Platform-Agnostic Execution Framework
Towards RDF Stream Processing

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RDF Stream Processing Workshop
May 31, 2015
Overview of CQELS Framework

RDF streams
SPARQL-Result streams

Decoder

Dynamic Executor

Dictionary

Window Buffer Manager
Cache Manager

Encoder

Input Manager
Cache Fetcher

RDF streams
RDF stores
SPARQL endpoints

Adaptive Optimizer
CQELS queries
CQELS Engines

CQELS Framework
CQELS Engines

use Apache Jena
high performance data structures
incremental evaluation algorithms

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use Apache Jena
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incremental evaluation algorithms

adapt RDF On The Go
light-weight data structures
CQELS Engines

use Apache Jena high performance data structures and incremental evaluation algorithms

adapt RDF On The Go light-weight data structures

use Storm, HBase distributed share-nothing architecture
Add new features:

- Complex Event Processing
- Rule-based, temporal, spatial, RDFS reasoning
- Build smaller CQELS on tiny micro controllers, sensor boards
- Adapt to the standardized query syntax and data model from the RSP working group
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