



@ FILE NAME: M_CTC_ID_007_.txt

@ TEST SCOPE: M PLANE O-RAN CONFORMANCE

@ Software Release for Garuda_RevD: v5.0.0

Test Description : This scenario is MANDATORY.

This test validates that the O-RU properly handles a NETCONF subscription to notifications.

This scenario corresponds to the following chapters in [3]:

8.2 Manage Alarm Requests

***** Connect to the NETCONF Server *****

```
> connect --ssh --host 192.168.4.46 --port 830 --login operator
```

Interactive SSH Authentication

Type your password:

Password:

```
> status
```

Current NETCONF session:

ID : 4

Host : 192.168.4.46

Port : 830

Transport : SSH

Capabilities:

urn:ietf:params:netconf:base:1.0 urn:ietf:params:netconf:base:1.1 urn:ietf:params:netconf:capability:writable-running:1.0
urn:ietf:params:netconf:capability:candidate:1.0 urn:ietf:params:netconf:capability:rollback-on-error:1.0
urn:ietf:params:netconf:capability:validate:1.1 urn:ietf:params:netconf:capability:startup:1.0 urn:ietf:params:netconf:capability:xpath:1.0
urn:ietf:params:netconf:capability:with-defaults:1.0?basic-mode=explicit&also-supported=report-all,report-all-tagged,trim,explicit
urn:ietf:params:netconf:capability:notification:1.0 urn:ietf:params:netconf:capability:interleave:1.0
urn:ietf:params:xml:ns:yang:ietf-yang-metadata?module=ietf-yang-metadata&revision=2016-08-05
urn:ietf:params:xml:ns:yang:1?module=yang&revision=2017-02-20
urn:ietf:params:xml:ns:yang:ietf-inet-types?module=ietf-inet-types&revision=2013-07-15
urn:ietf:params:xml:ns:yang:ietf-yang-types?module=ietf-yang-types&revision=2013-07-15
urn:ietf:params:netconf:capability:yang-library:1.1?revision=2019-01-04&content-id=61
urn:sysrepo:plugind?module=sysrepo-plugind&revision=2020-12-10
urn:ietf:params:xml:ns:yang:ietf-netconf-acm?module=ietf-netconf-acm&revision=2018-02-14
urn:ietf:params:xml:ns:netconf:base:1.0?module=ietf-netconf&revision=2013-09-29&features=writable-running,candidate,rollback-on-error,validate,startup,url,xpath urn:ietf:params:xml:ns:yang:ietf-netconf-with-defaults?module=ietf-netconf-with-defaults&revision=2011-06-01
urn:ietf:params:xml:ns:yang:ietf-netconf-notifications?module=ietf-netconf-notifications&revision=2012-02-06
urn:ietf:params:xml:ns:yang:ietf-netconf-monitoring?module=ietf-netconf-monitoring&revision=2010-10-04
urn:ietf:params:xml:ns:netconf:notification:1.0?module=notifications&revision=2008-07-14
urn:ietf:params:xml:ns:netmod:notification?module=nc-notifications&revision=2008-07-14
urn:ietf:params:xml:ns:yang:ietf-x509-cert-to-name?module=ietf-x509-cert-to-name&revision=2014-12-10
urn:ietf:params:xml:ns:yang:iana-crypt-hash?module=iana-crypt-hash&revision=2014-08-06 urn:notification_history?module=notification_history
urn:ietf:params:xml:ns:yang:iana-if-type?module=iana-if-type&revision=2017-01-19

=====

STEP 1 and 2 subscribe and check for the <rpc> reply.

