

tgftools

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1. Overview

A simple command line tool reading and converting TGF data to

- PLANTUML
- CSV
- JSON
- YAML

Following command line options are available

```
Usage: tgfMain [-hV] [--convert-csv] [--convert-json] [--convert-puml]
              [--convert-puml-mindmap] [--convert-puml-wbs] [--convert-yaml]
              [--overwrite-outputfile] [-f=<tgfFile>] [-o=<outputFile>]
parse, and convert TGF file format
  --convert-csv          convert TGF to csv
  --convert-json         convert TGF to json
  --convert-puml         convert TGF to puml
  --convert-puml-mindmap
                        convert TGF to puml mindmap
  --convert-puml-wbs     convert TGF to puml wbs
  --convert-yaml         convert TGF to yaml
-f, --file=<tgfFile>    read from TGF file, if not specified read TGF from
                        stdin
-h, --help              Show this help message and exit.
-o, --output=<outputFile>
                        write to file, if not specified write to stdout
  --overwrite-outputfile
                        overwrite existing output file
-V, --version           Print version information and exit.
```

2. TGF Format

TGF stands for Trivial-Graphic-Format. It simply defines a number of nodes, and edges.

The file syntax is simple:

```
file := node_list
      '#'
      edge_list

node_list := node_item node_list | node_item | []
node_item := node_id ' ' [node_name]
edge_list := edge_item edge_list | edge_item
edge_item := source_node_id ' ' target_node_id ' ' [edge_name]
source_node_id := node_id
target_node_id := node_id
```

An simple example with 2 nodes, and 1 edge:

```
1 Alice
2 Bob
#
2 1 hello
```

3. Use Case Generate TGF from Maven dependency:tree

You can generate a maven dependency tree in TGF-Format, like

```
mvn -DoutputType=tgf -DoutputFile=dependency_tree.tgf dependency:tree
```

Next you can convert the file `dependency_tree.tgf` using this command line tool, like

```
java -jar target/tgftools-1.0-SNAPSHOT-tgfmain.jar \  
--file=dependency_tree.tgf --convert-puml
```

The above command will read the file `dependency_tree.tgf`, and output a plantuml representation to stdout.

4. Use Case Convert TGF to CSV

You can convert a TGF file to CSV using the command line option `-convert-csv`.

The first column type describes if the csv row describes either a *node*, or an *edge*.

For a node entry *id_from* describes the *node_id*, and *name_to* describes the node name. The column *label* is always empty for a node node entry.

For an edge entry *id_form* describes the start node of the edge, *name_to* describes the end node of the edge. Finally *label* describes the optional label of the edge.

4.1. Example CSV

```

"type","id_from","name_to","label"
"node","244577237","org.huberb:tgftools:jar:1.0-SNAPSHOT",""
"node","1612496268","info.picocli:picocli:jar:4.6.1:compile",""
"node","13692003","org.junit.jupiter:junit-jupiter-api:jar:5.8.1:test",""
"node","94748968","org.opentest4j:opentest4j:jar:1.2.0:test",""
"node","1944815218","org.junit.platform:junit-platform-commons:jar:1.8.1:test",""
"node","1497558532","org.apiguardian:apiguardian-api:jar:1.1.2:test",""
"node","1584833211","org.junit.jupiter:junit-jupiter-params:jar:5.8.1:test",""
"node","1970377948","org.junit.jupiter:junit-jupiter-engine:jar:5.8.1:test",""
"node","1518752790","org.junit.platform:junit-platform-engine:jar:1.8.1:test",""
"edge","244577237","1612496268","compile"
"edge","13692003","94748968","test"
"edge","13692003","1944815218","test"
"edge","13692003","1497558532","test"
"edge","244577237","13692003","test"
"edge","244577237","1584833211","test"
"edge","1970377948","1518752790","test"
"edge","244577237","1970377948","test"

```

5. Use Case Convert TGF to PUML

You can convert a TGF file to PLANTUML using the command line option `-convert-puml`.

