



# HOW TO ADD NEW TERMINATION TEST CASE (VOICE AUTOMATION TOOL)

## Abstract

This document is a guide for adding new Termination test cases, to test Voice calls from Customer towards Carrier, in Voice Automation Tool

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The Test Cases are majorly classified into two major Test Suites

1. Origination(Inbound)
2. Termination(Outbound)

As of Sep 20, 2017:

The Test cases under Termination(Outbound) Test Suite are the ones highlighted in green

Test#	Call Flow Type	
1	SBC	Termination call through CUSBC to SBC proxy to CASBC to international number
2	Edge Proxy	Termination call through Edge Proxy/WRAP to CASBC
3	BW7/BW9	Termination call through BW7 to CASBC
4	SBC	Termination call through CUSBC to SBC Proxy to CASBC to international number
5	SIP Auth	Termination call through CUSBC to Auth proxy to core network to CASBC
6		Termination call, test DTMF functionality
7		Termination call, test 711u
8		Termination call, test 729a
9		Termination call, T.38 fax (reINVITE from customer)
10		Termination call, transcoding 711/729
11		Termination call, BYE from carrier
12		Termination call, CANCEL after 18x
13		Termination call, call to invalid TN (555-555-5555)
14		Termination call, long duration call over 30 minutes
15	911	Termination call, 911
16		Termination call, CASBC direct-media enabled
17	911	Termination call, 911 "410 error code"
18		Termination call to TN +19195550002: should return "404"

**Steps to Add a Termination Test Case (Customer → Carrier)**  
(Customer:192.168.100.110:5062 & Carrier:192.168.100.107:5091)

1. Configuration in Customer CentOS VM(192.168.100.110)
2. Configuration in Carrier CentOS VM(192.168.100.107)
3. Configuration changes in .robot file located in 192.168.100.110

1. **Configuration in Customer CentOS VM(192.168.100.110)**
  - ✓ Create <new test-case>.xml scenario file
  - ✓ Create <new test-case>.txt result file
  - ✓ Create <new test-case>.py script file

- ✓ Change rwx permissions of each of the created files

- SSH into Customer CentOS VM(192.168.100.110)

```
Connecting to 192.168.100.110:22...
Connection established.
To escape to local shell, press 'Ctrl+Alt+J'.

Last login: Wed Jun 28 14:39:27 2017 from clecvoip-02.lab1.bandwidthclec.local
[cfernando@clecvoip-02.lab1 ~]$
```

- Change directory to /home/Termination/

```
[cfernando@clecvoip-02.lab1 ~]$ cd /home/Termination/
[cfernando@clecvoip-02.lab1 Termination]$
```

- The “Termination” directory includes the robot files, test case scenarios, scripts and results

```
[cfernando@clecvoip-02.lab1 Termination]$ ls -alrth
total 556K
drwxr-xr-x. 6 root    root          74 Jun 26 15:11 ..
drwxrwxrwx. 2 root    root         4.0K Jun 28 14:02 Scenarios
drwxrwxrwx. 2 root    root         4.0K Jun 28 14:12 Scripts
drwxrwxrwx. 2 root    root         4.0K Jun 28 14:22 Results
-rwxrwxrwx. 1 root    root          12K Jun 28 14:26 Termination.robot
drwxrwxrwx. 5 root    root         4.0K Jun 28 14:26 .
-rwxrwxrwx. 1 jenkins voip-intern 96K Jun 28 14:36 output.xml
-rwxrwxrwx. 1 root    root        222K Jun 28 14:36 log.html
-rwxrwxrwx. 1 root    root        208K Jun 28 14:36 report.html
[cfernando@clecvoip-02.lab1 Termination]$
```

