Avaya Solution & Interoperability Test Lab

Application Notes for configuring Avaya Communication Server 1000E R7.0 with Lincor Solutions MediVista R7.3 using SIP Line Gateway – Issue 1.0

Abstract

These Application Notes describe how to configure Avaya Communication Server 1000E R7.0 with Lincor Solutions MediVista R7.3. MediVista is registered to the SIP Line Gateway on the Communication Server 1000E.

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

Lincor Solutions MediVista is part of a Patient Entertainment and Clinical Access Terminal that is installed at the bedside of hospital patients. The main purpose of the terminal, to provide entertainment services to the patient such as TV, radio, telephone and to provide bedside computer terminal access to the clinical staff within the hospital. This MediVista Patient Entertainment System is composed of a number of software modules that operate a complete network of terminals while also providing the back office software to centrally monitor and control the terminals during operation. Lincor Solutions MediVista uses a NetBoot server to acquire configuration information. Lincor Solutions supply, install and configure their solution to the end customer directly. There is no third party involvement at the customer site relating to the MediVista terminal installation or configuration. In line with Lincor Solutions request the exact configuration method of the Lincor Solutions MediVista terminal and NetBoot server will not be covered in these Application Notes.

2. General Test Approach and Test Results

The test approach was to configure a simulated enterprise voice network using Avaya Communication Server 1000E R7.0 (CS1000E) and Lincor Solutions MediVista (MediVista). The MediVista terminal connects to the CS1000E using a SIP Line Gateway (SLG). See **Figure 1** for a network diagram. The MediVista terminal registers with the SLG and is configured as a. Universal Extension (UEXT). The UEXT is programmed as a Third Party SIP (SIP3) extension. Test cases were selected to exercise a sufficiently broad segment of functionality and have a reasonable expectation of interoperability in production configurations. During compliance testing only the phone service was tested, all other services are outside the scope of these Application Notes. A variety of Avaya telephones were installed and configured on the CS1000E. See **Section 4** for list of phones.

2.1. Interoperability Compliance Testing

The compatibility tests included the following:

- SIP registration
- Calls to and from internal numbers
- Calls to and from external numbers
- Exercising MediVista features such as Ignore and Do not Disturb

2.2. Test Results

Tests were performed to insure full interoperability between the MediVista and the CS1000E.The tests were all functional in nature and performance testing was not included. All the test cases passed successfully.

Note: During compliance testing it was noticed that the Calling Line Identification (CLID) received by the MediVista terminal contained the originating extension number and phone context. MediVista does not require the Phone Context included in the CLID. The phone context can be changed by making a CS1000E system wide configuration change or a customer unique software change on the MediVista.

2.3. Support

For technical support for Lincor Solutions products, please use the following web link.
support@lincor.com

3. Reference Configuration

Figure 1 The CS1000E runs on the Common Processor Pentium Mobile (CPPM) server as a co-resident configuration. The SLG application on the signaling server co-resides on the CPPM. Element Manager is used to access the SLG which resides on the Unified Communication Management Server. A number of Avaya desk phones were configured consisting of Avaya 1230, 1140 IP, 3904 Digital and 500 Analogue. The MediVista terminal is registered to the SLG as a Third Party SIP Client (SIP3) The MediVista terminal uses a NetBoot server to acquire configuration information

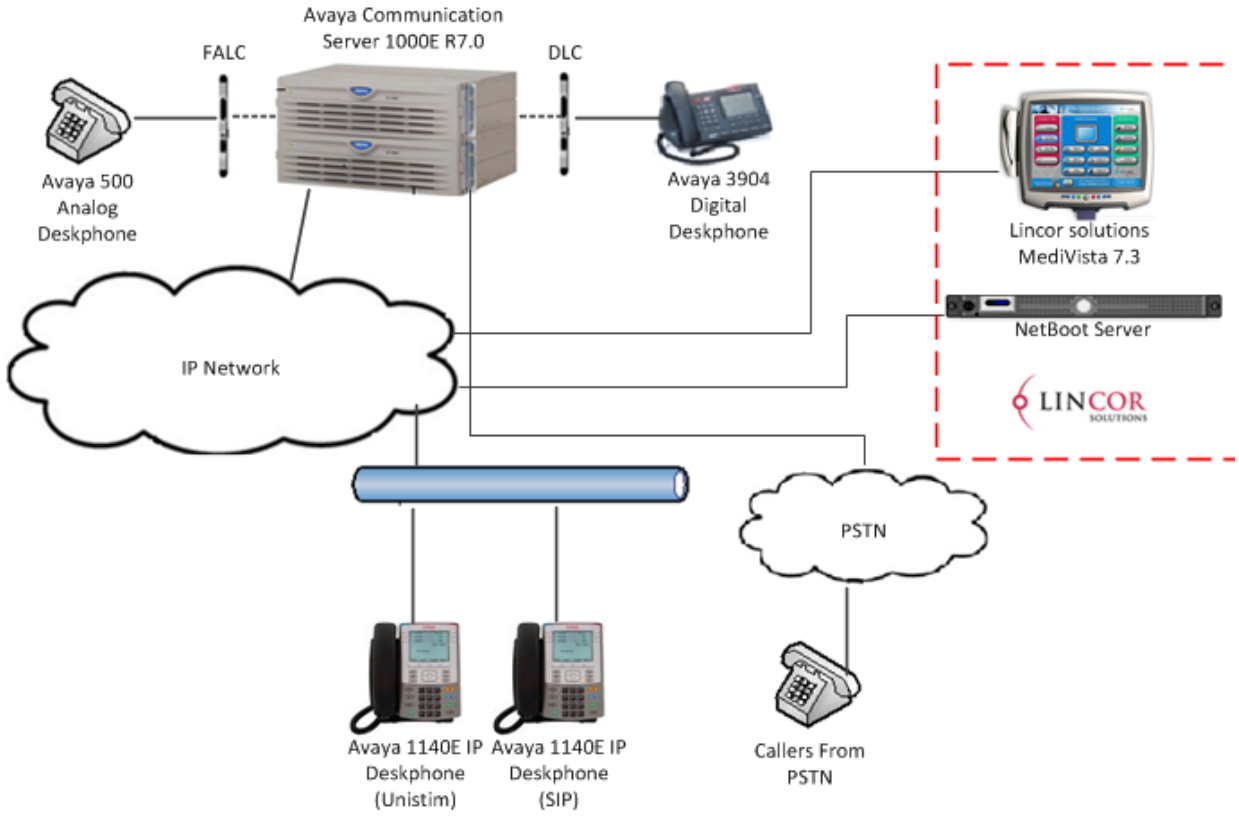


Figure 1: Avaya CS1000E 1000E R7.0 with Lincor Solutions MediVista R7.3 Reference Configuration

