

Transaction ID & Trace

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Jan Lindblad <jlindbla@cisco.com>

Roque Gagliano <rogaglia@cisco.com>

Transaction ID

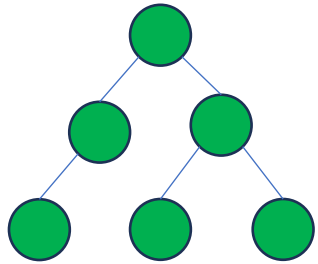
draft-ietf-netconf-transaction-id-02

draft-ietf-netconf-transaction-id-02 changes vs. -01

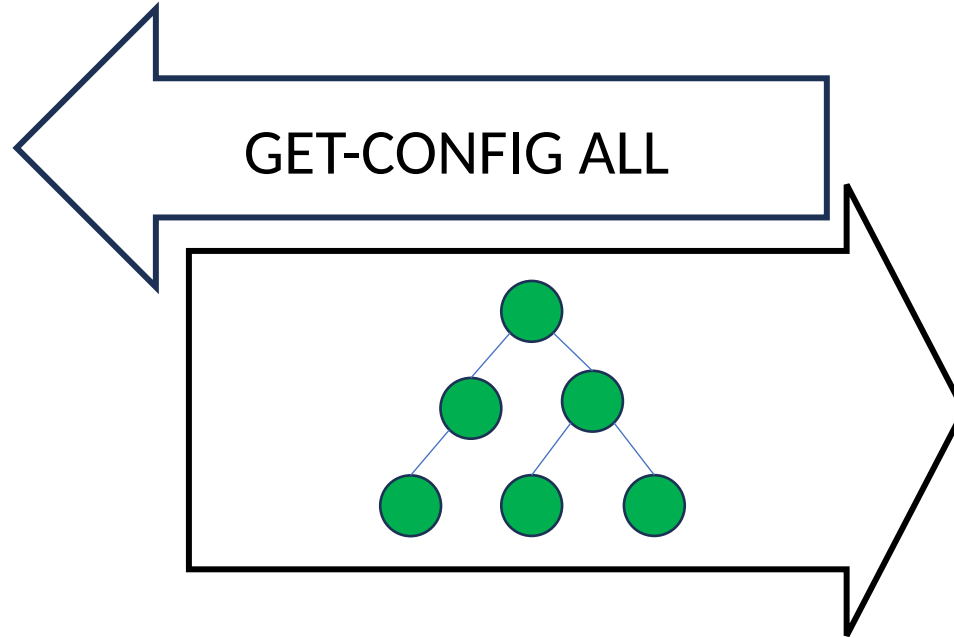
- Txid History concept, optional to implement. Clients can now:
 - Get all config changes since given point in time/prior txid
 - Conditionally edit config if no changes have happened in selected areas (independently of where edits are made)
- Optional to use YANG extension statement to mark versioned-nodes
- Renamed couple of YANG features slightly

Initial GET-CONFIG

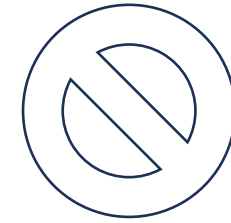
SERVER-SIDE
CLIENT-SIDE



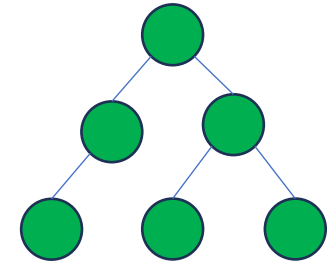
t0



t0



t1



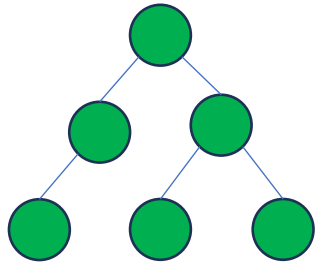
t

SERVER TXID HISTORY

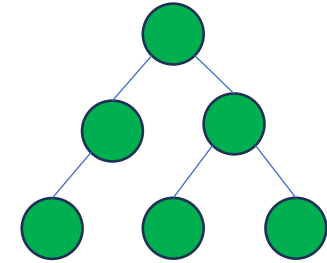
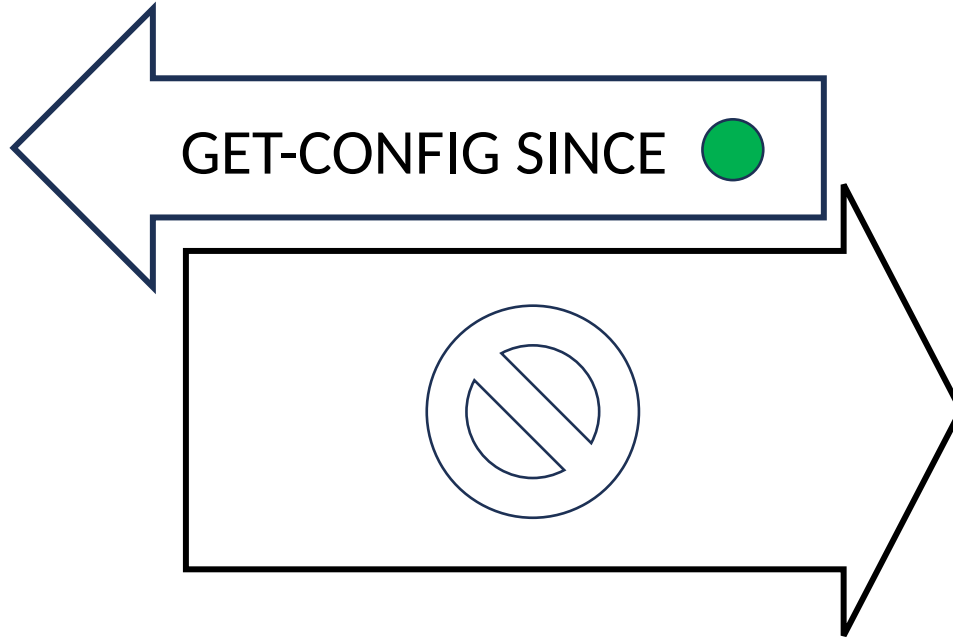


