NETCONF Base Notifications for NMDA

draft-wu-netconf-base-notification-nmda-00

Authors:
Qin Wu
Xiaojian Ding
Goal and Motivation

Goal:

• Updates NETCONF Base Event [RFC6470] to Support NMDA defined in [I-D.ietf-netmod-revised-datastores].

• Support the monitoring of the base system events pertaining to additional datastores, indicate the affected datastore and affected phase

Motivation:

• NETCONF base event [RFC6470] defines 5 common event notifications related to running and startup config datastore but hasn’t defined any event notification associated with conventional datastore and operational datastore.

• Provide general purpose notification and working together YANG push, e.g., provide event notification associated with multiple subscriptions.

• Backwards compatible with existing event notification defined in RFC6470.
What is new?

• Introduce one additional common system event
  • netconf-data-change
    • Generated when the NETCONF server detects that the conventional configuration datastore or 'config true' objects in the operational state datastore has been changed by a management session. The notification summarizes the edits that have been detected pertaining to one or multiple subscription.

• Example of a netconf-data-change notification message is:

```xml
<notification xmlns="urn:ietf:params:xml:ns:netconf:notification:1.0">
  <eventTime>2017-06-16T16:30:59.137045+09:00</eventTime>
    <changed-by>
      <username>admin</username>
      <session-id>0</session-id>
      <source-host>10.251.93.83</source-host>
    </changed-by>
    <datastore>operational</datastore>
    <edit>
      <target>/ietf-interfaces:interfaces/ietf-interfaces:statistics</target>
      <operation>create</operation>
      <origin>default</origin>
      <current-phase>inactive</current-phase>
    </edit>
    <edit>
      <operation>merge</operation>
      <origin>system</origin>
      <current-phase>in-use</current-phase>
    </edit>
  </netconf-data-change>
</notification>
```
New parameter: Current phase

module: ietf-netconf-notifications
notifications:
  +--- netconf-data-change
     |  +--ro changed-by
     |     |  +--ro (server-or-user)
     |     |     +---: (server)
     |     |     |  +--ro server? empty
     |     |     +---: (by-user)
     |     |     +--ro username string
     |     |     +--ro session-id nc:session-id-or-zero-type
     |     |     +--ro source-host? inet:ip-address
     |  +--ro datastore? identityref
     |  +--ro edit*
     |     |  +--ro target? instance-identifier
     |     |  +--ro origin?
     |  +--ro current-phase?
     |  +--ro operation? nc:edit-operation-type

identity change-phase {
  description
  |  "Base identity for change phase."
}

identity inactive {
  base change-phase;
  description
  |  "Identity for inactive data. It is referred to as configuration that is not currently used."
}

identity in-use {
  base change-phase;
  description
  |  "Identity for the in use data. It is referred to as configuration that is actively used."
}

identity Remnant {
  base in-use;
  description
  |  "Identity for the remnant configuration. It indicates that both the previous and current configuration coexist."
}

identity miss-resource {
  base in-use;
  description
  |  "Identity for the missing resource. It indicates that Configuration in <intended> can refer to resources that are not available or otherwise not physically present and parts of <intended> are not applied."
}

identity sys-resource {
  base in-use;
  description
  |  "Identity for the system controlled resource. It indicates that a system controlled resource has matching configuration in <intended>."
Relation with RFC6470

- The existing notifications defined in [RFC6470] remain unchanged.
- An extra event notification is defined in separate model in this document.
- Back compatible with RFC6470.
## Relation with YANG Push

<table>
<thead>
<tr>
<th>Comparison</th>
<th>push-change-update Defined in YANG push</th>
<th>netconf-data-change defined in this document</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per subscription Vs Multiple subscription</td>
<td>only be used to send per subscription datastore contents invoked by the client via subscription.</td>
<td>report data change event associated with multiple subscriptions of the receiver</td>
</tr>
<tr>
<td>Application specific vs application independent</td>
<td>define push change update as application specific notification</td>
<td>general purpose notification, not tied to specific subscription id.</td>
</tr>
<tr>
<td>Notification Data Vs metadata</td>
<td>push entire or portion of datastore contents</td>
<td>report datastore change metadata which is not covered by YANG push(e.g., who made configuration changes, identify specific location and phase of configuration changes</td>
</tr>
</tbody>
</table>
Next Step for this work

- Discuss to see whether we all agree
- Decide whether this needs to be standardized in Netconf WG
  - We could just discuss, agree and move on
THANK YOU