4. Equipment and Software Validated

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

Avaya Equipment	Software / Firmware Version
Avaya Communication Server 1000E CPPM HWNTDW61	Avaya Communication Server 1000E R7.0 See appendix for list of patches SIP Line S/W 7.0.00.20
Avaya Communication Server 1000E Media Gateway Controller	HW NTDW60
Avaya Flexible Analog Line Card	NT5K02QC
Avaya Digital Line Card	NT8D02
Avaya 3904 Digital set	F/W 2.4
Avaya 1140E IP set	UNIStim 4.3
Avaya 1230 IP set	SIP 4.0
Avaya Analog set	NT2N73AA
Lincor Solutions Equipment	**Software / Firmware Version**
MediVista Terminal	R7.3
NetBoot Server	R2.3.0

5. Configure 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 implied a working system is already in place and the SIP Line Gateway (SLG) is fully configured. For all other provisioning information such as Installation and Configuration, please refer to the product documentation in **Section 10**.

Note: In the telnet screenshots below only the unique prompt inputs are shown. To accept default values carriage return at all other prompts.

5.1. Configuring Data block: SLS (SIP Line Services)

Create an **SLS Data** block using the **CHG** command (change) in Overlay 15**.** Type **LD 15** to enter the overlay. The User Agent Prefix (**UAPR**) is required when configuring the **UEXT** for each MediVista terminal.

LD 15

Prompt	**Response**	**Description**
>	**LD 15**	Enter Overlay 15
REQ	**CHG**	Change
TYPE	**SLS_DATA**	SIP Line Services Data block
CUST	**0**	Customer Number
SIPD	DPP.NORTEL	SIP Domain
SIPL_ON	YES	SIP Line on
UAPR	89	Prefix used to auto-generate the User Agent
NMME	NO	Multimedia Service

5.2. Configuring Universal Extension (UEXT)

Configure the **UEXT** on the CS1000E using the **NEW** command in overlay 11. Type **LD 11** to enter the overlay. At the **Key 01** prompt use **UAPR** as configured in the **SLS_DATA Block** in **Section 5.1**. The SIP User (**SIPU)** and Station control Password (**SCPW)** are required when configuring each MediVista terminal.

LD 11

Prompt	**Response**	**Description**
>	**LD 11**	Enter Overlay 11
REQ:	**NEW**	Create New
TYPE:	**UEXT**	Universal Extension
TN	96 0 2 0	Terminal Number
DES	MED1	Description
CUST	0	Customer Number
UXTY	SIPL	Universal Extension type
MCCL	YES	Maximum Client Count Limit
SIPN	0	SIP Line for Nortel
SIP3	1	SIP Line for third-party
FMCL	0	Fixed Mobility Converged Line
SIPU	2039	Required for MediVista terminal USER ID
NDID	2	Node ID
SUPR	NO	Super User
ZONE	1	Bandwidth Zone assigned for IP Sets
SCPW	2039	Required for MediVista terminal USER Password
KEY 00	SCR 2039 0	Key 0
CPND	New	Calling Party Name Disply
Name	MediVista 2039	Name
Key 01	HOT U 892039	The HOT U number is derived from the UAPR as configured in the SLS_DATA plus the Key 0 extension
Key 02		

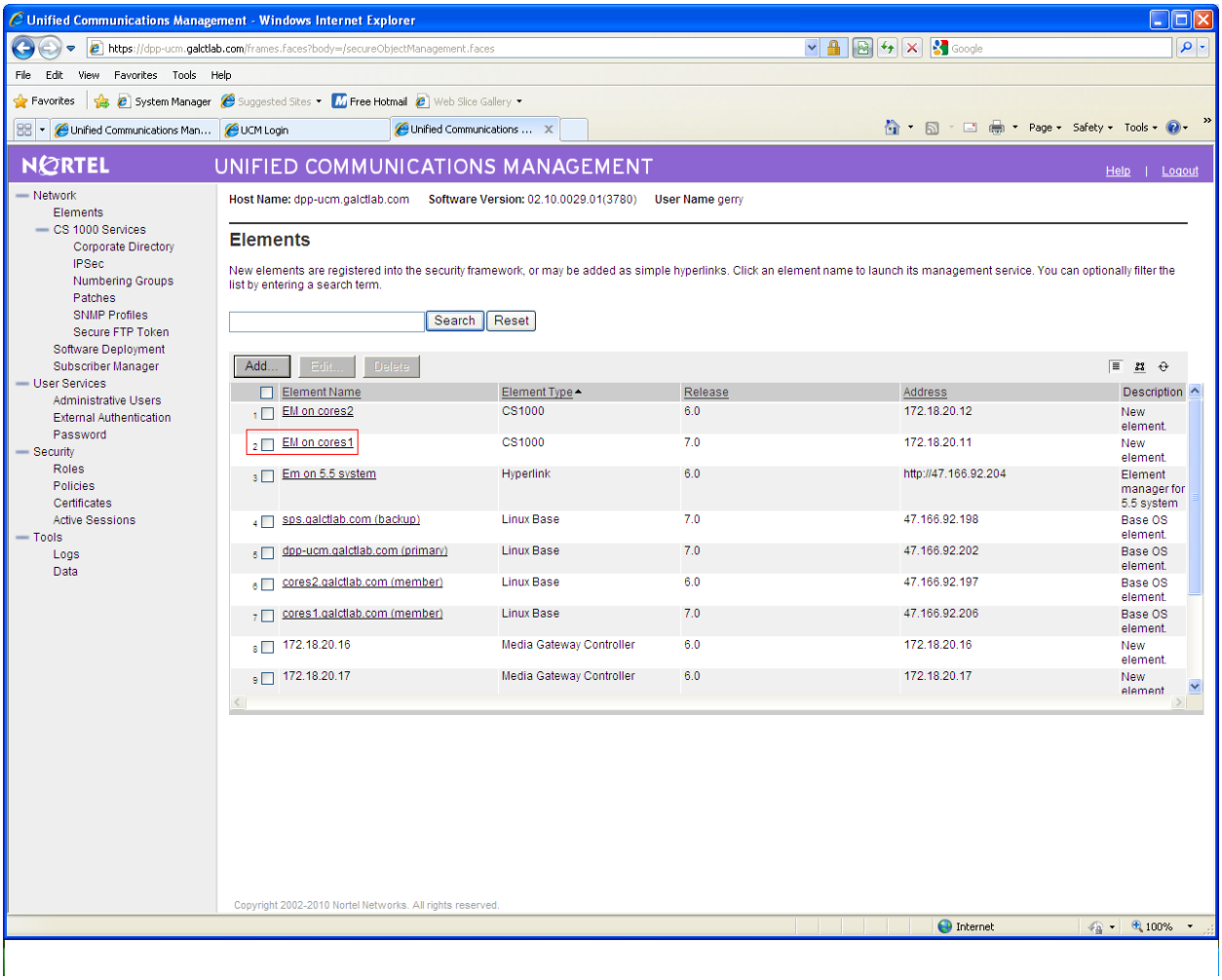
5.3. Finding SIP Line information

The following information is required by Lincor Solutions to configure the MediVista terminal.

- **Telephony LAN (TLAN) Node IP Address**
- **SIP Domain Name**
- **SLG Local Sip Port**

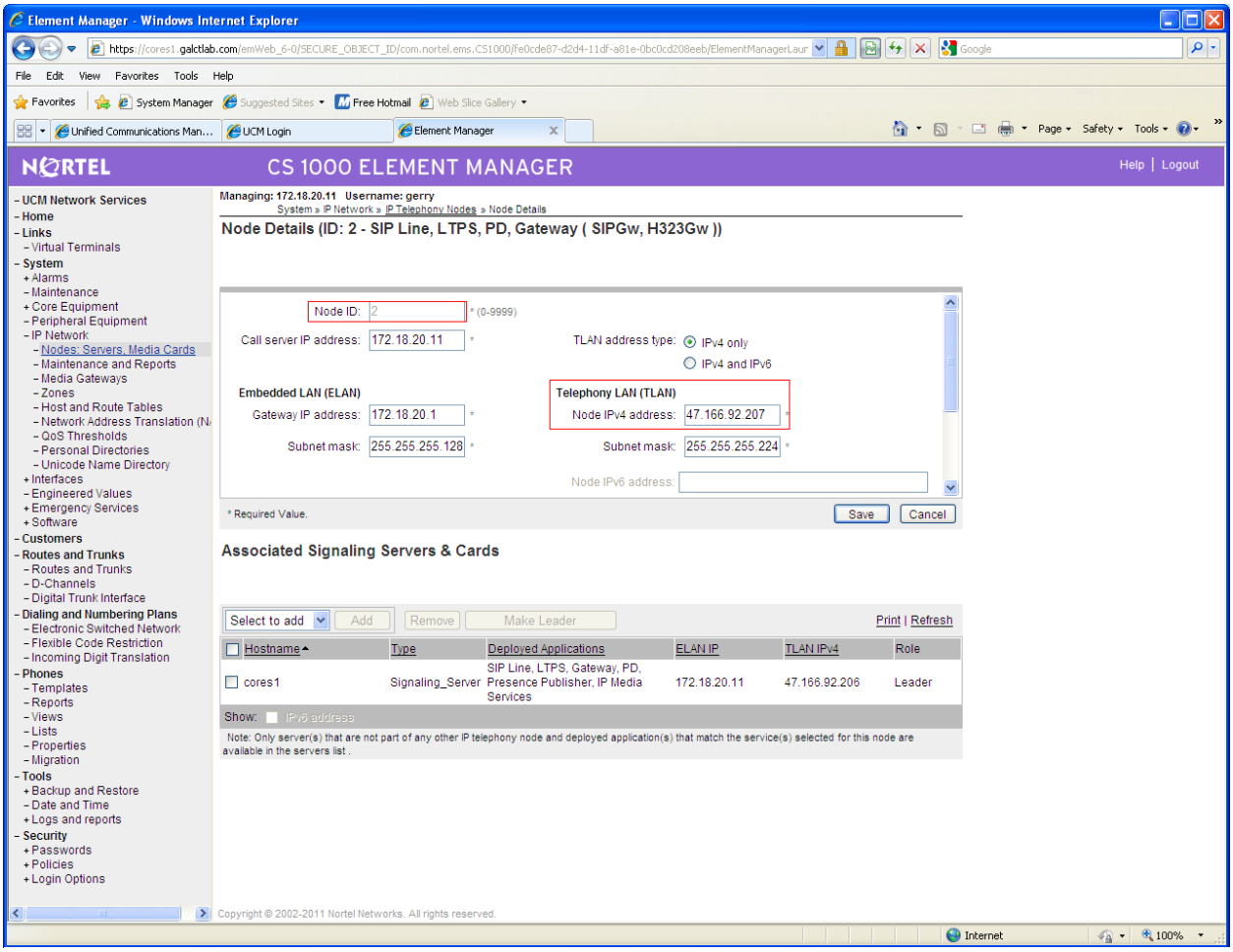
Access the web GUI of the Unified Communication Management server, using the URL http://<fqdn> or http://<ip-address>. Where the <fqdn> is the fully qualified domain name of the Unified Communication Management server and the <ipaddress> is the IP address of Unified Communication Management server.

Log in with the appropriate credentials. On the **Elements** page of **UCM Services**, select the Element Manager associated with the CS1000E. In this example it is **EM on cores1**.



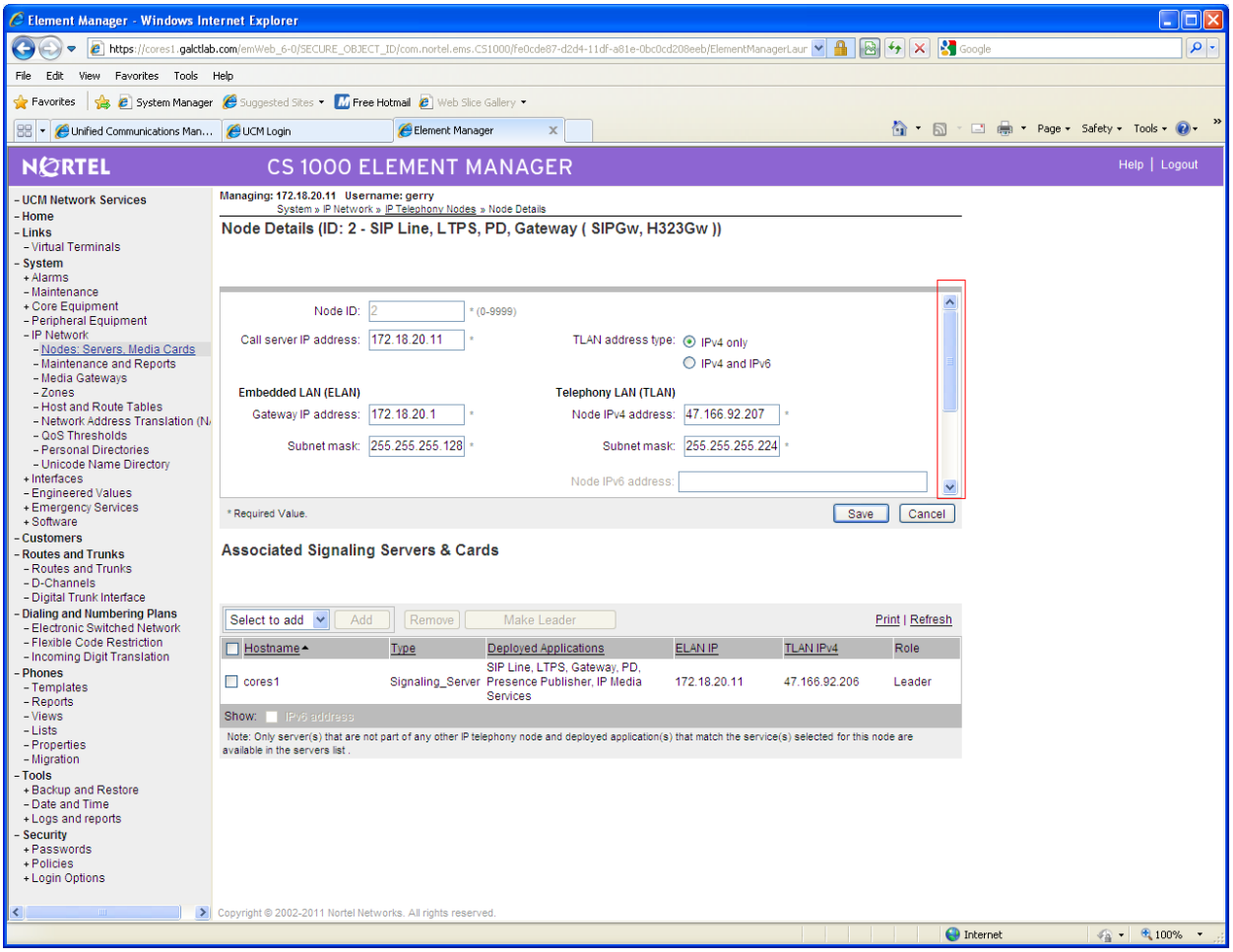
5.3.1. Finding the Telephony LAN (TLAN) Node IP Address

On the CS1000 Element Manager Page double click on the required Node ID (not shown) select **IP Network →Nodes Servers Media Cards**. On this page the **Telephony LAN (TLAN) Node IP Address** can be located for information needed when configuring the MediVista terminal.



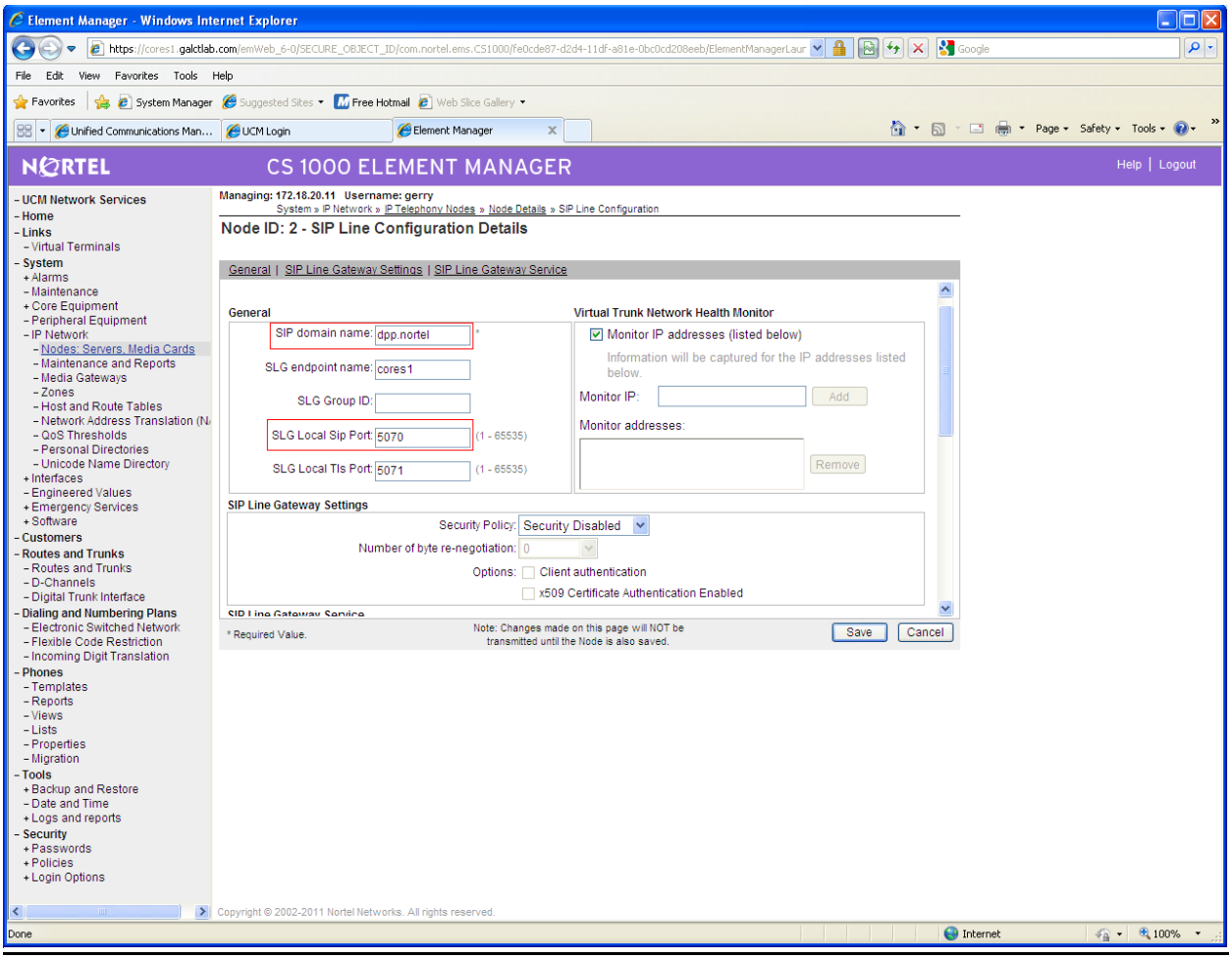
5.3.2. Finding the SIP Domain Name and SLG Local SIP Port

Using the scroll bar on the right side of the page scroll down and select **SIP LINE** (not shown).



