# Multi-Report

Quick Start Guide Version 3.20

10 September 2025



# What is Multi-Report?

- Multi-Report was written a long time ago under a different name, with the purpose of augmenting FreeNAS 8.x (and beyond) for running SMART tests, and monitoring for drive failures as FreeNAS was not very good at it reliably.
- One major change has occurred in version 3.1, the S.M.A.R.T. testing has been removed from Multi-Report
  and moved into a companion script called "Drive\_Selftest". This makes maintaining the script easier and the
  Drive\_Selftest script can run on its own for those people who just want to run the smart tests easily and not
  receive a report.
- SMART was designed with the intention to warn a user of pending Hard Drive doom within 0 to 24 hours of a
  failure. This is not fool proof, not a magic bullet. SMART is not perfect however if it does predict a failure
  and you are aware of it, you can fend off some danger. There are some failures that cannot be predicted and
  some failures happen very fast. All the data provided by this script will assist you moving forward once a
  failure or indication of a pending failure is identified.
- Additionally, I highly recommend running a SMART Short test once a day and running a SMART Long test
  once a week. If you have a lot of drives, only schedule a few drives a day (Monday), a few others
  (Wednesday), you get the point. The new Drive Selftest can automate the scheduling of your SMART tests,
  example: Daily Short tests and Weekly or Monthly Long Tests, and it is very simple to setup.
- As you look at the chart data, note that the column titles should be self-explanatory.
- Pay attention to the CRON setup between CORE and SCALE, they are different.

# Quick Setup Information

### Place script on your server (location is for example only)

- Create a new dataset titled 'scripts'. Path: /mnt/pool/scripts
  - Make the dataset:
    - Name: scripts
    - Share Type/Dataset Preset: SMB
    - SCALE: Create SMB Share checkbox
    - Submit/Save
- You should now have access to the SMB share you created.
- Copy the script to the 'scripts' dataset, rename the script to "multi\_report.sh".
- Make the script executable: "chmod +x multi\_report.sh" (must be 'root')

### First and Second Run

- As a privileged user (root), open a shell/SSH window and change directory 'cd' to cd/mnt/pool/scripts
- First Run: Enter ./multi\_report.sh -config
  - Follow the instructions to create a new multi\_report\_config.txt (configuration file).
- Second Run: Enter ./multi\_report.sh
  - The script should run without error.

### Setting up the CRON JOB

(CORE) -> Tasks -> Cron Jobs -> ADD

- (SCALE) -> System -> Advanced -> Cron Jobs -> ADD
- Description: multi\_report
- Command (CORE): ./mnt/pool/scripts/multi report.sh
- Command (SCALE): cd/mnt/pool/scripts && ./multi\_report.sh
- Run As User: root (or any privileged account)
- Schedule: CustomPreset: Daily
  - Minutes: 0, Hours: 2, Days: \*
  - Select DONE
- Hide Standard Output: Unchecked
- Hide Standard Error: Unchecked
- Enabled: Checked
- Save

### Notes:

- To customize Multi-Report run the script with the '-config' switch and select Advanced Configuration.
- If you run into a real problem, search the TrueNAS forums first, and if you cannot figure it out, use the '-dump email' switch to send me the required information I need to assist you. I will return an email to you once I have looked at it. I normally get back to people in less that 24 hours, keep in mind time zones, I'm in the USA, NY (ET).

-

\*WARNING\* SMART Testing Results for truenas \*WARNING\*

F

Multi-Report v3.20 dtd:2025-09-08 (TrueNAS SCALE - Fangtooth 25.04.2.3)

Report Run 09-Sep-2025 Tuesday @ 02:15:01

Total Memory: 19Gi, Used Memory: 10Gi, Free Memory: 5.5Gi

System Uptime: 5 days, 8:51:22 Script Execution Time: 12 Seconds Subject Line with Summary (Warning, Caution, Script Update Available, or Custom)