- ✓ Create <new test-case>.xml scenario file

- The “Scenarios” directory includes all the uac.xml files for TC(Termination Cases). Create and add the new Test Case UAC scenario in this location

```

[cfernando@clecvoip-02.lab1 Scenarios]$ ls -alrth
total 192K
-rwxrwxrwx. 1 root root 5.9K Jun 28 14:02 TC10-uac.xml
-rwxrwxrwx. 1 root root 2.0K Jun 28 14:02 newUAC.xml
-rwxrwxrwx. 1 root root 6.1K Jun 28 14:02 Calvin-200.xml
-rwxrwxrwx. 1 root root 6.0K Jun 28 14:02 TC13-uac.xml
-rwxrwxrwx. 1 root root 5.3K Jun 28 14:02 TC12.xml
-rwxrwxrwx. 1 root root 815 Jun 28 14:02 TC12-UAS.xml
-rwxrwxrwx. 1 root root 6.1K Jun 28 14:02 TC12-uac.xml
-rwxrwxrwx. 1 root root 5.2K Jun 28 14:02 TC11-uac.xml
-rwxrwxrwx. 1 root root 6.0K Jun 28 14:02 TC7-uac.xml
-rwxrwxrwx. 1 root root 6.0K Jun 28 14:02 TC6-uas.xml
-rwxrwxrwx. 1 root root 5.7K Jun 28 14:02 TC6-uac.xml
-rwxrwxrwx. 1 root root 6.0K Jun 28 14:02 TC1-uac.xml
-rwxrwxrwx. 1 root root 6.0K Jun 28 14:02 TC15-uac.xml
-rwxrwxrwx. 1 root root 6.7K Jun 28 14:02 UAC.xml
-rwxrwxrwx. 1 root root 6.5K Jun 28 14:02 uac-robust.xml
-rwxrwxrwx. 1 root root 2.1K Jun 28 14:02 UAC1.xml
-rwxrwxrwx. 1 root root 6.1K Jun 28 14:02 TC8-uas.xml
-rwxrwxrwx. 1 root root 6.0K Jun 28 14:02 TC8-uac.xml
-rwxrwxrwx. 1 root root 19K Jun 28 14:02 UAS.xml
-rwxrwxrwx. 1 root root 20K Jun 28 14:02 uas-proxytesting.xml
-rwxrwxrwx. 1 root root 6.1K Jun 28 14:02 uas-bye-200.xml
-rwxrwxrwx. 1 root root 815 Jun 28 14:02 UAS1.xml
drwxrwxrwx. 2 root root 4.0K Jun 28 14:02 .
drwxrwxrwx. 5 root root 4.0K Jun 28 14:26 ..
[cfernando@clecvoip-02.lab1 Scenarios]$

```

- Make sure the scenario has a “response time flag(rtd)” set to “true” . This ensures that the SIPp result displays Response Time and the logic in the scripts(.py) works fine

```

<recv response="200" rtd="true" rrs="true">
  <action>
    <ereg regexp="<(.*)>"
      search_in="hdr"
      header="Contact"
      checkit="true"
      assign_to="2,2"/>
  </action>
</recv>

```

```

----- Statistics Screen ----- [1-9]: Change Screen --^M
Start Time      | 2017-06-28 14:32:02:511 | 1498660322.511594 ^M
Last Reset Time | 2017-06-28 14:32:26:786 | 1498660346.786661 ^M
Current Time    | 2017-06-28 14:32:26:787 | 1498660346.787209 ^M
-----^M
Counter Name    | Periodic value          | Cumulative value^M
-----^M
Elapsed Time    | 00:00:00:000            | 00:00:24:275 ^M
Call Rate       | 0.000 cps               | 0.041 cps ^M
-----^M
Incoming call created | 0                      | 0 ^M
OutGoing call created | 0                      | 1 ^M
Total Call created  | 0                      | 1 ^M
Current Call       | 0                      | ^M
-----^M
Successful call     | 0                      | 1 ^M
Failed call         | 0                      | 0 ^M
-----^M
Response Time 1    | 00:00:00:000            | 00:00:10:105 ^M
Call Length        | 00:00:00:000            | 00:00:24:149 ^M
----- Test Terminated -----^M

```

✓ Create <new test-case>.txt result file

- Before heading on to create a script, first create a result (.txt) file for the TC(Termination Case).

