Distributed Packet Forwarding and Caching Based on Stochastic Network Utility Maximization
ABSTRACT

• In this paper, we present a distributed framework for joint request/data forwarding and dynamic cache placement in cache-enabled networks.

• We establish a dual queue system for both requests and data, and define a dynamic mapping between the two queues with the help of dummy data.

• As the local objective function associated with Lyapunov optimization is time-varying due to the stochastic evolution of request/data queues, we develop a low-complexity distributed forwarding and caching algorithm via stochastic network utility maximization.
EXISTING SYSTEM

- Cache-enabled network architecture has great potential for enhancing the efficiency of content distribution as well as reducing the network congestion.
- This, in turn, has called for joint optimization of traffic engineering and caching strategies while considering both network congestion and content demands.
- In this paper, we present a distributed framework for joint request/data forwarding and dynamic cache placement in cache-enabled networks.
PROPOSED SYSTEM

• First, to extract the network state information from local queue information, we introduce a dual queue system with dynamic mapping between the request and data queues.

• Second, to derive an efficient forwarding and caching algorithm, we iteratively update the request/data forwarding vector and the cache placement vector using stochastic network utility maximization.

• We prove that the proposed algorithm achieves the queue stability and derive its tracking performance in a stochastic environment.
HARDWARE REQUIREMENTS

• Processor - Intel core i3
• RAM - 2B
• Hard Disk - 20 GB
SOFTWARE REQUIREMENTS

• Operating System : LINUX
• Tool : Network Simulator-2
• Front End : OTCL (Object Oriented Tool Command Language)
REFERENCE


