@ FILE NAME: M_CTC_ID_003.txt

@ TEST SCOPE: M PLANE O-RAN CONFORMANCE

@ Software Release for MCB1: v1.0.1

Test Description : This scenario validates that the O-RU properly executes the session establishment procedure with VLANs and a DHCPv4 server. This test is applicable to IPv4 environments. Two negative flows are included in this test:

The TER NETCONF Client uses improper credentials when trying to establish a SSH session with the RU NETCONF Server.

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Interfaces Present in DU Side

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eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        ether 64:9d:99:ff:f5:12  txqueuelen 1000  (Ethernet)
        RX packets 31383  bytes 5365520 (5.3 MB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 28459  bytes 3388514 (3.3 MB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

eth1: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
        ether 64:9d:99:ff:f5:13  txqueuelen 1000  (Ethernet)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

eth2: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 172.25.96.163  netmask 255.255.254.0  broadcast 172.25.97.255
        inet6 fe80::a7de:bea9:9091:a5f0  prefixlen 64  scopeid 0x20<link>
        ether b4:2e:99:60:73:8c  txqueuelen 1000  (Ethernet)
        RX packets 744623  bytes 102091599 (102.0 MB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 2978940  bytes 4149621885 (4.1 GB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
        device interrupt 16  memory 0xb1400000-b1420000

eth0.485: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.128.72  netmask 255.255.255.0  broadcast 192.168.128.255
        inet6 fe80::669d:99ff:feff:f512  prefixlen 64  scopeid 0x20<link>
        ether 64:9d:99:ff:f5:12  txqueuelen 1000  (Ethernet)
        RX packets 66  bytes 6197 (6.1 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 841  bytes 144840 (144.8 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

