

IETF YANG Advancements

Current YANG work relevant to ITU-T SG15 and
IEEE 802

Introduction

- This is NOT a YANG introduction (but there is a slide to set context)
- This presentation discusses YANG features NOT currently utilized by ITU-T SG15 or IEEE 802

- Applicability to IEEE 802.1, IEEE 802.3, IEEE 1588, and ITU-T SG15
- Background
- Updated Guidelines
- Useful YANG related IETF Standards
- Schema Mount

But First...
Why do you care?

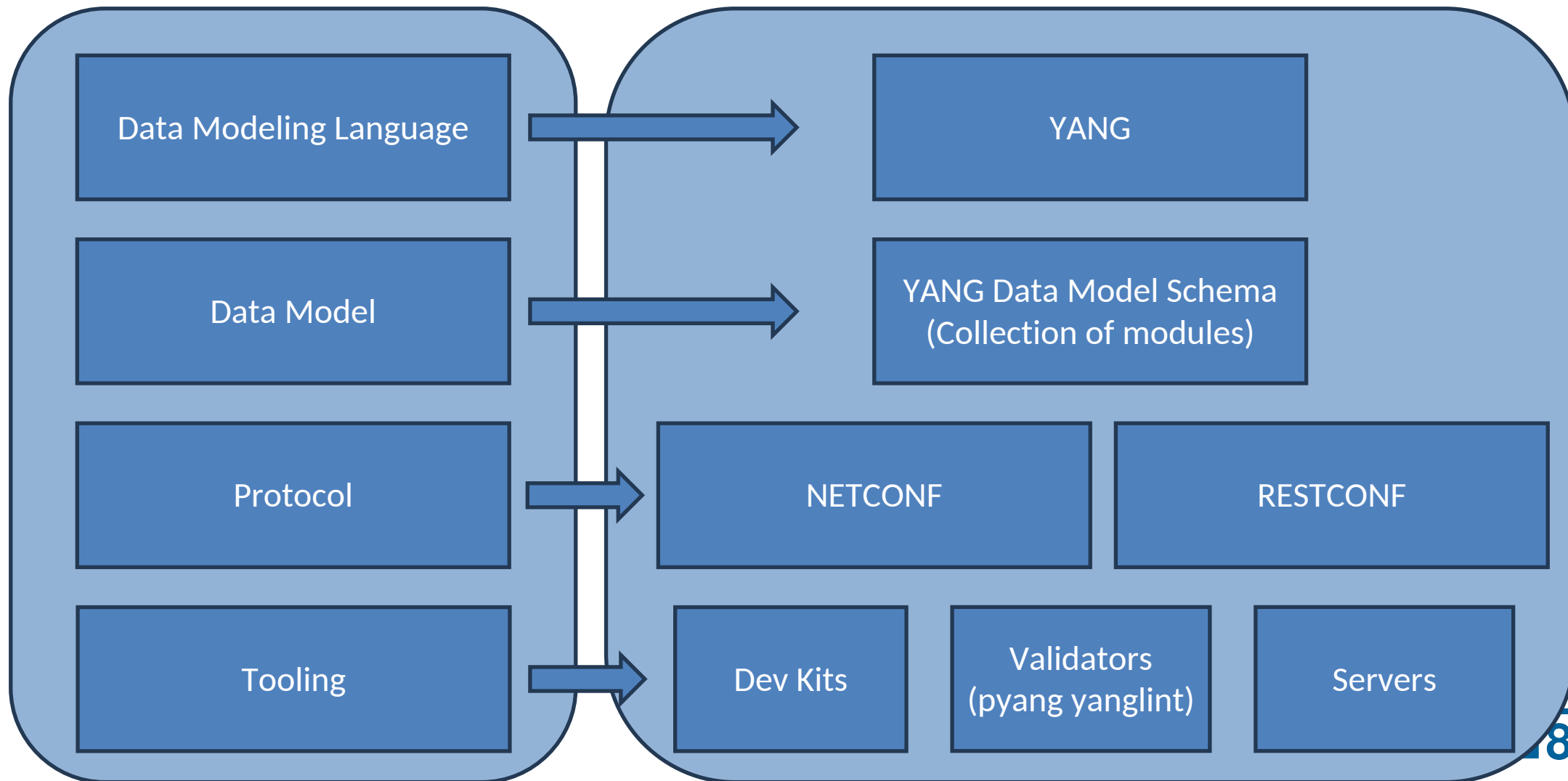


Why I think you care...

- YANG and NETCONF have broad acceptance in the standards community
 - With many on-going projects in IEEE 802.1, IEEE 802.3, IEEE 1588, and ITU-T SG15 (among others)
- Coordination is very important because YANG is a general-purpose data modeling language and guidelines for use of the modeling language are important to ensure all models work well together and can be extended in useful ways.
 - Ask me about "Not all YANG Models are the same" (if you have a couple hours)
- **There are many tools in the YANG toolbox that we are not currently leveraging in Standards Development**

Background

- YANG and NETCONF Relationship



Guidelines for Authors and Reviewers of Documents Containing YANG Data Models

- <https://datatracker.ietf.org/doc/draft-ietf-netmod-rfc8407bis/>
- Obsoletes RFC8407 and updates a couple other RFCs
- Disclaimer: RFC8407 is currently used... but this provides some information about why Standards Bodies should consider moving to the new guidelines
- Some Updates
 - Many new recommendations and clarifications
 - Clarification on recommendation related to folding YANG modules
 - Recommendation on how to clearly identify examples
 - More information on IANA modules

Useful YANG-related IETF Standards

- YANG Module Tags RFC8819
 - Ability to provide "hashtag" like tags to Modules
- YANG Library RFC8525
 - Provides a YANG model that provides information about YANG modules
 - Can be used as an API to share information about what YANG modules features/functionality are supported on a server.
- YANG Module Revision Handling
 - This is an Internet draft that provides guidance for versioning and identification of non-backward-compatible changes
- Bottom Line: All the about could be used to streamline version and revision handling and provide a way to group modules that have related functionality.

Schema Mount and YANG Include

- Schema Mount described in RFC 8528
 - A server normally has one schema (YANG model - made up of multiple YANG modules) loaded.
 - Schema Mount allows a server to "mount" multiple copies of the same YANG module at deployment or runtime.
- YANG Include
 - Current this is an individual draft that has promise to address some of the issues identified with schema mount including the ability to define reusable models at design time.

More Information

- IETF NETCONF Working Group:
 - <https://datatracker.ietf.org/wg/netconf/about/>
- IETF NETMOD Working Group:
 - <https://datatracker.ietf.org/wg/netmod/about/>
- IEEE 802.1 YANGsters Group:
 - <https://1.ieee802.org/yangsters/>
- Linux Foundation ONMI Project:
 - [Open Network Models and Interfaces \(ONMI\) · GitHub](#)
- Public YANG Repository
 - <https://github.com/YangModels/yang>
- YANG Catalog
 - <https://www.yangcatalog.org/>

Summary

- There are many YANG advancements available, and some advancements are being defined now!
- As the number of YANG modules increases, the more important it is to have a well-defined process to manage modules.
- This presentation provides some pointers to YANG enhancements that would be useful to leverage to increase the maturity of YANG module development.

Thanks!

IEEE
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