Subsequent GET-CONFIG

SERVER-SIDE
CLIENT-SIDE

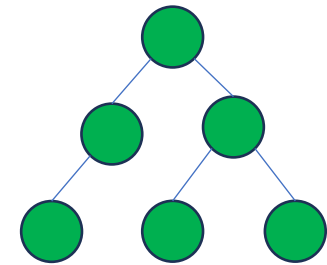


t2



t2

t3



t

t

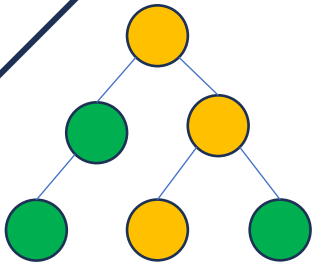
SERVER TXID HISTORY



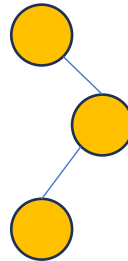
Subsequent GET-CONFIG after OOB Change

SERVER-SIDE
CLIENT-SIDE^{t4}

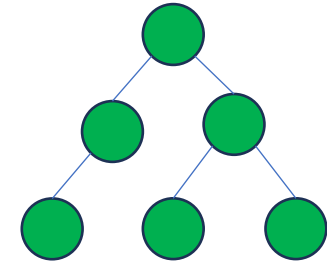
OOB
CHANGE



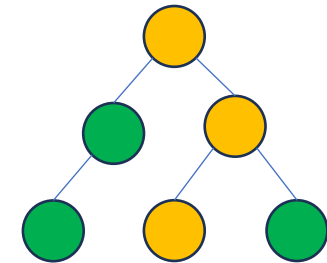
GET-CONFIG SINCE ●



t4



t5



SERVER TXID HISTORY

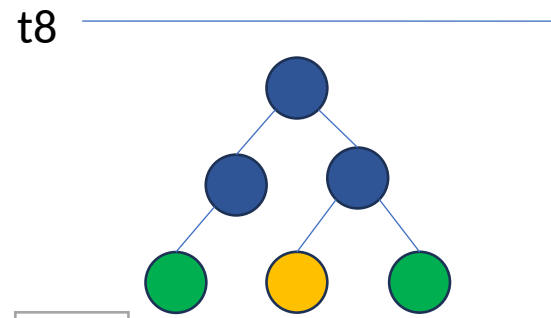
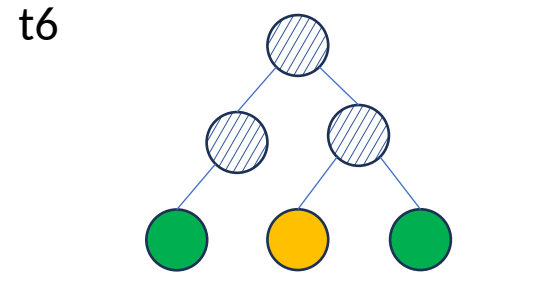
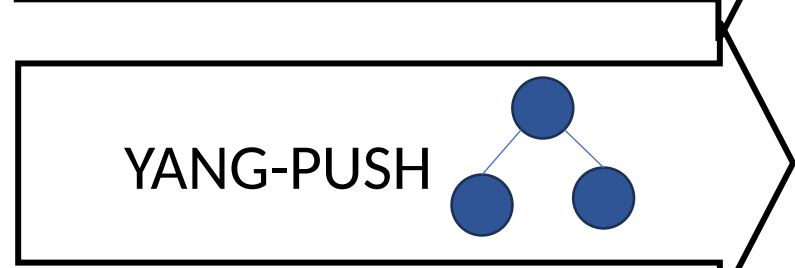
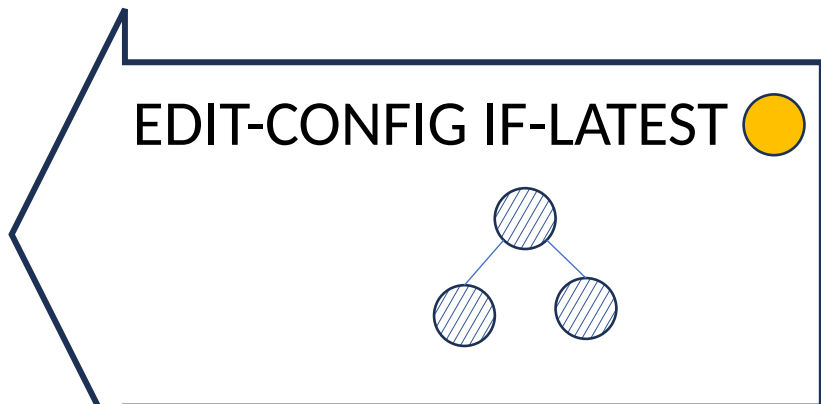
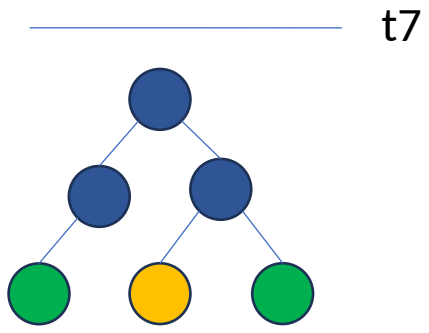
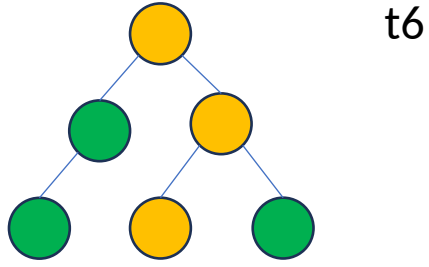


