INNODISK iSMART
Linux Execution File
V6
General User Guide

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Revision History

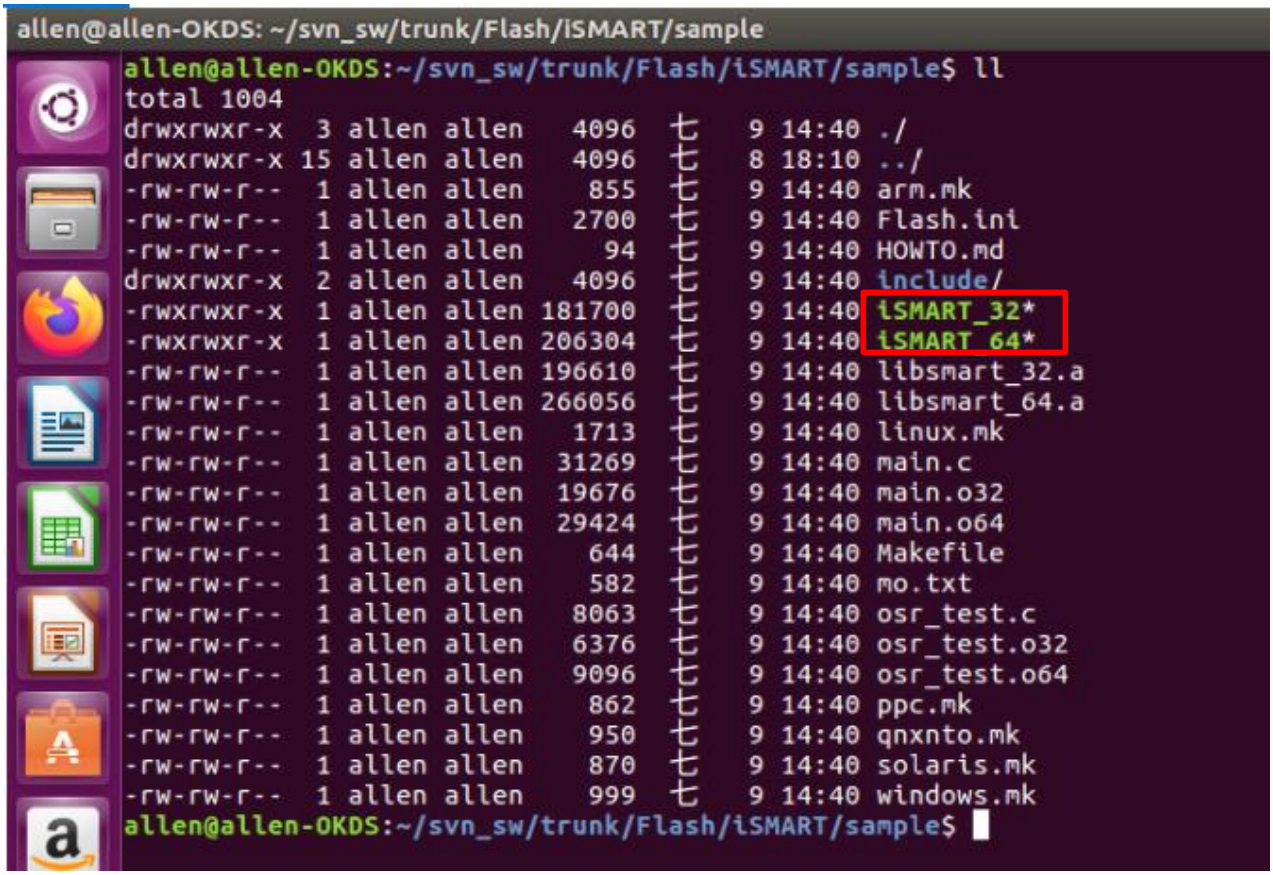
Revision	Description	Date
V6	Official release	Nov, 13, 2020

1. Execution File for Linux

iSMART reports following items to show the information of SSD. However, due to the support of controller, you may see only part of items for a product.

