QA TEST REPORT

@ FILE NAME: M_CTC_ID_019_.txt

@ TEST SCOPE: M PLANE O-RAN CONFORMANCE

@ Software Release for Garuda_RevD: v5.0.0

Test Description : This scenario is MANDATORY for an O-RU supporting the Hybrid M-plane architecture model.

This test validates that the O-RU correctly implements NETCONF Access Control security aspects.

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

3.3 SSH Connection Establishment

3.4 NETCONF Access Control

```
==================================================================================
  ********* 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   : 20

    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

```
==================================================================================
```

>subscribe

```
==================================================================================
```

Ok

```
================================================================================
###########Step 2 and 3 O-RU NETCONF server replies by silently omitting data
nodes####################
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================================================================================
> get --filter-xpath /o-ran-usermgmt:users/user
================================================================================
<?xml version="1.0" ?>
<data xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0">
 <users xmlns="urn:o-ran:user-mgmt:1.0">
  <user>
   <name>oranuser</name>
   <account-type>PASSWORD</account-type>
   <enabled>true</enabled>
  </user>
  <user>
   <name>operator</name>
   <account-type>PASSWORD</account-type>
   <enabled>true</enabled>
  </user>
  <user>
   <name>observer</name>
   <account-type>PASSWORD</account-type>
   <enabled>true</enabled>
  </user>
  <user>
   <name>installer</name>
   <account-type>PASSWORD</account-type>
   <enabled>true</enabled>
  </user>
  <user>
   <name>operator5310619424927220</name>
   <account-type>PASSWORD</account-type>
   <enabled>true</enabled>
  </user>
  <user>
   <name>operator42009256600399182198</name>
   <account-type>PASSWORD</account-type>
   <enabled>true</enabled>
  </user>
  <user>
   <name>operator900036241939705</name>
   <account-type>PASSWORD</account-type>
   <enabled>true</enabled>
  </user>
```

