

確定SSD驅動器的開機時間

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背景

「開機時間」是確定SSD壽命的重要指標。為了識別受影響的固態驅動器(SSD)，您需要下載3個rd允許檢視開機時間的當事方實用程式(PoH)在某些情況下，還會出現模型#對於受影響的SSD。在下面您將找到有關從何處獲取實用程式以及如何使用它們的說明。

從何處獲取實用程式

有4選擇不同的實用程式rom取決於您的作業系統和需求。請檢視下表。

工具	適用的OS	工具源
SmartMon工具	Linux、Windows、VMware	https://sourceforge.net/projects/rtmontools/files/smartmontools
sg3_utils	Linux、Windows	http://sg.danny.cz/sg/sg3_utils
SanDisk工具	Linux、Windows	https://kb.sandisk.com/app/answers/detail/a_id/18565/~/lightning-g-ssd-drive-firmware
Storcli實用程式	所有作業系統	https://docs.broadcom.com/doc/7.1410.0000.0000_Unified_Storage.zip

有關如何使用每個實用程式的步驟。

每個應用工具都需要具備一些在Linux、VMware和Windows中安裝軟體的知識。安裝之前，請務必閱讀所有自述檔案。

Windows版SmartMonTools - JBOD模式

附註：如果您使用的是RAID控制器，則無法通過Windows收集此資料

1. **安裝:** 轉到上表中發佈的下載連結並下載 和 安裝smartmontools實用程式通過上面的連結獲取 smartctl Windows安裝程式檔案。執行安裝檔案：

```
smartmontools-7.1-1.win32-setup.exe
```

開啟命令提示符轉到資料夾：

```
C:\Program Files\smartmontools\bin
```

2. **檢查驅動器韌體版本：** 在命令下運行以獲取目標驅動器的裝置名稱。

```
smartctl -scan
```

```
C:\Program Files\smartmontools\bin>smartctl --scan
/dev/sda -d ata # /dev/sda, ATA device
/dev/sdb -d ata # /dev/sdb, ATA device
/dev/sdc -d scsi # /dev/sdc, SCSI device
/dev/sdd -d scsi # /dev/sdd, SCSI device
```

[jbod windows smartmon fw 1]讀取驅動器韌體版本，如下所示：

```
smartctl -i /dev/sdc
```

```
C:\Program Files\smartmontools\bin>smartctl -i /dev/sdc
smartctl 7.1 2019-12-30 r5022 [x86_64-w64-mingw32-2016] (sf-7.1-1)
Copyright (C) 2002-19, Bruce Allen, Christian Franke, www.smartmontools.org

--- START OF INFORMATION SECTION ---
Vendor:                SanDisk
Product:               LT1600MO
Revision:              C405
Compliance:           SPC-4
User Capacity:         1,600,321,314,816 bytes [1.60 TB]
Logical block size:    512 bytes
LU is resource provisioned, LBPRZ=1
Rotation Rate:         Solid State Device
Form Factor:           2.5 inches
Logical Unit id:       0x5001e82002818248
Serial number:         42041928
Device type:           disk
Transport protocol:    SAS (SPL-3)
Local Time is:         Mon Feb 04 15:54:19 2019 PST
SMART support is:      Available - device has SMART capability.
SMART support is:      Enabled
Temperature Warning:   Disabled or Not Supported
```

[jbod windows smartmon fw 2]

3. **檢查開機時間：** 安裝之後，您將使用smartmontools包中的「smartctl」實用程式。開啟 CMD，轉到smartmontools目錄 並鍵入以下內容來查詢SSD清單：

```
smartctl.exe --scan
```

一次 確定要檢查的SSD後，可以鍵入以下兩個命令 訂購 以獲得所需的輸出 (其中X是要檢查的驅動器碟符◆◆)

```
smartctl -t short /dev/sdX - Wait 10 seconds before running the second command
```

```
smartctl -l selftest /dev/sdX
```

