Semantic Technologies for Data Access and Integration: Part 4. Demo of Integrating Web APIs

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Integrating Web APIs using Ontop

Goal: Integrating the Station and Sensor Web APIs of the South Tyrol Open Data Portal

- Weather Station API:
  `http://daten.buergernetz.bz.it/services/meteo/v1/stations`
- Sensor API:
  `http://daten.buergernetz.bz.it/services/meteo/v1/sensors`

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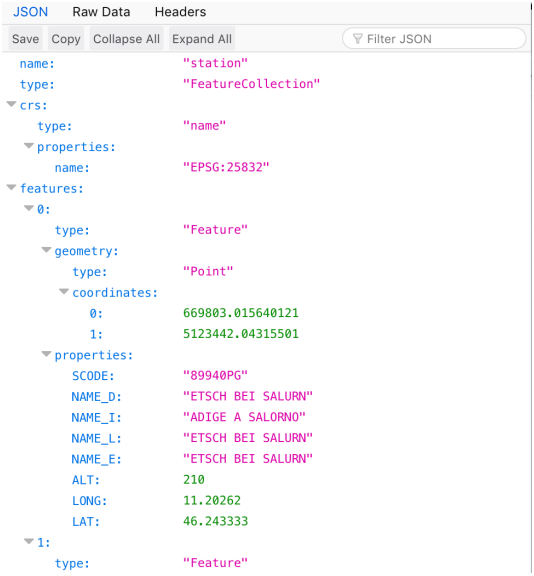
Weather Stations



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Sensors


```
▼ 0:
    SCODE:    "82500WS"
    TYPE:     "LT"
    DESC_D:   "Lufttemperatur"
    DESC_I:   "Temperatura dell´aria"
    DESC_L:   "Temperatura dl'aria"
    UNIT:     "°C"
    DATE:     "2018-10-25T18:40:00CEST"
    VALUE:    8.8
▼ 1:
    SCODE:    "82500WS"
    TYPE:     "WD"
```


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Federation Engine

(https://www.denodo.com) is a platform for

- virtualizing heterogeneous datasources as a relational database, and
- performing federated queries using SQL queries

Denodo Express can be evaluated for free.

NB: Other data integration tools/federation engines (e.g. Spark, Presto, Teiid) might also be used, but we haven't tested yet.

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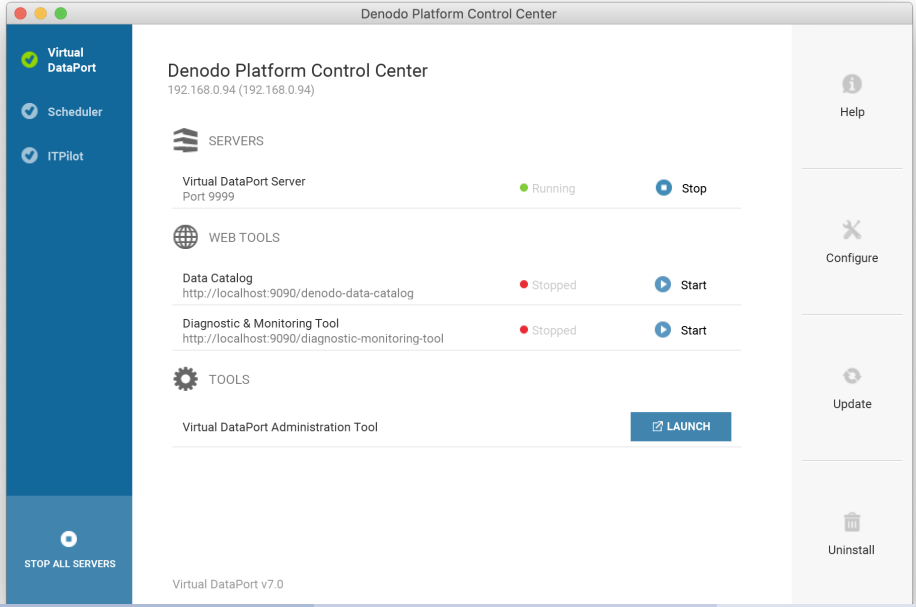
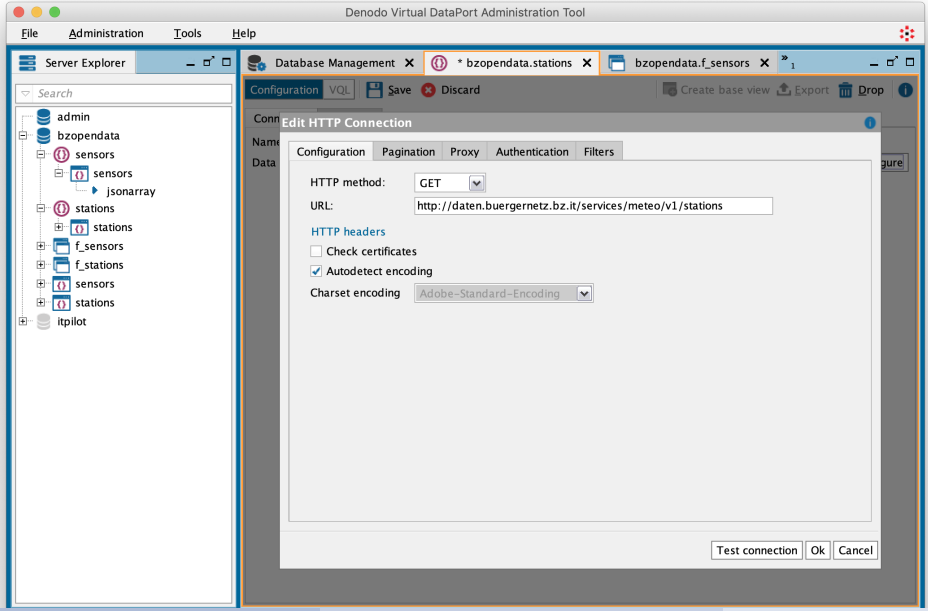