```
</users>
</data>
```

```
====================================================================
   ############ SYSTEM LOGS #############
====================================================================
```

Aug 2 18:46:11 garuda daemon.info netopeer2-server[846]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 2 18:46:11 garuda daemon.info netopeer2-server[846]: getsockopt() error (Connection refused).

Aug 2 18:46:12 garuda daemon.info netopeer2-server[846]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 2 18:46:12 garuda daemon.info netopeer2-server[846]: getsockopt() error (Connection refused).

Aug 2 18:46:13 garuda user.notice SYNCMNGR[1160]: Received message from S-Plane

Aug 2 18:46:13 garuda daemon.info netopeer2-server[846]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 2 18:46:13 garuda daemon.info netopeer2-server[846]: getsockopt() error (Connection refused).

Aug 2 18:46:14 garuda daemon.info netopeer2-server[846]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 2 18:46:14 garuda daemon.info netopeer2-server[846]: getsockopt() error (Connection refused).

Aug 2 18:46:15 garuda daemon.info netopeer2-server[846]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 2 18:46:15 garuda daemon.info netopeer2-server[846]: getsockopt() error (Connection refused).

Aug 2 18:46:15 garuda daemon.info netopeer2-server[846]: Accepted a connection on :::830.

Aug 2 18:46:15 garuda daemon.info netopeer2-server[846]: Session 1776 (user "root", CID 1) created.

Aug 2 18:46:15 garuda daemon.info netopeer2-server[846]: Received an SSH message "request-service" of subtype "ssh-userauth".

Aug 2 18:46:15 garuda daemon.info netopeer2-server[846]: Received an SSH message "request-auth" of subtype "password".

Aug 2 18:46:15 garuda daemon.info netopeer2-server[846]: User "operator" authenticated.

Aug 2 18:46:15 garuda daemon.info netopeer2-server[846]: Received an SSH message "request-channel-open" of subtype "session".

Aug 2 18:46:15 garuda daemon.info netopeer2-server[846]: Received an SSH message "request-channel" of subtype "subsystem".

Aug 2 18:46:15 garuda daemon.info netopeer2-server[846]: Session 1777 (user "root", CID 1) created.

Aug 2 18:46:15 garuda daemon.info netopeer2-server[846]: There are no subscribers for "ietf-netconf-notifications" notifications.

Aug 2 18:46:15 garuda daemon.info netopeer2-server[846]: Generated new event (netconf-session-start).

Aug 2 18:46:15 garuda daemon.info netopeer2-server[846]: Resolving unresolved data nodes and their constraints...

Aug 2 18:46:15 garuda daemon.info netopeer2-server[846]: All data nodes and constraints resolved.

Aug 2 18:46:15 garuda daemon.info netopeer2-server[846]: Resolving unresolved data nodes and their constraints...

Aug 2 18:46:15 garuda daemon.info netopeer2-server[846]: All data nodes and constraints resolved.

Aug 2 18:46:15 garuda daemon.info netopeer2-server[846]: Published event "rpc" "/notifications:create-subscription" with ID 4 priority 0 for 1 subscribers.

Aug 2 18:46:15 garuda daemon.info netopeer2-server[846]: Processing "/notifications:create-subscription" "rpc" event with ID 4 priority 0 (remaining 1 subscribers).

Aug 2 18:46:15 garuda daemon.info netopeer2-server[846]: Successful processing of "rpc" event with ID 4 priority 0 (remaining 0 subscribers).

Aug 2 18:46:15 garuda daemon.info netopeer2-server[846]: Event "rpc" with ID 4 priority 0 succeeded.

Aug 2 18:46:15 garuda daemon.info netopeer2-server[846]: Session 20: thread 0 event new RPC.

Aug 2 18:46:16 garuda daemon.info netopeer2-server[846]: Resolving unresolved data nodes and their constraints...

Aug 2 18:46:16 garuda daemon.info netopeer2-server[846]: All data nodes and constraints resolved.

Aug 2 18:46:16 garuda daemon.info netopeer2-server[846]: Resolving unresolved data nodes and their constraints...

Aug 2 18:46:16 garuda daemon.info netopeer2-server[846]: All data nodes and constraints resolved.

Aug 2 18:46:16 garuda daemon.info netopeer2-server[846]: Published event "rpc" "/ietf-netconf:get-config" with ID 9 priority 0 for 1 subscribers.

Aug 2 18:46:16 garuda daemon.info netopeer2-server[846]: Processing "/ietf-netconf:get-config" "rpc" event with ID 9 priority 0 (remaining 1 subscribers).

Aug 2 18:46:16 garuda daemon.info netopeer2-server[846]: Successful processing of "rpc" event with ID 9 priority 0 (remaining 0 subscribers).

Aug 2 18:46:16 garuda daemon.info netopeer2-server[846]: Event "rpc" with ID 9 priority 0 succeeded.

Aug 2 18:46:16 garuda daemon.info netopeer2-server[846]: Resolving unresolved data nodes and their constraints...

Aug 2 18:46:16 garuda daemon.info netopeer2-server[846]: All data nodes and constraints resolved.

Aug 2 18:46:16 garuda daemon.info netopeer2-server[846]: Session 20: thread 4 event new RPC.

Aug 2 18:46:16 garuda daemon.info netopeer2-server[846]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 2 18:46:16 garuda daemon.info netopeer2-server[846]: getsockopt() error (Connection refused).

Aug 2 18:46:16 garuda daemon.info netopeer2-server[846]: Session 20: thread 4 event new RPC.

Aug 2 18:46:16 garuda daemon.info netopeer2-server[846]: Session 20: thread 4 event session terminated.

Aug 2 18:46:16 garuda daemon.info netopeer2-server[846]: There are no subscribers for "ietf-netconf-notifications" notifications.

Aug 2 18:46:16 garuda daemon.info netopeer2-server[846]: Generated new event (netconf-session-end).

Aug 2 18:46:17 garuda daemon.info netopeer2-server[846]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 2 18:46:17 garuda daemon.info netopeer2-server[846]: getsockopt() error (Connection refused).

Aug 2 18:46:18 garuda daemon.info netopeer2-server[846]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 2 18:46:18 garuda daemon.info netopeer2-server[846]: getsockopt() error (Connection refused).

Aug 2 18:46:19 garuda daemon.info netopeer2-server[846]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 2 18:46:19 garuda daemon.info netopeer2-server[846]: getsockopt() error (Connection refused).

Aug 2 18:46:20 garuda daemon.info netopeer2-server[846]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 2 18:46:20 garuda daemon.info netopeer2-server[846]: getsockopt() error (Connection refused).

Aug 2 18:46:21 garuda daemon.info netopeer2-server[846]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 2 18:46:21 garuda daemon.info netopeer2-server[846]: getsockopt() error (Connection refused).

Aug 2 18:46:21 garuda auth.info sshd[10037]: Accepted password for operator from 192.168.4.15 port 59720 ssh2

Aug 2 18:46:21 garuda authpriv.info sshd[10037]: pam_unix(sshd:session): session opened for user operator by (uid=0)

Expected Result : The O-RU NETCONF server replies by silently omitting data nodes and their descendants to which the client does not have read access from the <rpc-reply> message

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===========================================================================
  ***************** Actual Result ******************
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============================================================================
Access Control Sudo (negative case)              =          SUCCESS

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```