Base Notifications for NMDA
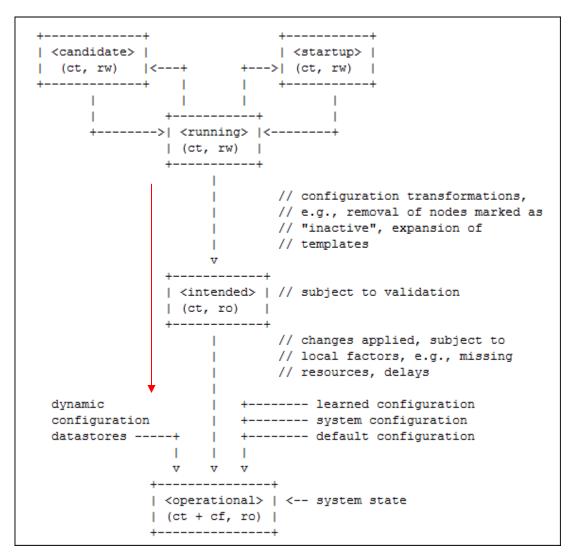
draft-wu-netconf-base-notification-nmda-01

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Status Recap

- Submitted and presented during IETF 101, London, two issues were raised on this draft
  - the relationship between on change YANG Push and netconf-data-change and
  - what need to be modified in RFC6470 to support NMDA
- After IETF 101,London, a few discussion to address the above issues:
  - Thanks Carey, Timothy,Andy Berman and Rohit R Ranade to provide input and feedback
  - Discussed RFC6470bis vs New draft on NMDA base event support and reached agreement
  - Discussed what need to be defined to support NMDA and remove netconf-data-change to address overlapping with YANG push

- Changes since -01
  - Remove netconf-data-change and replace it with nmda-data-validate .
  - Provide an example for nmda-data-validation notification.
  - Remove dependency on ietf-netconf-notifications
  - Introduce Rohit R Ranade as a new coauthor.
  - Some other editorial changes.

Use cases for NMDA Data Validation

```
+-------------+              +-----------+
| <candidate> |              | <startup> |
|  (ct, rw)   |<---+    +--->|  (ct, rw) |
+-------------+    |    |    +-----------+
       |           |    |          |
       |     +-----------+         |
    +-------->| <running> |<--------+
             |  (ct, rw)  |
             +-----------+
                  |
                  |
                  |        // configuration transformations,
                  |        // e.g., removal of nodes marked as
                  |        // "inactive", expansion of
                  |        // templates
                  v
             +------------+
             | <intended> | // subject to validation
             |  (ct, ro)  |
             +------------+
                  |        // changes applied, subject to
                  |        // local factors, e.g., missing
                  |        // resources, delays
                  |
 dynamic          |    +-------- learned configuration
 configuration    |    +-------- system configuration
 datastores ------+    +-------- default configuration
                  |   |   |
                  v   v   v
             +----------------+
             |  <operational> | <-- system state
             |  (ct + cf, ro) |
             +----------------+
```

Problem Statement
– There are many background activities that happen during the time that configuration is committed to <running> to the time that the configuration is actually applied from <intended> to <operational>.
– It is possible that some configuration could not be applied from <intended> due to either validation issues, or missing resource etc.
– There is a need for user to know the validation result of <intended> data-store and the reason why the configuration were not applied.

Example use cases
– Identify all the failed objects defined in the model when the data validation fail

Solution for NMDA Data Validation

- Introduce one additional common system event nmda-data-validate pertaining to NMDA

> nmda-data-validate: Generated when a server with network management protocol support detects that a data validation event has occurred from the time that configuration is committed to <running> to the time that the configuration is actually applied to <operational> during management session. Indicates the event and the current state of the data validation.

- Inherit common-session-parms from NETCONF base event model defined in RFC6470.

- Allow clients get access to this notification via either the subscription mechanism described in [RFC5277] or dynamic subscription mechanism and configured subscription mechanism described in [I- D.ietf-netconf-netconf-event-notifications].

- Allow the server report events for non- NETCONF management sessions (such as RESTCONF,gPRC), using the 'session-id' value of zero.

How NMDA Data Validation works

Example of a nmda-data-validation notification message is:

```
<notification xmlns="urn:ietf:params:xml:ns:netconf:notification:1.0">
 <eventTime>2017-06-16T16:30:59.137045+09:00</eventTime>
 <nmda-data-validate xmlns="urn:ietf:params:xml:ns:yang:ietf-nmda-notifications">
    <username>admin</username>
    <session-id>0</session-id>
    <source-host>10.251.93.83</source-host>
    <validate-event>start<validate-event>
    <validate-result>partial-fail</validate-result>
    <validate-fail-targets>
     <datastore>intended</datastore>
     <target>/ietf-interfaces:interfaces-state</target>
    </validate-fail-targets>
    <validate-fail-targets>
     <datastore>intended</datastore>
     <target>/ietf-system:system</target>
    </validate-fail-targets>
 </nmda-data-validate>
</notification>
```

Next Step

- Two open issues in last meeting have been resolved.

- Request to accept draft as WG item
  - Got already supporter on the list