Avaya Solution & Interoperability Test Lab

Application Notes for configuring Logicall IVR from Maximum Network Solutions with Avaya Communication Server 1000E R7.0 and Avaya Network Routing Server R7.0 - Issue 1.0

Abstract

These Application Notes describe the configuration steps necessary for provisioning Maximum Network Solutions Logicall IVR to successfully interoperate with Avaya Communication Server 1000E R7.0 and Avaya Network Routing Server R7.0.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

These Application Notes describe a compliance-tested configuration of the interoperability of Logicall IVR from Maximum Network Solutions to successfully interoperate with Avaya Communication Server 1000E R7.0 and Avaya Network Routing Server R7.0 (NRS). Maximum Network Solutions Logicall is a voice processing platform capable of supporting both DTMF (touch tone) and Natural Speech. Maximum Network Solutions Logicall provides a platform on which voice applications and speech self-service applications can be installed enabling the automation of telephone transactions and is available as a pre-configured, out of the box solution.

2. General Test Approach and Test Results

The Maximum Network Solutions Logicall solution (Logicall) resides on Solaris R10 platform installed on a Sun Microsystems server and is administered over a telnet session using a program such as Putty or Reflections. Each solution is pre-configured according to the end-users' specifications. The configuration, regarding connectivity to the Avaya Communication Server 1000E (CS1000E), is contained in a configurable .ini file called Control.ini, an example of which can be seen in the Appendix of these Application Notes. The test approach was to successfully place calls to the Logicall system over SIP trunks between Logicall and the CS1000E. Calls from the CS1000E to Logicall route through the NRS. Outbound calls from Logicall that terminate on the CS1000E are routed directly to the CS1000E SIP Gateway by-passing the NRS.

2.1. Interoperability Compliance Testing

During interoperability compliance testing the following types of calls were made and features of Logicall covered.

- Calls placed into Logicall from CS1000E 1140E IP deskphones and M3820 digital deskphones
- Calls placed into logicall from PSTN users
- Calls transferred to Logicall from CS1000E 1140E IP deskphones and M3820 digital deskphones
- Calls transferred to Logicall from PSTN users
- Calls transferred to Logicall from an Avaya Callpilot menu
- Outbound calls from CS1000E 1140E IP deskphones and M3820 digital deskphones from Logicall
- Blind transfers to CS1000E 1140E IP deskphones and M3820 digital deskphones
- Blind transfers to CS1000E users logged into Automatic Call Distribution (ACD) Queue
- Automatic Speech Recognition (ASR) test on Logicall
- Text to Speech (TTS) test on Logicall

2.2. Test Results

All tests outlined in the Test Plan document passed successfully. Below are listed observations following the compliance test of this solution.

1. When sending calls from Logicall to deskphones on the CS1000E over SIP trunks, the IP address to which the calls were sent was the SIP Gateway IP address on the CS1000E and not the Network Routing Server IP address. This is not the Avaya recommended setup for such a scenario but was specifically requested by Maximum Network Solutions for this compliance testing.
2. When transferring calls into Logicall from the CS1000E, the B-Party CLID was passed to Logicall and not the A-Party CLID. This was the preferred method and thus the design intent by Maximum Network Solutions as SIP updates are not processed by the Logicall solution, meaning the A-Party CLID cannot be passed to Logicall.

2.3. Support

For more information on Maximum Network Solutions (Maxnet) and product support visit http://www.maxnet.co.uk. The following is the contact information for Maxnet:

Maximum Network Solutions
The Old Granary, The Square, Sheffield,
South Yorkshire, S26 5QN
+44 1909 774477
www.maxnet.co.uk

3. Reference Configuration

The configuration in **Figure 1** was used to compliance test Logicall with the CS1000E using SIP trunks to pass calls from the CS1000E into Logicall. Calls from the CS1000E deskphones to Logicall route via an NRS. Calls from Logicall to the CS1000E by-pass the NRS and are routed directly to the CS1000E SIP Gateway.

