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(57) Abstract :

An intelligent cache management system for high-traffic servers comprises an incoming request interface (101), a request interceptor (102), an object profiler (103), a policy engine (104), a scoring controller (105), a tier allocator (106), primary and secondary cache stores (107, 108), and a coherency manager (109). The system computes composite object value scores from access behavior, retrieval penalty, freshness state, and memory footprint to control admission, promotion, demotion, and eviction. Request coalescing and targeted revalidation reduce backend overload and maintain efficient cache residency during variable demand conditions.

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