Reply All

ply All 

Forward

Tue 9/9/2025 2:15 AM

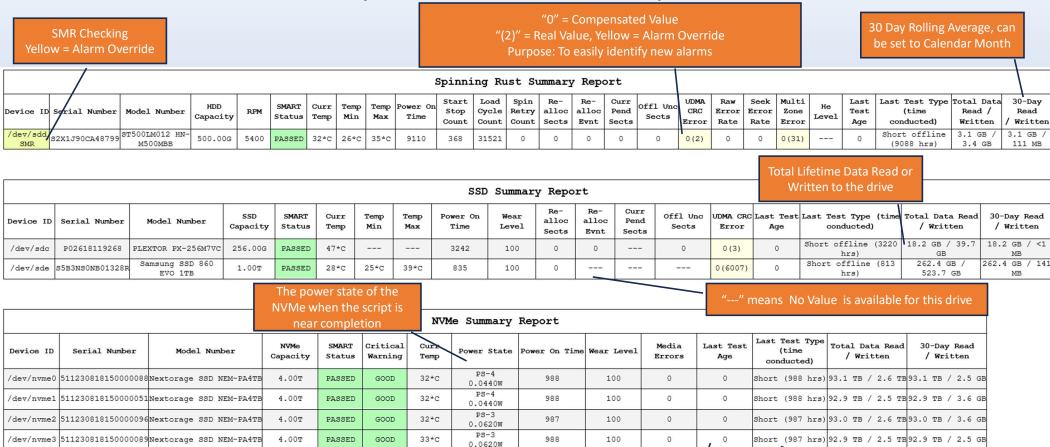
Version Info
Date/Time of Report
RAM/SWAP Specs
Uptime
Run Duration of the Script
Updates if available

Total Lifetime Data
Values for all the drives
in a pool.

### \*ZPool/ZFS Status Report Summary

Pool Name	Status	Pool Size	Free Space	Used Space	Frag	Read Errors	Write Errors	Cksum Errors	Scrub Repaired Bytes	Scrub Errors	Last Scrub Age	Last Scrub Duration	Total Data Read / Total Data Written
boot-pool	ONLINE	28.06G	19.4G	8.66G (29%)	27%	0	0	0	0B	0	6	00:00:18	Virtual Drive
farm	ONLINE	8.69T	4.47T	4.22T (47%)	10%	0	0	0	0B	0	26	00:45:20	525.0 TB / 58.0 TB

<sup>\*</sup>Data obtained from zpool and zfs commands.



How many 24 hour periods (value is based on 24 hours) have past since last S.M.A.R.T. test

A Short S.M.A.R.T. Test Completed (987) Hours the test completed. If the last test was a Long test, that would be indicated here

Wa	d d)																	time Data Rea en to the driv									
											Spi	inning	, Rus	t Sum	mary	Repo	rt										
Device ID	Serial Number	Model Numb	hor	HDD acity			Warr- anty				Power On Time	Stop	Cycle	Retry	Re- alloc Sects			Offl Unc Sects		Error	Error	Multi Zone Error	He Level	Last Test Age	Last Test Type (time conducted)	Lifetime Data Read / Written	d / Written
/dev/ada0	ZR13JRL0	ST6000VN00 2BB186	6.0	.00T 5	5425	PASSED	9m 29d	36°C	31°C	40°C	18608	141	863	0	0		0	0	0	0	0			0	90% Remaining (18608 hrs)	109.9 TB / 20.5 TB	
/dev/ada1	K1JRSWLD	HGST HDN726060ALE	E614 6.0	.00T 7	7200	PASSED	4y 7m 28d	41°C	34°C	46°C	57757	327	4251	0	0	0	0	0	0	0	0			0	80% Remaining (57757 hrs)	313.6 TB / 69.2 TB	GB (24%)
/dev/ada2	K1JUMW4D	HGST HDN726060ALE	E614 6.0	.00T 7	7200	PASSED	4y 7m 28d	44°C	35°C	46°C	57757	328	4220	0	0	0	0	0	0	0	0			0	90% Remaining (57756 hrs)	309.5 TB / 68.9 TB	GB (25%)
/dev/ada3	K1GVD84B	HGST HDN726060ALE	E614 6.0	.00T 7	7200	PASSED	4y 7m 16d	38°C	33°C	43°C	57757	327	4272	0	0	0	0	0	0	0	0			0	80% Remaining (57757 hrs)	315.3 TB / 69.3 TB	
I																"	" mea	ans No	Value	Exists					the percentag	_	
1												NVM	e Sum	mary	Repor	rt									period of tim		
Device ID	Serial 1		del Number	Capa	NVMe pacity	SMAR y Statu			Critic Warnin	ng Te	emp	Power State		ver On Time	Wear Level		edia crors	Last Test Age				e (time			Lifetime Data Read / Written	/ W	Day Read Written
/dev/nvme(	0 HBSE43211		SSD EX900 Plus 1TB	1.	.02T	PASSE	ED 7m	4d	GOOD		5°C 7/35 0	PS-4 0.0090W	1 4	1291	99		0	0	Sho			st in p g (4291		;s 89%	5.7 TB / 2. TB		GB (100%) / MB (0%)

