Implementation of an OpenFlow Network Virtualization for Multi-Controller Environment

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Abstract— To share Future Internet OpenFlow testbed with multi-users using multi-controllers without each other’s intervention, network virtualization based on FlowVisor should be implemented. For network resource virtualization, bandwidth isolation at allocated switches on a given slice and admission control are required. In this paper, we implemented admission control and minimum bandwidth guaranteeing scheme at the FlowVisor and tested the transmission performance of QoS-video streams on this testbed. Using our enhanced FlowVisor, we show that each user’s bandwidth requirement can be guaranteed irrespective of other users’ flow traffic.

Keywords— OpenFlow, Future Internet, Network Virtualization