ENTRADA:
TLD Traffic Analysis goes Open Source

Moritz Müller | 5th CENTR Jamboree - 17 May 2016, Brussels, Belgium

DNS Data @SIDN

> 3.1 million distinct resolvers

> 1.3 billion queries daily

> 300 GB of PCAP data daily

ENTRADA

ENhanced Top-Level Domain Resilience through Advanced Data Analysis

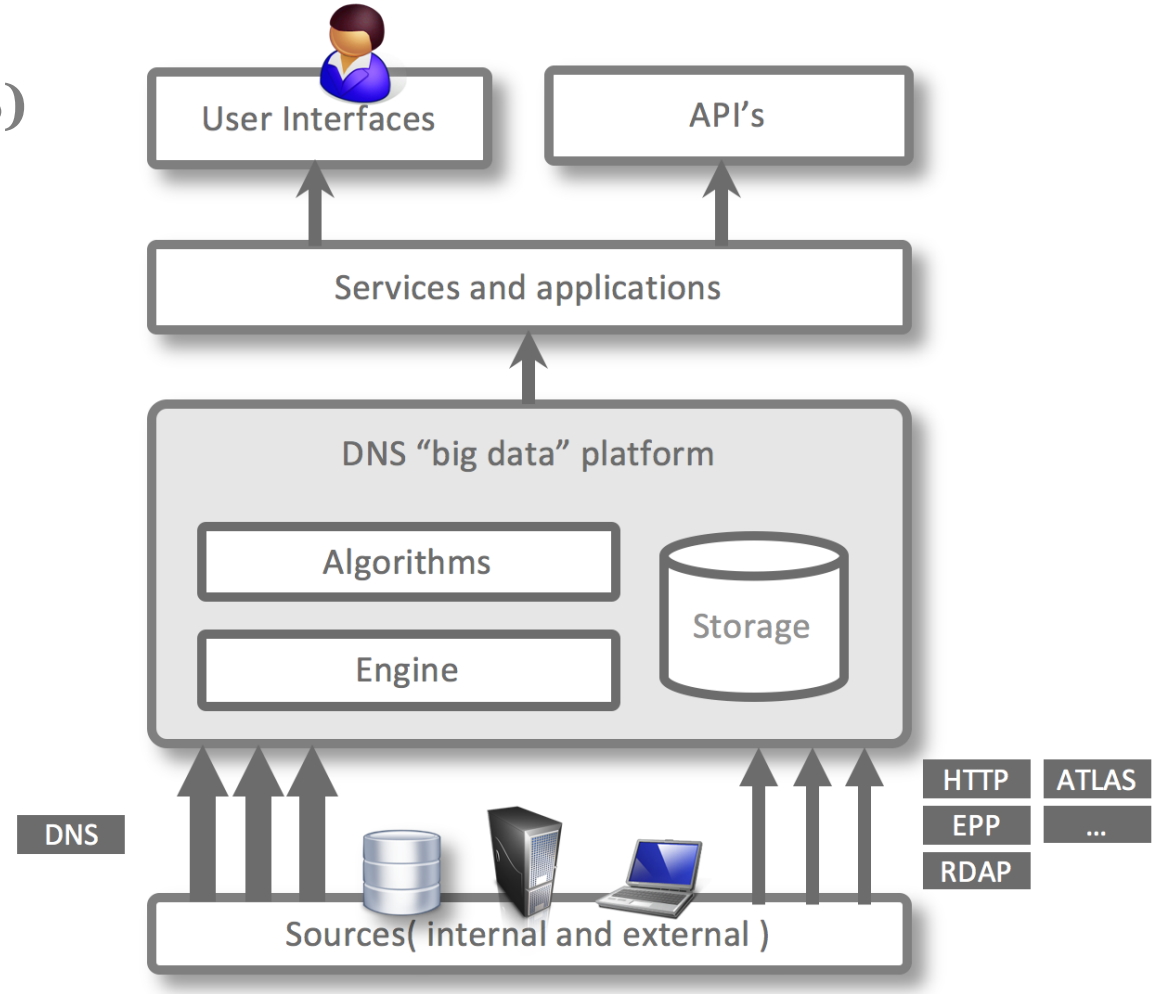
- **Goal**: data-driven improved security & stability of .nl
- **Problem**: Existing solutions do not work well with large datasets and have limited analytical capabilities.

