

# GENICinema: Persistent Live Video Streaming Service

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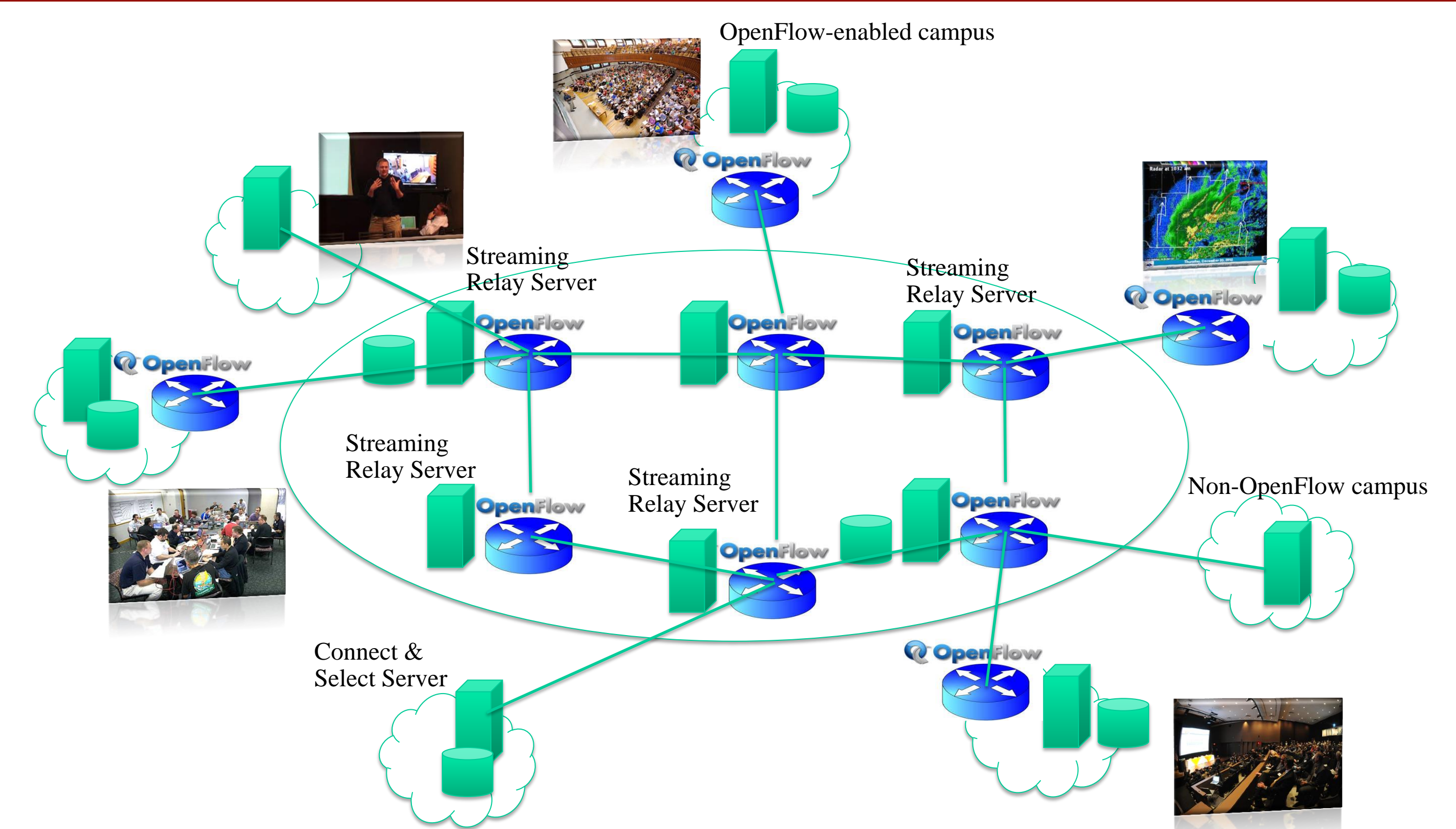
## Goal and Motivation

- **Goal:** Seamless support for live video streaming for contemporaneous viewing by a large number of users
- **Why?** Imagine a world where
  - University lectures and research seminars are routinely transmitted for students all over the world
  - Individuals or small organizations transmit live video streams, (e.g., kids soccer games, high school football games, weddings, etc.) to a small but geographically distributed audience
  - Families in different locations are “always connected” through live video streams (e.g., family dinner with grandparents in a retirement home over live video).