查詢「終身」小時 從1st 線路。 這將是PoH的最新記錄。

```
C:\Program Files\smartmontools\bin>smartctl --scan
/dev/sda -d ata # /dev/sda, ATA device
/dev/sdb -d scsi # /dev/sdb, SCSI device
/dev/sdc -d scsi # /dev/sdc, SCSI device

C:\Program Files\smartmontools\bin>smartctl -t short /dev/sdb
smartctl 7.1 2019-12-30 r5022 [x86_64-w64-mingw32-2016] (sf-7.1-1)
Copyright (C) 2002-19, Bruce Allen, Christian Franke, www.smartmontools.org

Short Background Self Test has begun
Use smartctl -X to abort test

C:\Program Files\smartmontools\bin>smartctl -l selftest /dev/sdb
smartctl 7.1 2019-12-30 r5022 [x86_64-w64-mingw32-2016] (sf-7.1-1)
Copyright (C) 2002-19, Bruce Allen, Christian Franke, www.smartmontools.org

=== START OF READ SMART DATA SECTION ===
SMART Self-test log
Num Test Status segment LifeTime LBA_first_err [SK ASC ASQ]
Description number (hours)
# 1 Background short Completed - 3883 - [- - -]
# 2 Background short Completed - 3882 - [- - -]
# 3 Background short Completed - 3880 - [- - -]

Long (extended) Self-test duration: 5000 seconds [83.3 minutes]
```

The first record is the latest

[jbod windows smartmon]

Linux版SmartMonTools - JBOD模式

1. 安裝: 轉到上表中發佈的下載連結, 下載並安裝smartmontools實用程式。獲取smartctl 安裝通過以上鍊接獲得檔案Linux版本。解除安裝 檔案。

```
tar -zxvf smartmontools-7.1.tar.gz
```

轉到資料夾:

```
smartmontools-7.1
```

按順序運行以下命令。

```
./configure
```

```
make
```

```
make install
```

2. 檢查驅動器韌體版本: 「sdb」是目標驅動器的裝置名稱。

```
smartctl -i /dev/sdb
```

```
[root@localhost ~]# smartctl -i /dev/sdb
smartctl 6.5 2016-05-07 r4318 [x86_64-linux-3.10.0-957.el7.x86_64] (local build)
Copyright (C) 2002-16, Bruce Allen, Christian Franke, www.smartmontools.org

=== START OF INFORMATION SECTION ===
Vendor:                SanDisk
Product:               LT1600MO
Revision:              C405
Compliance:           SPC-4
User Capacity:         1,600,321,314,816 bytes [1.60 TB]
Logical block size:    512 bytes
LU is resource provisioned, LBPRZ=1
Rotation Rate:         Solid State Device
Form Factor:           2.5 inches
Logical Unit id:       0x5001e82002818248
Serial number:         42041928
Device type:           disk
Transport protocol:    SAS (SPL-3)
Local Time is:         Mon Feb  4 19:38:03 2019 CST
SMART support is:      Available - device has SMART capability.
SMART support is:      Enabled
Temperature Warning:   Disabled or Not Supported
```

[jbod linux smartmon fw]

3. 檢查開機時間(POH) 轉到smartmontools目錄，通過鍵入以下內容找到SSD清單：

```
esxcli storage core device list
```

一旦確定要檢查哪個SSD，您就可以進行檢查鍵入以下兩個命令以獲取所需的輸出（其中X是要檢查的驅動器碟符）◆◆

```
smartctl -t short /dev/sdX - Wait 10 seconds before running the second command
smartctl -l selftest /dev/sdX
```

