

# SSD CACHE

SSD cache is a simple and effective tool to improve data storage performance. System speed increases due to fast drives used as a buffer for frequently used data.

SSD cache in RAIDIX 4.X is available in two modes: on read, on read and write.



## IMPLEMENTATION AREA

The main and only purpose of SSD cache is increasing total performance of data storage system.

Priority task for SSD cache in RAIDIX 4.X software is optimization of random workloads. Sequential workloads, coming to a system, will be addressed right away to disk space, passing by SSD cache.

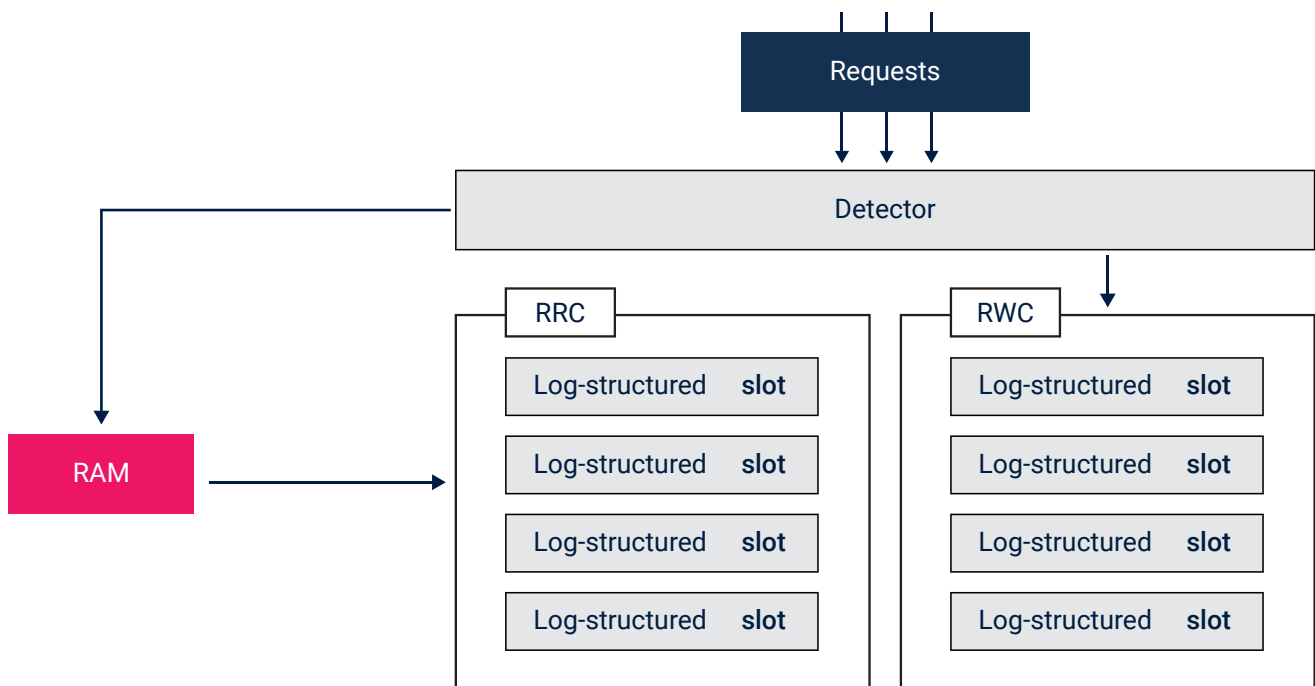


## HOW IT WORKS

RAIDIX 4.X has parallel SSD cache, at which all incoming requests are separated into two types: RRC (Random Read Cache) and RWC (Random Write Cache).

Requests with frequency more than 2 go to RRC – this approach is called “ghost” cache. After qualification RRC requests are addressed to RAM and then to SSD cache. All random write requests with size less than 32KB go to RWC.

The key feature of SSD cache in RAIDIX 4.X software is Log-structured writing into independent slots 1GB each. This approach is appropriate for random read and random write requests.



RRC replacement process is based on unique algorithm, when the system selects the coldest Log-structured slot and then places new requests blocks there. In RWC this process goes sequentially: system selects oldest Log-structured slot and then puts data there according its LBA (Logical Block Address).



## FEATURES

SSD cache uses LUN on flash-based array (SAS, SATA, NVMe).

SSD cache in RAIDIX 4.X has the following features:

- Log-structured writing in RWC/RRC.
- Unique algorithm for RRC/RWC replacement policy.
- RWC/RRC sizing according workload types (50/50 by default).
- Synchronous saving of headline metadata.
- Persistency and Consistency.