

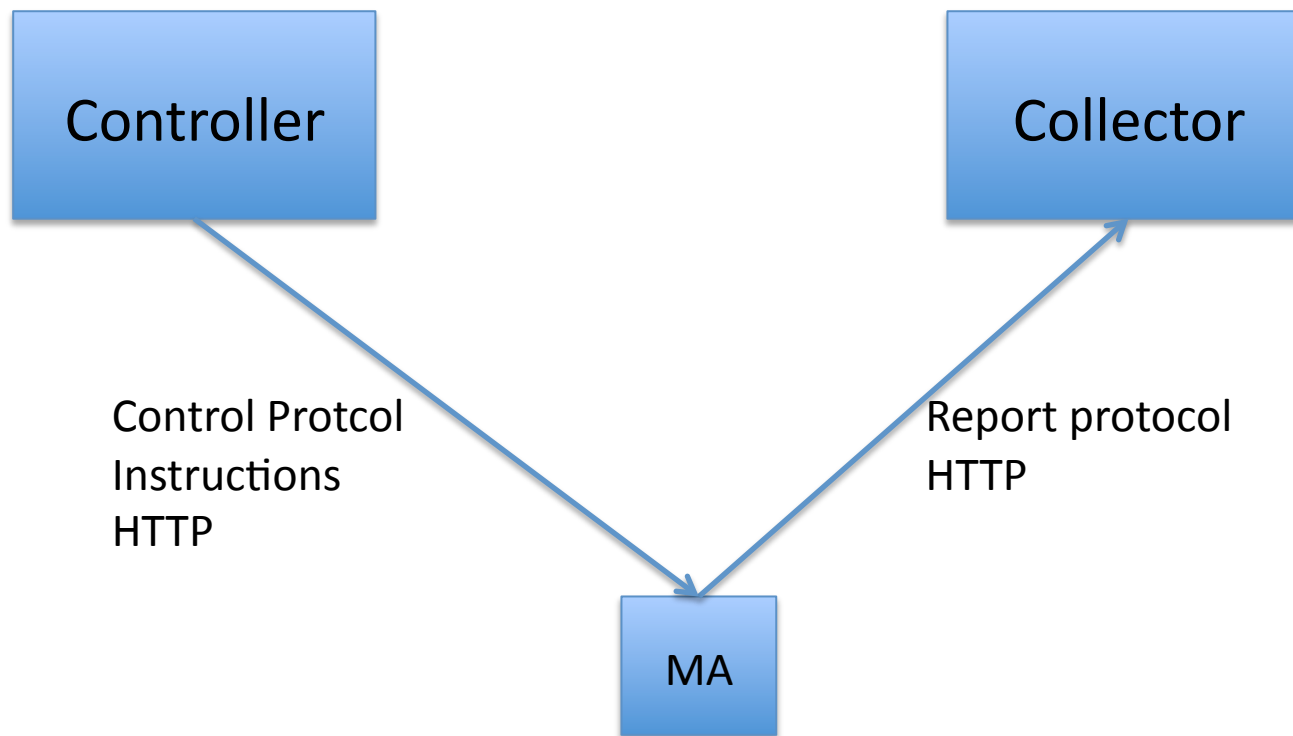
Large MeAsurement Platform Protocol based on HTTP

draft-bagnulo-lmap-http-02

M. Bagnulo, T. Burbridge, S. Crawford, J.
Schoenwaelder, V. Bajpai

LMAP WG – IETF90

Big Picture



HTTP used as Transport
Data Model expressed in JSON

Benefits

- HTTP exist already on all possible Imap devices (home routers, smart phones, pcs, ...)
- Easily gets through firewalls, NATs and other middleboxes
- Lots of tools and lots educated people in HTTP, likely to reduce development time

Some Naming considerations

- Controllers have FQDN and/or stable IP address, so we use them as IDs
- Collectors have FQDN and/or stable IP address so we use them as IDs
- MAs cannot be assumed to have none of those. MAs likely being NATs, so private and/or ephemeral IP address. We suggest to use a UUID as ID for the MAs
 - UUID version 4 random or pseudo randomly generated
- Metrics used in measurements: identified using IANA registry of proprietary registry

HTTP-based Control protocol

- Used for Retrieving Instructions from the Controller to the MA
- Using GET
 - GET /.well-known/imap/instructions/<ma-iid> HTTP/1.1
 - Host: FQDN or IP of the Controller
 - Accept: application/json (as per [RFC7159])
- Using POST
 - POST /.well-known/imap/instructions HTTP/1.1
 - Host: controller.example.com
 - Content-Type: application/imap-maid+json
 - Accept: application/imap-config+json
 - ```
{"ma-id" : "550e8400-e29b-11d4-a716-446655440000",}
```
- Probably the POST method is preferred as there is no need to push the ma-id into the URL, security and flexibility

# HTTP-based Report protocol

- Used to send Measurement Report information from the MA to the Collector
- Using PUT
- Using POST
- Similar considerations than for the Control protocol

# LMAP data model

- Straightforward adoption of the LMAP Information Model into JSON
  - The current IM contains a JSON example already

# Other considerations in the draft

- Handling communication failures
- Controller initiated communications
- Security (HTTPS)



# Implementation (ongoing)

- A one-2-one map of Information Model (IM) -00 objects to sqlite3 schemas.
  - The JSON data-model in -02 was auto-generated by querying this sqlite3 DB.
- Pre-configuration and configuration with a LMAP Controller to retrieve a UUID.
  - A MA can send some sort of deviceId (currently a MAC address) to a LMAP controller and retrieve a UUID. This request is idempotent. In case the MA makes multiple such requests it receives the same UUID.
- Reporting of measurement results to a LMAP Collector.
  - A MA can push measurement results to a LMAP collector, which gets saved in a sqlite3 database.
- TBD: Instruction, scheduling, suppression and capability