Performance Analysis of the First-Order Characteristics of Polling System Based on Parallel Limited (K=1) Services Mode

Authors : Liu Yi, Bao Liyong

Abstract : Aiming at the problem of low efficiency of pipelined scheduling in periodic query-qualified service, this paper proposes a system service resource scheduling strategy with parallel optimized qualified service polling control. The paper constructs the polling queuing system and its mathematical model; firstly, the first-order and second-order characteristic parameter equations are obtained by partial derivation of the probability mother function of the system state variables, and the complete mathematical, analytical expressions of each system parameter are deduced after the joint solution. The simulation experimental results are consistent with the theoretical calculated values. The system performance analysis shows that the average captain and average period of the system have been greatly improved, which can better adapt to the service demand of delay-sensitive data in the dense data environment.