查詢「Lifetime」小時從1st 線路。這將是PoH的最新記錄。

```
[root@localhost ~]# smartctl -t short /dev/sda
smartctl 7.0 2018-12-30 r4883 [x86_64-linux-3.10.0-957.el7.x86_64] (local build)
Copyright (C) 2002-18, Bruce Allen, Christian Franke, www.smartmontools.org

Short Background Self Test has begun
Use smartctl -X to abort test
[root@localhost ~]# smartctl -l selftest /dev/sda
smartctl 7.0 2018-12-30 r4883 [x86_64-linux-3.10.0-957.el7.x86_64] (local build)
Copyright (C) 2002-18, Bruce Allen, Christian Franke, www.smartmontools.org

=== START OF READ SMART DATA SECTION ===
SMART Self-test log
Num  Test          Status          segment  LifeTime  LBA_first_err [SK ASC ASQ]
   1  Background short Completed        -         6439          - [- - -]
   2  Background short Completed        -         6433          - [- - -]
   3  Background short Completed        -         6433          - [- - -]
   4  Reserved(7)    Aborted (device reset ?) -          317          - [- - -]

Long (extended) Self-test duration: 5000 seconds [83.3 minutes]

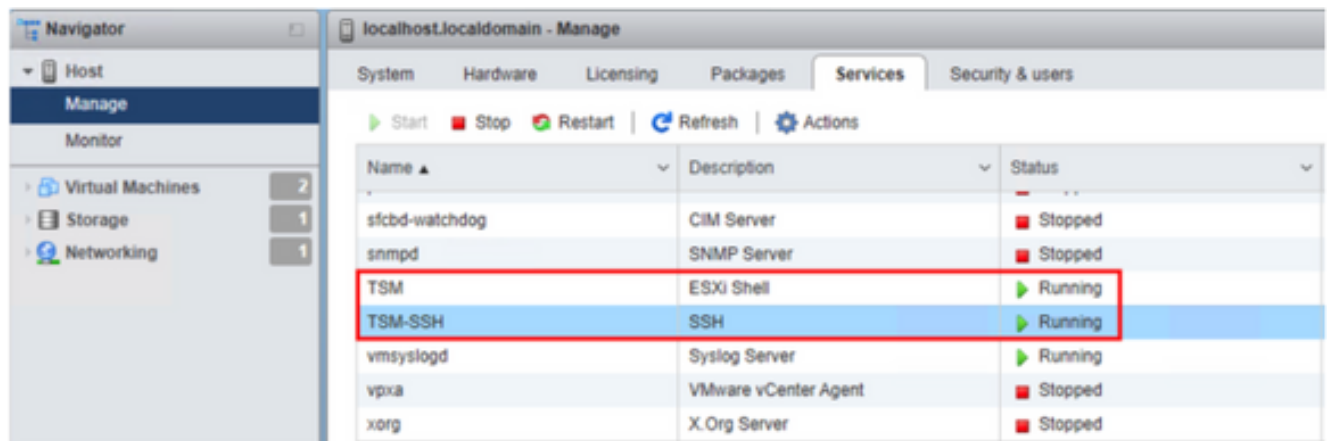
[root@localhost ~]#
```

The first one is the latest record

[jbod linux smartmon]

適用於ESXi的SmartMonTools - JBOD模式

1. 安裝：轉到上表中發佈的下載連結，下載並安裝smartmontools實用程式 獲取smartctl ESXi 安裝 檔案通過上面的連結。在ESXi主機上啟用外殼和SSH。



[jjobd esxi smartmon安裝]

通過ftp工具將檔案「smartctl-6.6-4321.x86_64.vib」上傳到ESXi主機「tmp」資料夾。通過SSH連線到ESXi主機。將ViB接受級別設定為CommunitySupported。

```
esxcli software acceptance set --level=CommunitySupported
```

然後安裝軟體包。

```
esxcli software vib install -v /tmp/smartctl-6.6-4321.x86_64.vib
```

2. 檢查驅動器韌體版本 通過SSH連線到ESXi主機。然後運行以下命令以獲取目標驅動器的裝置名稱和韌體版本。

```
esxcli storage core device list
```

```
naa.5001e82002818248
```

```
Display Name: Local SanDisk Disk (naa.5001e82002818248)
Has Settable Display Name: true
Size: 1526185
Device Type: Direct-Access
Multipath Plugin: NMP
Devfs Path: /vmfs/devices/disks/naa.5001e82002818248
Vendor: SanDisk
Model: LT1600M0
Revision: C405
SCSI Level: 6
Is Pseudo: false
Status: on
Is RDM Capable: true
Is Local: true
Is Removable: false
Is SSD: true
Is VVOL PE: false
Is Offline: false
Is Perennially Reserved: false
Queue Full Sample Size: 0
Queue Full Threshold: 0
Thin Provisioning Status: yes
Attached Filters:
VAAI Status: unknown
Other UUIDs: vml.02000000005001e820028182484c5431363030
```

```
[jbod esxi smartmon fw]
```