=====

=====

> subscribe

=====

Ok

=====

Check_Notification

=====

```
<?xml version="1.0" ?>
<notification xmlns="urn:ietf:params:xml:ns:netconf:notification:1.0">
  <eventTime>2022-08-02T18:17:16Z</eventTime>
  <sync-state-change xmlns="urn:o-ran:sync:1.0">
    <sync-state>LOCKED</sync-state>
  </sync-state-change>
</notification>
```

```
<?xml version="1.0" ?>
<notification xmlns="urn:ietf:params:xml:ns:netconf:notification:1.0">
  <eventTime>2022-08-02T18:17:16Z</eventTime>
  <synchronization-state-change xmlns="urn:o-ran:sync:1.0">
    <sync-state>FREERUN</sync-state>
  </synchronization-state-change>
</notification>
```

```
<?xml version="1.0" ?>
<notification xmlns="urn:ietf:params:xml:ns:netconf:notification:1.0">
  <eventTime>2022-08-02T18:17:16Z</eventTime>
  <netconf-config-change xmlns="urn:ietf:params:xml:ns:yang:ietf-netconf-notifications">
    <changed-by>
      <username>root</username>
      <session-id>0</session-id>
    </changed-by>
    <datastore>running</datastore>
    <edit>
      <target
xmlns:notif-hist="urn:notification_history"/>notif-hist:history/notif-hist:module-notification[notif-hist:module-name='Module']/notif-hist:notif-erro
r</target>
      <operation>replace</operation>
    </edit>
  </netconf-config-change>
</notification>
```

```
<?xml version="1.0" ?>
<notification xmlns="urn:ietf:params:xml:ns:netconf:notification:1.0">
  <eventTime>2022-08-02T18:17:16Z</eventTime>
  <netconf-config-change xmlns="urn:ietf:params:xml:ns:yang:ietf-netconf-notifications">
    <changed-by>
      <username>root</username>
      <session-id>0</session-id>
    </changed-by>
    <datastore>running</datastore>
    <edit>
      <target
xmlns:notif-hist="urn:notification_history">/notif-hist:history/notif-hist:module-notification[notif-hist:module-name='Module']/notif-hist:alert</target>
      <operation>replace</operation>
    </edit>
  </netconf-config-change>
</notification>
```

```
<?xml version="1.0" ?>
<notification xmlns="urn:ietf:params:xml:ns:netconf:notification:1.0">
  <eventTime>2022-08-02T18:17:16Z</eventTime>
  <alarm-notif xmlns="urn:o-ran:fm:1.0">
    <fault-id>18</fault-id>
    <fault-source>Module</fault-source>
    <affected-objects>
      <name>Sync Module</name>
    </affected-objects>
    <fault-severity>CRITICAL</fault-severity>
    <is-cleared>false</is-cleared>
    <fault-text>Synchronization Error</fault-text>
    <event-time>2022-08-02T18:17:16Z</event-time>
  </alarm-notif>
</notification>
```

