How to monitor the status of Western Digital **My Cloud PR4100** NAS server drives using **Hard Disk Sentinel** and a Windows PC

Illustrated guide

This guide explains how to monitor the status of Western Digital My Cloud PR4100 NAS server drives using Hard Disk Sentinel software and a Windows PC.

The description applies to the PR4100 server with OS5 version 5.31.102.

I. Warning.

Making a mistake when configuring the NAS may cause permanent damage to the My Cloud PR4100 operating system and render the NAS unusable.
If you are not sure what you are doing, don't do it. You act at your own risk.
You have been warned.

II. What you will need

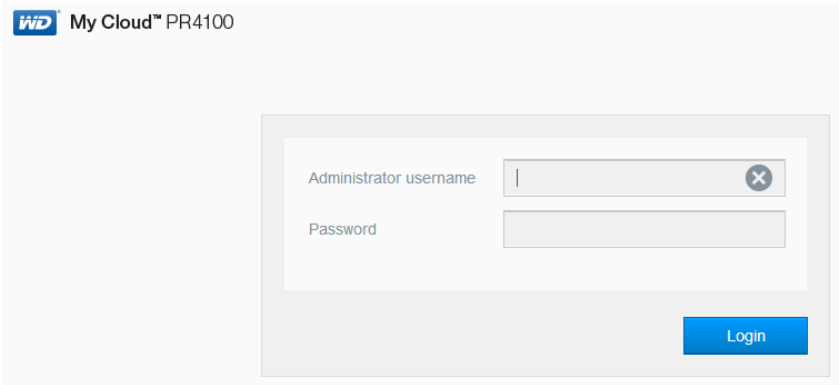
1. Hard Disk Sentinel Professional for Windows:
   https://www.hdsentinel.com/hard_disk_sentinel_professional.php
2. Hard Disk Sentinel for Linux:
   https://www.hdsentinel.com/hard_disk_sentinel_linux.php
   Since the PR4100 is equipped with an Intel Pentium N3710 processor and has a 64-bit version of Linux installed, you should download the program described as „Hard Disk Sentinel 64-bit Linux console version - **executable, zip-compressed**"
3. SSH client, e.g., PuTTY: https://www.chiark.greenend.org.uk/~sgtatham/putty/
4. SFTP client, e.g., WinSCP: https://winscp.net

III. Install Hard Disk Sentinel for Linux on your NAS server

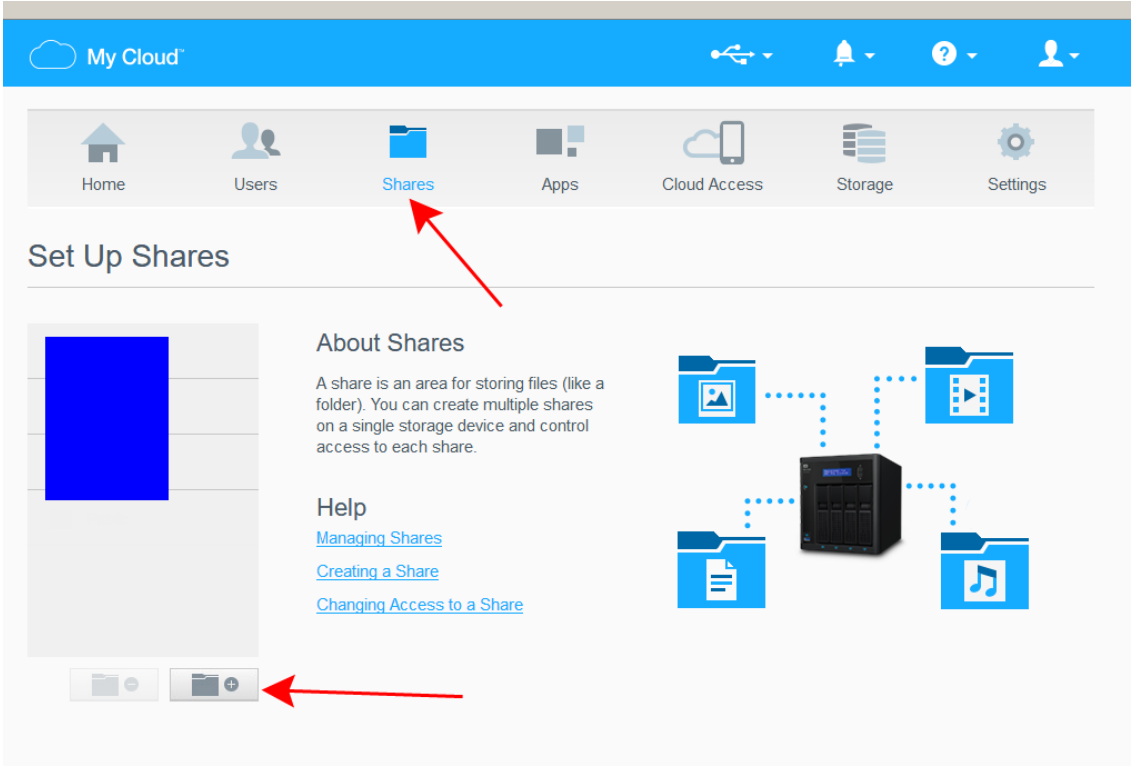
1. Download „Hard Disk Sentinel 64-bit Linux console version - **executable, zip-compressed**" (see section II.2).
   Today, as I write this guide, the downloadable file is named „`hdsentinel-020c-x64.zip`".

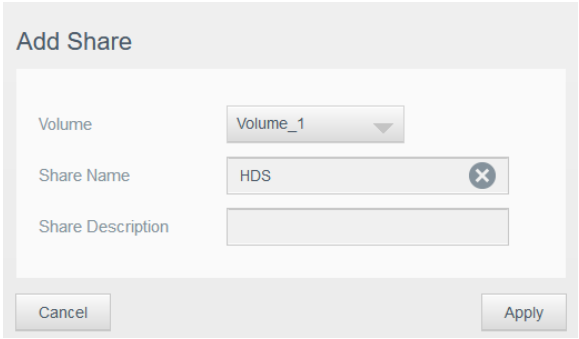
2. The downloaded ZIP archive contains one file: „`HDSentinel`" – extract it. This is a program that you will need to upload to your NAS server (we will do this in section III.6).