檢查開機時間(POH) 請轉到smartmontools目錄，通過鍵入

```
esxcli storage core device list
```

確定要檢查的SSD後，可以鍵入以下兩個命令以獲取所需的輸出(其中 naa.xxx 是要檢查的驅動器碟符◆◆)

```
/opt/smartmontools/smartctl -d scsi -t short /dev/disks/naa.xxx - Wait 10 seconds before running the second command
```

```
/opt/smartmontools/smartctl -d scsi -l selftest /dev/disks/naa.xxx
```

查詢從第一行開始的「Lifetime」小時。這將是PoH的最新記錄。

```
[root@localhost:~] /opt/smartmontools/smartctl -d scsi -t short /dev/disks/naa.5001e82002818248
smartctl 6.6 2016-05-10 r4321 [x86_64-linux-6.5.0] (daily-20160510)
Copyright (C) 2002-16, Bruce Allen, Christian Franke, www.smartmontools.org

Short Background Self Test has begun
Use smartctl -X to abort test
[root@localhost:~] /opt/smartmontools/smartctl -d scsi -l selftest /dev/disks/naa.5001e82002818248
smartctl 6.6 2016-05-10 r4321 [x86_64-linux-6.5.0] (daily-20160510)
Copyright (C) 2002-16, Bruce Allen, Christian Franke, www.smartmontools.org

=== START OF READ SMART DATA SECTION ===
SMART Self-test log
Num Test Status segment LifeTime LBA_first_err [SK ASC ASQ]
Description number (hours)
# 1 Background short Completed - 2505 - [- - -]
# 2 Background short Completed - 2409 - [- - -]

Long (extended) Self Test duration: 29600 seconds [493.3 minutes]
```

[jbod esxi smartmon]

Sg3_utils for Windows - JBOD模式

1. 安裝 轉到上表中發佈的下載連結，下載並安裝 sg3_utils 公用事業通過上面的連結獲取smartctl Windows安裝程式檔案。執行安裝檔案：

smartmontools-7.1-1.win32-setup.exe

開啟命令提示符轉到資料夾：

C:\Program Files\smartmontools\bin

2. 檢查驅動器韌體版本：在命令下運行以獲取目標驅動器的裝置名稱。

smartctl -scan

```
C:\Program Files\smartmontools\bin>smartctl --scan
/dev/sda -d ata # /dev/sda, ATA device
/dev/sdb -d ata # /dev/sdb, ATA device
/dev/sdc -d scsi # /dev/sdc, SCSI device
/dev/sdd -d scsi # /dev/sdd, SCSI device
```

[jbod windows sg3_utils fw 1]如下所示讀取驅動器韌體版本

smartctl -i /dev/sdc

```

C:\Program Files\smartmontools\bin>smartctl -i /dev/sdc
smartctl 7.1 2019-12-30 r5022 [x86_64-w64-mingw32-2016] (sf-7.1-1)
Copyright (C) 2002-19, Bruce Allen, Christian Franke, www.smartmontools.org

=== START OF INFORMATION SECTION ===
Vendor:                 SanDisk
Product:                LT1600MO
Revision:               C405
Compliance:            SPC-4
User Capacity:         1,600,321,314,816 bytes [1.60 TB]
Logical block size:    512 bytes
LU is resource provisioned, LBPRZ=1
Rotation Rate:         Solid State Device
Form Factor:           2.5 inches
Logical Unit id:       0x5001e82002818248
Serial number:         42041928
Device type:           disk
Transport protocol:    SAS (SPL-3)
Local Time is:         Mon Feb 04 15:54:19 2019 PST
SMART support is:     Available - device has SMART capability.
SMART support is:     Enabled
Temperature Warning:   Disabled or Not Supported

```

[jbod windows sg3_utils fw 2]

3. 檢查開機時間：轉到 sg3_utils 目錄，並通過鍵入以下內容找到SSD清單：

sg_scan

確定要檢查的SSD後，可以鍵入以下內容g命令（其中X是要檢查的驅動器號）：

sg_logs --page=0x15 pdX

查詢「累計開機（分鐘）」。

```

C:\Users\Administrator\Downloads\sg3_utils-1.45mgw64>sg_scan
PD0 [C] ST1000NX0423 CT05 S4702TL2
PD1 SanDisk LT0400MO C405 42211160
PD2 SanDisk LT1600MO C405 42041928

C:\Users\Administrator\Downloads\sg3_utils-1.45mgw64>sg_logs --page=0x15 pd2
SanDisk LT1600MO C405
Background scan results page [0x15]
Status parameters:
Accumulated power on minutes: 144762 [h:m 2412:42]
Status: background medium scan is active
Number of background scans performed: 36750
Background medium scan progress: 1.13831 %
Number of background medium scans performed: 36750

