

GraphDB

Breve guida

GraphDB



La versione gratuita permette di creare e gestire un insieme di repository



Ogni repository può contenere più grafi oltre al default graph



Nella configurazione del repository si può selezionare l'insieme di regole di inferenza che verranno applicate ai dati caricati

(Disponibile anche in Virtuoso 8.x ma non ancora per release open source)

Le inferenze vengono materializzate andando a formare un set separato

Menu Setup: elenco dei repositories

GraphDB FREE

Import

Explore

SPARQL

Monitor

Setup

Repositories

Users and Access

My Settings

Connectors

Namespaces

Autocomplete

RDF Rank

Repositories

Repositories from: Local

| | |
|--|------------------------|
| | arte • Arte |
| | cinema • Cinema |
| | citta • Citta |

Create new repository

Repository locations

| | |
|--|-------|
| | Local |
|--|-------|

Attach remote location

Repository cinema

| | |
|-----------------------------------|------------|
| Type: | Free |
| Access: | Read/write |
| Total statements: | 1,509 |
| Explicit: | 153 |
| Inferred: | 1,356 |
| Expansion ratio (total/explicit): | 9.86 |

Lo stesso server ospita più repositories, ognuno con caratteristiche diverse

Creazione di un repository

GraphDB FREE

cinema

Create Repository

Repository properties

Repository ID*

Repository title

Type

Storage folder

Ruleset [Upload custom ruleset](#)

☒ Disable owl:sameAs

Base URL

Entity index size

☒ Use predicate indices ☒ Cache literal language tags

☐ Use context index ☒ Enable literal index

Al momento della creazione del repository se ne impostano le caratteristiche
Esistono un insieme di profili predefiniti (profili di OWL2 e loro declinazioni)

Menu Import: caricamento dei dati

Import settings

×

Base IRI ⓘ

http://www.modsem.org/arte#

Target graphs ⓘ

☐ From data

☐ The default graph

☒ Named graph

http://www.rossanadamiano.me/arte

☐ Enable replacement of existing data

Show advanced settings ▾

Restore defaults

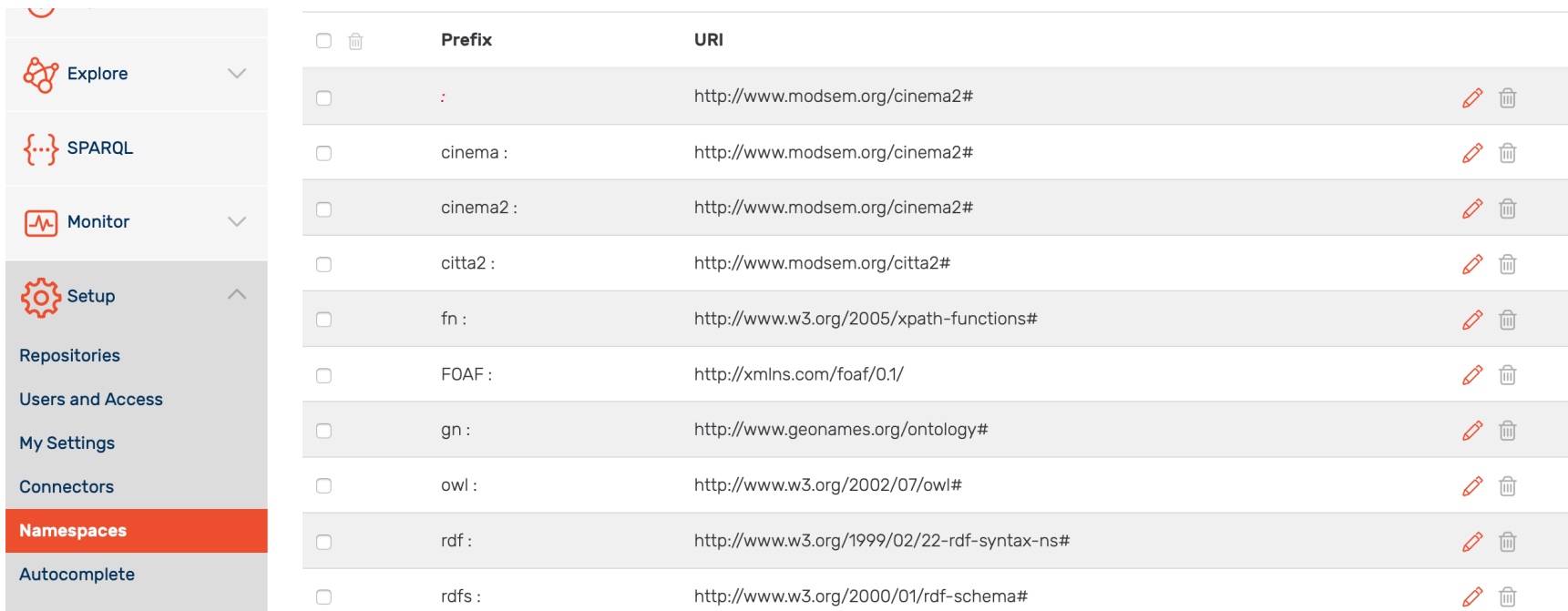
Cancel

Import

Sono supportati tutti i formati di RDF.