Item	Description
Health	Health indicates the percentage of remaining disk life.
AverageEraseCount	The average erase count of all blocks.
MaximumEraseCount	The maximum erase count of all blocks.
TotalBadBlock	The total counts of bad block.
LaterBadBlock	After user used SSD for a period of time, there will have some bad block. Later bad block is unstable. SMART firmware will stop using bad block and do bad block replacement.
InitialFreeBlock	When system has a new bad block, free block is needed to do the replacement.
FreeBlock	The count of free block.
TotalEraseBlock	This value shows block erase counts of whole SSD.
ECCFailCount	The count of fail ECC.
CorrectedECCCount	The count of corrected ECC.
ReadLaterBadBlockCount	Total numbers of bad block occurring by reading data with ECC error.
WriteLaterBadBlockCount	Total numbers of bad block occurring by writing data with flash error.
EraseLaterBadBlockCount	Total numbers of bad block occurring by erasing block with error.
TotalGoodBlock	The total counts of good block.
InitialBadBlock	The count of initial bad block.
FlashEnduranceCount	The count of flash endurance.
Temperature	The temperature range is from -50℃~105℃ on a single disk. It supports commercial temperature (0℃ ~70 ℃) and industrial temperature (-40℃~85 ℃). *For SATA III drives iSMART only support temperature on industrial temperature products.
iAnalyzer	Demonstration of user behavior.

There are several version iSMART execute files for different application.
For example, you could choose the "iSMART_64" if the OS is support Linux 64-bit.



For products information as below:

- Device for SATA interface (SD_)

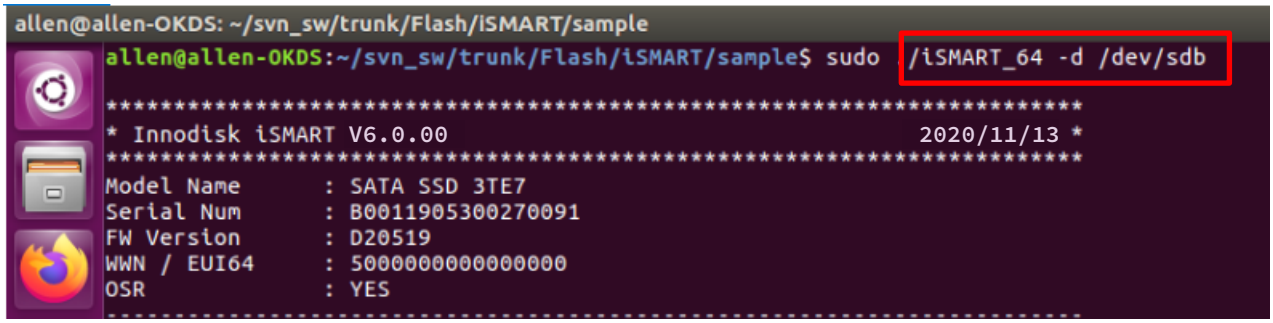
SARMT attribute check	./iSMART -d /dev/sda*

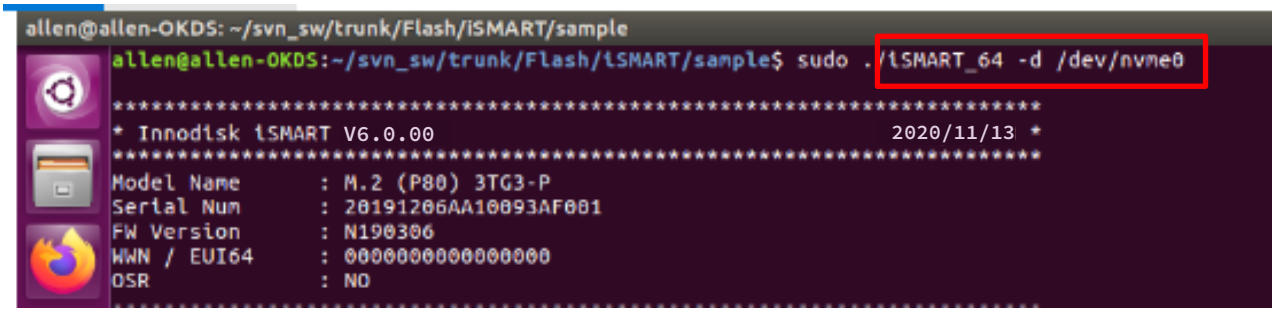
*a,b,c: Device name

- Device for PCIe interface (nvme_)

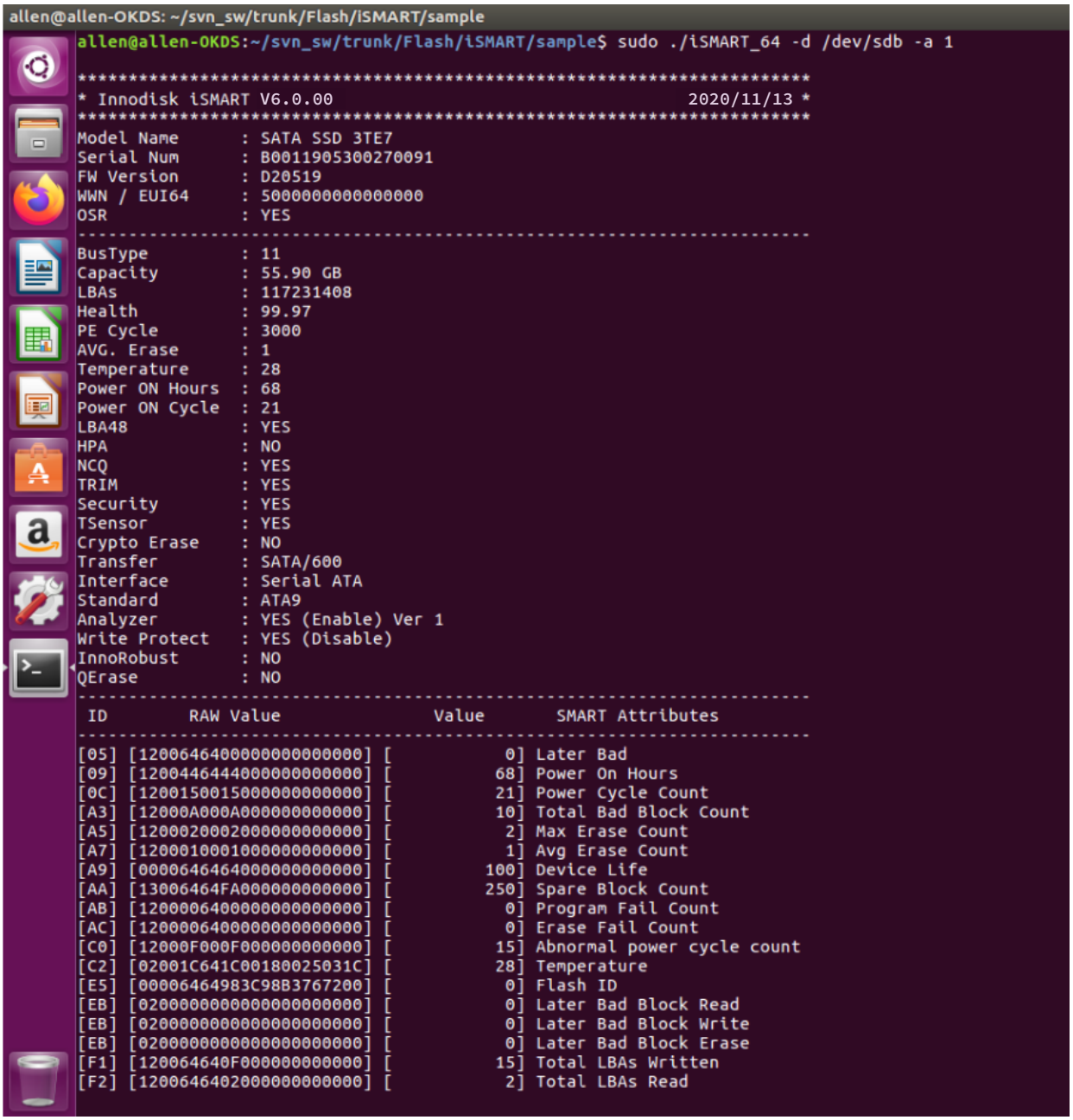
SARMT attribute check	./iSMART -d /dev/nvme0*

