

ALTO Incremental Updates

draft-schwan-alto-incr-updates-02

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Content and Objectives

- **Problem statement:** Huge size of ALTO cost maps (15 MB for 1000 PID)
- **Determine client map version options**
 - If-Modified-Since HTTP Header
 - If-None-Match HTTP Header with ETags
 - Version-based incremental updates as ALTO extension, i.e., query for map-vtag
- **Incremental update options**
 - (HTTP compression)
 - JSON patch
 - Pro: Standard mechanism for JSON documents
 - Con: Special care needed for network maps → Guidance needed even if vanilla mechanism applied
 - Con: Significantly larger overhead (see draft and IETF 85 presentation)
 - ALTO extension for incremental update service
 - Pro: Similar to filtered network/cost map message (using map-vtag), i. e., simple to implement
 - Pro: Factor 2 more efficient (see draft and IETF 84 presentation)
 - Con: Extensibility, possibly updates required if future ALTO extensions get standardized

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Incremental Update Examples

- **Request**

- New MIME Type: "application/alto-update-param+json"
- Input parameter: {"reference-tag": "1266506140"}

- **Response for JSON patch**

- JSON Patch (draft-ietf-appsawg-json-patch-02)
- Supports "add", "remove", "replace", "move", "copy" or "test" operations
- Example: { "replace": "meta/data/map/SRC-PID/DEST-PID", "value": 123 }

- **ALTO Extension**

- Syntactically equal to Filtered Map services
- Contains only changed values (or -1 for delete)
- Example: "SRC-PID": {"DEST-PID": 123}

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Next Steps

- **Draft recently expired** due to new affiliation of Nico Schwan
 - New version to be submitted
- **HTTP/1.1 useful for conditional requests**
 - Specification instead of survey
- **Incremental update** options: JSON patch vs. ALTO extension
 - No clear winner, but some WG interest in JSON patch at IETF 84
 - More experience with running code required
 - Too early for decision