Denodo Platform Control Center
Virtual DataPort
Scheduler
ITPilot
STOP ALL SERVERS
Denodo Platform Control Center
192.168.0.94 (192.168.0.94)
SERVERS
Virtual DataPort Server
Port 9999
Running
Stop
WEB TOOLS
Data Catalog
http://localhost:9090/denodo-data-catalog
Stopped
Start
Diagnostic & Monitoring Tool
http://localhost:9090/diagnostic-monitoring-tool
Stopped
Start
TOOLS
Virtual DataPort Administration Tool
LAUNCH
Virtual DataPort v7.0
Help
Configure
Update
Uninstall


Denodo Virtual DataPort Administration Tool
File
Administration
Tools
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Server Explorer
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f_sensors
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Drop
Edit HTTP Connection
Configuration
Pagination
Proxy
Authentication
Filters
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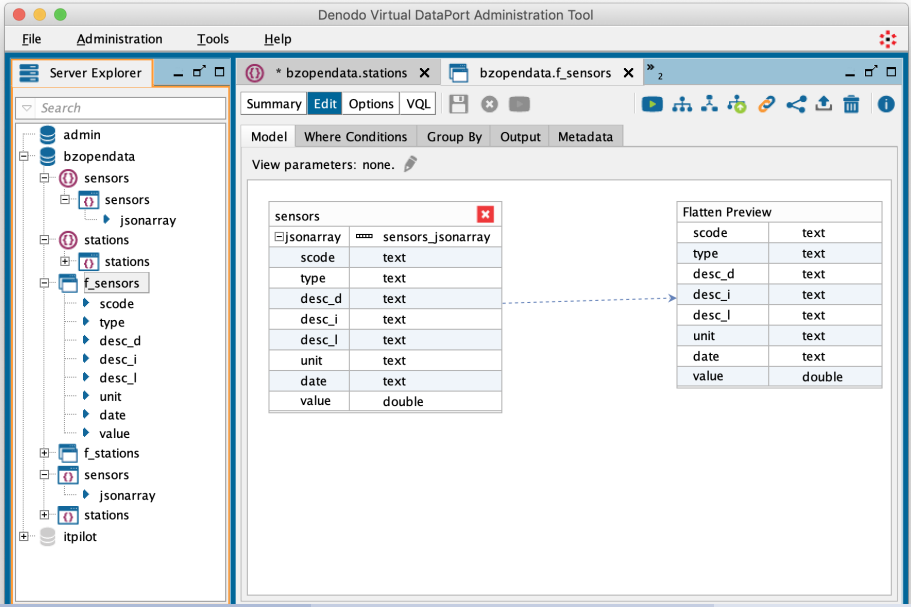
GET
URL:
http://daten.buergernetz.bz.it/services/meteo/v1/stations
HTTP headers
