ALTO for Querying LMAP Results

draft-xie-alto-lmap-01

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LMAP: Large-Scale Measurement of Broadband Performance

Main components of a Measurement System:

- **Controller**
  - Instruct one or more MAs
  - Manage measurement schedule and report schedule

- **Measurement Agent**
  - Initiate the actual measurement tasks
  - Could be software-based agents on PCs, embedded agents in customer devices/ISP network devices or even dedicated probes
  - Magnitude: a few hundred thousand or even millions

- **Collector**
  - Accept reports from MAs with the measurement tasks results

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An LMAP-based Measurement System

- **Controller**
  - Instruction
    - `ietf-lmap-control.yang`

- **Measurement Agent**
  - Initiates actual measurement tasks
  - Observed traffic flow
  - `ietf-lmap-report.yang`

- **Collector**
  - Accepts reports from MAs

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End user

- Observed traffic flow

- Measurement traffic

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LMAP Scope

Non-LMAP Scope
How LMAP Could be Leveraged by ALTO

The report contains:

- date
  - Date and time when report was sent
- Agent-id or group-id
  - Measurement agent (group) id from which the report originates
- Measurement result list which contains:
  - Measurement task name
  - Task-specific parameters (allow extension)
  - Additional tags
  - Task start/end time
  - Result values...

An LMAP-based Measurement System with ALTO integrated
Open discussion

• Potential ALTO extension with LMAP
  • Cost calendar, e.g., to support a more comprehensive calendar type based on LMAP scheduled tasks
  • Entity property, e.g., to indicate measurement point location

• Should we expose LMAP info (e.g., schedule and task, MA location) to ALTO client?
• How to represent ALTO cost map (cost metrics between two PIDs) using LMAP results?
• How to coordinate LMAP measurement agent with ALTO PID?
Comments, Questions, Concerns?