Se non si specifica un grafo, i dati vengono caricati nel default graph del repository.

Menu Setup: Impostazione dei namespaces



| <input type="checkbox"/> | <input type="checkbox"/> | Prefix | URI | | |
|--------------------------|--------------------------|-----------|---|--|--|
| <input type="checkbox"/> | <input type="checkbox"/> | : | http://www.modsem.org/cinema2# | | |
| <input type="checkbox"/> | | cinema : | http://www.modsem.org/cinema2# | | |
| <input type="checkbox"/> | | cinema2 : | http://www.modsem.org/cinema2# | | |
| <input type="checkbox"/> | | citta2 : | http://www.modsem.org/citta2# | | |
| <input type="checkbox"/> | | fn : | http://www.w3.org/2005/xpath-functions# | | |
| <input type="checkbox"/> | | FOAF : | http://xmlns.com/foaf/0.1/ | | |
| <input type="checkbox"/> | | gn : | http://www.geonames.org/ontology# | | |
| <input type="checkbox"/> | | owl : | http://www.w3.org/2002/07/owl# | | |
| <input type="checkbox"/> | | rdf : | http://www.w3.org/1999/02/22-rdf-syntax-ns# | | |
| <input type="checkbox"/> | | rdfs : | http://www.w3.org/2000/01/rdf-schema# | | |

I namespace vengono impostati automaticamente a partire da quelli caricati. Possono essere specificati e modificati anche manualmente.

Menu Explore: Visualizzazione dei grafi RDF

The screenshot displays the 'Menu Explore' interface for visualizing RDF graphs. On the left is a vertical sidebar with the following items: 'Explore' (with a graph icon and an upward arrow), 'Graphs overview' (highlighted in orange), 'Class hierarchy', 'Class relationships', 'Visual graph', 'Similarity', 'SPARQL' (with a curly braces icon), 'Monitor' (with a pulse icon and a downward arrow), 'Setup' (with a gear icon and a downward arrow), and 'Help' (with a question mark icon and a downward arrow). The main area at the top contains two buttons: 'Export repository' (in an orange box) and 'Clear repository' (in a grey box). Below these is a section titled 'Graphs' with a search icon, a dropdown arrow, and a trash icon. It lists two graphs: 'The default graph' and 'http://modsem.org/esempi/cinemaWD'. Each graph entry has a selection checkbox on the left and a delete icon (trash) on the right.

Explore ^

Graphs overview

Class hierarchy

Class relationships

Visual graph

Similarity

{...} SPARQL

Monitor v

Setup v

? Help v

Export repository Clear repository

Graphs

The default graph

http://modsem.org/esempi/cinemaWD

La visualizzazione dei grafi ha come preconditione che si selezioni uno specifico grafo

Menu Explore: Visualizzazione tabellare

The screenshot shows the GraphDB interface for a database named 'arte'. The left sidebar contains the 'Explore' menu, which is expanded to show options like 'Visual graph' and 'Similarity'. The main area displays a table view of the data. The table has four columns: 'subject', 'predicate', 'object', and 'context'. The data is organized into seven rows, each representing a triple. The 'context' column contains the URL 'http://www.rossanadamiano.me/arte' for all rows. The 'subject' column contains URIs like '_:node1', '_:node10', and '_:node11'. The 'predicate' column contains URIs like 'rdf:first', 'rdf:rest', 'rdf:type', 'owl:onProperty', and 'owl:someValuesFrom'. The 'object' column contains URIs like ':espone', '_:node2', 'owl:Restriction', ':appartieneEpoca', and ':Novecento'.

Source: <http://www.rossanadamiano.me/arte>

| | subject | predicate | object | context |
|---|----------|------------------------------------|----------------------------------|---|
| 1 | _:node1 | rdf:first | :espone | http://www.rossanadamiano.me/arte |
| 2 | _:node1 | rdf:rest | _:node2 | http://www.rossanadamiano.me/arte |
| 3 | _:node10 | rdf:type | owl:Restriction | http://www.rossanadamiano.me/arte |
| 4 | _:node10 | owl:onProperty | :appartieneEpoca | http://www.rossanadamiano.me/arte |
| 5 | _:node10 | owl:someValuesFrom | :Novecento | http://www.rossanadamiano.me/arte |
| 6 | _:node11 | rdf:type | owl:Restriction | http://www.rossanadamiano.me/arte |
| 7 | _:node11 | owl:onProperty | :espone | http://www.rossanadamiano.me/arte |

La visualizzazione di base è in formato tabellare.

