WG-2 Information Service

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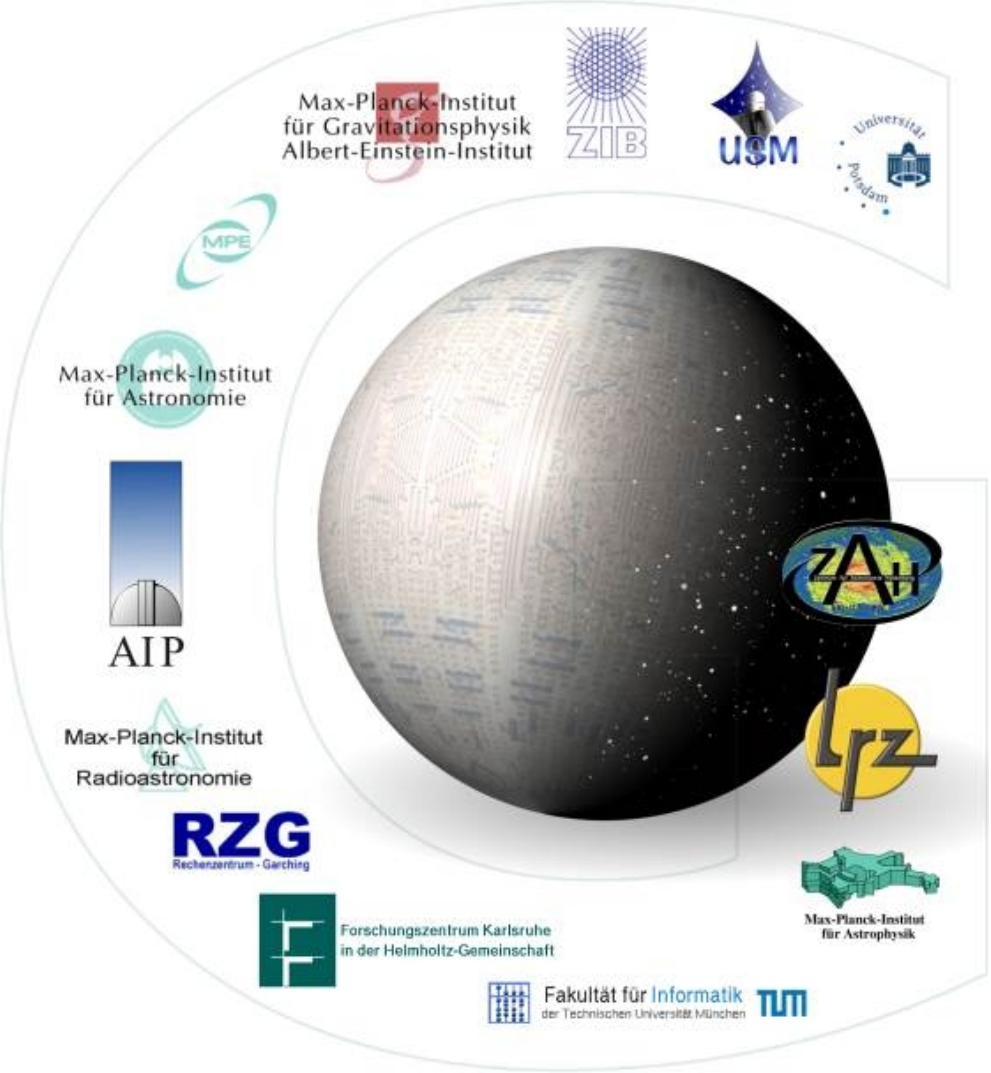


Summary

- Used to store and query metadata
- Metadata
  - resource information (CPU speed, Memory, ...)
  - grid state (jobs, files, ...)
  - application-specific (simulation iterations, ...)
  - scientific (data set annotations, provenance, ...)
- Metadata is represented in RDF
- Queries are defined in SPARQL

Status

- First software release, version 0.0.1
- Insert, retrieve, delete and query
- Group RDF by using contexts
- This is a test-release
  - No security!
  - No guarantee for your data!