SMART Enabled/Disabled Status and PASSED/FAILED results

User changeable fonts

	Spinning Rust Summary Report																								
Device ID	Serial Number	Model Number	HDD Capacity	RPM	SMART Status	Curr Temp					Load Cycle Count	Retry		alloc	Pend	Unc	CRC	Error	Error	Zone	T1	Last Test Age	Last Test Type (time conducted)	Lifetime Data Read / Written	30-Day Read / Written
/dev/ada0 SMR	ZR13JRL0	ST6000VN001- 2BB186	6.00T	5425	Enabled PASSED	39° C	31° C	44° C	21090	141	965	0	0	1	0	0	0	0	0			0	Short offline (21090 hrs)		255 MB (0%) / 784.5 GB (100%)
/dev/ada1	K1JRSWLD	HGST HDN726060ALE614	6.00T	7200	Enabled PASSED	45° C	34° C	51° C	60239	327	4351	0	0	0	0	0	0	0	0			4	Short offline (60130 hrs)		136 MB (0%) / 703.5 GB (100%)
/dev/ada2	K1JUMW4D	HGST HDN726060ALE614	6.00T	7200	Enabled PASSED	46° C	35° C	52° C	60239	328	4320	0	0	0	0	0	0	0	0			0	90% Remaining (60239 hrs)	317.2 TB / 72.9 TB	261 MB (0%) / 724.3 GB (100%)
/dev/ada3	K1GVD84B	HGST HDN726060ALE614	6.00T	7200	Disabled PASSED	41° C	33° C	46° C	60239	327	4381	0	0	0	0	0	0	0	0			0	Short offline (60239 hrs)		97 MB (0%) / 598.3 GB (100%)

NVMe Reports Min/Max Temps since power on, if available

Added a little color

						NVM	e Summary	Report						
Device ID	Serial Number	Model Number	NVMe Capacity	SMART Status	Critical Warning	Curr Temp	Power State	Power On Time	Wear Level	Media Errors	Last Test Age	Last Test Type (time conducted)	Lifetime Data Read / Written	30-Day Read / Written
/dev/nvme0	HBSE43211100274	HP SSD EX900 Plus 1TB	1.02T	Enabled PASSED	GOOD	37° C 40/37	PS-4 0.0090W	4431	99	0	0	Short (4430 hrs)	6.1 TB / 2.8 TB	188.5 GB (100%) / 38 MB (0%)

**SMART Drive** 

Status (New)

### Multi-Report Text Section

- 1) External Configuration File (Present) dtd:2025-09-01
- 2) Statistical Data Log (Present) @ (/mnt/farm2/scripts/statisticalsmartdata.csv)
- 3) Sendemail (Not Required)

#### Attachments:

- 1) TrueNAS Configuration File (Mon) (Enabled)
- 2) Multi Report Configuration File (Mon) (Enabled)
- 3) Statistical Log (Mon) (Enabled)
- 4) HDD/SSD Partition Backup (Mon) (Disabled)

#### Checks/Tests:

- 1) SMR Checking (Enabled) No Errors Detected
- 2) Partition Check (Enabled) No Errors Detected
- 3) Spencer (Enabled) No Errors
- 4) Seagate Drive FARM Check (Enabled)
- 5) S.M.A.R.T Testing External File (Disabled)
- 6) S.M.A.R.T. List of Drives where S.M.A.R.T. was disabled prior to running Multi-Report: Drives listed will be returned to original state at end of script:

ada3 - Temporarily Enabled

#### WARNING LOG FILE

Drive: K1JRSWLD - Test Age = 4 Days

END

The Text Section contains: Configuration Information and Test Information

### **Update and Error** Logs

Three logs can be displayed, Caution, Warning, and Update.

### If you have an alarm on the Chart Section,

look here for amplifying information.

#### Multi-Report Text Section

- 1) External Configuration File (Present) dtd:2025-04-07
- 2) Statistical Data Log (Present) @ (/mnt/farm2/scripts/statisticalsmartdata.csv)

#### Attachments:

- 1) TrueNAS Configuration File (Mon) (Enabled)
- 2) Multi Report Configuration File (Mon) (Enabled)
- 3) Statistical Log (Mon) (Enabled)
- 4) HDD/SSD Partition Backup (Mon) (Disabled)
- 5) Sendemail (Not Required)

