LPWAN BoF

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Agenda bashing

- General introduction and architecture – A.Pelov, P. Thubert
- Baseline technologies: presentation and characterization [40mn]
  - 3GPP LPWA (NB-IoT / EC-GSM-IoT / Cat-M1) - Antti Ratilainen
  - IEEE LPWA (Wi-SUN, IEEE 802.15.4g) - Bob Heile
  - LoRa - Alper Yegin
  - SIGFOX - Juan Carlos Zuniga
- Applicability and gap analysis of Internet protocols [20mn]
  - LPWA Gap analysis - Ana Minaburo (draft-minaburo-lp-wan-gap-analysis)
  - Analysis of IPv6 over LPWA: design space and challenges - Carles Gomez (draft-gomez-lpwan-ipv6-analysis)
- Charter and work Items Discussions, led by chairs [< 1H]
  - Interaction model with LPWA technologies (just cross participations? ISGs?)
  - Review proposed work items, one by one

Low-Power Wide-Area Networks

25 mW transmission power

Low-Power Wide-Area Networks

20 years on simple battery

15-50 km rural outdoor

Low-Power Wide-Area Networks

2-3 km urban indoor

No scheduling

Star topology

ALOHA

Low-Power Wide-Area Networks

Device-initiated com

Huge densities

Asymmetric links

Low throughput

Collisions

Duty cycling Acknowledgements

License free

Data-over-NAS In-band

Guard-bands

In licensed spectrum

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Huge densities

Asymmetric links

Low throughput

x 1%

100 bps
(50 kbps max)

12 byte payload
(typically 50 bytes)