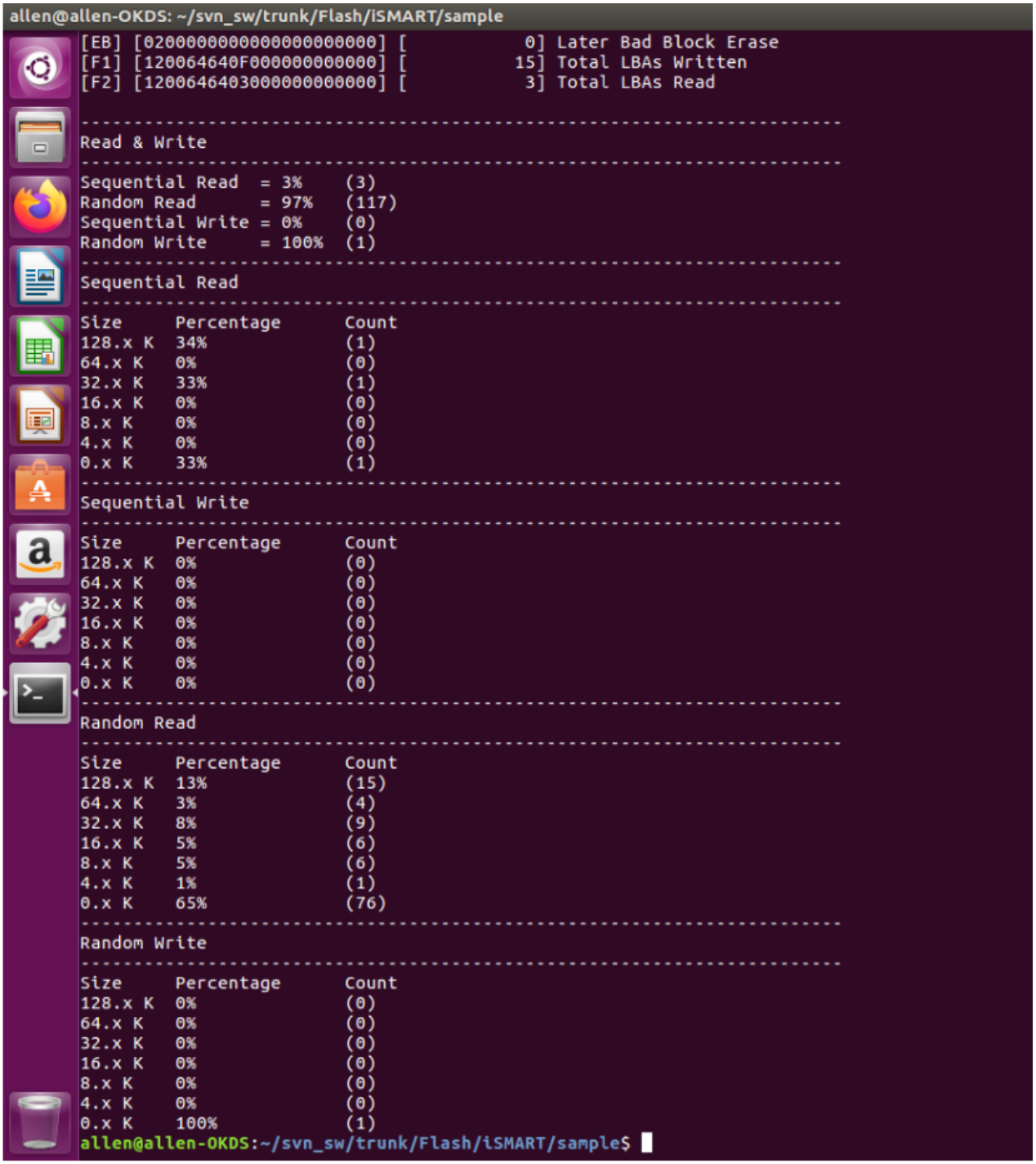
*0,1,2: Device name





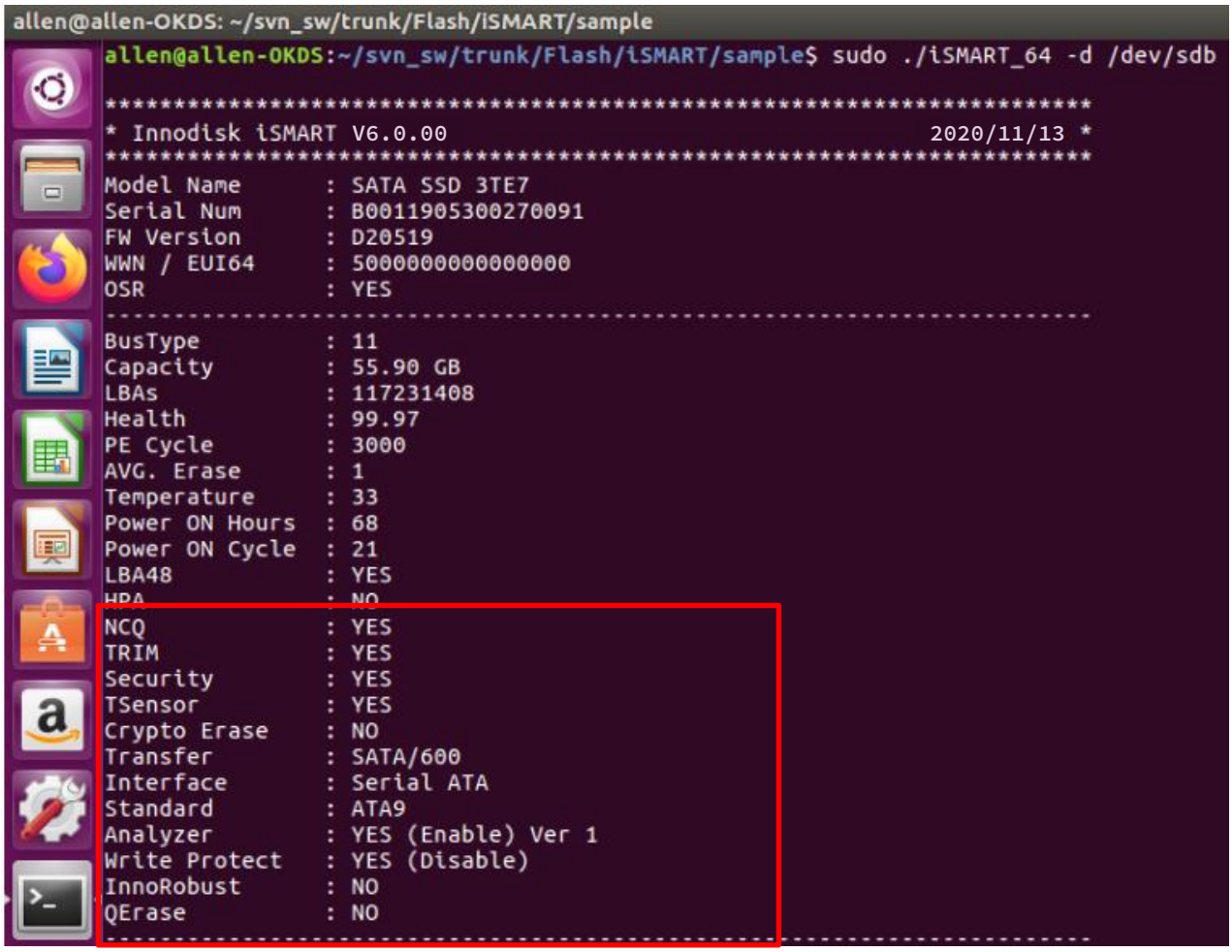
The sample result is as following picture.




allen@allen-OKDS: ~/svn_sw/trunk/Flash/iSMART/sample
[EB] [02000000000000000000] [0] Later Bad Block Erase
[F1] [120064640F000000000000] [15] Total LBAs Written
[F2] [120064640300000000000] [3] Total LBAs Read
Read & Write
Sequential Read = 3% (3)
Random Read = 97% (117)
Sequential Write = 0% (0)
Random Write = 100% (1)
Sequential Read
Size Percentage Count
128.x K 34% (1)
64.x K 0% (0)
32.x K 33% (1)
16.x K 0% (0)
8.x K 0% (0)
4.x K 0% (0)
0.x K 33% (1)
Sequential Write
Size Percentage Count
128.x K 0% (0)
64.x K 0% (0)
32.x K 0% (0)
16.x K 0% (0)
8.x K 0% (0)
4.x K 0% (0)
0.x K 0% (0)
Random Read
Size Percentage Count
128.x K 13% (15)
64.x K 3% (4)
32.x K 8% (9)
16.x K 5% (6)
8.x K 5% (6)
4.x K 1% (1)
0.x K 65% (76)
Random Write
Size Percentage Count
128.x K 0% (0)
64.x K 0% (0)
32.x K 0% (0)
16.x K 0% (0)
8.x K 0% (0)
4.x K 0% (0)
0.x K 100% (1)
allen@allen-OKDS:~/svn_sw/trunk/Flash/iSMART/sample$