#### Checks/Tests:

- 1) SMR Checking (Enabled) No Errors Detected
- 2) Partition Check (Enabled) No Errors Detected
- 3) Spencer (Enabled) No Errors
- 4) S.M.A.R.T. Testing External File (v1.05) (Enabled)
  - a) Short Test Authorized Test Days (Mon, Tue, Wed, Thu, Fri, Sat, Sun) (~1 Drive(s) per day) Drives Testing: (ada0 ada1 ada2 nvme0) - Test Mode 2
  - b) Long Test Authorized Test Days (Mon, Tue, Wed, Thu, Fri, Sat, Sun) (~1 Drive(s) per day) Drives Testing: (ada3) - Test Mode 1
  - c) A SCRUB or RESILVER is NOT in progress.
- 5) Seagate Drive FARM Check (Enabled)

Drive K1JRSWLD Warranty Expired on 2020-09-30 Drive K1JUMW4D Warranty Expired on 2020-09-30

Drive K1GVD84B Warranty Expired on 2020-10-12

#### ######## ZPool status report for farm1 ########

pool: farm1
state: ONLINE

status: Some supported and requested features are not enabled on the pool.

The pool can still be used, but some features are unavailable.

action: Enable all features using 'zpool upgrade'. Once this is done,

the pool may no longer be accessible by software that does not support the features. See zpool-features(7) for details.

scan: scrub repaired OB in 00:36:12 with 0 errors on Sun May 4 00:36:12 2025 config:

NAME STATE READ WRITE CKSUM farm1 ONLINE 0 0 0 0 qptid/d01351ec-050a-11ef-beaf-000c296fd555 ONLINE 0 0 0

errors: No known data errors

List of attachments that will be included during a Monday (default) run.

Sendemail is used or not used.

If SMART Testing is enabled:
List of drives being Short and Long tested
this run.

Also report if a SCRUB or Resilver operation is in progress as these operations by default will not allow a SMART Long test to be run.

Seagate Drive FARM Check
This may be disabled if you have already
run the check and it will slightly speed up
the script.

If Warranty is enabled and when the drives have expired, the drives will be listed with the expiration date.

The Chart section will display a countdown or count-up (yellow background) as well.

too many errors

#### ######## ZPool status report for farm ########

pool: farm state: DEGRADEI

status: One or more devices are faulted in response to persistent errors.

Sufficient replicas exist for the pool to continue functioning in a

degraded state.

action: Replace the faulted device, or use 'zpool clear' to mark the device

repaired.

scan: scrub repaired 472K in 00:34:18 with 0 errors on Sat Jan 11 13:06:34 2025

config:

1	NAME	STATE	READ	WRITE	CKSUM	
	farm	DEGRADED	0	0	0	
	raidz2-0	DEGRADED	0	0	0	
	f41cd7e4-df4c-4f0c-9c24-62a4343c1868	ONLINE	0	0	0	
	21e5a651-701d-4150-82c6-446211a8f898	ONLINE	0	0	0	
	f18e77b8-82cd-426c-b6e6-9bcc9778e511	FAULTED	15	0	0	
	cee96768-462c-437f-b35b-ab3abcd8fd0f	ONLINE	0	0	0	
	d3549c3a-2f33-41b8-8fdb-4096c3fb5248	ONLINE	0	0	0	

errors: No known data errors

Drives for this pool are listed below:	
21e5a651-701d-4150-82c6-446211a8f898 -> nvme1n1p2 -> S/N:511230818150000096	
cee96768-462c-437f-b35b-ab3abcd8fd0f -> nvme4n1p2 -> S/N:511230818150000088	
d3549c3a-2f33-41b8-8fdb-4096c3fb5248 -> nvme2n1p2 -> S/N:511230818150000450	
f18e77b8-82cd-426c-b6e6-9bcc9778e511 -> nvme3n1p2 -> S/N:511230818150000089	PROBLEM
f41cd7e4-df4c-4f0c-9c24-62a4343c1868 -> nvmeOn1p2 -> S/N:511230818150000051	

### **Zpool Status**

Besides the standard zpool status data, this example tells you the drive is "Virtual", the gptid number, the Drive ID, and Drive Serial Number.

Use this cross reference data to locate the drive serial number and use the drive serial number when troubleshooting a drive problem.