Deployment

- Install dependencies
- `python setup.py install`
- `twisted -noy services/serveREST.py`
- Runs on port 52539 by default
- Use browser to test if the service is running: http://localhost:52539/
- Or run the unit tests with: `python test/testREST.py`

Protocol

- HTTP-based
  - GET http://localhost:52539/context/<context>
  - PUT http://localhost:52539/context/<context>
    - Include RDF/XML in the message body
  - HEAD http://localhost:52539/context/<context>
  - DELETE http://localhost:52539/context/<context>
  - GET http://localhost:52539/?query=<query>

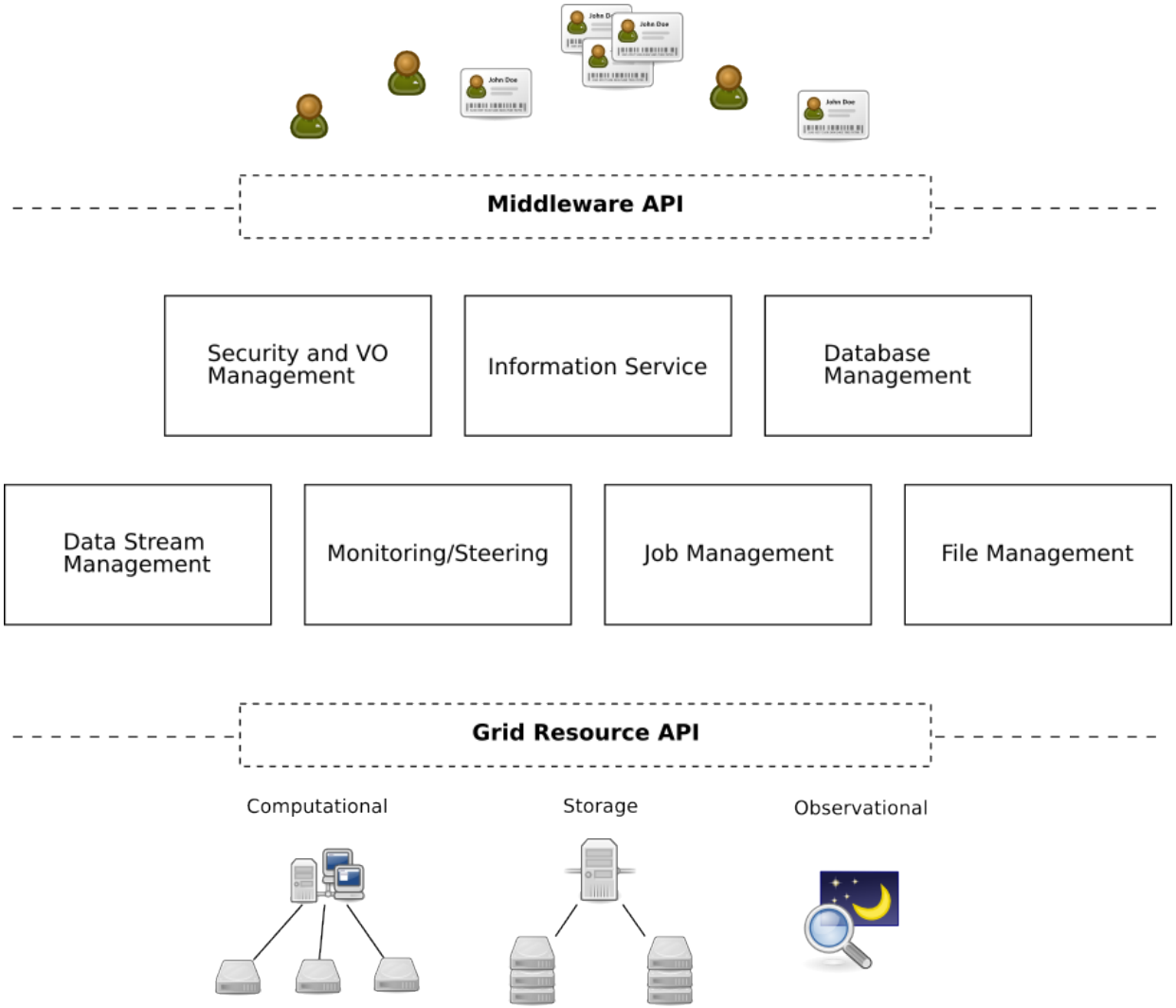
Usage

- Standard tools
  - curl, wget, your browser, ...
  - libcurl (C/C++), httplib (Python), java.net.* (Java)
- Example:
  - curl http://localhost:52539/
  - curl –upload-file <rdfdata> http://localhost:52539/context/<context>
  - curl -X DELETE http://localhost:52539/context/<context>

Until next time...

