

# draft-clacla-netmod-model-catalog-00

## Netmod WG

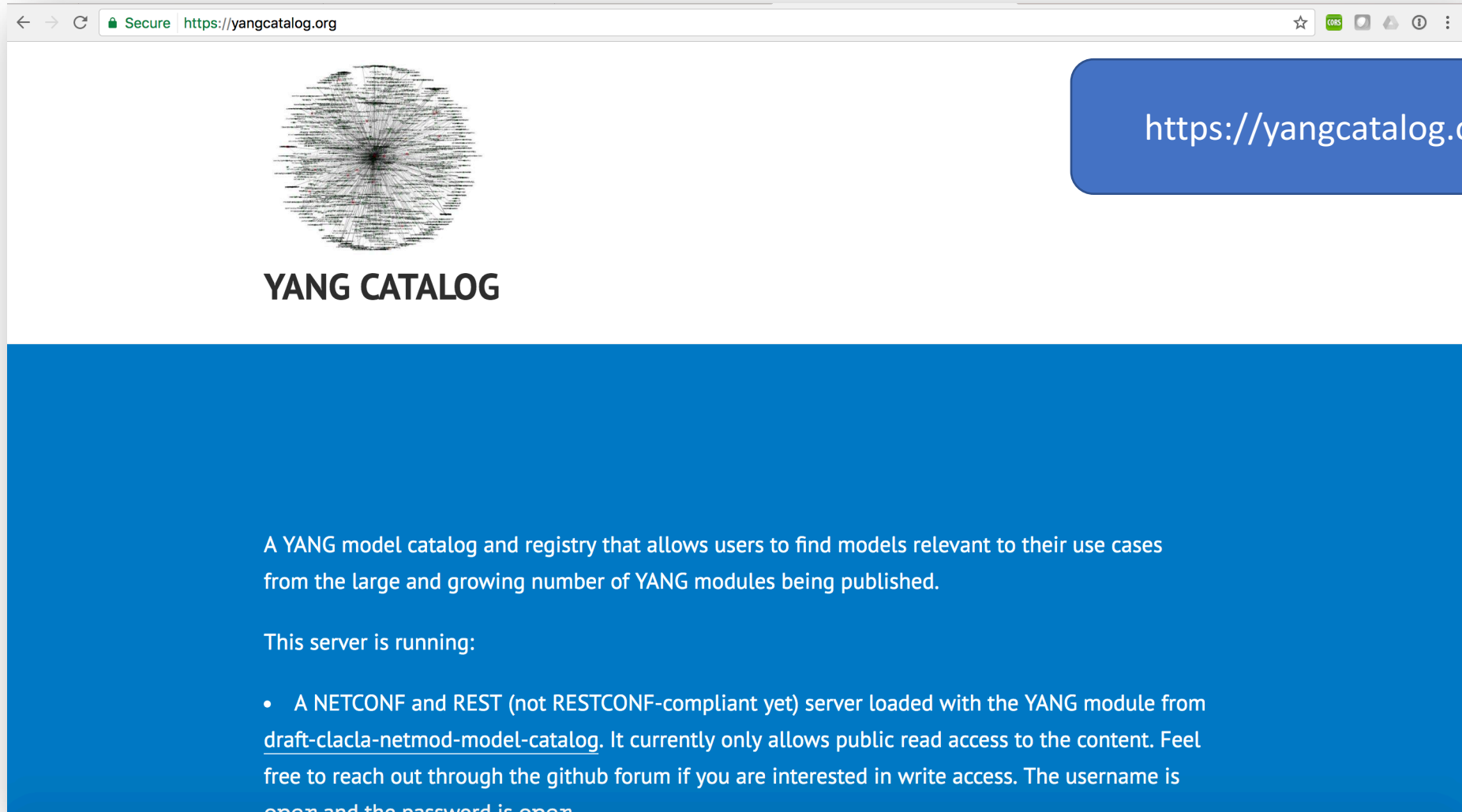
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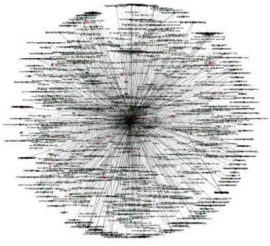
# Introduction

- We're beginning to have a “good” problem with YANG
  - Lots of YANG modules
  - Lots of bodies working on YANG modules
  - Lots of vendors implementing YANG modules
- Is it sufficient just to have a module developed and implemented?
- We need an industry-wide, single stop, open catalog and toolchain to help YANG consumers, YANG implementors, and YANG authors find and explore available modules

# Yangcatalog.org



Secure <https://yangcatalog.org>



**YANG CATALOG**

A YANG model catalog and registry that allows users to find models relevant to their use cases from the large and growing number of YANG modules being published.

