



**@ FILE NAME: M\_CTC\_ID\_019.txt**

**@ TEST SCOPE: M PLANE O-RAN CONFORMANCE**

**@ Software Release for Garuda\_RevD: v5.0.2**

**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 192.168.4.40 --port 830 --login operator

Interactive SSH Authentication

Type your password:

Password:

> status

Current NETCONF session:

ID : 20

Host : 192.168.4.40

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**

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```
<?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>operator363904219774937034226</name>
      <account-type>PASSWORD</account-type>
      <enabled>true</enabled>
    </user>
    <user>
      <name>operator0534452414116716545446</name>
      <account-type>PASSWORD</account-type>
      <enabled>true</enabled>
    </user>
    <user>
      <name>operator6163823880175</name>
      <account-type>PASSWORD</account-type>
      <enabled>true</enabled>
    </user>
  </users>
</data>
```

## =====

**##### SYSTEM LOGS #####**

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Aug 19 12:28:42 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:42 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:42 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:42 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:43 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:43 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:43 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:43 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:44 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:44 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:44 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:44 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:45 garuda user.notice SYNCMNGR[1176]: Received message from S-Plane

Aug 19 12:28:45 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:45 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:45 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:45 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:46 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:46 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:46 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:46 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:46 garuda daemon.info netopeer2-server[853]: Accepted a connection on :::830.

Aug 19 12:28:46 garuda daemon.info netopeer2-server[853]: Session 1645 (user "root", CID 1) created.

Aug 19 12:28:46 garuda daemon.info netopeer2-server[853]: Received an SSH message "request-service" of subtype "ssh-userauth".

Aug 19 12:28:46 garuda daemon.info netopeer2-server[853]: Received an SSH message "request-auth" of subtype "password".

Aug 19 12:28:46 garuda daemon.info netopeer2-server[853]: User "operator" authenticated.

Aug 19 12:28:46 garuda daemon.info netopeer2-server[853]: Received an SSH message "request-channel-open" of subtype "session".

Aug 19 12:28:46 garuda daemon.info netopeer2-server[853]: Received an SSH message "request-channel" of subtype "subsystem".

Aug 19 12:28:46 garuda daemon.info netopeer2-server[853]: Session 1646 (user "root", CID 1) created.

Aug 19 12:28:46 garuda daemon.info netopeer2-server[853]: There are no subscribers for "ietf-netconf-notifications" notifications.

Aug 19 12:28:46 garuda daemon.info netopeer2-server[853]: Generated new event (netconf-session-start).

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: Resolving unresolved data nodes and their constraints...

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: All data nodes and constraints resolved.

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: Resolving unresolved data nodes and their constraints...

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: All data nodes and constraints resolved.

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: Published event "rpc" "/notifications:create-subscription" with ID 4 priority 0 for 1 subscribers.

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: Processing "/notifications:create-subscription" "rpc" event with ID 4 priority 0 (remaining 1 subscribers).

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: Successful processing of "rpc" event with ID 4 priority 0 (remaining 0 subscribers).

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: Event "rpc" with ID 4 priority 0 succeeded.

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: Session 20: thread 1 event new RPC.

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: Resolving unresolved data nodes and their constraints...

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: All data nodes and constraints resolved.

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: Resolving unresolved data nodes and their constraints...

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: All data nodes and constraints resolved.

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: Published event "rpc" "/ietf-netconf:get-config" with ID 9 priority 0 for 1 subscribers.

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: Processing "/ietf-netconf:get-config" "rpc" event with ID 9 priority 0 (remaining 1 subscribers).

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: Successful processing of "rpc" event with ID 9 priority 0 (remaining 0 subscribers).

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: Event "rpc" with ID 9 priority 0 succeeded.

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: Resolving unresolved data nodes and their constraints...

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: All data nodes and constraints resolved.

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: Session 20: thread 4 event new RPC.

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: Session 20: thread 4 event new RPC.

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: Session 20: thread 4 event session terminated.

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: There are no subscribers for "ietf-netconf-notifications" notifications.

Aug 19 12:28:47 garuda daemon.info netopeer2-server[853]: Generated new event (netconf-session-end).

Aug 19 12:28:48 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:48 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:48 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:48 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:49 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:49 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:49 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:49 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:50 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:50 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:50 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:50 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:51 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:51 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:51 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:51 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:52 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:52 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:52 garuda daemon.info netopeer2-server[853]: Trying to connect via IPv4 to 192.168.4.15:4334.

Aug 19 12:28:52 garuda daemon.info netopeer2-server[853]: getsockopt() error (Connection refused).

Aug 19 12:28:52 garuda authpriv.debug sshd[8857]: pam\_unix(sshd:account): account operator has password changed in future

Aug 19 12:28:52 garuda auth.info sshd[8857]: Accepted password for operator from 192.168.4.15 port 40910 ssh2

Aug 19 12:28:52 garuda authpriv.info sshd[8857]: 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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