Developers Day at the 2004 World Wide Web Conference
Rules on the Web Track

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Brief Description

This track presents
tools and applications for rules on the web, including
- business policies,
- web services

This includes use of rules
- in, or for, the (RDF, OWL) Semantic Web
- as well as rules for the XML Web,
- and rules in combination with
  - Web Services
  - and/or other Web techniques/protocols

Tim Berners-Lee: cwm rules

http://www.w3.org/2004/Talks/0522-tbl-n3 (slides)

"N3 Rules" subset

Aims to be the sed, awk, grep of the SW

Uses built-ins via RDF

- e.g., arithmetic relations (like greaterThan) as RDF properties
- Web access -- e.g., for homepage info (vegetarian example)
- crypto -- e.g., for security and trust
- formula interrogation -- e.g., for provenance

Explicitly closed world "not" -- log:notIncludes

Examples include 1040 tax form

Can handle provenance explicitly, since a rule is just data

“Functions should be built-in RDF properties, not magic rule language syntax"

Benjamin Grosof, SweetRules: Tools for RuleML Inferencing and Translation

See Talk !

H. Boley, M. Ball, B. Spencer, OO jDREW: A Java-Based Rule Engine for OO RuleML

http://www.jdrew.org/oojdrew (applets)

Supports:
- POsitional-SLotted syntax
- (OO) RuleML XML markup
- RDF/XML markup (for types)

Type declarations refer to RDF Schema classes

Type intersection, via the unifier
(e.g., sale is specialization of both offer and promotion)

Use case: NBBizKB

Rules for integrity checking, info integration, …
from two sources about New Brunswick enterprises

Michael Kifer, FLORA 2

Newest implementation of F-logic

Supports:

- Hilog higher-order syntax
- RDF blank nodes
- Schema querying

Users of Flora:

- Daimler-Chrysler!
- UMBC
- several other univ's

Sean Bechhofer, Ian Horrocks, Hoolet

First implementation of SWRL

Uses material implication rules with contrapositive rules
Restriction: named classes only

Straightforward translation into FOL (Vampire)

Can be improved via static analysis:
- efficiency
- datatypes

SWRL parser will be available on sourceforge on OWL-API

Mike Dean,
Use of SWRL for Ontology Translation

Uses/motivates the SWRL V0.6 built-ins

Example application: aggregate company and stock price info from NYSE, NASDAQ, London, currency exchange rates

Rules: Price from London ontology in pounds, and exchange rate; use SWRL multiplication builtin to convert to stock price in dollars

Define penny-stock

XSLT translator of SWRL to CLIPS (Jess) rules
Restrictions: named classes only, position of built-ins

Rules used for ontology translation:
Facilitate analysis of missing/conflicting values or augmentation

Dave Reynolds,
Rule based inference support in Jena2

Rule processing designed to work purely on RDF triples with forward and backward engines

Has extensible set of built-in sensors -- "procedural callouts"

Structured values in obj position of triples, for n-ary relations

Tabled, similar to XSB; but much simpler because:
No NAF and Datalog restriction

Allows flexible tradeoff of eager/lazy processing mode

5-10K downloads!

N. Sadeh, F. Gandon, M. Sheshagiri, ROWL: Rule Language in OWL & … JESS

ROWL (Rules in OWL) serialized in RDF,
with OWL ontologies and annotations

Translation engine into Jess (mainly in XSLT, OWL metamodel)

10's of users

Forward only rule ex.: "when I am in a meeting then I am busy"

service invocation rules -- activate any Java etc. procedure

"service triples" = are associated

e-wallet application uses preference/confidentiality rules

Hoi Chan, Overview IBM CommonRules 4.0

New features in V4.0:

1. GUI: "project builder" for ruleset combination
2. Persistent relationships in knowledge server for on-demand computing, e.g., for systems management about resources

Provides an API for storage of facts and rules

Have started to include RuleML and OWL support

S. Decker, M. Sintek, A. Harth, TRIPLE: an RDF … transformation language …

RDF transformations -- often don't want just OWL semantics, but want to generate new RDF

Uses contexts: scopes around some RDF data

Status: implemented using Java, XSB over RMI

Half dozen univ. groups in Europe, plus ISI are current users AND extenders

Plans:

- get native Java engine
- more import filters, e.g., recently did MOF/CIM
- integrate with Jena 2 and Protege-2000

Announcements

- SWRL now an official acknowledged W3C Member Submission

- RuleML-2004 Workshop at ISWC-2004 Conference
  “Rules and Rule Markup Languages for the Semantic Web”

http://2004.ruleml.org

Paper submission deadline: 12 July 2004