- Use a database backend (Sleepycat?)
- Performance
  - Partitioning over contexts
  - HTTP Caching (add cache headers)
- Update contexts
- Security? (GSI, how do we define users?)
- Documentation!
- We need more users!

AstroGrid-D introduction



RDF Example

"A picture of the Eiffel tower has a photographer with value Maria"

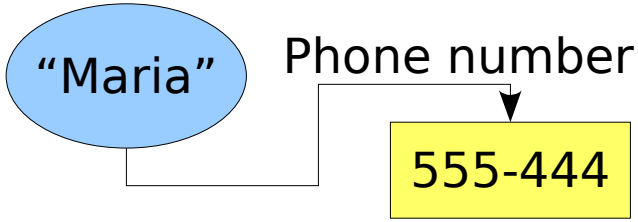
Photographer

"Maria"

RDF Example

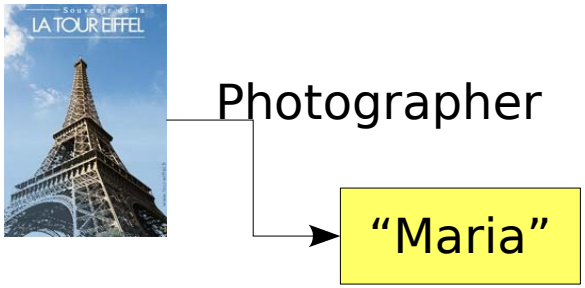
"A picture of the Eiffel tower has a photographer with value Maria"

"Maria has a phone number with value 555-444"

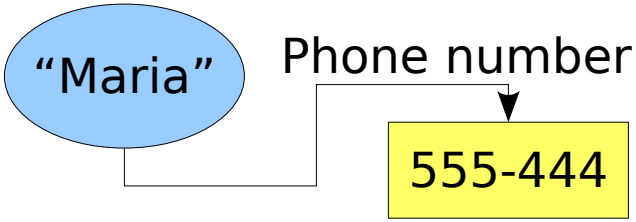


RDF Example

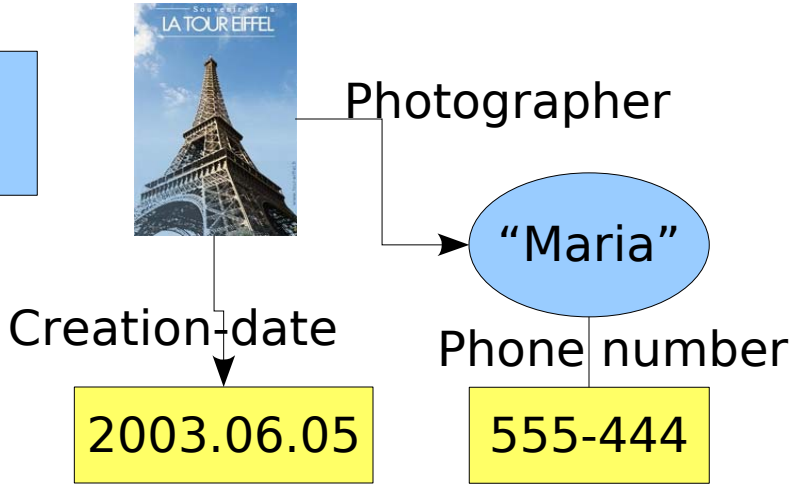
"A picture of the Eiffel tower has a photographer with value Maria"



"Maria has a phone number with value 555-444"



"A picture of the Eiffel tower has creation-date with value 2003.06.05"



SPARQL Example

Photographer

"Maria"

