Calder - data stream access middleware

- Service interface enables programmatic access - the virtual piping of stream directly into a processing application.
- Query distribution that is sensitive to metrics such as minimized global network bandwidth consumption
- Approximation of query results under conditions of stream bursts
- Stream discovery
- Temporal and spatial aggregation operators that minimize CPU and network bandwidth consumption.

Continuous queries

```
SELECT * FROM METAR_EV, CAPS_EV
START 2005-07-25 12:00:00
EXPIRE 2005-07-25 20:00:00
RANGE 10 minutes
```

Calder Performance

Query deployment time – Time taken to deploy a new query in the system. Includes planning time, compilation time, distribution time and the time taken to setup ringbuffer.

Resultset time interval – Time interval of data stored in the ringbuffer at a time. Directly proportional to the number of events returned by the rowset query.

User turnaround time – Time taken by the rowset service to process a query. Affected by the number of active queries (and hence ringbuffers) in the system and the number of users handled by the rowset service at the same time.

Rowset Queries

- `getTuple` (timestamp, ringBufferID)
- `getRangeTuple` (startT, endTS, ringBufferID)
- `getMostRecent` (lastRecent, num_events, ringBufferID)

Ongoing work

- Distributed stream query optimization
- Data stream approximation and accuracy management
- Secure data streams
- Provenance management for data streams
ERROR: undefined
OFFENDING COMMAND:

STACK: