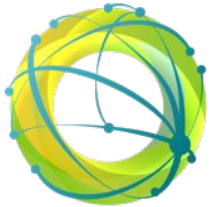
FTS & XRootD Workshop

Jozef Stefan Institute, Ljubljana, 27-31st March 2023



FTS

File Transfer Service

FTS3@CERN: Service Health Monitoring

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on behalf of the FTS team

CERN

Definition

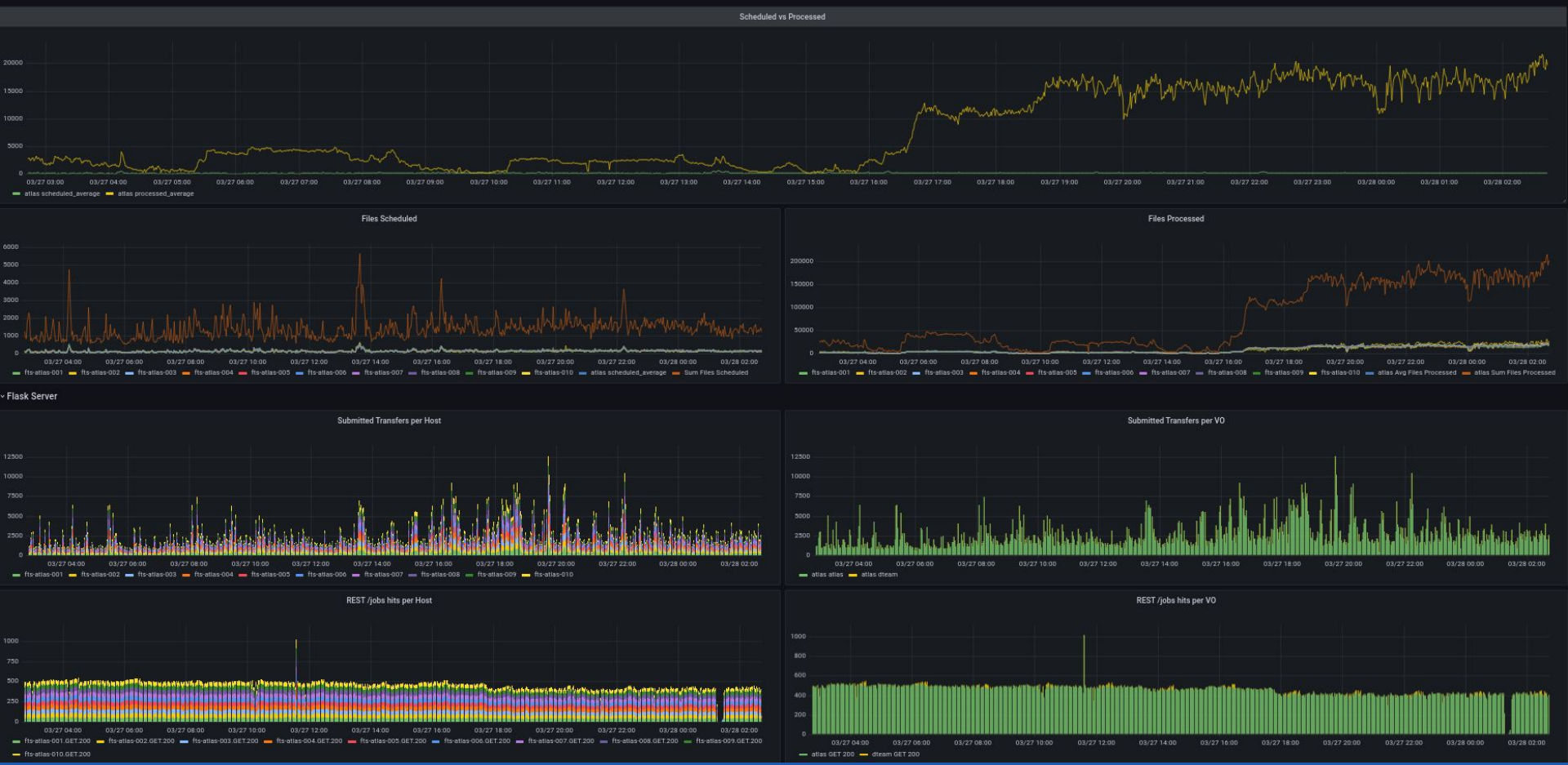
- Monitoring meant for FTS Service operators
    - Helps us observe the state of the system
    - React preventively based on service health input
- Collected indirectly via logs / directly via probes or scripts
    - FluentBit parsing / Probes→ Graphite ingestion → Grafana plots
- Code enhanced to print key moments in FTS execution (e.g.: time it takes to run a full scheduler cycle)
- Deployed for every FTS instance at CERN

FluentBit collected metrics

- Code enhanced at key moments of FTS execution
- Desired values printed in <key>=<value> format
- FluentBit modus operandi:
    - Constantly tails the FTS log files
      (Transfer daemon, QoS daemon, Submission server)
    - Matches desired expression (regex filter)
    - Performs 1 minute aggregations (FTS events can be multiple per minute)
    - Sends no more than once per minute aggregations to ingestion source
      (Graphite storage)

Probe collected metrics

- Probes custom written by us with specific purpose
  (e.g.: file state distribution in the database)
- Executed as cron jobs, never more often than once every minute
- Output sent to ingestion source (Graphite storage)
- Some probes also have alarms attached
  - When threshold hit, send SMS alarm + e-mail
  - Mark timestamp of last alarm
  - Configurable delay between alarms
- Probes ran by dedicated machine in FTS instance (fts-watchdog)


Scheduled vs Processed
atlas scheduled_average
atlas processed_average
Files Scheduled
Files Processed
Flask Server
Submitted Transfers per Host
Submitted Transfers per VO
REST /jobs hits per Host
REST /jobs hits per VO