2. Disable/Enable function

2.1 Function Status Check

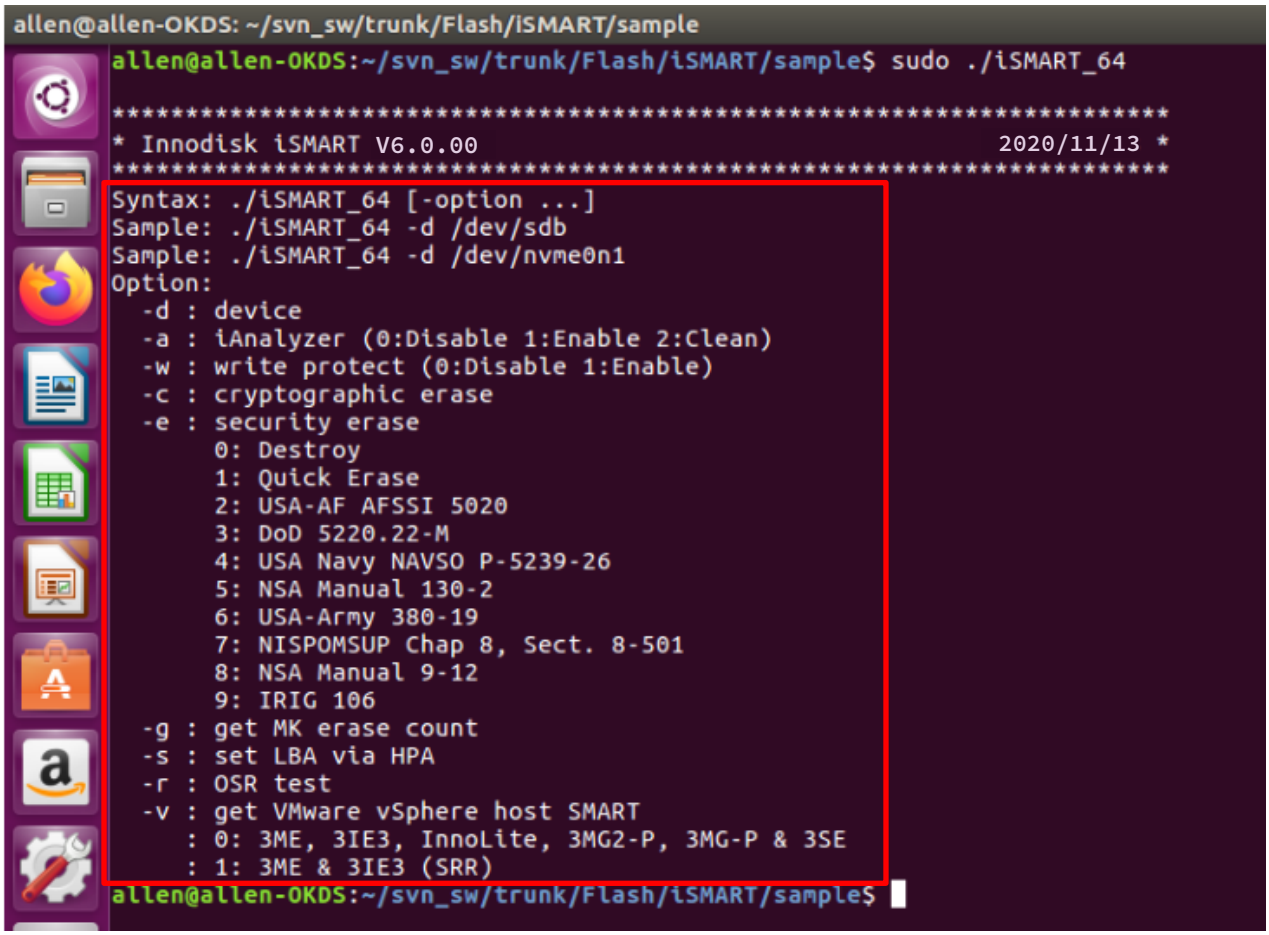


2.2 Function Disable / Enable

The Optional function command you could see as the below picture.
(The function is not total same for different SSD series)
For example, if you want to enable the iAnalyzer function, please input the command "./iSMART -d /dev/*** –a 1".

