

Catalog and registry for YANG models

OpenConfig network operator working group
www.openconfig.net

draft-openconfig-netmod-model-catalog-00

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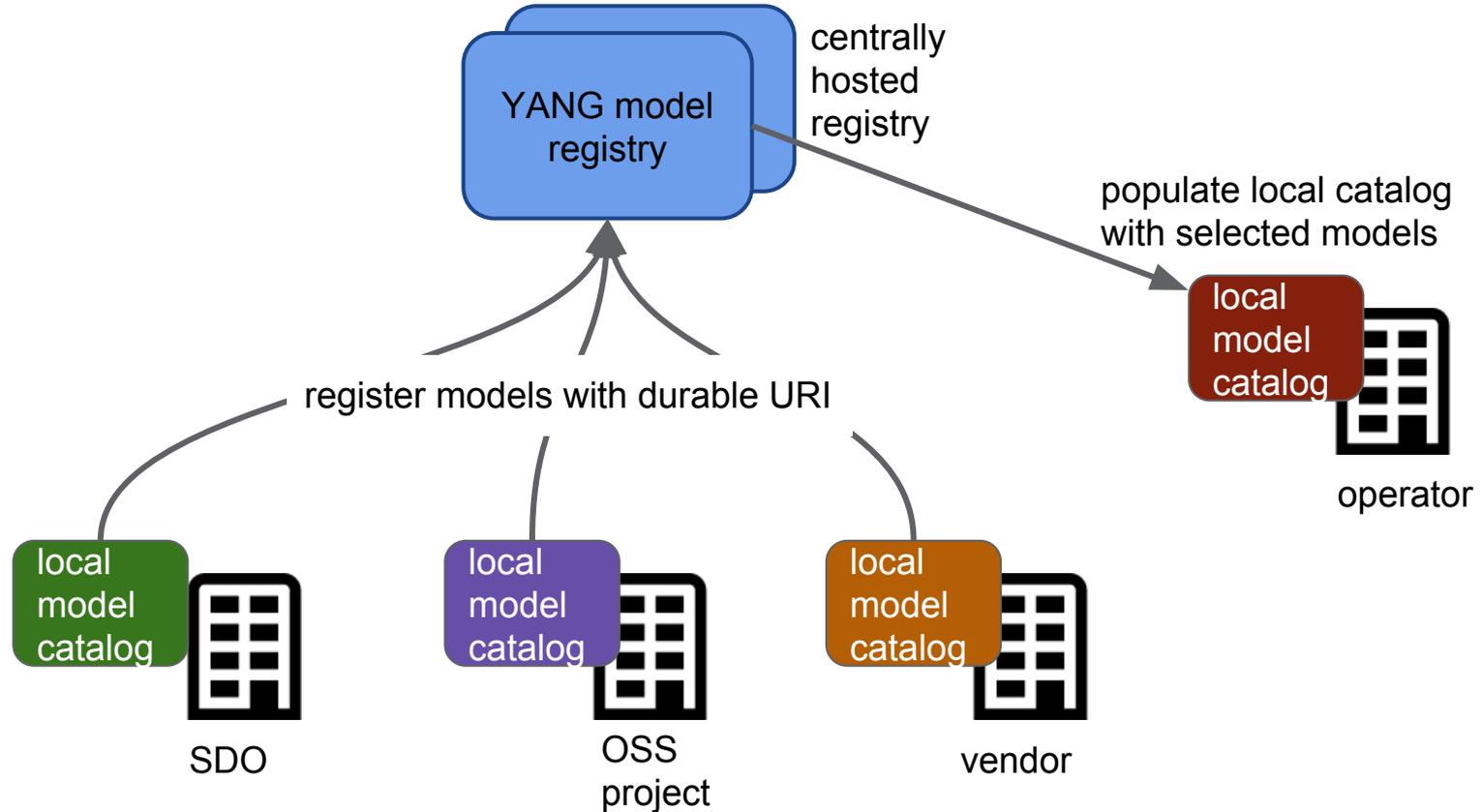


I E T F[®]
IETF 94
NETMOD WG

Why do we need a registry for YANG models

- Models everywhere
 - IETF : 165 modules
 - MEF : 5 modules
 - IEEE : 7 modules
 - ODL: 500+ modules
 - OpenConfig : 30 modules
 - more coming ...
- what do these models do?
- are they implemented?
- how mature are they?
- are they free to use?
- where can I get them?

