

IETF 121 [Dublin and Online]

NETMOD Working Group

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- Online Agenda and Slides: <https://datatracker.ietf.org/meeting/121/session/netmod>
- Data tracker: <http://datatracker.ietf.org/wg/netmod/>
- Notes: <https://notes.ietf.org/notes-ietf-121-netmod#both>

Note Well

This is a reminder of IETF policies in effect on various topics such as patents or code of conduct. It is only meant to point you in the right direction. Exceptions may apply. The IETF's patent policy and the definition of an IETF "contribution" and "participation" are set forth in BCP 79; please read it carefully.

As a reminder:

- By participating in the IETF, you agree to follow IETF processes and policies.
- If you are aware that any IETF contribution is covered by patents or patent applications that are owned or controlled by you or your sponsor, you must disclose that fact, or not participate in the discussion.
- As a participant in or attendee to any IETF activity you acknowledge that written, audio, video, and photographic records of meetings may be made public.
- Personal information that you provide to IETF will be handled in accordance with the IETF Privacy Statement.
- As a participant or attendee, you agree to work respectfully with other participants; please contact the ombudsteam (<https://www.ietf.org/contact/ombudsteam/>) if you have questions or concerns about this.

Definitive information is in the documents listed below and other IETF BCPs. For advice, please talk to WG chairs or ADs:

- BCP 9 (Internet Standards Process)
- BCP 25 (Working Group processes)
- BCP 25 (Anti-Harassment Procedures)
- BCP 54 (Code of Conduct)
- BCP 78 (Copyright)
- BCP 79 (Patents, Participation)
- <https://www.ietf.org/privacy-policy/> (Privacy Policy)

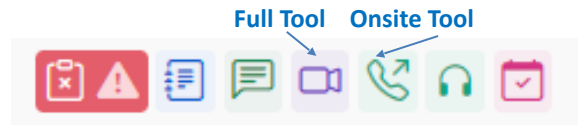
Also see: <http://www.ietf.org/about/note-well.html>:

IETF Conduct Guidelines

The IESG has asked all chairs to remind their working groups of the need for appropriate behavior. This is described in more detail in BCP 54. In summary:

1. IETF participants extend respect and courtesy to their colleagues at all times.
2. IETF participants have impersonal discussions.
3. IETF participants devise solutions for the global Internet that meet the needs of diverse technical and operational environments.
4. Individuals are prepared to contribute to the ongoing work of the group.

IETF 121 Meeting Tips



- **In-person participants**

- Make sure to sign into the session using the Meetecho Onsite Tool from the Datatracker agenda
- Use Meetecho to join the mic queue
- *Keep audio and video off if not using the onsite version*

- **Remote participants**

- Make sure your audio and video are off unless you are chairing or presenting during a session
- Use of a headset is strongly recommended

Administrative

- Meetecho
 - **Using meetecho queue control**
 - Chat/Jabber available for use
 - Bluesheets – via meetecho (remote and local app)
- Note taking
 - <https://notes.ietf.org/notes-ietf-121-netmod>
 - Please help with minute taking
(only discussion needs to be captured)
- Online Agenda and Slides at:
<https://datatracker.ietf.org/meeting/121/session/netmod>
- Data tracker:
<http://datatracker.ietf.org/wg/netmod/>

Today's Agenda: Special Focus on Templates

- 13) Session Intro (10 min)
- 14) YANG template idea #1 (10 min)
- 15) YANG template idea #2 (10 min)
- 16) YANG template idea #3 (10 min)
- 17) YANG template idea #4 (10 min)
- 18) Open Discussion (10 min)

Time remaining: 0 mins

How Did We Get Here?

Templates are hinted at, but not defined in NMDA (RFC 8342)

- o Some implementations have proprietary mechanisms that allow clients to define configuration templates in `<running>`. These templates are expanded automatically by the system, and the resulting configuration is applied internally.

This idea coming again because of an incoming liaison that indicates that templates are needed to more concisely define configuration.

Liaison from ITU-T-SG-15: [LS/r on Scalable YANG \(reply to LIAISE-666\)](#)

What Are Templates?

Templates enable common configuration to be factored out

- they support DRY approach (Don't Repeat Yourself)

Templates reduced cognitive overhead, over-the-wire data, and memory consumption.

What Templates are not:

Despite these presentations being labelled as “YANG Templates Ideas”

- Templates do not affect the YANG-language itself

The idea is that they can work with any YANG data-model (even if augmented)

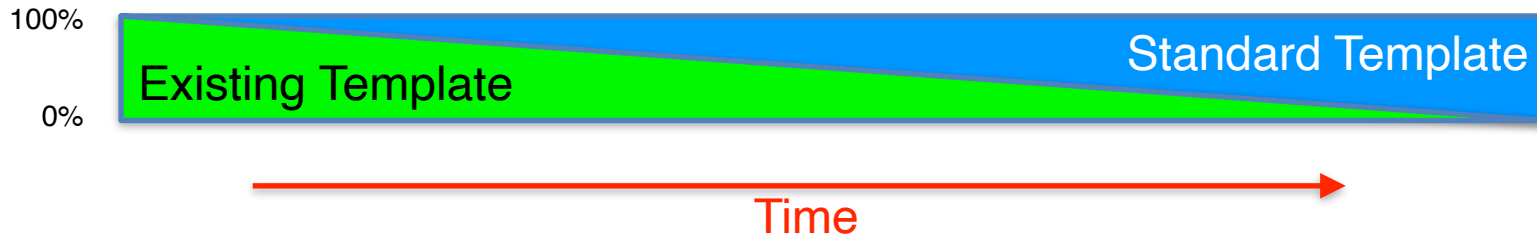
Should Templates Be Standardized?

Templates could've been standardized before now

- Why didn't we discuss earlier?
 - WG too busy?
 - Issue not important?
 - Concern that templates require the clients/servers to opt-into using NMDA?
 - Concern that client-side tooling is missing?

Given existing solutions, how to gracefully migrate?

- Can solution annotate which template mechanism is in use?



What's the Purpose for the Next Hour

- Decide if important
- Compare/contrast existing solutions

Considerations:

- Are these ideas solving the same problem?
- Is the goal to address size over the wire or internally too?
- Is the goal to reduce human cognitive overload (e.g., debugging at 4am)?
- Should template solution be independent of data models
 - or is validation of <running> alone necessary?