



## **Avaya Solution & Interoperability Test Lab**

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# **Application Notes for configuring Ascom IP-DECT with Avaya Aura® Communication Manager and Avaya Aura® Session Manager – Issue 1.0**

### **Abstract**

These Application Notes describe the configuration steps for provisioning Ascom IP-DECT R11 (V11.3.4) to interoperate with Avaya Aura® Communication Manager R8.1 and Avaya Aura® Session Manager R8.1.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as any observations noted in **Section 2.2**, to ensure that their own use cases are adequately covered by this scope and results.

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 IP-DECT R11 to interoperate with Avaya Aura® Communication Manager R8.1 and Avaya Aura® Session Manager R8.1. Ascom IP -DECT consists of DECT handsets and IP-DECT Access Points (IPBS3), which are also referred to as Base Stations. The DECT handsets are configured to register with Session Manager using SIP signalling and are also subscribed to the IPBS3 Access Points using DECT signalling. Each handset is configured as a SIP user on Communication Manager as Avaya 9620 SIP endpoint. The 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.

- IP (Internet Protocol) – Universal standard for inter-networking that maximizes scalability and interoperability.
- DECT (Digital Enhanced Cordless Telecommunications) - Secure radio communication standard that delivers superior voice quality over reserved radio frequency bands.
- IPBS3 (IP Base Station 3) – This is also referred to as Ascom IP-DECT Access Point or Base Station.

## 2. General Test Approach and Test Results

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

Ascom can use both UDP and TCP as the SIP transport protocol; however, 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 DECT master and standby base stations. The setup of a SIP Entity must use the “Endpoint Concentrator Connection Policy”. Refer to **Section 6.2** for configuration details.

Starting with Session Manager Release 6.3.9, an “Endpoint Concentrator” can be selected as a SIP Entity type. This Endpoint Concentrator type allows up to 1000 connections from a single IP address. The single IP address can be shared by multiple Windows instances running on a Virtualized server or multiple DECT handsets sharing the same base station IP address.

A new connection policy, Endpoint Concentrator, can be assigned to a SIP entity link. The Session Manager allows up to 1000 connections on that SIP entity link. The Endpoint Concentrator policy is an untrusted policy based on the current Default (endpoint) policy. That is, the requests arriving over the SIP entity link with the connection policy Endpoint Concentrator are challenged as for any other endpoint. To identify and administer the SIP entities hosting multiple endpoints, this release introduces a new entity type, Endpoint Concentrator.

**Note:** SIP Link Monitoring is not available for SIP entities of type Endpoint Concentrator.

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.

Avaya's formal testing and Declaration of Conformity is provided only on the headsets/handsets that carry the Avaya brand or logo. Avaya may conduct testing of non-Avaya headset/handset to determine interoperability with Avaya phones. However, Avaya does not conduct the testing of non-Avaya headsets/handsets for: Acoustic Pressure, Safety, Hearing Aid Compliance, EMC regulations, or any other tests to ensure conformity with safety, audio quality, long-term reliability or any regulation requirements.

Avaya recommends our customers implement Avaya solutions using appropriate security and encryption capabilities enabled by our products. The testing referenced in these DevConnect Application Notes included the enablement of supported encryption capabilities in the Avaya products. Readers should consult the appropriate Avaya product documentation for further information regarding security and encryption capabilities supported by those Avaya products.

Support for these security and encryption capabilities in any non-Avaya solution component is the responsibility of each individual vendor. Readers should consult the appropriate vendor-supplied product documentation for more information regarding those products.

For the testing associated with these Application Notes, the interface between Avaya systems and Ascom DECT handsets did not include use of any specific encryption features as requested by Ascom.

## **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, Avaya Digital, Ascom DECT endpoints and PSTN endpoints.

- Basic Calls
- Session Refresh Timer
- Long Duration Call
- Hold, Retrieve and Brokering (Toggle)
- Feature Access Code dialing
- Attended, Semi-attended and Blind Transfer
- Call Forwarding Unconditional, No Reply and Busy
- Call Waiting
- Call Park/Pickup
- EC500, where Avaya deskphone is the primary phone and DECT handset being the EC500 destination

- Do Not Disturb
- Calling Line Name/Identification
- Codec Support (G.711A, G.729A, G.722.2 (AMR-WB) tested)
- DTMF Support
- Voice Mail, Message Waiting Indication
- Serviceability

**Note:** Multi-Device Access (MDA) is not supported.

**Note:** Compliance testing does not include redundancy testing as standard. Where some LAN failures were simulated, and the results observed, there were no redundancy or failover tests performed.

## 2.2. Test Results

Tests were performed to verify interoperability between Ascom DECT handsets and Communication Manager deskphones. The tests were all functional in nature and performance testing or redundancy testing were not included.

The following observations/limitations were noted during testing.

1. All compliance testing was done using TCP (preferred) and UDP as the transport protocol.
2. Negotiation of G.722.2 (AMR-WB) between endpoints, such as the Ascom DECT handset, requires support for the codec to be configured on Communication Manager.
3. A SIP Entity with “Endpoint Concentrator” assigned was set up for the Ascom IP-DECT Base Station, the corresponding TCP entity links were setup as type “Endpoint Concentrator”.
4. When using Call Forward Busy set on Communication Manager and Ascom DECT device is busy, when called to, the DECT sends a “486 busy here” as expected and so Communication Manager will pass that on and not forward the call as intended.
5. When an Avaya endpoint or a DECT handset calls another DECT handset, after the called DECT handset declines the call, the display for the DECT calling party shows busy whereas the Avaya calling party receives the busy tone.
6. In the scenario where an Avaya station calls DECT1 and DECT1 does a semi-attended transfer to DECT2. The DECT2 display shows DECT1 information instead of the Avaya station information until the call is answered.
7. As per current design, DECT handsets cannot initiate a three-party conference however are able to join a conference.
8. DECT handsets do not have a redial button. User needs to use “Call List” and redial the numbers.
9. As per current design, DECT handsets do not support Multi-Device Access (MDA).
10. When using the EC500 (concurrent call) feature, if DECT handset or an Avaya endpoint answers the call before two rings, the call is dropped. This is due to the “Cellular Voice Mail Detection” field default value seen in “off-pbx-telephone configuration-set” form of Communication Manager. The default value for this field is “timed (seconds): 4” which

means that if Communication Manager receives an answer within 4 seconds then it will be considered as the cellular voicemail picking up the call, and so call will be dropped and proceed to do Communication Manager coverage processing instead. The workaround is to answer the call after 2 rings or change the “Cellular Voice Mail Detection” field value to “none” or decrease “timed” value. Note that changing the “off-pbx-telephone configuration-set” affects all users in the same set, so if cellular users are grouped with DECT handset users, calls may be answered by a cellular user’s voicemail instead of following the coverage criteria in Communication Manager.

11. A DECT handset is configured on an Avaya station as EC500. Call Avaya station, both Avaya station and DECT handset rings. Decline the call at DECT handset, Avaya station continues to ring as per normal design.

