Application Notes for Configuring Ascom DECT Handsets and Ascom IPBS Access Point with Avaya Aura® Communication Manager R6.3 and Avaya Aura® Session Manager R6.3 – Issue 1.0

Abstract

These Application Notes describe the configuration steps for provisioning Ascom's IP DECT Base Station and Handsets to interoperate with Avaya Aura® Communication Manager and Avaya Aura® Session Manager.

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 the configuration steps for provisioning Ascom's IP DECT base station and DECT handsets to interoperate with Avaya Aura® Communication Manager R6.3 and Avaya Aura® Session Manager R6.3. Ascom's DECT handsets are configured to register with Session Manager via SIP and are also subscribed to the base station via DECT. Each handset is configured as a SIP user on Avaya Aura® Communication Manager as Avaya 9620 SIP endpoints. The Ascom DECT handsets then behave as third-party sip extensions on Communication Manager able to make/receive internal calls and have full voicemail and other telephony facilities available on Communication Manager.

2. General Test Approach and Test Results

The interoperability compliance testing evaluates the ability of Ascom DECT sets to make and receive calls to and from Avaya H.323 and SIP deskphones. Avaya Aura® Messaging (messaging) was used to allow users leave voicemail messages and to demonstrate Message Waiting Indication was working on the Ascom handsets.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and/or standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute full product performance or feature testing performed by DevConnect members, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a DevConnect member's solution.

2.1. Interoperability Compliance Testing

The compliance testing included the test scenarios shown below. Note that when applicable, all tests were performed with Avaya SIP deskphones, Avaya H.323 deskphones, Ascom DECT endpoints and PSTN endpoints.

- Basic Calls
- Hold and Retrieve
- Attended and Blind Transfer
- Call Forwarding Unconditional, No Reply and Busy (Controlled on PBX)
- Call Waiting
- Call Park/Pickup
- EC500
- Conference
- Do Not Disturb
- Calling Line Name/Identification
- Codec Support
- DTMF Support
- Message Waiting Indication

2.2. Test Results

The following observations were noted during testing.

1. TLS negotiation between the Ascom DECT IP Base Station and Session Manager is not supported. All compliance testing was carried out using TCP and/or UDP as the transport protocol.
2. Although the Ascom handsets are added as SIP users when using TCP as the transport protocol a SIP Entity and a SIP Entity Link must be added as per **Section 6.2**. Note this is not required when using UDP.
3. When the Ascom handset transfers “blind” to the Avaya deskphones there is no ringback heard from the Ascom handset.
4. If there are active calls present on the SIP trunk between the Communication Manager and the Session Manager when a standby base station takes over from the master base station these trunks remain busy due to Communication Managers ‘Connection Preservation’ timer which is hardcoded. They will clear after 2 hours. This may result in a “Service” message from Communication Manager stating “no signaling available”. Please note this may only occur if there are insufficient trunks available for further calls to be made.
5. When there is a Message Waiting Indicator on an Ascom handset when registered to the master base station and a failover to the secondary base station is done the Message Waiting indicator fails to get removed when the voicemail is emptied. This can also be cleared by turning the handset off and on again.

2.3. Support

Support from Avaya is available by visiting the website http://support.avaya.com and a list of product documentation can be found in **Section 11** of these Application Notes. Technical support for the Ascom IP DECT product can be obtained through a local Ascom supplier. Ascom global technical support:

- Email: support@ascom.se
- Help desk: +46 31 559450

3. Reference Configuration

Figure 1 shows the network topology during compliance testing. The Ascom DECT handsets connect to the Ascom DECT base station which is placed on the LAN. The DECT handsets register with Session Manager in order to be able to make/receive calls to and from the Avaya H.323 and SIP deskphones on Communication Manager.

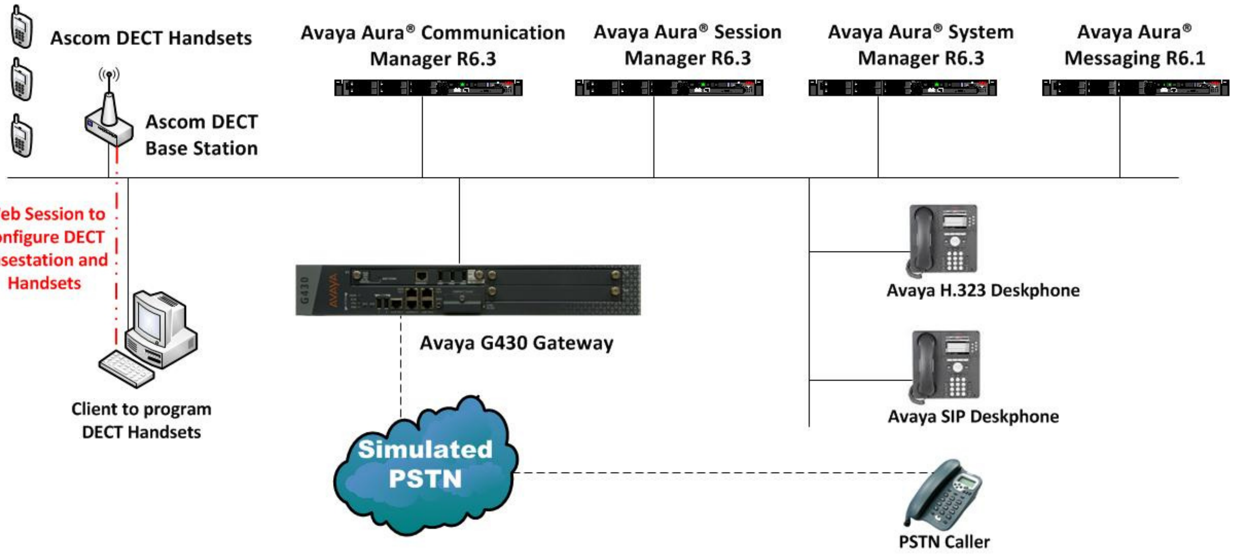

Ascom DECT Handsets
Ascom DECT Base Station
Avaya Aura® Communication Manager R6.3
Avaya Aura® Session Manager R6.3
Avaya Aura® System Manager R6.3
Avaya Aura® Messaging R6.1
Web Session to configure DECT Basestation and Handsets
Client to program DECT Handsets
Avaya G430 Gateway
Simulated PSTN
Avaya H.323 Deskphone
Avaya SIP Deskphone
PSTN Caller

Figure 1: Network Solution of Ascom DECT Handsets with Avaya Aura® Communication Manager R6.3 and Avaya Aura® Session Manager R6.3

4. Equipment and Software Validated

The following equipment and software was used for the compliance test.

Equipment/Software	Version/Release
Avaya Aura® System Manager running on an Avaya S8800 Server	R6.3 SP3 Build 6.3.0.8.5682-6.3.8.1814 Software Update Revision 6.3.3.5.1719
Avaya Aura® Communication Manager running on an Avaya S8800 Server	R6.3 SP1 R016x.03.0.124.0
Avaya Aura® Session Manager running on an Avaya S8800 Server	R6.3 SP3 6.3.3.0.633004
Avaya Aura® Messaging running on S8800 Server	R6.1
Avaya 96xx Series Deskphone	96xx H.323 Release 3.1 SP2 96xx SIP Release 2.6 SP3
Ascom DECT Base Station	IPBS V7.0.1
Ascom DECT Handsets	Mixture of 9 D41, D62, D81 handsets D62-Talker 4.1.6 D62-Protector 4.1.6 D41-Basic 4.1.6 D41-Advanced 4.1.6 D81-Messenger 4.1.6

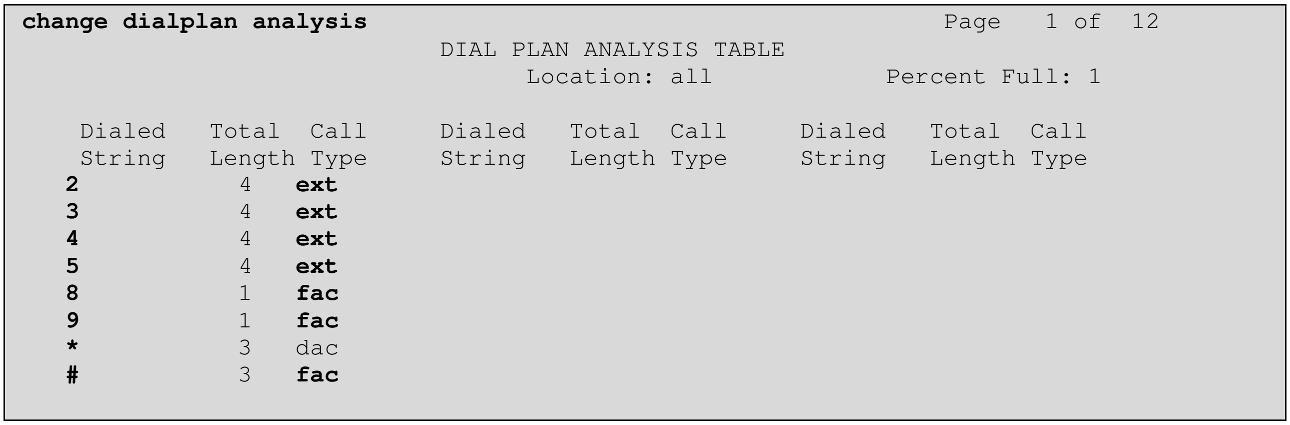
5. Configure Avaya Aura® Communication Manager

It is assumed that a fully functioning Communication Manager is in place with the necessary licensing with a SIP Trunk in place to Session Manager. For further information on the configuration of Communication Manager please see **Section 11** of these Application Notes. The following sections go through the following.

- Dial Plan Analysis
- Feature Access Codes
- IP Interfaces
- Network Region
- IP Codec

5.1. Configure Dial Plan Analysis

Use the **change dialplan analysis** command to configure the dial plan using the parameters shown below. Extension numbers (**ext**) are those beginning with **2**, **3**, **4** and **5**. Feature Access Codes (**fac**) use digits **8** and **9** or **#**.



```
change dialplan analysis                                        Page   1 of  12
                             DIAL PLAN ANALYSIS TABLE
                                   Location: all           Percent Full: 1

    Dialed   Total  Call      Dialed   Total  Call      Dialed   Total  Call
    String   Length Type      String   Length Type      String   Length Type
   2           4   ext
   3           4   ext
   4           4   ext
   5           4   ext
   8           1   fac
   9           1   fac
   *           3   dac
   #           3   fac
```

5.2. Configure Feature Access Codes

Use the **change feature-access-codes** command to configure access codes which can be entered from Ascom handsets to initiate Communication Manager call features. These access codes must be compatible with the dial plan described in **Section 5.1**. The following access codes need to be setup.

- **Answer Back Access Code : #22**
- **Auto Alternate Routing (AAR) Access Code : 8**
- **Auto Route Selection (ARS) - Access Code 1 : 9**
- **Call Park Access Code : #11**

```
change feature-access-codes                                     Page   1 of  10
                              FEATURE ACCESS CODE (FAC)
         Abbreviated Dialing List1 Access Code:
         Abbreviated Dialing List2 Access Code:
         Abbreviated Dialing List3 Access Code:
Abbreviated Dial - Prgm Group List Access Code:
                      Announcement Access Code:
                       Answer Back Access Code: #22
                         Attendant Access Code:
      Auto Alternate Routing (AAR) Access Code: 8
    Auto Route Selection (ARS) - Access Code 1: 9     Access Code 2:
                 Automatic Callback Activation:        Deactivation:
Call Forwarding Activation Busy/DA:        All:        Deactivation:
   Call Forwarding Enhanced Status:        Act:        Deactivation:
                         Call Park Access Code: #11
                       Call Pickup Access Code:
CAS Remote Hold/Answer Hold-Unhold Access Code:
                  CDR Account Code Access Code:
                        Change COR Access Code:
                   Change Coverage Access Code:
            Conditional Call Extend Activation:        Deactivation:
                   Contact Closure   Open Code:          Close Code:
CDR Account Code Access Code:
                        Change COR Access Code:
                   Change Coverage Access Code:
            Conditional Call Extend Activation:        Deactivation:
                   Contact Closure   Open Code:          Close Code:
```

5.3. Configure IP Interfaces

Shown below is an example of the nodes names used in the compliance testing. Note that Ascom does not feature in this setup only the name and IP address of Session Manager is added. Use the **change node-names ip** command to configure the IP address of Session Manager. **SM100** is the **Name** used for Session Manager and **10.10.40.34** is the **IP Address**.

```
change node-names ip                                            Page   1 of   2
                                 IP NODE NAMES
    Name              IP Address
SM100               10.10.40.34
default             0.0.0.0
g430                10.10.40.18
procr               10.10.40.13
procr6              ::
```

5.4. Configure Network Region

Use the **change ip-network-region x** (where x is the network region to be configured) command to assign an appropriate domain name to be used by Communication Manager, in the example below **devconnect.local** is used. Note this domain is also configured in **Section 6.1** of these Application Notes.

```
change ip-network-region 1                                   Page   1 of  20
                               IP NETWORK REGION
  Region: 1
Location: 1       Authoritative Domain: devconnect.local
    Name: default NR
MEDIA PARAMETERS                Intra-region IP-IP Direct Audio: yes
      Codec Set: 1              Inter-region IP-IP Direct Audio: yes
   UDP Port Min: 2048                      IP Audio Hairpinning? y
   UDP Port Max: 3329
DIFFSERV/TOS PARAMETERS
 Call Control PHB Value: 46
        Audio PHB Value: 46
        Video PHB Value: 26
802.1P/Q PARAMETERS
 Call Control 802.1p Priority: 6
        Audio 802.1p Priority: 6
        Video 802.1p Priority: 5      AUDIO RESOURCE RESERVATION PARAMETERS
H.323 IP ENDPOINTS                                        RSVP Enabled? n
  H.323 Link Bounce Recovery? y
 Idle Traffic Interval (sec): 20
   Keep-Alive Interval (sec): 5
            Keep-Alive Count: 5
```

5.5. Configure IP-Codec

Use the **change ip-codec-set x** (where x is the ip-codec set used) command to designate a codec set compatible with the Ascom Handsets, which support both **G.711A** and **G.729A**.

```
change change ip-codec-set 1                                        Page   1 of   2

                          IP Codec Set

    Codec Set: 1

    Audio        Silence      Frames   Packet
    Codec        Suppression  Per Pkt  Size(ms)
 1: G.711A           n          2        20
 2: G.729A           n          2        20
```

5.6. Configuration of Coverage Path and Hunt Group for voicemail

The coverage path setup used for compliance testing is illustrated below. Note the following:

Don't' Answer is set to **y**	The coverage path will be used in the event the phone set is not answered
Number of Rings is set to **4**	The coverage path will be used after 4 rings
Point 1: is set to **h59**	Hunt Group 59 is utilised by this coverage path

```
display coverage path 1
                                 COVERAGE PATH

                   Coverage Path Number: 1
     Cvg Enabled for VDN Route-To Party? n        Hunt after Coverage? n
                       Next Path Number:          Linkage

COVERAGE CRITERIA
    Station/Group Status    Inside Call     Outside Call
             Active?             n               n
               Busy?             y               y
        Don't Answer?            y               y        Number of Rings: 4
                All?             n               n
 DND/SAC/Goto Cover?             y               y
   Holiday Coverage?             n               n

COVERAGE POINTS
    Terminate to Coverage Pts. with Bridged Appearances? n
  Point1: h59           Rng:    Point2:
  Point3:                       Point4:
  Point5:                       Point6:
```

The hunt group used for compliance testing is shown below. Note on **Page 1** the **Group Extension** is **5999** which is the voicemail number for Messaging and on **Page 2 Message Center** is set to **sip-adjunct**.

```
display hunt-group 59                                          Page   1 of  60
                                  HUNT GROUP

            Group Number: 59                               ACD? n
              Group Name: Voicemail                      Queue? n
         Group Extension: 5999                          Vector? n
              Group Type: ucd-mia                 Coverage Path:
                      TN: 1         Night Service Destination:
                     COR: 1                  MM Early Answer? n
           Security Code:              Local Agent Preference? n
 ISDN/SIP Caller Display: mbr-name

```

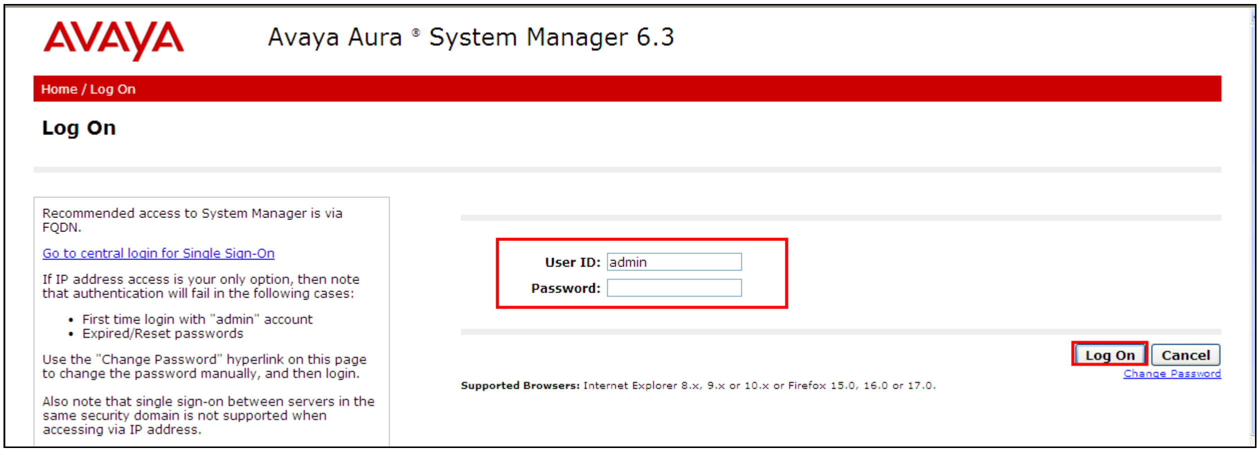
```
display hunt-group 59                                          Page   2 of  60
                                  HUNT GROUP

                      Message Center: sip-adjunct

     Voice Mail Number        Voice Mail Handle         Routing Digits
                                                  (e.g., AAR/ARS Access Code)
     5999                    5999                       8
```

6. Configure Avaya Aura® Session Manager

The Ascom DECT Handsets are added to Session Manager as SIP Users. In order make changes in Session Manager a web session to System Manager is opened.

6.1. Configuration of a Domain

Navigate to http://<System Manager IP Address>/SMGR, enter the appropriate credentials and click on **Log On** as shown below.



Avaya Aura ® System Manager 6.3

Home / Log On

Log On

Recommended access to System Manager is via FQDN.

Go to central login for Single Sign-On

If IP address access is your only option, then note that authentication will fail in the following cases:

- First time login with "admin" account
- Expired/Reset passwords

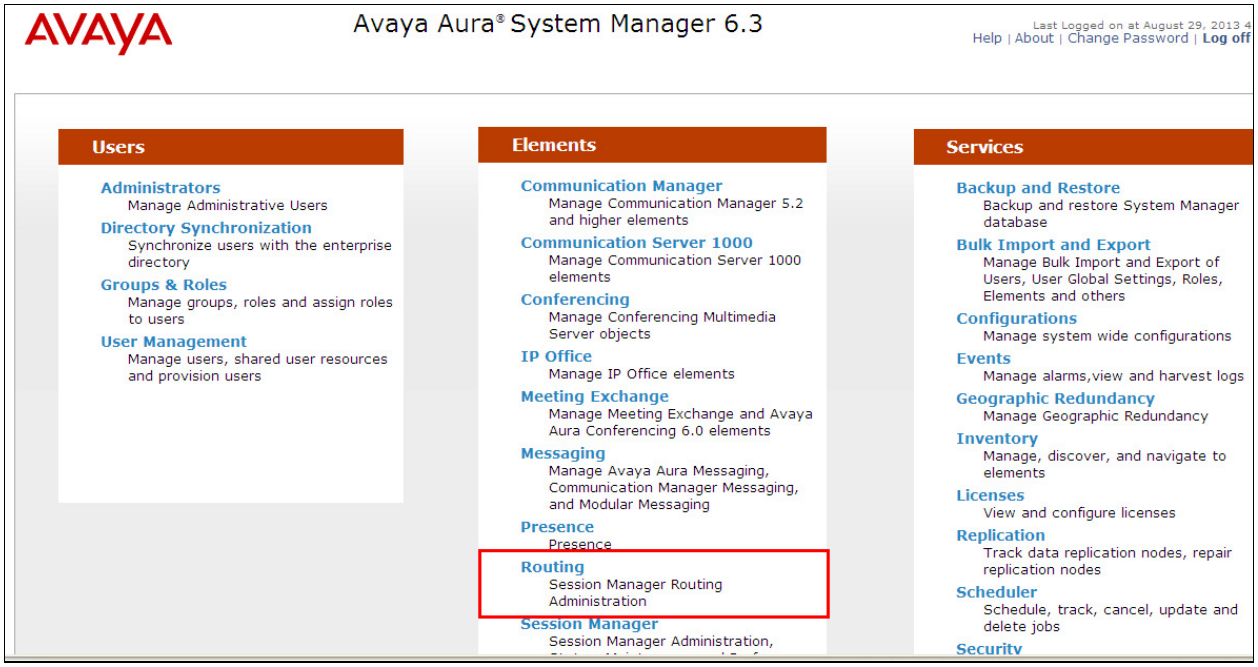
Use the "Change Password" hyperlink on this page to change the password manually, and then login.

Also note that single sign-on between servers in the same security domain is not supported when accessing via IP address.

User ID: admin
Password:

Supported Browsers: Internet Explorer 8.x, 9.x or 10.x or Firefox 15.0, 16.0 or 17.0.

Once logged in click on **Routing** highlighted below.



Avaya Aura® System Manager 6.3

Last Logged on at August 29, 2013 4

Users

Administrators
Manage Administrative Users

Directory Synchronization
Synchronize users with the enterprise directory

Groups & Roles
Manage groups, roles and assign roles to users

User Management
Manage users, shared user resources and provision users

Elements

Communication Manager
Manage Communication Manager 5.2 and higher elements

Communication Server 1000
Manage Communication Server 1000 elements

Conferencing
Manage Conferencing Multimedia Server objects

IP Office
Manage IP Office elements

Meeting Exchange
Manage Meeting Exchange and Avaya Aura Conferencing 6.0 elements

Messaging
Manage Avaya Aura Messaging, Communication Manager Messaging, and Modular Messaging

Presence
Presence

Routing
Session Manager Routing Administration

Session Manager
Session Manager Administration,

Services

Backup and Restore
Backup and restore System Manager database

Bulk Import and Export
Manage Bulk Import and Export of Users, User Global Settings, Roles, Elements and others

Configurations
Manage system wide configurations

Events
Manage alarms,view and harvest logs

Geographic Redundancy
Manage Geographic Redundancy

Inventory
Manage, discover, and navigate to elements

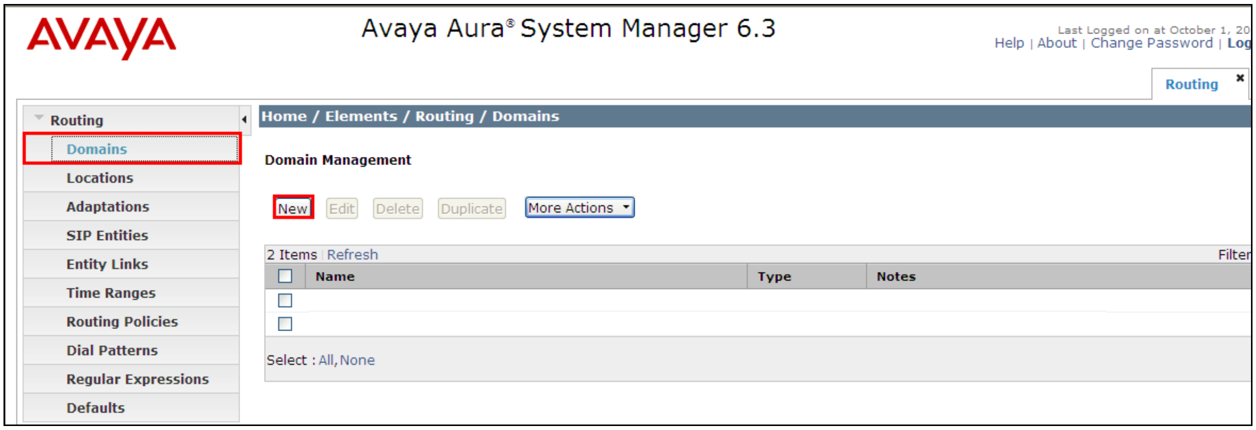
Licenses
View and configure licenses

Replication
Track data replication nodes, repair replication nodes

Scheduler
Schedule, track, cancel, update and delete jobs

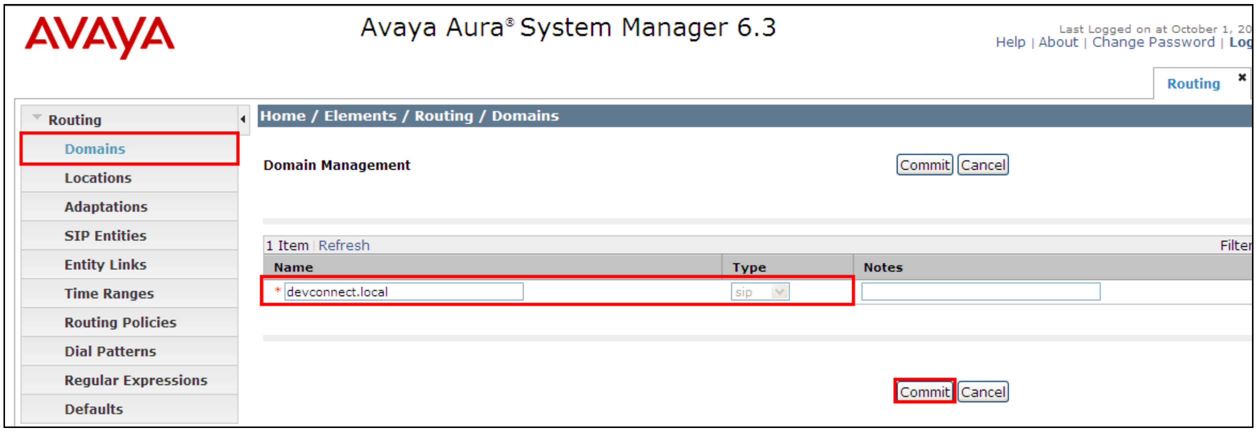
Security

Click on **Domains** in the left window. If there is not a domain already configured click on **New** highlighted below.



□	Name	Type	Notes
□			
□			

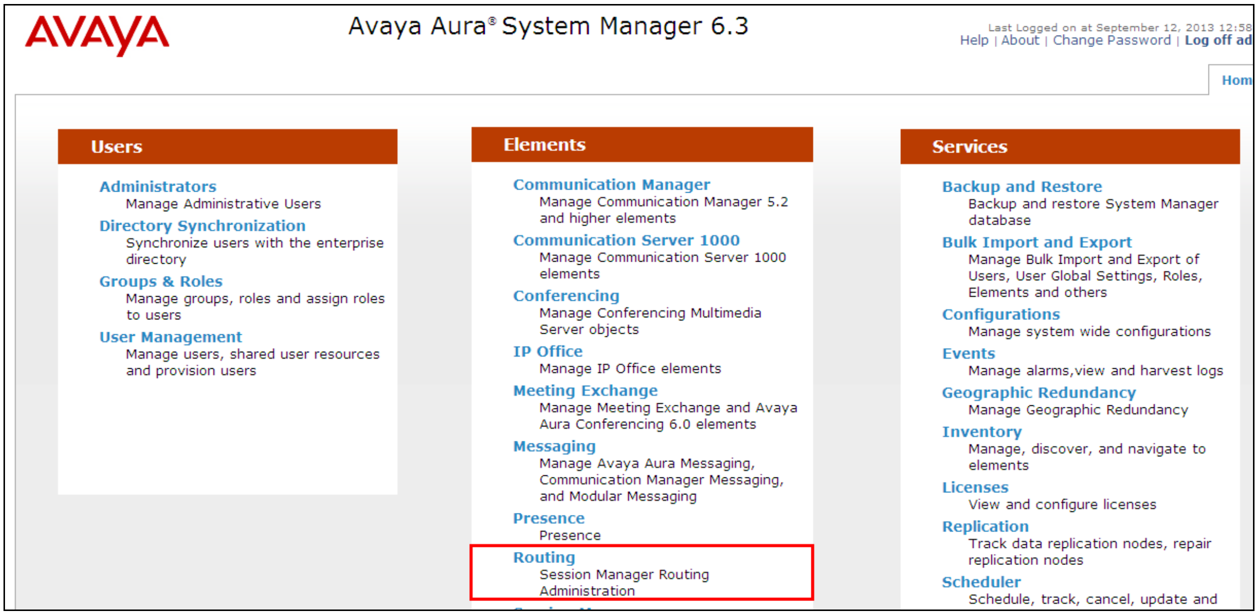
Note the domain **Name** used in the compliance testing was **devconnect.local**. Note this domain is also referenced in **Section 5.4**. Once the domain name is entered click on **Commit** to save this.



Name	Type	Notes
* devconnect.local	sip	

6.2. Configuration of SIP Entities

Navigate to http://<System Manager IP Address>/SMGR, enter the appropriate credentials and click on **Log On** as shown in **Section 6.1**. Once logged in click on **Routing** highlighted below.



Avaya Aura® System Manager 6.3

Last Logged on at September 12, 2013 12:58
Help | About | Change Password | Log off ad

Hom

Users

Administrators
Manage Administrative Users

Directory Synchronization
Synchronize users with the enterprise directory

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Manage groups, roles and assign roles to users

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Presence

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Scheduler
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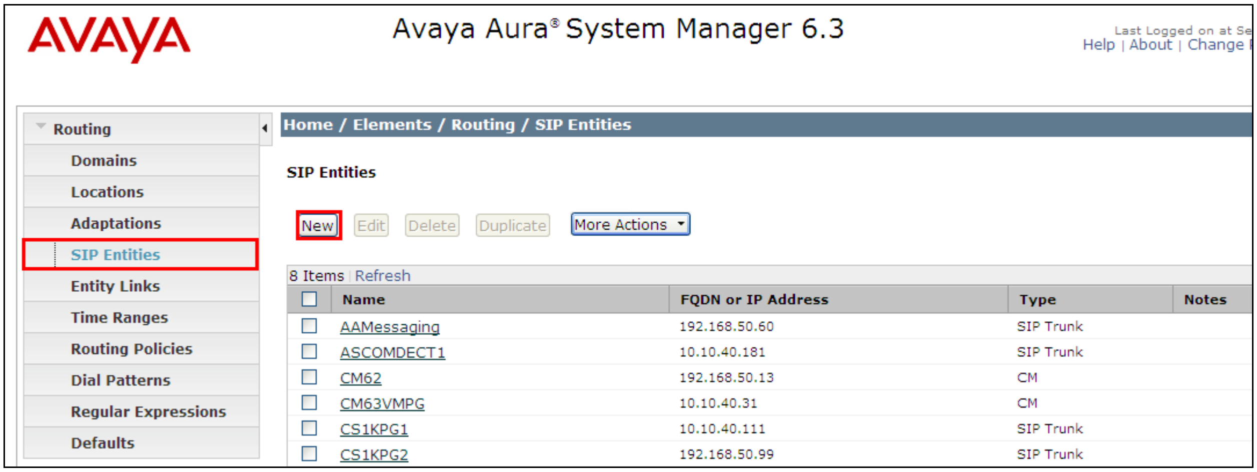
Clicking on **SIP Entities** shows what SIP Entities have been added to the system and allows the addition of any new SIP Entity that may be required. Please note the SIP Entities already present for the Compliance Testing of Ascom DECT Handsets.

- Communication Manager SIP Entity
- Session Manager SIP Entity
- Messaging SIP Entity

Note: There is no SIP Entity required if UDP is chosen for the transport protocol in **Section 8.3**, where TSIP is chosen for TCP protocol and SIP for UDP protocol.

If TCP is chosen as the transport protocol for the Ascom DECT then a SIP Entity and an Entity Link are required for the Ascom IPBS. Select **SIP Entities** in the left window and click on **New** in the main window.

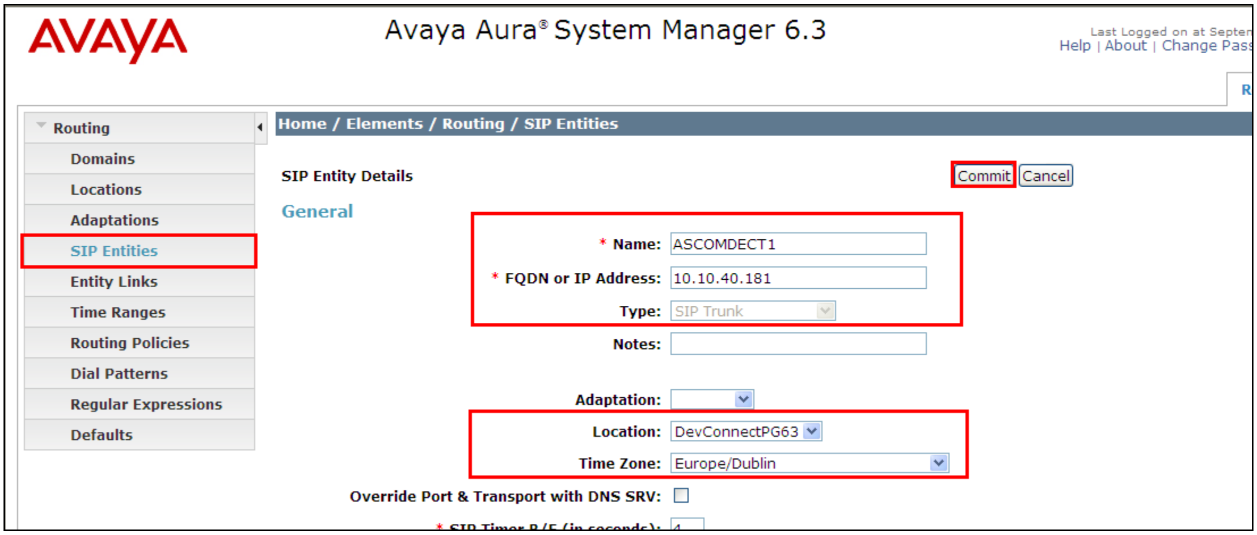
Note: A SIP Entity and Entity link are required for both the Master and Standby base stations.



SIP Entities

□	Name	FQDN or IP Address	Type	Notes
□	AAMessaging	192.168.50.60	SIP Trunk	
□	ASCOMDECT1	10.10.40.181	SIP Trunk	
□	CM62	192.168.50.13	CM	
□	CM63VMPG	10.10.40.31	CM	
□	CS1KPG1	10.10.40.111	SIP Trunk	
□	CS1KPG2	192.168.50.99	SIP Trunk	

Enter a suitable **Name** and enter the **IP Address** of the DECT Base Station. Select the correct **Location** and **Time Zone**. Click on **Commit** once completed.

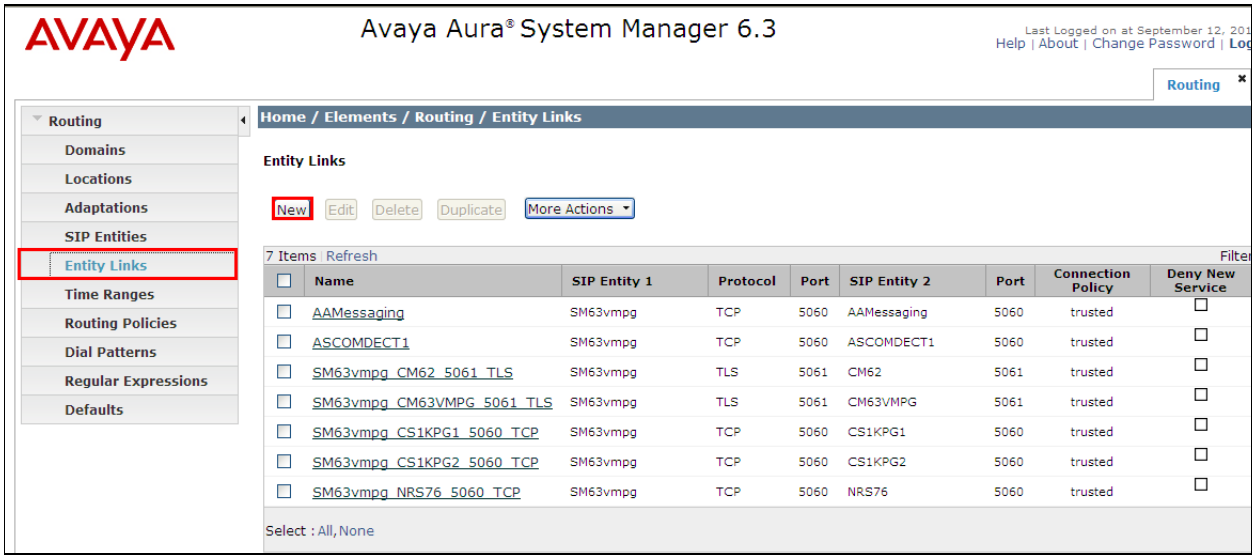


SIP Entity Details

General

* Name:	ASCOMDECT1
* FQDN or IP Address:	10.10.40.181
Type:	SIP Trunk
Notes:	
Adaptation:	
Location:	DevConnectPG63
Time Zone:	Europe/Dublin
Override Port & Transport with DNS SRV:	□
* SIP Timer B/F (in seconds):	4

Select **Entity Links** from the left window and select **New** from the right window in order to add the new Ascom Entity Link.



Avaya Aura® System Manager 6.3

Last Logged on at September 12, 201
Help | About | Change Password | Log

Routing

- Routing
  - Domains
  - Locations
  - Adaptations
  - SIP Entities
  - Entity Links
  - Time Ranges
  - Routing Policies
  - Dial Patterns
  - Regular Expressions
  - Defaults

Home / Elements / Routing / Entity Links

Entity Links

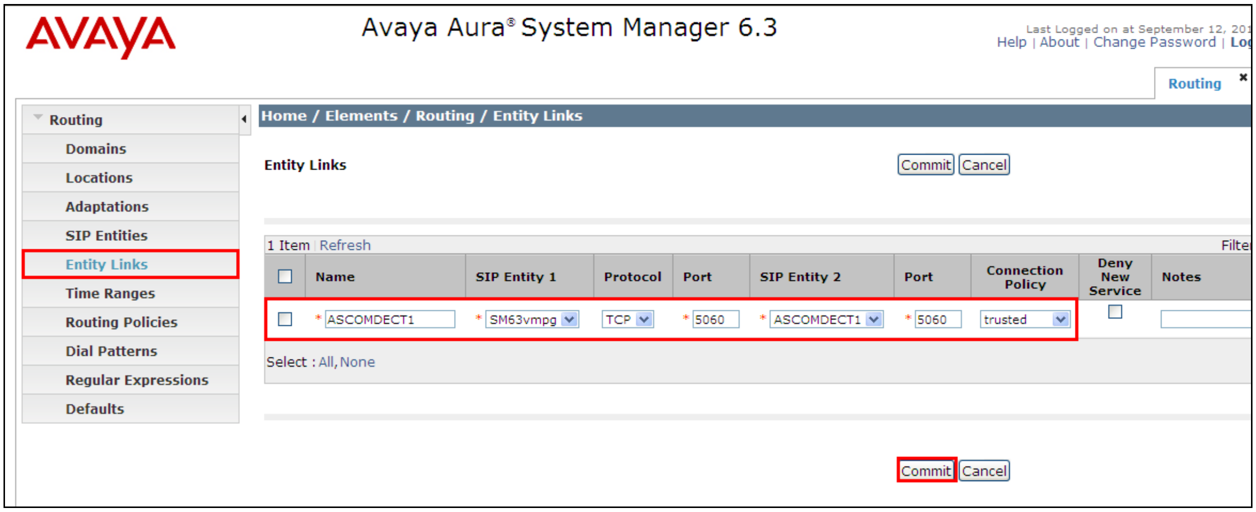
New | Edit | Delete | Duplicate | More Actions

7 Items | Refresh

	Name	SIP Entity 1	Protocol	Port	SIP Entity 2	Port	Connection Policy	Deny New Service
□	AAMessaging	SM63vmpg	TCP	5060	AAMessaging	5060	trusted	□
□	ASCOMDECT1	SM63vmpg	TCP	5060	ASCOMDECT1	5060	trusted	□
□	SM63vmpg_CM62_5061_TLS	SM63vmpg	TLS	5061	CM62	5061	trusted	□
□	SM63vmpg_CM63VMPG_5061_TLS	SM63vmpg	TLS	5061	CM63VMPG	5061	trusted	□
□	SM63vmpg_CS1KPG1_5060_TCP	SM63vmpg	TCP	5060	CS1KPG1	5060	trusted	□
□	SM63vmpg_CS1KPG2_5060_TCP	SM63vmpg	TCP	5060	CS1KPG2	5060	trusted	□
□	SM63vmpg_NRS76_5060_TCP	SM63vmpg	TCP	5060	NRS76	5060	trusted	□

Select : All, None

Ensure that **TCP** is selected for the **Protocol** and **5060** for the **Port**. Click on **Commit** once completed.



Avaya Aura® System Manager 6.3

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Help | About | Change Password | Log

Routing

- Routing
  - Domains
  - Locations
  - Adaptations
  - SIP Entities
  - Entity Links
  - Time Ranges
  - Routing Policies
  - Dial Patterns
  - Regular Expressions
  - Defaults

Home / Elements / Routing / Entity Links

Entity Links

Commit | Cancel

1 Item | Refresh

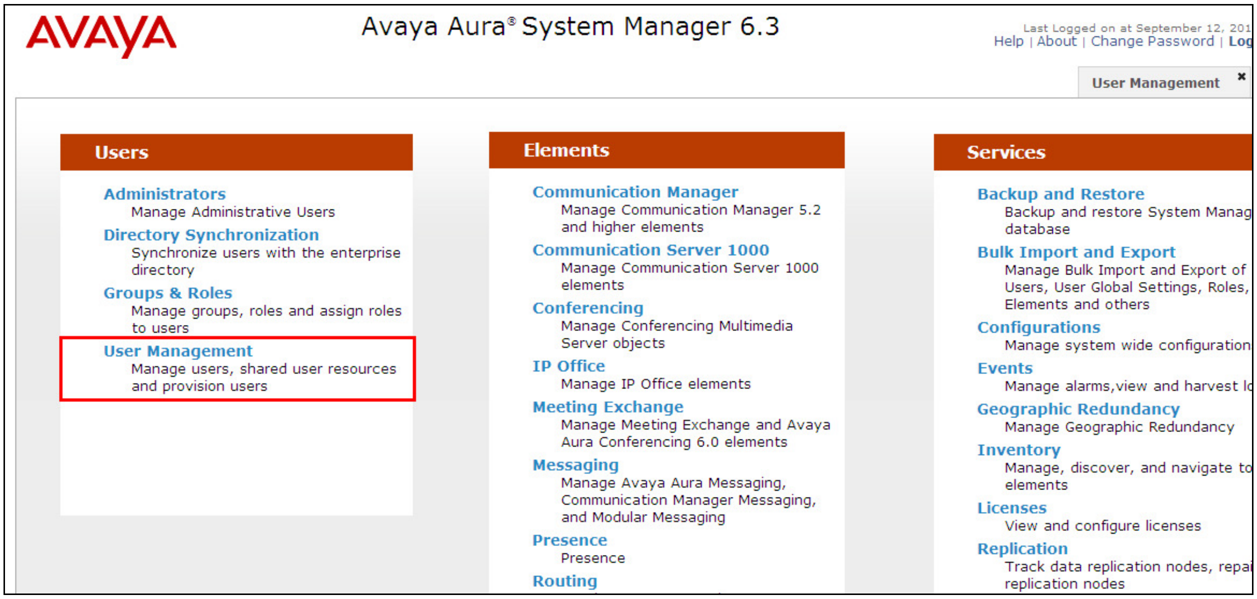
	Name	SIP Entity 1	Protocol	Port	SIP Entity 2	Port	Connection Policy	Deny New Service	Notes
□	* ASCOMDECT1	* SM63vmpg	TCP	* 5060	* ASCOMDECT1	* 5060	trusted	□	

Select : All, None

Commit | Cancel

6.3. Adding Ascom SIP Users

From the home page click on **User Management** highlighted below.



AVAYA Avaya Aura® System Manager 6.3

Last Logged on at September 12, 201
Help | About | Change Password | Log

User Management ✖

Users

Administrators
Manage Administrative Users

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Synchronize users with the enterprise directory

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Backup and restore System Manag database

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Manage alarms,view and harvest l

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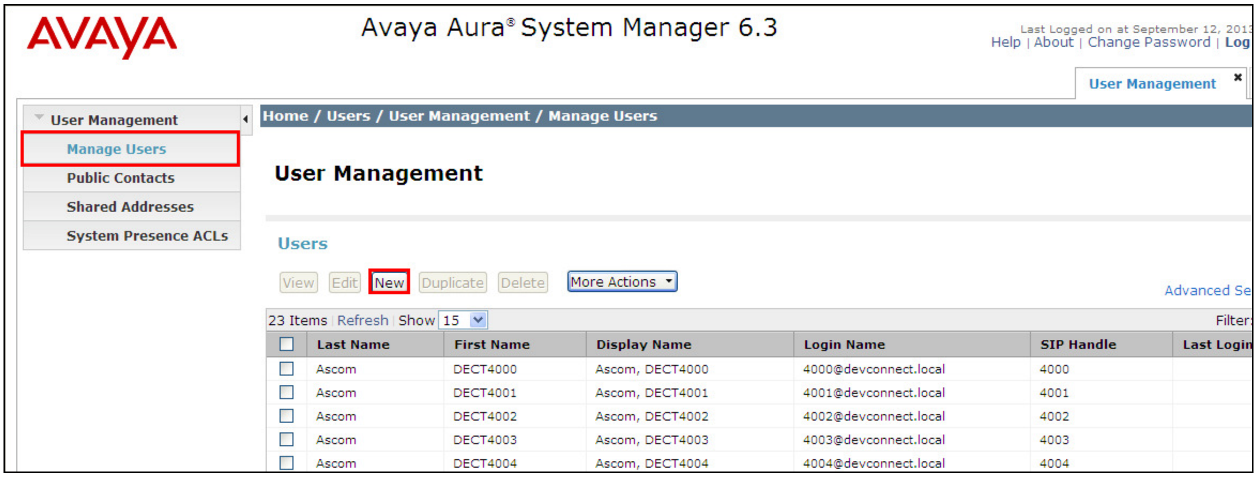
Manage Geographic Redundancy

Inventory
Manage, discover, and navigate to elements

Licenses
View and configure licenses

Replication
Track data replication nodes, repai replication nodes

Click on **New** highlighted to add a new SIP user.



