Unified ATS Routing

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Agenda

- Layer 7 Routing in ATS
- Gaps
- Use cases
- New Routing solution

ATS Routing

- Remaps
  - map/regex_map
  - map_with_recv_port/regex_map_with_recv_port
  - reverse_map
  - redirect/regex_redirect etc

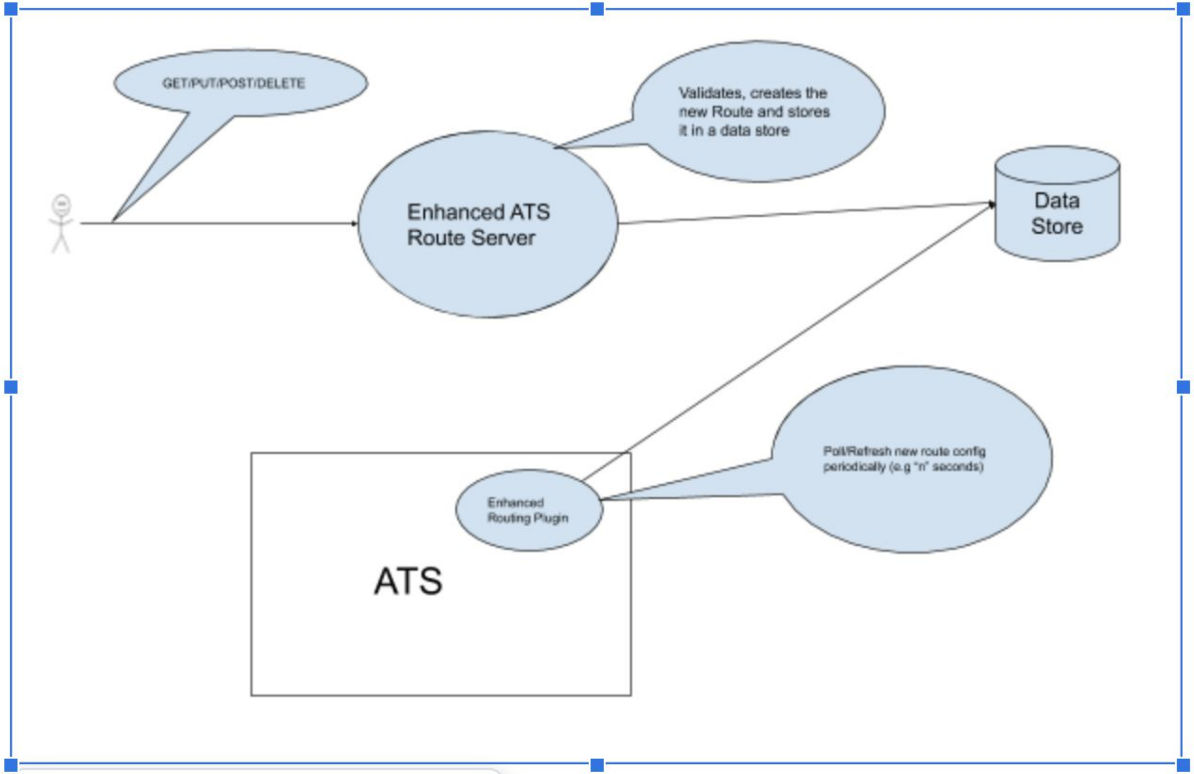
- Plugins
  - regex_remap
  - cookie_remap
  - header_rewrite
  - other custom plugins..

ATS Routing

- Remaps primarily Host and/or Path based
  - New plugins to support custom Routing requirements
    - Device type/Geo/User Session Status (logged-in/Guest) etc
- No built-in support for optional rules or gradual ramps
  - Not self-serviceable
  - Cloud Gateway/Microservices use cases
    - Sharding
    - Canarying
    - Debugging
    - Troubleshooting etc
- Plugins order sensitive and hard to manage
  - Global vs Remap plugins

Unified Routing

- REST API based on routing criteria and actions
  - JSON/YAML format
- Routing Criteria : Any set of identifiable keys from the request metadata
  - Host
  - Path
  - URL params
  - Headers
  - Cookies
  - Geo
  - Device type etc
- Routing Actions : Treatment applied to filtered requests matching the criteria
  - Primary route
  - override route
  - status (reject/redirect)
  - config update
  - header operations
  - canary
  - load test etc


GET/PUT/POST/DELETE
Validates, creates the new Route and stores it in a data store
Enhanced ATS Route Server
Data Store
Poll/Refresh new route config periodically (e.g "n" seconds)
Enhanced Routing Plugin
ATS

Unified Routing

Unified Routing

- Self Serviceable
  - Offline validation during Routing Rule creation
  - Impact analysis and safe-guards based on real time log streaming
    - Detect rule conflicts
    - Overlaps etc
- TTL
- Dry run mode
- Ramp support (parts per million/per myriad/percentage)
- Routing scope
- Fall backs (Optional)
- Other Context (owner, app etc)

Unified Routing

- Predefined precedence amongst “primary” keys
- Rules stored in a sorted list within a given primary key type
- Longest(greedy) match
- Composite(Sub)/Linked rules
- Other potential Actions
  - Client side load balancers
  - QoS/Rate limiting/Throttling/Retry handling
  - Connection tuning (including timeouts, retries etc)
  - Response Headers
  - Error body templates etc

Thank you!