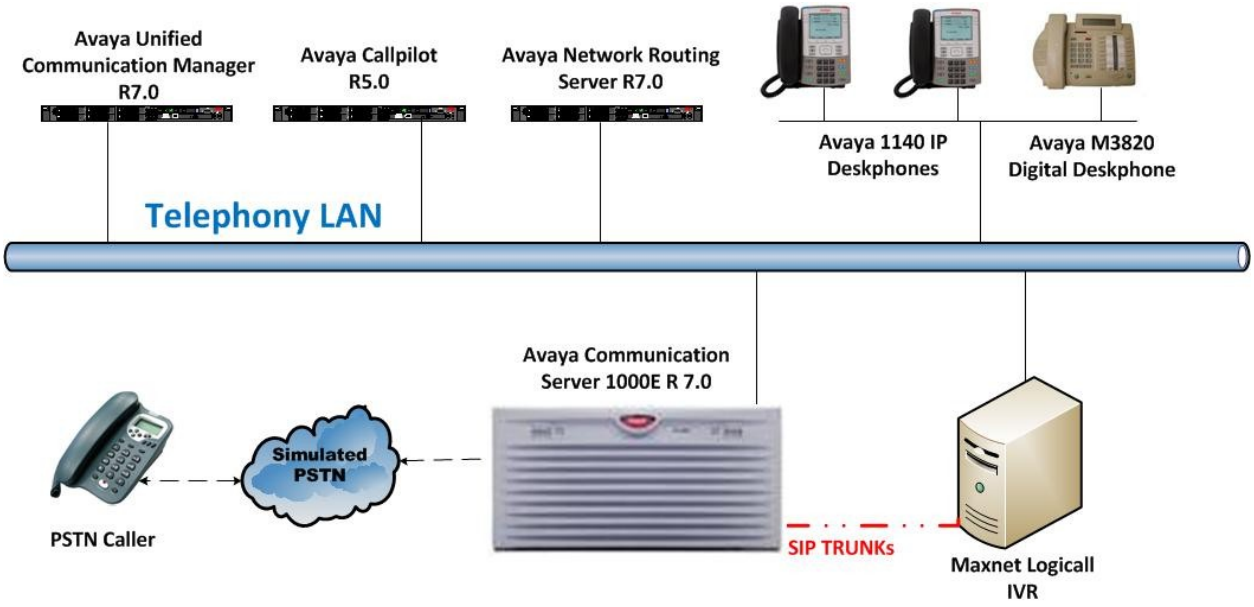


Figure 1: Connection of Maximum Network Solutions Logicall IVR and Avaya Communication Server 1000E R7.0.

4. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

Equipment Description	Software Release
Avaya Communication Server 1000E CPPM	Avaya Communication Server 1000E R7.0 **See Appendix for patch list used**
Avaya PVI NRS (IBM x3350)	Avaya Network Routing Server R7.0
Avaya PVI UCM (IBM x3350)	Avaya Unified Communications Management R7.0
Avaya 1140 UNIStim Deskphone	UNIStim V0625C8D
Avaya 3820 Digital Set	N/A
Avaya Call Pilot 600r Server	Avaya Call Pilot Version 5.00.41 Patch Line-up:CP50041SU08S CP500508G09C
Maximum Network Solution Sun Microsystems	Maximum Network Solutions Solaris R10 Maximum Network Solutions Logicall IVR R1.0.0

5. Configuration of Avaya Communication Server 1000E

The configuration operations illustrated in this section were performed using terminal access to the CS1000E over a telnet session. It is assumed a fully working CS1000E is in place with SIP trunks configured and a Route List Index (RLI) associated with the route for the SIP. For all other provisioning information, such Administering Avaya CS1000E, refer to product documentation in **Section 10** of these Application Notes.

Note: Not all prompts need an answer. The prompts highlighted below are mandatory for a basic configuration. Accept the default responses for all other prompts by pressing the Return key.

5.1. Add a Distant Steering Code in a Coordinated Dialling Plan for Logicall

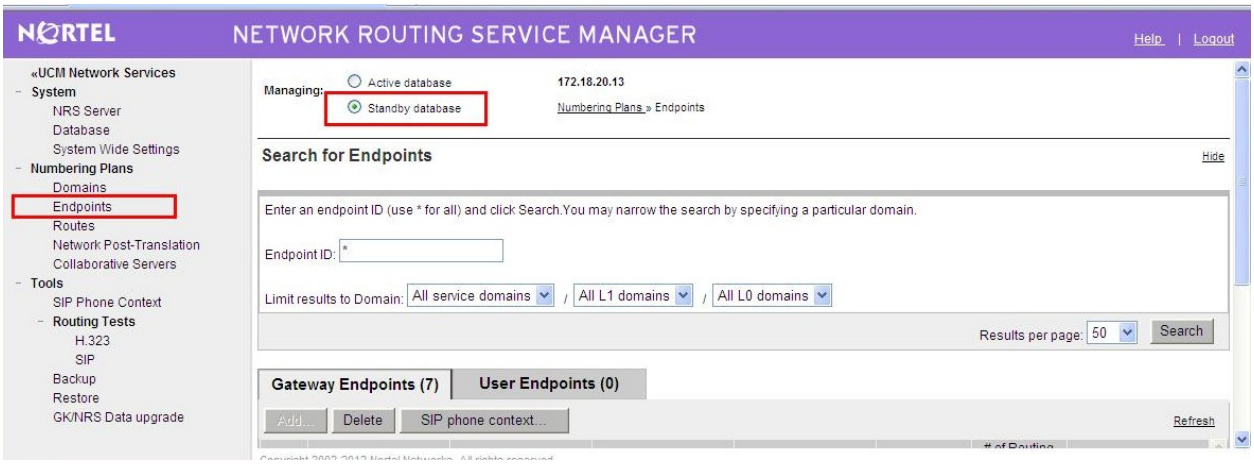
In order to send calls to Logicall, a Directory Number (DN) must be associated with each Logicall application. For compliance testing one application was created in Logicall and therefore one DN must be associated with this application in order to call it. In the example below 6000 is chosen, this DN is created in overlay 87 as type Distant Steering Code (DSC) in a Coordinated Dialling Plan (CDP). Type **LD 87** to enter Overlay 87, then create a new **cdp** and add **6000** as the **dsc** as shown below.

Prompt	**Response**	**Description**
>	**LD 87**	Enter Overlay 87
REQ	**NEW**	New
CUST	0	Customer 0
FEAT	**cdp**	Coordinated Dialling Plan
TYPE	**dsc**	Distant Steering Code
DSC	**6000**	6000 is the DN associated with Logicall
FLEN	4	Number Length (4 digits)
RLI	14	Route List index associated with this DSC
….		
….		