```

[jbod windows sg3_utils]

Sg3_utils for Linux - JBOD模式

1. 安裝：轉到上表中發佈的下載連結，下載並安裝sg3_utils實用程式獲取sg3_utils 安裝 通過以上鍊接獲得檔案Linux版本。解除 安裝 檔案。

tar -zxvf sg3_utils-1.45.tgz

轉至文件夾'sg3_utils-1.45'。按順序運行以下命令。

./configure


```
make
make install
```

2. 檢查驅動器韌體版本 「sdb」 是目標驅動器的裝置名稱。

```
sg_logs --page=0x33 /dev/sdb
[root@localhost ~]# sg_logs --page=0x33 /dev/sdb
SanDisk LT1600M0 C405
No ascii information for page = 0x33, here is hex:
00 33 00 07 c8 00 00 03 00 56 55 5f 50 41 47 45 53
10 00 01 03 08 01 02 03 04 05 06 07 08 00 02 03 08
20 09 0a 0b 0c 0d 0e 0f 10 00 03 03 08 12 2f 00 00
30 00 00 00 00 00 04 03 08 00 00 00 00 00 00 00
..... [truncated after 64 of 1996 bytes (use '-H' to see the rest)]
```

[jbod linux sg3_utils fw]

3. 檢查開機時間 確定要檢查的SSD後，可以鍵入以下命令（其中X是要檢查的驅動器碟符）：

```
sg_logs --page=0x15 /dev/sdX
```

尋找「Cumulated power on minutes」。

```
[root@localhost ~]# sg_logs --page=0x15 /dev/sdb
SanDisk LT1600M0 C405
Background scan results page [0x15]
Status parameters:
Accumulated power on minutes: 372254 [h:m 6204:14]
Status: background medium scan is active
Number of background scans performed: 3321
Background medium scan progress: 3.52 %
Number of background medium scans performed: 3321
```

[jbod linux sg3_utils.jpg]

Windows版Sandisk工具 — JBOD模式

1. 安裝: 轉到上表中發佈的下載連結，下載並安裝sg3_utils實用程式通過上面的連結獲取smartctl Windows安裝程式檔案。執行安裝檔案

```
smartmontools-7.1-1.win32-setup.exe
```

開啟命令提示符轉到資料夾：

```
C:\Program Files\smartmontools\bin
```

2. 檢查驅動器韌體版本 在命令下運行以獲取目標驅動器的裝置名稱。

```
smartctl -scan
C:\Program Files\smartmontools\bin>smartctl --scan
/dev/sda -d ata # /dev/sda, ATA device
/dev/sdb -d ata # /dev/sdb, ATA device
/dev/sdc -d scsi # /dev/sdc, SCSI device
/dev/sdd -d scsi # /dev/sdd, SCSI device
```

[jbod windows sandisk fw]

3. 檢查開機時間 要標識要檢查的驅動器，請鍵入以下命令：

```
scli show all
```

確定要檢查的SSD後，可以鍵入以下命令（其中X是要檢查的驅動器碟符）：

```
scli show diskX -S
```

尋找「總開機小時數」。

```
C:\Program Files\SanDisk\scli\bin64>scli show all
SanDisk scli version 1.8.0.12
Copyright (C) 2014 SanDisk
01/30/2019 18:30:57

Device          Port Capacity  State  Boot DeviceSerial#      Model
-----
DISK0           SATA 1.00 TB   Unknown Yes  S4702TL2                ST1000NX0423
DISK1           SAS 400.09 GB   Good   No   42211160                LT0400MO
DISK2           SAS 1.60 TB    Good   No   42041928                LT1600MO

Command Executed Successfully.

C:\Program Files\SanDisk\scli\bin64>scli show disk2 -S
SanDisk scli version 1.8.0.12
Copyright (C) 2014 SanDisk
01/30/2019 18:55:39

Statistics Information for disk2
-----
Life Used          : 1 %
Temperature        : 39 Celsius
Total Read         : 164.96 TB
Total Write        : 275.10 TB
Total Read Commands : 12052397070
Total Write Commands : 18756685157
Read Errors        : 1
Program Events     : 0
Background Read Events : 0
GList Count        : 1
Lifetime Max Temperature : 73 Celsius
Total Power on Hours : 2409
Command Executed Successfully.
```

[jbod windows sandisk]

Linux版Sandisk工具 — JBOD模式

1. 安裝 轉到上表中發佈的下載連結，下載並安裝sg3_utils實用程式獲取Cli 安裝 通過以上鍊接獲得檔案Linux版本。解壓縮 安裝 檔案。轉到資料夾：

Linux_1.8.0.12/generic/x86_64

在命令下運行以使「scli」可執行。

```
chmod +x scli
```

2. 檢查驅動器韌體版本 「sdb」 是目標驅動器的裝置名稱。

```
./scli show /dev/sdb -a
```

```
[root@localhost x86_64]# ./scli show /dev/sdb -a
SanDisk scli version 1.8.0.12
Copyright (C) 2014 SanDisk
07/15/2020 15:41:10

Asset Information for /dev/sdb
-----
Vendor          : SanDisk
Product ID      : LT1600M0
Revision Level  : C405
Serial No       : 42062372
Part Number     : 193a
WWN LUN         : 5001e8200281d224
WWN Target      : 5001e8200281d225

Command Executed Successfully.
```

[jbod linux sandisk fw]

3. 檢查開機時間 確定要檢查的SSD後，可以鍵入以下命令（其中X是要檢查的驅動器號）：

```
./scli show /dev/sdX -S
```

尋找「總開機小時數」。

```
[root@localhost x86_64]# ./scli show /dev/sda -S
SanDisk scli version 1.8.0.12
Copyright (C) 2014 SanDisk
07/10/2020 19:53:30

Statistics Information for /dev/sda
-----
Life Used          : 6 %
Temperature        : 41 Celsius
Total Read         : 275.83 TB
Total Write        : 580.95 TB
Total Read Commands : 23791125744
Total Write Commands : 29664369071
Read Errors        : 0
Program Events     : 0
Background Read Events : 0
GList Count        : 1
Lifetime Max Temperature : 71 Celsius
Total Power on Hours : 6436

Command Executed Successfully.
```

[jbod linux sandisk]

Linux版SmartMonTools - RAID模式

1. 安裝 您需要安裝smartmontools和storcli utility來收集資料。轉到上表中發佈的下載連結，下載並安裝smartmontools實用程式 獲取smartctl 安裝 通過以上鍊接獲得檔案Linux版本。解除安裝 檔案。

```
tar -zxvf smartmontools-7.1.tar.gz
```

轉到資料夾：

```
smartmontools-7.1
```

按順序運行以下命令。

```
./configure  
make  
make install
```

現在轉到上表中發佈的下載連結，下載並安裝storcli實用程式。標識要檢查的驅動器，轉到storcli目錄並鍵入命令：

```
storcli /c0/eall/sall show
```

查詢裝置ID(DID)。 裝置ID將是 未來步驟中需要的。

```
[root@localhost smartctl]# storcli /c0/eall/sall show  
CLI Version = 007.0913.0000.0000 Jan 11, 2019  
Operating system = Linux 3.10.0-957.el7.x86_64  
Controller = 0  
Status = Success  
Description = Show Drive Information Succeeded.
```

Drive Information :

=====

EID:Slr	DID	State	DG	Size	Intf	Med	SED	PI	SeSz	Model	Sp	Type
252:1	69	Onln	0	222.585 GB	SATA	SSD	N	N	512B	SAMSUNG MZ7LM240HHMQ-00005	U	-
252:4	91	JBOD	-	372.611 GB	SAS	SSD	N	N	512B	LT0400M0	U	-
252:5	88	JBOD	-	1.455 TB	SAS	SSD	N	N	512B	LT1600M0	U	-

[raid linux smartmon fw 1]