t

t

EDIT-CONFIG with YANG-PUSH

SERVER-SIDE
CLIENT-SIDE



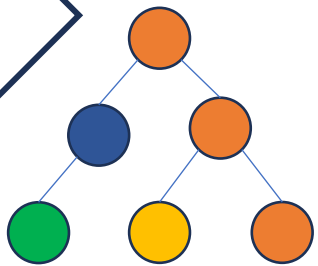
t

t

EDIT-CONFIG after OOB Change

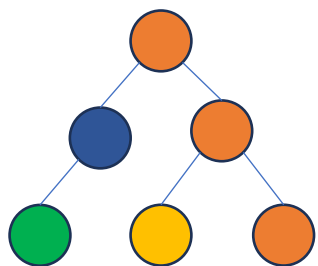
SERVER-SIDE
CLIENT-SIDE
 t_9

OOB
CHANGE



t_{10}

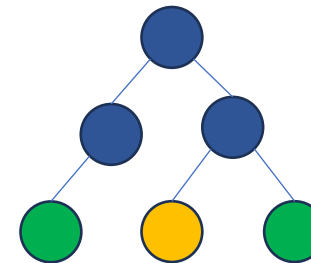
t_{11}



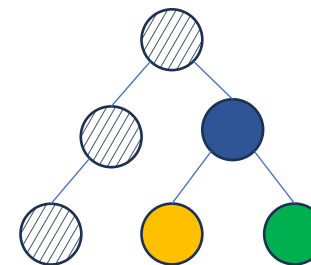
EDIT-CONFIG IF-LATEST

EDIT-CONFIG REJECTED

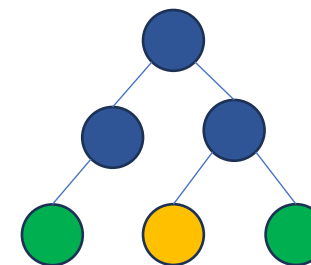
t_9



t_{10}



t_{11}



SERVER TXID HISTORY

t

t

Next Steps

- [?] Implementation experience
- [?] Add "Etag+Seq", optional If-(un)modified-since functionality
- [?] Add YANG extension to allow marking versioned nodes in YANG tree
- Further Implementation experience

Trace Context Extension

draft-rogaglia-netconf-trace-ctx-extension-03

draft-rogaglia-netconf-restconf-trace-ctx-headers-00

draft-rogaglia-netconf-trace-ctx-extension-03

- Adopted. No updates: "it's done"
- W3C defined REST headers → trivial NETCONF XML attribute mapping

draft-rogaglia-netconf-restconf-trace-ctx-headers-00

- Adopted. No updates: "it's done"
- W3C defined REST headers → carbon copy RESTCONF headers