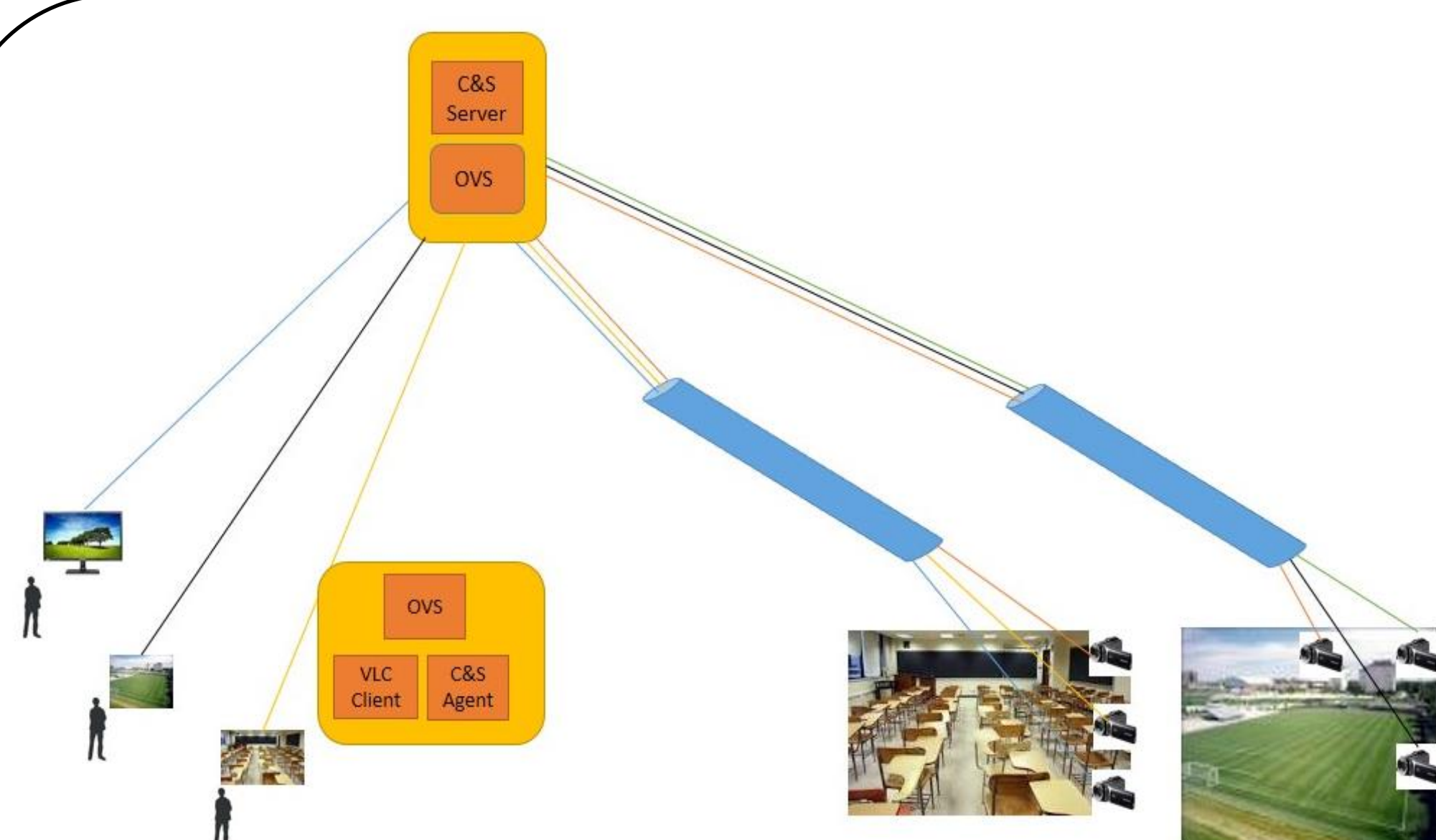
## Solution Approach

### Four major functions

- Connect and Select (C&S) servers act as public interface that interacts with users of the service
- C&S servers authenticate, establish, and terminate connections from live video sources
- Streaming Relay (SR) servers accept packets from live video source and multicast to clients
- C&S reconfigure network topology and packet forwarding for efficient management of network resources

