



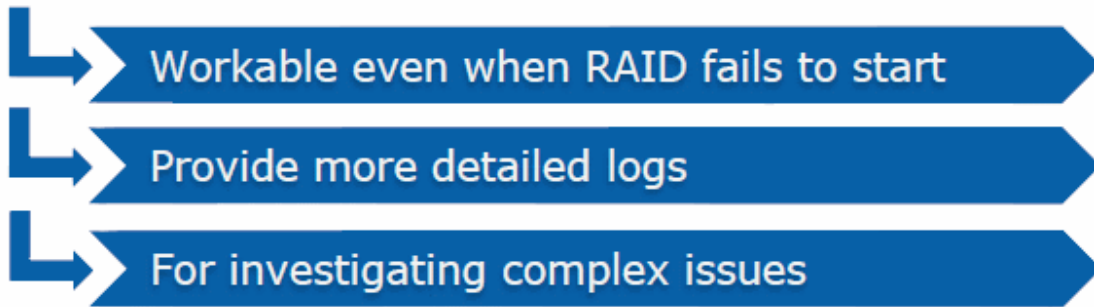
TTY Log???LSI?Firmware Debug Log. ???Hardware RAID Logging???. ???, ????????:

HWRAID Logs are saved in NVRAM

??Log???????NVRAM. NVRAM?LSI RAID Controller????????, ????????:

1. RAID Controller?????
2. Logging?????
3. Write-journaling??

## Firmware Debug Log (TTY Log)



???, ?LSISAS2108 RoC?????32KB?NVRAM, ?LSISAS2208??128KB NVRAM. ?????????TTY Logging, ??????!  
???TTY Logging?? ???????????????:

1. TTY Log is a FW transaction log and is held in controller memory and saved to NVRAM during power down
2. Memory resident TTY log is lost during power interruption unless a battery is present
3. The last three saved TTY log are available in NVRAM

TTY Log??????, ??????????????(Hot buffer), ??????????????NVRAM. ??????BBU????, ?Hot buffer??TTY log????, ?NVRAM????????TTY log??.

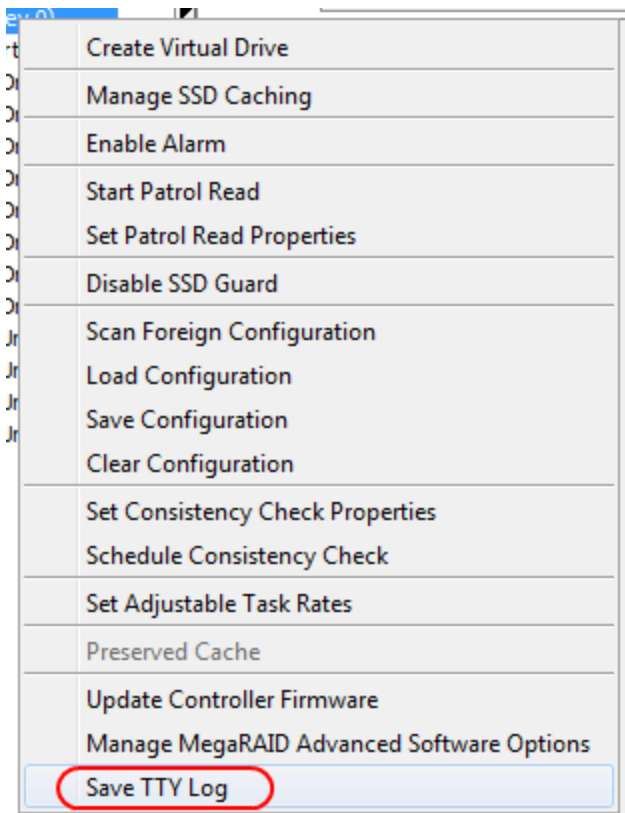
????, TTY Log???Firmware Debug Log, ???????????:

1. ??RAID??????, ??????.
2. ?????????
3. ?????????