Creation-date

Phone number

2003.06.05

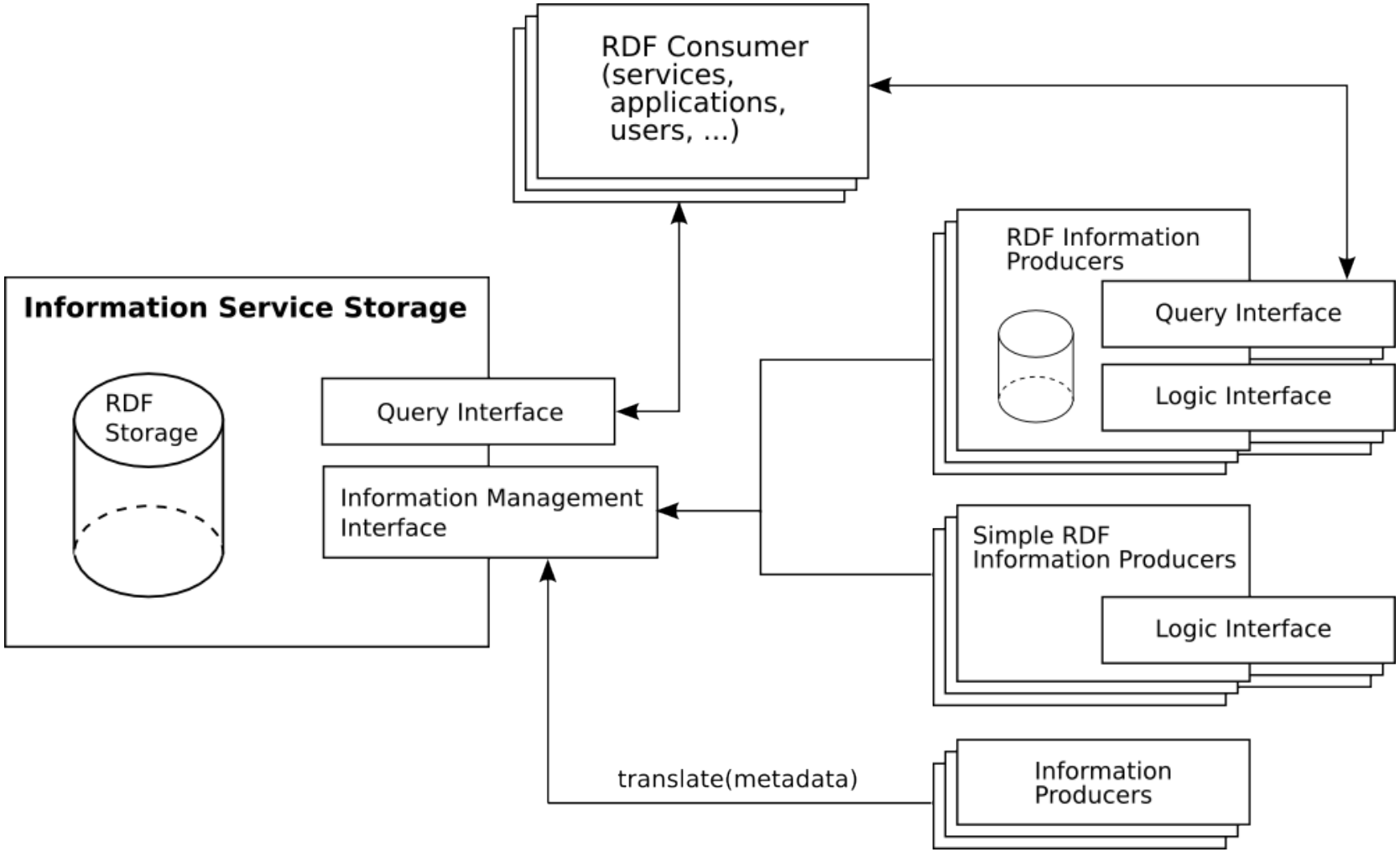
555-444

"Get the name and phone number of the photographer who took the picture of the Eiffel tower"

Input graph

SELECT ?name, ?number WHERE
{"Picture of Eiffel tower" "Photographer" ?name .
?name "Phone number" ?number }

Number	Name
555-444	Maria

Output results

Architecture overview