



FLAME

FACILITY FOR LARGE-SCALE ADAPTIVE MEDIA EXPERIMENTATION

Creating a FLAME Replication

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Webinar - FLAME

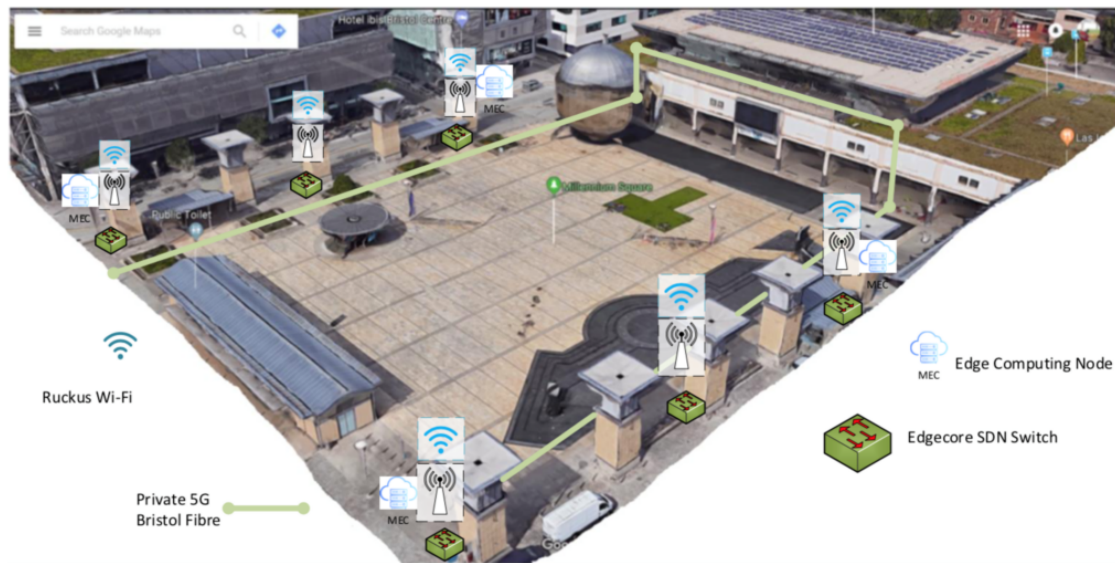
12 Dec, 2018

FLAME High-level Replication Requirements

The deployment of FLAME requires a set of features to be present

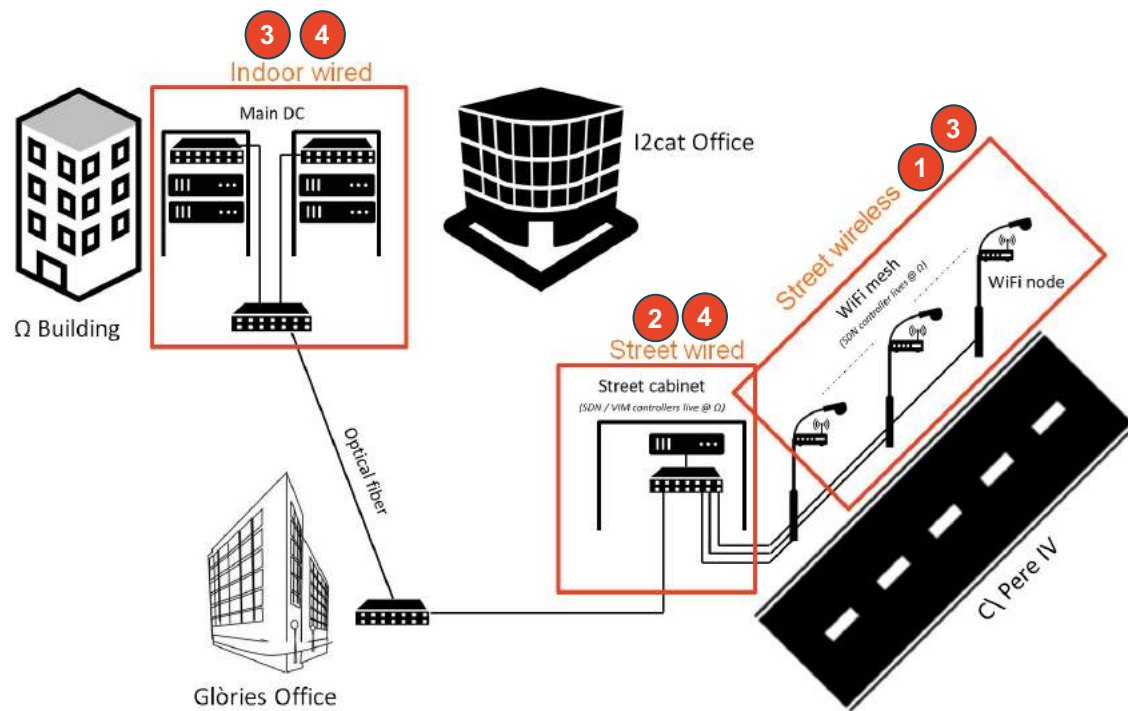
- Two tiers of OpenStack-managed compute resources (Ocata upwards), one for the main DC, one for the edge deployment
- The two tiers need to be interconnected via SDN-based switching with support for OpenFlow1.3 upwards
- Wireless connectivity such as WLAN to enable users to connect to the services hosted by FLAME

Deployment in Bristol (Edge)



- Each Wi-Fi AP has dedicated compute resources
- Localized content and features can be provided
- A wide open space that allows for all sorts of experiments

Deployment Schematic



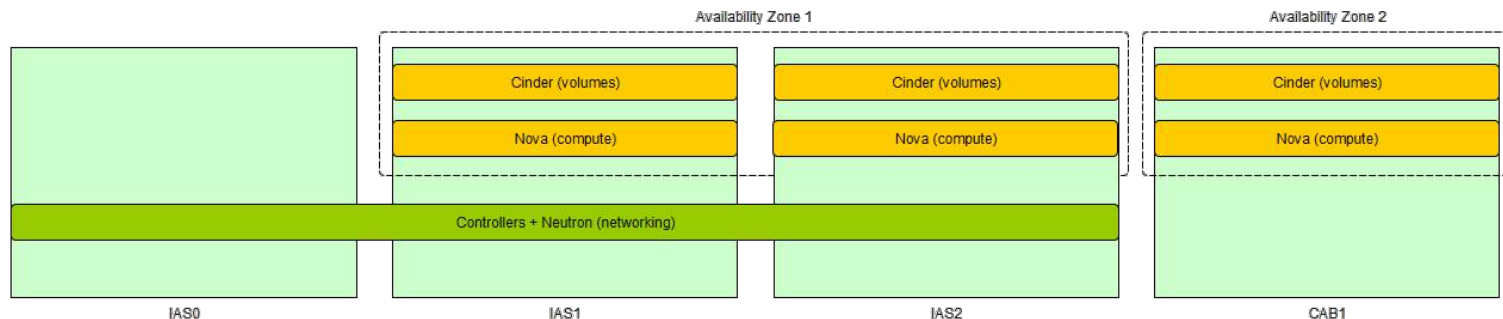
- 1 High speed radio access with mobility support
- 2 Edge computing capabilities
- 3 SDN/ICN technology to achieve multicast gains
- 4 Integration with FLAME platform for automatic service provisioning through NFV

Deployment in Barcelona



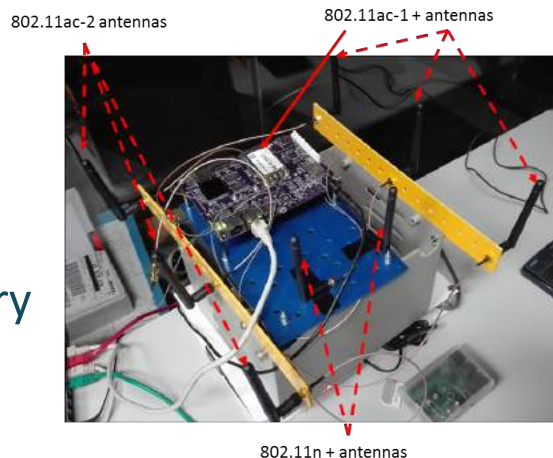
Example for Compute Specs (Barcelona)

1. 4 x 3GHz CPU, 32 GB RAM, 240 GB SSD. IAS0 server performs as controller
2. 6 x 2.4GHz CPU, 96 GB RAM, 1900 GB SSD. IAS1 server performs controller, compute and volume services
3. 6 x 3.5GHz CPU, 96 GB RAM, 1900 GB SSD. IAS2 server performs controller, compute and volume services
4. 12 x 2.1GHz CPU, 128 GB RAM, 1.8TB HDD. CAB1 server performs compute and volume services



Radio Access equipment (custom, as in Barcelona)

- **Board:** Gateworks Ventana 5410
 - Freescale™ i.MX6 1GHz Quad Core ARM® Cortex™ -A9
 - 1Gbytes DDR3-1066 SDRAM Memory
 - Two GbE Ethernet Ports
 - 6 miniPCIe ports
 - DOS: Ubuntu 12.04 (4.7 kernel)
- **Wireless NICs:**
 - 11ac: QCA9888 2x2 (Wave 2)
 - At least 3 (2 BH, 1 access)



Planned device integration in Barcelona

Wireless backhaul @ 5GHz

Wireless Access @ 5GHz

Regular Wi-Fi BCN node



Network planning (Barcelona)

Street (validation)