eth0.490: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.49.88  netmask 255.255.255.0  broadcast 192.168.49.255
        inet6 fe80::669d:99ff:feff:f512  prefixlen 64  scopeid 0x20<link>
        ether 64:9d:99:ff:f5:12  txqueuelen 1000  (Ethernet)
        RX packets 31177  bytes 4908924 (4.9 MB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 27618  bytes 3132262 (3.1 MB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
```

loop txqueuelen 1000 (Local Loopback)
RX packets 239682 bytes 5954986940 (5.9 GB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 239682 bytes 5954986940 (5.9 GB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

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DHCP Status

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DHCP Status

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```
isc-dhcp-server.service - ISC DHCP IPv4 server
  Loaded: loaded (/lib/systemd/system/isc-dhcp-server.service; enabled; vendor preset: enabled)
  Active: active (running) since Tue 2022-11-29 10:11:27 IST; 4h 44min ago
    Docs: man:dhcpd(8)
Main PID: 8639 (dhcpd)
   Tasks: 1 (limit: 4915)
  CGroup: /system.slice/isc-dhcp-server.service
   hcpd -user dhcpd -group dhcpd -f -4 -pf /run/dhcp-server/dhcpd.pid -cf /etc/dhcp/dhcpd.conf eth0.490

Nov 29 14:52:06 vvdn dhcpd[8639]: reuse_lease: lease age 1616 (secs) under 25% threshold, reply with unaltered, existing lease for 192.168.49.39
Nov 29 14:52:06 vvdn dhcpd[8639]: DHCPDISCOVER from 98:ae:71:00:8a:c2 (mcb1) via eth0.490
Nov 29 14:52:07 vvdn dhcpd[8639]: DHCPOFFER on 192.168.49.39 to 98:ae:71:00:8a:c2 (mcb1) via eth0.490
Nov 29 14:52:07 vvdn dhcpd[8639]: reuse_lease: lease age 1617 (secs) under 25% threshold, reply with unaltered, existing lease for 192.168.49.39
Nov 29 14:52:07 vvdn dhcpd[8639]: DHCPREQUEST for 192.168.49.39 (192.168.49.88) from 98:ae:71:00:8a:c2 (mcb1) via eth0.490
Nov 29 14:52:07 vvdn dhcpd[8639]: DHCPACK on 192.168.49.39 to 98:ae:71:00:8a:c2 (mcb1) via eth0.490
Nov 29 14:55:37 vvdn dhcpd[8639]: DHCPDISCOVER from 98:ae:71:00:8a:c2 (mcb1) via eth0.490
Nov 29 14:55:38 vvdn dhcpd[8639]: DHCPOFFER on 192.168.49.39 to 98:ae:71:00:8a:c2 (mcb1) via eth0.490
Nov 29 14:55:38 vvdn dhcpd[8639]: DHCPREQUEST for 192.168.49.39 (192.168.49.88) from 98:ae:71:00:8a:c2 (mcb1) via eth0.490
Nov 29 14:55:38 vvdn dhcpd[8639]: DHCPACK on 192.168.49.39 to 98:ae:71:00:8a:c2 (mcb1) via eth0.490
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########## Pinging ##########

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```
PING 192.168.49.39 (192.168.49.39) 56(84) bytes of data.
64 bytes from 192.168.49.39: icmp_seq=1 ttl=64 time=0.123 ms
64 bytes from 192.168.49.39: icmp_seq=2 ttl=64 time=0.200 ms
64 bytes from 192.168.49.39: icmp_seq=3 ttl=64 time=0.193 ms
64 bytes from 192.168.49.39: icmp_seq=4 ttl=64 time=0.184 ms
64 bytes from 192.168.49.39: icmp_seq=5 ttl=64 time=0.192 ms

--- 192.168.49.39 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4100ms
rtt min/avg/max/mdev = 0.123/0.178/0.200/0.030 ms
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The O-RU NETCONF Serve establishes TCP connection and performs a Call Home procedure towards the NETCONF Client and not establishes a SSH.

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> listen --ssh --login observer

Waiting 60s for an SSH Call Home connection on port 4334...The authenticity of the host '::ffff:192.168.49.39' cannot be established.

ssh-rsa key fingerprint is 59:9e:90:48:f1:d7:6e:35:e8:d1:f6:1e:90:aa:a3:83:a0:6b:98:5a.

Are you sure you want to continue connecting (yes/no)? yes

observer@::ffff:192.168.49.39 password:

nc ERROR: Unable to authenticate to the remote server (all attempts via supported authentication methods failed).

cmd_listen: Receiving SSH Call Home on port 4334 as user "observer" failed.

> listen --ssh --login operator

Waiting 60s for an SSH Call Home connection on port 4334...The authenticity of the host '::ffff:192.168.49.39' cannot be established.

ssh-rsa key fingerprint is 59:9e:90:48:f1:d7:6e:35:e8:d1:f6:1e:90:aa:a3:83:a0:6b:98:5a.

Are you sure you want to continue connecting (yes/no)? yes

operator@::ffff:192.168.49.39 password:

nc ERROR: Unable to authenticate to the remote server (all attempts via supported authentication methods failed).

cmd_listen: Receiving SSH Call Home on port 4334 as user "operator" failed.

> listen --ssh --login installerr

Waiting 60s for an SSH Call Home connection on port 4334...The authenticity of the host '::ffff:192.168.49.39' cannot be established.

ssh-rsa key fingerprint is 59:9e:90:48:f1:d7:6e:35:e8:d1:f6:1e:90:aa:a3:83:a0:6b:98:5a.

Are you sure you want to continue connecting (yes/no)? yes

installerr@::ffff:192.168.49.39 password:

nc ERROR: Unable to authenticate to the remote server (all attempts via supported authentication methods failed).

cmd_listen: Receiving SSH Call Home on port 4334 as user "installerr" failed.

> listen --ssh --login installer

Waiting 60s for an SSH Call Home connection on port 4334...The authenticity of the host '::ffff:192.168.49.39' cannot be established.

ssh-rsa key fingerprint is 59:9e:90:48:f1:d7:6e:35:e8:d1:f6:1e:90:aa:a3:83:a0:6b:98:5a.

Are you sure you want to continue connecting (yes/no)? yes

installer@::ffff:192.168.49.39 password:

nc ERROR: Unable to authenticate to the remote server (all attempts via supported authentication methods failed).

cmd_listen: Receiving SSH Call Home on port 4334 as user "installer" failed.

> listen --ssh --login operator1

Waiting 60s for an SSH Call Home connection on port 4334...The authenticity of the host '::ffff:192.168.49.39' cannot be established.

ssh-rsa key fingerprint is 59:9e:90:48:f1:d7:6e:35:e8:d1:f6:1e:90:aa:a3:83:a0:6b:98:5a.

Are you sure you want to continue connecting (yes/no)? yes

operator1@::ffff:192.168.49.39 password:

nc ERROR: Unable to authenticate to the remote server (all attempts via supported authentication methods failed).

cmd_listen: Receiving SSH Call Home on port 4334 as user "operator1" failed.

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############ SYSTEM LOGS ##############

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Expected Result : The TER NETCONF Client and O-RU NETCONF Server exchange capabilities through NETCONF <hello> messages.

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

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Reject_SSH_Authentication_due_to_Incorrect_Credential = SUCCESS

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