SYSTEM LOGS

```
Aug 2 18:17:03 garuda daemon.info netopeer2-server[848]: Trying to connect via IPv4 to 192.168.4.15:4334.
Aug 2 18:17:03 garuda daemon.info netopeer2-server[848]: getsockopt() error (Connection refused).
Aug 2 18:17:04 garuda daemon.info netopeer2-server[848]: Trying to connect via IPv4 to 192.168.4.15:4334.
Aug 2 18:17:04 garuda daemon.info netopeer2-server[848]: getsockopt() error (Connection refused).
Aug 2 18:17:05 garuda daemon.info netopeer2-server[848]: Trying to connect via IPv4 to 192.168.4.15:4334.
Aug 2 18:17:05 garuda daemon.info netopeer2-server[848]: getsockopt() error (Connection refused).
Aug 2 18:17:06 garuda daemon.info netopeer2-server[848]: Trying to connect via IPv4 to 192.168.4.15:4334.
Aug 2 18:17:06 garuda daemon.info netopeer2-server[848]: getsockopt() error (Connection refused).
Aug 2 18:17:07 garuda daemon.info netopeer2-server[848]: Trying to connect via IPv4 to 192.168.4.15:4334.
Aug 2 18:17:07 garuda daemon.info netopeer2-server[848]: getsockopt() error (Connection refused).
Aug 2 18:17:08 garuda daemon.info netopeer2-server[848]: Trying to connect via IPv4 to 192.168.4.15:4334.
Aug 2 18:17:08 garuda daemon.info netopeer2-server[848]: getsockopt() error (Connection refused).
Aug 2 18:17:09 garuda daemon.info netopeer2-server[848]: Accepted a connection on :::830.
Aug 2 18:17:09 garuda daemon.info netopeer2-server[848]: Session 129 (user "root", CID 1) created.
Aug 2 18:17:09 garuda daemon.info netopeer2-server[848]: Received an SSH message "request-service" of subtype "ssh-userauth".
Aug 2 18:17:09 garuda daemon.info netopeer2-server[848]: Received an SSH message "request-auth" of subtype "password".
Aug 2 18:17:09 garuda daemon.info netopeer2-server[848]: User "operator" authenticated.
Aug 2 18:17:09 garuda daemon.info netopeer2-server[848]: Received an SSH message "request-channel-open" of subtype "session".
Aug 2 18:17:09 garuda daemon.info netopeer2-server[848]: Received an SSH message "request-channel" of subtype "subsystem".
Aug 2 18:17:09 garuda daemon.info netopeer2-server[848]: Session 130 (user "root", CID 1) created.
Aug 2 18:17:09 garuda daemon.info netopeer2-server[848]: There are no subscribers for "ietf-netconf-notifications" notifications.
Aug 2 18:17:09 garuda daemon.info netopeer2-server[848]: Generated new event (netconf-session-start).
Aug 2 18:17:09 garuda daemon.info netopeer2-server[848]: Resolving unresolved data nodes and their constraints...
Aug 2 18:17:09 garuda daemon.info netopeer2-server[848]: All data nodes and constraints resolved.
Aug 2 18:17:09 garuda daemon.info netopeer2-server[848]: Resolving unresolved data nodes and their constraints...
Aug 2 18:17:09 garuda daemon.info netopeer2-server[848]: All data nodes and constraints resolved.
Aug 2 18:17:09 garuda daemon.info netopeer2-server[848]: Published event "rpc" "/notifications:create-subscription" with ID 1 priority 0 for 1 subscribers.
Aug 2 18:17:09 garuda daemon.info netopeer2-server[848]: Processing "/notifications:create-subscription" "rpc" event with ID 1 priority 0 (remaining 1 subscribers).
Aug 2 18:17:09 garuda daemon.info netopeer2-server[848]: Successful processing of "rpc" event with ID 1 priority 0 (remaining 0 subscribers).
Aug 2 18:17:09 garuda daemon.info netopeer2-server[848]: Event "rpc" with ID 1 priority 0 succeeded.
Aug 2 18:17:09 garuda daemon.info netopeer2-server[848]: Session 4: thread 4 event new RPC.
Aug 2 18:17:09 garuda daemon.info netopeer2-server[848]: Trying to connect via IPv4 to 192.168.4.15:4334.
Aug 2 18:17:09 garuda daemon.info netopeer2-server[848]: getsockopt() error (Connection refused).
Aug 2 18:17:10 garuda daemon.info netopeer2-server[848]: Trying to connect via IPv4 to 192.168.4.15:4334.
Aug 2 18:17:10 garuda daemon.info netopeer2-server[848]: getsockopt() error (Connection refused).
Aug 2 18:17:11 garuda daemon.info netopeer2-server[848]: Trying to connect via IPv4 to 192.168.4.15:4334.
Aug 2 18:17:11 garuda daemon.info netopeer2-server[848]: getsockopt() error (Connection refused).
Aug 2 18:17:12 garuda daemon.info netopeer2-server[848]: Trying to connect via IPv4 to 192.168.4.15:4334.
Aug 2 18:17:12 garuda daemon.info netopeer2-server[848]: getsockopt() error (Connection refused).
Aug 2 18:17:13 garuda daemon.info netopeer2-server[848]: Trying to connect via IPv4 to 192.168.4.15:4334.
Aug 2 18:17:13 garuda daemon.info netopeer2-server[848]: getsockopt() error (Connection refused).
```

Aug 2 18:17:14 garuda daemon.info netopeer2-server[848]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 2 18:17:14 garuda daemon.info netopeer2-server[848]: getsockopt() error (Connection refused).

Aug 2 18:17:15 garuda daemon.info netopeer2-server[848]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 2 18:17:15 garuda daemon.info netopeer2-server[848]: getsockopt() error (Connection refused).