Type `vim <name of the text file>`

Then hit `ESC` key followed by `:wq` keys

```
[cfernando@clecvoip-02.lab1 Results]$ ls -alrht
total 384K
-rwxrwxrwx. 1 root root 2.2K Jun 28 14:02 README.txt
-rwxrwxrwx. 1 root root 522 Jun 28 14:02 Ping.txt
-rwxrwxrwx. 1 root root 3.4K Jun 28 14:02 MEDIA.txt
-rwxrwxrwx. 1 root root 18K Jun 28 14:02 LICENSE.txt
drwxrwxrwx. 5 root root 4.0K Jun 28 14:26 .
-rwxrwxrwx. 1 root root 42K Jun 28 14:32 TC1.txt
-rwxrwxrwx. 1 root root 53K Jun 28 14:33 TC6.txt
-rwxrwxrwx. 1 root root 62K Jun 28 14:33 TC7.txt
-rwxrwxrwx. 1 root root 62K Jun 28 14:34 TC8.txt
-rwxrwxrwx. 1 root root 28K Jun 28 14:35 TC10.txt
-rwxrwxrwx. 1 root root 14K Jun 28 14:35 TC11.txt
-rwxrwxrwx. 1 root root 5.6K Jun 28 14:35 TC12.txt
-rwxrwxrwx. 1 root root 13K Jun 28 14:35 TC13.txt
-rwxrwxrwx. 1 root root 46K Jun 28 14:36 TC15.txt
drwxrwxrwx. 2 root root 4.0K Jun 28 15:08 .
[cfernando@clecvoip-02.lab1 Results]$
```

✓ Create <new test-case>.py script file

- The “Scripts” directory includes all the uac.py files for TC(Termination Cases).

```
[cfernando@clecvoip-02.lab1 Scripts]$ ls -alrht
total 1.7M
-rwxrwxrwx. 1 root root 87 Jun 28 14:02 Calvin_uas.py
-rwxrwxrwx. 1 root root 702 Jun 28 14:02 Calvin_uac.py
-rwxrwxrwx. 1 root root 364 Jun 28 14:02 Calvin_ping.py
-rwxrwxrwx. 1 root root 456 Jun 28 14:02 TC12_uas.py
-rwxrwxrwx. 1 root root 457 Jun 28 14:02 TC11_uas.py
-rwxrwxrwx. 1 root root 1.6M Jun 28 14:02 get-pip.py
-rwxrwxrwx. 1 root root 131 Jun 28 14:02 test.py
-rwxrwxrwx. 1 root root 445 Jun 28 14:02 TC8_uas.py
-rwxrwxrwx. 1 root root 391 Jun 28 14:02 TC7_uas.py
-rwxrwxrwx. 1 root root 460 Jun 28 14:02 TC6_uas.py
-rwxrwxrwx. 1 root root 1.1K Jun 28 14:06 TC6_uac.py
-rwxrwxrwx. 1 root root 1.1K Jun 28 14:06 TC7_uac.py
-rwxrwxrwx. 1 root root 1.1K Jun 28 14:07 TC8_uac.py
-rwxrwxrwx. 1 root root 1.1K Jun 28 14:07 TC10_uac.py
-rwxrwxrwx. 1 root root 1.1K Jun 28 14:09 TC11_uac.py
-rwxrwxrwx. 1 root root 1.1K Jun 28 14:09 TC12_uac.py
-rwxrwxrwx. 1 root root 1.2K Jun 28 14:10 TC13_uac.py
-rwxrwxrwx. 1 root root 1.1K Jun 28 14:10 TC15_uac.py
-rwxrwxrwx. 1 root root 1.1K Jun 28 14:11 TC1_uac.py
drwxrwxrwx. 2 root root 4.0K Jun 28 14:12 .
drwxrwxrwx. 5 root root 4.0K Jun 28 14:26 ..
[cfernando@clecvoip-02.lab1 Scripts]$
```

- To add a new Test Case script, simply make a copy of an existing .py, rename and change the below highlighted fields

```
import os
import sys
#Initiating the sipp UAC and saving the output in a .txt file
try:
    i = os.system("/home/cfernando/sipp-3.3/sipp "+ sys.argv[1]+":5060 -i "+sys.argv[2]+ " -p

#Filtering out the contents of .txt file and confirming if the test case is Pass/Fail

    f = open("/home/Termination/Results/TCL.txt","r")
    y = f.readlines()

# Reversing the contents of .txt file inorder to quickly locate the Success/Failed field
    rev = y[ : -1]
#print rev
    output = rev[7]
    z = output.split(' ')
    outputl = rev[6]
    z1 = outputl.split(' ')

    if z[45]!='0'and z1[49] == '0':
        print "*****Pass*****"
    else:
        print "*****Fail*****"
except Exception as e:
    print e
    print "*****Fail*****"
```

```
" -p 5062 -s +12012000050 -sf /home/Termination/Scenarios/TCL-uac.xml -m "+sys.argv[3]+ " >/home/Termination/Results/TCL.txt")
```