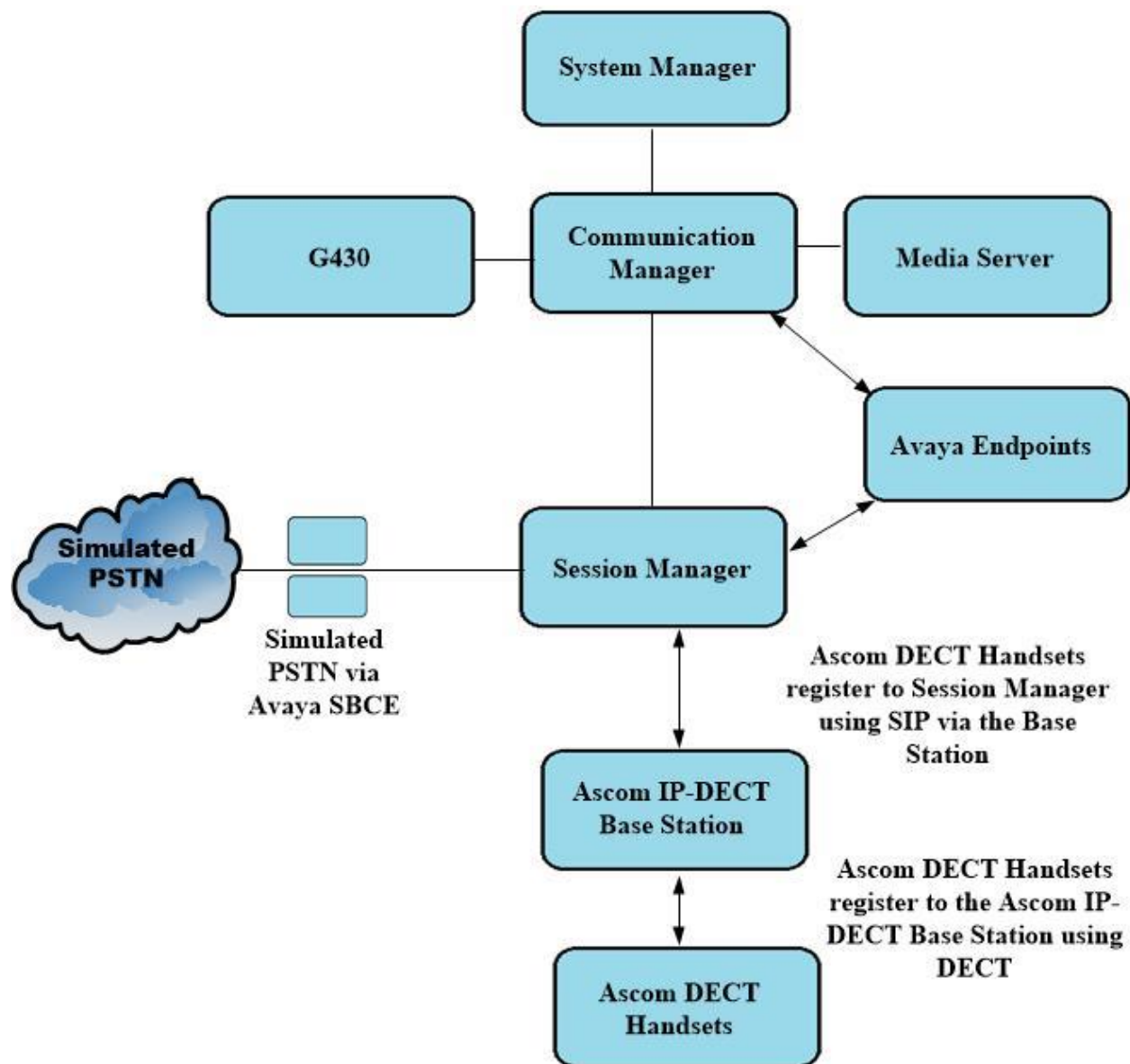
## 2.3. Support

Support from Avaya is available by visiting the website <http://support.avaya.com> and a list of product documentation can be found in **Section 10** of these Application Notes. Technical support for the Ascom DECT handsets can be obtained through a local Ascom supplier or Ascom global technical support:

- Email: [support@ascom.com](mailto:support@ascom.com)
- 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 IP-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, SIP and Digital deskphones on Communication Manager. During compliance testing the DECT base stations were configured by accessing them via a web interface on a Windows PC.



**Figure 1: Network Solution of Ascom IP-DECT with Avaya Aura® Communication Manager and Avaya Aura® Session Manager**

## 4. Equipment and Software Validated

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

Avaya Equipment	Release/Version
Avaya Aura® System Manager running on a virtual server	8.1.3.0 Build No. – 8.1.0.0.733078 Software Update Revision No: 8.1.3.0.1011784 Feature Pack 3
Avaya Aura® Session Manager running on a virtual server	8.1.3 Build No. – 8.1.3.0.813014
Avaya Aura® Communication Manager running on a virtual server	8.1.3 – FP3 R018x.01.0.890.0 Update ID 01.0.890.0-26568
Avaya Session Border Controller for Enterprise	8.1.1.0-26-19214
Avaya Aura® Media Server	8.0.2.138
Avaya G430 Media Gateway	41.16.0/1
Avaya J179 H.323 Deskphone	6.8304
Avaya J159 SIP Deskphone	4.0.7.1.5
Avaya 9408 Digital Phone	2.00
Ascom Equipment	Release/Version
Ascom IP-DECT Base Station (IPBS3)	V11.3.4 (R11)
Ascom DECT Handset D63 Talker	2.11.4

## 5. Configure Avaya Aura® Communication Manager

It is assumed that a fully functioning Communication Manager is in place with the necessary licensing with SIP trunks in place to Session Manager. For further information on the configuration of Communication Manager please see **Section 10** of these Application Notes.

**Note:** A printout of the Signalling and Trunk groups that were used during compliance testing can be found in the **Appendix** of these Application Notes.

The following sections go through the following.

- System Parameters
- Dial Plan Analysis
- Feature Access Codes
- Network Region
- IP Codec
- Coverage Path and Hunt Group for VoiceMail

### 5.1. Configure System Parameters

Ensure that the SIP endpoints license is valid as shown below by using the command **display system-parameters customer-options**.

display system-parameters customer-options		Page	1 of 12
OPTIONAL FEATURES			
G3 Version: V17	Software Package: Enterprise		
Location: 2	System ID (SID): 1		
Platform: 28	Module ID (MID): 1		
		USED	
Platform Maximum Ports:		48000	168
Maximum Stations:		36000	44
Maximum XMOBILE Stations:		36000	0
Maximum Off-PBX Telephones - EC500:		41000	2
<b>Maximum Off-PBX Telephones - OPS:</b>		<b>41000</b>	<b>20</b>
Maximum Off-PBX Telephones - PBFMC:		41000	0
Maximum Off-PBX Telephones - PVFMC:		41000	0
Maximum Off-PBX Telephones - SCCAN:		0	0
Maximum Survivable Processors:		313	1

Ascom have asked that the SIP Endpoint Managed Transfer parameter be set to n as an incorrectly set parameter may interfere with attended transfers.

Type **change system-parameters features** and on **Page 19** ensure that the **SIP Endpoint Managed Transfer** parameter is set to **n**.

change system-parameters features	Page 19 of 19
FEATURE-RELATED SYSTEM PARAMETERS	
IP PARAMETERS	
Direct IP-IP Audio Connections? y	IP Audio Hairpinning? n
Synchronization over IP? n	Allow SIP-H323 Video in SDP? n
Initial INVITE with SDP for secure calls? y	
<b>SIP Endpoint Managed Transfer? n</b>	
Expand ISDN Numbers to International for 1XCES? n	
CALL PICKUP	
Maximum Number of Digits for Directed Group Call Pickup: 4	
Call Pickup on Intercom Calls? y	Call Pickup Alerting? y
Temporary Bridged Appearance on Call Pickup? y	Directed Call Pickup? y
Extended Group Call Pickup: simple	
Enhanced Call Pickup Alerting? n	
Call Pickup for Call to Coverage Answer Group? y	
Display Information With Bridged Call? y	
Keep Bridged Information on Multiline Displays During Calls? y	
PIN Checking for Private Calls? n	

## 5.2. 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 **21**. Feature Access Codes (**fac**) use digits **8** and **9** and use characters **\*** or **#**.

change dialplan analysis						Page 1 of 12		
DIAL PLAN ANALYSIS TABLE								
Location: all						Percent Full: 5		
Dialed String	Total Length	Call Type	Dialed String	Total Length	Call Type	Dialed String	Total Length	Call Type
21	4	ext						
3	4	udp						
6	4	ext						
8	1	fac						
9	1	fac						
*8	4	dac						
*	3	fac						
#	3	fac						

### 5.3. Configure Feature Access Codes

Use the **change feature-access-codes** command to configure access codes which can be entered from DECT handsets to initiate Communication Manager call features. These access codes must be compatible with the dial plan described in **Section 5.2**. Some of the access codes configured during compliance testing are shown below.

