

内容中心网络中基于缓存索引的缓存路由机制

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摘 要: 从内容中心网络内置缓存可用性出发, 提出了一种基于缓存索引的缓存路由机制. 对传统 CCN 路由器转发引擎模块进行改进, 在保留 CS, PIT 以及 FIB 的同时, 添加缓存索引表模块, 详细描述了缓存索引表表项的创建以及管理流程, 并结合缓存索引表提出一种基于缓存索引的缓存路由机制. 结合该路由机制转发用户产生的兴趣包, 可以有效减少服务器的命中率以及转发兴趣包的跳数, 仿真结果验证了其有效性.

关键词: 网络内置缓存; 内容中心网络; 缓存路由; 缓存索引表

Cache-Routing Scheme Based on Cache Index in

Content-Centric Networking

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Abstract: Taking availability of in-networking cache in content-centric networking into consideration, a cache-routing scheme based on cache index(CRCI) is proposed in this paper. Forwarding engine module of router in traditional CCN is modified in this paper. Remaining CS, PIT and FIB, a cache index table (CIT) is added to a router. The way to create a CIT entry and manage the entry in CIT is expatiated, as well as, coordinated with CIT, a cache-routing scheme based on cache index is proposed. The scheme proposed can forward interest packet generated by user efficiently, decrease sever hit ratio and hops to forward interest packet. Finally, the simulation prove the feasibility of the scheme by comparing with existing schemes.

Key words: in-network caching; content-centric networking(CCN); cache-routing; cache index table

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