✓ Change rwx permissions of each of the created files

- After having created the three files, viz *.xml*, *.txt* and *.py*

Execute the below commands

- *sudo chmod +x /home/Termination/Scripts/<name of the newscrip>.py*

```
[cfernando@clecvoip-02.lab1 Results]$ sudo chmod +x /home/Termination/Scripts/TC1_uac.py
```

- *sudo chmod 777 /home/Termination/Scenarios/\**

```
[cfernando@clecvoip-02.lab1 Termination]$ sudo chmod 777 /home/Termination/Scenarios/*
```

- *sudo chmod 777 /home/Termination/Results/\**

```
[cfernando@clecvoip-02.lab1 Termination]$ sudo chmod 777 /home/Termination/Results/*
```

## 2. Configuration in Carrier CentOS VM(192.168.100.107)

- ✓ Create <new test-case>.xml scenario file
- ✓ Create <new test-case>.txt result file
- ✓ Create <new test-case>.py script file
- ✓ Change rwx permissions of each of the created files

- ✓ Create <new test-case>.xml scenario file

Repeat the steps as performed for Customer CentOS VM(stated earlier).

The only change is that the path for the Test Case files is /etc/sipp/proxytesting/

- ✓ Create <new test-case>.txt scenario file

Repeat the steps as performed for Customer CentOS VM(stated earlier).

The only change is that the path for the Test Case files is /etc/sipp/proxytesting/

- ✓ Create <new test-case>.py scenario file

Repeat the steps as performed for Customer CentOS VM(stated earlier).

The only change is that the path for the Test Case files is /etc/sipp/proxytesting/

- ✓ Change rwx permissions of each of the created files

Repeat the steps as performed for Customer CentOS VM(stated earlier).

The only change is that the path for the Test Case files is /etc/sipp/proxytesting/

### 3. Configuration changes in .robot file located in 192.168.100.110

- SSH into 192.168.100.110

```
Connecting to 192.168.100.110:22...
Connection established.
To escape to local shell, press 'Ctrl+Alt+J'.

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[cfernando@clecvoip-02.lab1 ~]$
```

- Change directory to /home/Termination/

```
[cfernando@clecvoip-02.lab1 ~]$ cd /home/Termination/
[cfernando@clecvoip-02.lab1 Termination]$
```

- The “Termination” directory includes the robot files, test case scenarios, scripts and results

```
[cfernando@clecvoip-02.lab1 Termination]$ ls -alrth
total 556K
drwxr-xr-x. 6 root    root          74 Jun 26 15:11 ..
drwxrwxrwx. 2 root    root         4.0K Jun 28 14:02 Scenarios
drwxrwxrwx. 2 root    root         4.0K Jun 28 14:12 Scripts
drwxrwxrwx. 2 root    root         4.0K Jun 28 14:22 Results
-rwxrwxrwx. 1 root    root         12K Jun 28 14:26 Termination.robot
drwxrwxrwx. 5 root    root         4.0K Jun 28 14:26 .
-rwxrwxrwx. 1 jenkins voip-intern 96K Jun 28 14:36 output.xml
-rwxrwxrwx. 1 root    root        222K Jun 28 14:36 log.html
-rwxrwxrwx. 1 root    root        208K Jun 28 14:36 report.html
[cfernando@clecvoip-02.lab1 Termination]$
```

- Open the “Termination.robot” file using a vim editor

```
[root@clecvoip-02 Termination]# vim Termination.robot
```

```
Test9: Termination call,911
  Open Connection    ${UAS_IP}
  Login    ${USERNAME}    ${PASSWORD}

  write          sudo su
  ${outputS}= Read Until    :
  Should Contain    ${outputS}    [sudo] password for cfernando:
  write    ${PASSWORD}
  sleep    1.5s
  write    cd ${PATH_S}
  write    ${PATH_S}TC15_uas.py ${UAS_IP} ${PORT}

  [Documentation]    Running UAC that accepts SBC IP(216.x.x.x) and Client IP(192.168.x.x)
  [Tags]    Terminating/Outbound

  Open Connection    ${UAC_IP}
  Login    ${USERNAME}    ${PASSWORD}

  write          sudo su
  ${outputC}= Read Until    :
  Should Contain    ${outputC}    [sudo] password for cfernando:
  write    ${PASSWORD}
  sleep    1.5s
  write    cd ${PATH_C}
  write    ${PATH_C}TC15_uac.py ${SBC_IP} ${UAC_IP} ${COUNT}

  Set Client Configuration    prompt=#
  Set Client Configuration    timeout=10000
  ${output1}=    Read Until Prompt
  Should End With    ${output1}    ]#
  Log    ${output1}
  Should Not Contain Any    ${output1}    Fail

  close all connections

  ${SLEEPTIMER}=    Evaluate    ${COUNT}+ ${COUNT}
  Sleep    ${SLEEPTIMER}
```