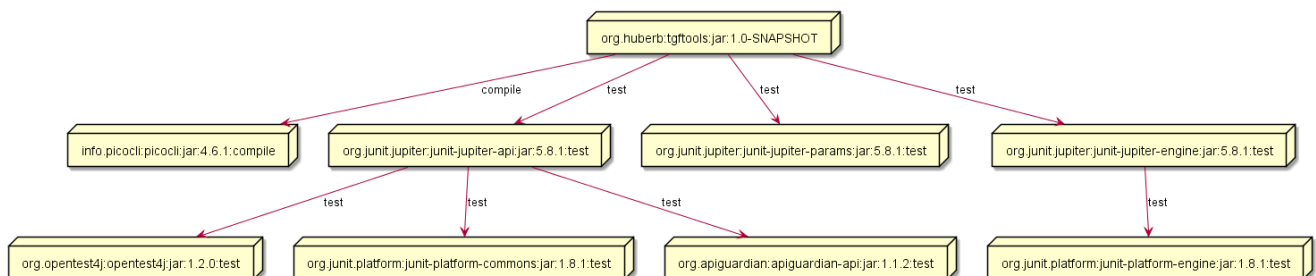
5.1. Example PUML

@startuml

```
' nodes
node "org.huberb:tgftools:jar:1.0-SNAPSHOT" as 244577237
node "info.picocli:picocli:jar:4.6.1:compile" as 1612496268
node "org.junit.jupiter:junit-jupiter-api:jar:5.8.1:test" as 13692003
node "org.opentest4j:opentest4j:jar:1.2.0:test" as 94748968
node "org.junit.platform:junit-platform-commons:jar:1.8.1:test" as 1944815218
node "org.apiguardian:apiguardian-api:jar:1.1.2:test" as 1497558532
node "org.junit.jupiter:junit-jupiter-params:jar:5.8.1:test" as 1584833211
node "org.junit.jupiter:junit-jupiter-engine:jar:5.8.1:test" as 1970377948
node "org.junit.platform:junit-platform-engine:jar:1.8.1:test" as 1518752790
' edges
244577237 --> 1612496268 : compile
13692003 --> 94748968 : test
13692003 --> 1944815218 : test
13692003 --> 1497558532 : test
244577237 --> 13692003 : test
244577237 --> 1584833211 : test
1970377948 --> 1518752790 : test
244577237 --> 1970377948 : test
```

@enduml

5.2. Example Rendered PUML



6. Use Case Convert TGF to PUML WBS

You can convert a TGF file to PUML wbs (work breakdown structure) using the command line option `-convert-puml-wbs`.