AVAYA Avaya Aura® System Manager 6.3

Last Logged on at September 12, 201
Help | About | Change Password | Log

User Management ✖

Home / Users / User Management / Manage Users

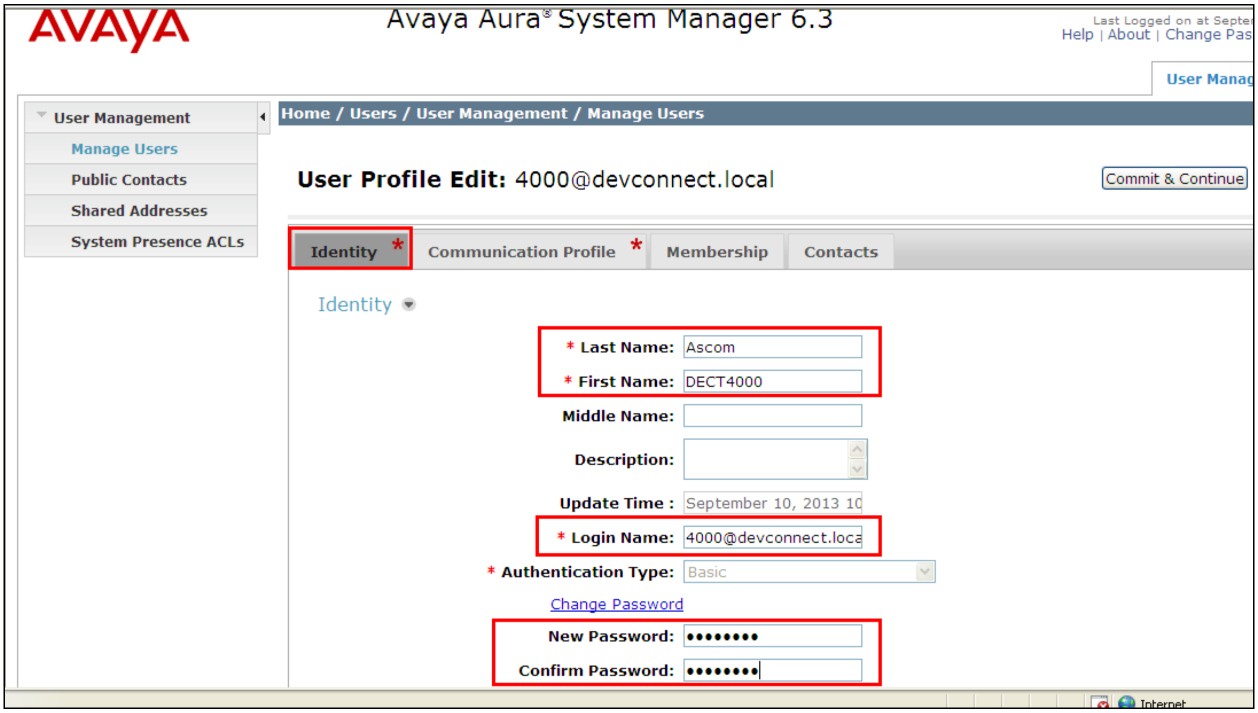
User Management

Users

23 Items | Refresh | Show 15 Filter:

□	Last Name	First Name	Display Name	Login Name	SIP Handle	Last Login
□	Ascom	DECT4000	Ascom, DECT4000	4000@devconnect.local	4000	
□	Ascom	DECT4001	Ascom, DECT4001	4001@devconnect.local	4001	
□	Ascom	DECT4002	Ascom, DECT4002	4002@devconnect.local	4002	
□	Ascom	DECT4003	Ascom, DECT4003	4003@devconnect.local	4003	
□	Ascom	DECT4004	Ascom, DECT4004	4004@devconnect.local	4004	

Under the **Identity** tab fill in the user's **Last Name** and **First Name** as shown below. Enter the **Login Name** and ensure **Authentication Type** is set to **Basic** and enter a suitable **Password**.



User Profile Edit: 4000@devconnect.local

* Last Name: Ascom

* First Name: DECT4000

Middle Name:

Description:

Update Time : September 10, 2013 10

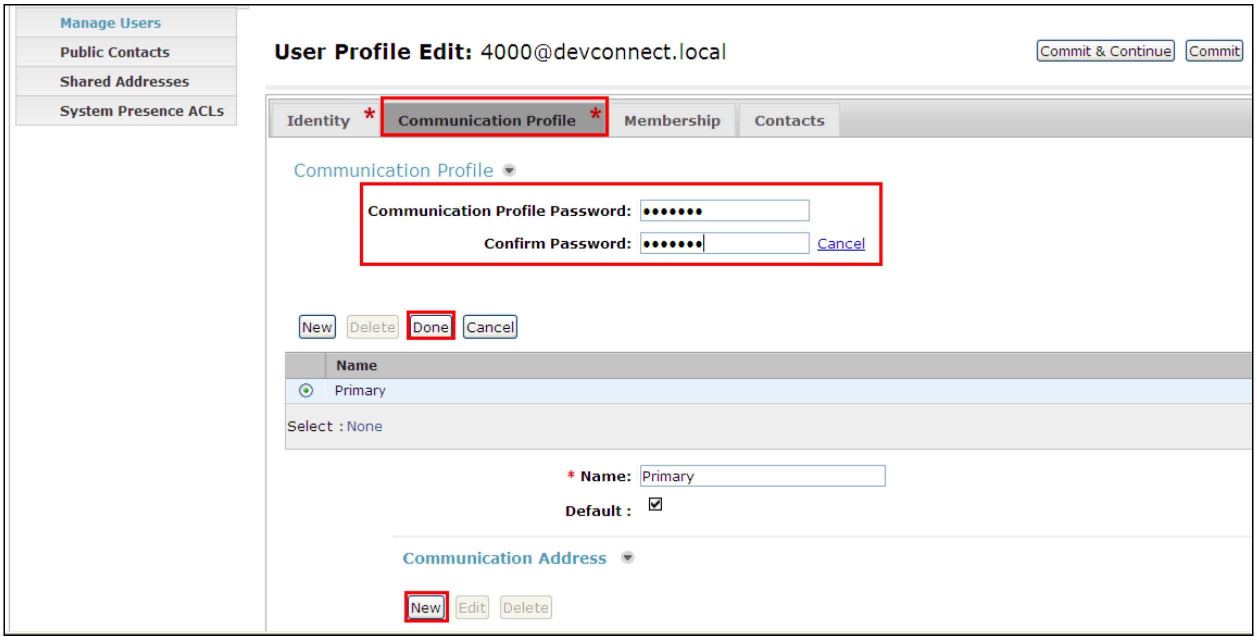
* Login Name: 4000@devconnect.loca

* Authentication Type: Basic

New Password: ••••••••

Confirm Password: ••••••••

Under the **Communication Profile** tab enter a suitable **Communication Profile Password** and click on **Done** when added, note that this password is required when configuring the Ascom handset in **Section 8.2**. Click on **New** to add a new **Communication Address**.



User Profile Edit: 4000@devconnect.local

Communication Profile Password: •••••••

Confirm Password: •••••••

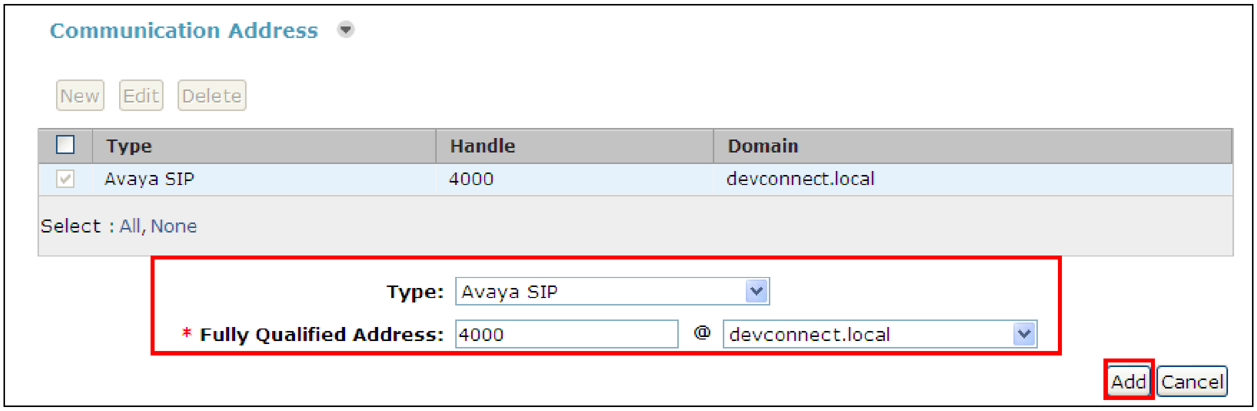
	Name
●	Primary

Select : None

* Name: Primary

Default : ☑

Enter the extension number and the domain for the **Fully Qualified Address** and click on **Add** once finished.



Communication Address

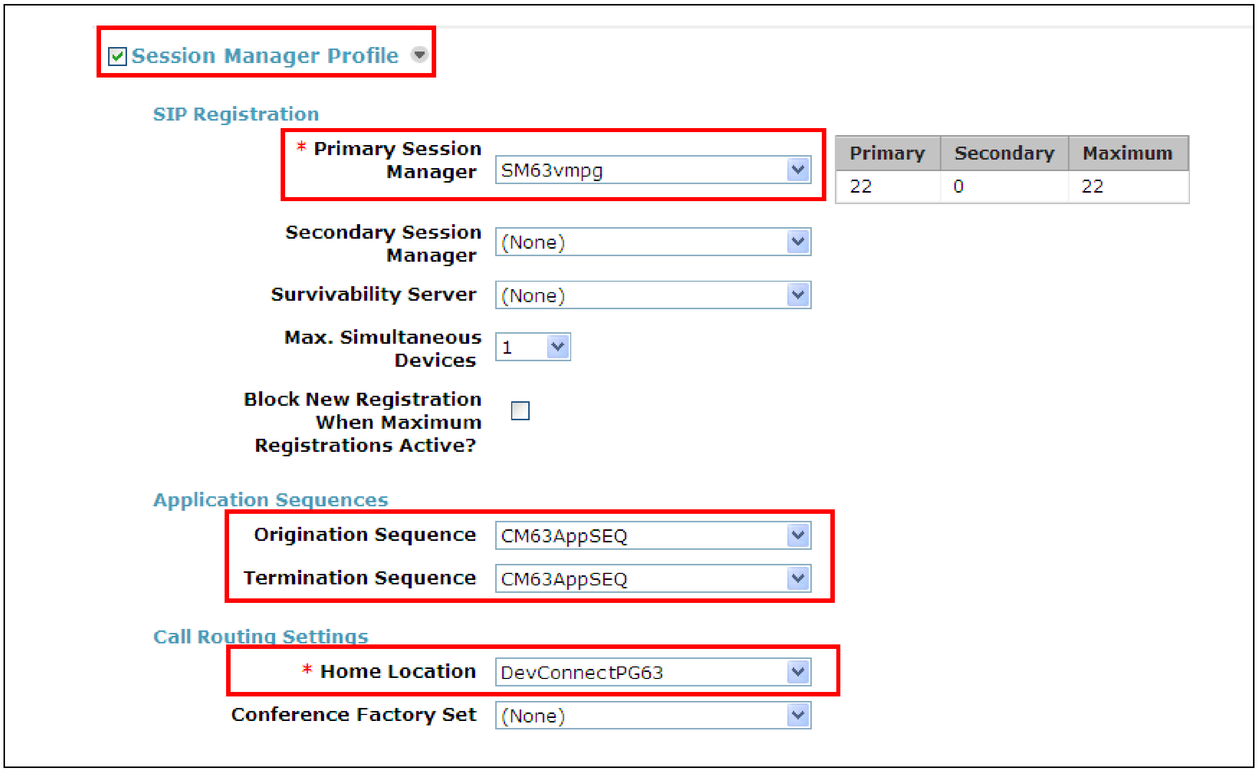
□	Type	Handle	Domain
☑	Avaya SIP	4000	devconnect.local

Select : All, None

Type: Avaya SIP

* Fully Qualified Address: 4000 @ devconnect.local

Ensure **Session Manager Profile** is checked and enter the **Primary Session Manager** details, enter the **Origination Application Sequence** and the **Termination Application Sequence** and the **Home Location** as highlighted below.



☑ Session Manager Profile

SIP Registration

* Primary Session Manager: SM63vmpg

Primary	Secondary	Maximum
22	0	22

Secondary Session Manager: (None)

Survivability Server: (None)

Max. Simultaneous Devices: 1

Block New Registration When Maximum Registrations Active? □

Application Sequences

Origination Sequence: CM63AppSEQ

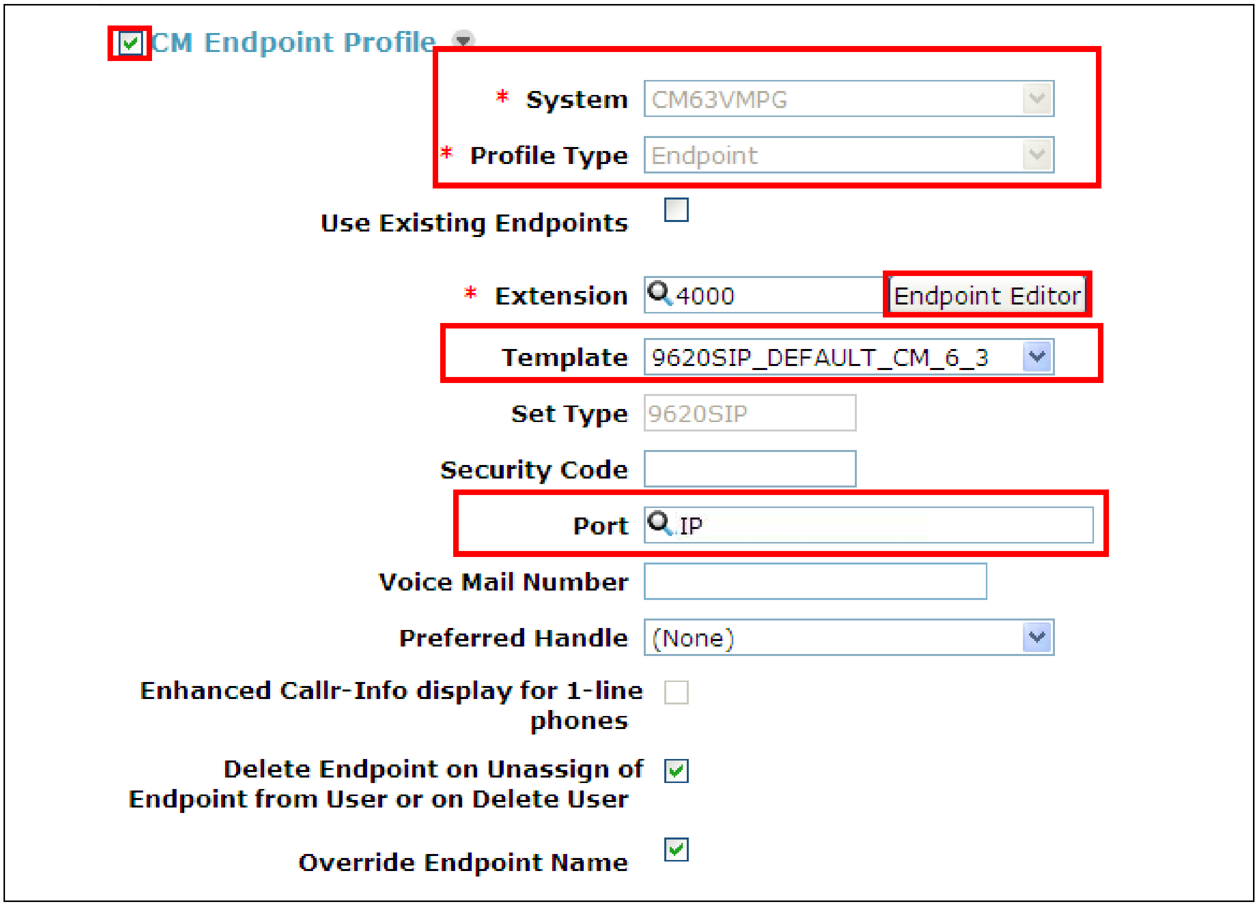
Termination Sequence: CM63AppSEQ

Call Routing Settings

* Home Location: DevConnectPG63

Conference Factory Set: (None)

Ensure that **CM Endpoint Profile** is selected and choose the **DEFAULT_9620SIP_CM_6_3** as the **Template** and ensure **Port** is set to **IP**. Click **Endpoint Editor** to configure the buttons and features for that handset on Communication Manager.