Central registry , distributed administration



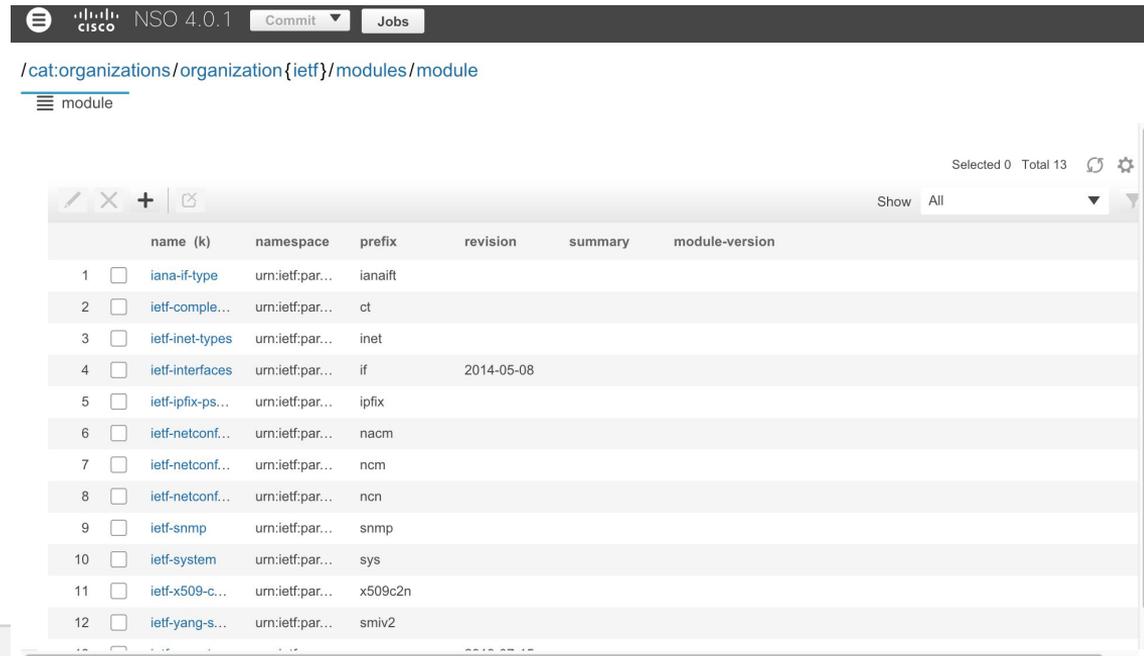
Requirements for the model catalog

Provide the information needed for users to determine which models best meet their needs

- organization responsible for the module
- classification of the module
 - functional category, service vs. element, commercial vs. free-to-use, model license, etc.
 - extensible via augments
- module dependencies
- durable, machine-readable pointer to the YANG module
- list of available server implementations that support the module
- authentication / verification information

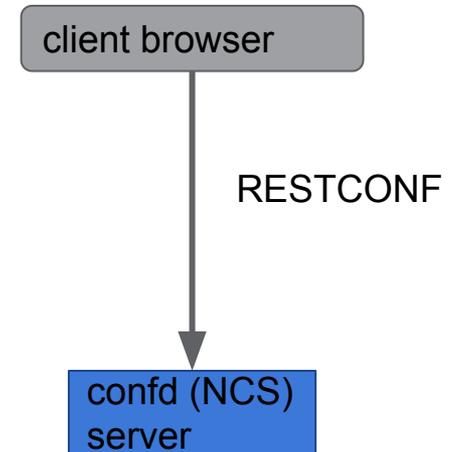
Example implementation

- Demo created as part of the IETF Hackathon (Carl Moberg, Cisco)
 - RESTCONF based admin interface to the registry
 - ability to update and retrieve catalog data



The screenshot shows a RESTCONF interface for the NSO 4.0.1 system. The breadcrumb path is `/cat:organizations/organization{iETF}/modules/module`. The interface displays a table of modules with columns for name, namespace, prefix, revision, summary, and module-version. The table contains 12 rows of data, including modules like `iana-if-type`, `ietf-comple...`, `ietf-inet-types`, `ietf-interfaces`, `ietf-ipfix-ps...`, `ietf-netconf...`, `ietf-netconf...`, `ietf-netconf...`, `ietf-snmp`, `ietf-system`, `ietf-x509-c...`, and `ietf-yang-s...`.

	name (k)	namespace	prefix	revision	summary	module-version
1	<input type="checkbox"/> iana-if-type	urn:ietf:par...	ianaift			
2	<input type="checkbox"/> ietf-comple...	urn:ietf:par...	ct			
3	<input type="checkbox"/> ietf-inet-types	urn:ietf:par...	inet			
4	<input type="checkbox"/> ietf-interfaces	urn:ietf:par...	if	2014-05-08		
5	<input type="checkbox"/> ietf-ipfix-ps...	urn:ietf:par...	ipfix			
6	<input type="checkbox"/> ietf-netconf...	urn:ietf:par...	nacm			
7	<input type="checkbox"/> ietf-netconf...	urn:ietf:par...	ncm			
8	<input type="checkbox"/> ietf-netconf...	urn:ietf:par...	ncn			
9	<input type="checkbox"/> ietf-snmp	urn:ietf:par...	snmp			
10	<input type="checkbox"/> ietf-system	urn:ietf:par...	sys			
11	<input type="checkbox"/> ietf-x509-c...	urn:ietf:par...	x509c2n			
12	<input type="checkbox"/> ietf-yang-s...	urn:ietf:par...	smiv2			



Additional use cases and open questions

Consumers / operators

- determine which models provide needed functionality
- what platforms support the model
- create approved / tested module 'bundles'
 - example schema in the draft

Model developers

- find existing models to leverage
- query for already-defined types and other reusable data

Open issues

- registry should be central -- where to host? by whom?
- handling per-org schema extensions
- cross-org updates (e.g., vendors updating implementation info)