THE RESEARCH OF A NEW STREAMING MEDIA NETWORK ARCHITECTURE BASED ON THE FUSION OF P2P AND CDN

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ABSTRACT—A new three-layered streaming media network architecture based on the fusion of P2P and CDN which can be used for mobile device users is proposed in this paper. It uses P2P network as the backbone, selects nodes of high-performance, high-bandwidth, and stable online time as CDN edge servers, and provides mobile device users with streaming media services under the schedule of the load-balancing servers. Since P2P has the inherent drawback of flow disorder, an optimized idea of P4P has been introduced into P2P network in this architecture to make the flow ordered. Theoretical analysis and experimental results show that this architecture has optimized P2P network with higher transmission efficiency, lower bandwidth utilization of the backbone network and lower cost and fewer resources to provide streaming media services as higher network scalability and quality as possible. A streaming media system for video-on-demand which uses the method proposed in the paper has good performance when a large number of mobile users access concurrently.

Key Words: P2P, CDN, Multicast, streaming media