☑ CM Endpoint Profile

* System: CM63VMPG

* Profile Type: Endpoint

Use Existing Endpoints: □

* Extension: 4000 [Endpoint Editor]

Template: 9620SIP_DEFAULT_CM_6_3

Set Type: 9620SIP

Security Code:

Port: IP

Voice Mail Number:

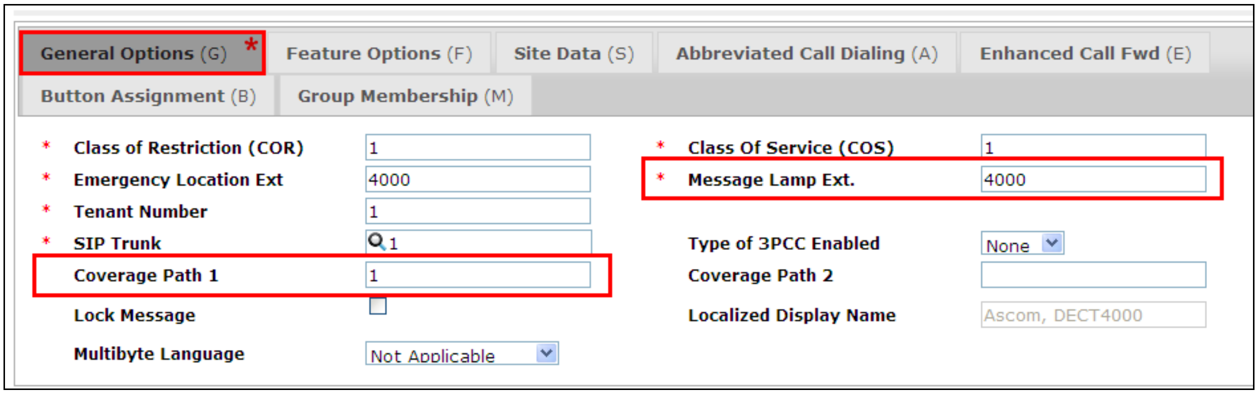
Preferred Handle: (None)

Enhanced Callr-Info display for 1-line phones: □

Delete Endpoint on Unassign of Endpoint from User or on Delete User: ☑

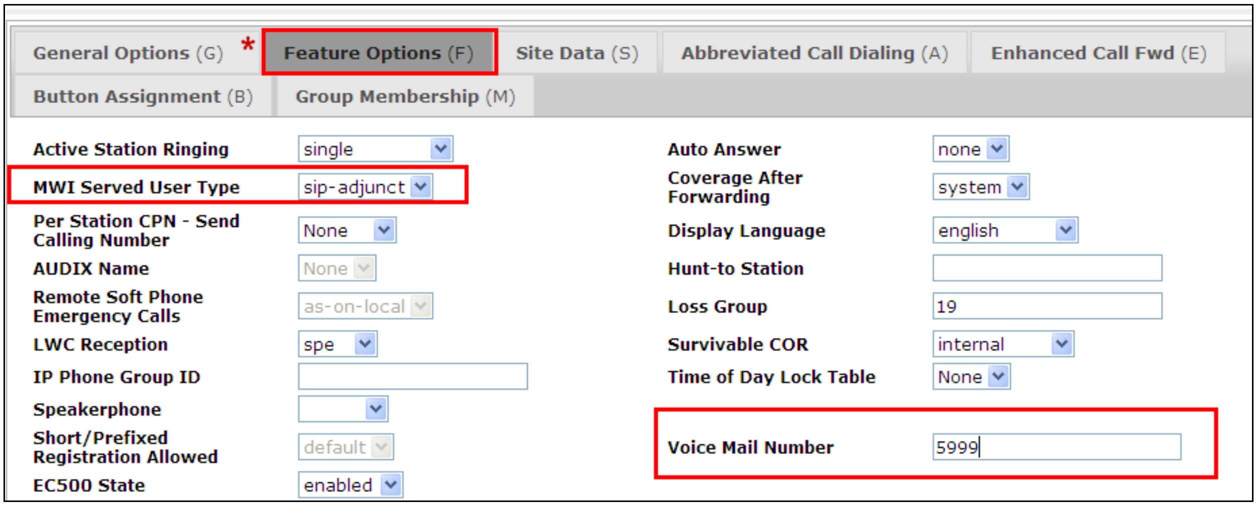
Override Endpoint Name: ☑

Under the **General Options** tab ensure that **Coverage Path 1** is set to that configured in **Section 5.6**. Also ensure that **Message Lamp Ext.** is showing the correct extension number.



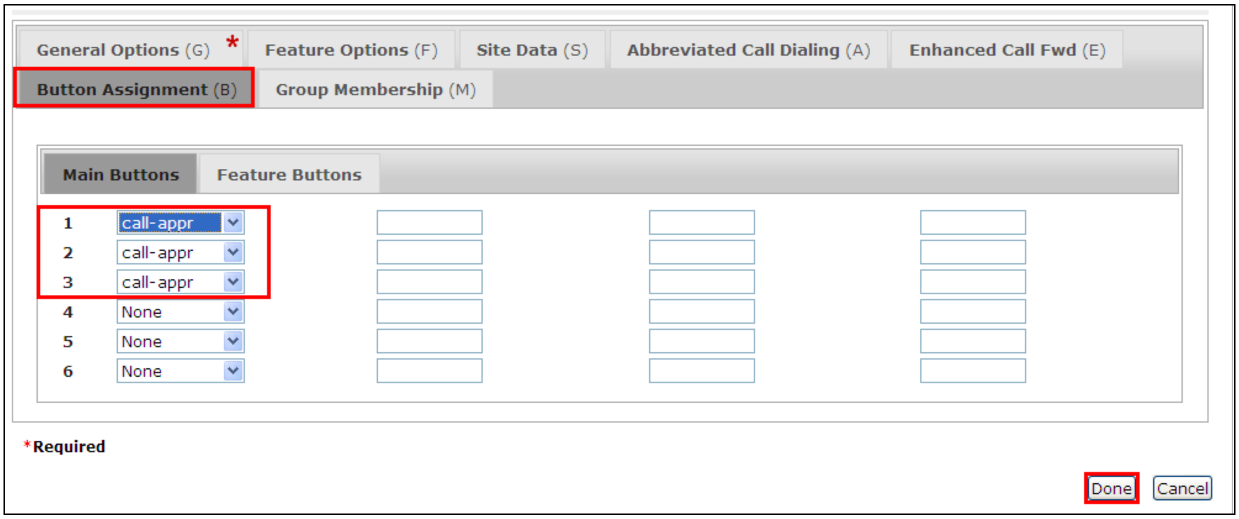
* Class of Restriction (COR)	1	* Class Of Service (COS)	1
* Emergency Location Ext	4000	* Message Lamp Ext.	4000
* Tenant Number	1		
* SIP Trunk	1	Type of 3PCC Enabled	None
Coverage Path 1	1	Coverage Path 2	
Lock Message	□	Localized Display Name	Ascom, DECT4000
Multibyte Language	Not Applicable		

Under the tab **Feature Options** ensure that **MWI Served User Type** is set to **sip-adjunct**. Ensure the **Voice Mail Number** is set to that configured in **Section 5.6**.



Active Station Ringing	single	Auto Answer	none
MWI Served User Type	sip-adjunct	Coverage After Forwarding	system
Per Station CPN - Send Calling Number	None	Display Language	english
AUDIX Name	None	Hunt-to Station	
Remote Soft Phone Emergency Calls	as-on-local	Loss Group	19
LWC Reception	spe	Survivable COR	internal
IP Phone Group ID		Time of Day Lock Table	None
Speakerphone			
Short/Prefixed Registration Allowed	default	Voice Mail Number	5999
EC500 State	enabled		

There must be 3 call appearances setup for the DECT sets for Call Waiting to work. However the number of call appearances must be changed from 3 to 2 in order to allow the call forward when busy to work properly. Once the **Button Assignment** is completed click on **Done** to finish.

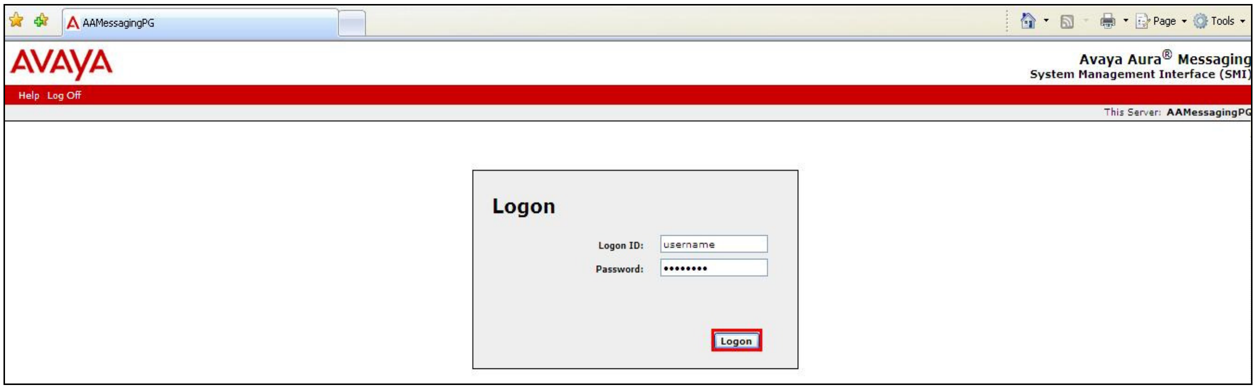


1	call-appr			
2	call-appr			
3	call-appr			
4	None			
5	None			
6	None			

7. Configure Avaya Aura® Messaging

It is assumed that a fully working messaging system is in place and the necessary configuration for Communication Manager and Session Manager has already been done. For further information on the installation and configuration of Messaging please refer to **Section 11** of these Application Notes.

Navigate to http://<Messaging IP Address>. Enter the appropriate credentials and click on **Logon** highlighted below.



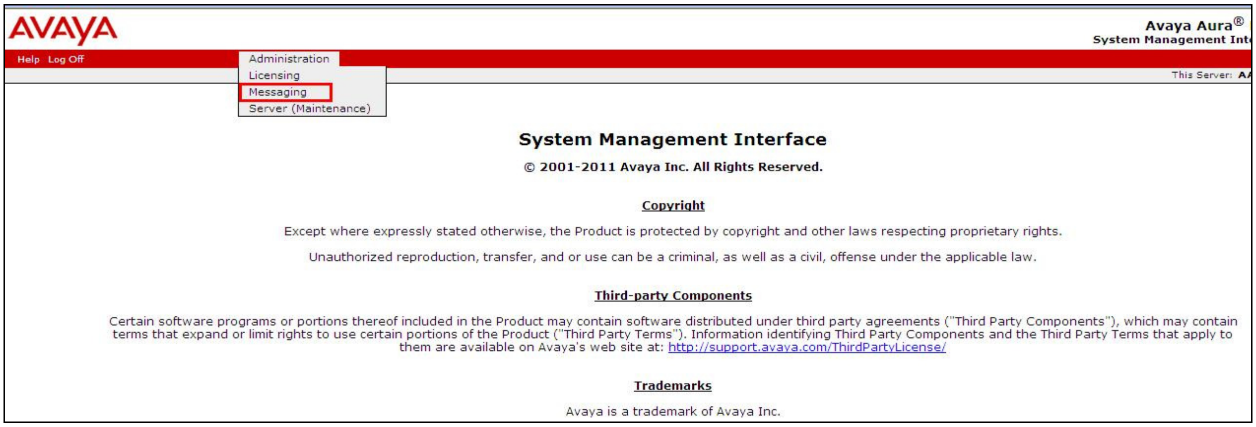
Logon

Logon ID: username

Password: ••••••••

Logon

Once logged on select **Messaging** under **Administration** as shown below.



System Management Interface

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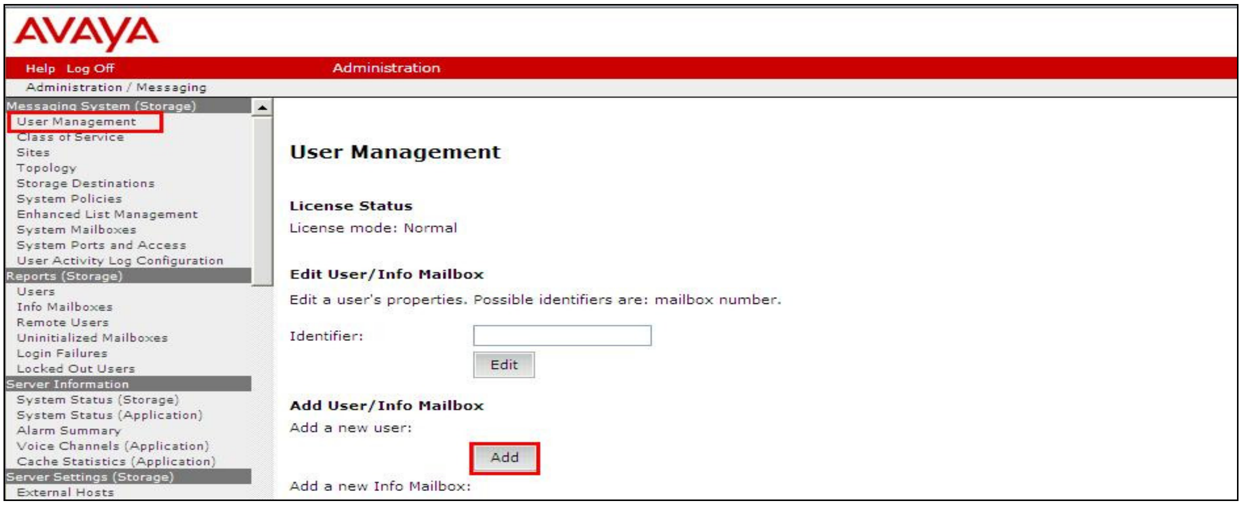
Click on **User Management** in the left hand column and click on **Add** under **Add User/Info Mailbox** as highlighted below.



User Management

License Status

License mode: Normal

Edit User/Info Mailbox

Edit a user's properties. Possible identifiers are: mailbox number.

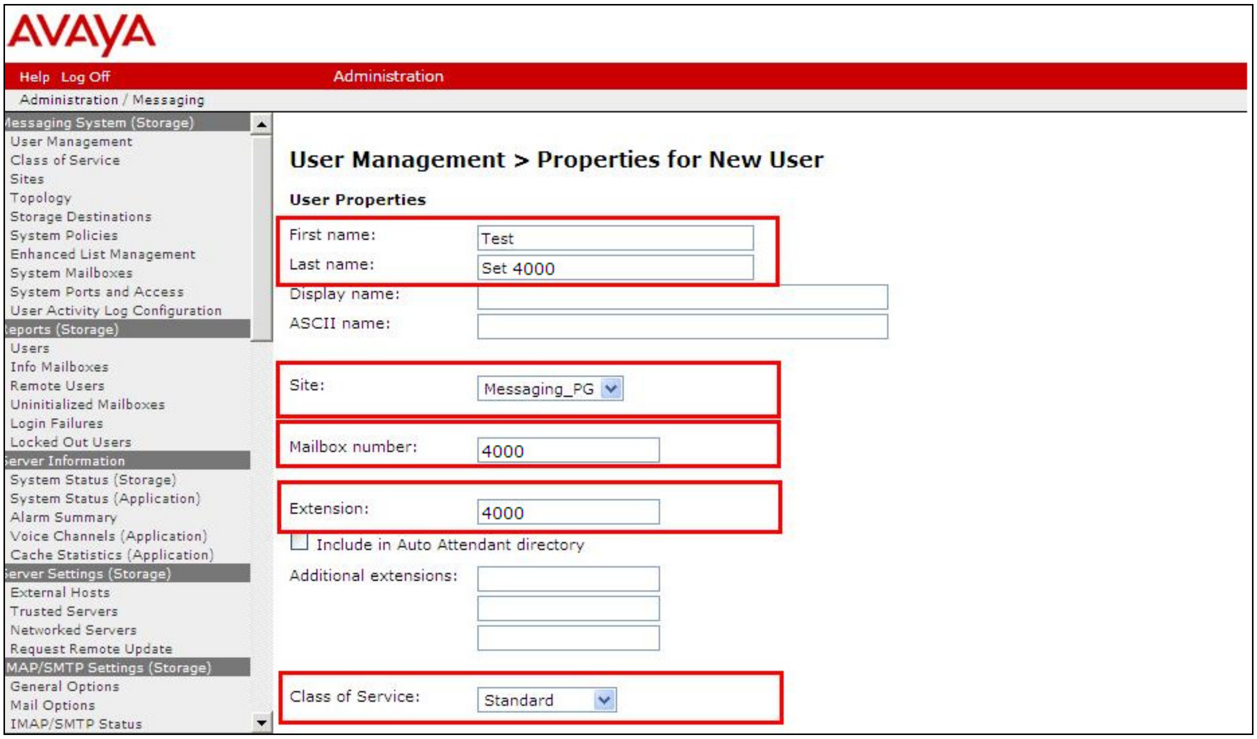
Identifier:

Add User/Info Mailbox

Add a new user:

Add a new Info Mailbox:

Enter a suitable **First Name** and **Last Name**. Select the appropriate **Site** from the drop down box. Enter the correct **Mailbox number** and **Extension**. Select the appropriate **Class of Service**.