This server is running:

- A NETCONF and REST (not RESTCONF-compliant yet) server loaded with the YANG module from [draft-clacla-netmod-model-catalog](#). It currently only allows public read access to the content. Feel free to reach out through the github forum if you are interested in write access. The username is open and the password is open

<https://yangcatalog.org>

# draft-clacla-netmod-model-catalog-00

- Driven by running code to address various use cases around YANG models
- Defines a YANG model, **yang-catalog.yang** that describes per-model and per-vendor implementation metadata used by various tools
- Provides for a sub-tree to derive per-model metadata, including implementations of models
- Provides a sub-tree to find all models implemented by a given vendor on a given platform with a given software release
- Choice made to move away from the Openconfig catalog model
  - It started to deviate from providing per-model implementation
  - Regular expression syntax was not consistent with RFC7950
  - Confusion between it and the IETF YANG Library (RFC7895)

# Use Cases

- Given a YANG model find all vendors, platforms, and software releases that implement it
- Given a vendor, platform, and software release show all of the implemented YANG models and their conformance/deviations
- Given a YANG model provide details about module maturity, compilation status, originating document, originating WG, service model or device model, etc.

# Model Subtree

```
+--rw module* [name revision]
  +--rw name          yang:yang-identifier
  +--rw revision      union
  +--rw schema?       inet:uri
  +--rw namespace     inet:uri
  +--rw feature*      yang:yang-identifier
  +--rw deviation* [name revision]
    | +--rw name      yang:yang-identifier
    | +--rw revision  union
  +--rw conformance-type enumeration
  +--rw submodule* [name revision]
    | +--rw name      yang:yang-identifier
    | +--rw revision  union
    | +--rw schema?   inet:uri
  +--rw document-name? string
  +--rw author-email?  string
  +--rw compilation-status? enumeration
  +--rw compilation-result? string
  +--rw reference?     string
  +--rw prefix?       string
  +--rw yang-version?  string
  +--rw organization?  string
  +--rw description?   string
  +--rw contact?       string
  +--rw module-type?   enumeration
  +--rw maturity-level? enumeration
  +--rw implementations
    +--rw implementation* [vendor platform software-version software-flavor]
      +--rw vendor          string
      +--rw platform        string
      +--rw software-version string
      +--rw software-flavor string
      +--rw os-version?     string
      +--rw feature-set?    string
      +--rw os-type?        string
```

- Contains a summary of data that can be extracted from a module plus non-extractable metadata
- Initially used the `module-list` grouping from `ietf-yang-library` (RFC7895)
- The nodes `conformance-type`, `feature`, and `deviation` require a server (and the module subtree doesn't have a concept of a server)

# Compilation Status

- When registered with the YANG Catalog, models are processed by a number of validators
- The result of those compilations is provided in the `compilation-status` leaf
  - PASSED : No compiler errors or warnings
  - PASSED-WITH-WARNINGS : No errors, but warnings were encountered
  - FAILED : Compilation in at least one compiler failed
  - MISSING : No compilation status available
- The output of the compilation is included in the `compilation-result` leaf

# Maturity Levels

- For Standards Development Organizations' (SDO) YANG models, there is a notion of maturity as a model is developed
  - Individual : The model (or its document) has been submitted to the SDO, but has no other formal status
  - Working-group : The model has been adopted as an official work item by the SDO or a sub-organization therein
  - Ratified : The document is an approved standard
- Current text suggests a mapping for vendors, but in further discussion, there will be a “not-applicable” maturity for vendors



# Vendor Implementation Subtree

```
+--rw vendor* [name]
+--rw name          string
+--rw platforms
+--rw platform* [name]
+--rw name          string
+--rw software-versions
+--rw software-version* [name]
+--rw name          string
+--rw software-flavors
+--rw software-flavor* [name]
+--rw name          string
+--rw protocols
| +--rw protocol* [name]
|   +--rw name      enumeration
|   +--rw protocol-version? string
|   +--rw capabilities* string
+--rw modules
+--rw module* [name revision]
+--rw name        -> ../../../../../../../../../../modules/module/name
+--rw revision    -> ../../../../../../../../../../modules/module/revision
```

- Provides a means to search for all modules implemented on a platform and software release
- Conformance, feature and deviation need to move here

# Intent And Next Steps

- Intent of this document is not necessarily to standardize, but to openly advertise the work
- Development of the yang-catalog model is being done in GitHub using draft-clause-semver
  - <https://github.com/xorrkaz/netmod-yang-catalog>
  - Newer version of the draft already in GitHub
- Received a couple of expert YANG reviews thus far
- New revision of draft and model forthcoming
- Future enhancements to support bundles of related models
- Contribute to the Catalog → <https://yangcatalog.org/contribute.php>
- Updates about the Catalog → [announce@yangcatalog.org](mailto:announce@yangcatalog.org)