On the **SIP Line Configuration** page the **SIP Domain Name** and **SLG Local SIP Port** can be located for information needed when configuring the MediVista terminal.

Note: For the correct syntax of the **SIP domain name** see the **SIPD** entry in **Section 5.1**



6. Lincor Solutions MediVista Terminal Configuration

Lincor Solutions supply, install and configure their solution to the end customer directly. There is no third party involvement at the customer site relating to the MediVista terminal installation or configuration. In line with Lincor Solutions request the exact configuration method of the MediVista terminal and NetBoot server will not be covered in these Application Notes. An example of the configuration of MediVista used during compliance testing are shown in **Appendix B**.

7. Verification Steps

This section provides the tests that can be performed to verify correct configuration of CS1000E system with Lincor Solutions MediVista 7.3.

7.1. Status of MediVista registration with the SLG.

Check the status of the MediVista terminal registration by opening an SSH session to the signaling server.

- Login with the appropriate credentials.
- At the prompt enter the following command "**slgSetShowAll**".

Example Below shows that MediVista terminal 2039 is registered.

```
[paulg@cores3 ~]$ slgSetShowAll
=== VTRK ===
UserID        AuthId       TN           Clients  Calls  SetHandle  Pos ID    SIPL Type
--------------  ----------  ---------------  -------  -----  ---------  -------   ---
--
--------------- IPV4 Endpoints   ---------------------------
2039            2039     096-00-02-00       1      0    0x9914e90             SIP
Lines

Total User Registered = 1   V4 Registered = 1  V6 Registered = 0
```

8. Conclusion

These Application Notes describe the configuration steps required for Lincor solutions MediVista 7.3 to successfully interoperate with Avaya Communication Server 1000E. All compliance testing passed successfully.

9. Additional References

The documentation that is relevant when administering the test configurations is outlined below. Product documentation for Avaya products is available at *http://support.avaya.com*

[1] Nortel Communication Server 1000 Software Input Output Reference 7.0 Administration NN43001-611, 04.05 April 2011

[2] Nortel Communication Server 1000 System Management Reference 7.0 NN43001-600, 04.04 May 2011

[3] Nortel Communication Server 1000 SIP Line Fundamentals 7.0 NN43001-508, 02.05 June 2011

Product Documentation for Lincor Solutions: In line with Lincor Solutions policies no product documentation is supplied.

Appendix A
Avaya Communication Server 1000E patch and firmware releases

Avaya Communication Server 1000E call server deplists

```
VERSION 4121
RELEASE 7
ISSUE 00 Q +
DepList 1: core Issue: 01 (created: 2010-09-14 13:43:30 (est))
IN-SERVICE PEPS
PAT# CR #            PATCH REF #     NAME      DATE        FILENAME       SPECINS
000  Q02162391       ISS1:1OF1       p30272_1  06/10/2011  p30272_1.cpl   NO
001  Q02151971-01    ISS1:1OF1       p30183_1  06/10/2011  p30183_1.cpl   NO
002  Q02152936-01    ISS1:1OF1       p30249_1  06/10/2011  p30249_1.cpl   NO
003  Q02162037       ISS1:1OF1       p30266_1  06/10/2011  p30266_1.cpl   YES
004  Q02149076-01    ISS1:1OF1       p30206_1  06/10/2011  p30206_1.cpl   NO
005  Q02158718-01    ISS1:1OF1       p30311_1  06/10/2011  p30311_1.cpl   NO
006  Q02143641-01    ISS1:1OF1       p30159_1  06/10/2011  p30159_1.cpl   NO
007  Q02159250-01    ISS1:1OF1       p30280_1  06/10/2011  p30280_1.cpl   NO
008  Q02156594       ISS1:1OF1       p30276_1  06/10/2011  p30276_1.cpl   YES
009  Q02143605-02    ISS1:1OF1       p30089_1  06/10/2011  p30089_1.cpl   NO
010  Q02152254       ISS1:1OF1       p30271_1  06/10/2011  p30271_1.cpl   NO
011  Q02159545       ISS1:1OF1       p30277_1  06/10/2011  p30277_1.cpl   YES
012  Q02145107-02    ISS1:1OF1       p30126_1  06/10/2011  p30126_1.cpl   NO
013  Q02161860       ISS2:1OF1       p30263_2  06/10/2011  p30263_2.cpl   NO
014  Q02152968-01    ISS1:1OF1       p30168_1  06/10/2011  p30168_1.cpl   NO
015  Q02157114       ISS1:1OF1       p30251_1  06/10/2011  p30251_1.cpl   NO
016  Q02154023       ISS1:1OF1       p30157_1  06/10/2011  p30157_1.cpl   NO
017  Q02154408       ISS1:1OF1       p30162_1  06/10/2011  p30162_1.cpl   NO
018  Q02165164       ISS1:1OF1       p30304_1  06/10/2011  p30304_1.cpl   NO
019  Q02156744       ISS2:1OF1       p30248_2  06/10/2011  p30248_2.cpl   NO
020  Q02150582-02    ISS2:1OF1       p30144_2  06/10/2011  p30144_2.cpl   NO
```

```
   Avaya Communication Server 1000E Peripheral Software Version (PSWV) data
PSWV        VERSION: PSWV 100
LCRI:       VERSION NUMBER: AA02
XNET:       VERSION NUMBER: AC23
XPEC:       VERSION NUMBER: AC43
FNET:       VERSION NUMBER: AA07
FPEC:       VERSION NUMBER: AA08
MSDL:       VERSION NUMBER: AJ73
SDI:        VERSION NUMBER: AH51
DCH:        VERSION NUMBER: AA72
AML:        VERSION NUMBER: AK81
BRIL:       VERSION NUMBER: AK83
BRIT:       VERSION NUMBER: AK82
MISP:       VERSION NUMBER: AJ71
MPH:        VERSION NUMBER: AH51
BRSC:       VERSION NUMBER: AJ71
BBRI:       VERSION NUMBER: AH54
PRIE:       VERSION NUMBER: AA87
BRIE:       VERSION NUMBER: AK89
ISIG:       VERSION NUMBER: AA33
SWE1:       VERSION NUMBER: BA53
UKG1:       VERSION NUMBER: BA51
AUS1:       VERSION NUMBER: BA49
DEN1:       VERSION NUMBER: BA48
FIN1:       VERSION NUMBER: BA49
GER1:       VERSION NUMBER: BA54
ITA1:       VERSION NUMBER: AA54
NOR1:       VERSION NUMBER: BA49
POR1:       VERSION NUMBER: BA49
DUT1:       VERSION NUMBER: BA50
EIR1:       VERSION NUMBER: BA49
SWI1:       VERSION NUMBER: BA53
BEL1:       VERSION NUMBER: BA49
SPA1:       VERSION NUMBER: BA51
NET1:       VERSION NUMBER: BA48
FRA1:       VERSION NUMBER: BA52
CIS1:       VERSION NUMBER: BA48
ETSI:       VERSION NUMBER: BA48
E403:       VERSION NUMBER: BA07
N403:       VERSION NUMBER: BA05
JTTC:       VERSION NUMBER: AC08
TCNZ:       VERSION NUMBER: AA13
AUBR:       VERSION NUMBER: AA14
AUPR:       VERSION NUMBER: AA04
HKBR:       VERSION NUMBER: AA06
HKPR:       VERSION NUMBER: AA08
SING:       VERSION NUMBER: AA15
THAI:       VERSION NUMBER: AA07
NI02:       VERSION NUMBER: AA26
T1IS:       VERSION NUMBER: AA10
T1ES:       VERSION NUMBER: AA09
ESGF:       VERSION NUMBER: AC30
ISGF:       VERSION NUMBER: AC31
ESGFTI:     VERSION NUMBER: AC29
ISGFTI:     VERSION NUMBER: AC31
INDO:       VERSION NUMBER: AA06
```

```
JAPN:       VERSION NUMBER: AA16
MSIA:       VERSION NUMBER: AA04
CHNA:       VERSION NUMBER: AA04
INDI:       VERSION NUMBER: AA03
PHLP:       VERSION NUMBER: AA02
TAIW:       VERSION NUMBER: AA03
EAUS:       VERSION NUMBER: AA02
EGF4:       VERSION NUMBER: AC14
DCH3:       VERSION NUMBER: AA10
PUP3:       VERSION NUMBER: AA14
T1E1:       VERSION NUMBER: AA19
DITI:       VERSION NUMBER: AA40
CLKC:       VERSION NUMBER: AA20
3902:       VERSION NUMBER: AA84
3903:       VERSION NUMBER: AA90
3904:       VERSION NUMBER: AA93
3905:       VERSION NUMBER: AA93
MGC, MGX and MGS:  CSP  VERSION: MGCC BD01
  MSP  VERSION: MGCM AB01
  APP  VERSION: MGCA BA07
  FPGA VERSION: MGCF AA18
  BOOT VERSION: MGCB BA07
  DSP1 VERSION: DSP1 AB03
  DSP2 VERSION: DSP2 AB03
  DSP3 VERSION: DSP3 AB03
  DSP4 VERSION: DSP4 AA01
  DSP5 VERSION: DSP5 AA01
UDT VERSION NUMBER: AA42
```