User Management > Properties for New User

User Properties

First name: Test

Last name: Set 4000

Display name:

ASCII name:

Site: Messaging_PG

Mailbox number: 4000

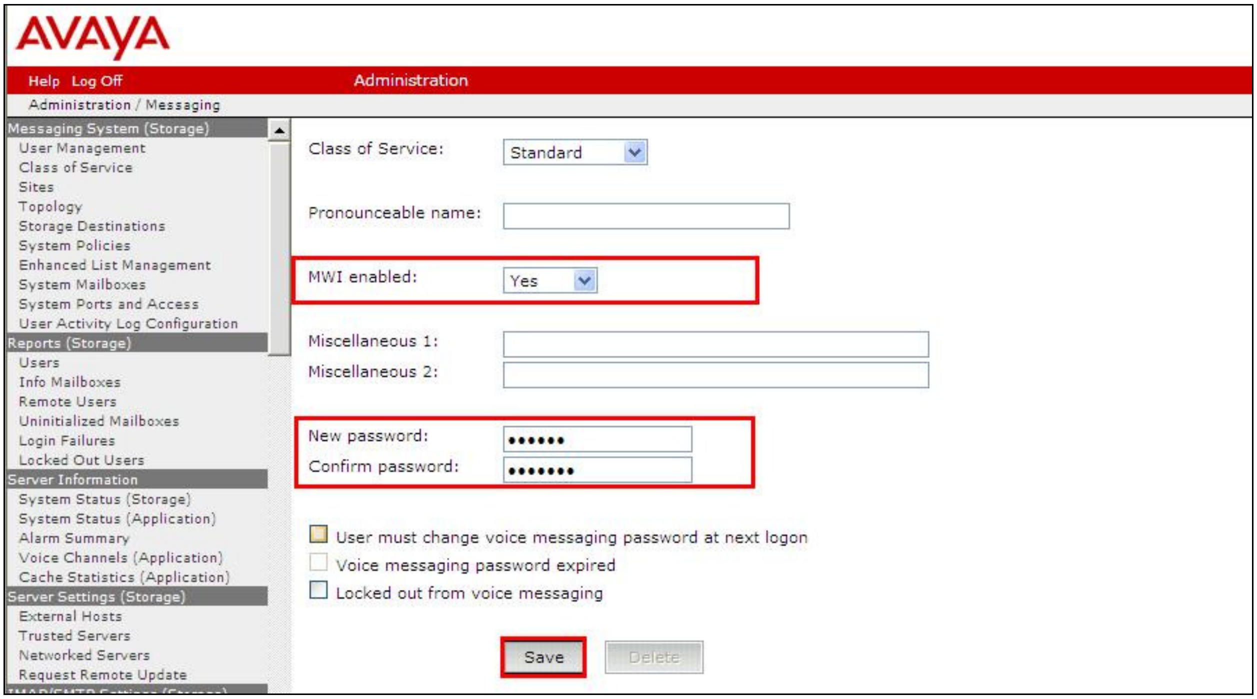
Extension: 4000

□ Include in Auto Attendant directory

Additional extensions:

Class of Service: Standard

Ensure that **MWI Enabled** is set to **Yes**. Enter a suitable **password** and click on **Save** once finished.



Class of Service: Standard

Pronounceable name:

MWI enabled: Yes

Miscellaneous 1:

Miscellaneous 2:

New password: ••••••

Confirm password: •••••••

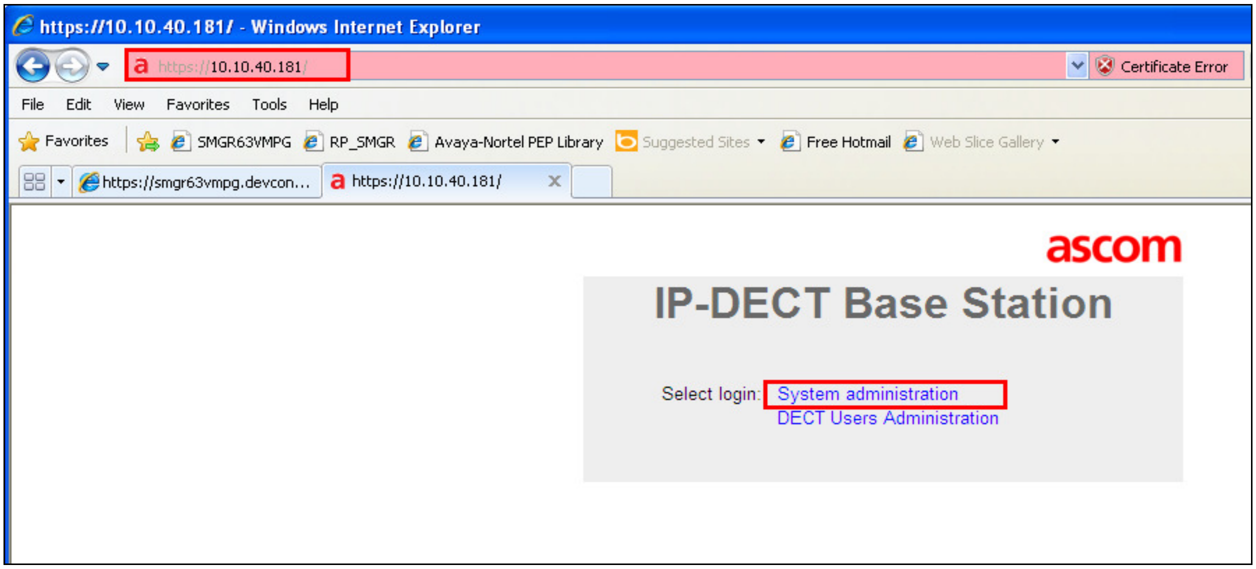
☐ User must change voice messaging password at next logon

☐ Voice messaging password expired

☐ Locked out from voice messaging

8. Configure Ascom DECT Base Station and Handsets

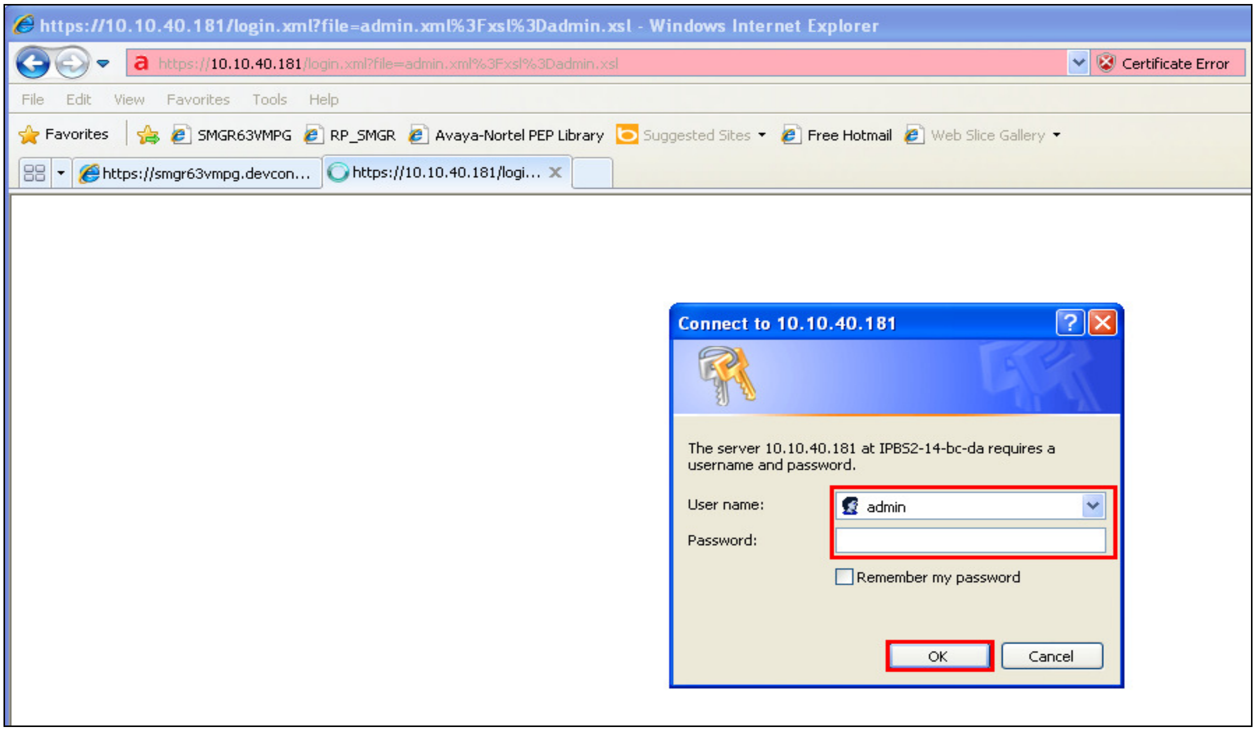
The configuration of the DECT Base Station and the DECT handsets are both achieved through a http session to the web interface of the DECT base station. Open a web session to the IP address of the DECT base station as and click on **System administration** as shown below.



IP-DECT Base Station

Select login: System administration
DECT Users Administration

Enter the proper credentials and click on **OK** to log in.


https://10.10.40.181/login.xml?file=admin.xml%3Fxsl%3Dadmin.xsl - Windows Internet Explorer
https://10.10.40.181/login.xml?file=admin.xml%3Fxsl%3Dadmin.xsl
Certificate Error
File Edit View Favorites Tools Help
Favorites
SMGR63VMPG
RP_SMGR
Avaya-Nortel PEP Library
Suggested Sites
Free Hotmail
Web Slice Gallery
https://smgr63vmpg.devcon...
https://10.10.40.181/logi...
Connect to 10.10.40.181

The server 10.10.40.181 at IPBS2-14-bc-da requires a username and password.

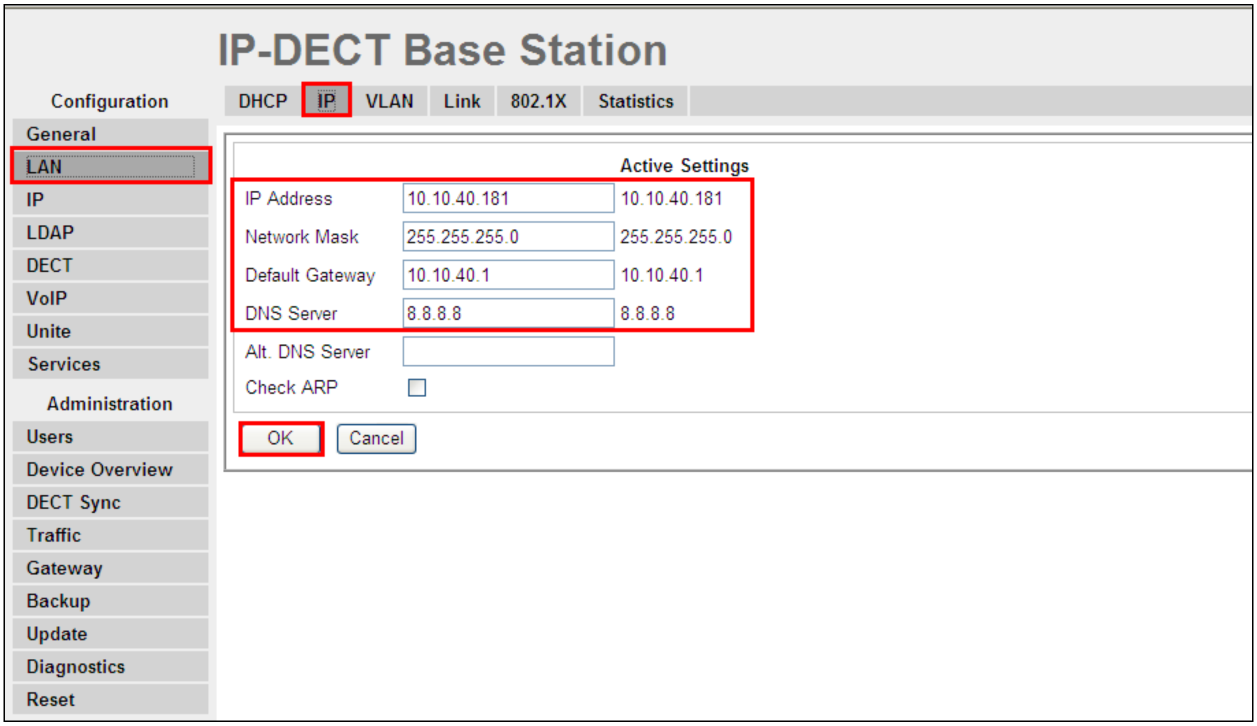
User name: admin

Password:

☐ Remember my password

8.1. Configure DECT Base Station IP address

In order to change the IP Address of the DECT Base Station in order to connect to the local LAN select **LAN** in the left column and click on the **IP** tab. Enter the **IP Address** information of the DECT Base Station and click on **OK**. Ensure also that DCHP mode is set to disabled under the **DHCP** tab (not shown).

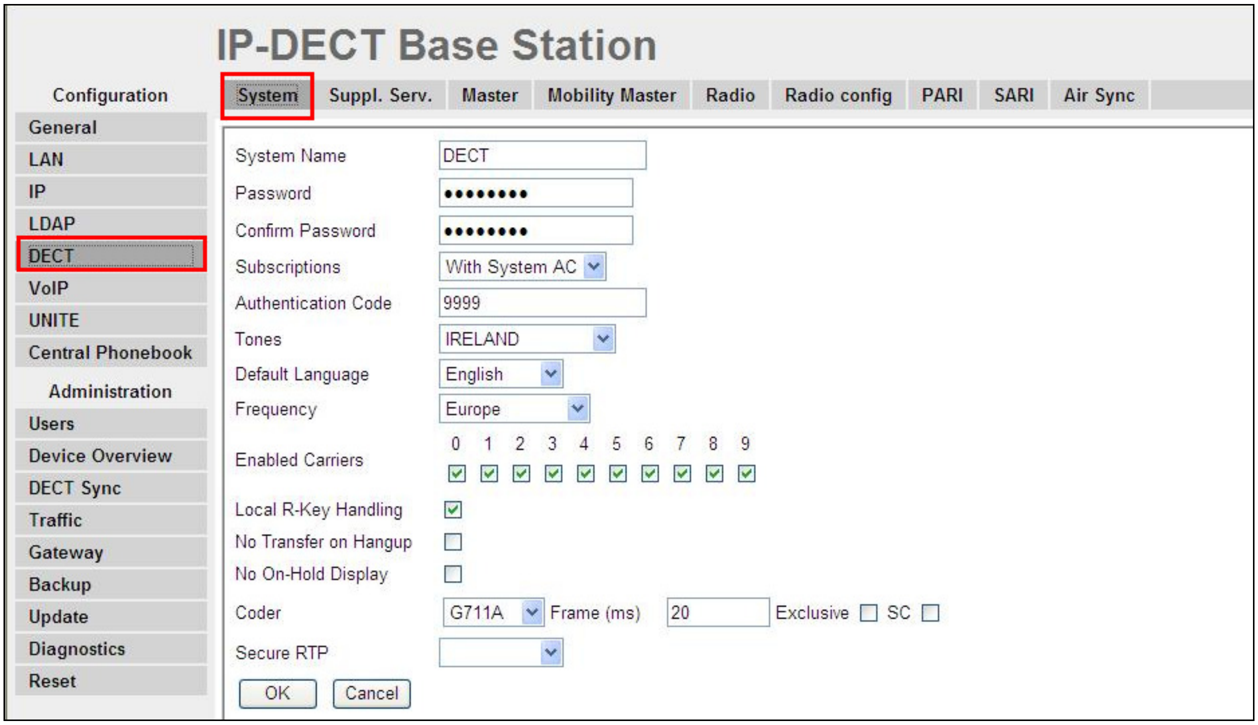


		Active Settings
IP Address	10.10.40.181	10.10.40.181
Network Mask	255.255.255.0	255.255.255.0
Default Gateway	10.10.40.1	10.10.40.1
DNS Server	8.8.8.8	8.8.8.8
Alt. DNS Server		
Check ARP	□	

Please refer to Ascom's documentation listed in **Section 11** of these Application Notes for further information about DECT configuration. The following sections cover specific settings concerning SIP and the connection to Session Manager.

8.2. Configure IP-DECT Base Station System Information

Select **DECT** in the left column and click on the **System** tab in the main window. Ensure that **Subscriptions** is set to **With System AC** and enter an appropriate **Authentication Code**, note this will be used again in subscribing the DECT handsets in **Section 6.3**. Select the appropriate country for **Tones**, note for these compliance tests **IRELAND** was selected. Select **Europe** for the **Frequency** and ensure that **Local R-Key Handling** is ticked. For **Coder** select **G711A** from the drop-down box note that this will be the same codec used in **Section 5.5**.