change feature-access-codes			Page	1 of	12
FEATURE ACCESS CODE (FAC)					
Abbreviated Dialing List1 Access Code: *11					
Abbreviated Dialing List2 Access Code: *12					
Abbreviated Dialing List3 Access Code: *13					
Abbreviated Dial - Prgm Group List Access Code: *10					
Announcement Access Code: *27					
Answer Back Access Code: #02					
Attendant Access Code:					
Auto Alternate Routing (AAR) Access Code: 8					
Auto Route Selection (ARS) - Access Code 1: 9			Access Code 2:		
Automatic Callback Activation: *05			Deactivation: #05		
Call Forwarding Activation Busy/DA: *03			All: *04		Deactivation: #04
Call Forwarding Enhanced Status: *73			Act: *74		Deactivation: #74
Call Park Access Code: *02					
Call Pickup Access Code: *09					
CAS Remote Hold/Answer Hold-Unhold Access Code:					
CDR Account Code Access Code: *14					
Change COR Access Code:					
Change Coverage Access Code:					
Conditional Call Extend Activation:			Deactivation:		
Contact Closure			Open Code:		Close Code:

## 5.4. Configure Network Region

Use **change ip-network-region x** (where x is the network region to be configured) to assign an appropriate domain name to be used by Communication Manager, in the example below **devconnect.local** is used. Note that this domain is also configured in **Section 6.1.1**.

```
change ip-network-region 1                                     Page 1 of 20
                                                                IP NETWORK REGION
    Region: 1          NR Group: 1
    Location: 1        Authoritative Domain: devconnect.local
        Name: PG Default      Stub Network Region: n
    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? n
        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
    H.323 IP ENDPOINTS      AUDIO RESOURCE RESERVATION PARAMETERS
                                RSVP Enabled? n
        H.323 Link Bounce Recovery? y
        Idle Traffic Interval (sec): 20
        Keep-Alive Interval (sec): 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 DECT handsets. During compliance testing the codecs **G.711A**, **G.729A** and **G.722.2** were tested.

```
change ip-codec-set 1                                         Page 1 of 2
                                                                IP MEDIA PARAMETERS
    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
3: G.722.2     n            1         20
4: G.722-64K    2            2         20
5:
6:
7:
    Media Encryption      Encrypted SRTCP: enforce-unenc-srtcp
1: 1-srtp-aescm128-hmac80
2: none
3:
4:
```

## 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 **h6**: Hunt Group 6 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: h6                Rng:      Point2:
  Point3:                    Point4:
  Point5:                    Point6:
```

The hunt group used for compliance testing is shown below. Note that on **Page 1** the **Group Extension** is **6666**, which is used to dial for messaging and **Group Type** is set to **ucd-mia**.

```
display hunt-group 6                                     Page 1 of 60

                                HUNT GROUP

                                Group Number: 6                ACD? n
                                Group Name: Messaging           Queue? n
                                Group Extension: 6666           Vector? n
                                Group Type: ucd-mia             Coverage Path: 1
                                TN: 1                          Night Service Destination:
                                COR: 1                          MM Early Answer? n
                                Security Code:                  Local Agent Preference? n
                                ISDN/SIP Caller Display: mbr-name

SIP URI::
```

On **Page 2 Message Center** is set to **sip-adjunct**.

display hunt-group 6		Page 2 of 60	
HUNT GROUP			
<b>Message Center: sip-adjunct</b>			
Voice Mail Number	Voice Mail Handle	Routing Digits	
		(e.g., AAR/ARS Access Code)	
6666	6666	9	

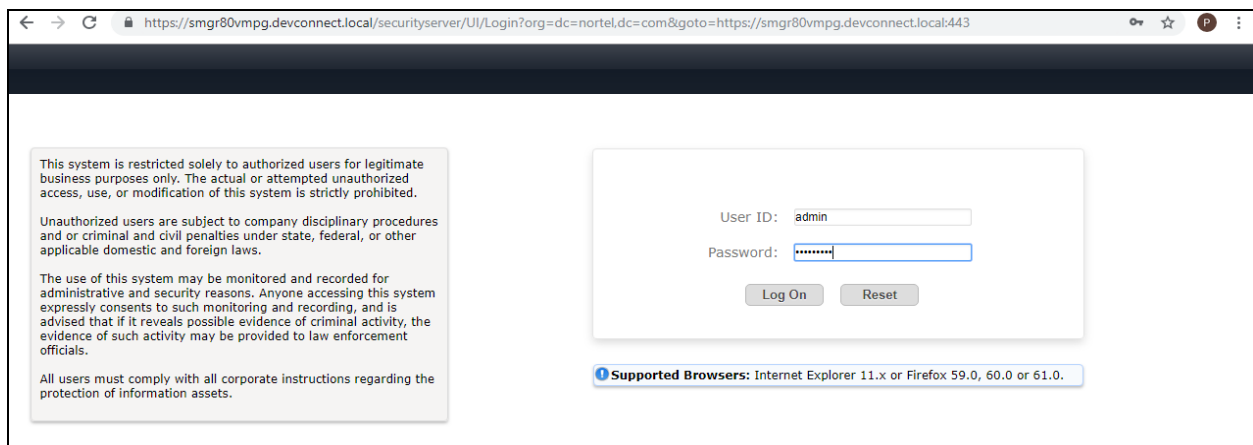
## 6. Configure Avaya Aura® Session Manager

This section provides the procedures for configuring Session Manager. Session Manager is configured via System Manager. The procedures include the following areas:

- Domains and Locations
- Configure SIP Entity and Entity Link
- Adding Ascom SIP Users

To make changes on Session Manager a web session is established to System Manager. Log into System Manager by opening a web browser and navigating to <https://<System Manager FQDN>/SMGR>. Enter the appropriate credentials for the **User ID** and **Password** and click on **Log On**.

**Note:** The screen shots on this section were all taken for the same solution test with Session Manager release 8.0. There is no difference between the setup necessary to connect to Session Manager release 8.0 and release 8.1, therefore the screen shots below are also valid to demonstrate the correct setup with Session Manager release 8.1.



← → ↻ <https://smgr80vmppg.devconnect.local/securityserver/UI/Login?org=dc=nortel,dc=com&goto=https://smgr80vmppg.devconnect.local:443> 🔍 ☆ ⓘ

This system is restricted solely to authorized users for legitimate business purposes only. The actual or attempted unauthorized access, use, or modification of this system is strictly prohibited.

Unauthorized users are subject to company disciplinary procedures and or criminal and civil penalties under state, federal, or other applicable domestic and foreign laws.

The use of this system may be monitored and recorded for administrative and security reasons. Anyone accessing this system expressly consents to such monitoring and recording, and is advised that if it reveals possible evidence of criminal activity, the evidence of such activity may be provided to law enforcement officials.

All users must comply with all corporate instructions regarding the protection of information assets.

User ID:

Password:

**Supported Browsers:** Internet Explorer 11.x or Firefox 59.0, 60.0 or 61.0.

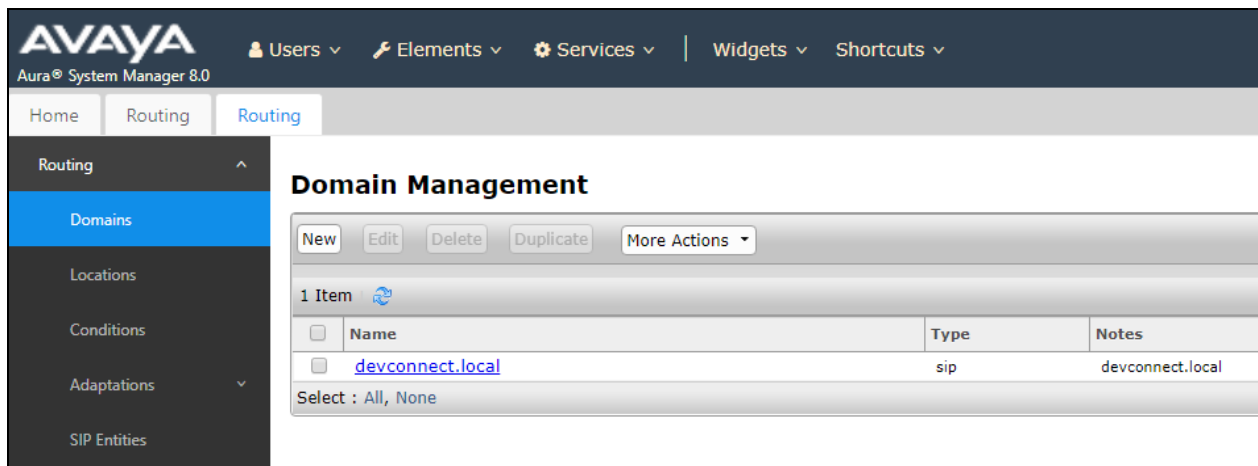
Once logged in navigate to **Elements** and click on **Routing** (not shown).