Appendix B

1. Lincor Solutions MediVista Terminal Configuration

The following configuration files and screen shots show the configuration of MediVista used during compliance testing. The UDP port on the SLG is **5070** The register request of the MediVista terminal must include the SLG Domain not the IP Address. Lincor Solutions require the following information before configuring the MediVista terminal:

- IP Address, of the SIP Line Gateway, Node IP address found in **Section 5.3.1**
- SIP Line Gateway Domain. Found in **Section 5.3.2**
- Extension (DN) for each terminal. Found in **Section 5.2**
- User ID and Password for each terminal. Found in **Section 5.2**

2. Modifying the linphone_config.templete.NORTEL File

The following information needs to be modified in the **linphone_config.templete.NORTEL** file:

- **registrar**: this is the domain name of the CS1000E, found in **Section 5.3.2**. i.e. **dpp.nortel**
- **reg_proxy**: this is the UDP port on the SLG, found in **Section 5.3.2.** i.e. **sip:dpp.nortel:5070**
- **reg_identity**: this is the Registration Identity. i.e. **%REGALIAS%<sip:%REGUSERNAME%@dpp.nortel**

The configuration printout below shows the **linphone_config.templete** file used during testing.

```
[sip]
username=%USERNAME%
hostname=%HOSTNAME%
sip_port=5060
guess_hostname=0
use_registrar=1
registrar= dpp.nortel          CS1000E Domain Name)
as_proxy=0
expires=900
contact=sip:%USERNAME%@%HOSTNAME%
inc_timeout=30
use_info=0
use_ipv6=0
default_proxy=0

[rtp]
audio_rtp_port=7078
video_rtp_port=9078
audio_jitt_comp=90
video_jitt_comp=90

[sound]
alsadev=default
rec_lev=80
play_lev=70
ring_lev=80
```

