Center for Open Middleware

Building interoperable read-write Linked Data applications with the W3C Linked Data Platform and the LDP4j framework

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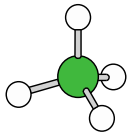

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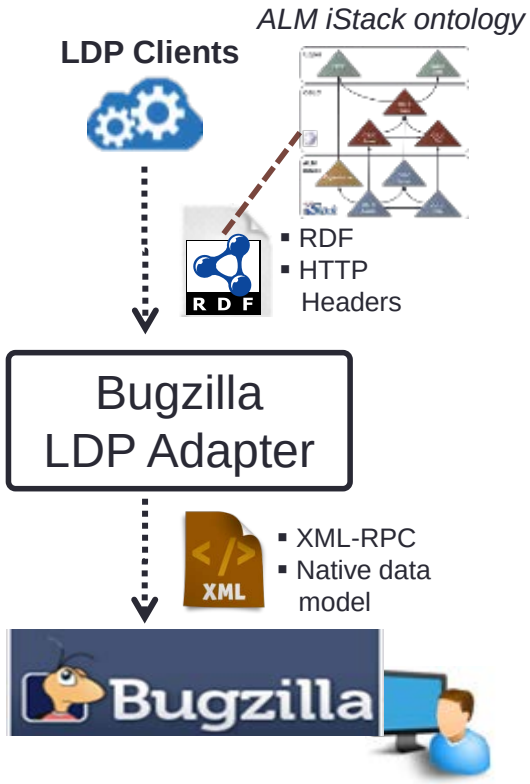
CONCLUDING REMARKS

LDP4j in use

The Bugzilla adapter

- Exposes Bugzilla as an LDP-enabled application



An example of bug creation

```
POST /ita/containers/bugs  HTTP/1.1
Host: localhost
Content-Type: text/turtle

@prefix ai: <http://delicias.dia.fi.upm.es/ontologies/alm-istack#> .
…rest of the namespace declarations are omitted for brevity.
<> a ai:ClientDefect;
    dcterms:creator <http://localhost/ita/ldp/resources/users/9> ;
    dcterms:title "Bugzilla adapter build is broken"^^xsd:string;
    dcterms:description "Bugzilla adapter build fails due to a
                                                test failure"^^xsd:string;
    oslc_asset:relatedAsset <http://localhost/ita/ldp/resources/versions/16> ;
    ai:relatedIncident <https://bugzilla.mozilla.org/show_bug.cgi?id=730698> .
```

```
HTTP/1.1 201 Created
Location: http://localhost/ita/ldp/resources/bugs/12
Link: <http://www.w3.org/ns/ldp#Resource>; rel='type'
Content-Length: 0
```

Mihindukulasooriya, N., Esteban-Gutiérrez, M., García-Castro, R.: A Linked Data Platform adapter for the Bugzilla issue tracker. Demo at the 13th International Semantic Web Conference, Riva del Garda, Italy (Oct 2014)