2. 檢查驅動器韌體版本 以下命令中的「148」是目標驅動器的裝置ID(DID)。而「sdc」是其裝置名稱。

```
smartctl -d megaraid,148 -i /dev/sdc
```

```
[root@localhost ~]# smartctl -d megaraid,148 -i /dev/sdc  
smartctl 6.5 2016-05-07 r4318 [x86_64-linux-3.10.0-957.el7.x86_64] (local build)  
Copyright (C) 2002-16, Bruce Allen, Christian Franke, www.smartmontools.org
```

=== START OF INFORMATION SECTION ===

```
Vendor: SanDisk  
Product: LT0400M0  
Revision: C405  
Compliance: SPC-4  
User Capacity: 400,000,457,216 bytes [400 GB]  
Logical block size: 512 bytes  
LU is resource provisioned, LBPRZ=1  
Rotation Rate: Solid State Device  
Form Factor: 2.5 inches  
Logical Unit id: 0x5001e82002041758  
Serial number: 42211160  
Device type: disk  
Transport protocol: SAS (SPL-3)  
Local Time is: Mon Feb 4 23:08:06 2019 CST  
SMART support is: Available - device has SMART capability.  
SMART support is: Enabled  
Temperature Warning: Disabled or Not Supported
```

[raid linux smartmon fw 2]

3. 檢查開機時間 一旦確定要檢查哪個SSD，則可以鍵入以下兩個命令以獲取所需的輸出(其中X是 從步驟4獲得的裝置ID◆◆)

注意：為了讓此操作生效，您需要確保並使用megaraid'使用RAID集時輸入命令。 否則就無法使用。

smartctl -d megaraid,N -t short /dev/sdX - Wait 10 seconds before running the second command

smartctl -d megaraid,N -l selftest /dev/sdX

查詢「Lifetime」小時從1st 線路。 這將是PoH的最新記錄。

EID:Slt	DID	State	DG	Size	Intf	Med	SED	PI	SeSz	Model	Sp	Type
252:1	69	Onln	0	222.585 GB	SATA	SSD	N	N	512B	SAMSUNG MZ7LM240MHMQ-00005	U	-
252:4	91	JB0D	-	372.611 GB	SAS	SSD	N	N	512B	LT0400MO	U	-
252:5	88	JB0D	-	1.455 TB	SAS	SSD	N	N	512B	LT1600MO	U	-

EID=Enclosure Device ID|Slt=Slot No. DID=Device ID DG=DriveGroup
DHS=Dedicated Hot Spare|UGood=Unconfigured Good|GHS=Global Hotspare
UBad=Unconfigured Bad|Onln=Online|Offln=Offline|Intf=Interface
Med=Media Type|SED=Self Encryptive Drive|PI=Protection Info
SeSz=Sector Size|Sp=Spun|U=Up|D=Down|T=Transition|F=Foreign
UGUnsp=Unsupported|UGShld=UnConfigured shielded|HSPShld=Hotspare shielded
CFShld=Configured shielded|Cpybck=CopyBack|CBSHld=Copyback Shielded

```
[root@localhost ~]# smartctl -d megaraid,88 -t short /dev/sdb
smartctl 7.0 2018-12-30 r4883 [x86_64-linux-3.10.0-957.el7.x86_64] (local build)
Copyright (C) 2002-18, Bruce Allen, Christian Franke, www.smartmontools.org
```

```
Short Background Self Test has begun
Use smartctl -X to abort test
[root@localhost ~]# smartctl -d megaraid,88 -l selftest /dev/sdb
smartctl 7.0 2018-12-30 r4883 [x86_64-linux-3.10.0-957.el7.x86_64] (local build)
Copyright (C) 2002-18, Bruce Allen, Christian Franke, www.smartmontools.org
```

=== START OF READ SMART DATA SECTION ===

SMART Self-test log

Num	Test	Status	segment number	LifeTime (hours)	LBA_first_err	[SK ASC ASQ]
# 1	Background short	Completed	-	6204	-	[- - -]
# 2	Background short	Completed	-	6203	-	[- - -]
# 3	Background short	Completed	-	6198	-	[- - -]
# 4	Background short	Completed	-	6198	-	[- - -]
# 5	Background short	Completed	-	6198	-	[- - -]

Long (extended) Self-test duration: 29600 seconds [493.3 minutes]

[raid linux smartmon]

附註： SmartMonTools在RAID for ESXi中不起作用。 sg3_utils和Sandisk工具不能在所有作業系統的RAID中工作。