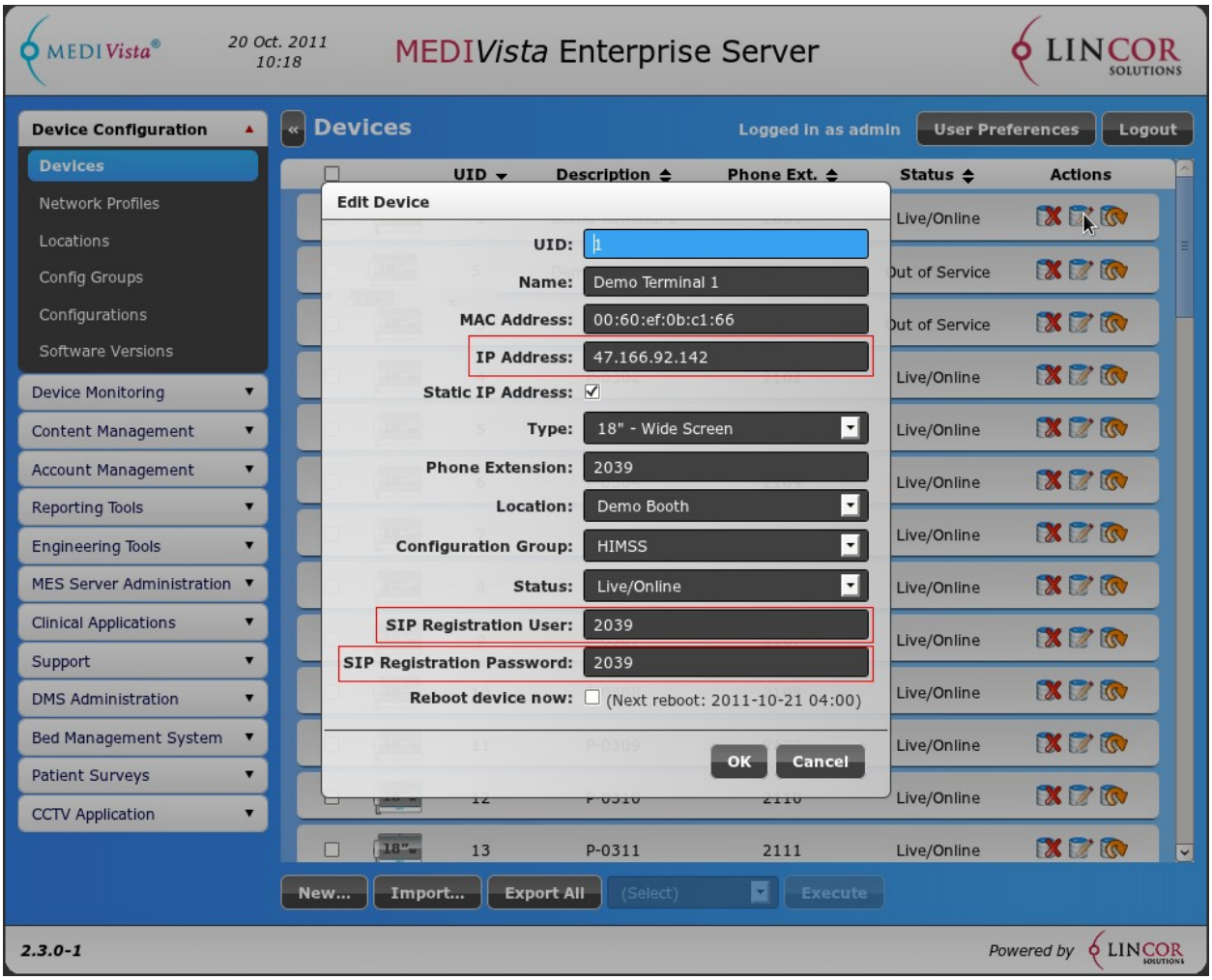
```
source=m
local_ring=/usr/share/sounds/linphone/rings/orig.wav
remote_ring=/usr/share/sounds/linphone/ringback.wav
dial_tone=/usr/share/sounds/linphone/dialtone.wav
engaged_tone=/usr/share/sounds/linphone/engaged.wav
badnumber_tone=/usr/share/sounds/linphone/badnumber.wav
digit_beep=/usr/share/sounds/linphone/digitbeep.wav
dc_removal=1
noisegate=0
echocancellation=1

[video]
enabled=0
show_local=0

[audio_codec_0]
mime=PCMU
rate=8000
enabled=1

[audio_codec_1]
mime=GSM
rate=8000
enabled=1

[audio_codec_2]
mime=PCMA
rate=8000
enabled=1

[audio_codec_3]
mime=speex
rate=8000
enabled=0

[audio_codec_4]
mime=speex
rate=16000
enabled=0

[audio_codec_5]
mime=1015
rate=8000
enabled=0

[proxy_0]
reg_proxy=sip:dpp.nortel:5070                                  UDP Port of SLG
reg_identity=%REGALIAS%<sip:%REGUSERNAME%@dpp.nortel>   Registration Identity
reg_expires=300
reg_sendregister=1
publish=0

[auth_info_0]
username=%REGUSERNAME%
passwd=%REGPASSWORD%
realm="%REALM%"
```

3. Configuring Devices

When configuring the MediVista terminal **Devices** the following is required:

- **IP Address:** Set to the IP Address of MediVista terminal i.e. **47.166.92.142**
- **SIP Registration User**: Set to the **SIPU**. Found in **Section 5.2**, i.e. **2039**
- **SIP Registration Password:** Set to the **SCPW** Found in **Section 5.2**, i.e. **2039**

