External Transaction ID for Configuration Tracing

draft-ietf-netconf-configuration-tracing-02

J. Quilbeuf (Huawei) , B. Claise (Huawei) , T. Graf (Swisscom), D. Lopez (Telefonica) , S. Qiong (China Telecom)

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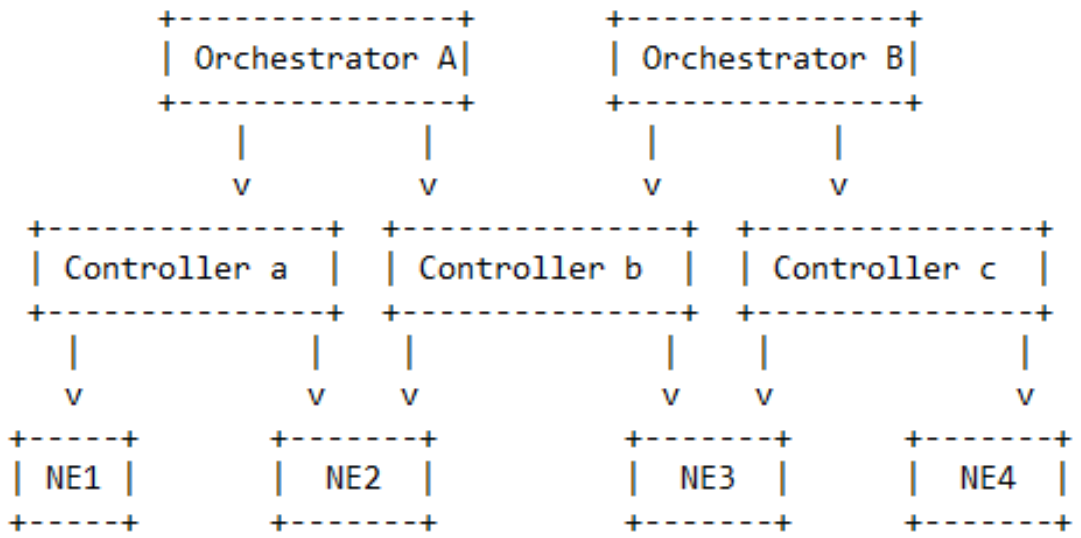
Motivation: Tracing Configuration



Something wrong with last change of configuration on NE2.
Where does the change comes from?

Use cases:

- **Configuration Mistake** *"Which service request, if any, caused the mistake?"*
- **Concurrent NMS modification** *"Both NMS assume that they are in charge of the NE and regularly overwrite each other configuration."*
- **Conflicting Intents** *"Conflicting configuration changes are cause by two conflicting service requests."*

Updates

- Pass client-id as an attribute of RPC (similar to trace-context)

```
<rpc xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1"
     xmlns:w3ctc="urn:ietf:params:xml:ns:netconf:w3ctc:1.0"
     xmlns:ext-txid="urn:ietf:params:xml:ns:yang:ietf-external-transaction-id"
     w3ctc:traceparent="00-4bf92f3577b34da6a3ce929d0e0e4736-00f067aa0ba902b7-01"
     ext-txid:client-id="controller-01">
  <commit/>
</rpc>
```

passing of the trace context in
[I-D.ietf-netconf-trace-ctx-extension], we propose an XML attribute on NETCONF messages to pass the client-id. The attribute name is "client-id" and the namespace is the namespace of the YANG module from Section 5, namely 'urn:ietf:params:xml:ns:yang:ietf-external-transaction-id'. An example of a commit message including the client-id is shown in Figure 4.

Updates

- Align with draft-ietf-netconf-trace-ctx-extension-01

This document was written with autonomous networks in mind. We assume that an existing monitoring or assurance system, such as described in [RFC9417], is able to detect and report network anomalies , e.g. SLA violations, intent violations, network failure, or simply a customer issue. Here are the use cases for the proposed YANG module; they are extensions of the "Provisioning root cause analysis" use case presented in Section 1.3.1 of [I-D.ietf-netconf-trace-ctx-extension].

[I-D.ietf-netconf-trace-ctx-extension] The information needed to trace the configuration is stored in a new YANG module that maps a local configuration change to some additional metadata. The additional metadata contains the trace ID, and, if the local change is not the beginning of the trace, the ID of the client that triggered the local-change. In that sense, it is an instance of the YANG DataStore implementation of the Trace Context as proposed in Section 1.2 of [I-D.ietf-netconf-trace-ctx-extension].

Open questions

Closed:

- Should we make a more general solution (i.e. follow https://github.com/open-telemetry/opentelemetry-proto/blob/main/opentelemetry/proto/trace/v1/trace.proto) and only specify what is missing (i.e. client-id, local-commit-id)?
  - The model proposed here is focused on configuration tracing, which makes it simpler to use than a more generic solution.

No open question left. Draft seems ready for WGLC

Draft repo is at https://github.com/netconf-wg/configuration-tracing