Check certificates
Autodetect encoding
Charset encoding
Adobe-Standard-Encoding
Test connection
Ok
Cancel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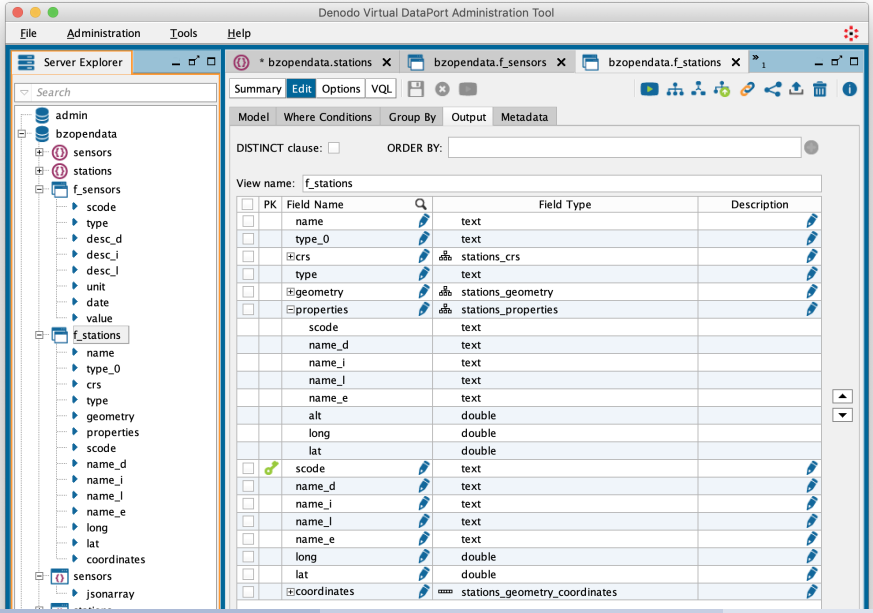
desc_l text
unit text
date text
value double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name_i
name_l
name_e
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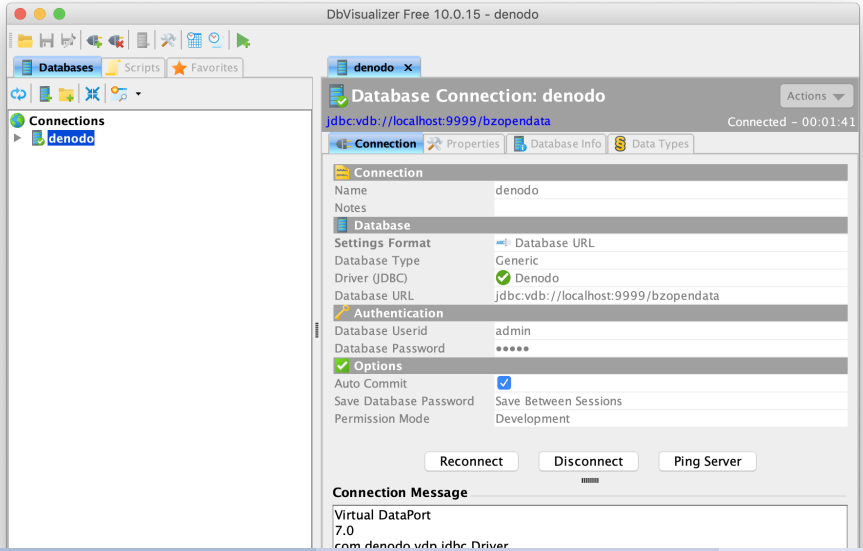
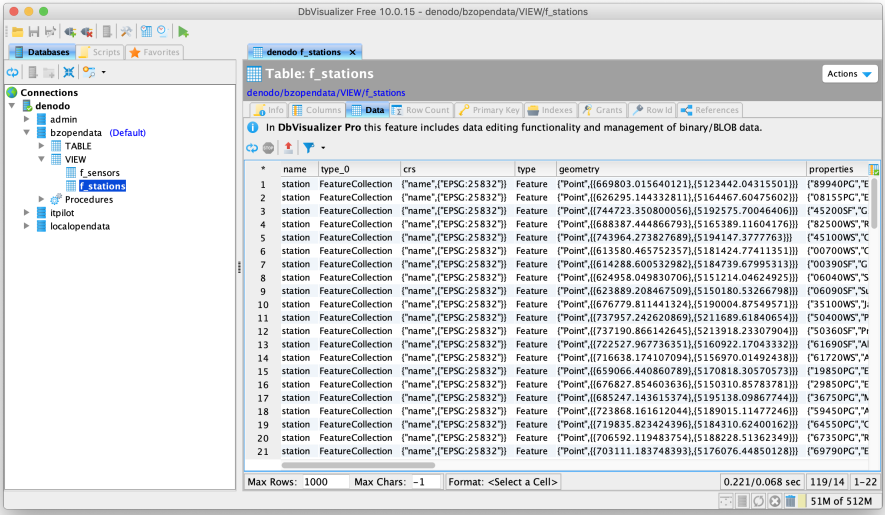
* bzopendata.stations
bzopendata.f_sensors
bzopendata.f_stations
Summary
Edit
Options
VQL
Model
Where Conditions
Group By
Output
Metadata
DISTINCT clause:
ORDER BY:
View name: f_stations
PK
Field Name
Field Type
Description
name text
type_0 text
crs stations_crs
type text
geometry stations_geometry
properties stations_properties
scode text
name_d text
name_i text
name_l text
name_e text
alt double
long double
lat double
scode text
name_d text
name_i text
name_l text
name_e text
long double
lat double
coordinates stations_geometry_coordinates

