



KOÇ UNIVERSITY

the perfect view



<http://www.ku.edu.tr>



PROJECT IDEAS 1: Recent Trends in Networking - Software-Defined Networking (SDN)

Prof.Dr. Murat Tekalp (<http://home.ku.edu.tr/~mtekalp/index.htm>)
(mtekalp@ku.edu.tr)

- OpenFlow is the first successful implementation of SDN developed by Stanford Univ.
- Started to be deployed throughout the world.
- Video with end-to-end quality of service (QoS)

•**Decoupling control and forwarding layers of routing.**

Open Problems - Distributed architectures for OpenFlow-based end-to-end QoS by dynamically optimizing queue management and/or traffic re-routing. - Distributed optimization framework for above architectures - Controller-to-controller interface and controller software to implement the proposed framework with minimum messaging - P2P architectures over OpenFlow networks - Deployment of an actual OpenFlow test network





PROJECT IDEAS 1: Recent Trends in Networking - Software-Defined Networking (SDN)

Existing QoS Mechanisms

- Several QoS mechanisms have been proposed
 - *IntServ*
 - *Diffserv*
 - *Multiprotocol Label Switching (MPLS)*
- **Problem:** They are built on current Internet's distributed (hop-by-hop) architecture which cannot have end-to-end network resource information
- **We propose two solutions for enabling QoS:**
 - 1) **priority queuing and**
 - 2) **dynamic QoS routing (shall be triggered when the QoS requirements are not met by queue management)**
- OpenFlow's role : - providing complete network resource visibility; - instant management over network devices seamlessly adapting end-to-end network behavior; - differentiate packet types on a per-flow basis



Thank you!
<http://tto.ku.edu.tr/>
tto@ku.edu.tr