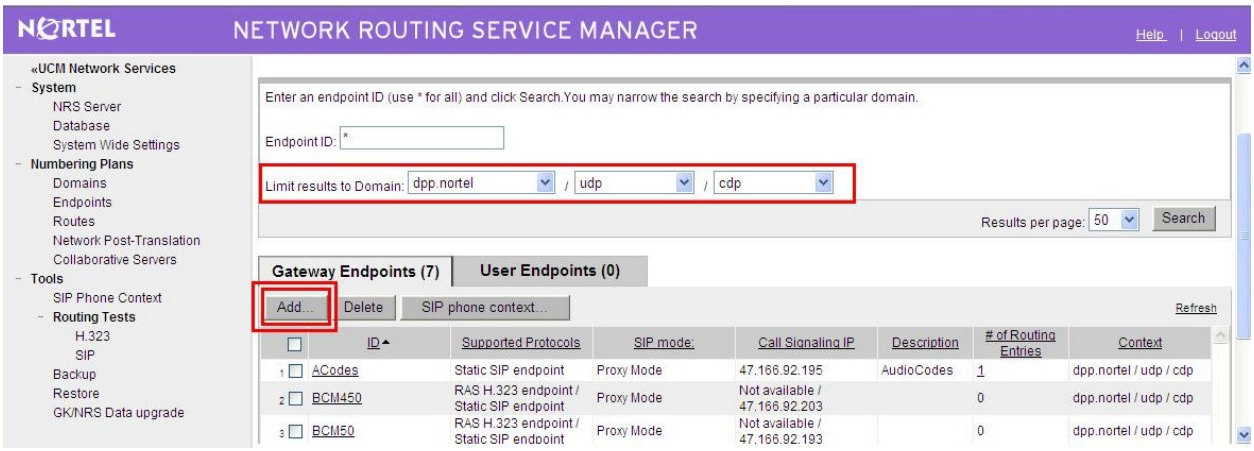
6. Configure Avaya Network Routing Server

The Avaya Network Routing Server is configured through a http session to the Avaya Unified Communications Management. Open internet explorer and log into **Unified Communications Management**, then open the NRS named **NRSM on sps** as highlighted below.

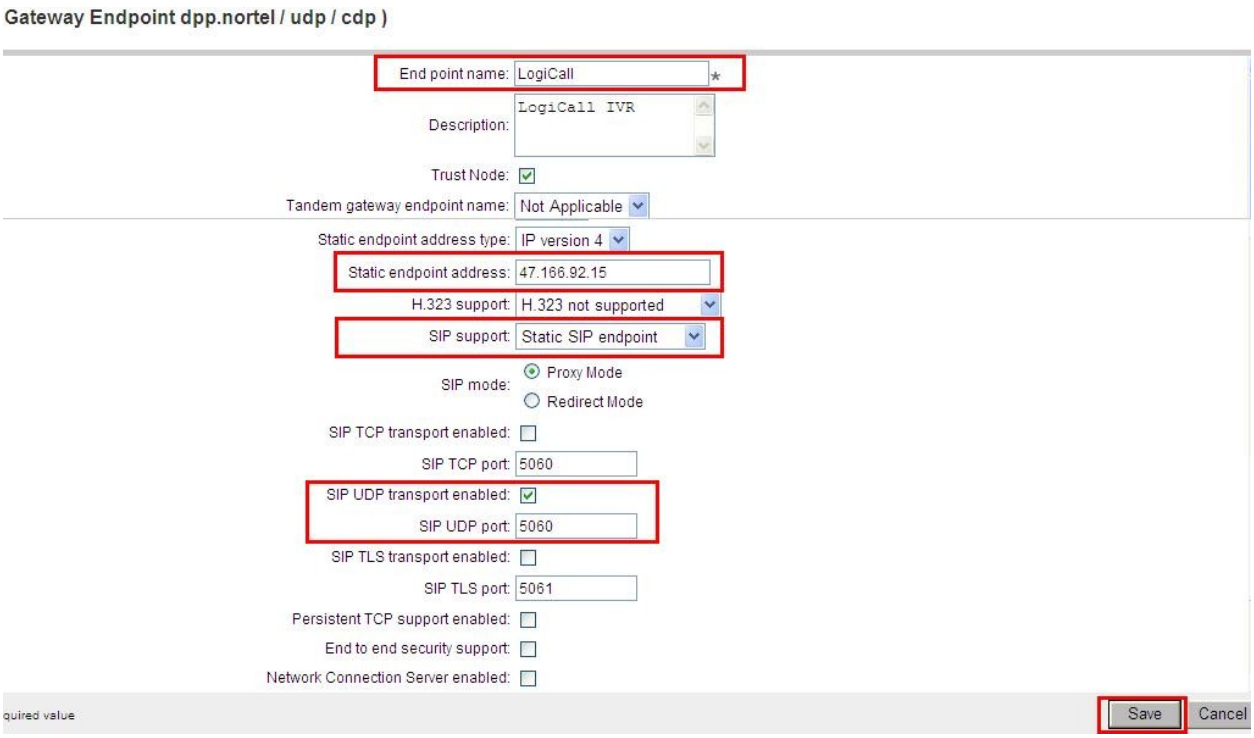
Upon entering the NRS, click on **Endpoints** in the left hand pane and select **Standby database** at the top of the screen highlighted below.