3. Log in to the PR4100 GUI as an administrator:

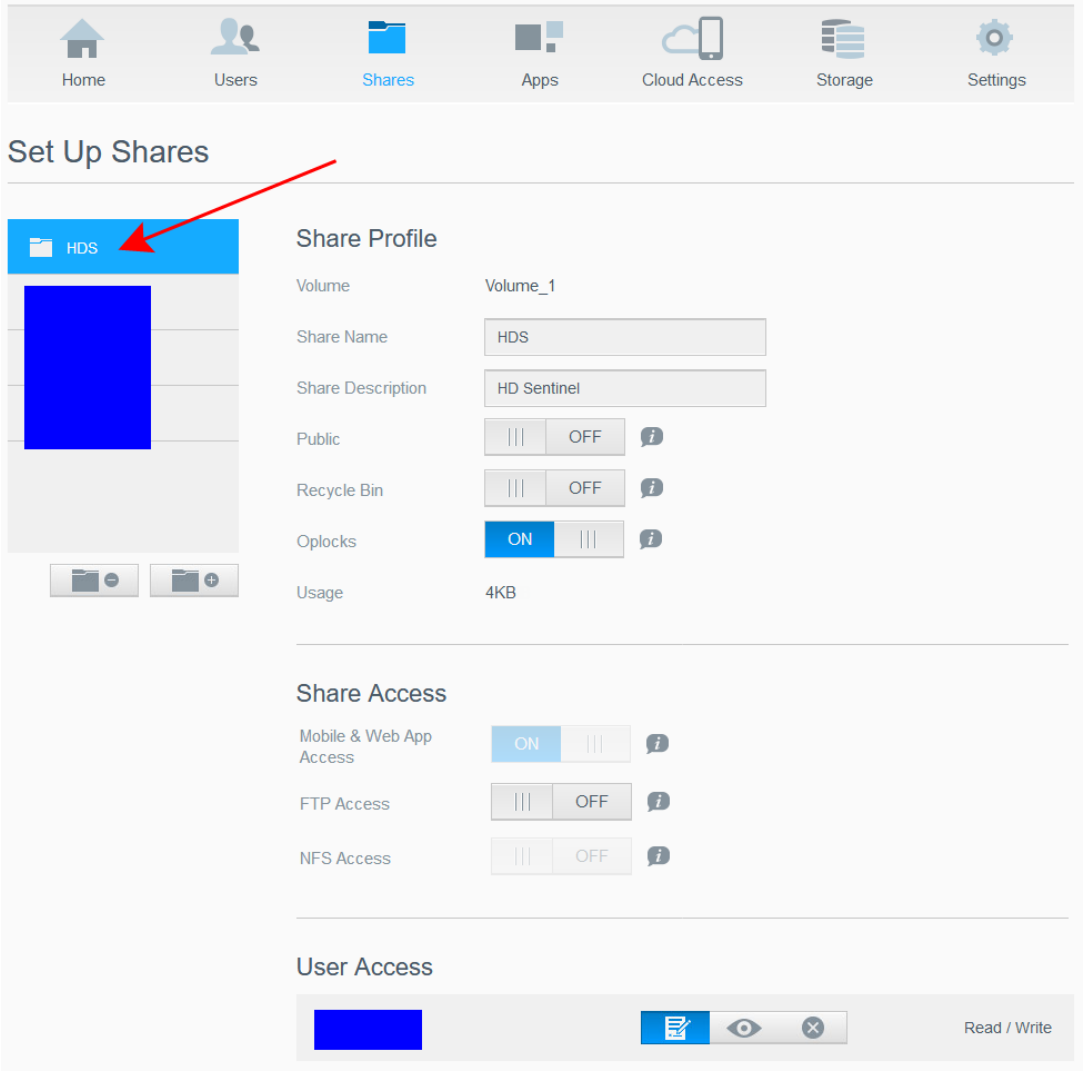


4. Go to „Shares” and create a new share called „HDS”:

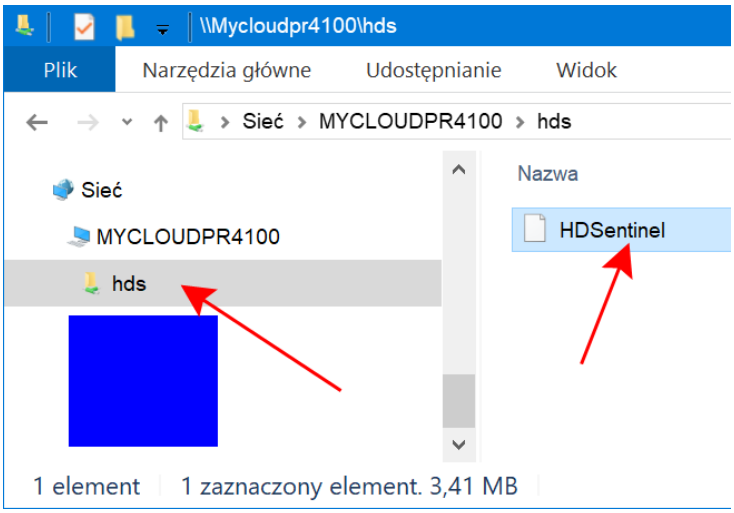




5. Configure the „HDS” share.
   Note: you can configure this share as „Public”, but I prefer to create private shares and regulate access to them with permissions.



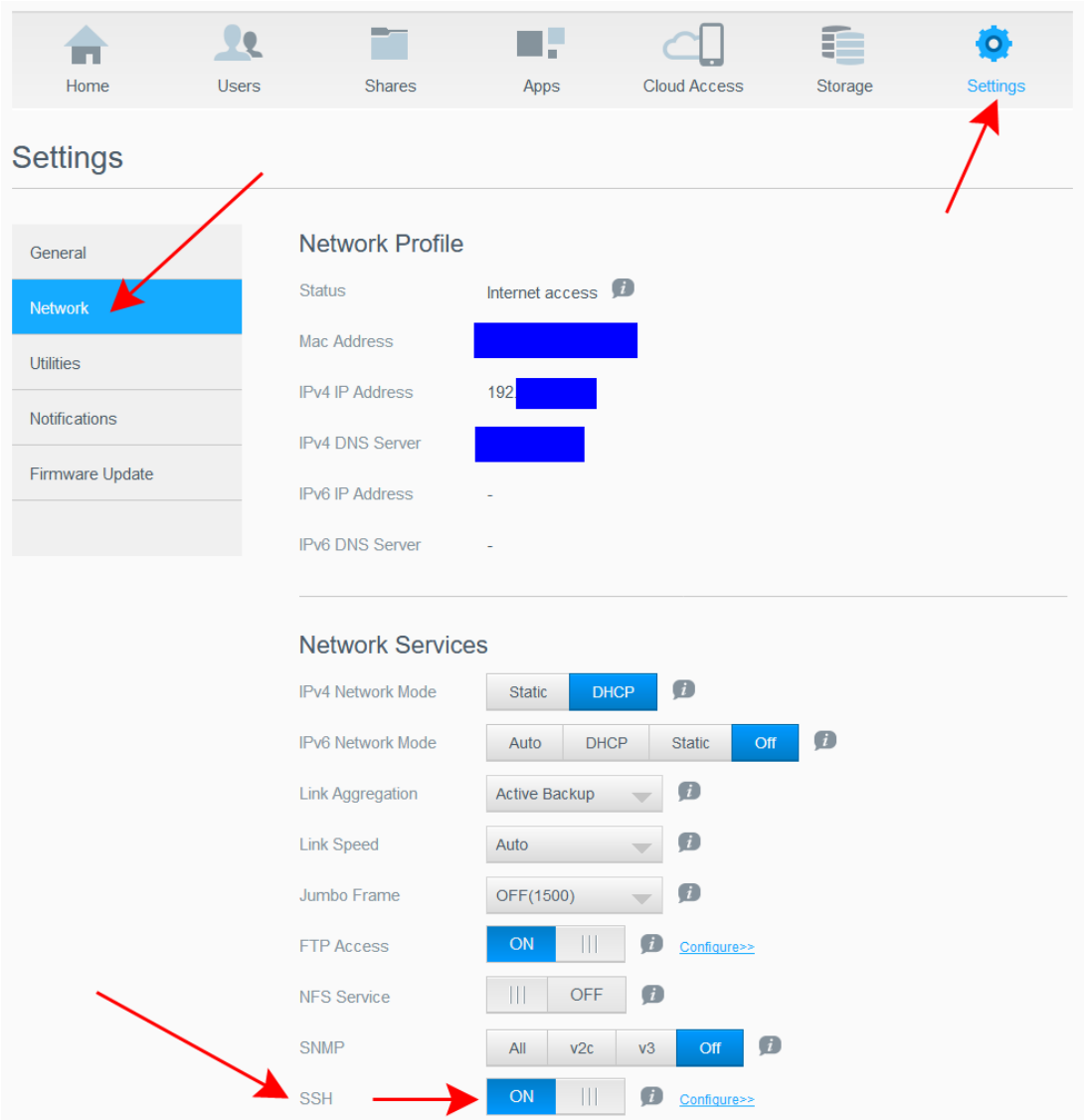
6. Copy the „HDSentinel” file (see section III.2) to the NAS server, to the „HDS” share.



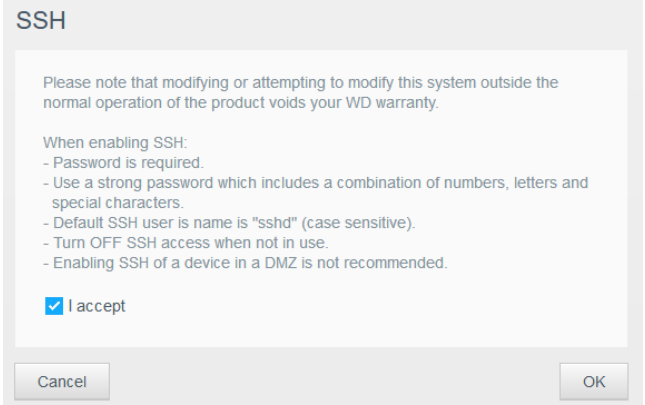
IV. Configure CRONTAB

Note: in this guide, I limit myself to describing „what to do". For more details and additional explanations, see [3] - I encourage you to read it.