ENTRADA Architecture

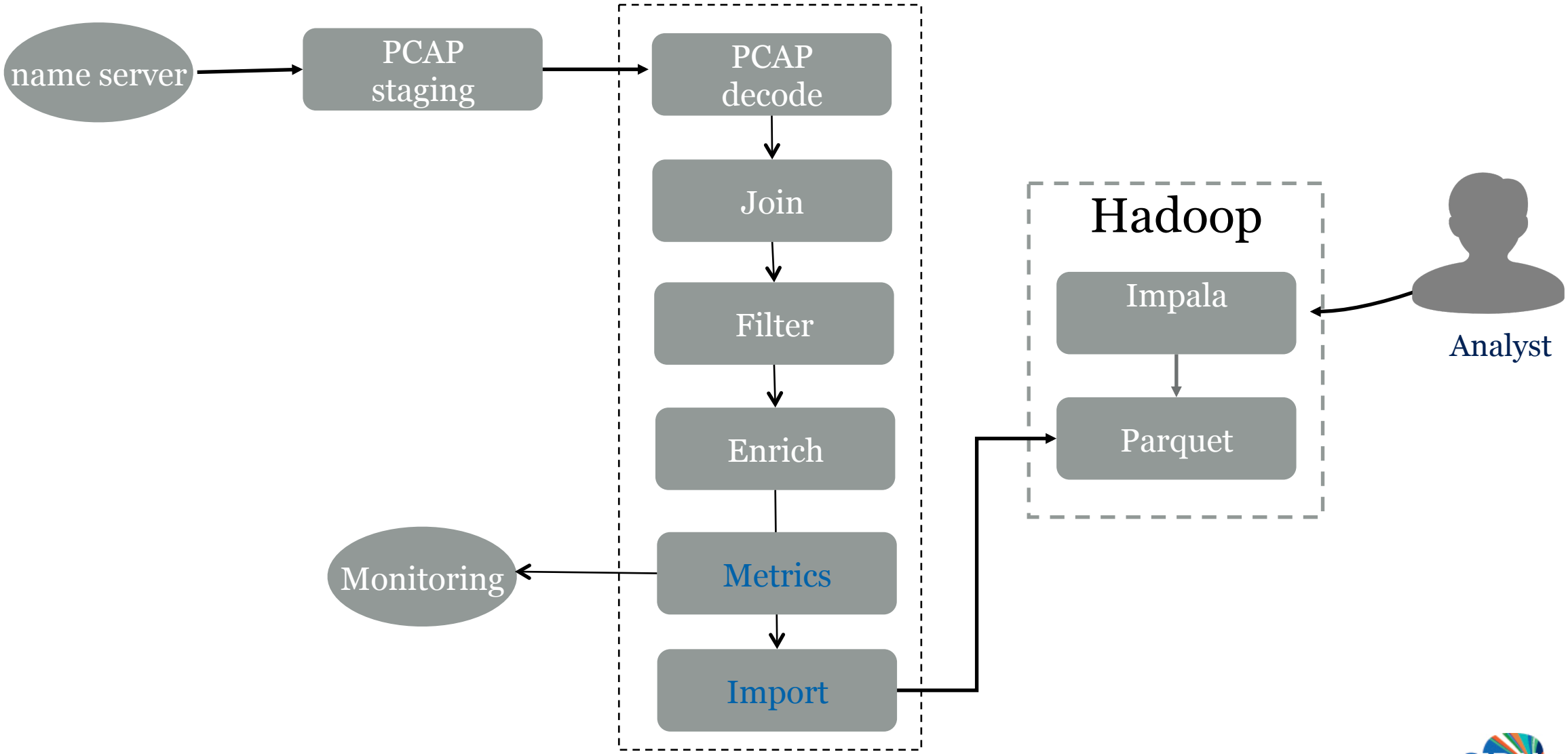
SQL on Hadoop (Impala + Parquet +HDFS)