### How to get TTY Log?/?????TTY Log???

??????????????????:

1. ??MegaRAID Storage Manager(MSM)??GUI????
  2. ??MegaCLI?CLI?????????log??
- ??1????MSM?????????????Save TTY Log????????????txt???



```

?2????????????????????, ????
megacli -fwtermlog -a0 > ttylog.txt
????????????TTY log?. ??TTY log??????????:
1. Controller Properties/?????????
2. ??????????????????????
3. ????(Logical Device)?????????
4. ??????????(Sense Code)?????
5. ???????FW????, ??????????????.
?????TTY log??????:
T0: Initializing memory pool size=002FDD24 bytes
?????????????????????????????. T????????????? Tx???x?number, T?????????(T: Time)????????, ??????????. number
x?????????????????????????????.
??????, ???T0????, ?????????, ?????????????, ???debug?????????????????. ?????????, TTY log????????????????????????
????????????????, ?????????????, ?????????, ??????Event log?????????.

????????????????????TTY log??????:
?????, ??????:
T0: Firmware version 1.40.92-0746 built on Nov 3 2009 at 12:10:24
?T0?????, ??????????????????
?????, ??????????????:
T3: DRAM SIZE=512 MB
?????, ??????:
rebuildRate=1e
?????, ??????????(alarn):
    
```

alarmEnable=1

????, ??PD?spinup????:

spinupDelay=6

????, ??????????????????:

T28: 12 f1400005 00020 00 e8e088af 0 0 SEAGATE ST32000444SS 0005 0 0 0c 5000c500104457ed 04 03 0c

T28: 13 f1400005 00020 00 e8e088af 0 0 SEAGATE ST32000444SS 0005 0 0 0d 5000c50020c78d55 04 04 0d

T28: 14 f1400005 00020 00 e8e088af 0 0 SEAGATE ST32000444SS 0005 0 0 0e 5000c500103f3675 04 05 0e

T28: 15 f1400005 00020 00 e8e088af 0 0 SEAGATE ST32000444SS 0005 0 0 0f 5000c500104a4599 04 06 0f

T28: 16 f1400005 00020 00 e8e088af 0 0 SEAGATE ST32000444SS 0005 0 0 10 5000c50020ee7d25 04 07 10

T28: 17 f1400005 00020 00 e8e088af 0 0 SEAGATE ST32000444SS 0005 0 0 11 5000c50020eee125 04 08 11

????T28??, ?6??????????, ????????

????, ??????????(Logical Device)??:

T59: ARs configured: 2

T59: Ar 0: size=172aa800, activeLd=1, numPd=2, seq=0, PDs: 10(1a/0) 11(1a/1)

T59: Ar 1: size=e8b6d000, activeLd=2, numPd=8, seq=0, PDs: 12(1a/3) 13(1a/4) 14(1a/5) 15(1a/6) 16(1a/7)  
17(1a/8) 18(1a/9) 19(1a/10)

T59: LD 0: L=1 SS=512 Size=172aa800 NL=1938 Status=3 DT=833 BT=1337, MF=0030, Encr=0

prop=[ID=00,dcp=65,ccp=65,ap=0,dc=2,dbg=0]

T59: span 0: sBlk=00000000, nBlk=172aa800, ar=0

T59: LD 1: L=6 SS=512 Size=57448e000 NL=1938 Status=3 DT=833 BT=1337, MF=0120, Encr=0

prop=[ID=01,dcp=6d,ccp=6d,ap=0,dc=2,dbg=0]

T59: span 0: sBlk=00000000, nBlk=e8b6d000, ar=1

?T59??, ????ARs configured: 2?????????????????. Ar 0?Ar 1?????????????????

?LD 0?????????????????Ar 0, ??Stripe-size????512KB. ??L=1???RAID mode????????R1??. LD 1????????????????!..