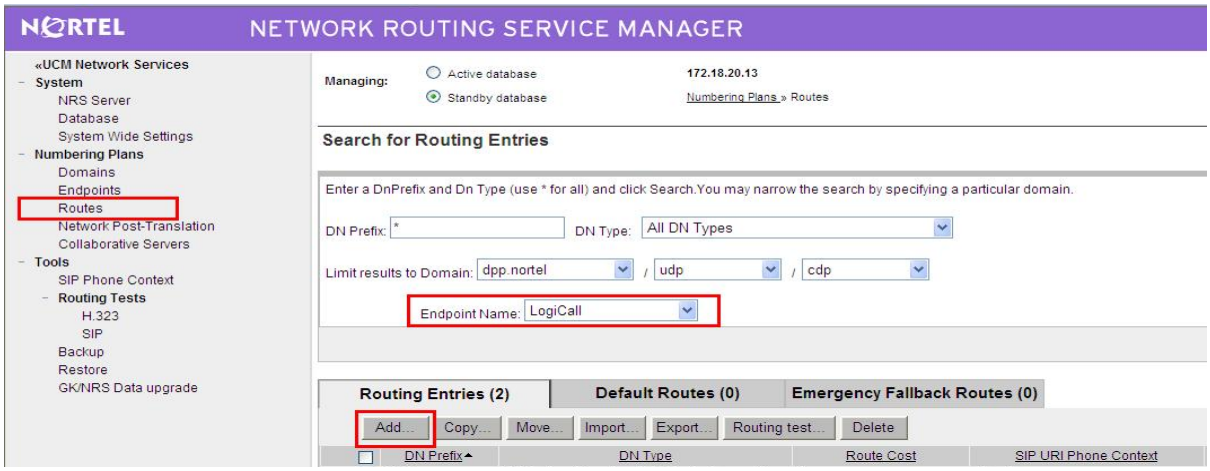
Ensure the correct **Domain** is selected in the highlighted box below and click **Add** to add Logicall as a **Gateway Endpoint**.



Enter a suitable **Endpoint name** and enter the IP address of the Logicall SIP stack in the **Static endpoint address** field. Ensure **SIP support** is set to **Static SIP endpoint** and that the **SIP UDP transport enabled** box is ticked as Logicall used UDP for SIP transport. Click **Save**.

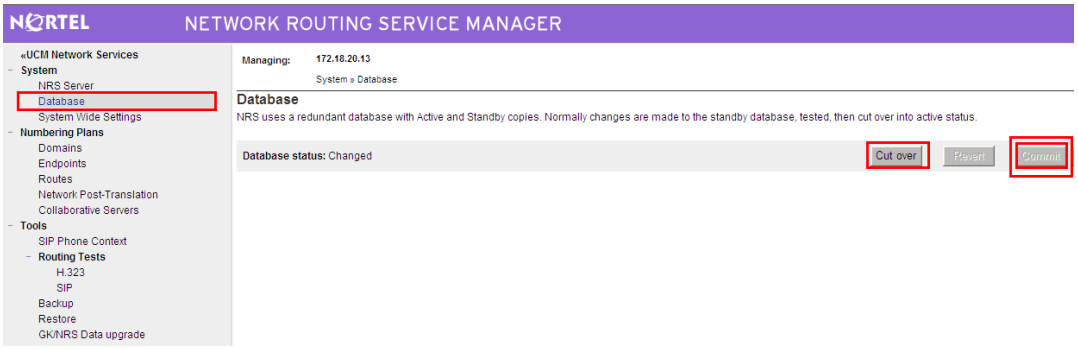


Click on **Routes** in the left hand pane to add a routing entry for the new SIP endpoint and ensure this endpoint is selected under **Endpoint Name** as highlighted below. Click **Add** to add a new route.



In the example below the Directory Number (DN) 6000 is associated with Logicall so when 6000 is called from a CS1000E deskphone the call is sent to the Logicall endpoint configured above. DN 6000 is configured as a Distant Steering Code (DSC) in a CDP (Coordinated Dialling Plan) on the CS1000E in **Section 5.1**, so ensure the **DN type** is set to **Private level 0 regional (CDP steering code)**. The **DN prefix** is the DN associated with Logicall, in this case **6000**, and the **Route cost** is set to **1**. Click **Save** when finished.

Once all configuration changes are made the database must be cutover to be made active. Click on database in the left hand plane as shown. Click on **Cut over** and then **Commit** both highlighted.



7. Configuration of Maximum Network Solutions Logicall IVR

The Logicall IVR is preconfigured to specifications depending on the requirements of each solution. The configuration used to connect to the CS1000E is located in both the Control.ini and MYSIP.cfg files for each application on Logicall server. Logicall does not register with the NRS as a SIP endpoint so any calls made from the Logicall system are manually configured on the application to route directly to the SIP Gateway on the CS1000E. See the example below from the Control.ini file where a blind transfer and supervised transfer are setup in a menu service on a test application to ring extension number 2600 on the CS1000E.

NOTE: 2600 is a directory number (DN) on the CS1000E and **47.166.92.207** is the node IP address of the CS1000E.