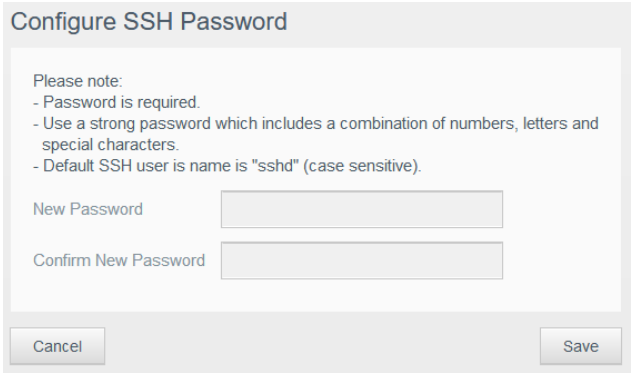
1. In the NAS server GUI, go to „`Settings`" → „`Network`" and enable SSH:



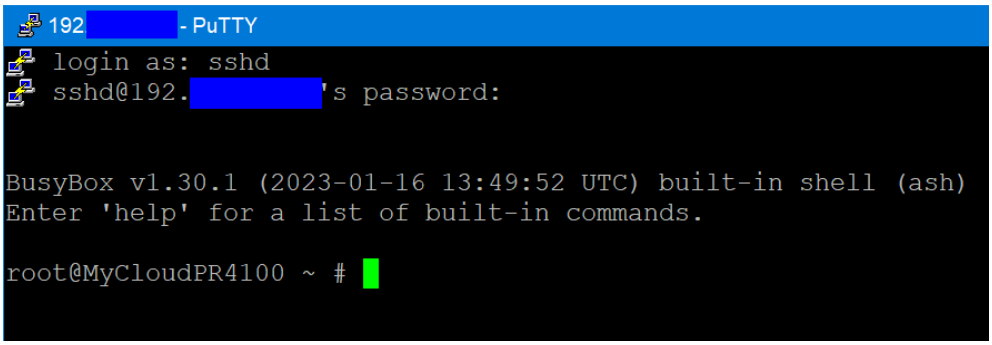
2. Read and accept the warnings and information:



3. Set an SSH password:



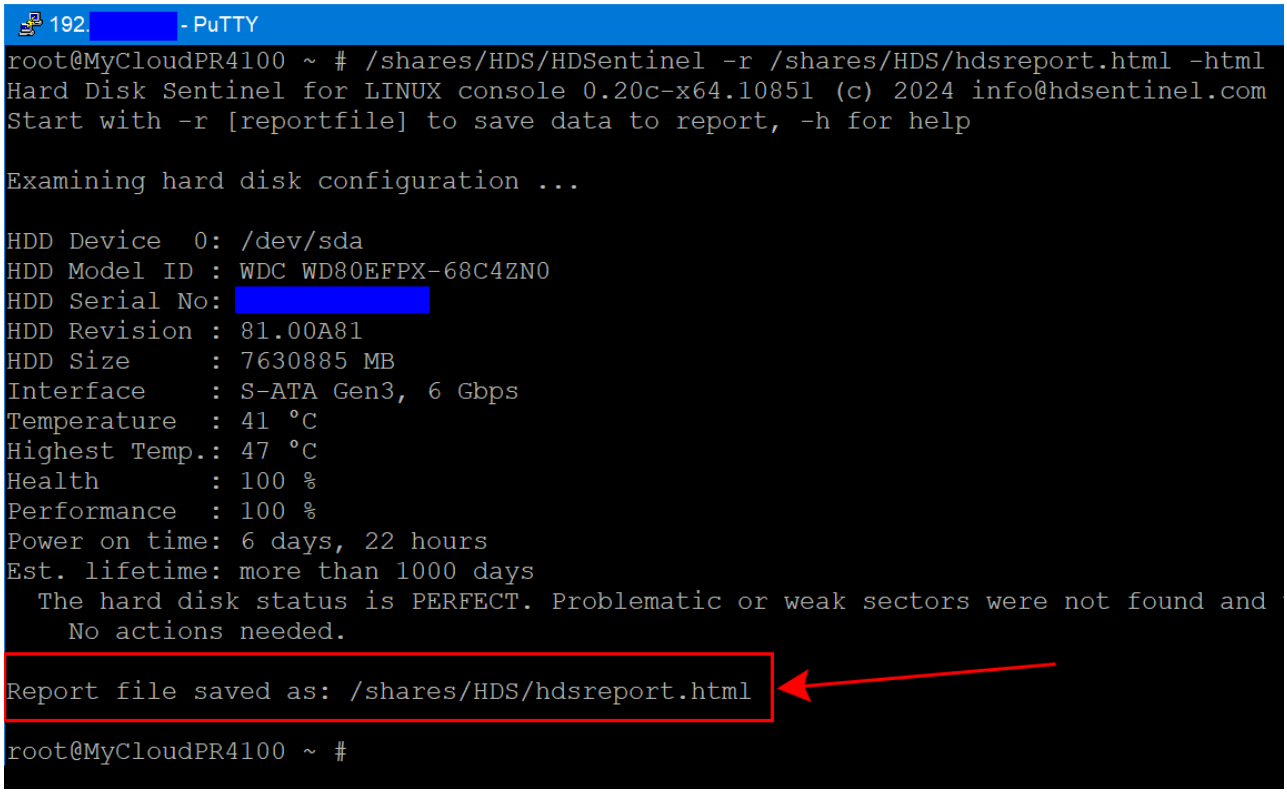
4. Start PuTTY and log in to the NAS server using the password from section IV.3:



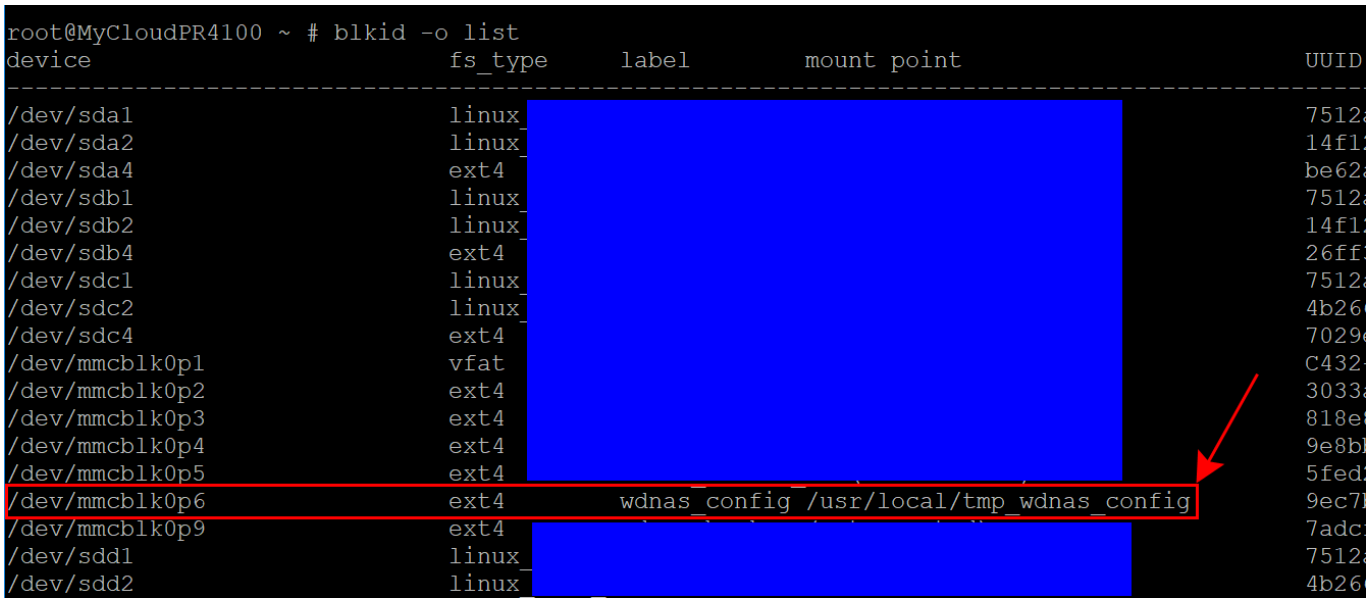
5. Check whether the „HDSentinel” program copied to the server in section III.6 is working.
   To do this, execute the command:

   ```
   /shares/HDS/HDSentinel -r /shares/HDS/hdsreport.html -html
   ```

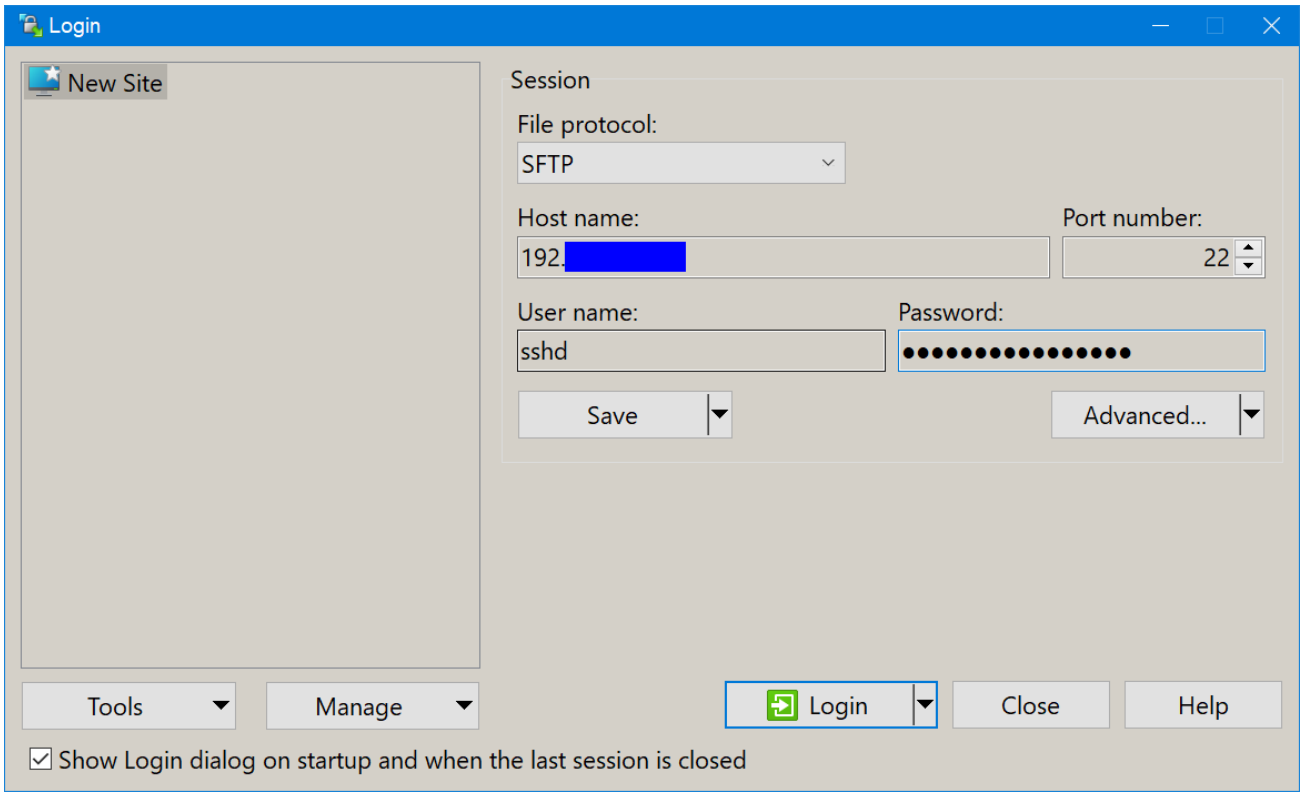
   This command should launch the „HDSentinel”program, which should generate a report on the status of the disks and save it in HTML format in the „HDS” share.



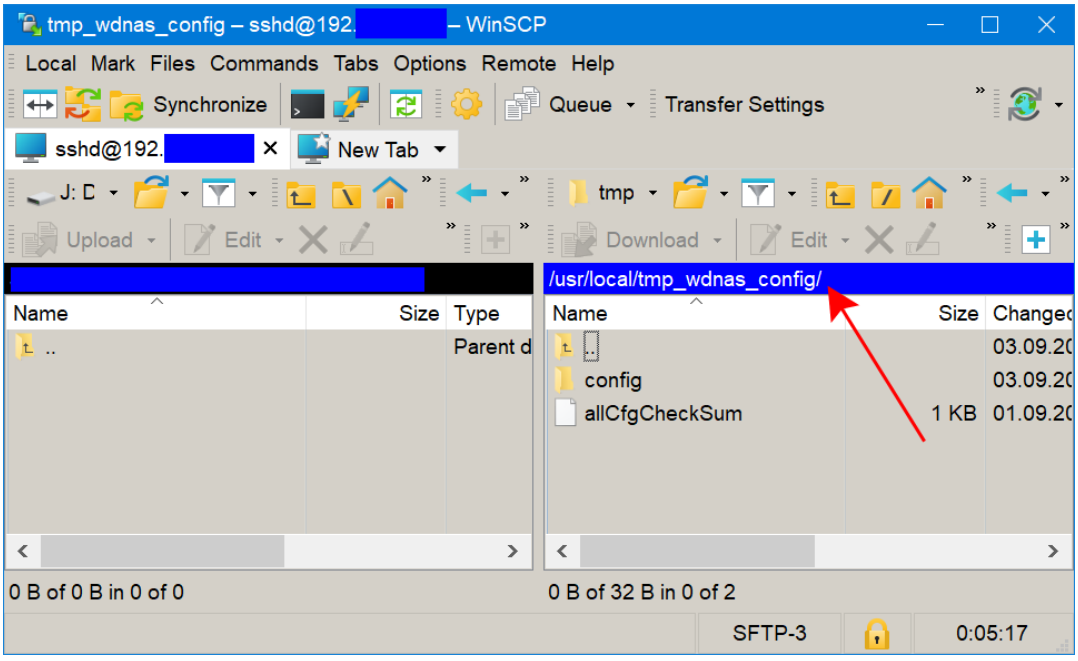
6. Execute the command: `blkid -o list`
   Find the partition „mmcblk0p6” („wdnas_config”) in the list displayed. Remember its mount point.



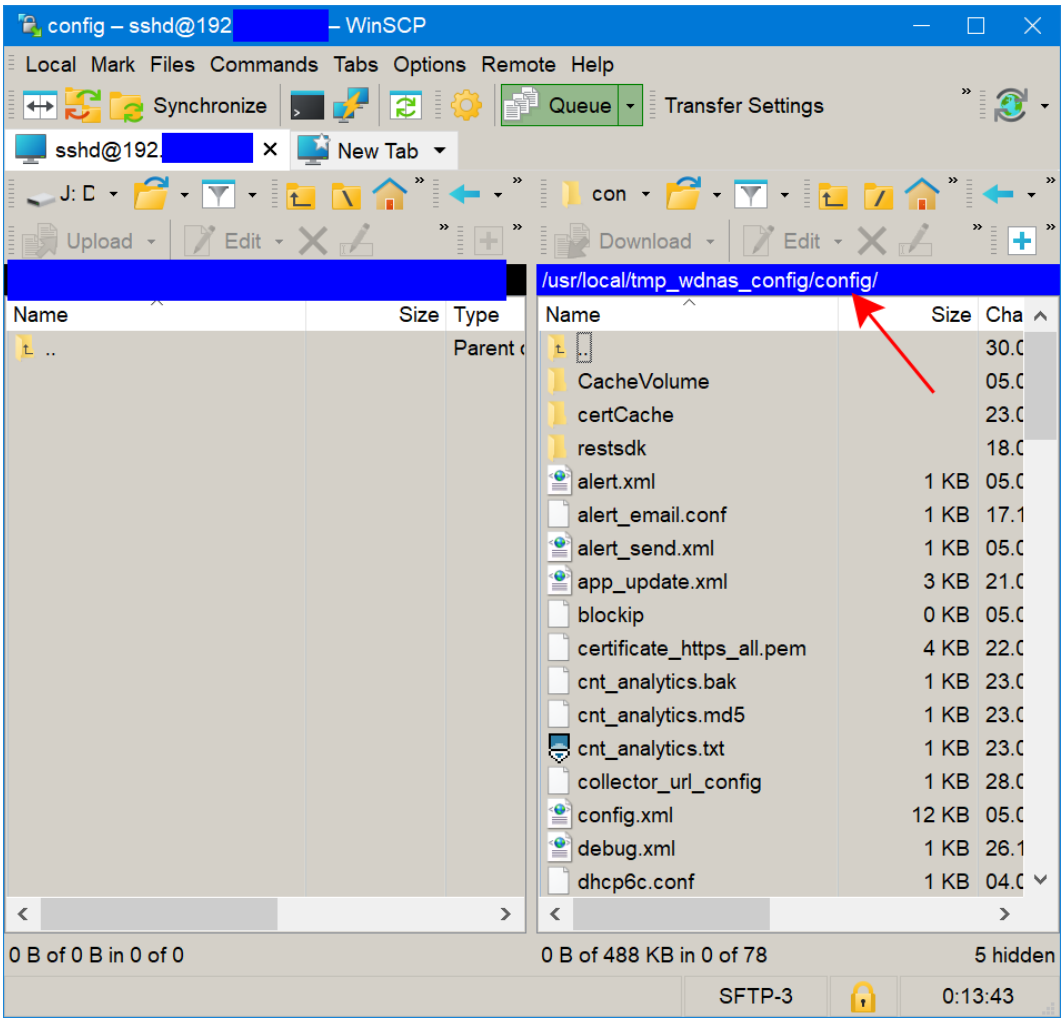
7. Start WinSCP and log in to the NAS server using the password from section IV.3:



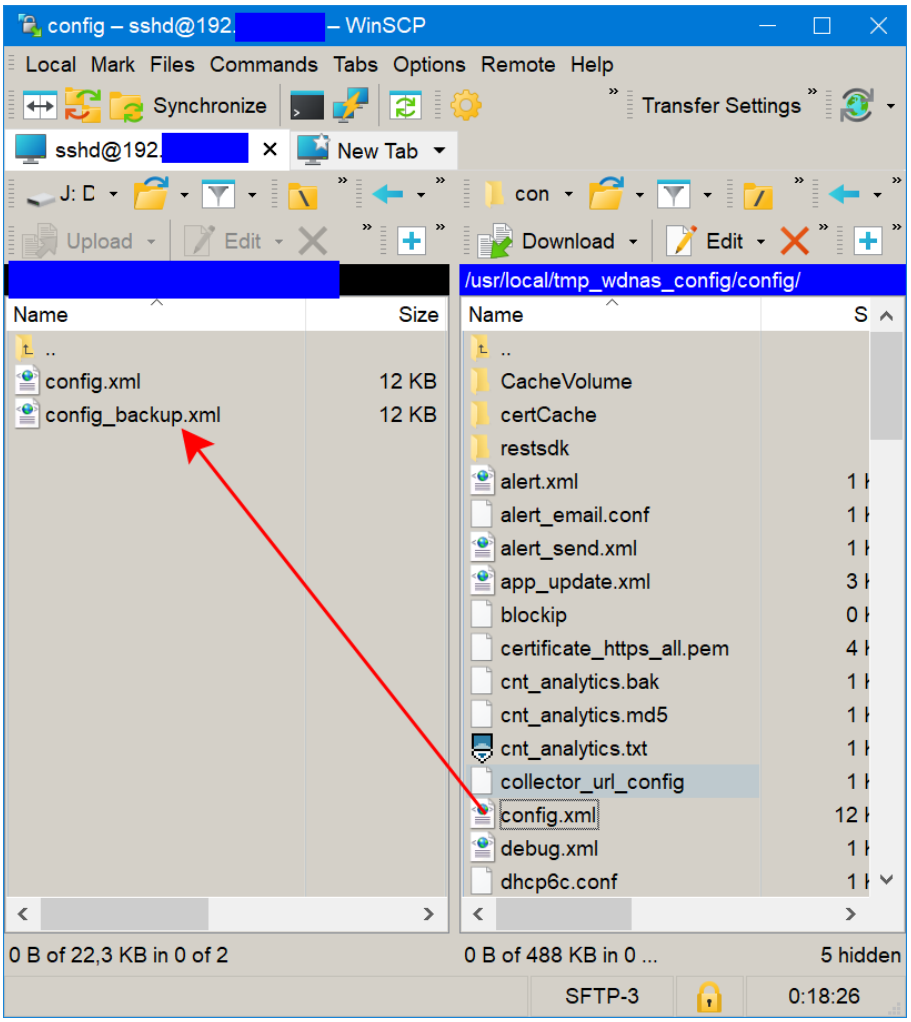
8. In WinSCP, in the NAS server window, navigate to the directory (folder) read in section IV.6:



9. Go to the „`config`” subdirectory (subfolder):



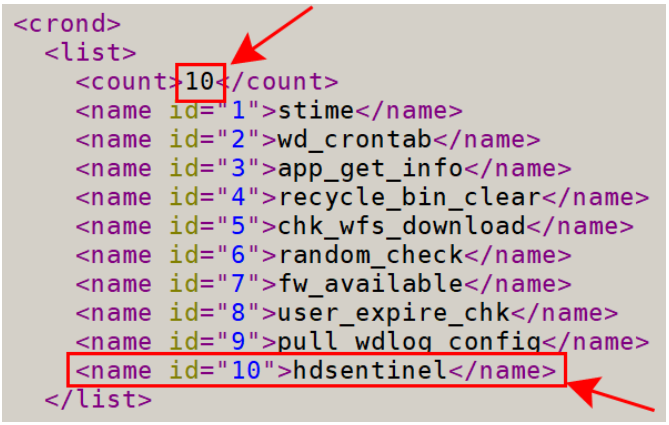
10. Copy the „`config.xml`” file to your PC and create a backup copy.
    You will make changes in the „`config.xml`” file, and you will need a backup copy of it in case you need to restore the original version of the file.



11. Open the „`config.xml`” file in a TXT editor (I used PSPad).

12. In the „`config.xml`” file, find the section „`<crond>...</crond>`”.

13. At the beginning of the section „<crond>...</crond>”, find the subsection „<list>...</list>”.
    Add the name of the next cron job to this subsection: „hdsentinel”.
    Please note that the value of „count” should match the number of entries in the „<list>...</list>” subsection.



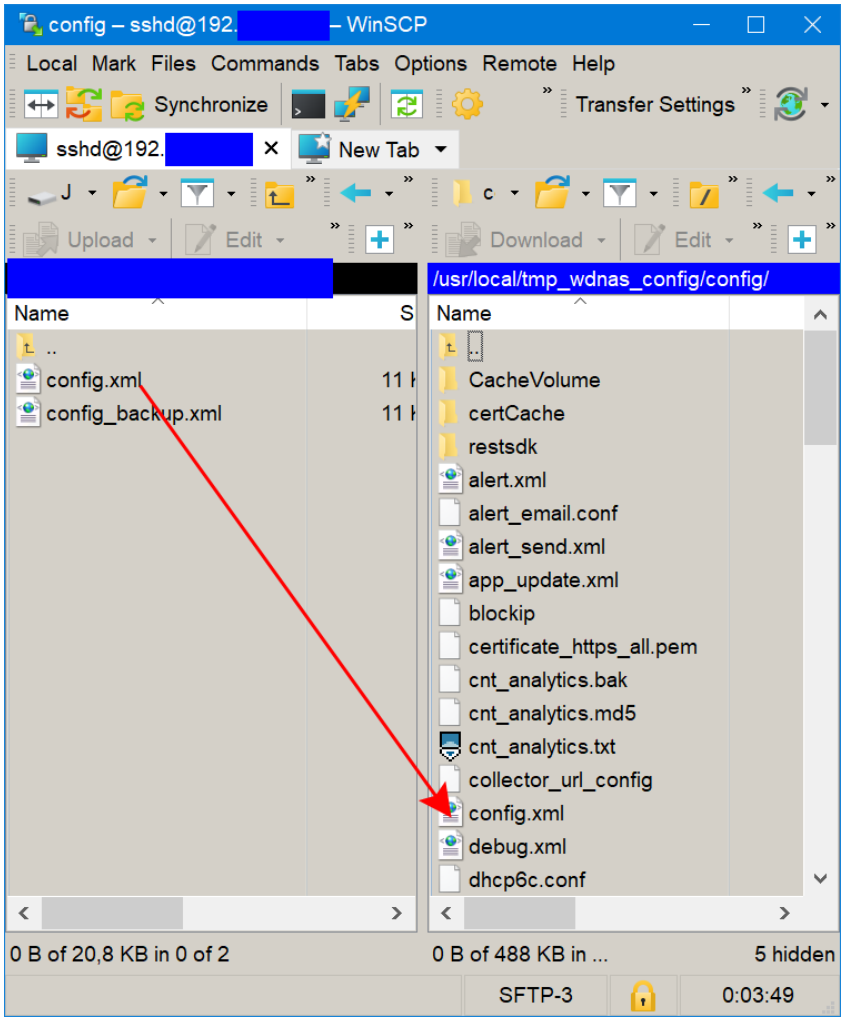
14. At the end of the section „<crond>...</crond>”, add the cron job „hdsentinel”.
    Important: the name of the cron job used here must be identical to the name defined in the „<list>...</list>” subsection (see IV.13).

```
<hdsentinel>
  <item id="1">
    <method>3</method>
    <1>*/10</1>
    <2>*</2>
    <3>*</3>
    <4>*</4>
    <5>*</5>
    <run>/shares/HDS/HDSentinel -r /shares/HDS/hdsreport.html -html &amp;</run>
  </item>
</hdsentinel>
</crond>
```

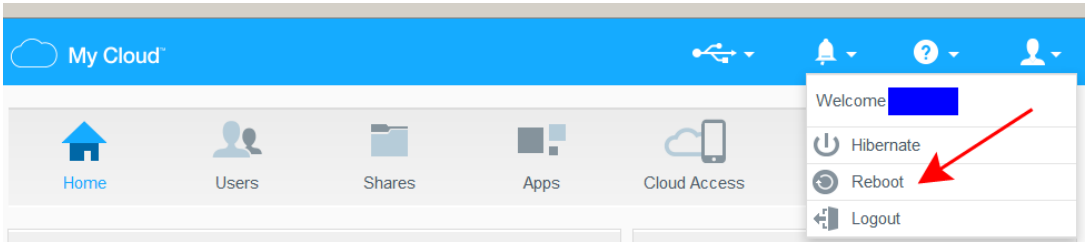
The above entry will cause the „HDSentinel” program located in the „HDS” share to run every 10 minutes. The program will create a report of its work and save it in the „hdsreport.html” file in the same folder. The & (ampersand) character forces the cron job to run in the background.
You can read more about this in [3].

After making the above changes to the „config.xml” file, it is ready to be uploaded to the NAS server.
Double-check that you have not made any mistakes!
If you upload a file containing errors to the server, you may permanently damage the server!

15. In WinSCP, copy the modified „`config.xml`” file to the server folder from section IV.9 (this file will replace the original file).