- Copy and paste a complete existing Test Case in the existing file. Increment the Test Case number so that it remains unique in the file. Proceed to the next modification step

```

Test10: Termination call,911
Open Connection    ${UAS_IP}
Login    ${USERNAME}    ${PASSWORD}

write            sudo su
${outputS}= Read Until    :
Should Contain    ${outputS}    [sudo] password for cfernando:
write            ${PASSWORD}
sleep    1.5s
write    cd ${PATH_S}
write    ${PATH_S}TC15_uas.py ${UAS_IP} ${PORT}

[Documentation]    Running UAC that accepts SBC IP(216.x.x.x) and Client IP(192.168.x.x)
[Tags]    Terminating/Outbound

Open Connection    ${UAC_IP}
Login    ${USERNAME}    ${PASSWORD}

write            sudo su
${outputC}= Read Until    :
Should Contain    ${outputC}    [sudo] password for cfernando:
write            ${PASSWORD}
sleep    1.5s
write    cd ${PATH_C}
write    ${PATH_C}TC15_uac.py ${SBC_IP} ${UAC_IP} ${COUNT}

Set Client Configuration    prompt=#
Set Client Configuration    timeout=10000
${output1}=    Read Until Prompt
Should End With    ${output1}    ]#
Log    ${output1}
Should Not Contain Any    ${output1}    Fail

close all connections

${SLEEPTIMER}=    Evaluate    ${COUNT}+ ${COUNT}
sleep    ${SLEEPTIMER}

```

- Modify the below highlighted fields, in the new Test Case, with the names of the newly created scripts for both Carrier(\_uas.py) and Customer(\_uac.py)

```
Test10: Termination call,911
Open Connection    ${UAS_IP}
Login    ${USERNAME}    ${PASSWORD}

write    sudo su
${outputS}= Read Until    :
Should Contain    ${outputS}    [sudo] password for cfernando:
write    ${PASSWORD}
sleep    1.5s
write    cd ${PATH_S}
write    ${PATH_S} TC15_uas.py ${UAS_IP} ${PORT}

[Documentation]    Running UAC that accepts SBC IP(216.x.x.x) and Client IP(192.168.x.x)
[Tags]    Terminating/Outbound

Open Connection    ${UAC_IP}
Login    ${USERNAME}    ${PASSWORD}

write    sudo su
${outputC}= Read Until    :
Should Contain    ${outputC}    [sudo] password for cfernando:
write    ${PASSWORD}
sleep    1.5s
write    cd ${PATH_C}
write    ${PATH_C} TC15_uac.py ${SBC_IP} ${UAC_IP} ${COUNT}

Set Client Configuration    prompt=#
Set Client Configuration    timeout=10000
${output1}= Read Until Prompt
Should End With    ${output1}    ]#
Log    ${output1}
Should Not Contain Any    ${output1}    Fail

close all connections

${SLEEPTIMER}= Evaluate    ${COUNT}+ ${COUNT}
sleep    ${SLEEPTIMER}
```

- Hit **ESC** key followed by **:wq** keys and then run the .robot file as below to check if the newly integrated test case is successful.

**NOTE: No extra configuration is required to reflect the changes on Jenkins**

```
[root@clecvoip-02 Termination]# pybot Termination.robot

=====
Termination :: Voice Automation Tool
=====
Test0: Pinging SBC :: Checking reachability of SBC from UAC and UAS    | PASS |
-----
Test1: Termination call through CUSBC to SBC proxy to Carrier :: R... | PASS |
-----
Test2: Termination call, test DTMF functionality :: Running UAC th... ..... █
```