The end goal is to tap into OTLP ecosystem

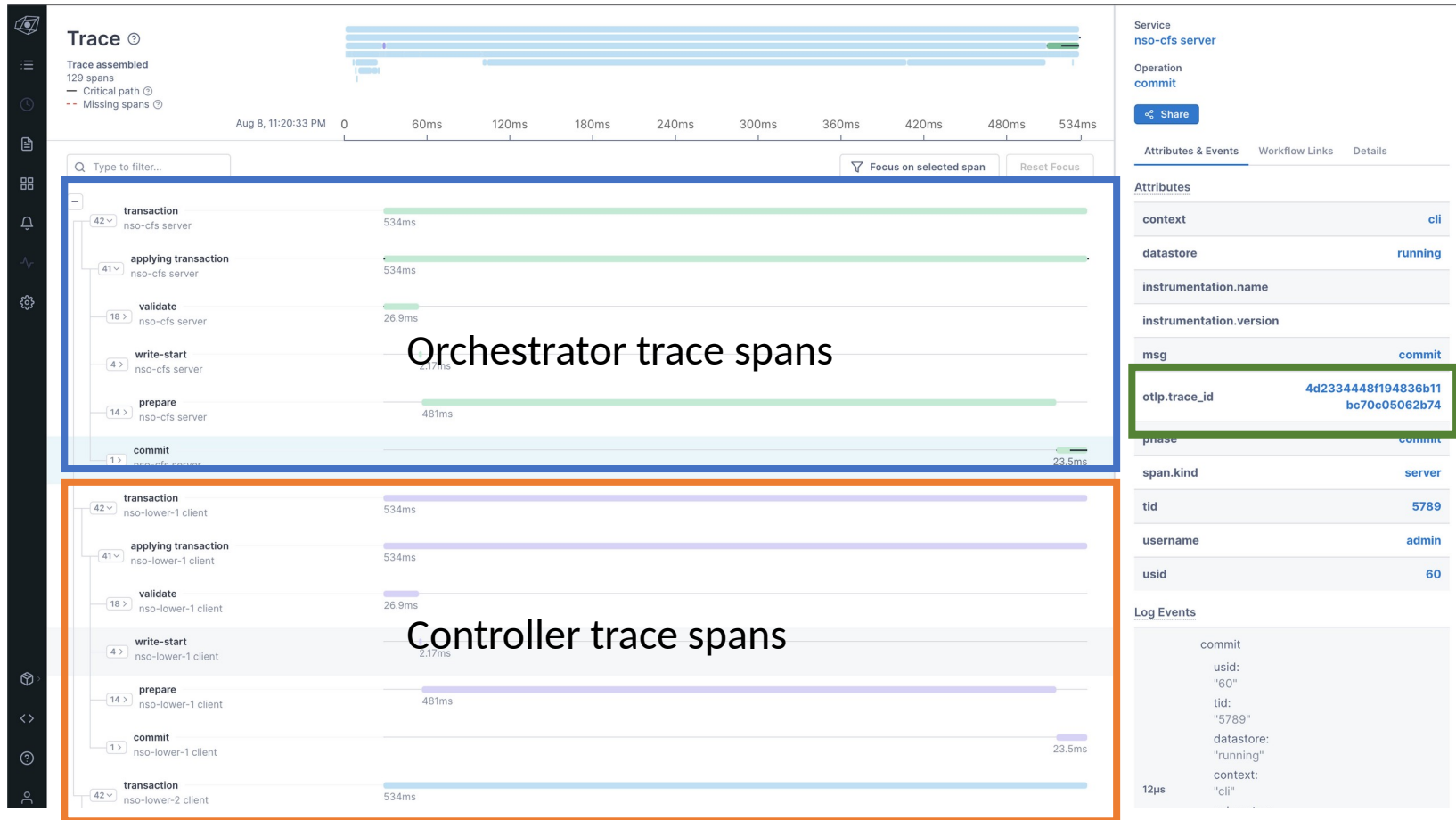
Example with ServiceNow/LightStep backend

Orchestrator

<edit-config>
↓
trace-context

Controller

OTLP Backend



Same trace-id

Next Steps

- [?] More details around error handling
- [?] Publish RESTCONF document “should” implement W3C headers
- [?] Figure out process for W3C protocol registration
- [?] WG adoption of both trace drafts
- Implementation experience
- Monitor W3C “baggage headers” development (still W3C draft state)

Thank you

Catalog of Related Drafts

TRANS-ID	draft-ietf-netconf-transaction-id-02
CFG-TRACE	draft-quilbeuf-netconf-configuration-tracing-00
W3C-TRACE	draft-rogalia-netconf-trace-ctx-extension-03
W3C-HEADERS	draft-rogalia-netconf-restconf-trace-ctx-headers-00
PRIV-CAND	draft-ietf-netconf-privcand-01
ETAGS	RFC 8040 (RESTCONF)