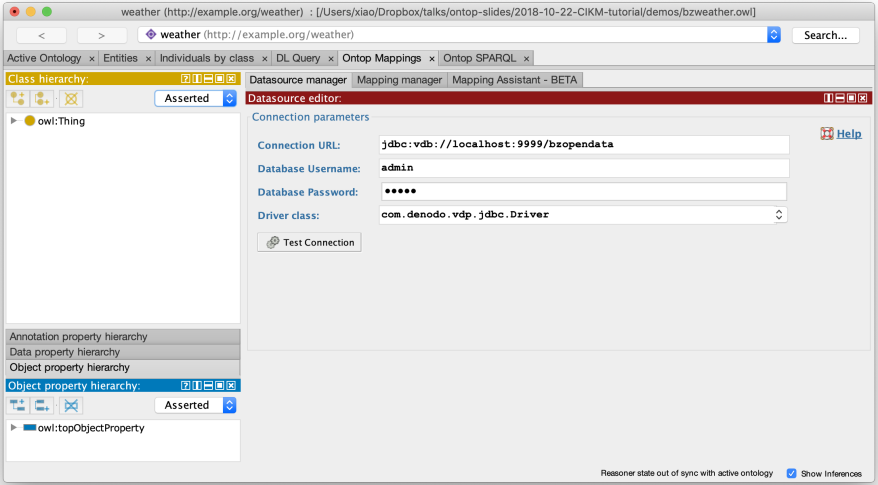
DbVisualizer



DbVisualizer



Protege



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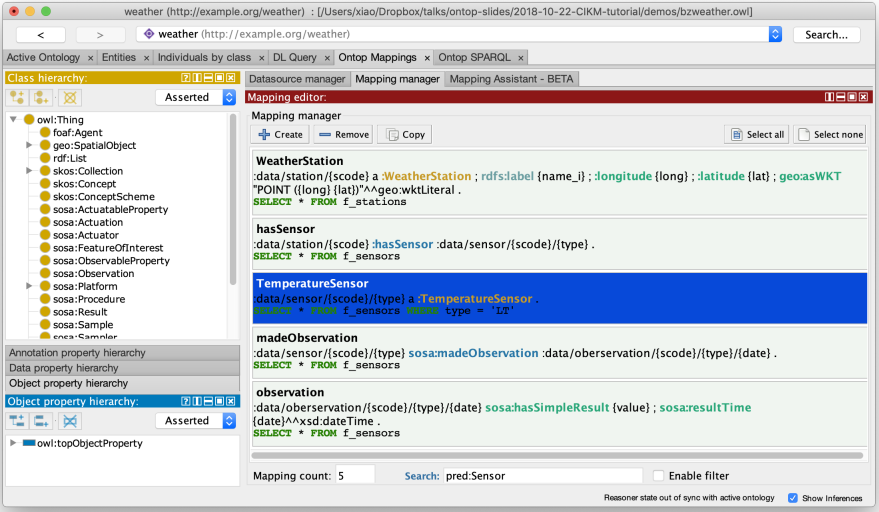
Protege



