Modernizing the monitoring of Mass-storage systems

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Why do we need storage?

Experiments produce 50 PB of data per year. Need to develop storage solutions.

- EOS (2010)
- CASTOR (late 90’s)

Focus on CASTOR and its monitoring: CASTOR Cockpit
What is CASTOR Cockpit?

› Monitoring tool for CASTOR
› Display charts with metric data computed by the Analytic Engine (MAE)
Node 1 → Log Messages → Analytic Engine (MAE) → Cockpit Metric Visualization
Node 2 → Log Messages → Analytic Engine (MAE) → Cockpit Metric Visualization
Node n → Log Messages → Analytic Engine (MAE) → Cockpit Metric Visualization

CLIENT

DB
The problem

Cockpit

CERN Advanced STORage manager

BIG DATA

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Can we do better?

Users

Graphite webapp

Carbon cache

Whisper DB

Metrics
Why Graphite?

› Agile Infrastructure
› Performance
› Scalability
› Better monitoring
› Multi year retention
› Less code -> Less bugs

THERE WILL BE BUGS IN YOUR CODE
Key Features

› Numeric time-series data
› Render graphs
› Structured format
› Aggregation of data
› Grafana dashboard
Metric: Test.migration.NSCompletedRequestsPerSecond
Conditions: MSG = “Processing complete” and Daemon = “nsd”
GroupByKeys: INSTANCE
Data: CounterHz (COUNT)
Grafana dashboard
Future Work

- Code in production
- Migrate old data
- Sample Grafana dashboards
- Do my report