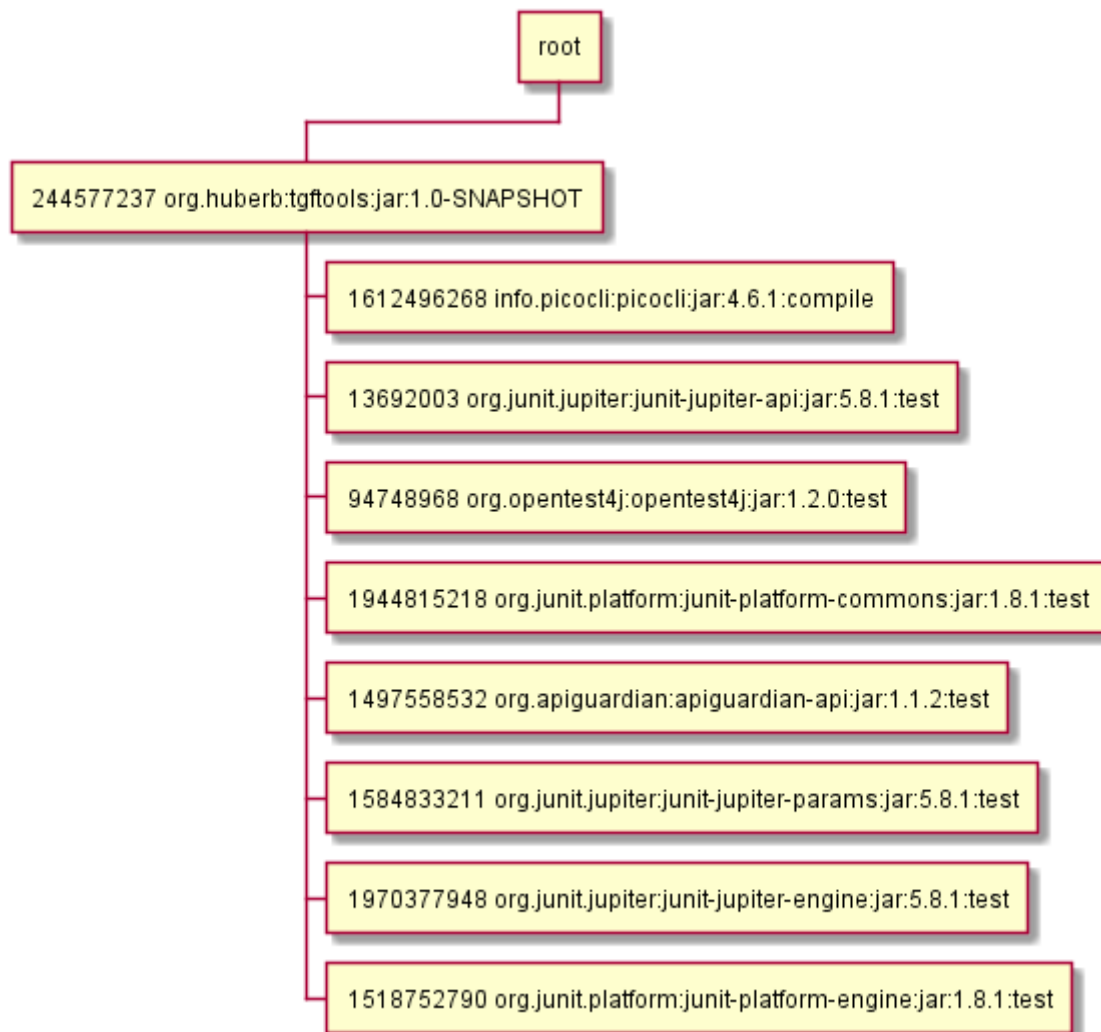
6.1. Example PUML WBS

@startwbs

```
* root
** 244577237 org.hubert:tgftools:jar:1.0-SNAPSHOT
*** 1612496268 info.picocli:picocli:jar:4.6.1:compile
*** 13692003 org.junit.jupiter:junit-jupiter-api:jar:5.8.1:test
*** 94748968 org.opentest4j:opentest4j:jar:1.2.0:test
*** 1944815218 org.junit.platform:junit-platform-commons:jar:1.8.1:test
*** 1497558532 org.apiguardian:apiguardian-api:jar:1.1.2:test
*** 1584833211 org.junit.jupiter:junit-jupiter-params:jar:5.8.1:test
*** 1970377948 org.junit.jupiter:junit-jupiter-engine:jar:5.8.1:test
*** 1518752790 org.junit.platform:junit-platform-engine:jar:1.8.1:test
```

@endwbs

6.2. Example Rendered PUML WBS



7. Use Case Convert TGF to PUML MINDMAP

You can convert a TGF file to PUML using the command line option `-convert-puml-mindmap`.

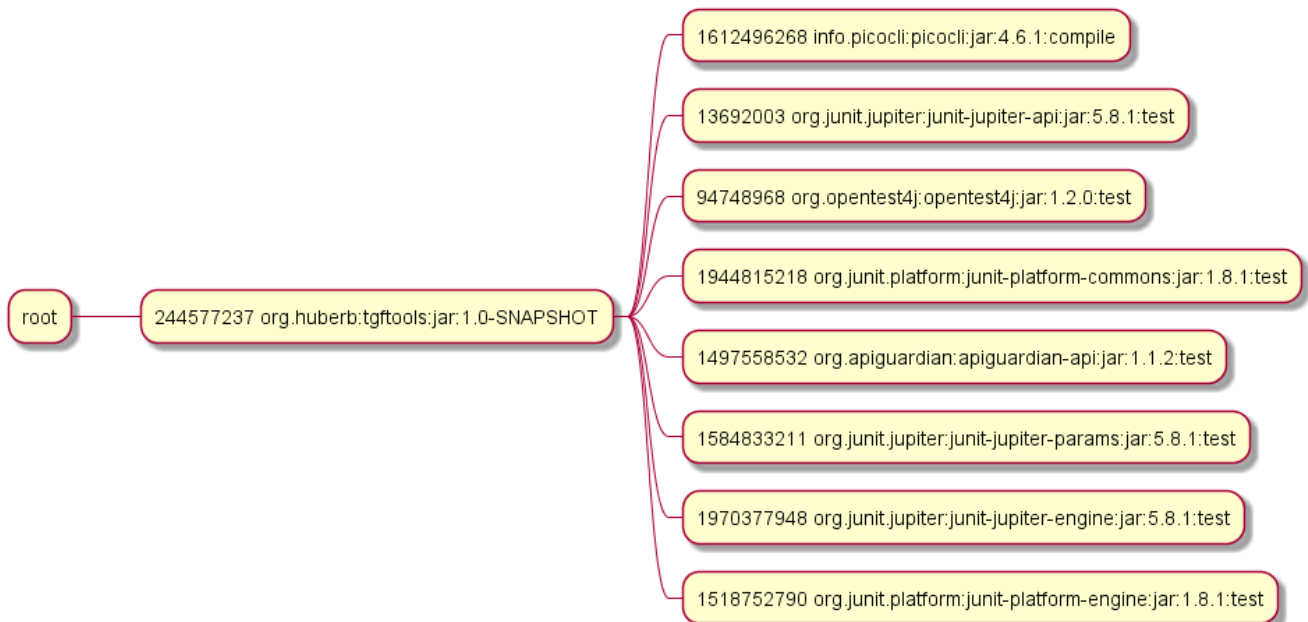
7.1. Example PUML MINDMAP

```
@startmindmap

* root
** 244577237 org.hubert:tgftools:jar:1.0-SNAPSHOT
*** 1612496268 info.picocli:picocli:jar:4.6.1:compile
*** 13692003 org.junit.jupiter:junit-jupiter-api:jar:5.8.1:test
*** 94748968 org.opentest4j:opentest4j:jar:1.2.0:test
*** 1944815218 org.junit.platform:junit-platform-commons:jar:1.8.1:test
*** 1497558532 org.apiguardian:apiguardian-api:jar:1.1.2:test
*** 1584833211 org.junit.jupiter:junit-jupiter-params:jar:5.8.1:test
*** 1970377948 org.junit.jupiter:junit-jupiter-engine:jar:5.8.1:test
*** 1518752790 org.junit.platform:junit-platform-engine:jar:1.8.1:test

@endmindmap
```

