

YANG TO RDF



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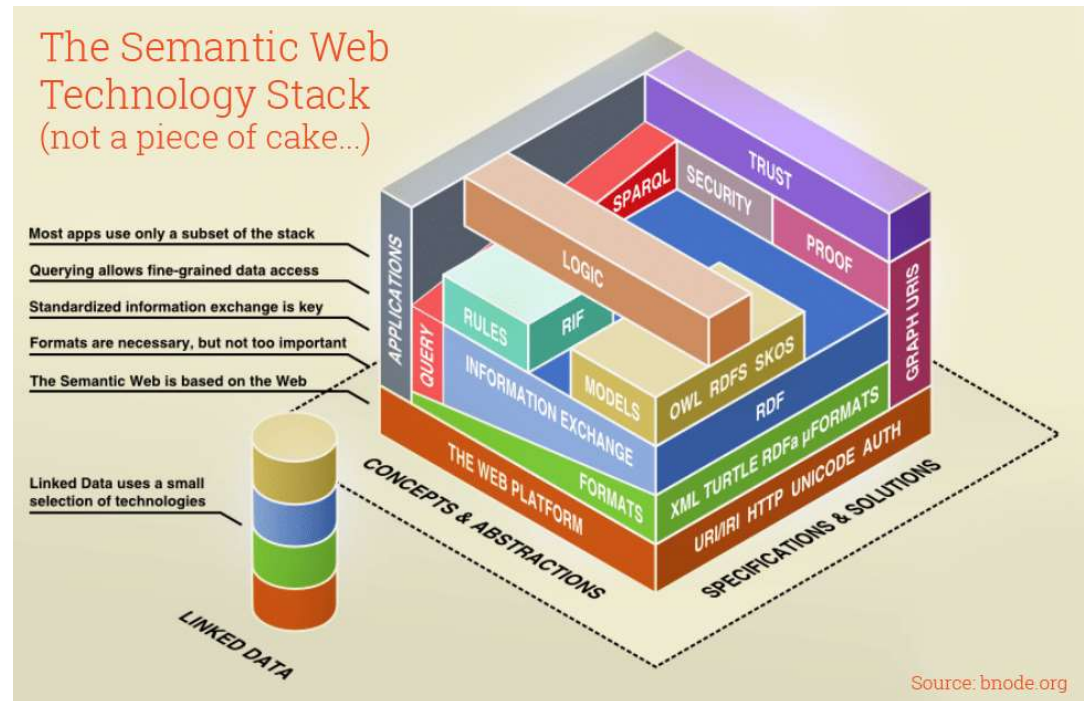
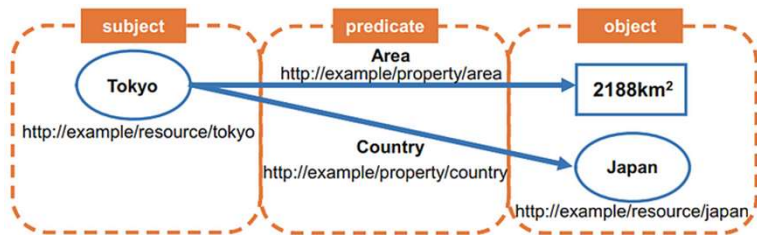
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What is RDF ?

A **semantic triple**, or **RDF triple** or simply **triple**, is the atomic data entity in RDF

Subject, predicate and object



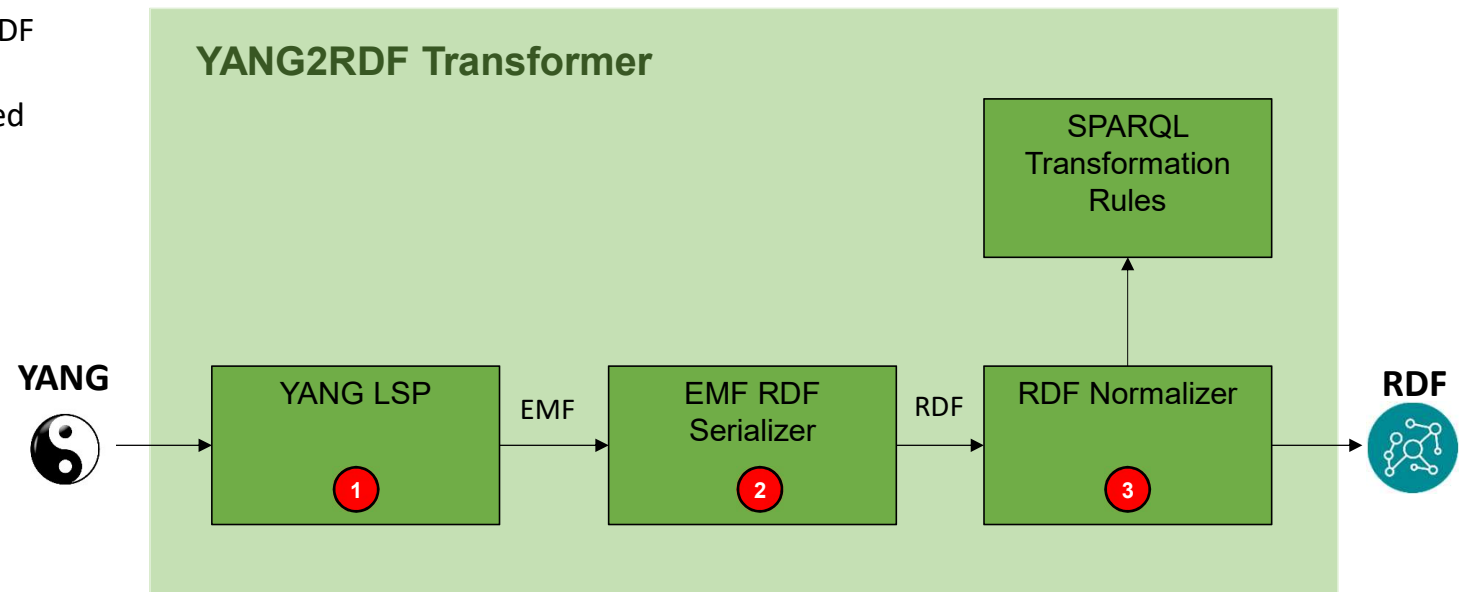
Latest version: 1.1 (Recommendation); February 25, 2014; 8 years ago

YANG2RDF Transformer

- YANG model is a hierarchical model in plain text
- YANG model is transformed to RDF using YANG2RDF Transformer
- Anything in RDF can be connected to something else

How it works:

- 1 YANG model is parsed to EMF model
- 2 EMF model is transformed to RDF
- 3 RDF is normalized for optimal representation using SPARQL Transformation Rules

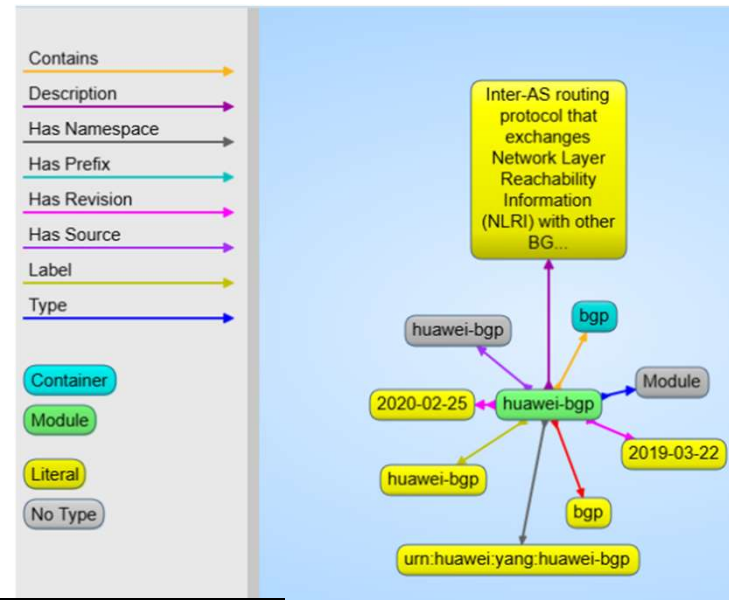


Sample Results: Describe a module

Conversion Of The YANG modules for a Sample Device
(Huawei ne40e-x8x16)

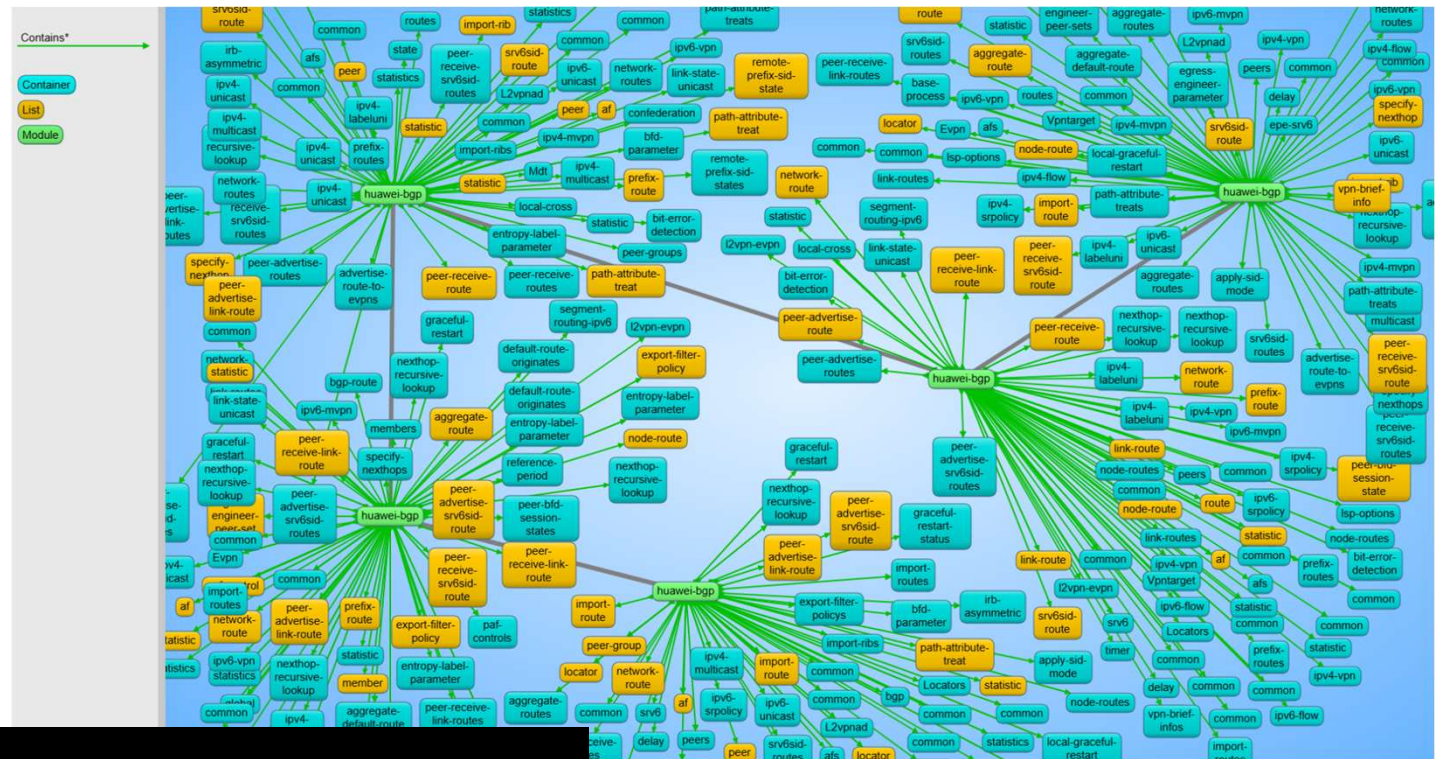
<https://github.com/Huawei/yang/tree/master/network-router/8.20.10/ne40e-x8x16>