Aug 2 18:17:16 garuda user.notice SYNCMNGR[1161]: Received message from S-Plane

Aug 2 18:17:16 garuda user.notice SYNCMNGR[1161]: SYNCE Lock state : LOCKED

Aug 2 18:17:16 garuda user.notice SYNCMNGR[1161]: SYNC Lock state : FREE RUN

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: Resolving unresolved data nodes and their constraints...

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: There is no leafref "/sync/synce-status/lock-state" with the value "LOCKED", but it is not required.

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: All data nodes and constraints resolved.

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: Processing "notif" "o-ran-sync" event with ID 1.

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: Successful processing of "notif" event with ID 1 priority 0 (remaining 0 subscribers).

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: Resolving unresolved data nodes and their constraints...

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: There is no leafref "/sync/sync-status/sync-state" with the value "FREERUN", but it is not required.

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: All data nodes and constraints resolved.

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: Processing "notif" "o-ran-sync" event with ID 2.

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: Successful processing of "notif" event with ID 2 priority 0 (remaining 0 subscribers).

Aug 2 18:17:16 garuda user.err FAULT MANAGER[862]: sendData : Source ID: 15

Aug 2 18:17:16 garuda user.err FAULT MANAGER[862]: sendData : Fault ID: 18

Aug 2 18:17:16 garuda user.err FAULT MANAGER[862]: sendData : FAULT_IS_CLEARED: FALSE

Aug 2 18:17:16 garuda user.err FAULT MANAGER[862]: sendData : FAULT_SEVERITY: 3

Aug 2 18:17:16 garuda user.err FAULT MANAGER[862]: sendData : FAULT_TIME: 2022-08-02T18:17:16Z

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: Resolving unresolved data nodes and their constraints...

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: There is no instance of "/notification_history:history/module-notification[module-name='Module']/notif-error", but it is not required.

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: All data nodes and constraints resolved.

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: Processing "notif" "ietf-netconf-notifications" event with ID 1.

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: Successful processing of "notif" event with ID 1 priority 0 (remaining 0 subscribers).

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: Resolving unresolved data nodes and their constraints...

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: There is no instance of "/notification_history:history/module-notification[module-name='Module']/alert", but it is not required.

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: All data nodes and constraints resolved.

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: Processing "notif" "ietf-netconf-notifications" event with ID 2.

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: Successful processing of "notif" event with ID 2 priority 0 (remaining 0 subscribers).

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: Processing "notif" "o-ran-fm" event with ID 1.

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: Successful processing of "notif" event with ID 1 priority 0 (remaining 0 subscribers).

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: Resolving unresolved data nodes and their constraints...

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: There is no instance of "/notification_history:history/module-notification[module-name='Module']/epochtime", but it is not required.

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: All data nodes and constraints resolved.

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: Processing "notif" "ietf-netconf-notifications" event with ID 3.

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: Successful processing of "notif" event with ID 3 priority 0 (remaining 0 subscribers).

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 2 18:17:16 garuda daemon.info netopeer2-server[848]: getsockopt() error (Connection refused).

Aug 2 18:17:17 garuda daemon.info netopeer2-server[848]: Session 4: thread 4 event new RPC.

Aug 2 18:17:17 garuda daemon.info netopeer2-server[848]: Session 4: thread 4 event session terminated.

Aug 2 18:17:17 garuda daemon.info netopeer2-server[848]: There are no subscribers for "ietf-netconf-notifications" notifications.

Aug 2 18:17:17 garuda daemon.info netopeer2-server[848]: Generated new event (netconf-session-end).

Aug 2 18:17:17 garuda auth.info sshd[11649]: Accepted password for operator from 192.168.4.15 port 59106 ssh2

Aug 2 18:17:17 garuda authpriv.info sshd[11649]: pam_unix(sshd:session): session opened for user operator by (uid=0)

**Expected Result : The O-RU NETCONF Server responds with
<rpc-reply><ok/></rpc-reply> to the TER NETCONF Client.**

=====

******* Actual Result *******

=====

=====

Subscription to Notifications	=	SUCCESS
--------------------------------------	----------	----------------

=====