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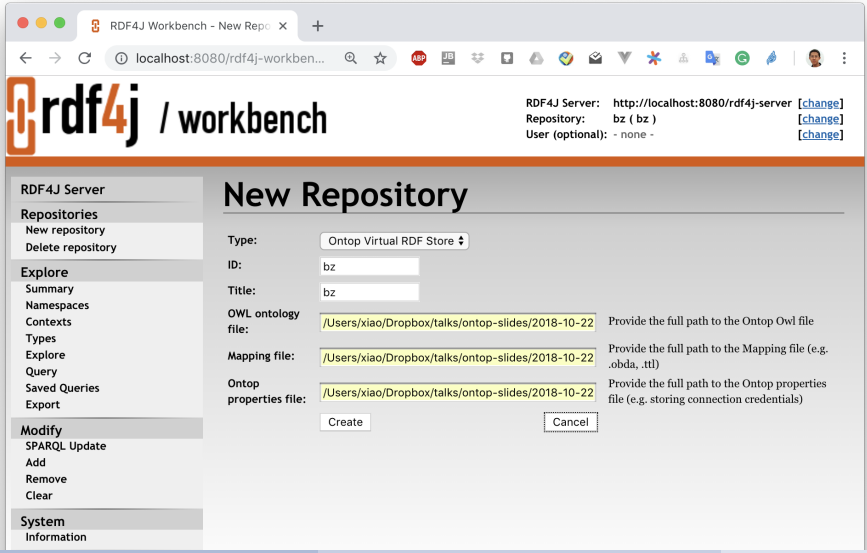
Ontop SPARQL endpoint



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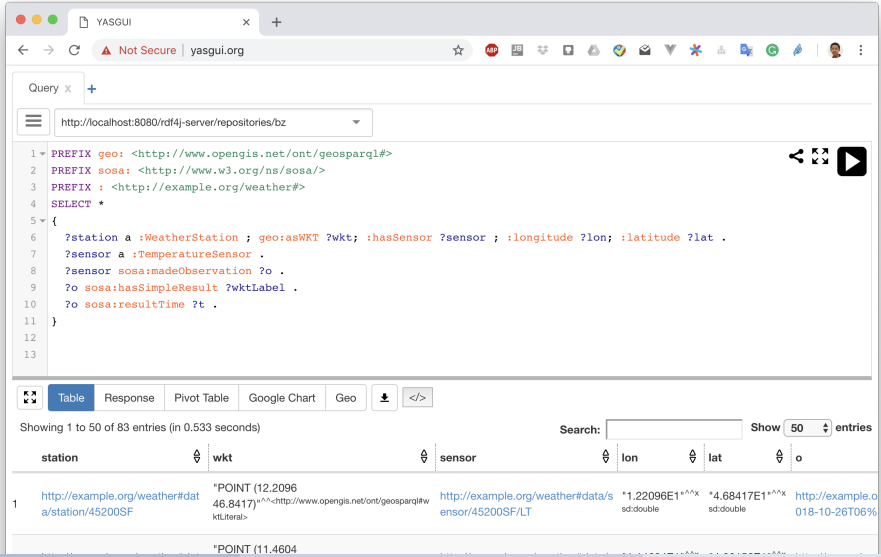
Visualization of Query Results



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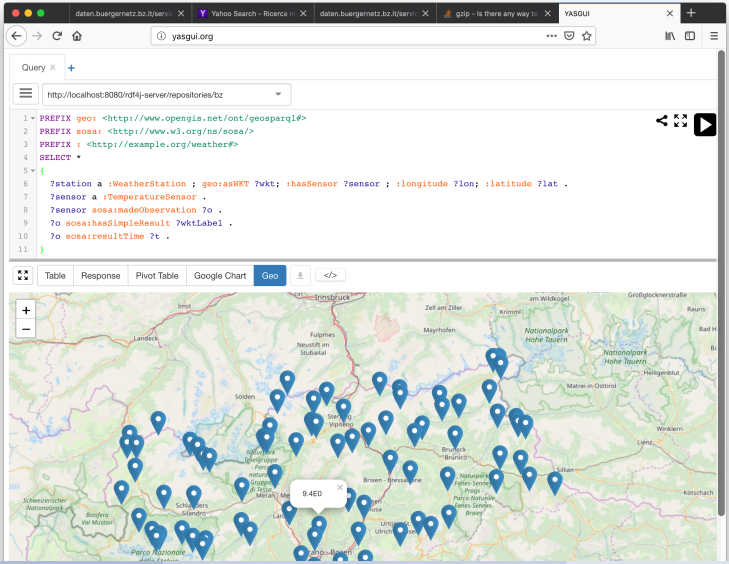

References I