➔ Created 277,329 Triples



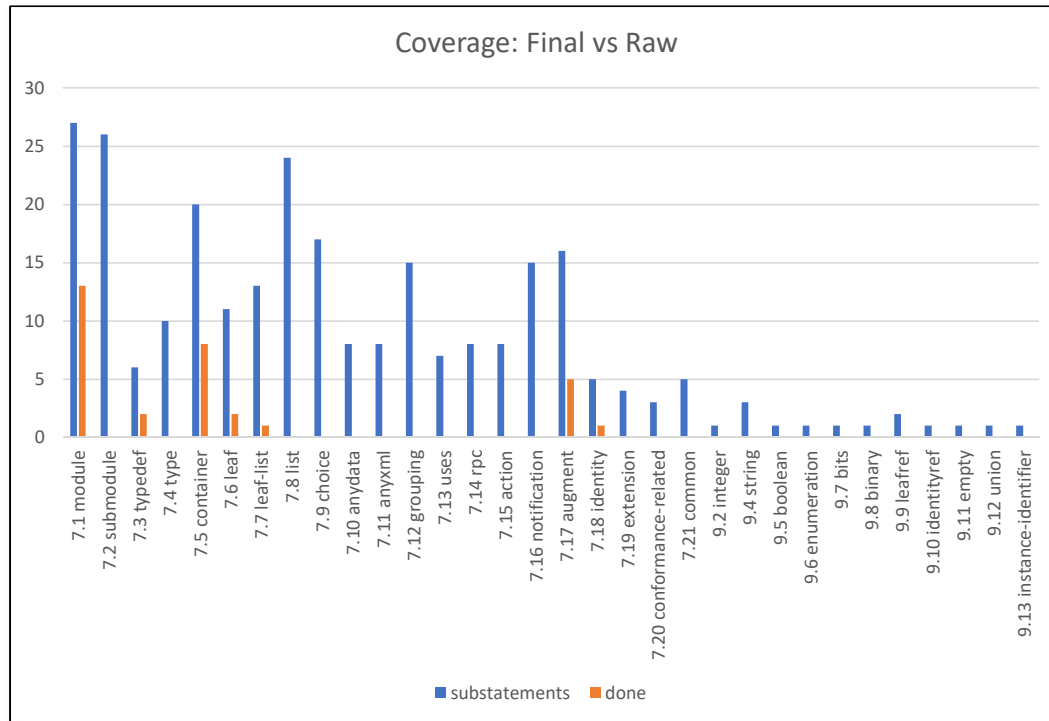
```
DESCRIBE <http://huawei.com/kg/def/common/Module/huawei-bgp>
```

Sample Results: Show all List/Containers for a module



```
SELECT DISTINCT *  
WHERE {  
  VALUES ?module { <http://huawei.com/kg/def/common/Module/huawei-bgp> }  
  VALUES ?statementType { <http://huawei.com/kg/def/yang/Container>  
    <http://huawei.com/kg/def/yang/List> } .  
  ?module yang:contains* ?statementInstance .  
  ?statementInstance a ?statementType .  
}
```


Results Summary



Full Grammar Support !

- ALL Yang Statements And Substatements translated

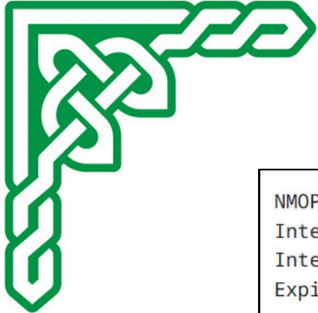
Main structural features of YANG Supported

- Reconciliation of Augment, Grouping, Extension, Deviation

Translation Of Autogenerated IRIs to Deterministic IRIs based on XPATH

- Partial support for Module, Container, Leaf, LeafList, Type and Identity


Checkout the code !!! <https://github.com/Huawei-IOAM/yang2rdf>



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NTT
21 October 2024

Knowledge Graph Framework for Network Operations
draft-mackey-nmop-kg-for-netops-01



**For More Information
On Knowledge Graphs
And Networking -
Please Check Out Our
Draft !!!**

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