Il contesto (quarto elemento della quadrupla) è dato dal nome del grafo (explicit è il grafo di default)

Visualizzazione delle inferenze

| | subject ↕ | predicate ↕ | object ↕ | context ↕ |
|---|--|--------------------------------|--|---|
| 1 | cinema:StevenSpielberg | cinema:haRuolo | cinema:regiaIndianaJones | http://modsem.org/esempi/cinemaWD |
| 2 | cinema:StevenSpielberg | cinema:haRuolo | cinema:regiaStarWars | http://modsem.org/esempi/cinemaWD |
| 3 | cinema:StevenSpielberg | rdf:type | _:node13 | http://www.ontotext.com/implicit |
| 4 | cinema:StevenSpielberg | rdf:type | cinema:Persona | http://modsem.org/esempi/cinemaWD |
| 5 | cinema:StevenSpielberg | rdf:type | cinema:RegistaFilm | http://www.ontotext.com/implicit |
| 6 | cinema:StevenSpielberg | rdf:type | owl:NamedIndividual | http://modsem.org/esempi/cinemaWD |
| 7 | cinema:StevenSpielberg | rdf:type | owl:Thing | http://www.ontotext.com/implicit |
| 8 | cinema:StevenSpielberg | rdf:type | FOAF:Person | http://www.ontotext.com/implicit |
| 9 | cinema:StevenSpielberg | owl:sameAs | cinema:StevenSpielberg | http://www.ontotext.com/implicit |

Le triple inferite durante il caricamento dei dati sono associati a un contesto specifico (implicit).

Nell'esempio, il soggetto è stato inferito come appartenente a altre classi oltre a quelle asserite grazie agli assiomi di classe equivalente ([cinema:RegistaFilm](#) e [FOAF:Person](#)).

Triple inferite

The screenshot shows the GraphDB interface with a SPARQL query editor. The query is as follows:

```
1  
2 PREFIX cinema2: <http://www.modsem.org/cinema2#>  
3 SELECT ?c  
4 FROM <http://modsem.org/esempi/cinemaWD>  
5 WHERE {  
6   cinema2:StevenSpielberg a ?c .  
7 }
```

The query is executed, and the results are displayed in a table. The table has a single column labeled 'c' and two rows of results:

| | c |
|---|-------------------------------------|
| 1 | owl:NamedIndividual |
| 2 | cinema:Persona |

Below the table, a status bar indicates: "Showing results from 1 to 2 of 2. Query took 0.1s, minutes ago."

Le triple inferite non sono estratte con una query SPARQL se la query viene indirizzata a uno specifico grafo (clausola FROM)

Endpoint SPARQL

The screenshot shows the GraphDB web interface. On the left is a sidebar with navigation options: Import, Explore, SPARQL (highlighted in orange), Monitor, Setup, and Help. The main area is titled 'SPARQL Query & Update' with an information icon. Below the title is a tabbed interface with five 'Unnamed' tabs and a plus icon. The first tab is active, showing a SPARQL query editor with the following text:

```
1 PREFIX cinema: <http://www.modsem.org/cinema2#>
2 INSERT DATA
3 { cinema:StarWars7 cinema:haPersonaggio cinema:PaolinoPaperino }
4
```

On the right side of the editor, there are icons for saving, opening, linking, and running queries. A 'Run' button is located at the bottom right. Above the editor, there are tabs for 'Editor only', 'Editor and results' (selected), and 'Results only'. In the top right corner, there is a dropdown menu showing 'cinema'. At the bottom of the interface, a light green status bar displays the message: 'Added 1 statements. Update took 0.1s, today at 12:55.'

L'endpoint SPARQL supporta anche ASK, INSERT e DELETE

SPARQL Insert

The screenshot displays a web-based SPARQL editor. On the left is a sidebar with navigation links: 'Explore', 'SPARQL' (highlighted in orange), 'Monitor', 'Setup', and 'Help'. The main area contains a SPARQL query editor with line numbers 1 through 4. The query is as follows:

```
1 PREFIX cinema: <http://www.modsem.org/cinema2#>
2 INSERT DATA
3 { GRAPH <http://modsem.org/esempi/cinemaWD> {cinema:StarWars7 cinema:haPersonaggio
4   cinema:LukeSkywalker } }
```

On the right side of the editor, there are icons for saving, opening files, undo, redo, and a network diagram. At the bottom right is a red 'Run' button. Below the editor, a status bar indicates 'Press Alt+Enter to autocomplete'. A light green notification banner at the bottom states: 'Added 1 statements. Update took 0.2s, moments ago.'

L'inserimento avviene nel grafo `<http://modsem.org/esempi/cinemaWD>` e in quello di default se non diversamente specificato

Risultati della query

GraphDB FREE

Import

Explore

SPARQL

Monitor

Setup

Help

SPARQL Query & Update

cinema

Editor only Editor and results Results only

```
1 SELECT ?data
2 #FROM <http://localhost:8890/DAV/cinemaWD>
3 WHERE
4 {
5   ?p <http://www.modsem.org/cinema2#haRuolo>
6   <http://www.modsem.org/cinema2#attoreIndianaJones> .
7   SERVICE <https://query.wikidata.org/sparql> {
8     ?p <http://www.wikidata.org/prop/direct/P569> ?data . }
9 }
10
```

Run

Table Raw Response Pivot Table Google Chart

Download as

I risultati si possono visualizzare come tabella, JSON o chart e scaricare in vari formati