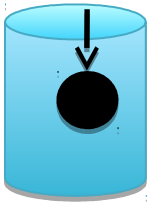
140 messages
uplink

4 messages
downlink

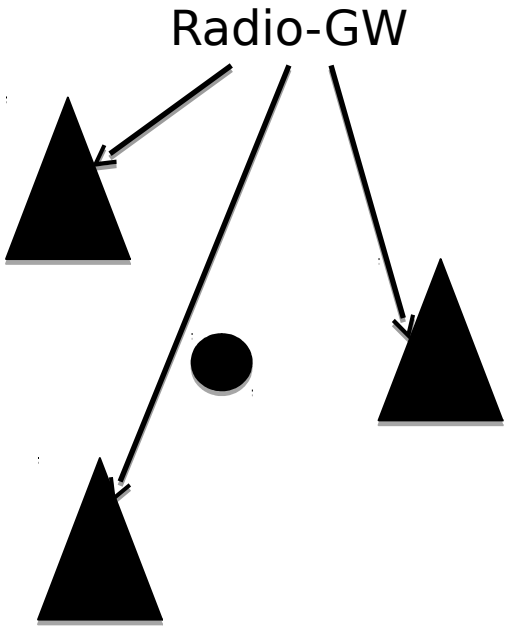
Device Application