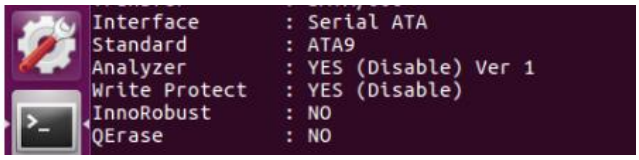
Write protect	Disable	./iSMART -d /dev/*** –w 0
	Enable	./iSMART -d /dev/*** –w 1
iAnalyzer	Disable	./iSMART -d /dev/*** –a 0
	Eanble	./iSMART -d /dev/*** –a 1

*** Device name (check it in page 4)

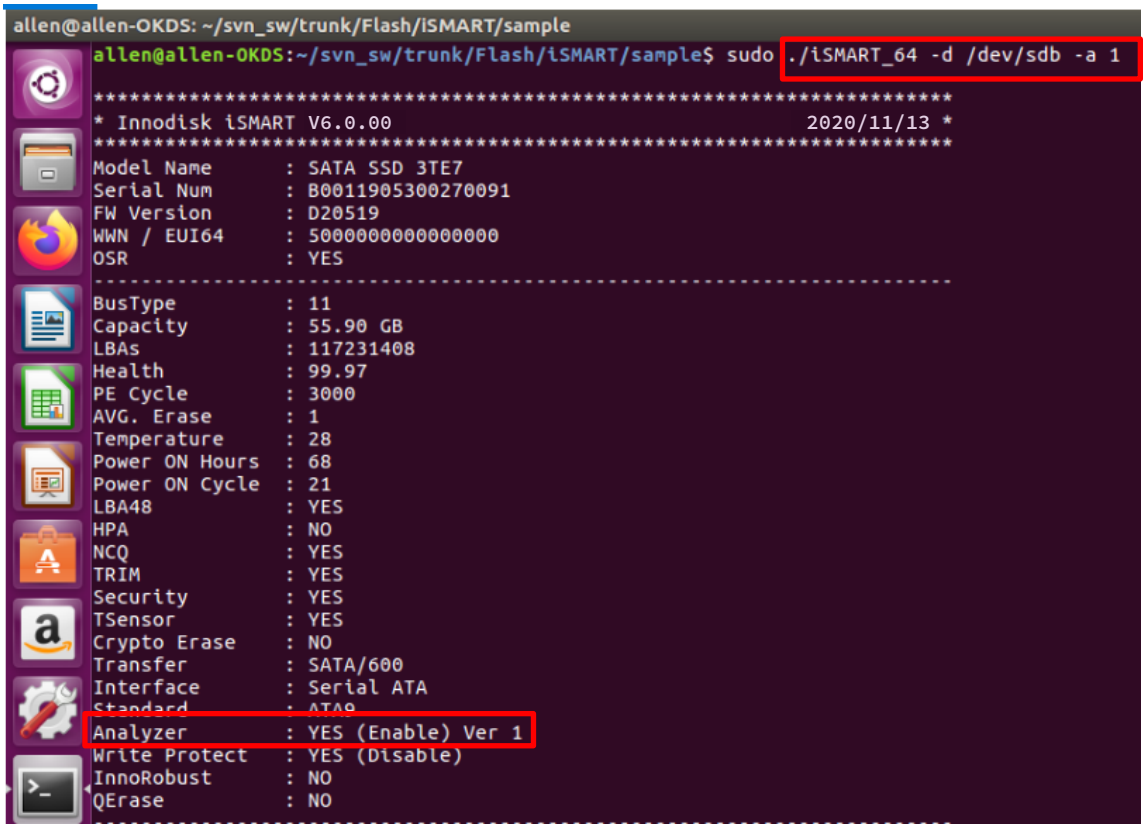


Example:

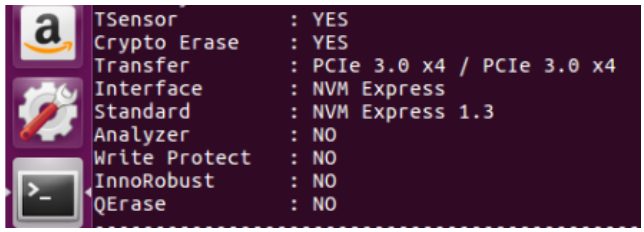
✓ The picture shows the SSD support Analyzer, but the status is disable.



✓ The picture shows the SSD support Analyzer, and the status is enable.



✓ The picture shows the SSD is PCIe interface and support Crypto Erase, but not support write protect function.



3. Support List

3.1. OS List

- Linux kernel 2.6, 32bit, 64bit
- Linux kernel 3.0, 32bit, 64bit
- Linux kernel 4.13.4, 32bit, 64bit