## 6.1. Domains and Locations

**Note:** It is assumed that a domain and a location have already been configured, therefore a quick overview of the domain and location that was used in compliance testing is provided here.

### 6.1.1. Display the Domain

Select **Domains** from the left window. This will display the domain configured on Session Manager. For compliance testing this domain was **devconnect.local** as shown below. If a domain is not already in place, click on **New**. This will open a new window (not shown) where the domain can be added.

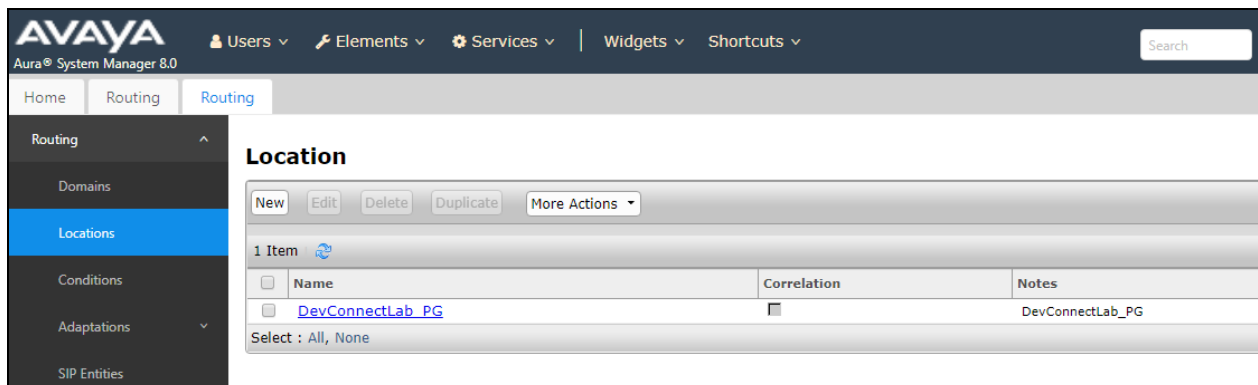


The screenshot shows the Avaya Aura System Manager 8.0 interface. The top navigation bar includes 'Users', 'Elements', 'Services', 'Widgets', and 'Shortcuts'. The left sidebar has 'Routing' selected, and the 'Domains' sub-menu is active. The main content area is titled 'Domain Management' and contains a table with one item: 'devconnect.local' of type 'sip' with notes 'devconnect.local'.

Name	Type	Notes
devconnect.local	sip	devconnect.local

### 6.1.2. Display the Location

Select **Locations** from the left window and this will display the location setup. The example below shows the location **DevConnectLab\_PG** which was used for compliance testing. If a location is not already in place, then one must be added to include the IP address range of the Avaya solution. Click on **New** to add a new location.



The screenshot shows the Avaya Aura System Manager 8.0 interface. The top navigation bar includes 'Users', 'Elements', 'Services', 'Widgets', and 'Shortcuts'. The left sidebar has 'Routing' selected, and the 'Locations' sub-menu is active. The main content area is titled 'Location' and contains a table with one item: 'DevConnectLab\_PG' with correlation and notes 'DevConnectLab\_PG'.

Name	Correlation	Notes
DevConnectLab_PG		DevConnectLab_PG

## 6.2. Configure SIP Entity and Entity Link

Clicking on **SIP Entities** in the left window 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's DECT handsets.

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

There is no SIP Entity required if UDP is chosen for the transport protocol in **Section 7.3**, however 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 IPBS3. 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.

Name	FQDN or IP Address	Type	Notes
AA Messaging V7	10.10.40.23	SIP Trunk	AA Messaging V7
CM71vmppg	10.10.40.47	CM	CM71vmppg
CM80vmppg	10.10.40.59	CM	CM80vmppg
CS1KPG1	10.10.40.111	SIP Trunk	CS1000 (CS1KPG1)
EP72vmppg	10.10.40.63	Voice Portal	EP72vmppg
EP_Oceana	10.10.41.16	Voice Portal	EP_Oceana
SM80vmppg	10.10.40.58	Session Manager	SM80vmppg
StephensCM	10.10.16.23	CM	StephensCM
StevesEP	10.10.16.20	Voice Portal	StevesEP

Enter a suitable **Name** and enter the **IP Address** of the DECT Base Station. Select **Endpoint Concentrator** as the **Type**. Under Entity Links, ensure that **TCP** is selected for the **Protocol** and **5060** for the **Port**. Click on **Commit** once completed.

**SIP Entity Details**

**General**

\* Name:

\* FQDN or IP Address:

Type:

Notes:

Minimum TLS Version:

Credential name:

Securable: ☐

**Entity Links**

Override Port & Transport with DNS SRV: ☐

Add 
Filter: [Enable](#)

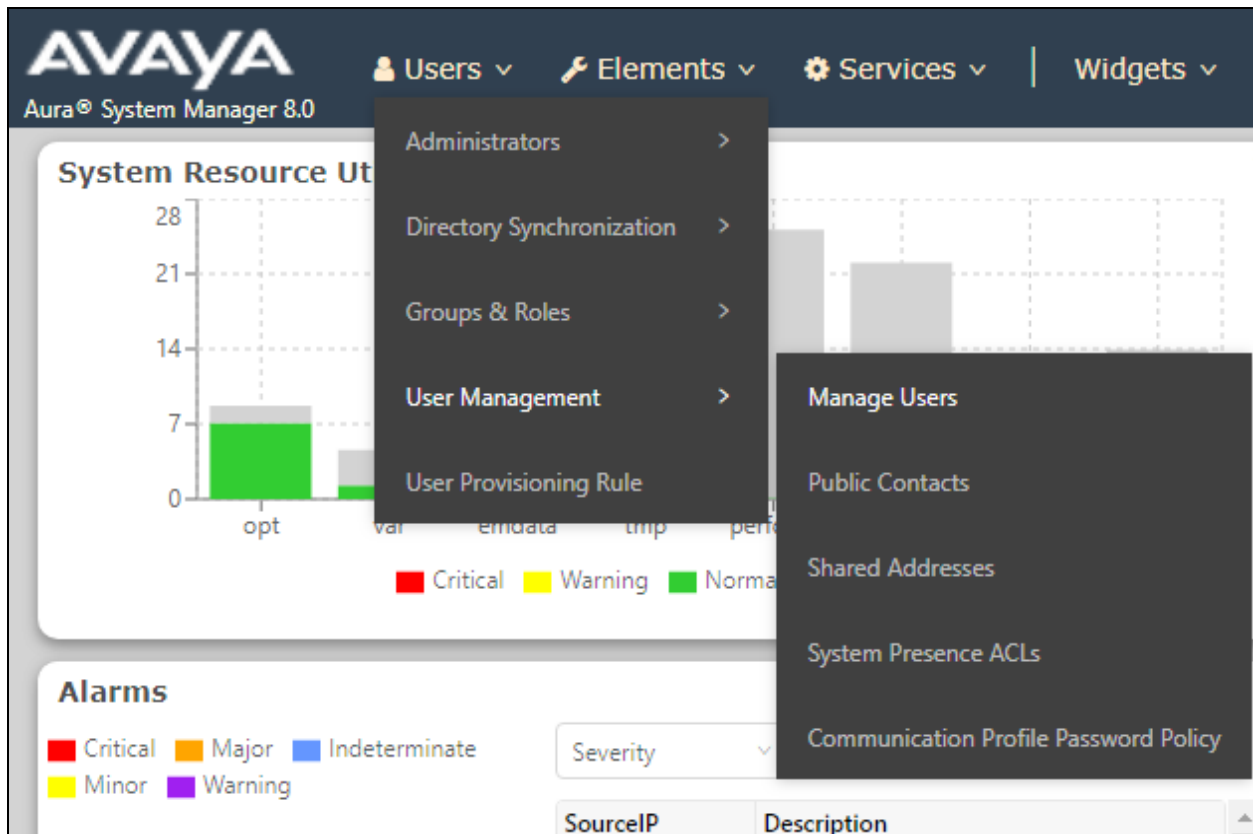
1 Item

<input type="checkbox"/>	Name	SIP Entity 1	Protocol	Port	SIP Entity 2	Port	Connection Policy	Deny New Service
<input type="checkbox"/>	* SM80vmg_Ascm DECT	SM80vmg	TCP	* 5060	Ascom DECT Master	* 5060	endpt conc	<input type="checkbox"/>

Select : All, None

### 6.3. Adding Ascom SIP Users

From the home page click on **User Management** → **Manager Users** shown below.