All drives for pool called "farm" in this example identified by three things: gptid -> Drive ID -> Drive Serial Number

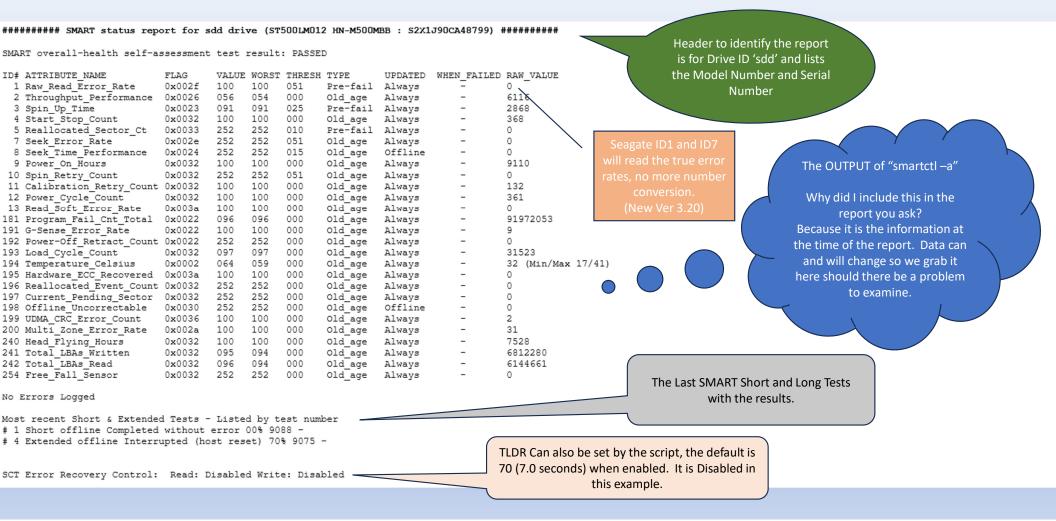
This makes it significantly easier to identify which drive actually failed by serial number.

PROBLEM does not mean the drive has fail. It simply means that a problem is related to this physical drive. It could be a ZFS problem (as in this example) or a real hardware failure. Just do not jump to conclusions without looking at all the data.

# Anatomy of the Multi-Report Email New for Version 3.20

```
######## ZPool status report for farm2 #########
 pool: farm2
 state: ONLINE
status: Some supported and requested features are not enabled on the pool.
      The pool can still be used, but some features are unavailable.
action: Enable all features using 'zpool upgrade'. Once this is done,
      the pool may no longer be accessible by software that does not support
      the features. See zpool-features (7) for details.
 scan: scrub repaired OB in 07:43:01 with 0 errors on Fri Aug 8 02:30:29 2025
config:
      NAME.
                                                      STATE
                                                                READ WRITE CKSUM
      farm2
                                                      ONLINE
        raidz2-0
                                                      ONLINE
          gptid/d0f8a4fe-bf79-11ed-a0df-000c296fd555 ONLINE
          gptid/6528d863-d52f-11e7-ab84-0cc47ab37c5a ONLINE
          gptid/b595a038-3d9a-11f0-8e9f-000c296fd555 ONLINE
          gptid/66431f30-d52f-11e7-ab84-0cc47ab37c5a ONLINE
errors: No known data errors
Drives for this pool are listed in order:
d0f8a4fe-bf79-11ed-a0df-000c296fd555 -> ada0 -> S/N:ZR13JRL0 -> Bay 1
6528d863-d52f-11e7-ab84-0cc47ab37c5a -> ada1 -> S/N:K1JRSWLD -> Bay 2
b595a038-3d9a-11f0-8e9f-000c296fd555 -> ada3 -> s/N:K1GVD84B -> Bay 4
66431f30-d52f-11e7-ab84-0cc47ab37c5a -> ada2 -> S/N:K1JUMW4D -> Bay 3
```

Drive Location Data (Great for locating your drive's physical location)



# Closing Notes

Always backup your important data Always use an Uninterruptable Power Supply (UPS) Read the User Guide



If something is not running correctly, please ensure your CRON Job setup is like the example in the Quick Setup Information. Having the wrong command can absolutely cause problems. If you are smarter than me, share your wisdom, I will accept it openly. Having the "Hide Standard Output" unchecked provides additional data when the script is run. If you filter your emails and place these into a separate folder, it will keep your email looking clean and consolidated.

This Quick Start Guide is <u>not</u> an "all inclusive" resource. I will not cover every possible problem a drive could indicate, that is not the purpose of the guide. If you have something happen and it is not covered here, try to use Google to find out more, or ask someone. It can be much faster for you if you Google it.

If you find something wrong with the script or these instructions, please reach out to <u>joeschmuck2023@hotmail.com</u> with the issue, or run the script using the '-dump email' switch to send me data to analyze and include a little message as well. Believe it or not, I appreciate the feedback, good or not so good.

And if you have a recommendation on what the default values should be within the multi\_report\_config.txt file, please reach out to me. If the change makes sense, I will implement it.