7.2. Example Rendered PLANTUML MINDMAP



8. Use Case Convert TGF to JSON

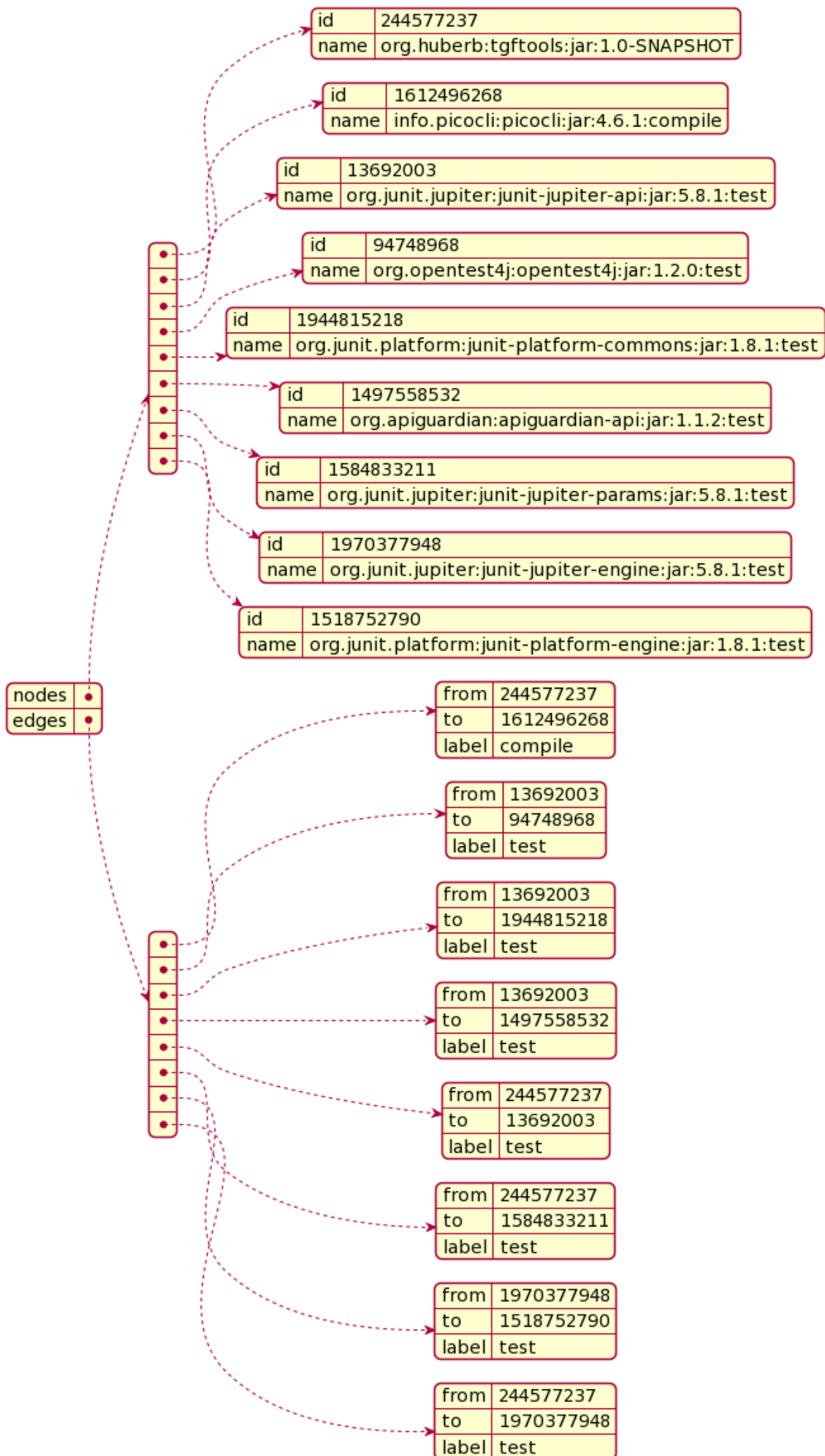
You can convert a TGF file to CSV using the command line option `-convert-json`.

