Motivation

- Wireless hop often critical for performance:
  - Non-stationary environment (Non-negligible delay, available bandwidth varies)
  - No user-defined service differentiation
- Software-Defined Wireless Networking (SDWN)
  - Introduces flexible control over many WiFi knobs
  - Rarely managed in unison with network functions
  - Stateful firewalls, service differentiation, or intrusion detection
- OpenSDWN enables, e.g.:
  - User-defined service differentiation
  - Mobility and flexible function allocation

OpenSDWN

- Open Software-Defined Wireless Networking architecture
- Targets WiFi Deployments
- Combines the benefits of Wireless, SDN, and NFV:
  - Light Virtual Access Point Abstraction (Odin)
  - WiFi Data-Path Transmission Control (WDTX)
  - Virtualized Network Functions/Middlebox management (vMB)
  - SDN Interface for Ethernet (OpenFlow)
  - External API for Operators/Users (Participatory Interface)

Demo: Enabling Fine Grained Traffic Differentiation via a Participatory Interface

OpenSDWN Building Blocks

Example Operations

Literature


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