

Centre for
Data Analytics

Insight



SCEP and RSP

Report

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Aspects discussed and somehow agreed

- Leverage RSP-QL efforts to support “some kind of” CEP in RSP
 - Identify what aspects we can leverage and what is missing
 - For each missing part, try to characterize short- vs. long- term goals
- Identify what are the KEY aspects RSP-QL should handle, which would make SCEP support closer to reality
- Where is the cut-off point? (What should be in the language and what could be dealt with out of RSP-QL (for several reasons))
 - Complexity and scalability (language vs. implementation)
 - Application dependent
- Roadmap for SCEP and RSP

Key aspects identified

1. Windowing (tumbling in CEP) and time intervals
2. Managing graphs
 - Need to uniquely identify a graph to refer to it later
 - Same named graph (one event) could have unique identifier but different timestamps
3. State Management
 - Access to timestamps (e.g. for partial computation of substreams)
 - Store state of previous event
4. List of Stateful Operators
 - SEQ (need optional binding), REP
 - Clean Closure (e.g. same event with different temporal values)
 - Selection strategies (e.g. skip till next)
 - Correlations of results of sub-patterns into one query
 - MORE: property paths, nested construct queries, negation, ... (longer term?)

General Idea for SCEP in RSP

- Key idea is to reduce the input at CEP level
- Need operators for summarization/aggregation
 - Can be done by enabling State Management
- Ability to feed back results into the stream (loop-back new stream?)
- Would that scale?
 - Implementation can be different than RSP-QL language specification
- Application dependent aspects (long-term)
 - Mathematical operators
 - Geospatial calculation

Roadmap for SCEP in RSP-QL

- Subwiki page within RSP-QL (and collect broader interest)
- Work on usecases to identify specific functionalities for SCEP operators)
- Identify initial set of stateful operators that can be supported without too much disruption
- Identify what is required for these operators and what can be leveraged by the RSP-QL advances
- Direct feedback to RSP-QL on what is missing for those operators (to have them included in RSP-QL)
- Implementation?
 - In specific engines?
 - In new engines?