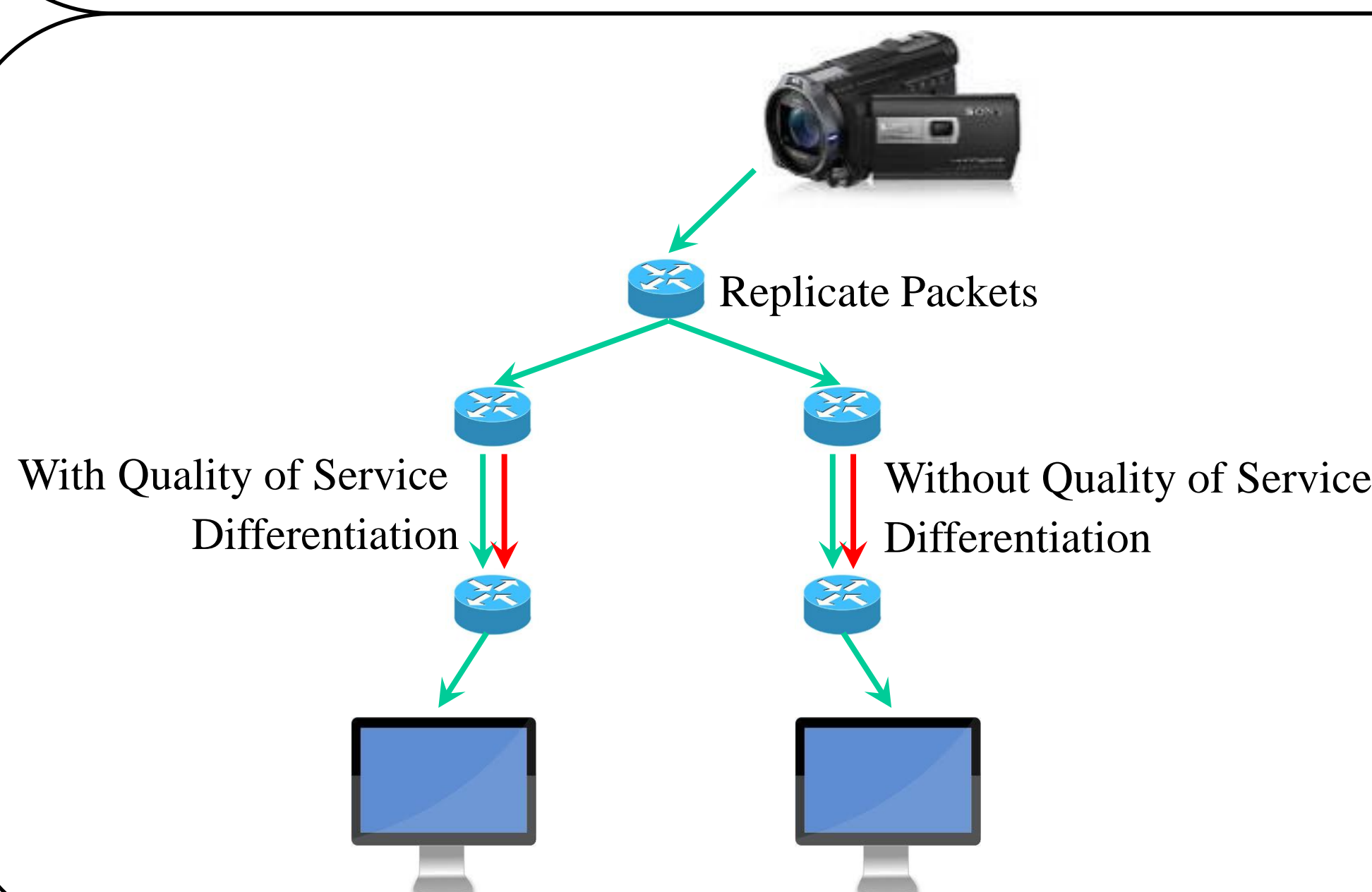


## Project Demonstration



- Video sources send live streams to C&S server
  - Video source is composed of multiple views/cameras
- VLC viewer and C&S agent at each interact with C&S server to seamlessly select and switch views

- C&S server is implemented as a floodlight module
- C&S server and agent configure OpenFlow switches to provide the needed network functionality



- Video streams from the C&S server needs to be routed through several OF switches to send the stream to the viewer.
- Due to various other traffic along the path, the video stream needs to be guaranteed

- Deploy two identical paths with similar “cross traffic”, one with Quality of Service and one without, showing the need to provide “guarantee” to the video flows.

## Acknowledgements



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