Subscription Drafts

IETF #102 - NETCONF WG

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16-Jul-2018

With Thanks to...

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NETCONF WG Subscription Drafts

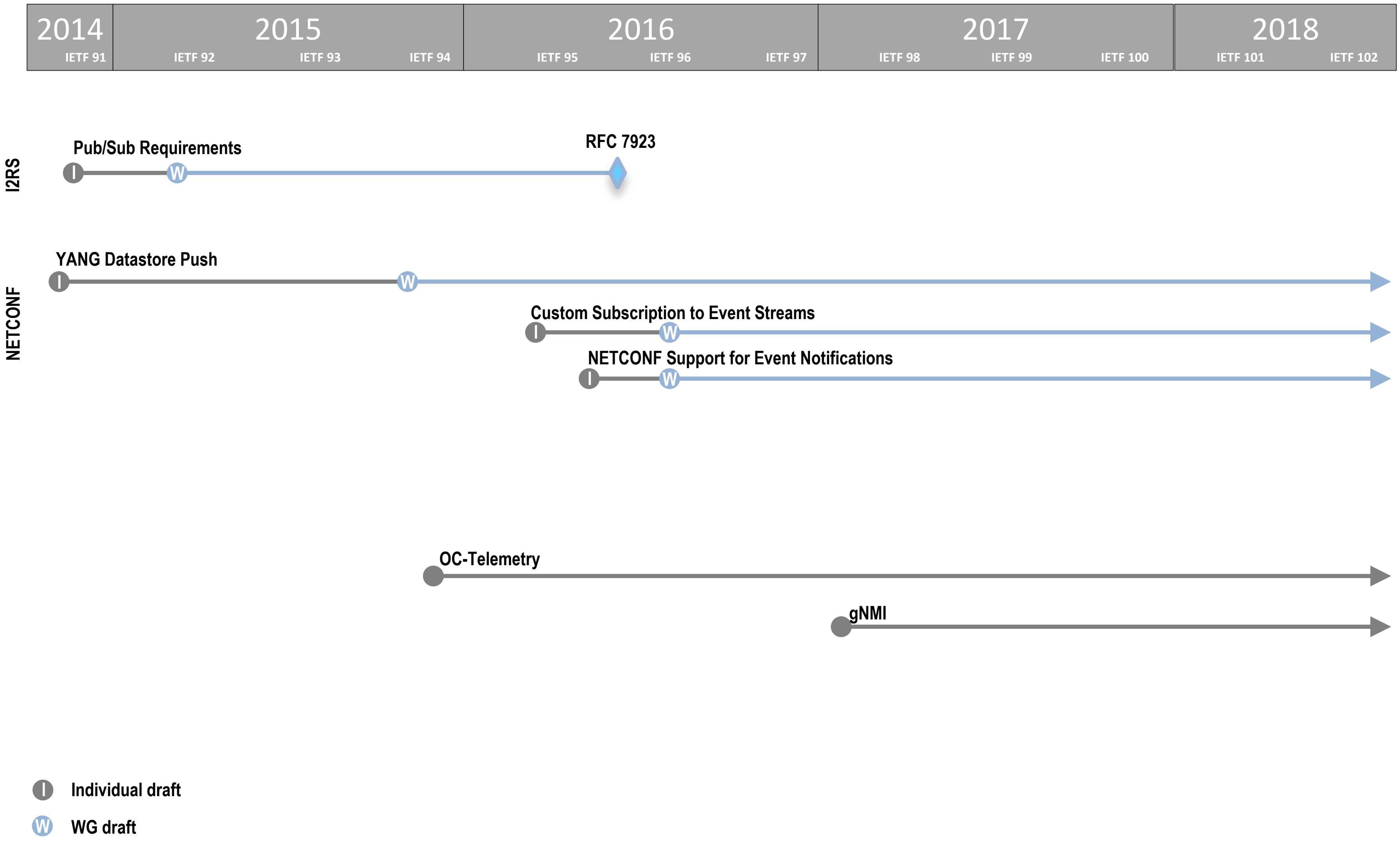
Draft	
Custom Subscription to Event Streams	draft-ietf-netconf-subscribed-notifications
YANG Datastore Subscription	draft-ietf-netconf-yang-push
NETCONF Support for Event Notifications	draft-ietf-netconf-netconf-event-notifications
RESTCONF & HTTP Transport for Event Notifications	draft-ietf-netconf-restconf-notif
Notification Message Headers and Bundles	draft-ietf-netconf-notification-messages
UDP based Publication Channel for Streaming Telemetry	draft-ietf-netconf-udp-pub-channel
Subscription to Multiple Stream Originators	draft-zhou-netconf-multi-stream-originators
YANG PUSH Based Generalized Network Control Automation Problem Stmt.	draft-bryskin-netconf-automation-framework
Coap Transfer	draft-birkholz-yang-push-coap-problem-statement
Smart filters for Push Updates - Problem Statement	draft-clemm-netconf-push-smart-filters-ps
YangPush Notification Capabilities	draft-lengyel-netconf-notification-capabilities
Concise YANG Telemetry	draft-birkholz-yang-core-telemetry

WGLC

This session

Pending

Industry Subscription Specification Progression



2014 IETF 91

2015 IETF 92 IETF 93 IETF 94

2016 IETF 95 IETF 96 IETF 97

2017 IETF 98 IETF 99 IETF 100

2018 IETF 101 IETF 102

I2RS

Pub/Sub Requirements

RFC 7923

NETCONF

YANG Datastore Push

Custom Subscription to Event Streams

NETCONF Support for Event Notifications

OC-Telemetry

gNMI

I Individual draft

W WG draft

draft-ietf-netconf-subscribed-notifications

Updated with WGLC so far...