From **Manager Users** section, click on **New** to add a new SIP user.

**AVAYA**  
 Aura® System Manager 8.0

Users ▾ Elements ▾ Services ▾ Widgets ▾ Shortcuts ▾

Search

admin

Home
 User Management

User Management
 Manage Users
 Public Contacts
 Shared Addresses
 System Presence ACLs
 Communication Profile ...

Home / Users / Manage Users
 Help ?

Search

View Edit **+ New** Duplicate Delete More Actions Options

	First Name ▾	Surname ▾	Display Name ▾	Login Name ▾	SIP Handle ▾
<input type="checkbox"/>	DECT2150	Ascom	Ascom, DECT2150	2150@devconnect.local	2150
<input type="checkbox"/>	DECT2151	Ascom	Ascom, DECT2151	2151@devconnect.local	2151
<input type="checkbox"/>	DECT2152	Ascom	Ascom, DECT2152	2152@devconnect.local	2152
<input type="checkbox"/>	DECT2153	Ascom	Ascom, DECT2153	2153@devconnect.local	2153
<input type="checkbox"/>	i62_2154	Ascom	Ascom, i62_2154	2154@devconnect.local	2154
<input type="checkbox"/>	i62_2155	Ascom	Ascom, i62_2155	2155@devconnect.local	2155
<input type="checkbox"/>	i62_2156	Ascom	Ascom, i62_2156	2156@devconnect.local	2156
<input type="checkbox"/>	i62_2157	Ascom	Ascom, i62_2157	2157@devconnect.local	2157
<input type="checkbox"/>	MYCO2158	Ascom	Ascom, MYCO2158	2158@devconnect.local	2158
<input type="checkbox"/>	MYCO2159	Ascom	Ascom, MYCO2159	2159@devconnect.local	2159

Select All

Total Users : 23
 1 2 3
 10 / page
 Goto

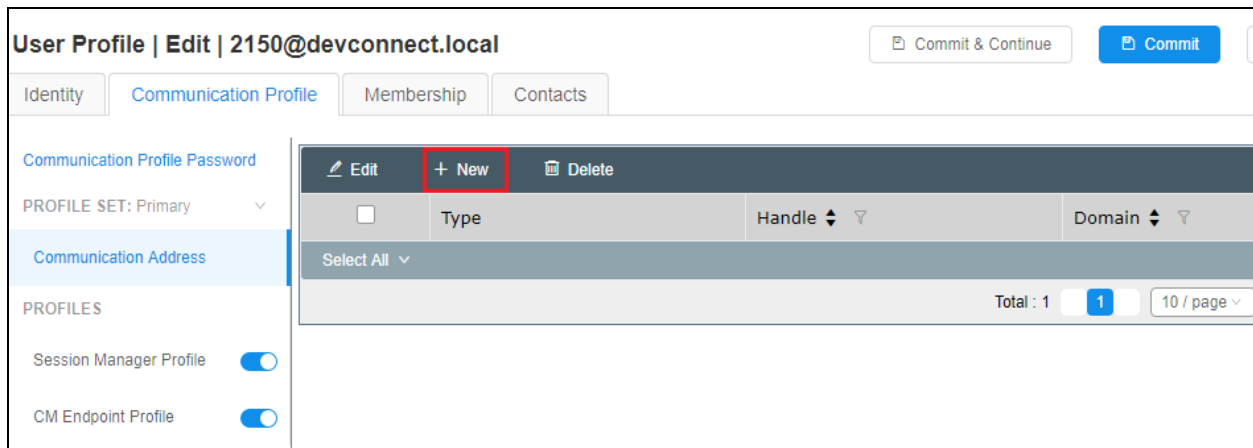
Under the **Identity** tab fill in the user's **Last Name** and **First Name** as shown below. Enter the **Login Name**, following the format of "user id@domain". The remaining fields can be left as default.

The screenshot shows the 'User Profile | Edit | 2150@devconnect.local' form with the 'Identity' tab selected. The form contains various fields for user information. The 'Basic Info' section on the left lists 'Address' and 'LocalizedName'. The main form area includes a 'User Provisioning Rule' dropdown, and several input fields for 'Last Name', 'First Name', 'Login Name', 'Description', 'Password', 'Confirm Password', 'Endpoint Display Name', 'Language Preference', 'Employee ID', 'Last Name (Latin Translation)', 'First Name (Latin Translation)', 'Middle Name', 'Email Address', 'User Type', 'Localized Display Name', 'Title Of User', 'Time Zone', and 'Department'. The 'Login Name' field is populated with '2150@devconnect.local'.

Under the **Communication Profile** tab enter **Communication Profile Password** and **Re-enter Comm-Profile Password**, note that his password is required when configuring the DECT handset in **Section 7.4**.

The screenshot shows the 'User Profile | Edit | 2150@devconnect.local' form with the 'Communication Profile' tab selected. The form displays 'Communication Profile Password' and 'Communication Address' sections. A modal dialog box titled 'Comm-Profile Password' is open, prompting the user to enter a 'Comm-Profile Password' and 'Re-enter Comm-Profile Password'. The 'Re-enter' field has a green checkmark indicating it matches. The dialog also includes a 'Generate Comm-Profile Password' link, 'Cancel', and 'OK' buttons. The background form shows the 'Communication Profile' tab with a table of profiles and a sidebar with 'Session Manager Profile' and 'CM Endpoint Profile' toggles.

Staying on the **Communication Profile** tab, click on **New** to add a new **Communication Address**.



User Profile | Edit | 2150@devconnect.local

Commit & Continue Commit

Identity Communication Profile Membership Contacts

Communication Profile Password

PROFILE SET: Primary

Communication Address

PROFILES

Session Manager Profile

CM Endpoint Profile

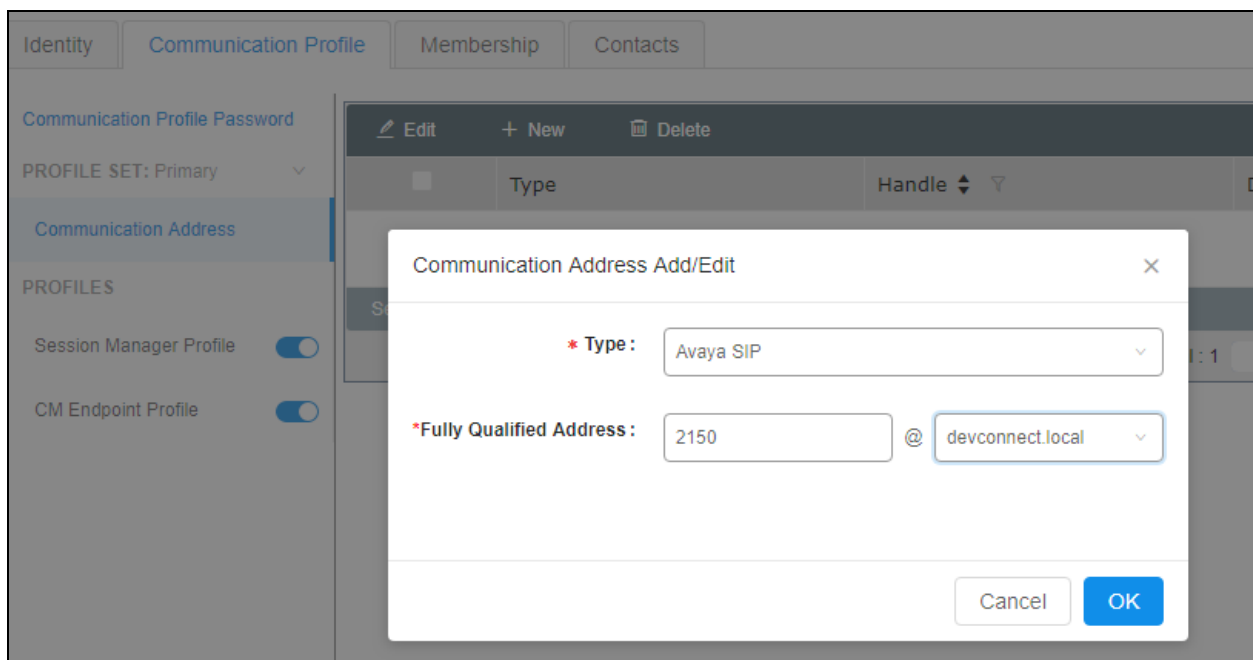
Edit + New Delete

Type Handle Domain

Select All

Total: 1 1 10 / page

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



Identity Communication Profile Membership Contacts

Communication Profile Password

PROFILE SET: Primary

Communication Address

PROFILES

Session Manager Profile

CM Endpoint Profile

Edit + New Delete

Type Handle Domain

Communication Address Add/Edit

\* Type: Avaya SIP

\*Fully Qualified Address: 2150 @ devconnect.local

Cancel OK

Ensure **Session Manager Profile** is checked and enter the **Primary Session Manager** details, enter the **Origination Sequence** and the **Termination Sequence**. Scroll down to complete the profile.