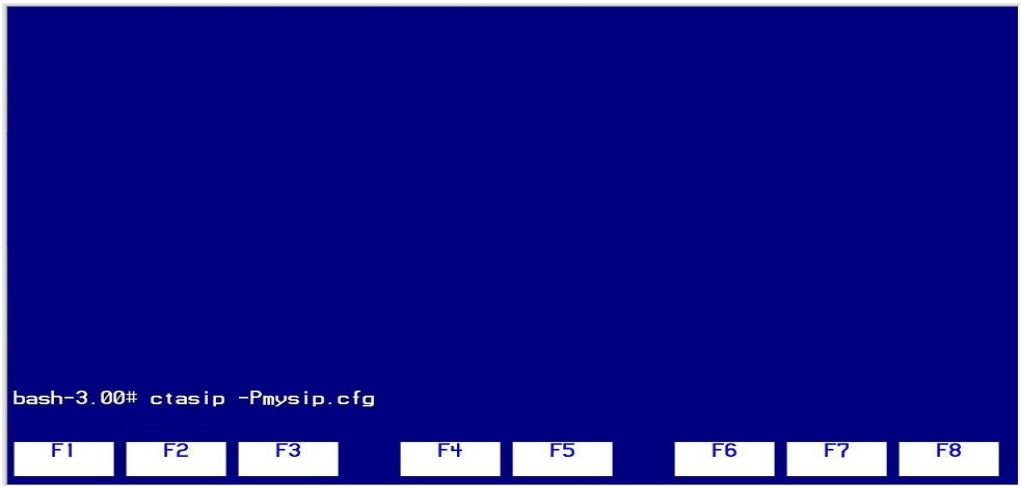
```
[BlindTransfer]
BlindTransferDefault=sip:2600@47.166.92.207:5060

[SupervisedTransfer]
SupervisedTransferOriginator1=5060
SupervisedTransfer1=sip:2600@47.166.92.207:5060
```

The Control.ini and MYSIP.cfg files used in the compliance testing are included in the **Appendix** of these Application Notes.

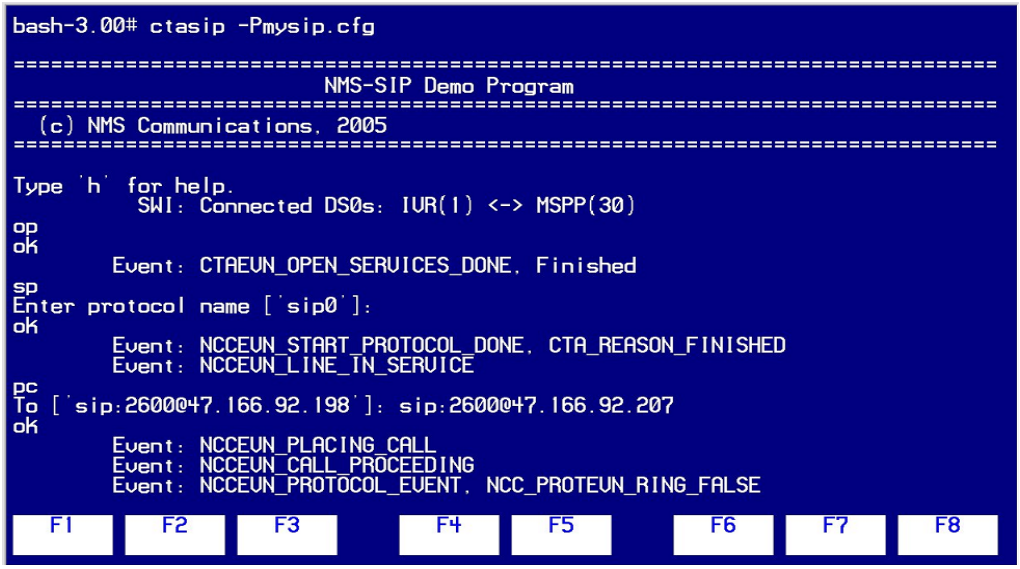
8. Verification Steps

To verify a successful configuration of Logicall and CS1000E, a call is placed from the CS1000E to the Logicall IVR application with the caller getting answered and successfully hearing clear and audible speech. A second call is made from the Logicall IVR to an extension on the CS1000E by opening a demo application on Logicall. Open a telnet session to the Logicall IVR software. This brings up the screen below.

