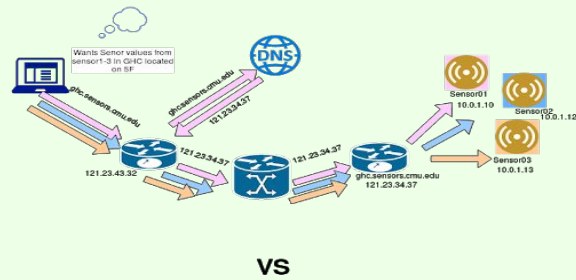


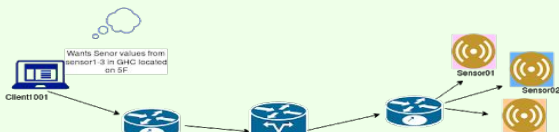
## Motivation

- In today's Internet, the users are interested in mainly the content instead of sensor nodes.
- Bridge the gap between the content and how it is addressed.
- Build a scalable and intuitive networking scheme for IoT devices

## Approach



vs



- Using content based hierarchical addressing

## Design/Implementation

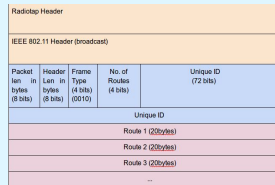
- Addressing
  - Nodes - unique ids, #(mac, type of data)
  - Nodes advertise type, attributes
  - Switches - hierarchical names- routing
  - Nodes can move freely
- Routing
  - Switches responsible for routing, aggregation; sensors need not be intelligent.
  - Routing - Dijkstra's algorithm to find the shortest path to known addresses
  - Multicast for
  - Filter type, attribute at the end switch
- Aggregation possible
  - /CMU/GHC/5F - all nodes on 5F will respond
- Implementation - Click modular router

## System Overview

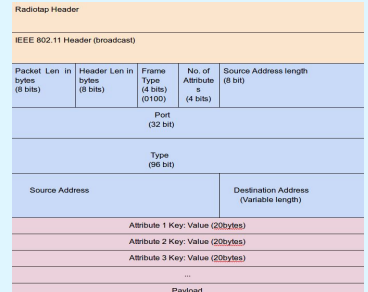
- Advertisement
  - Sensors/Clients advertise their unique id, type and attributes
  - Switches maintain the node information through periodic heartbeats; use for filtering while servicing requests
- Management
  - Switches exchange management frames with known routes - build routing table
- Data Request and Response
  - Data request and response frames forwarded based on destination address
  - Filtering of types and attributes at the destination switch



Advertisement Frame

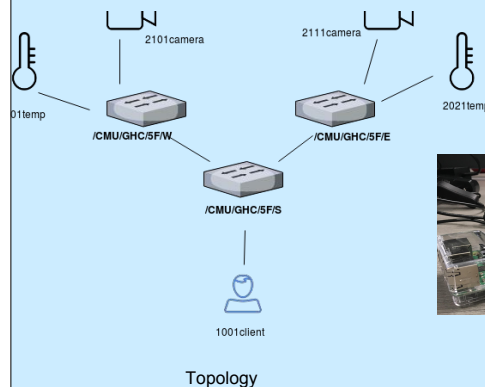


Management Frame



Data Req Frame

## Evaluation



Topology



- Multicast vs flooding while requesting data from more than one nodes.