8.1. Example JSON

```
{
  "nodes": [
    {"id": "244577237", "name": "org.hubert:tgftools:jar:1.0-SNAPSHOT"},
    {"id": "1612496268", "name": "info.picocli:picocli:jar:4.6.1:compile"},
    {"id": "13692003", "name": "org.junit.jupiter:junit-jupiter-api:jar:5.8.1:test"},
    {"id": "94748968", "name": "org.opentest4j:opentest4j:jar:1.2.0:test"},
    {"id": "1944815218", "name": "org.junit.platform:junit-platform-commons:jar:1.8.1:test"},
    {"id": "1497558532", "name": "org.apiguardian:apiguardian-api:jar:1.1.2:test"},
    {"id": "1584833211", "name": "org.junit.jupiter:junit-jupiter-params:jar:5.8.1:test"},
    {"id": "1970377948", "name": "org.junit.jupiter:junit-jupiter-engine:jar:5.8.1:test"},
    {"id": "1518752790", "name": "org.junit.platform:junit-platform-engine:jar:1.8.1:test"}
  ],
  "edges": [
    {"from": "244577237", "to": "1612496268", "label": "compile"},
    {"from": "13692003", "to": "94748968", "label": "test"},
    {"from": "13692003", "to": "1944815218", "label": "test"},
    {"from": "13692003", "to": "1497558532", "label": "test"},
    {"from": "244577237", "to": "13692003", "label": "test"},
    {"from": "244577237", "to": "1584833211", "label": "test"},
    {"from": "1970377948", "to": "1518752790", "label": "test"},
    {"from": "244577237", "to": "1970377948", "label": "test"}
  ]
}
```

8.2. Example Reendered JSON

Using plantuml feature ``@startjson/@endjson'' the JSON output is rendered



9. Use Case Convert TGF to YAML

You can convert a TGF file to CSV using the command line option `-convert-yaml`.