Identity	Communication Profile	Membership	Contacts
<b>Communication Profile Password</b>			
PROFILE SET: Primary ▼			
Communication Address			
PROFILES			
Session Manager Profile <input checked="" type="checkbox"/>			
CM Endpoint Profile <input checked="" type="checkbox"/>			
<b>SIP Registration</b>			
* Primary Session Manager :		SM80vmpg	<input type="text"/> ⓘ
Secondary Session Manager :		Start typing...	<input type="text"/> ⓘ
Survivability Server :		Start typing...	<input type="text"/> ⓘ
Max. Simultaneous Devices :		1	▼
Block New Registration When <input type="checkbox"/>			
Maximum Registrations			
Active? *			
<b>Application Sequences</b>			
Origination Sequence :		CMAPPSEQ	▼
Termination Sequence :		CMAPPSEQ	▼

Enter the **Home Location**, this should be the location configured in **Section 6.1.2**. Click on Commit at the top of the page (not shown).

### Application Sequences

Origination Sequence : 

CMAPPSEQ

Termination Sequence : 

CMAPPSEQ

### Emergency Calling Application Sequences

Emergency Calling Origination Sequence : 

Select

Emergency Calling Termination Sequence : 

Select

### Call Routing Settings

\* Home Location : 

DevConnectLab\_PG

Conference Factory Set : 

Select

### Call History Settings

Enable Centralized Call History? : ☐

Ensure that **CM Endpoint Profile** is selected in the left window. Select the Communication Manager that is configured for the **System** and choose the **9620SIP\_DEFAULT\_CM\_8\_1** as the **Template**. Enter the appropriate **Voice Mail Number** and **Sip Trunk** should be set to **aar**, providing that the routing is setup correctly on Communication Manager. The **Profile Type** should be set to **Endpoint** and the **Extension** is the number assigned to the DECT handset. Click on **Endpoint Editor** to configure the buttons and features for that handset on Communication Manager.

User Profile | Edit | 2150@devconnect.local

Commit & Continue

Commit

Cancel

Identity

Communication Profile

Membership

Contacts

Communication Profile Password

PROFILE SET: Primary

Communication Address

PROFILES

Session Manager Profile

CM Endpoint Profile

\* System :

CM80vmpg

\* Profile Type :

Endpoint

Use Existing Endpoints :

☐

\* Extension :

2150

Template :

9620SIP\_DEFAULT\_CM\_8\_1

\* Set Type :

9620SIP

\* Sub Type :

Select

\* Terminal Number :

0000

System ID :

Enter System Id

Security Code :

Enter Security Code

Port :

IP

Voice Mail Number :

6666

Preferred Handle :

Select

Calculate Route Pattern :

☐

Sip Trunk :

aar

SIP URI :

Select

Enhanced Callr-Info display for 1-line phones :

☐

Delete on Unassign from User or on Delete User :

☒

Override Endpoint Name and Localized Name :

☒

Allow H.323 and SIP Endpoint Dual Registration :

☐

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. The **Class of Restriction** and **Class of Service** should be set to the appropriate values for the DECT handset. This may vary depending on what level of access/permissions the handset has been given. Other tabs can be checked but for compliance testing the values were left as default. Click on Done (not shown) to complete.

**Note:** For compliance testing the default value of three call appearance buttons were used. This can be changed under the **Button Assignment** tab.

The screenshot shows the 'General Options' tab of a configuration window. The tabs at the top are: General Options (G) \*, Feature Options (F), Site Data (S), Abbreviated Call Dialing (A), Enhanced Call Fwd (E), Button Assignment (B), and Group Membership (M). The main area contains the following fields:

- Class of Restriction (COR):** 1
- Emergency Location Ext:** 2150
- Tenant Number:** 1
- SIP Trunk:** aar
- Coverage Path 1:** 1
- Lock Message:** ☐
- Multibyte Language:** Not Applicable
- Class Of Service (COS):** 1
- Message Lamp Ext.:** 2150
- Type of 3PCC Enabled:** None
- Coverage Path 2:** (empty)
- Localized Display Name:** Ascom, DECT2150
- Enable Reachability for Station Domain Control:** system
- SIP URI:** (empty)
- Primary Session Manager:**
  - IPv4:** 10.10.40.58
  - IPv6:** (empty)

Once the **CM Endpoint Profile** is completed correctly, click on **Commit** to save the new user.

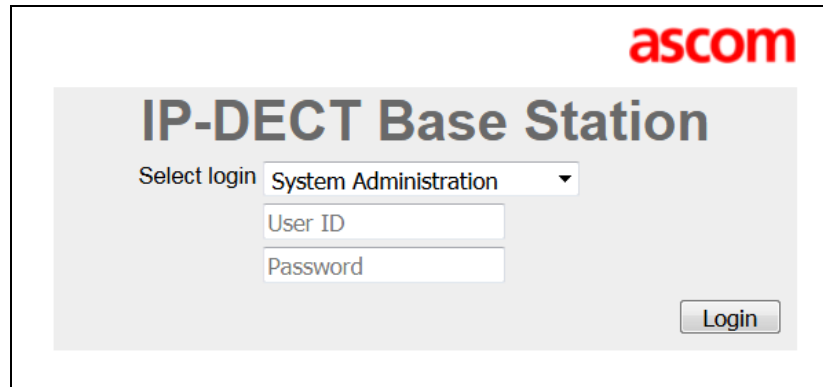
The screenshot shows the 'User Profile | Edit | 2150@devconnect.local' window. The tabs at the top are: Identity, Communication Profile, Membership, and Contacts. The 'Communication Profile' tab is selected. The left sidebar shows 'PROFILES' with 'Session Manager Profile' and 'CM Endpoint Profile' (selected). The main area contains the following fields:

- System:** CM80vmg
- Profile Type:** Endpoint
- Extension:** 2150
- Set Type:** 9620SIP
- Sub Type:** Select
- Terminal Number:** (empty)
- System ID:** Enter System Id
- Security Code:** Enter Security Code
- Port:** IP
- Voice Mail Number:** 6666
- Preferred Handle:** Select
- Calculate Route Pattern:** ☐
- Sip Trunk:** aar
- SIP URI:** Select
- Enhanced Callr-Info display for 1-line phones:** ☐
- Delete on Unassign from User or on Delete User:** ☒
- Override Endpoint Name and Localized Name:** ☒
- Allow H.323 and SIP Endpoint Dual Registration:** ☐

Buttons at the top right: Commit & Continue, Commit, Cancel.