Main components

- Data sources
- Platform
- Applications and services
- Privacy framework



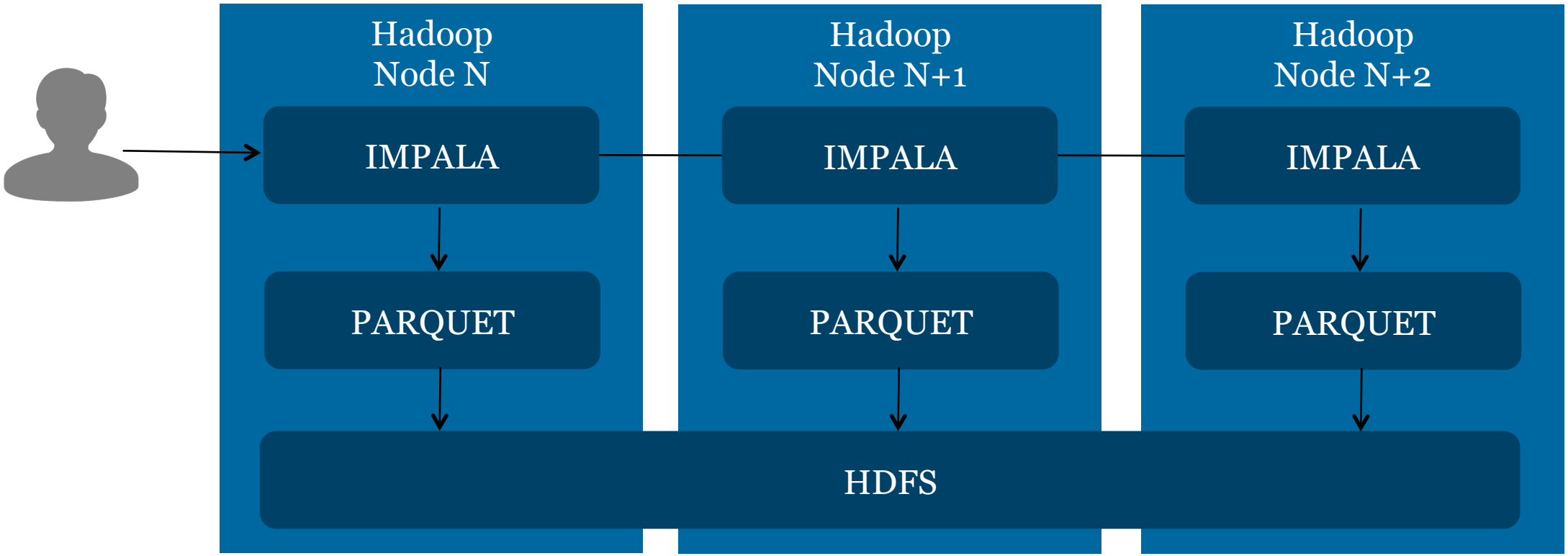
Workflow



Query data available for analysis within 10 minutes

SQL on Hadoop

Best fit for our requirements



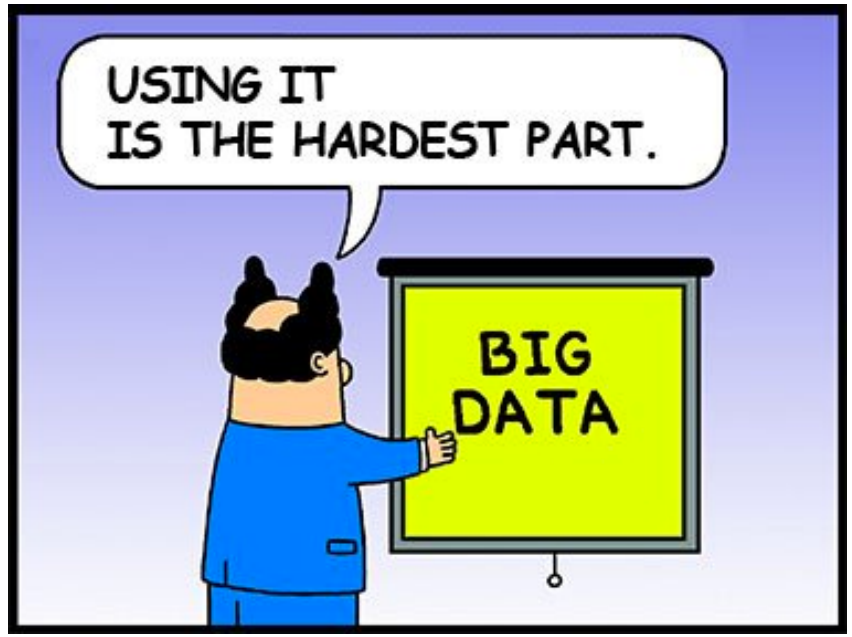
DEMO

- HUE Web Interface for basic DNS traffic exploration
- Python Notebook with Pandas Data Frames: Impact of TTL change at .nl

Use Cases

Focussed on increasing the security and stability of .nl

- Visualize DNS patterns
- Statistics (stats.sidnlabs.nl)
- Scientific research
- Support for operators
- Real-time Phishing detection
- Detect botnet infections



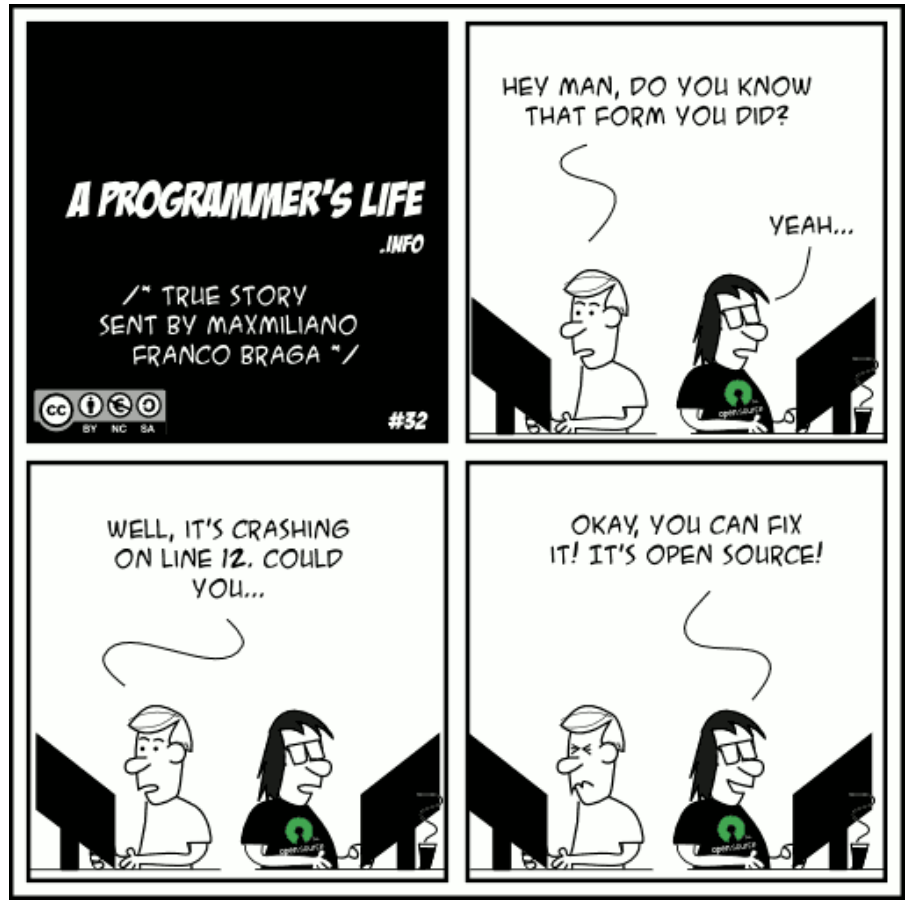
It’s open source!

- Since January 2016
- Project site:

entrada.sidnlabs.nl

- GitHub:

github.com/SIDN/ENTRADA/



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Questions? Feedback?