The screen shot below shows the configuration used during testing

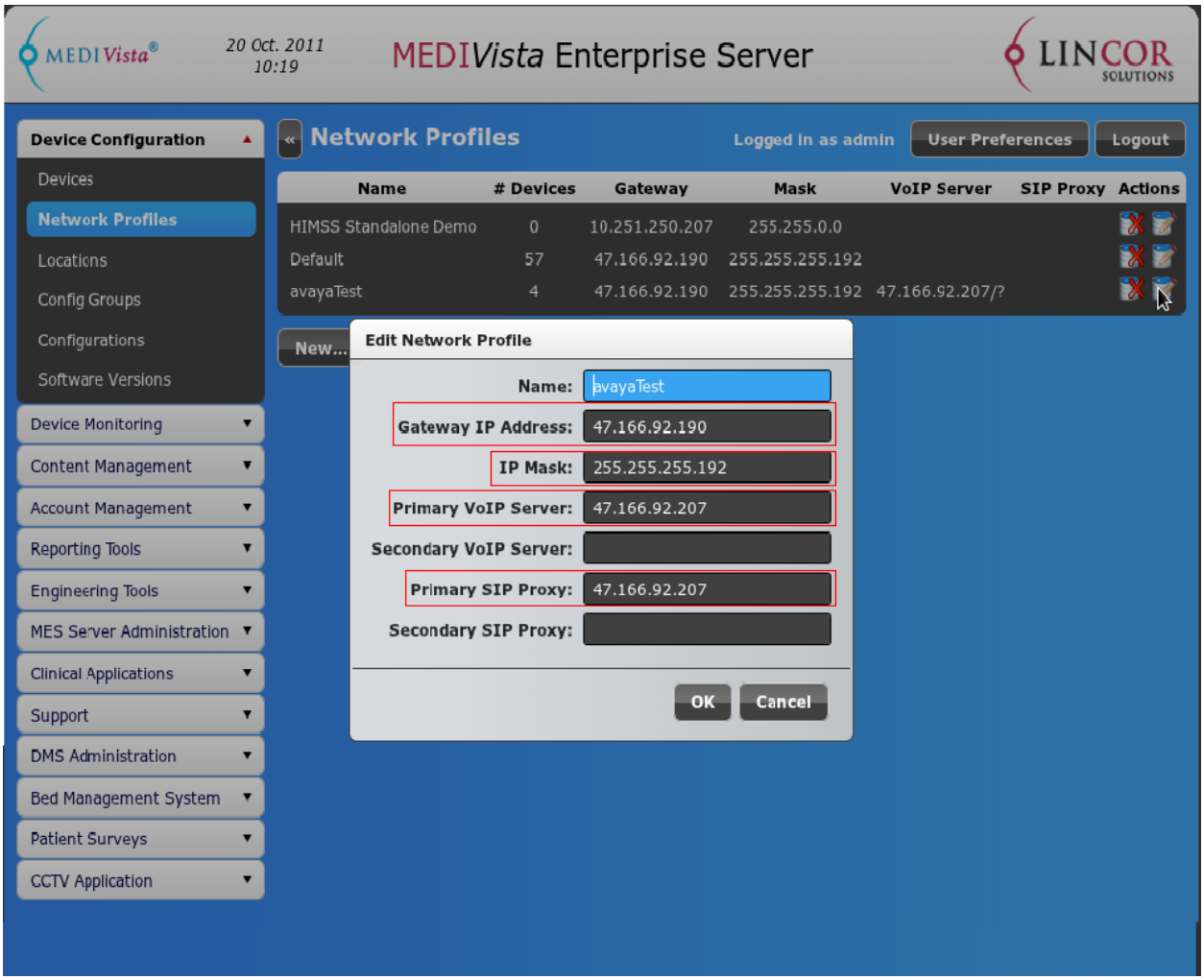


4. Network Profile

When configuring the **Network Profile** the following is required.

- **Gateway IP Address**: set to the default gateway address of the LAN that the MediVista terminal is located i.e. **47.166.92.190**
- **IP Mask:** Set to the subnet mask of the LAN that the MediVista terminal is located i.e. **255.255.255.192**
- **Primary VoIP Server:** Set to the IP address of the SLG i.e. **47.166.92.207.** Found in **Section 5.3.1**
- **Primary SIP Proxy:** Set to the IP address of the SLG **47.166.92.207.** Found in **Section 5.3.1**

The screen shot below shows the configuration used during testing.

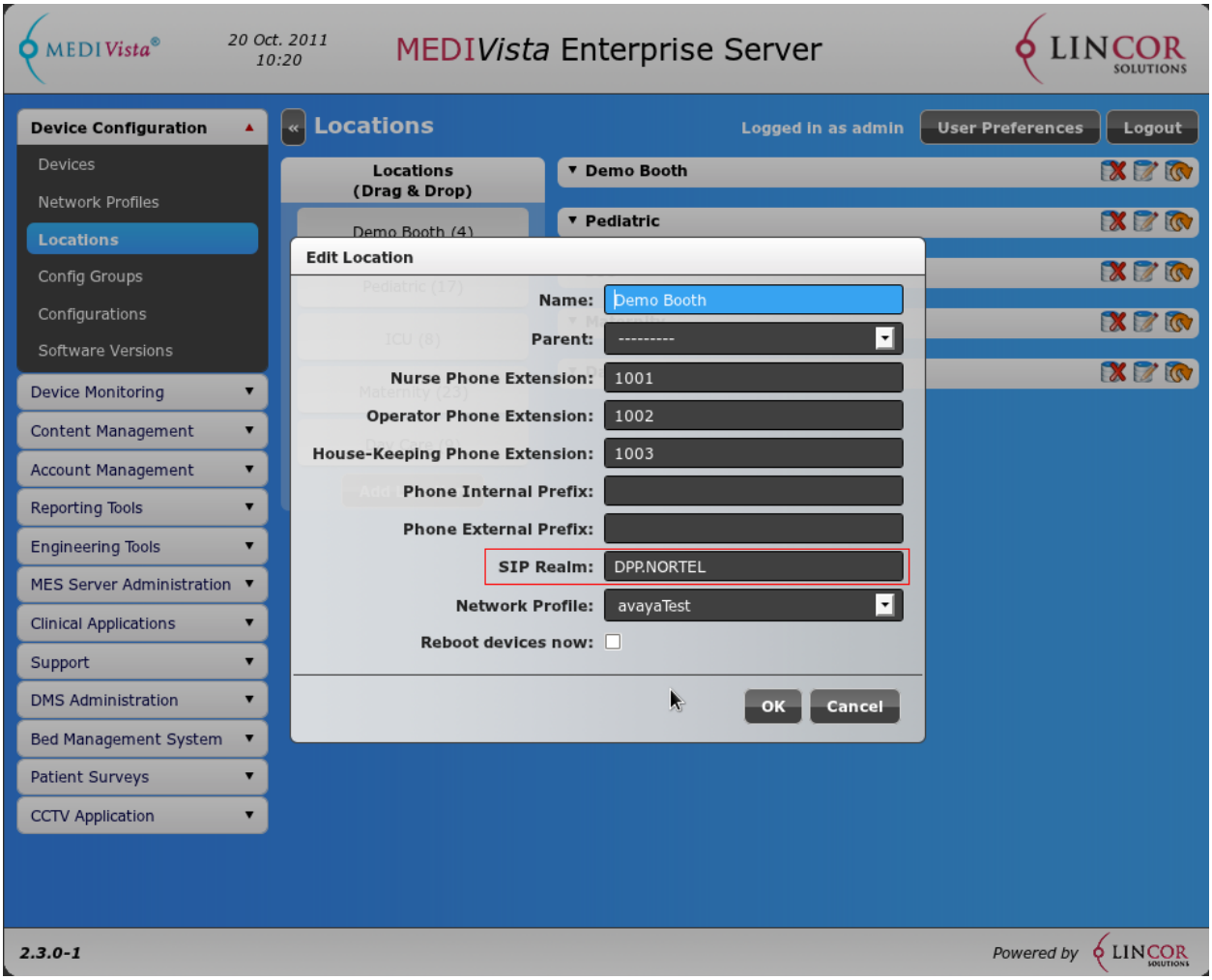


5. Configuring Locations

When configuring the **Locations** the following is required.

- **SIP Realm**: Set to the Domain of the SLG i.e. **DPP.NORTEL** Found in **Section 5.3.2**

The screen shot below shows the configuration used during testing.



6. Configuring Configurations

When configuring the **Configurations** the following is required.

- **Phone Mode**: Set to **Digital** and **Nortel**

The screen shot below shows the configuration used during testing.

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.