NETCONF (YANG?) Event Notifications draft-gonzalez-netconf-5277bis-01

NETCONF WG
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Alberto Gonzalez Prieto
Alexander Clemm
Eric Voit
Ambika Prasad Tripathy
Einar Nilsen-Nygaard

<albertgo|alex|evoit|ambripa|einarnn@cisco.com>

Motivation: Address WG Charter Item #6 (all addressed in the draft)

- Convert data models in RFC 5277 into **YANG**
- Ability to **delete subscriptions** without closing the client session
- Ability to **modify** existing subscriptions
- Ability to have **multiple subscriptions** on a client session
- Do not affect **older clients**

Functionality Proposed

From RFC 5277:
(:notification:1.0)

-create-subscription
-Filtering
-Replay
-Stream discovery
-Default stream
-interleaving

New features:
(:notification:1.1)

-establish-subscription
-Subscription negotiation
-modify-subscription
-delete-subscription
-Multiple subscriptions over session
-Subscription suspension and
                  cancellation
-Refined default stream

New optional features:
(:notification:1.1)

-Static subscriptions
-Different encodings

We reused the Subscription Control Plane of YANG Push

- Subscription **negotiation**
  - Agent can reject subscription terms and suggest acceptable terms (no hard guarantee)

- **Static subscriptions** are configured (optional)

- Subscription **suspension and termination**
  - Agent can suspend or terminate dynamic subscription

  - Agent can suspend a static subscription

- Support for **multiple encodings** (e.g., json)

NETCONF Event Notification & YANG Push Drafts - Key Elements

		draft-gonzalez-netconf-5277bis		
		Event Notifications		**YANG Push**
		1.0	1.1	
Subscription	Types of Subscription	Dynamic	Dynamic and Static	
	Subscriptions per Session	one	many	
	Negotiation	No	Yes	
	RPCs	create	establish, modify, delete	
	Control Plane Notifications	None	started, suspended, resumed, terminated, modified	
	Data Plane Notifications	notification	+subscription-id	push-update, push-change-update
Transport	NETCONF	Yes		
	RESTConf, HTTP, HTTP2	No	Yes	

"1.0" Column is fully compatible with RFC-5277

Work-in-progress

- Refine definition of static subscriptions
- 5277 namespaces
  - Text uses namespaces in 5277 for backwards compatibility
  - The yang module is temporarily tweaked with a different namespace to pass module validation
- Interleave capability

Work-in-progress (2)

- Formalize errors for new operations
- Add work flows and additional examples
- /netconf/streams config true|false
  - Currently, the module uses true so that static (configuration) subscription can leafref to it

Dialogs with authors of RFC 5277

- Sharon Chisholm
  - Ongoing discussion on the suitability of static subscriptions
- Hector Trevino
  - Provided input on the enhancements in the charter that were not features in RFC 5277
  - Delete/modify operations and the support of multiple subscriptions on a single session were not seen as requirements at the time. No reason not to include them now.
- Both have been invited to join the draft as authors

Thank you!

NETCONF Event Notification & Datastore Push Drafts - Context

complementary

	Consume a stream of Publisher generated messages at the cadence determined by the Publisher	Consume a stream of Publisher generated YANG data updates at a cadence negotiated with the Subscriber
What you need		
Proposed	RFC5277 draft-gonzalez-netconf-5277bis	draft-ietf-netconf-yang-push draft-voit-netconf-restconf-yang-push