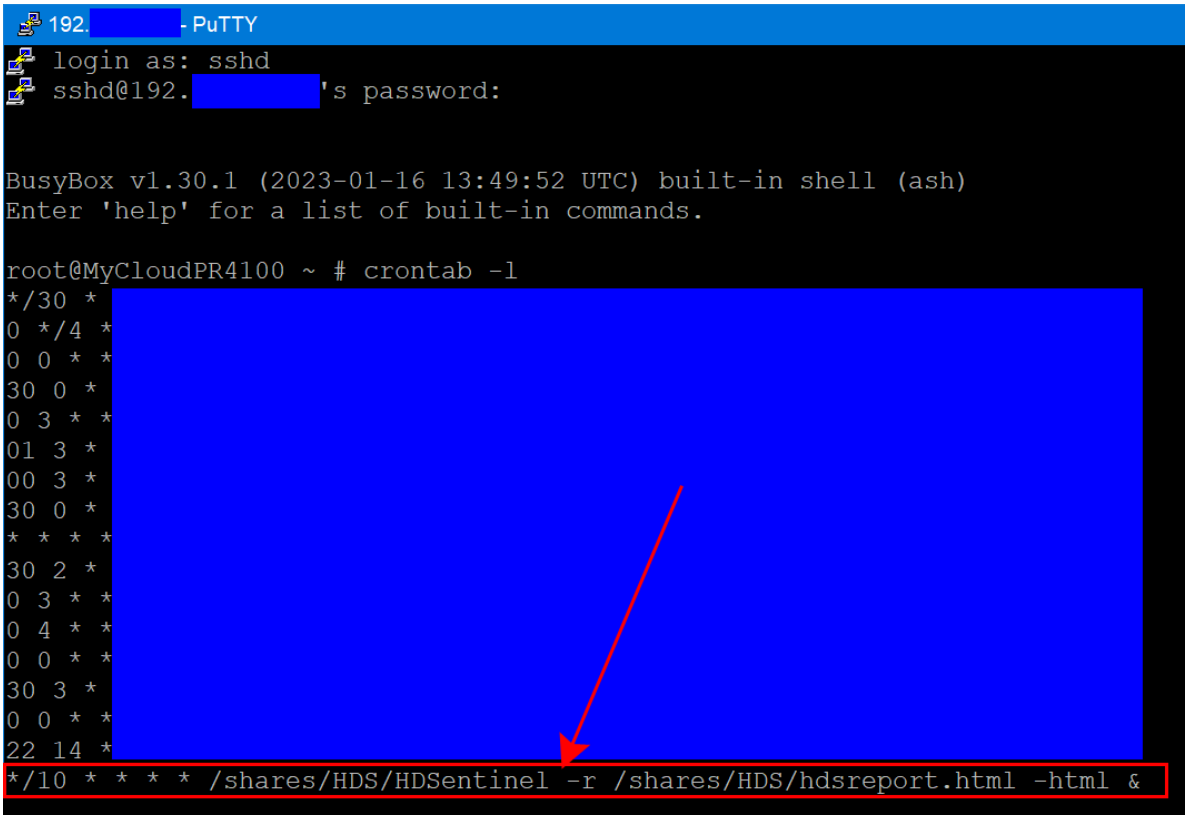


16. Restart the server:



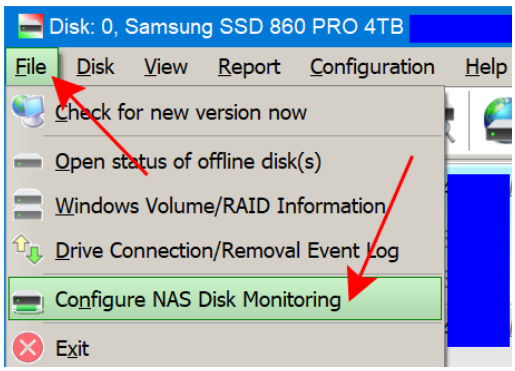
17. Start PuTTY and log in to the NAS server as described in section IV.4.

18. Execute the command: `crontab -l`
    If there were no errors in the „`config.xml`” file, the list of tasks displayed should include an entry related to the „`HDSentinel`” program:

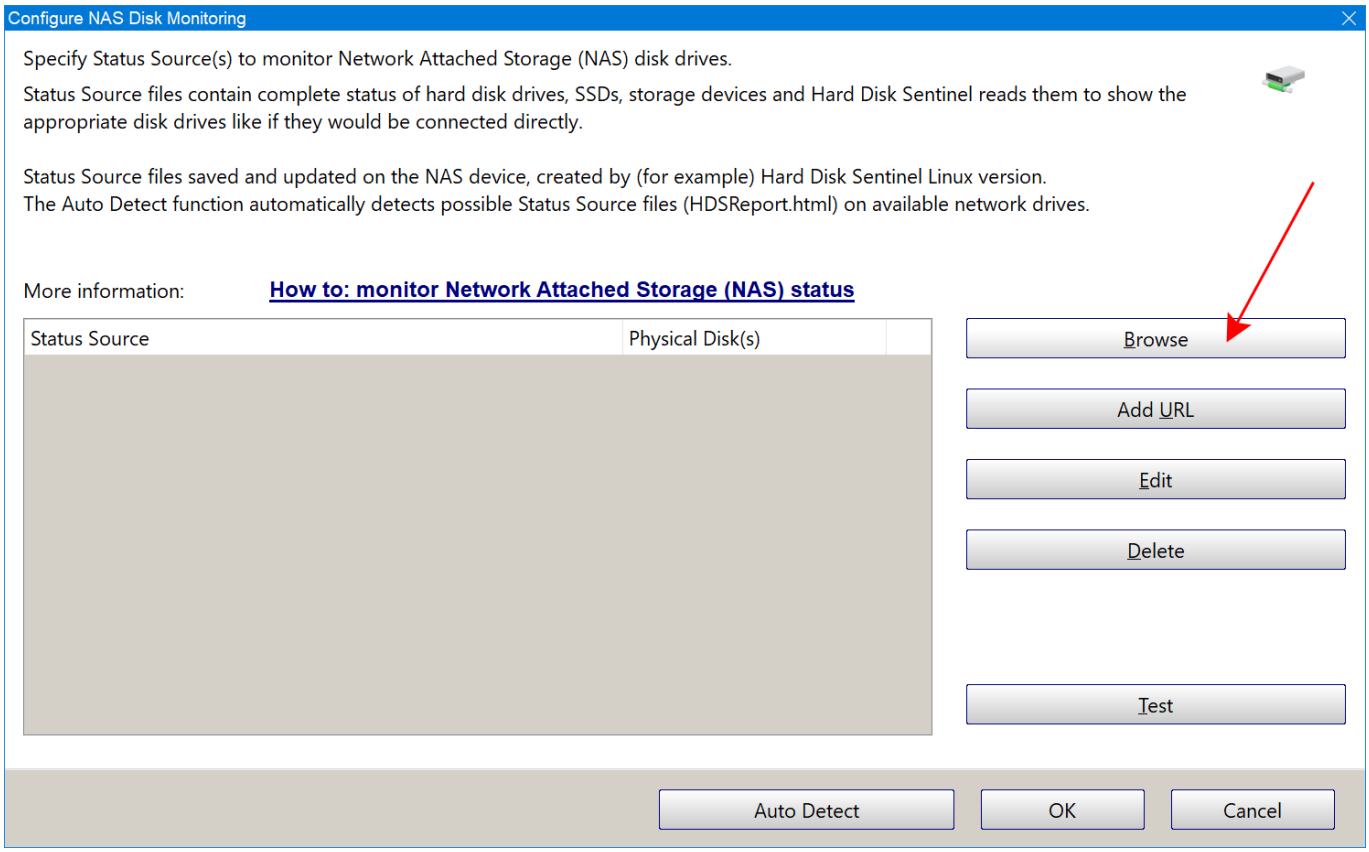


V. Configure the „HDSentinel” program on your PC

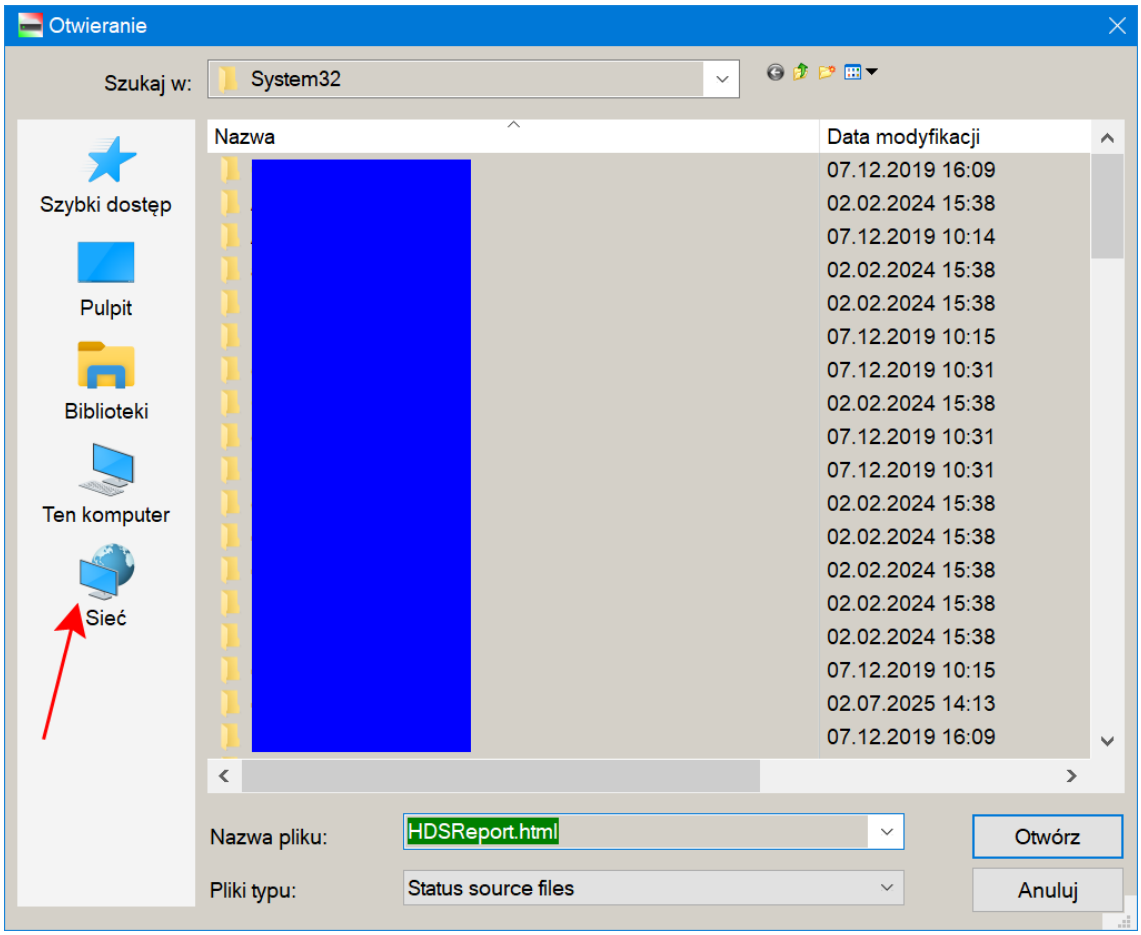
1. Launch the „Hard Disk Sentinel” program on your PC, go to the „`File`” menu, and select „`Configure NAS Disk Monitoring`”:



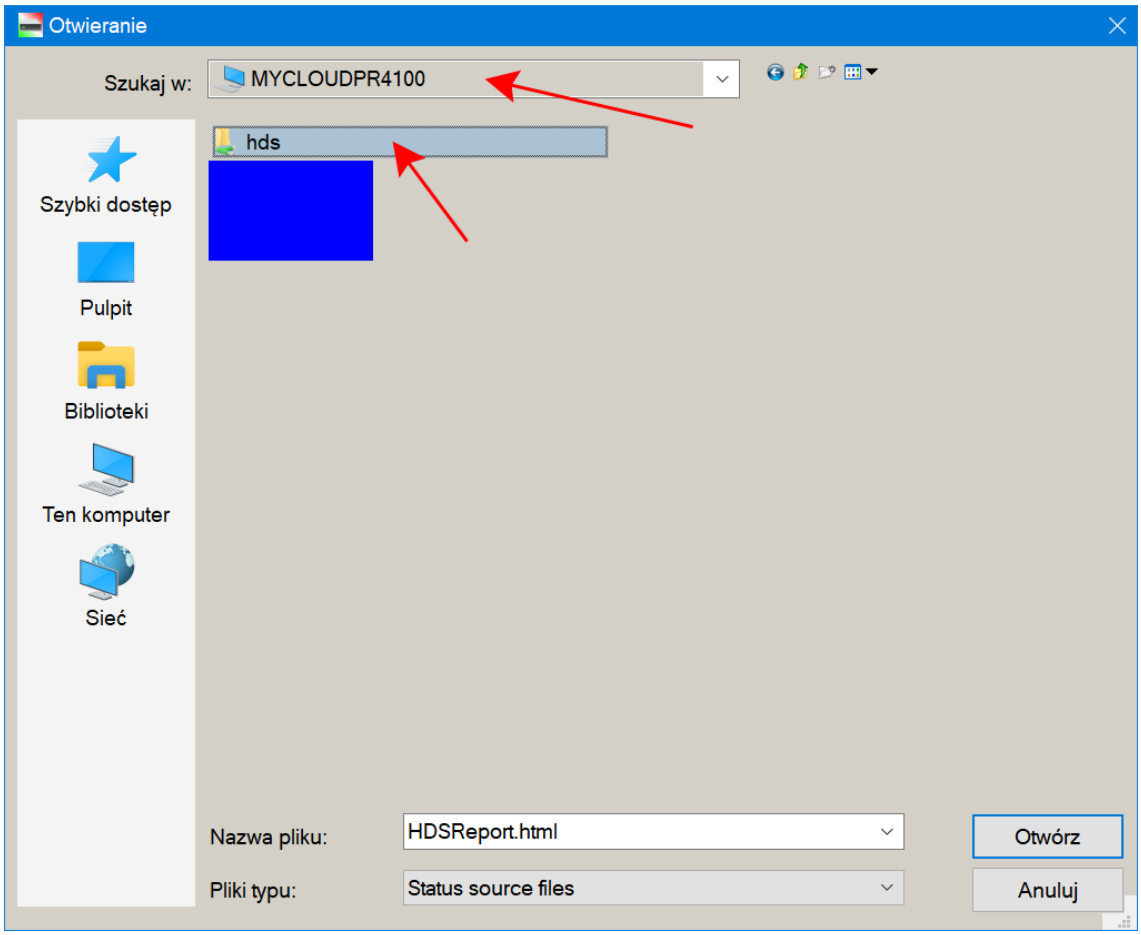
2. Select the „Browse” option:



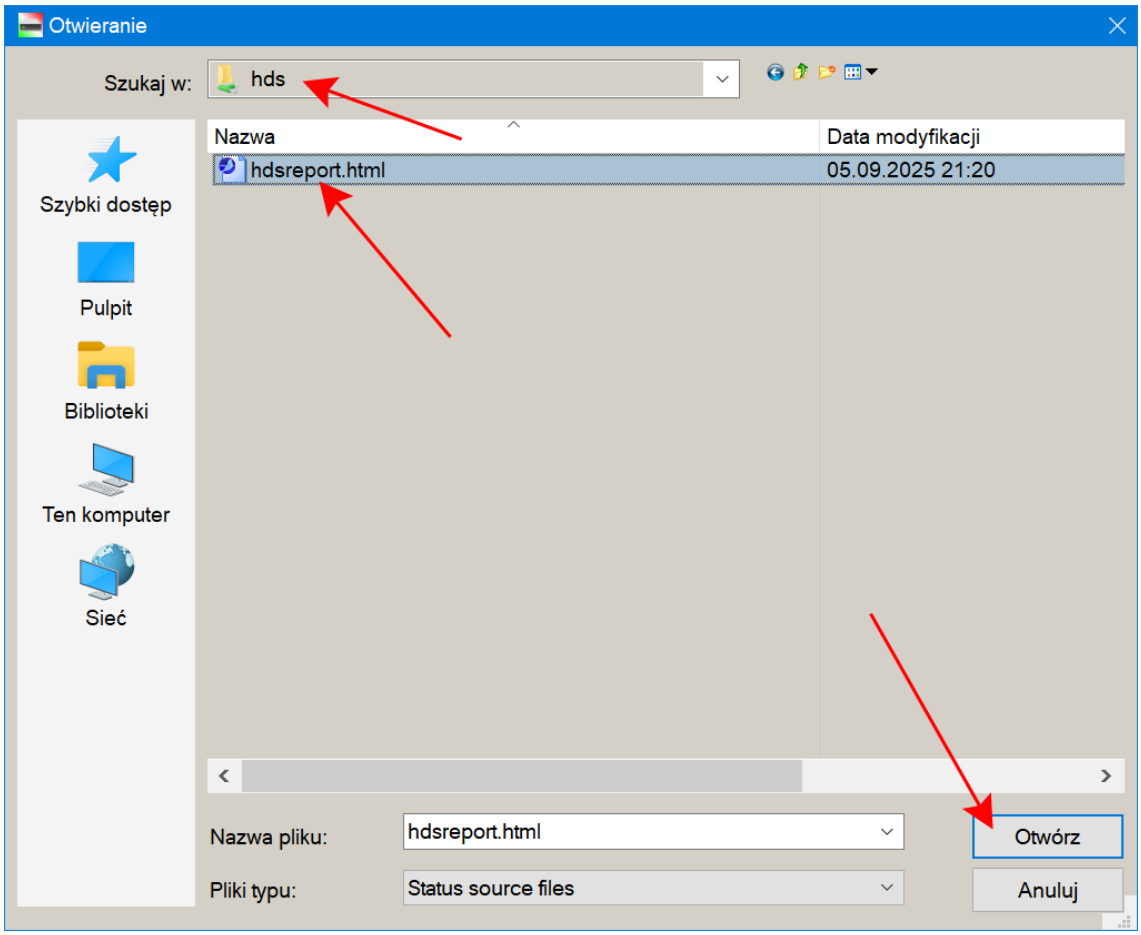
3. Select the „Network” option:



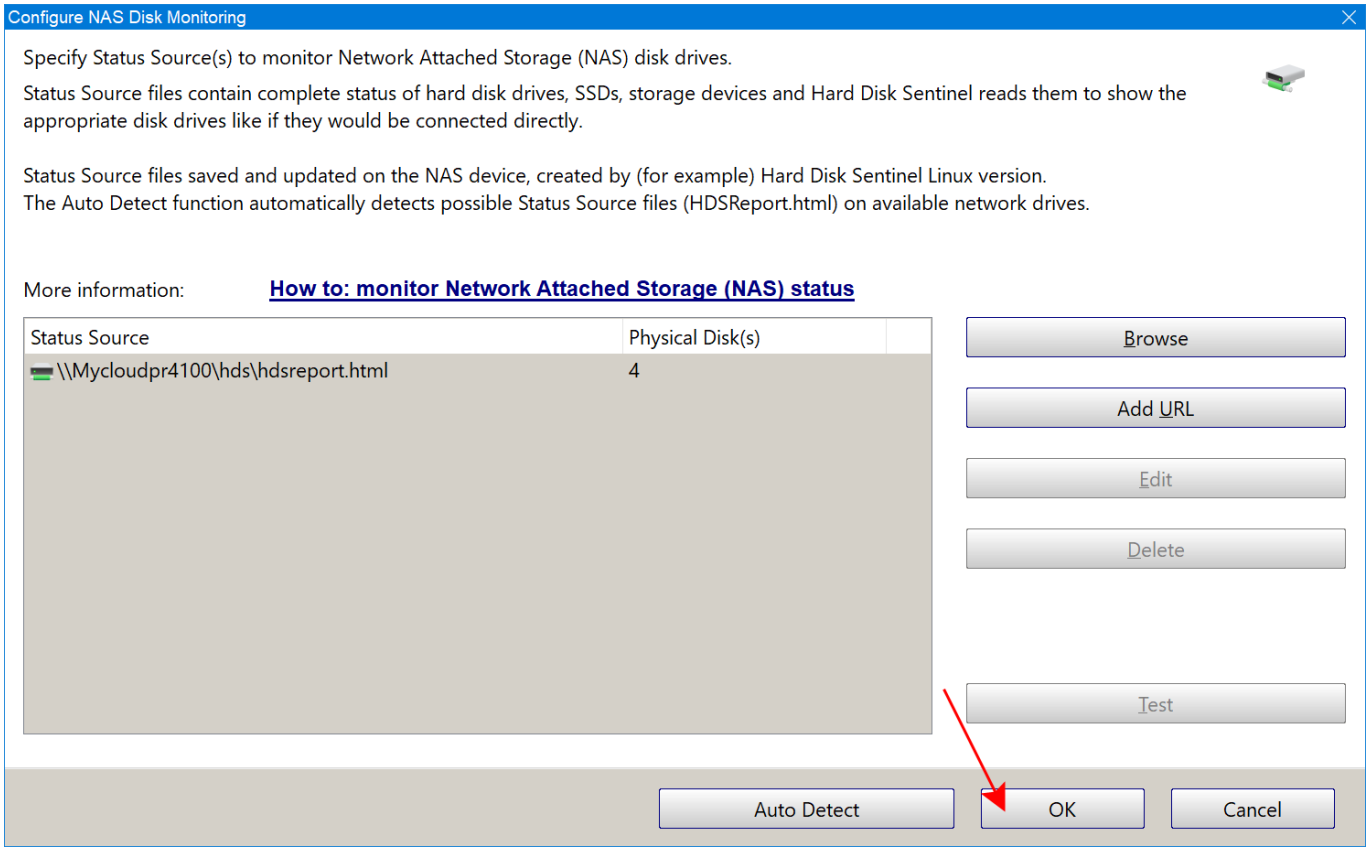
4. Select the NAS server, then select the „HDS” share:



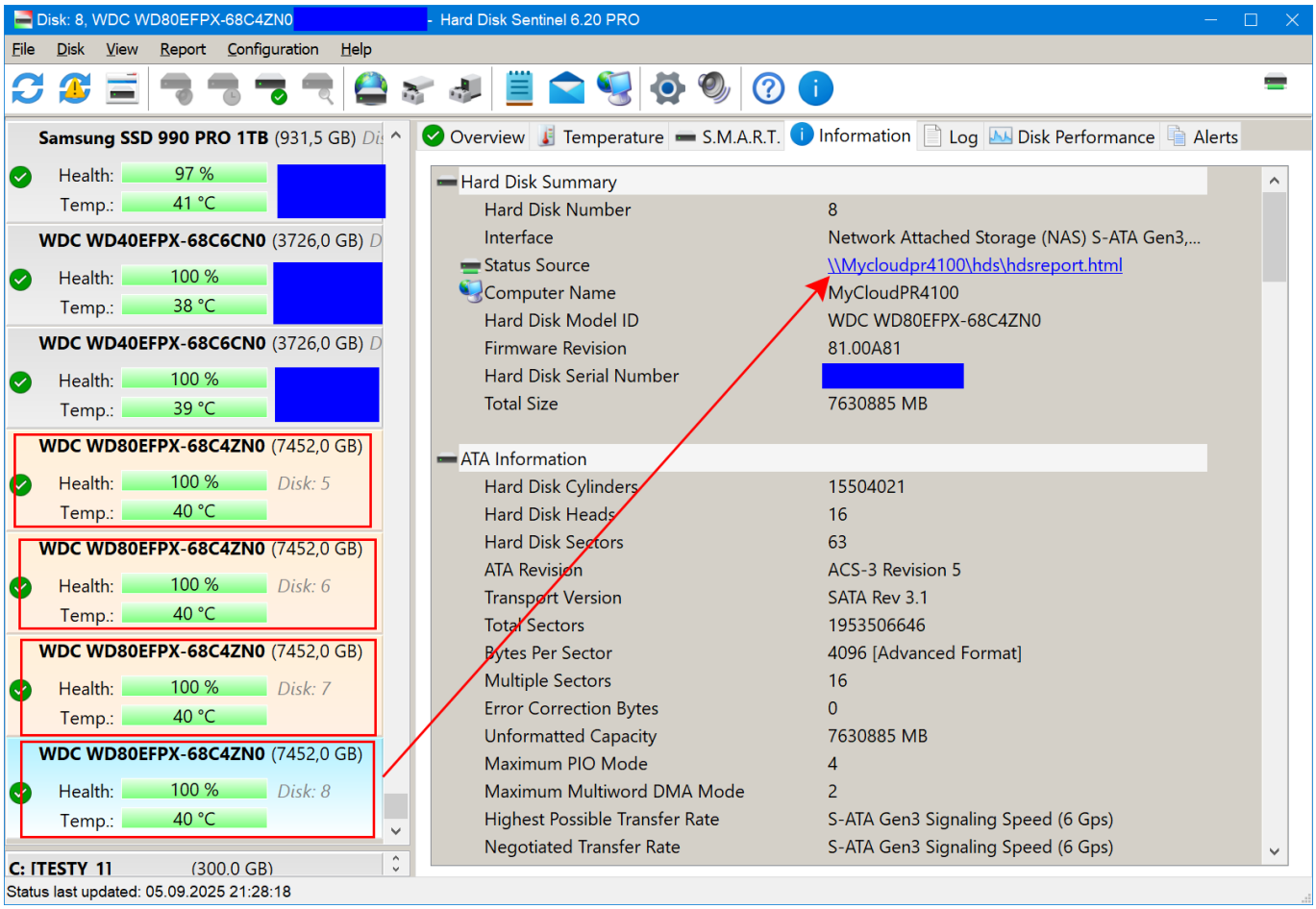
5. Select the „hdsreport.html” file and click „Open”:



6. In the configuration window, click „OK”:



7. The NAS server drives should appear in the main program window:



That's all. You can now disable SSH on the NAS server (see section IV.1).

VI. Bibliography

[1] Website „How to: monitor Network Attached Storage (NAS) status” https://www.hdsentinel.com/how_to_monitor_network_attached_storage_nas_status.php

[2] Guide „Monitor hard disk status of WD MyCloud 1st Gen (FW 04.xx.xx)” https://www.hdsentinel.com/nas/monitor_hard_disk_status_of_wd_mycloud_gen1.pdf

[3] Website „How to Make Persistent System Changes (crontab, etc)” https://community.wd.com/t/how-to-make-persistent-system-changes-crontab-etc/201268