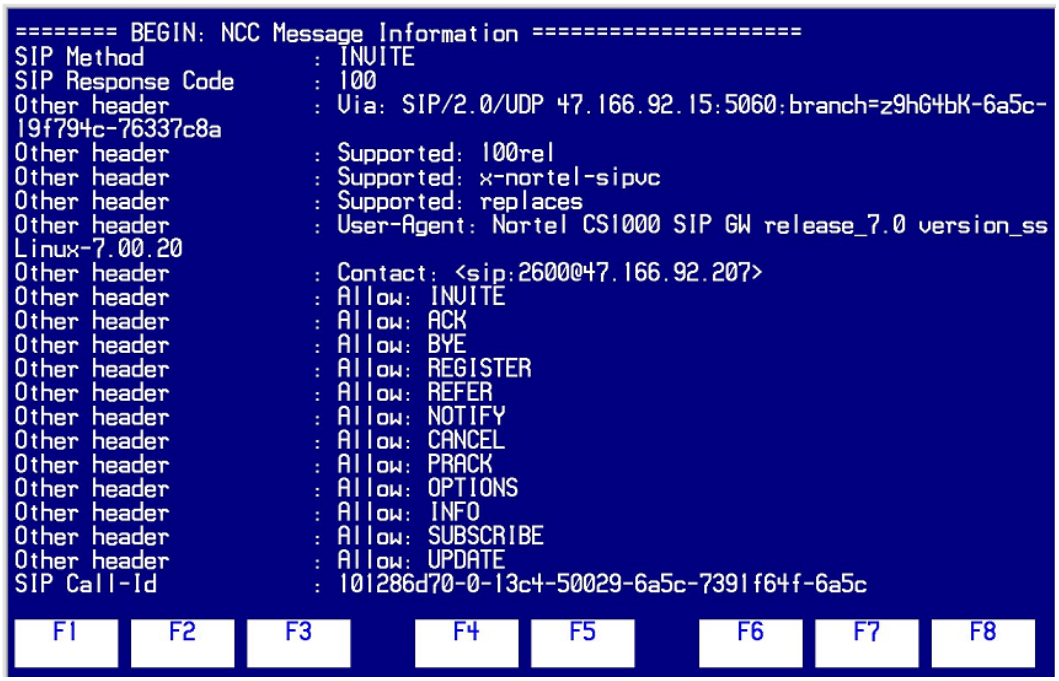


Type **ctasip -Pmysip.cfg** as shown above which brings up a test application (as shown below) that allows a call to be generated. Type the following:

1. **op** (to open the port)
2. **sp** (to start the SIP)
3. **pc** (to place the call)
4. Type in the number to call out to (**2600** in the example below)



If Logicall is receiving SIP messages from the CS1000E, these can be viewed as shown below. SIP messages can be seen only when a successful call is being made.



9. Conclusion

The interoperation of Logicall IVR from Maximum Network Solutions with Avaya Communication Server 1000E was successful for this specific setup requested by Maximum Network Solutions with some workarounds put in place in order to place calls from the Logicall IVR to the CS1000E. These workarounds are outlined in **Section 2.2**.

10. Additional References

Additional Avaya product documentation is available at http://support.avaya.com.

[1] *Software Input Output Reference – Administration – Avaya Communication Sever 1000, R7.0 NN43001-611, 05.09 Sept 2011*

[2] *Network Routing Server Fundementals – Avaya Communication Sever 1000, R7.0 NN43001-130*

For information on Maximum Network Solutions (Maxnet) and product support visit http://www.maxnet.co.uk

