

?:OSSLAB VXR  
?:?:?:

??  
Baseline(Read ahead &Write back &Direct I O), SSDC01(N Read head&Write Though &Direct IO)  
??  
Baseline(Read ahead &Write back &Direct I O), SSDC01(N Read head&Write back &Direct IO)

\* CacheCade ??:LSI/AVAGO?Tri-mode??:?:?:?. ??:?:NVME??:?:, ??:?:?:?:.

LSI MegaRAID CacheCade Pro 2.0 ?/?:?:?:?:?:.?:?:?:?:?:?:?: (SSD) ??:?:?:?:?:,?:?“?:”?:?:?:?:?:?:,?:?:?:?:?:?:?:  
(HDD) ??:?:?: I/O ??:?.? CacheCade Pro 2.0 ??: MegaRAID??:?:?:?:?: HDD ??:?:?,?:?:?:?:?:?: 13?,?:?:?: 82%.

CacheCade Pro 2.0??:?:RAID Key?PCB??:?:?:?:?:LSISAS 2208/2108 RoC??:?:?. CacheCade Pro 2.0?CacheCade 1.x?  
??:?:, ??:1.x??:?:?:?:?:I/O??:, ??:?:?:?:Write-caching??:?:?:?:(Hot data)??:?:?:SSD Cache?.

CacheCade Pro 2.0?LSI??:?:?:?:SSD Caching??:, ??:SSDC, ??:?:?:?:?:?:?:?:?:?:I/O??:, ??:?:?:?:?:?:?:?:50??:. LSI SSDC  
??:?:?:?:?:?:?:?:PCB??:?:?:?:, ??:?:?:?:?:, ??:?:?:?:?:(unlock).

?:?:?:?:?:?:?:?:RAID Premium Feature Key(??:PFK)?PCB??:?:?:?:?:pin header?, ??:RAID f/w??:BIOS initializing?,  
?:?:?:?:LSI SSDC??. LSI SSDC?LSI??:?:?:?:?:(Advanced Software Options)??:, ??:?:?:?:?::

?:?:?:?:?:?:, RAID 6?RAID 5??:?:?:, ??:?:?:?:?:?:?:OEM solution??:, ??:LSI??:?:, ??:?:?:?:?:?. ??:PFK??:?:?:pin  
header??:, ??:RAID f/w??:BIOS??:, ??:?:?:?:?:?. ??:?:?:?:?:?:?:?:?:?:?:?:?:?:?::

- 1. ?WebBIOS?Advanced Software Options??:?:.
- 2. ??:MegaRAID Storage Manager?Dashboard??:.
- 3. ??:MegaCLI??:?:?:?:?:.
- 4. ??:tty Log??:?:?:?:, ??:?:?:.

?:?:?:LSI MSM??:?:?:?:?:Dashboard View??:?:?:?:, ??:?:?:?::

?:?:?:SSDC with Write-caching??:(CacheCade Pro 2.0)??:?:?:?:?:. ??:FastPath??:(SSD??:)??:?:SSDC??:?:?:?:. ??:?:?:?  
Manage MegaRAID Advanced Software Options??:?:?:?:?:?:?:?:?:?:?:?:?:?:?:?:.

?:?:?:TTY Log(Firmware Log)??:?:?:?:?:?:?:, MFC settings??:RAID f/w??:?:?:?:?:?:?::

?:?:?:?:, enableSSC?enableSSCWB, ??:?:?:?:?:?:?:?::

- 1. SSC: Solid State Caching
- 2. SSCWB: Solid State Caching with Write Back

?:?:LSI MSM??:, ??:Controller Properties View??:?:?:SSDC??:?:?:?:, ??:?:?:?:?:Write-caching??::

?:?:?:?:CacheCade Pro 2.0??:, Write Cache Capable??:?:flag??:?:?:Yes, ??:?:?:?:?:(Write-back)??. ??:, ??:?:?:VD??:, ??:VD  
Properties View??:?:?:?:VD??:SSDC??:.

?CacheCade Type??:Read and Write?, ??:?:?:CacheCade Pro 2.0??. ??:?:?:?:SSDC??:, LSI??:?:?::

LSI?????, ?????! ?????????????? ??, ?????, ?????I/O?. ???CacheCade Pro 2.0?????, Write-caching?????  
(unlock)?????. ?????SSDC VD????Write-back:

CacheCade Pro 2.0?????(Hot data)????SSD?, ??????????????. ??????????

????????????SSD?Caching?????, ???OLTP????????(Database)???, ??LSI SSDC?????????????. ?????  
?????????. ???SSDC????RAID f/w??RAID Controller????HDD????, ???SSDC??6Gb/s RoC??SSDC??.

??LSI?SSDC??, ?????????CacheCade Pro 2.0????RAID VD?I/O?, ???SSD Caching????, ?????????, ?  
????MySQL??????:

????????????, ?????????Hot-zone; ??, ?????????????Cold-zone. SSDC????????IP Core, ???  
?????. ?????Hot-zone????(Hot-data), ??SSDC?????. ?????SSDC????:

?LSI SSDC????, ???SSDC????IP Core??, ?LSI????Adaptec, ?????maxCaching. ?????, ?????Hot-zone?  
???. ?????v2.0?, ???Write-caching???Hot-data?SSD?.

Intel?IP Core????Smart Response Technology(SRT)????SSDC?. SRT????Hot-zone????, ?????????  
I/O????, ?????.

????Intel SRT????, ?????Multiple SSD Caching, ??????. ?????Desktop?. ?????, ?????  
RST????:

????, Intel SRT????SSD(Single SSD)?Caching, ?????. ?????, ?????.  
???, LSI????SSDC??, CacheCade v1.x. ?????Read-caching?. ?????:

v1.x??SSDC????Hot-data?????. ?????v2.0??, ???Write-caching????I/O????:

???Write-caching????, ?????Hot-data????SSDC?, ??SSDC????, ?????VD????, ?????RAID f/  
w?????????. ??SSD?NAND FLASH?????. LSI????MegaRAID v3.6????SSD Guard????SSD????, ???  
????SSDC????:

??RAID f/w??PFA??, ???SSD????, ?????SSD?????. SSD Guard????SSD??GHSP, ?????SSD(Configured  
SSD), ?????, RAID f/w??RAID Controller??Copyback????SSD????GHSP, ?????SSD?(????  
SSDC). ??LSI MSM????Controller Properties View??SSD Guard????:

????????SSDC????? I/O????, ??????. LSI????????????????:

???, ?????I/O??, ?????, ?????SSDC?. ?????????, ???SSDC????????, ??????. ??,  
????????, SSDC????????:

???SSDC????I/O?????????. LSI??CacheCade????SSDC VD, ?SSDC VD????RAID?, ???  
Multiple SSDs??RAID????I/O?, ?????? ?LSI????RAID 0(Data Striping)?RAID 1(Mirror)????SSDC VD. ??  
SSDC VD????, ???RAID VD??SSDC VD??, ?RAID f/w??SSDC VD??RAID VD?. ?????, ??LSI MSM????  
SSDC VD:

????, ???SSDC VD????RAID VD, ?????:

????, Associated Virtual Drive(s)????RAID VD, ?????SSDC VD????, ?????RAID Level, Size??Write

Policy?...

- 1. LSI CacheCade Pro 2.0 SSDC???, ???????:
- 2. LSI MegaRAID SAS 9260-8i(LSISAS2108 RoC) HBA??LSI CacheCade Pro 2.0????
- 3. Crucial M4 SATA 3.0 SSD 64GB, ??8????SSDC.
- 4. RAID VD, ??WD1000FYYG SAS 2.0 1TB HDD, ??4??RAID 5.
- 5. ??????????: Baseline(RA&WB&DIO), SSDC01(NRA&WB&DIO), SSDC02(NRA&WT&DIO)

CrystalDiskMark??, ?Baseline????, ?????????RAID 5 I/O??, ?????I/O????:

SSDC01 Profile, ?SSDC??Baseline????, ?????, ?????I/O?????:

?????????, ?????I/O(QD:32)?????, ??????. ??, ????SSDC02 Profile????, ?????WB??WT??:

?????, ??WT????, ?????4K????????I/O????????, ??????. ???WT????????I/O????, ?????WB??, ?  
????I/O??, ?????????RAID VD??(Baseline)????.  
????CrystalDiskMark????RAID VD?I/O??, ??????????. ?????????, ??????, ??????. ?????????, ??????:

????????, SSDC????I/O??, ??????????. ???RAID??, ?????????, ???SSDC?????:

SSDC????RAID????I/O??, ?????I/O????. ?SSDC??Write-caching????????, SSDC?????.  
????, ?LSI?SSD Guard. ???SSDC???, ?????????? ?????????I/O????.

????SSDC??, ?????????, ?????????dirty cache?, ?????????BBU?????????. ???Super  
Capacitor??NAND FLASH????(Data Protection)?. ?LSI?CacheVault??Adaptec?ZMCP solution.  
????-Super Capacitor, ??????. RAID HBA????FPGA????Hot-date Buffer??dirty-cache  
????(Flash-based Cache Module)??NAND FLASH?. ?????Super Capacitor????.

????(Advanced Software Options)??, ???Hardware Key?PCB????, LSI????Advanced Software  
Licensing????, ?Hardware Key????Key????.

?????: <http://www.lsi.com/products/storagesw/Pages/LSIAdvancedSoftwareLicensing.aspx>

LSI????CacheCade Pro 2.0 SSDC??, ??????????:

**Notes:** LSI????LSISAS2208 MR f/w????CacheCade Pro 2.0????.