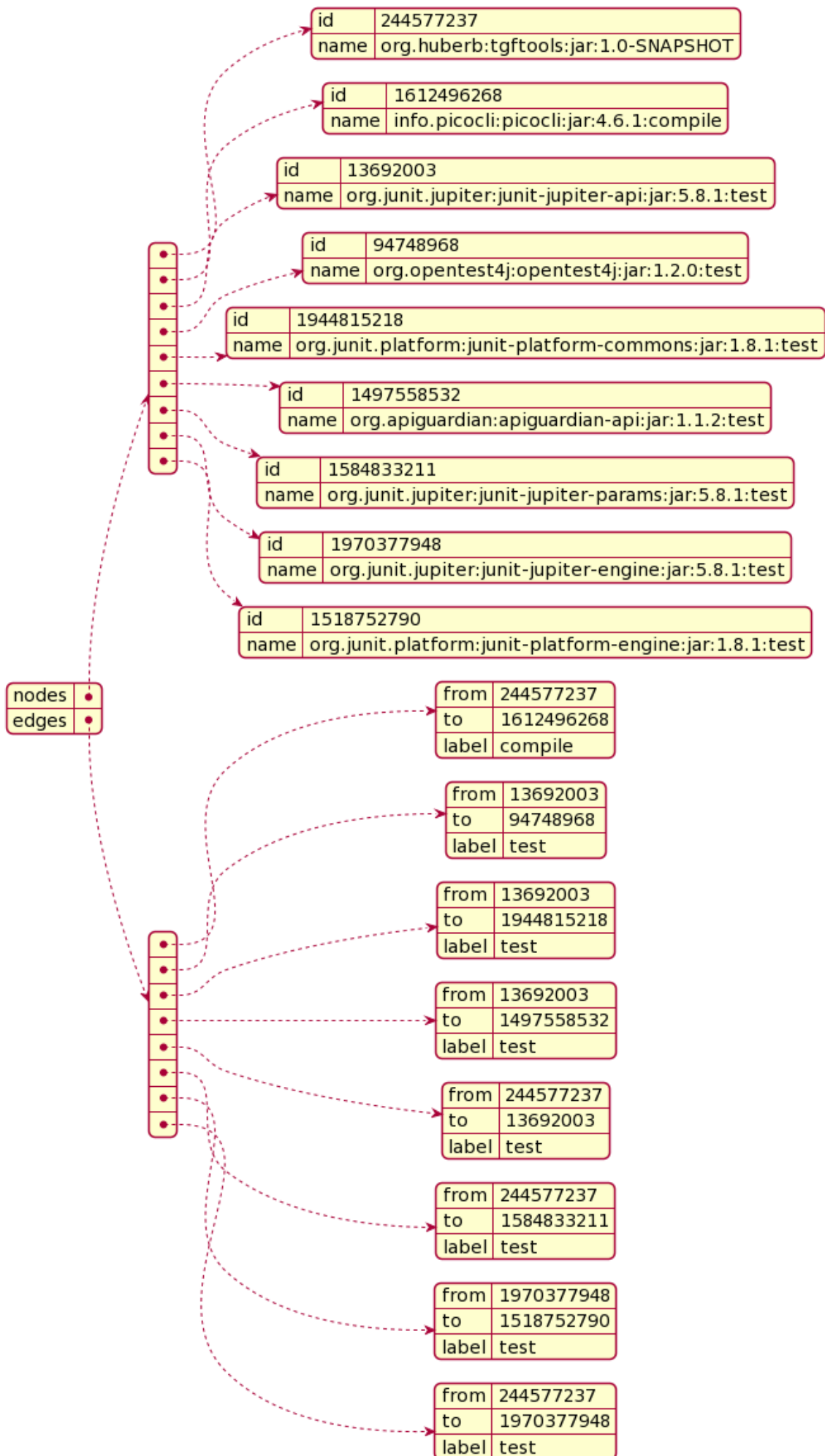
9.1. Example YAML

```
## YAML Template.
---
nodes:
  -
    id: "244577237"
    name: "org.huberb:tgftools:jar:1.0-SNAPSHOT"
  -
    id: "1612496268"
    name: "info.picocli:picocli:jar:4.6.1:compile"
  -
    id: "13692003"
    name: "org.junit.jupiter:junit-jupiter-api:jar:5.8.1:test"
  -
    id: "94748968"
    name: "org.opentest4j:opentest4j:jar:1.2.0:test"
  -
    id: "1944815218"
    name: "org.junit.platform:junit-platform-commons:jar:1.8.1:test"
  -
    id: "1497558532"
    name: "org.apiguardian:apiguardian-api:jar:1.1.2:test"
  -
    id: "1584833211"
    name: "org.junit.jupiter:junit-jupiter-params:jar:5.8.1:test"
  -
    id: "1970377948"
    name: "org.junit.jupiter:junit-jupiter-engine:jar:5.8.1:test"
  -
    id: "1518752790"
    name: "org.junit.platform:junit-platform-engine:jar:1.8.1:test"
edges:
  -
    from: "244577237"
    to: "1612496268"
    label: "compile"
  -
    from: "13692003"
    to: "94748968"
    label: "test"
  -
    from: "13692003"
    to: "1944815218"
    label: "test"
```

```
-  
  from: "13692003"  
  to: "1497558532"  
  label: "test"  
-  
  from: "244577237"  
  to: "13692003"  
  label: "test"  
-  
  from: "244577237"  
  to: "1584833211"  
  label: "test"  
-  
  from: "1970377948"  
  to: "1518752790"  
  label: "test"  
-  
  from: "244577237"  
  to: "1970377948"  
  label: "test"
```

9.2. Example Reendered YAML

Using plantuml feature ``@startyaml/@endyaml" the JSON output is rendered



10. References

- TGF : https://en.wikipedia.org/wiki/Trivial_Graph_Format
- PLANTUML : <https://plantuml.com/>