Appendix

Patch version for Avaya Communication Server R7.0

```
.
VERSION 4121
RELEASE 7
ISSUE 00 Q +
DepList 1: core Issue: 01 (created: 2011-05-17 10:40:44 (est)) ALTERED

IN-SERVICE PEPS
PAT# CR #            PATCH REF #     NAME      DATE        FILENAME       SPECINS
001  wi00849951      ISS1:1OF1       p30683_1  01/12/2011  p30683_1.cpl   NO
019  wi00853778      ISS1:1OF1       p30210_1  01/12/2011  p30210_1.cpl   NO
021  wi00728462      ISS1:1OF1       p30346_1  01/12/2011  p30346_1.cpl   NO
022  wi00839793      ISS1:1OF1       p28647_1  01/12/2011  p28647_1.cpl   NO
023  wi00860278      ISS1:1OF1       p30789_1  01/12/2011  p30789_1.cpl   NO
024  wi00853798      ISS1:1OF1       p30131_1  01/12/2011  p30131_1.cpl   NO
025  wi00856984      ISS1:1OF1       p17588_1  01/12/2011  p17588_1.cpl   NO
026  wi00847002      ISS1:1OF1       p30656_1  01/12/2011  p30656_1.cpl   NO
027  wi00647104      ISS2:1of1       p29747_2  01/12/2011  p29747_2.cpl   NO
028  wi00865953      ISS1:1OF1       p30832_1  01/12/2011  p30832_1.cpl   NO
029  wi00876852      ISS1:1OF1       p30952_1  01/12/2011  p30952_1.cpl   NO
030  wi00843647      ISS1:1OF1       p30186_1  01/12/2011  p30186_1.cpl   NO
031  wi00853750      ISS1:1OF1       p29938_1  01/12/2011  p29938_1.cpl   NO
032  wi00688477      ISS1:1OF1       p29732_1  01/12/2011  p29732_1.cpl   NO
033  wi00686977      ISS1:1OF1       p30223_1  01/12/2011  p30223_1.cpl   NO
034  wi00825672      ISS1:1OF1       p30468_1  01/12/2011  p30468_1.cpl   NO
035  wi00856244      ISS1:1OF1       p30418_1  01/12/2011  p30418_1.cpl   NO
036  wi00865152      ISS1:1OF1       p30826_1  01/12/2011  p30826_1.cpl   NO
037  wi00852325      ISS1:1OF1       p30167_1  01/12/2011  p30167_1.cpl   NO
038  wi00852304      ISS1:1OF1       p30215_1  01/12/2011  p30215_1.cpl   NO
039  wi00855276      ISS1:1OF1       p29903_1  01/12/2011  p29903_1.cpl   NO
040  wi00816794      ISS1:1OF1       p30443_1  01/12/2011  p30443_1.cpl   NO
041  wi00641909      ISS1:1OF1       p30004_1  01/12/2011  p30004_1.cpl   NO
042  wi00824249      ISS1:1OF1       p30447_1  01/12/2011  p30447_1.cpl   NO
043  Q02150073-01    ISS1:1OF1       p30160_1  01/12/2011  p30160_1.cpl   NO
044  wi00688048      ISS1:1OF1       p25747_1  01/12/2011  p25747_1.cpl   NO
045  wi00853453      ISS1:1OF1       p30282_1  01/12/2011  p30282_1.cpl   NO
046  wi00833760      ISS1:1OF1       p30541_1  01/12/2011  p30541_1.cpl   NO
047  wi00641671      ISS1:1OF1       p29744_1  01/12/2011  p29744_1.cpl   NO
048  wi00839645      ISS1:1OF1       p30596_1  01/12/2011  p30596_1.cpl   NO
049  wi00862916      ISS1:1OF1       p30807_1  01/12/2011  p30807_1.cpl   NO
050  wi00845667      ISS1:1OF1       p30676_1  01/12/2011  p30676_1.cpl   NO
051  wi00852317      ISS1:1OF1       p30176_1  01/12/2011  p30176_1.cpl   NO
052  wi00686889      ISS3:1OF1       p30074_3  01/12/2011  p30074_3.cpl   NO
053  WI00853478      ISS1:1OF1       p30306_1  01/12/2011  p30306_1.cpl   NO
054  Q02147525       ISS1:1OF1       p30072_1  01/12/2011  p30072_1.cpl   NO
055  wi00855050      ISS1:1OF1       p30731_1  01/12/2011  p30731_1.cpl   YES
056  WI00865566      ISS1:1OF1       p30709_1  01/12/2011  p30709_1.cpl   YES
057  wi00879820      ISS1:1OF1       p30719_1  01/12/2011  p30719_1.cpl   NO
058  wi00688110      ISS1:1OF1       p30305_1  01/12/2011  p30305_1.cpl   NO
059  wi00864908      ISS1:1OF1       p30825_1  01/12/2011  p30825_1.cpl   NO
060  wi00688114      ISS1:1OF1       p30319_1  01/12/2011  p30319_1.cpl   NO
061  WI00853186      ISS1:1OF1       p30625_1  01/12/2011  p30625_1.cpl   NO
062  wi00869693      ISS1:1OF1       p30654_1  01/12/2011  p30654_1.cpl   NO
063  wi00861072      ISS1:1OF1       p30787_1  01/12/2011  p30787_1.cpl   NO
064  wi00834381      ISS1:1OF1       p30548_1  01/12/2011  p30548_1.cpl   NO
065  wi00853658      ISS1:1OF1       p30740_1  01/12/2011  p30740_1.cpl   NO
066  wi00853781      ISS1:1OF1       p30416_1  01/12/2011  p30416_1.cpl   NO
067  wi00688225      ISS1:1OF1       p30295_1  01/12/2011  p30295_1.cpl   NO
```

```
068  wi00869468      ISS1:1OF1       p30856_1  01/12/2011  p30856_1.cpl   NO
069  WI00836290      ISS1:1OF1       p30554_1  01/12/2011  p30554_1.cpl   NO
070  wi00848801      ISS1:1OF1       p30336_1  01/12/2011  p30336_1.cpl   YES
071  wi00865433      ISS1:1OF1       p30828_1  01/12/2011  p30828_1.cpl   NO
072  WI00844778      ISS1:1OF1       p30641_1  01/12/2011  p30641_1.cpl   NO
073  wi00848697      ISS1:1OF1       p30621_1  01/12/2011  p30621_1.cpl   NO
074  wi00858461      ISS1:1OF1       p30564_1  01/12/2011  p30564_1.cpl   YES
075  wi00848515      ISS1:1OF1       p30677_1  01/12/2011  p30677_1.cpl   NO
076  wi00853388      ISS1:1OF1       p30065_1  01/12/2011  p30065_1.cpl   NO
077  wi00853431      ISS1:1OF1       p29935_1  01/12/2011  p29935_1.cpl   NO
078  wi00604003      ISS1:1OF1       p29726_1  01/12/2011  p29726_1.cpl   NO
079  wi00874210      ISS1:1 OF 1     p30880_1  01/12/2011  p30880_1.cpl   NO
080  WI00851975      ISS1:1OF1       p30312_1  01/12/2011  p30312_1.cpl   NO
081  wi00853837      ISS1:1OF1       p30172_1  01/12/2011  p30172_1.cpl   NO
082  wi00688037      ISS2:1OF1       p29376_2  01/12/2011  p29376_2.cpl   NO
083  WI00853745      ISS1:1OF1       p29841_1  01/12/2011  p29841_1.cpl   YES
084  wi00861414      ISS1:1OF1       p30791_1  01/12/2011  p30791_1.cpl   NO
085  wi00862909      ISS1:1OF1       p30809_1  01/12/2011  p30809_1.cpl   NO
086  wi00839916      ISS1:1OF1       p30593_1  01/12/2011  p30593_1.cpl   NO
087  wi00857960      ISS1:1OF1       p30768_1  01/12/2011  p30768_1.cpl   NO
088  wi00857493      ISS1:1OF1       p30766_1  01/12/2011  p30766_1.cpl   NO
089  WI00827391      ISS1:1OF1       p30477_1  01/12/2011  p30477_1.cpl   NO
090  wi00687324      ISS1:1OF1       p16376_1  01/12/2011  p16376_1.cpl   NO
091  wi00826074      ISS1:1OF1       p30452_1  01/12/2011  p30452_1.cpl   NO
092  wi00852510      ISS1:1OF1       p30357_1  01/12/2011  p30357_1.cpl   NO
093  WI00836333      ISS1:1OF1       p30481_1  01/12/2011  p30481_1.cpl   NO
094  wi00868063      ISS1:1OF1       p30848_1  01/12/2011  p30848_1.cpl   NO
095  wi00836181      ISS1:1OF1       p30450_1  01/12/2011  p30450_1.cpl   NO
096  wi00856160      ISS1:1OF1       p30750_1  01/12/2011  p30750_1.cpl   NO
097  wi00827512      ISS1:1OF1       p30479_1  01/12/2011  p30479_1.cpl   NO
098  wi00686928      ISS2:1of1       p29899_2  01/12/2011  p29899_2.cpl   NO
099  wi00701008      ISS2:1OF1       p30381_2  01/12/2011  p30381_2.cpl   NO
100  wi00837793      ISS1:1OF1       p30573_1  01/12/2011  p30573_1.cpl   NO
101  wi00688204      ISS1:1OF1       p30197_1  01/12/2011  p30197_1.cpl   NO
102  wi00854255      ISS1:1OF1       p30124_1  01/12/2011  p30124_1.cpl   NO
103  wi00880384      ISS1:1OF1       p30977_1  01/12/2011  p30977_1.cpl   NO
104  wi00824288      ISS1:1OF1       p30461_1  01/12/2011  p30461_1.cpl   NO
105  wi00843569      ISS1:1OF1       p30627_1  01/12/2011  p30627_1.cpl   NO
106  wi00828961      ISS2:1OF1       p30492_2  01/12/2011  p30492_2.cpl   NO
107  wi00853753      ISS1:1OF1       p30064_1  01/12/2011  p30064_1.cpl   NO
```