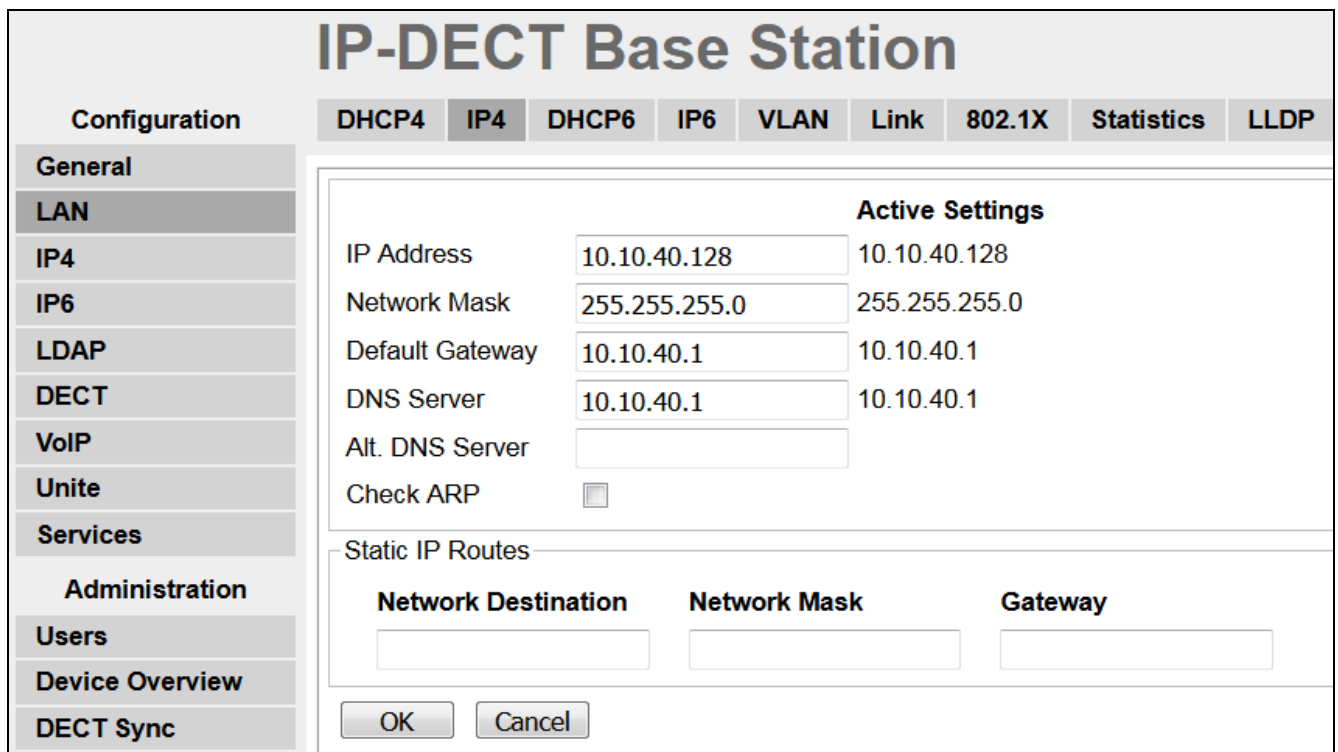
## 7. Configure Ascom DECT Base Station and Handsets

The configuration of the DECT base station and the DECT handsets are both achieved through an http session to the web interface of the DECT base station acting as Master. Open a web session to the IP address of the DECT base station and select **System Administration** as shown below. Enter the proper credentials for **User ID** and **Password** and click on **Login**.



### 7.1. Configure DECT Base Station IP address

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 **IP4** tab. Enter the **IP Address**, **Network Mask**, **Default Gateway** and **DNS Server** information of the DECT Base Station and click on **OK**. Ensure also that DHCP mode is set to disabled under the **DHCP** tab (not shown).



Please refer to Ascom's documentation listed in **Section 10** of these Application Notes for further information about DECT configuration. The following sections cover specific settings concerning SIP and the connection to Session Manager.

## 7.2. 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** (this is used in **Section 7.4** to subscribe the DECT handset to the base station). Note that the password seen here is not the password for the SIP users on Session Manager. Select the appropriate country for **Tones**, note for these compliance tests **EUROPE-PBX** was selected. Select **1880-1900 MHz (Europe)** for the **Frequency** and ensure that **Local R-Key Handling** box is checked. For **Coder** select **G722.2/G711A** from the drop-down box; note that this will be the same codec used in **Section 5.5**. Click on **OK** to save the changes.

IP-DECT Base Station	
Configuration	System    Suppl. Serv.    Master    Crypto Master    Mobility Master    Radio    Radio config
<b>General</b>	
<b>LAN</b>	
<b>IP4</b>	
<b>IP6</b>	
<b>LDAP</b>	
<b>DECT</b>	System Name: DECT3 Password: ..... Confirm Password: ..... Subscriptions: With System AC ▾ Authentication Code: 9999 Tones: EUROPE-PBX ▾ Default Language: English ▾ Frequency: 1880-1900 MHz (Europe) ▾ Enabled Carriers: 9 8 7 6 5 4 3 2 1 0 <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Local R-Key Handling: <input checked="" type="checkbox"/> No Transfer on Hangup: <input checked="" type="checkbox"/> No On-Hold Display: <input type="checkbox"/> Display Original Called: <input type="checkbox"/> Early Encryption: <input type="checkbox"/> RFP Location: <input type="checkbox"/> Unite Data Channel: <input type="checkbox"/> Disable ICE: <input checked="" type="checkbox"/> Coder: G722.2/G711A ▾    Frame (ms): 20    Exclusive <input type="checkbox"/> SC <input type="checkbox"/> Secure RTP Key Exchange: No encryption ▾ OK    Cancel
<b>Services</b>	
<b>Administration</b>	
<b>Users</b>	
<b>Device Overview</b>	
<b>DECT Sync</b>	
<b>Traffic</b>	
<b>Gateway</b>	
<b>Backup</b>	
<b>Update</b>	
<b>Diagnostics</b>	
<b>Reset</b>	
<b>Debug</b>	

### 7.3. Configure Session Manager Information

Select **DECT** in the left column and select the **Master** tab. Ensure the **Protocol** is set to **SIP/TCP** if TCP is the chosen transport protocol (preferred) and **SIP/UDP** 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. Note, for compliance testing **Enbloc Dialing** and **Allow DTMF through RTP** boxes were checked but these settings will depend on the customer site and how the Communication Manger is configured. All other values can be accepted as default.

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

IP-DECT Base Station	
Configuration	System    Suppl. Serv. <b>Master</b> Crypto Master    Mobility Master
<b>General</b>	
<b>LAN</b>	
<b>IP4</b>	
<b>IP6</b>	
<b>LDAP</b>	
<b>DECT</b>	
<b>VoIP</b>	
<b>Unite</b>	
<b>Services</b>	
<b>Administration</b>	
<b>Users</b>	
<b>Device Overview</b>	
<b>DECT Sync</b>	
<b>Traffic</b>	
<b>Gateway</b>	
<b>Backup</b>	
<b>Update</b>	
<b>Diagnostics</b>	
<b>Reset</b>	
	<div>Mode <span>Mirror</span></div> <div>Mirror Master <input type="text" value="10.10.40.127"/></div> <div>Mirror Status <span>Active</span> Connected to 10.10.40.127</div> <div>Multi-Master</div> <div>Master ID <input type="text" value="0"/></div> <div>Enable PARI Function <input checked="" type="checkbox"/></div> <div>Region Code <input type="text"/></div> <div>IP-PBX</div> <div>Protocol <span>SIP/TCP</span></div> <div>Proxy <input type="text" value="10.10.40.58"/></div> <div>Alt. Proxy <input type="text"/></div> <div>Alt. Proxy <input type="text"/></div> <div>Alt. Proxy <input type="text"/></div> <div>Domain <input type="text"/></div> <div>Max. Internal Number Length <input type="text" value="4"/></div> <div>International CPN Prefix <input type="text"/></div> <div>Registration with system password <input type="checkbox"/></div> <div>Enbloc Dialing <input checked="" type="checkbox"/></div> <div>Enable Enbloc Send-Key <input type="checkbox"/></div> <div>Send Inband DTMF <input type="checkbox"/></div> <div>Allow DTMF Through RTP <input checked="" type="checkbox"/></div>

Click on the **Suppl. Serv.** tab and ensure that **Enable Supplementary Services** box 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 dependent interrogate number** and the **MWI Notify Number** is set to the messaging voicemail number for the solution which is **6666**.