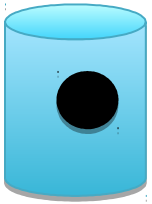
End-Device

Network Application

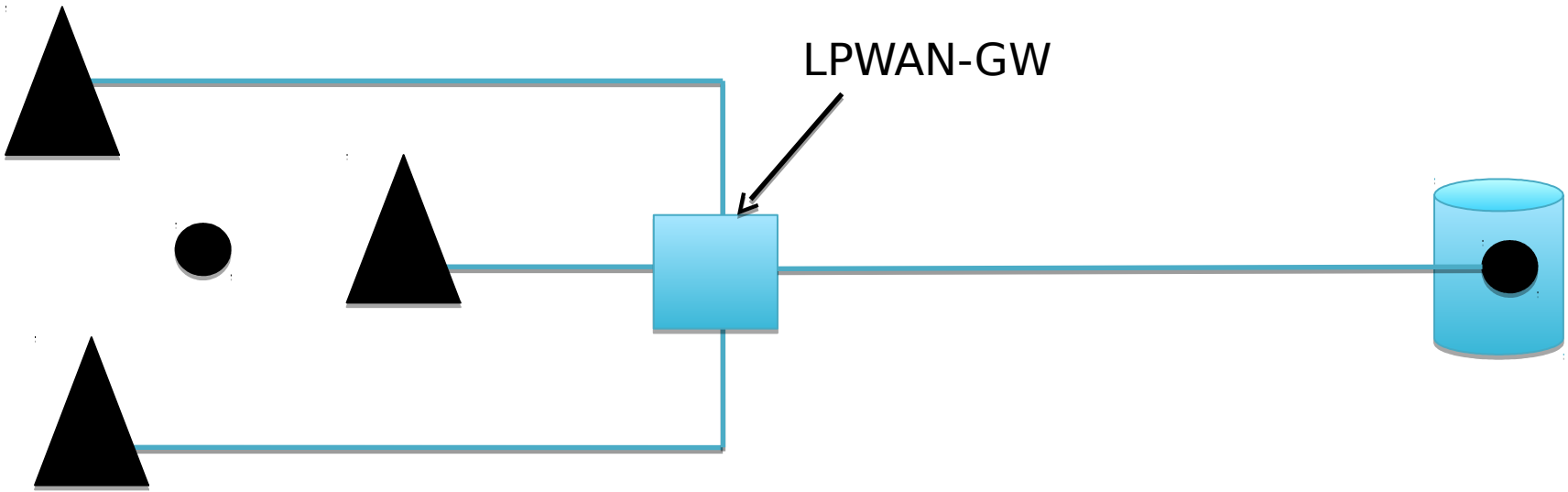


Application Server

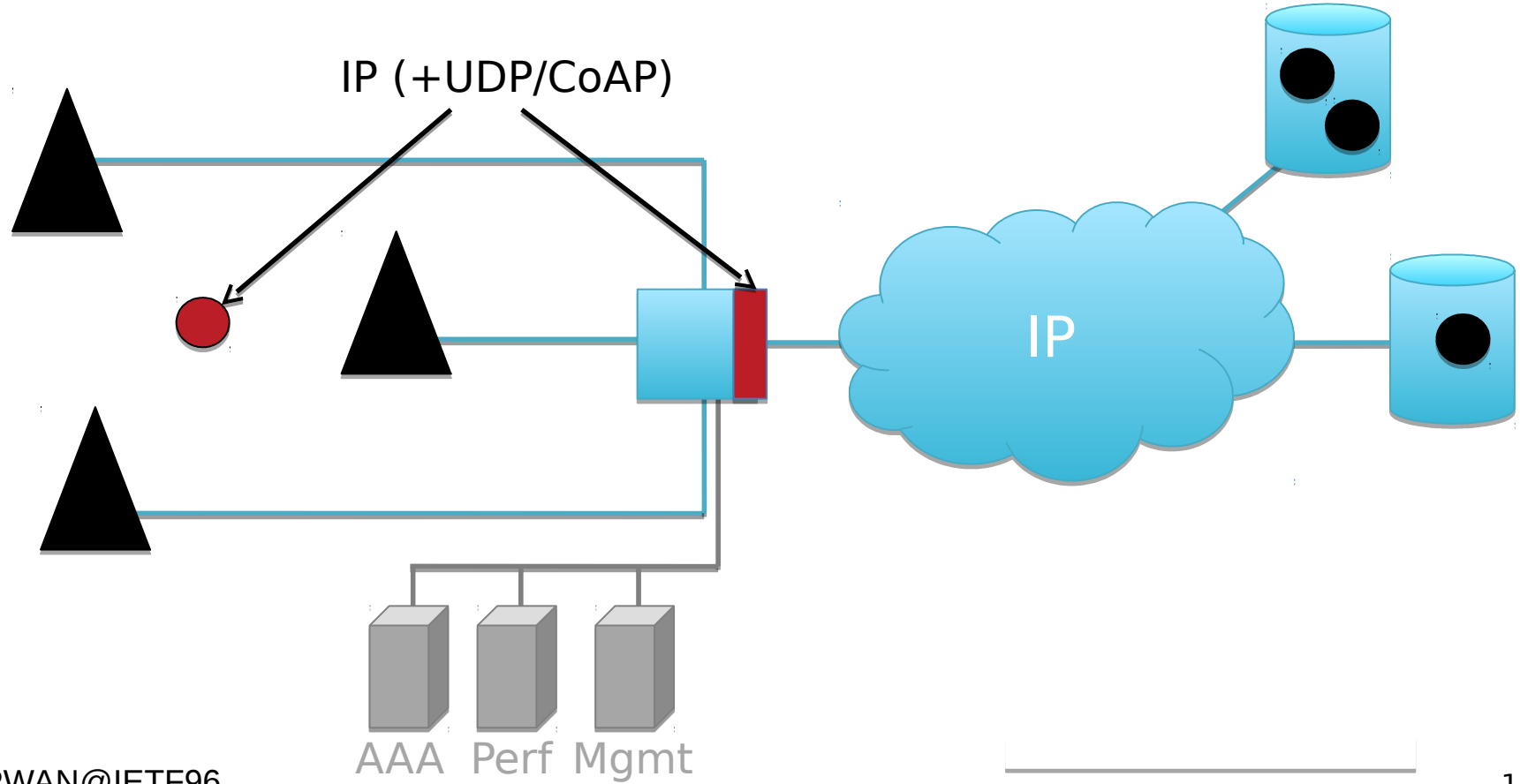

Radio-GW

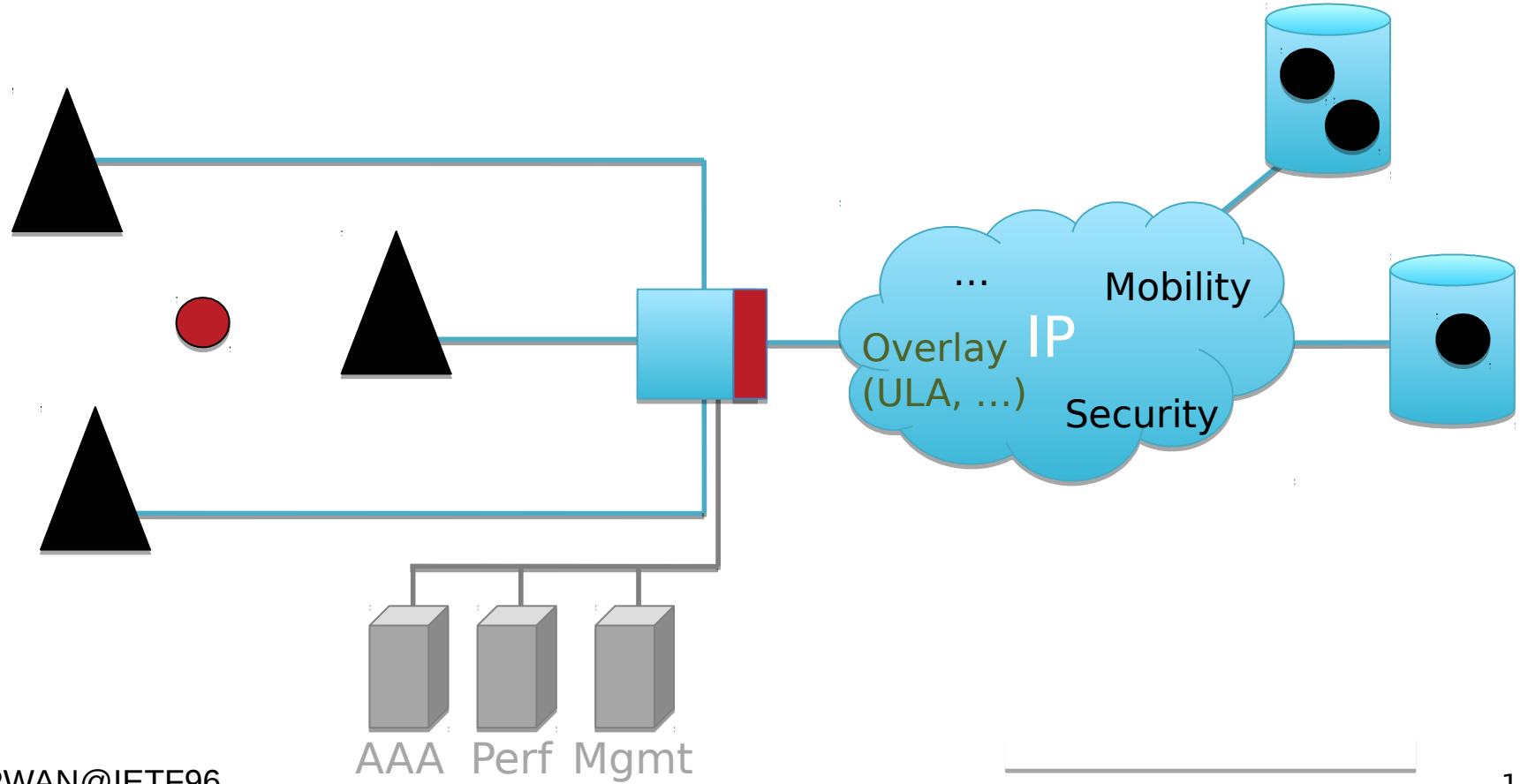


This is where we are today



IETF

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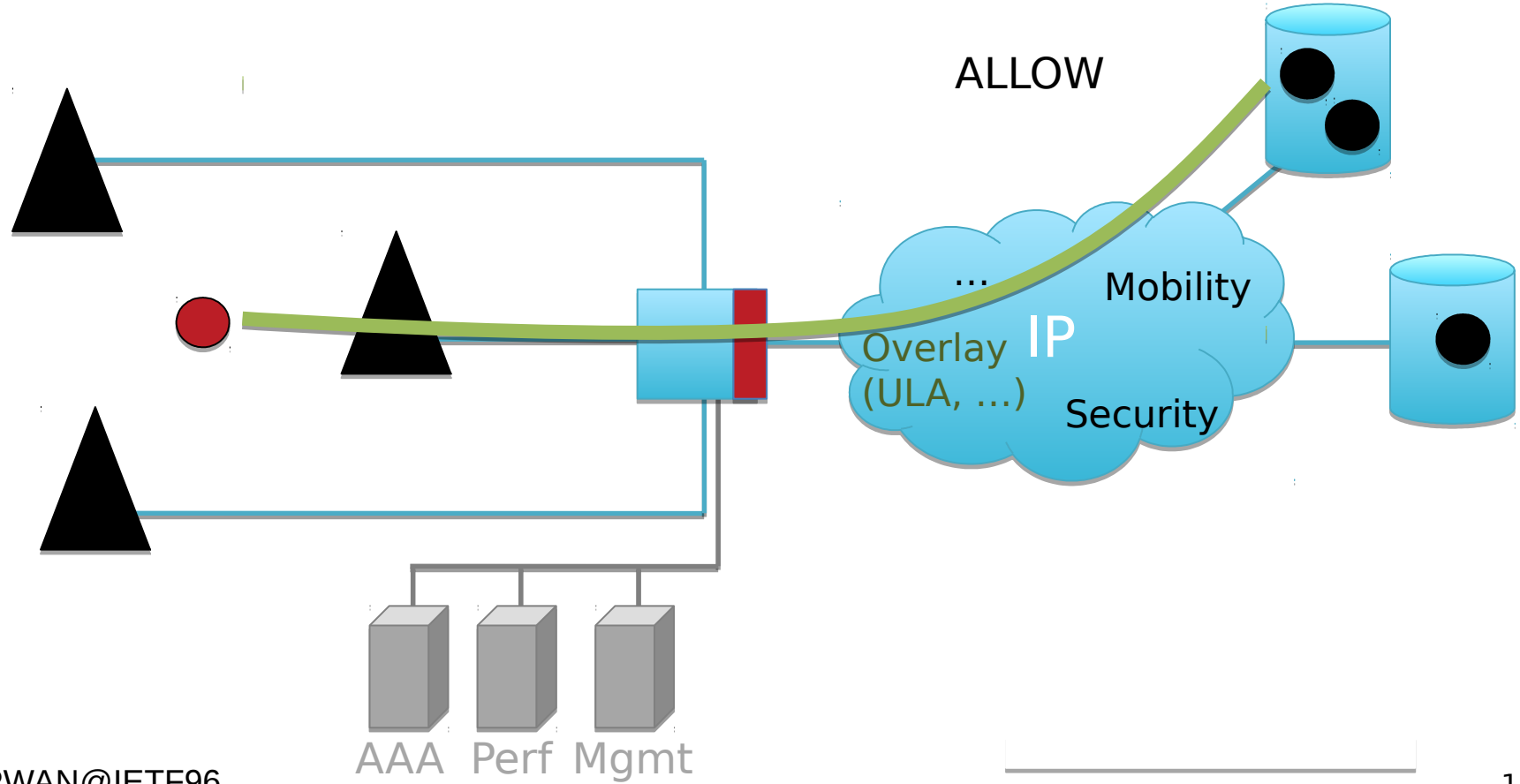