Maxnet Logicall Control.ini

```
[General]
LogFile=/export/logicall/avaya_test_com/AvayaComTest.log
Speech_Main_Path=/export/logicall/avaya_test_com/wav/main/

[BlindTransfer]
BlindTransferDefault=sip:2600@47.166.92.207:5060

[SupervisedTransfer]
SupervisedTransferOriginator1=5060
SupervisedTransfer1=sip:2600@47.166.92.207:5060

[Testing]
TestNos_Enabled=no
TestCLI=0297949600
TestDNIS=2907

[SpeechResources]
RTPDestIpAddress=47.166.92.15
RTPAltDestIpAddress=N/A
RTPSrcIpAddress=47.166.92.16
RTPSrcPort_ASR=2002
RTPSrcPort_TTS=2100

[CmdRequestListener]
CmdReqListenerPort=30007


* Trace to File - Set to FALSE - Print Screen.
* Debug Notes - Trace_Status - Should be FALSE or TRUE *
* Debug Notes - Trace Level - DEBUG, ERROR, EXTENDED *
[Debug]
TraceToFile=/export/logicall/avaya_test_com/AvayaComTest.log
TraceLevel=EXTENDED
```

Maxnet Logicall MYSIP.cfg

```
#-------------------------------------------------------------------------
#                    General Demo Parameters
#-------------------------------------------------------------------------
general.board           = 0  # NMS board number to use with ADI/VCE
general.slot            = 1  # NMS timeslot to use with ADI/VCE and SIP-NCC
general.stream          = 0
general.protocol        = sip0
general.autoStart       = 0
general.autoRelease     = 0
general.autoSDP         = 1

#-------------------------------------------------------------------------
#                    SIP Parameters
#-------------------------------------------------------------------------
sip.from                = sip:6000@47.166.92.15:5060
sip.registrar       =
sip.contact         =
#-------------------------------------------------------------------------
#                    SIP-SDP Parameters
#-------------------------------------------------------------------------

sip.sdp.connection.networkType = IN
sip.sdp.connection.addressType = IP4
sip.sdp.connection.address     = 47.166.92.16  # IP address of CG board as
                                               # configured in CG cfg file
sip.sdp.connection.port        = 8004          # UDP port on CG to use
sip.sdp.origin.userName        = nmsSip
sip.sdp.origin.sessionId       = 01234567890
sip.sdp.origin.version         = 0987654321
sip.sdp.origin.networkType     = IN
sip.sdp.origin.addressType     = IP4
sip.sdp.origin.address         = 47.166.92.16    # IP address of CG board
sip.auth.user                  =
sip.auth.password              =

#-------------------------------------------------------------------------
#                    MSPP Parameters -- Use Fusion, not HMP
#-------------------------------------------------------------------------
mspp.hmp                       = 0  # Do not use HMP => use Fusion since
                                    # nomedia (next parameter) is false.
mspp.nomedia                   = 0  # There is media used in the application
mspp.slot                      = 30 # NMS Time slot used by CG based Fusion
                                    # for DS0 endpoint. MUST be differen from
                                    # timeslot specified by 'general.slot'
#-------------------------------------------------------------------------
#                    Voice Play Parameters
#-------------------------------------------------------------------------
voice.play.file                = play.vox
voice.play.type                = 2   # 0 means VCE_FILETYPE_VOX
voice.play.encoding            = 10  # 2 means NMS_24
#-------------------------------------------------------------------------
#                    Voice Record Parameters
#-------------------------------------------------------------------------
voice.record.file              = record.vox
voice.record.type              = 0
voice.record.encoding          = 2  # 2 means NMS_24, consistent with shipped
                                    # fusion configuration file
```

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at devconnect@avaya.com.