

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