

# Graph Reference

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## Overview

VIVO stores its information in graphs – named collections of triples. Graphs keep data organized by kind, and provide the opportunity for different access rights and management practices to be applied at the graph level. All graphs are available to the VIVO SPARQL query interface. When using SPARQL to query the VIVO data, one does not need to know the graph the data is contained in. Triples in all graphs are available to the query. When updating data in VIVO using CONSTRUCT or UPDATE, knowledge of the graph may be necessary.

Here we show how to list the graphs in a VIVO, and provide a reference for the purpose of each graph.

## Listing the graphs used by VIVO

To list the graphs being used by your VIVO, you can run the SPARQL query shown below. Caution: If you have a significant amount of data in your VIVO, the query may take quite a while to run. With tens of thousands of entities in your VIVO, the query should complete in a few minutes.

### SPARQL query to list the graphs in a VIVO

```
SELECT ?g
WHERE
{
  GRAPH ?g {
    ?s ?p ?o .
  }
}
GROUP BY ?g
ORDER BY ?g
```

To list the triples in a named graph, use the query below, substituting the name of the graph you wish to list. Caution: listing the triples in larger graphs may take significant time.

### SPARQL query to list the triples in a named graph

```
SELECT ?s ?p ?o
WHERE
{
  GRAPH <http://vitro.mannlib.cornell.edu/filegraph/tbox/sameAs.n3> {
    ?s ?p ?o .
  }
}
```

## The graphs used by VIVO

Graph name	Contents
<a href="http://vitro.mannlib.cornell.edu/default/asserted-tbox">http://vitro.mannlib.cornell.edu/default/asserted-tbox</a>	All ontology triples as asserted
<a href="http://vitro.mannlib.cornell.edu/default/inferred-tbox">http://vitro.mannlib.cornell.edu/default/inferred-tbox</a>	Triples inferred from the asserted ontology triples
<a href="http://vitro.mannlib.cornell.edu/default/vitro-kb-2">http://vitro.mannlib.cornell.edu/default/vitro-kb-2</a>	The main triple store for content
<a href="http://vitro.mannlib.cornell.edu/default/vitro-kb-applicationMetadata">http://vitro.mannlib.cornell.edu/default/vitro-kb-applicationMetadata</a>	Triples controlling the application
<a href="http://vitro.mannlib.cornell.edu/default/vitro-kb-inf">http://vitro.mannlib.cornell.edu/default/vitro-kb-inf</a>	Triples inferred from the main triple store
<a href="http://vitro.mannlib.cornell.edu/filegraph/abox/academicDegree.rdf">http://vitro.mannlib.cornell.edu/filegraph/abox/academicDegree.rdf</a>	Data provided regarding Academic Degrees
<a href="http://vitro.mannlib.cornell.edu/filegraph/abox/continents.n3">http://vitro.mannlib.cornell.edu/filegraph/abox/continents.n3</a>	Data provided regarding the continents

<a href="http://vitro.mannlib.cornell.edu/filegraph/abox/dateTimeValuePrecision.owl">http://vitro.mannlib.cornell.edu/filegraph/abox/dateTimeValuePrecision.owl</a>	Data provided regarding date time precisions
<a href="http://vitro.mannlib.cornell.edu/filegraph/abox/documentStatus.owl">http://vitro.mannlib.cornell.edu/filegraph/abox/documentStatus.owl</a>	Data provided regarding document statuses
<a href="http://vitro.mannlib.cornell.edu/filegraph/abox/geopolitical.abox.ver1.1-11-18-11.owl">http://vitro.mannlib.cornell.edu/filegraph/abox/geopolitical.abox.ver1.1-11-18-11.owl</a>	Data provided regarding geopolitical entities
<a href="http://vitro.mannlib.cornell.edu/filegraph/abox/us-states.rdf">http://vitro.mannlib.cornell.edu/filegraph/abox/us-states.rdf</a>	Data provided regarding US states and territories
<a href="http://vitro.mannlib.cornell.edu/filegraph/abox/validation.n3">http://vitro.mannlib.cornell.edu/filegraph/abox/validation.n3</a>	Data regarding validation states
<a href="http://vitro.mannlib.cornell.edu/filegraph/abox/vocabularySource.n3">http://vitro.mannlib.cornell.edu/filegraph/abox/vocabularySource.n3</a>	Data provided regarding vocabulary sources
<a href="http://vitro.mannlib.cornell.edu/filegraph/tbox/ontologies.owl">http://vitro.mannlib.cornell.edu/filegraph/tbox/ontologies.owl</a>	Descriptions of the ontologies used in VIVO
<a href="http://vitro.mannlib.cornell.edu/filegraph/tbox/vitro-0.7.owl">http://vitro.mannlib.cornell.edu/filegraph/tbox/vitro-0.7.owl</a>	Ontology assertions for the Vitro application, internal
<a href="http://vitro.mannlib.cornell.edu/filegraph/tbox/vitroPublic.owl">http://vitro.mannlib.cornell.edu/filegraph/tbox/vitroPublic.owl</a>	Ontology assertions for the Vitro application, public. Defines files and file types
<a href="http://vitro.mannlib.cornell.edu/filegraph/tbox/vivo.owl">http://vitro.mannlib.cornell.edu/filegraph/tbox/vivo.owl</a>	The VIVO Ontology

## Notes

1. Graphs named "default" are built and managed by the Vitro application. Graphs names "filegraph" are loaded from files when VIVO starts. Graphs named "filegraph/abox" are data. Graphs named "filegraph/tbox" are ontology.
2. filegraph graphs are named with the name of the file they were loaded from.
3. filegraph files may be in several formats. You will see graphs loaded from files with type n3, owl and rdf.
4. The content in some of the filegraphs may repeat content found in other filegraphs. This does not impact the application.
5. Data you load by placing a file in filegraph/abox will appear as a result of the graph listing query above.