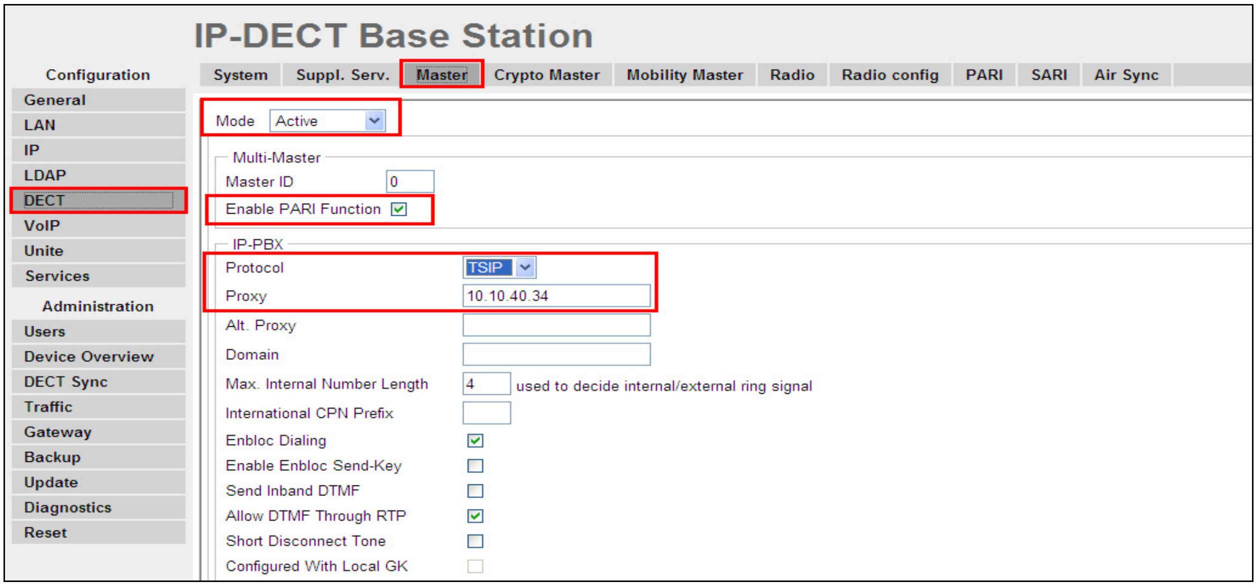


System Name	DECT
Password	••••••••
Confirm Password	••••••••
Subscriptions	With System AC
Authentication Code	9999
Tones	IRELAND
Default Language	English
Frequency	Europe
Enabled Carriers	0 ☑ 1 ☑ 2 ☑ 3 ☑ 4 ☑ 5 ☑ 6 ☑ 7 ☑ 8 ☑ 9 ☑
Local R-Key Handling	☑
No Transfer on Hangup	☐
No On-Hold Display	☐
Coder	G711A Frame (ms) 20 Exclusive ☐ SC ☐
Secure RTP	

8.3. Configure Session Manager Information

Select **DECT** in the left column and select the **Master** tab. Ensure the **Protocol** is set to **TSIP** if TCP is the chosen transport protocol and **SIP** if UDP is the chosen transport protocol and enter the Session Manager IP address for **Proxy**. Enter the length of digits used for internal numbers. All other values can be accepted as default.

Note: If TSIP is selected below a SIP Entity must be added for the Ascom IP Base Station as per **Section 6.2**.

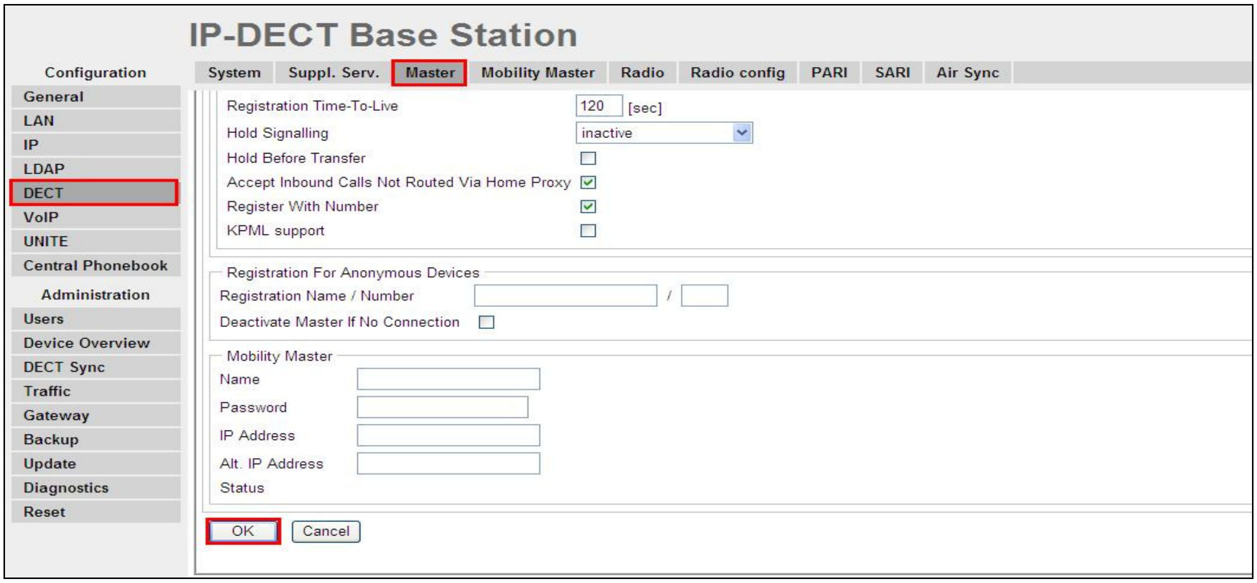


Mode: Active

Multi-Master
Master ID: 0
Enable PARI Function ☑

IP-PBX
Protocol: TSIP
Proxy: 10.10.40.34
Alt. Proxy:
Domain:
Max. Internal Number Length: 4 used to decide internal/external ring signal
International CPN Prefix:
Enbloc Dialing ☑
Enable Enbloc Send-Key ☐
Send Inband DTMF ☐
Allow DTMF Through RTP ☑
Short Disconnect Tone ☐
Configured With Local GK ☐

Scroll down and click on **OK** as highlighted below to save the new configuration.



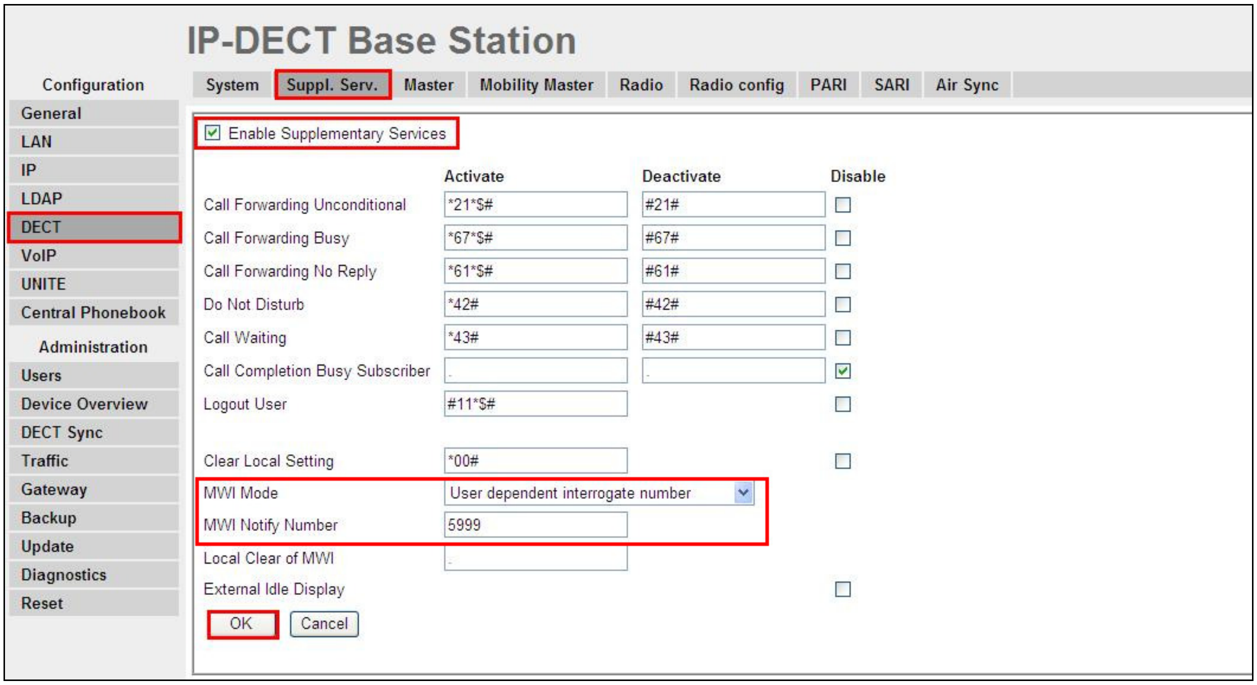
Registration Time-To-Live: 120 [sec]
Hold Signalling: inactive
Hold Before Transfer ☐
Accept Inbound Calls Not Routed Via Home Proxy ☑
Register With Number ☑
KPML support ☐

Registration For Anonymous Devices
Registration Name / Number: /
Deactivate Master If No Connection ☐

Mobility Master
Name:
Password:
IP Address:
Alt. IP Address:
Status

Click on the **Suppl. Serv.** tab and ensure that **Enable Supplementary Services** is checked. Take note of the activation and deactivation codes for services such as **Call Forwarding**, **Call Waiting** and **Do Not Disturb**. Click on **OK** when finished. These codes are unique to the Ascom DECT system.

Note that **MWI Mode** is set to **User dependant interrogate number** and the **MWI Notify Number** is set to the messaging voicemail number for the solution which is **5999**.

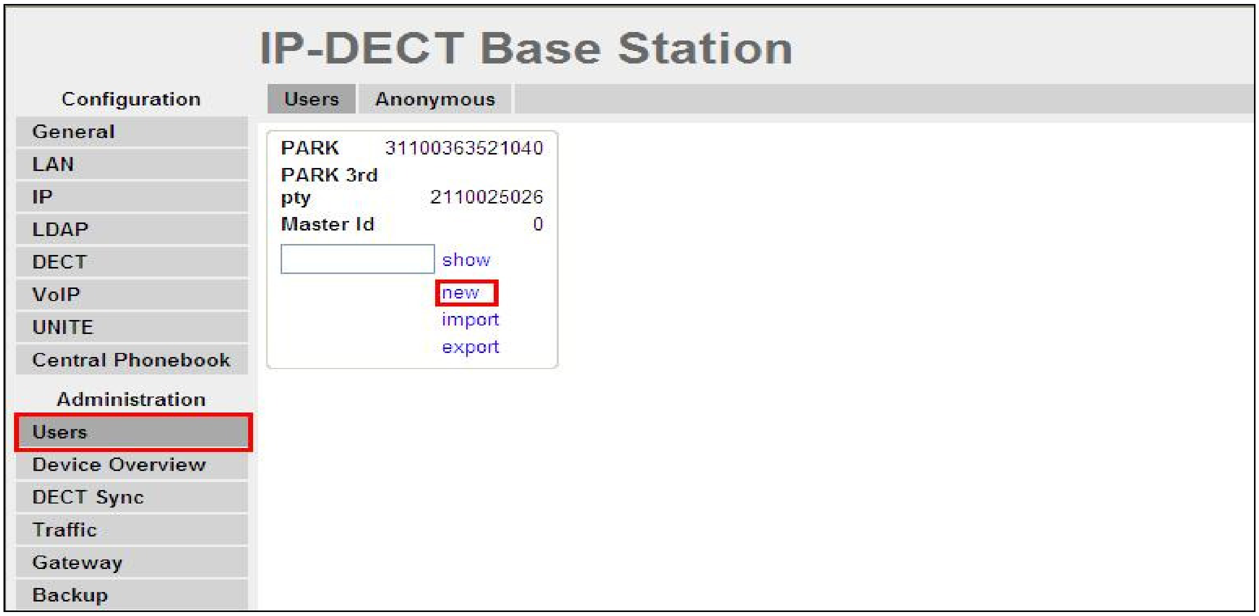


☑ Enable Supplementary Services

	Activate	Deactivate	Disable
Call Forwarding Unconditional	*21*$#	#21#	□
Call Forwarding Busy	*67*$#	#67#	□
Call Forwarding No Reply	*61*$#	#61#	□
Do Not Disturb	*42#	#42#	□
Call Waiting	*43#	#43#	□
Call Completion Busy Subscriber	.	.	☑
Logout User	#11*$#		□
Clear Local Setting	*00#		□
MWI Mode	User dependent interrogate number		
MWI Notify Number	5999		
Local Clear of MWI	.		
External Idle Display			□

8.4. Adding DECT Users

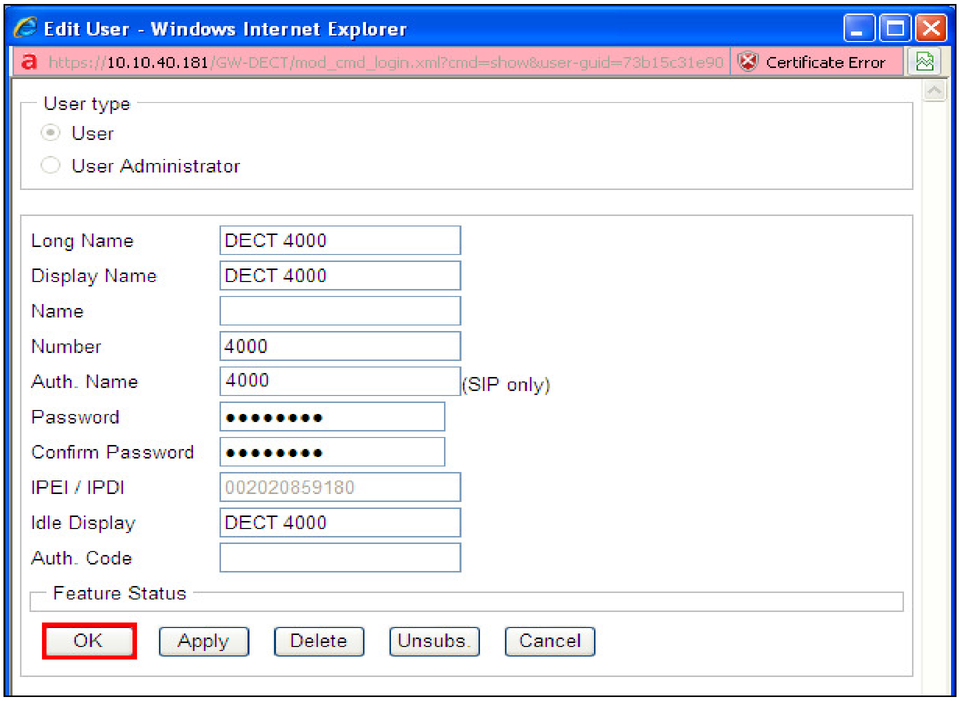
Click on **Users** in the left column and click **new** to add a new DECT user.



IP-DECT Base Station

PARK	31100363521040
PARK 3rd pty	2110025026
Master Id	0

Enter the appropriate information for the new DECT user and once all the information has been correctly filled in click on **OK** as highlighted. The Handset is registered with the DECT system, according to Ascom's documentation.