LDP4j in use

morph-LDP

- Exposes relational databases as read-write Linked Data

Database + R2RML mappings

Morph-LDP

Read-write LD

Oegmembers Table

id	fname	lname

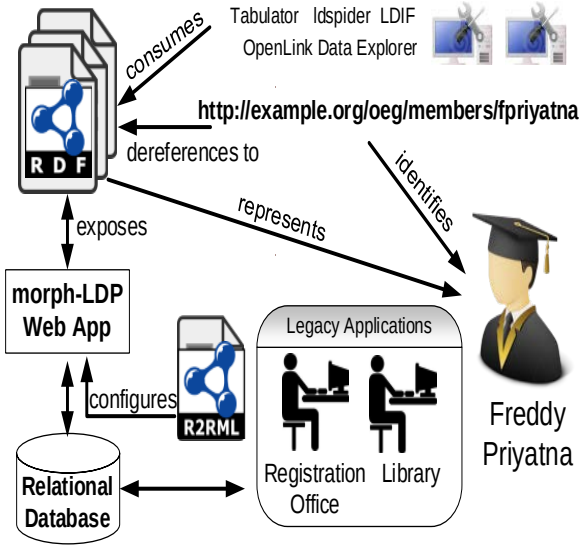
```
@prefix rr: <http://www.w3.org/ns/r2rml#>
@prefix foaf: <http://xmlns.com/foaf/0.1/> .
<TriplesMapPerson>
  a rr:TriplesMap;
  rr:logicalTable [ rr:tableName  "oegmembers" ];

  rr:subjectMap [ a rr:Subject; rr:class foaf:Person;
    rr:template "http://example.org/oeg/members/{id}";
    rr:termType rr:IRI; ];

  rr:predicateObjectMap [
    rr:predicateMap [ rr:constant foaf:firstName ];
    rr:objectMap    [  rr:column "fname"; rr:termType rr:Literal;  ];
  ];

  ObjectMap [
  ateMap [ rr:constant foaf:lastName ];
  Map    [  rr:column "lname"; rr:termType rr:Literal;  ];
```

R2RML




```
GET /oeg/members/ HTTP/1.1
Host: example.org
Accept: text/turtle
```

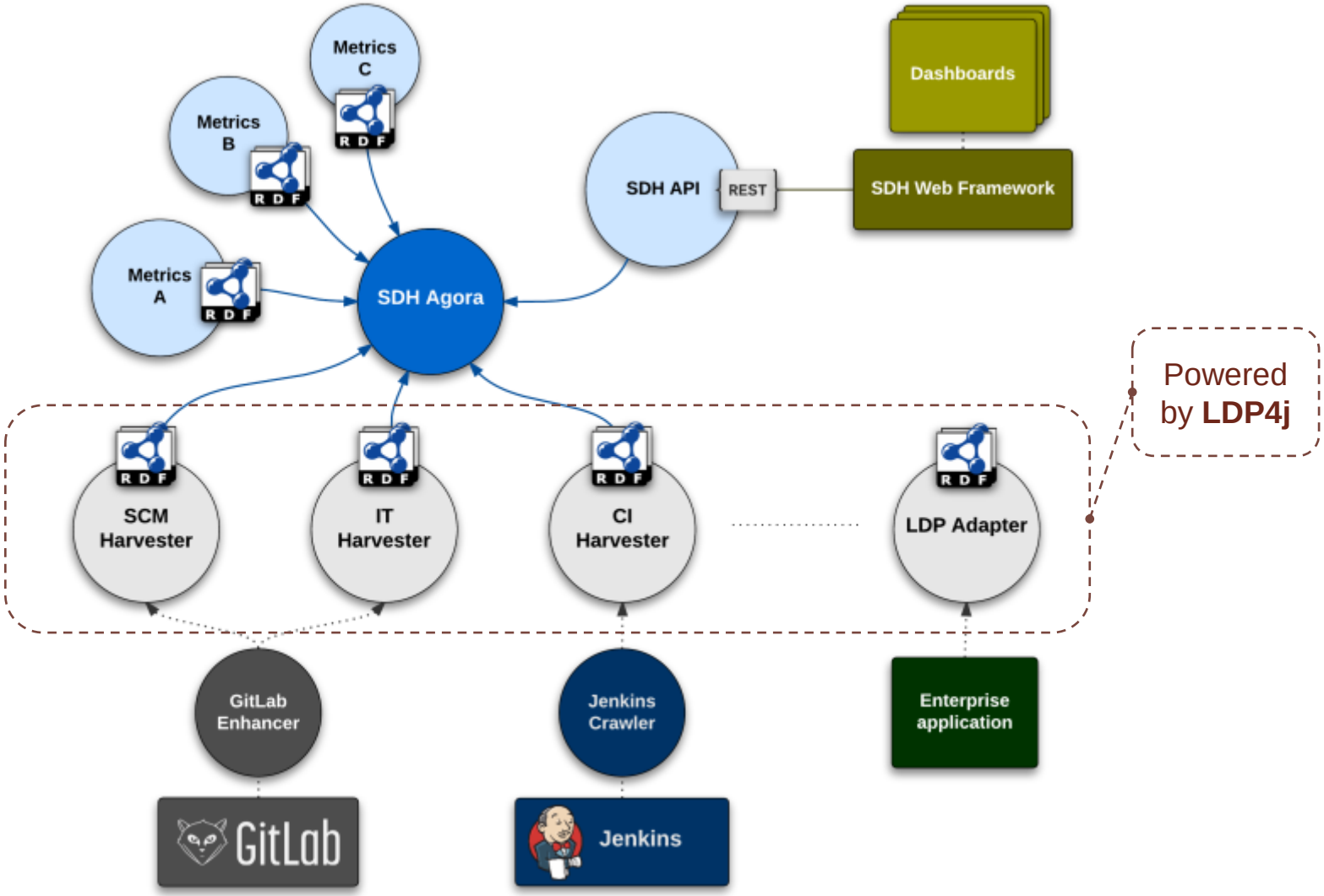
```
200 OK
HTTP/1.1 200 OK
 Content-Type: text/turtle; charset=UTF-8
Link: <http://www.w3.org/ns/ldp#BasicContainer>; rel="type"
ETag: W/"195482449"

@prefix dcterms: <http://purl.org/dc/terms/>.
@prefix ldp: <http://www.w3.org/ns/ldp#>.
 <> a ldp:BasicContainer;
   dcterms:title "Members of OEG, UPM";
   ldp:contains  <http://example.org/oeg/members/asun> ;
   ldp:contains  <http://example.org/oeg/members/fpriyatna> ;
   ldp:contains  <http://example.org/oeg/members/mesteban>;
   ldp:contains  <http://example.org/oeg/members/nmihindu>;
   ldp:contains  <http://example.org/oeg/members/ocorcho> ;
   ldp:contains  <http://example.org/oeg/members/rgarcia>  .
```

