Incremental Reasoning on RDFS
Jules Chevalier, Julien Subercaze, Christophe Gravier, Frederique Laforest

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The Semantic Web enables:
- describe knowledge from data
- leverage implicit knowledge through reasoning algorithms

The main limitations of current reasoning methods are:
- lack of scalability for large datasets
- inability to reason over knowledge from evolving data

We contribute to solving these problems by introducing Slider, an efficient incremental reasoner.

**Main Features**

- **Parallel and Scalable Execution:** Each inference rule is mapped to an independent module, receiving intended triples and later distributing them to other modules for further processing.
- **Duplicates Limitation:** Vertical partitioning [1] and multiple indexing limit the production of duplicates and avoid unnecessary computation.
- **Data Stream Support:** Slider can handle both dynamic triple streams and static triples sets by employing parallel architecture.
- **Fragment’s Customization:** Slider natively support both RDFS [4] and rdf [5] fragments, and can be extended to any other fragments.

**Architectural Overview**

[Diagram showing the architecture of Slider]

**Input Manager**
- Buffers
- Thread Pool
- Distributors

**General Distributor**
- Inference time (in ms.)
- SubClassOf
- Wordnet
- Wikipedia
- BSBM1M
- BSBM500k
- BSBM200k
- BSBM100k

**Evolving Data**
- Explicit Triples
- Implicit Triples

**TRIPLE STORE**

**Concurrent Access**

**REFERENCES**