Mobility
IP
Overlay
(ULA, ...)
Security
AAA
Perf
Mgmt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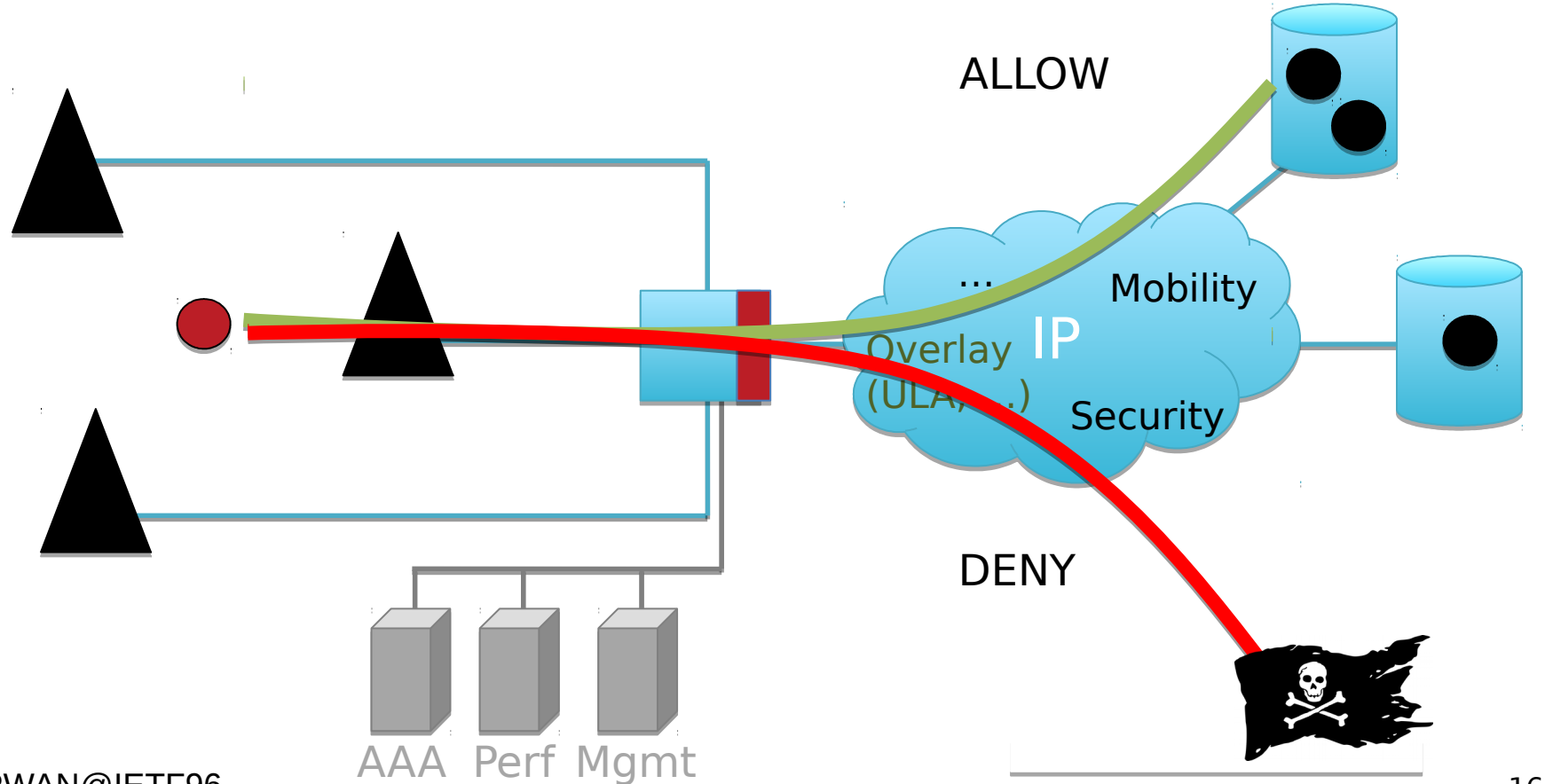
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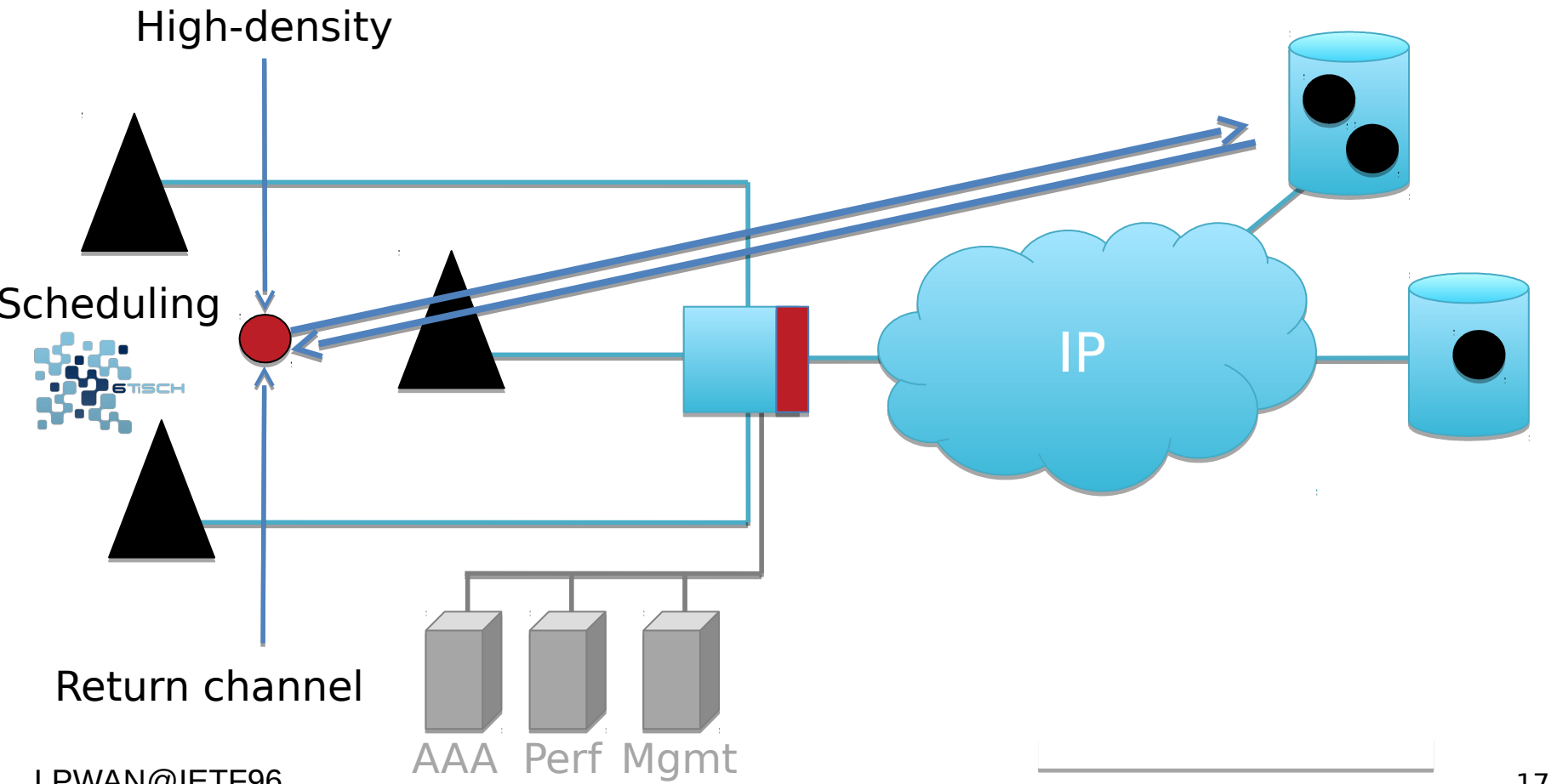
High-density
Scheduling
6TISCH
IP
Return channel
AAA
Perf
Mgmt