Mihindukulasooriya, N., Priyatna, F., Corcho, O., Garcıa-Castro, R., Esteban-Gutiérrez, M.: morph-LDP: An R2RML-based Linked Data Platform implementation. Demo at the 11th Extended Semantic Web Conference, Crete, Greece (May 2014)

LDP4j in use

Smart Developer Hub



Current status

Supported LDP features	Unsupported LDP features	Planned LDP features
• RDF Sources • Basic Containers • Direct Containers • Indirect Containers • Sever managed properties • Content preferences • Interaction models	• Put-to-Create • Patch • Paging	• Non-RDF Sources

- **Working towards 1st release (Summer time)**:
  - Application API,
  - Application Engine, and
  - Server Frontend

https://github.com/ldp4j/ldp4j

Implementation report for LDP4j

- Results of W3C LDP test suite
  - https://dvcs.w3.org/hg/ldpwg/raw-file/default/tests/reports/ldp.html

Feature	MUST	SHOULD	MAY
RDF Sources	**24/24 (100.0%)**	**7/7 (100.0%)**	**1/1 (100.0%)**
Basic Containers	**37/37 (100.0%)**	**15/17 (88.2%)**	3/4 (75.0%)
Direct Containers	**42/42 (100.0%)**	**17/19 (89.5%)**	3/4 (75.0%)
Indirect Containers	**38/39 (97.4%)**	**15/17 (88.2%)**	3/4 (75.0%)

Beware!!
The test suite does not verify all side effects

PUT-CREATE

PATCH

Future work

- Complete features under development
- Simplify data API
- Improve documentation
- Provide testing support

- Support more LDP features:
  - *Non-RDF Sources*
  - *Paging**
  - *Patch**

- Other features beyond the LDP scope:
  - **Vocabulary support**
    - Content validation (using SHACL)
  - **Co-reference support**
  - **Transaction support**
  - **AAA support**

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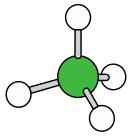
Questions?



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