Edit User - Windows Internet Explorer

https://10.10.40.181/GW-DECT/mod_cmd_login.xml?cmd=show&user-guid=73b15c31e90

User type

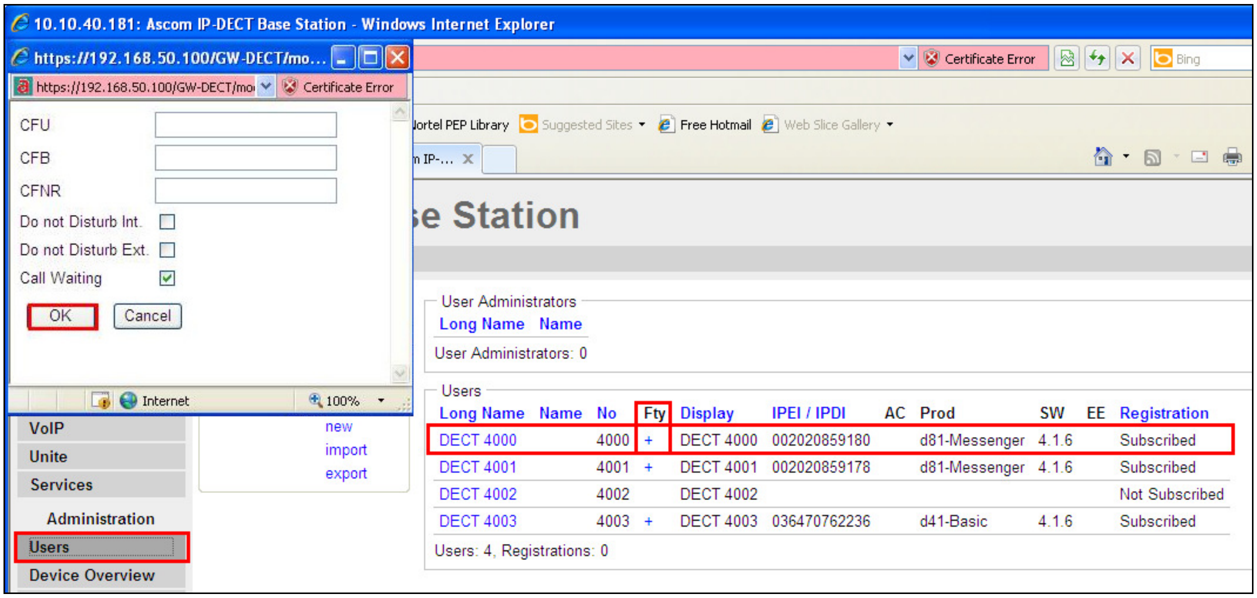
● User

○ User Administrator

Long Name	DECT 4000
Display Name	DECT 4000
Name	
Number	4000
Auth. Name	4000 (SIP only)
Password	••••••••
Confirm Password	••••••••
IPEI / IPDI	002020859180
Idle Display	DECT 4000
Auth. Code	

Feature Status

To change features such as **Call Waiting** or **Do not Disturb** click on the **+** icon under **Fty** as highlighted below. This opens a new window where these services can be selected or deselected. Click on **OK** once the appropriate services are selected.



CFU
CFB
CFNR
Do not Disturb Int. ☐
Do not Disturb Ext. ☐
Call Waiting ☑

OK Cancel

User Administrators

Long Name	Name

User Administrators: 0

Users

Long Name	Name	No	Fty	Display	IPEI / IPDI	AC	Prod	SW	EE	Registration
DECT 4000		4000	+	DECT 4000	002020859180		d81-Messenger	4.1.6		Subscribed
DECT 4001		4001	+	DECT 4001	002020859178		d81-Messenger	4.1.6		Subscribed
DECT 4002		4002		DECT 4002						Not Subscribed
DECT 4003		4003	+	DECT 4003	036470762236		d41-Basic	4.1.6		Subscribed

Users: 4, Registrations: 0

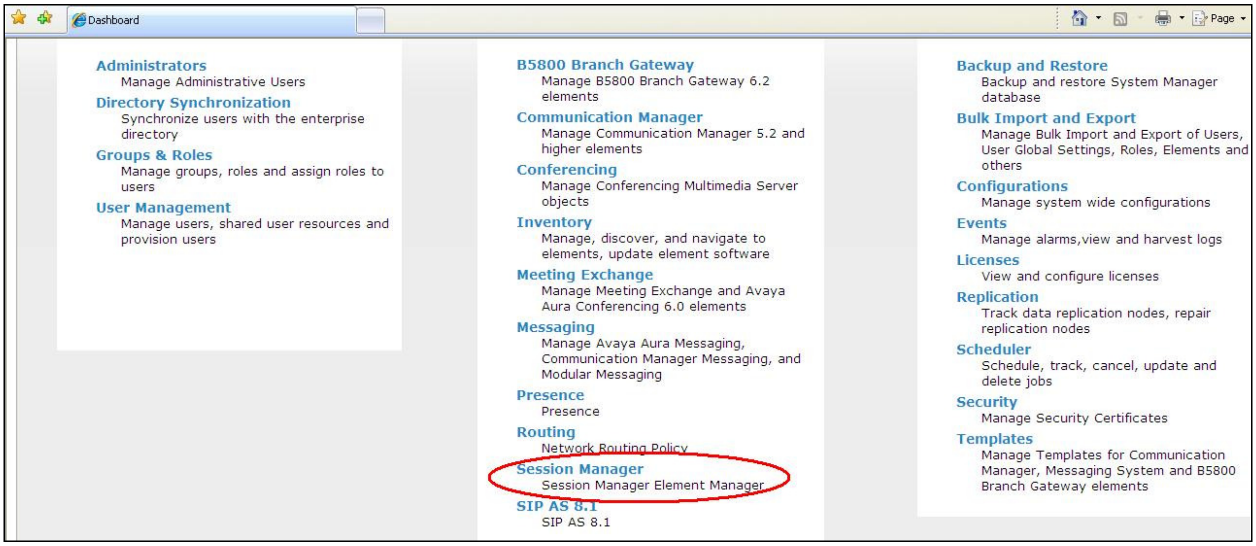
Telephony features, such as Call Waiting and Call Forwarding, can be programmed by entering feature codes on the handset. Please refer to the **Suppl. Serv**. tab in **Section 8.3**.

9. Verification Steps

The following steps can be taken to ensure that connections between Ascom DECT handsets and Session Manager and Communication Manager are up.

9.1. Session Manager Registration

Log into System Manager as done previously in **Section 6.1**, select **Session Manager** as highlighted below.



Administrators
Manage Administrative Users

Directory Synchronization
Synchronize users with the enterprise directory

Groups & Roles
Manage groups, roles and assign roles to users

User Management
Manage users, shared user resources and provision users

B5800 Branch Gateway
Manage B5800 Branch Gateway 6.2 elements

Communication Manager
Manage Communication Manager 5.2 and higher elements

Conferencing
Manage Conferencing Multimedia Server objects

Inventory
Manage, discover, and navigate to elements, update element software

Meeting Exchange
Manage Meeting Exchange and Avaya Aura Conferencing 6.0 elements

Messaging
Manage Avaya Aura Messaging, Communication Manager Messaging, and Modular Messaging

Presence
Presence

Routing
Network Routing Policy

Session Manager
Session Manager Element Manager

SIP AS 8.1
SIP AS 8.1

Backup and Restore
Backup and restore System Manager database

Bulk Import and Export
Manage Bulk Import and Export of Users, User Global Settings, Roles, Elements and others

Configurations
Manage system wide configurations

Events
Manage alarms,view and harvest logs

Licenses
View and configure licenses

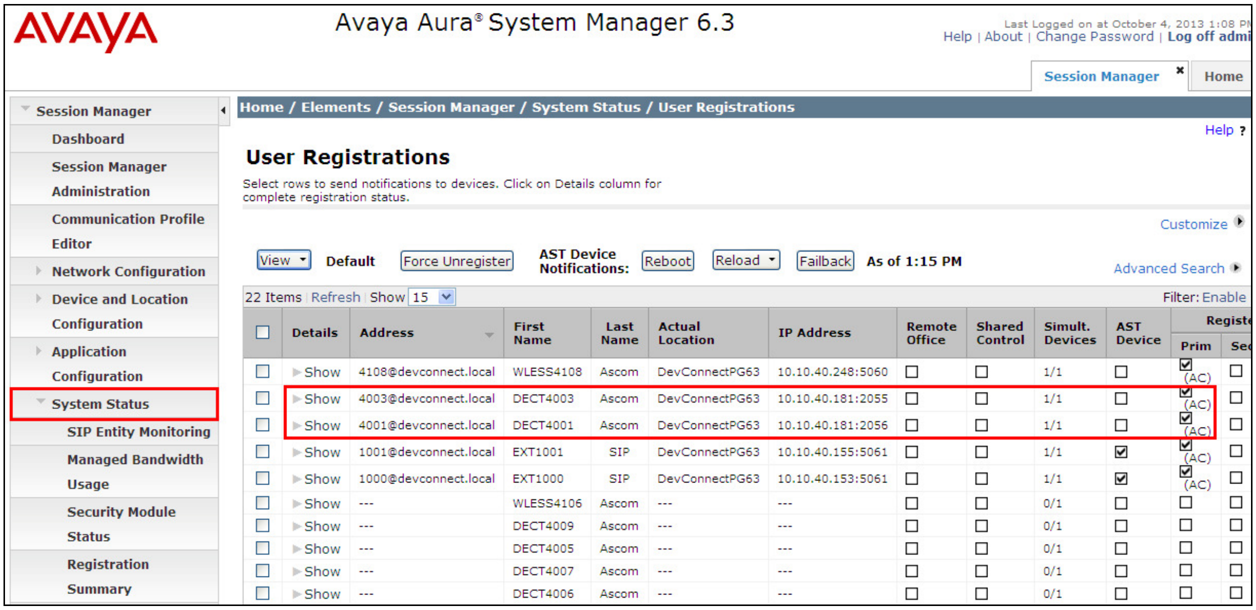
Replication
Track data replication nodes, repair replication nodes

Scheduler
Schedule, track, cancel, update and delete jobs

Security
Manage Security Certificates

Templates
Manage Templates for Communication Manager, Messaging System and B5800 Branch Gateway elements

Select **System Status** and **User Registrations** in the left column. This displays the users that are currently registered with Session Manager. The DECT users should show as being registered as they are below for extensions **4001** and **4003** highlighted.



Home / Elements / Session Manager / System Status / User Registrations

User Registrations

Select rows to send notifications to devices. Click on Details column for complete registration status.

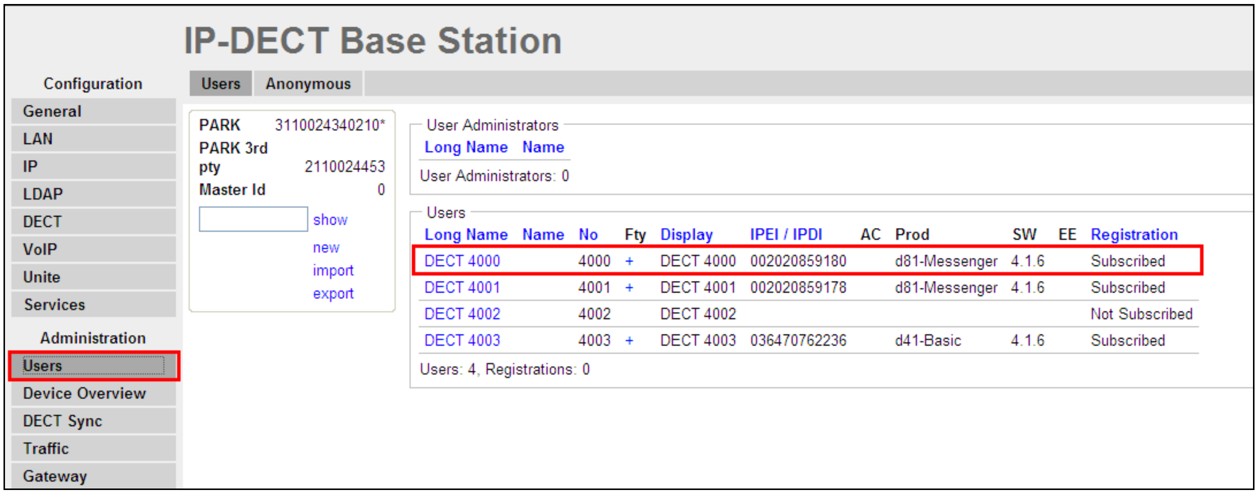
Default   AST Device Notifications: As of 1:15 PM

22 Items | Refresh | Show 15

□	Details	Address	First Name	Last Name	Actual Location	IP Address	Remote Office	Shared Control	Simult. Devices	AST Device	Registe	
											Prim	Se
□	Show	4108@devconnect.local	WLESS4108	Ascom	DevConnectPG63	10.10.40.248:5060	□	□	1/1	□	☑ (AC)	□
□	Show	4003@devconnect.local	DECT4003	Ascom	DevConnectPG63	10.10.40.181:2055	□	□	1/1	□	☑ (AC)	□
□	Show	4001@devconnect.local	DECT4001	Ascom	DevConnectPG63	10.10.40.181:2056	□	□	1/1	□	☑ (AC)	□
□	Show	1001@devconnect.local	EXT1001	SIP	DevConnectPG63	10.10.40.155:5061	□	□	1/1	☑	☑ (AC)	□
□	Show	1000@devconnect.local	EXT1000	SIP	DevConnectPG63	10.10.40.153:5061	□	□	1/1	☑	☑ (AC)	□
□	Show	---	WLESS4106	Ascom	---	---	□	□	0/1	□	□	□
□	Show	---	DECT4009	Ascom	---	---	□	□	0/1	□	□	□
□	Show	---	DECT4005	Ascom	---	---	□	□	0/1	□	□	□
□	Show	---	DECT4007	Ascom	---	---	□	□	0/1	□	□	□
□	Show	---	DECT4006	Ascom	---	---	□	□	0/1	□	□	□

9.2. Ascom DECT Registration

To verify that Ascom DECT Handsets are registered to the Ascom Base Station correctly click on **Users** in the left column and select the **Users** tab in the displayed window. Select **show** highlighted below, this displays the DECT handsets that are registered in the example below extensions **3010** and **3012** are registered correctly.



PARK	3110024340210*
PARK 3rd pty	2110024453
Master Id	0

User Administrators

Long Name	Name

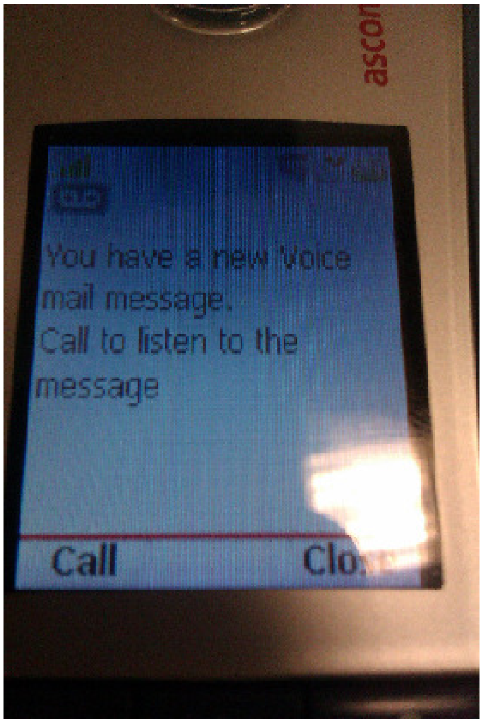
User Administrators: 0

Users

Long Name	Name	No	Fty	Display	IPEI / IPDI	AC	Prod	SW	EE	Registration
DECT 4000		4000	+	DECT 4000	002020859180		d81-Messenger	4.1.6		Subscribed
DECT 4001		4001	+	DECT 4001	002020859178		d81-Messenger	4.1.6		Subscribed
DECT 4002		4002		DECT 4002						Not Subscribed
DECT 4003		4003	+	DECT 4003	036470762236		d41-Basic	4.1.6		Subscribed

Users: 4, Registrations: 0

Check that MWI is working by leaving a voicemail for the DECT user. Once a voicemail message has been left the following message should appear on the DECT handset.



You have a new Voice mail message.
Call to listen to the message

10. Conclusion

These Application Notes describe the configuration steps required for Ascom's DECT IP Base Station and DECT Handsets to successfully interoperate with Avaya Aura® Communication Manager R6.3 and Avaya Aura® Session Manager R6.3 by registering the Ascom Handsets with Session Manager as third-party SIP phones. Please refer to **Section 2.2** for test results and observations.

11. Additional References

This section references documentation relevant to these Application Notes. The Avaya product documentation is available at http://support.avaya.com where the following documents can be obtained.

[1] *Administering Avaya Aura® Communication Manager,* Document ID 03-300509

[2] *Avaya Aura® Communication Manager Feature Description and Implementation,* Document ID 555-245-205

[3] *Implementing Avaya Aura® Session Manager* Document ID 03-603473

[4] *Administering Avaya Aura® Session Manager*, Doc ID 03-603324

Ascom's technical documentation is available through a local supplier. Please see a list of the documentation used for these Application Notes.

[6] *Installation and Operation Manual IP-DECT Base Station and IP-DECT Gateway (software version 7.0.x) (TD 92579EN)*

[7] *System Description Ascom IP-DECT System (TD 92375EN)*

[8] *System Planning Ascom IP-DECT System (TD 92422EN)*

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.