- v11 to v14: based on comments
  - Receiver “address” removed (transport parameters restricted to transport drafts.)
  - Added “replay-previous-event-time” to “subscription-started” to simplify loss discovery.
  - Renamed the event counters
  - DSCP now an optional feature
  - Wording tweaks
- Open
  - Mechanism for replay for configured subscriptions between Boot & “subscription-started” (next slide)

draft-ietf-netconf-subscribed-notifications

Open - Replay for configured subscriptions

- Without replay, events are just sent once transport is available.
- There are classes of applications (e.g., IMA) which require visibility into all events placed into a event stream since boot.
- What is the visibility mechanism for configured subscriptions when there are meaningful events between Publisher boot & the "subscription-started" notification?
- Without a mechanism, only events created after transport is available are visible, which doesn't meet the requirement for that class of applications.

Lets get WG feedback to hopefully close here...

draft-ietf-netconf-subscribed-notifications

Options - Replay for configured subscriptions

Option 1: Support the option of configured replay
Events beginning with boot are placed at the front of the stream.

< Preferred,
Current draft

Option 2: Do not explicitly support configured replay

To fill functional gap, each receiver needing prior stream info creates a dynamic replay subscription, and leverages capabilities needed when recovering from packet loss

PRO

- One Less Feature

CON

- With lots of receivers, this could result in an large number of temporary dynamic replay subscriptions coordinated to boot time.
- Delayed initial stream processing at receiver:
  - At "subscription-started" recognize missing events,
  - pause event processing and buffer incoming events,
  - request missing events via the dynamic subscription,
  - and insert them into the stream in the proper order.

  A higher quantity of events might be in play:
  - Boot time often longer than network loss
  - Event quantities at boot are high
  - Dynamic subscription availability delay
- Receiver won't know when boot occurred, and therefore will subscribe to events pre-boot, and then interpret from the events themselves when boot occurred.
- Receiver must always support dynamic subscription.
  - This may be a new function needed for receivers where network loss is not an issue.
  - For Option 1, if it is not an issue, receiver RPCs can be locked-out (resulting in tighter security)

Note: Where there are independent receiver transport sessions for a subscription, these will be established at different times. And different initial events will go to each receiver.

draft-ietf-netconf-yang-push

Updated with WGLC so far...

- v16 to v17: based on review comments
  - Minor updates to text and YANG module

draft-ietf-netconf-netconf-event-notifications

Updated with WGLC so far...

- v09 - v10:
  - Wording updates per LC.
  - Tweaked examples based on subscribed-notification changes.
  - Proposed example YANG augmentation for NETCONF call home receiver to ietf-netconf-server.yang. This can be done subsequently to WGLC for either a bis or this document, or by placing it actually into ietf-netconf-server.yang
- Unresolved (next slide)
  - Do we progress only the dynamic subscription requirements through WGLC, and hold off on a –bis once ietf-netconf-server.yang is available for configured subscriptions. (A2 on next slide)

YANGPush Now thread:
Three WGLC drafts: How do we close?

Hum A: Do we do progress Dynamic & Configured together

	Progression Option	Implication	
A1	Dynamic & configured together • Current three drafts	• Done	< Preferred
A2	Dynamic & configured together • Current SN & YP • Update NETCONF-Notif so it just supports dynamic • Support configured via a -bis of NETCONF-Notif when ietf-netconf-server.yang completes	• Minimal time delta	< Would be ok
A3	Configured after Dynamic Subscribed notifications & YANG Push	• Refactoring YANG model and all drafts text places timeframe beyond business relevance • Open authorship	

YANGPush Now thread:
Three WGLC drafts: How do we close?

Hum B: Do we do progress Subscribed Notifications & YANG Push together

	Progression Option	Implication	
B1	Subscribed Notifications & YANG Push together	• Done • WG direction since adoption	< Preferred
B2	Subscribed Notifications, then YANG Push	• No business driver	

draft-ietf-netconf-restconf-notif

Current status

- v04 to v06
  - Error mechanisms updated to match embedded RESTCONF mechanisms
  - Restructured format and sections of document.
  - Added a YANG data model for HTTP specific parameters.
  - Mirrored the examples from the NETCONF transport draft to allow easy comparison.
- Upcoming v07 changes
  - Model leafref updates to ietf-restconf-server.yang for call home.
- When last call?

draft-ietf-netconf-notification-messages
Updates since IETF #100

-No new version since v03.
- Awaiting completion of drafts in WGLC

Thank you!