Test

Auto-Erkennen

OK

Abbrechen

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:

