A Feedback Control Model based Hierarchical VoD System

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***Abstract*—P2P video-on-demand(VoD) system shows its advantage in network scaling. In VoD systems, how to organize the peers and how to schedule data among peers are popular research topics. However, the relationship between these two parts and whether the service quality affects the overlay structure is not described exactly. In this paper, we consider the overlay organization and data scheduling process as two different layers, and design a hierarchical VoD system. In addition, a novel feedback control model is proposed to link these two layers, in which the history service information of nodes can be used efficiently. Moreover, based on this model, the peers are prone to connect the peers who can provide them satisfying service. Simulation proofs that our feedback model can help the overlay organize the peers as a more efficient structure than before, in which the data is easy to be shared with each other. Compared with the system without the feedback information, our system shows that the server stress can be significantly reduced, and the starting delay is also improved obviously.**

***Keyword*—P2P, video-on-demand, feedback, control model, peer selection**

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