IP-DECT Base Station							
Configuration	System	Suppl. Serv.	Master	Crypto Master	Mobility Master	Radio	Radio
<b>General</b>	<input checked="" type="checkbox"/> Enable Supplementary Services						
<b>LAN</b>							
<b>IP4</b>							
<b>IP6</b>							
<b>LDAP</b>							
<b>DECT</b>							
<b>VoIP</b>							
<b>Unite</b>							
<b>Services</b>							
<b>Administration</b>							
<b>Users</b>							
<b>Device Overview</b>							
<b>DECT Sync</b>							
<b>Traffic</b>							
<b>Gateway</b>							
<b>Backup</b>							
<b>Update</b>							
<b>Diagnostics</b>							
<b>Reset</b>							
		<b>Activate</b>	<b>Deactivate</b>	<b>Disable</b>			
	Call Forwarding Unconditional	*21*\$\$	#21#	<input type="checkbox"/>			
	Call Forwarding Busy	*67*\$\$	#67#	<input type="checkbox"/>			
	Call Forwarding No Reply	*61*\$\$	#61#	<input type="checkbox"/>			
	Do Not Disturb	*42#	#42#	<input type="checkbox"/>			
	Call Waiting	*43#	#43#	<input type="checkbox"/>			
	Call Completion	.	.	<input checked="" type="checkbox"/>			
	Call Park	.	.	<input checked="" type="checkbox"/>			
	Interception	.	.	<input checked="" type="checkbox"/>			
	Call Service URI	.	.	<input checked="" type="checkbox"/>			
	Call Service URI (Argument)	.	.	<input checked="" type="checkbox"/>			
	Soft key	.	.	<input checked="" type="checkbox"/>			
	Logout User	#11*\$\$	.	<input type="checkbox"/>			
	Clear Local Setting	*00#	.	<input type="checkbox"/>			
	MWI Mode	User dependent interrogate number					
	MWI Notify Number	6666					
	Local Clear of MWI	.					
	External Idle Display						<input checked="" type="checkbox"/>
	<input type="button" value="OK"/> <input type="button" value="Cancel"/>						

## 7.4. Adding DECT Users

Click on **Users** in the left column and under the **Users** tab seen on right column, click **new** to add a new DECT user.

# IP-DECT Base Station

Configuration

General

LAN

IP4

IP6

LDAP

DECT

VoIP

Unite

Services

Administration

Users

Users

Anonymous

PARK [REDACTED]

PARK

3rd

pty [REDACTED]

Master Id

0

[show](#)

[new](#)

[import](#)

[export](#)

Enter the appropriate information for the new DECT user and once all the information has been correctly filled in click on the **OK** button. The DECT handset is then registered with the DECT system, according to Ascom's documentation. The Password entered should be the same as that configured in **Section 6.3**.

The screenshot displays the 'IP-DECT Base Station' configuration interface. On the left is a sidebar menu with categories: Configuration, LAN, IP4, IP6, LDAP, DECT, VoIP, Unite, Services, Administration, and a list of sub-items including Users, Device Overview, DECT Sync, Traffic, Gateway, Backup, Update, Diagnostics, and Reset. The 'Users' sub-item is selected. The main area has two tabs: 'Users' and 'Anonymous'. A 'Edit User' dialog box is open, showing a form for user configuration. The form includes fields for Long Name, Display Name, Name, Number, Auth. Name, Password, Confirm Password, IPEI / IPDI, Idle Display, and Auth. Code. The 'User type' section has radio buttons for 'User' (selected) and 'User Administrator'. The 'Feature Status' checkbox is unchecked. At the bottom of the dialog are buttons for OK, Apply, Delete, Unsubs., and Cancel.

IP-DECT Base Station	
<b>Configuration</b>	
<b>Users</b> <b>Anonymous</b>	
Edit User - Mozilla Firefox	
10.10.40.128/GW-DECT/mod_cmd_login.xml?cmd=sho	
<b>User type</b>	
<input checked="" type="radio"/> User	
<input type="radio"/> User Administrator	
Long Name	d63 2150
Display Name	d63 2150
Name	2150
Number	2150
Auth. Name	(SIP only)
Password	••••••••
Confirm Password	••••••••
IPEI / IPDI	002020909367
Idle Display	d63 2150
Auth. Code	
<input type="checkbox"/> Feature Status	
OK   Apply   Delete   Unsubs.   Cancel	

At this point the handset is **Subscribed** to the DECT system; please refer to the DECT handset user guide (see **Section 10**) to correctly subscribe to the base station. Note that every handset may be slightly different to setup but typically navigate to **Menu → Settings → System → Subscribe**. The **PARK** number must be entered correctly, and the **Authentication Code** configured in **Section 7.2** is required for the handset to subscribe to the DECT system.

Long Name	Name	No	Fty	Display	IPEI / IPDI	AC	Prod	SW	EE	Registration
d63 2150	2150	2150	+	d63 2150	002020909367	d63-Talker	2.11.4			10.10.40.58
d63 2151	2151	2151	+	d63 2151	002020772294	d63-Talker	2.11.4			10.10.40.58
d63 2152	2152	2152	+	d63 2152	110550389538	d63-Talker	2.11.4			10.10.40.58
d63 2153	2153	2153	+	d63 2153	110550389613	d63-Talker	2.11.4			10.10.40.58
d63 9916	9916	9916	+	d63 9916	002020909369					Subscribed
d63 9917	9917	9917	+	d63 9917	002020909371					Subscribed

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.

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 7.3**.

As a final step confirm that DECT handsets have registered successfully with Session Manager, note the IP addresses under **Registration**.

### IP-DECT Base Station

Configuration

**Users**   Anonymous

General

LAN

IP4

IP6

LDAP

DECT

VoIP

Unite

Services

Administration

**Users**

Device Overview

DECT Sync

Traffic

Gateway

PARK

PARK

3rd

pty

Master

Id

0

[show](#)

[new](#)

[import](#)

[export](#)

User Administrators

[Long Name](#)   [Name](#)

User Administrators: 0

Users

Long Name	Name	No	Fty	Display	IPEI / IPDI	AC	Prod	SW	EE	Registration
d63 2150	2150	2150	+	d63 2150	002020909367	d63-Talker	2.11.4			<a href="#">10.10.40.58</a>
d63 2151	2151	2151	+	d63 2151	002020772294	d63-Talker	2.11.4			<a href="#">10.10.40.58</a>
d63 2152	2152	2152	+	d63 2152	110550389538	d63-Talker	2.11.4			<a href="#">10.10.40.58</a>
d63 2153	2153	2153	+	d63 2153	110550389613	d63-Talker	2.11.4			<a href="#">10.10.40.58</a>

Users: 8, Registrations: 4

These settings were used for compliance testing but can be adjusted to suit each site as required. Please refer to Ascom documentation in **Section 10** for further information.

### IP-DECT Base Station

Configuration

**SIP**   Certificates

General

LAN

IP4

IP6

LDAP

DECT

Unite

Services

Advanced

Administration

**Users**

Device Overview

DECT Sync

Traffic

Gateway

Backup

Update

Add Instance ID To The User Registration With The IP-PBX ☐ SIP ☐ TSIP ☐ SIPS

IP-PBX Supports Redirection Of Registration When Registered To Alternative Proxy ☐ SIP ☐ TSIP ☐ SIPS

Use Local Contact Port As Source Port For TCP/TLS Connections ☐ SIP ☒ TSIP ☒ SIPS

Prefer P-Asserted-Identity As Calling Party Identity ☒ SIP ☒ TSIP ☒ SIPS

Use SBC for NAT traversal ☐ SIP ☐ TSIP ☐ SIPS

No Server Certificate Subject Check For TLS Connections ☐ SIP ☐ TSIP ☒ SIPS

No Server Certificate Trust Check For TLS Connections ☐ SIP ☐ TSIP ☐ SIPS

Accept Hold Signaling Using Remote Media Address 0.0.0.0 ☒ SIP ☒ TSIP ☒ SIPS

Remove SRTP Lifetime in SDP ☐ SIP ☐ TSIP ☐ SIPS

Allow Multiple Codecs in Answer SDP ☒ SIP ☒ TSIP ☒ SIPS

Send Early Progress Response ☐ SIP ☐ TSIP ☐ SIPS

Ignore Retry-After in Registration Responses ☐ SIP ☐ TSIP ☐ SIPS

Use STUN for NAT Traversal with TCP/TLS ☐ SIP ☐ TSIP ☐ SIPS

No Validation of Request URI ☐ SIP ☐ TSIP ☐ SIPS

Note: All settings require reset

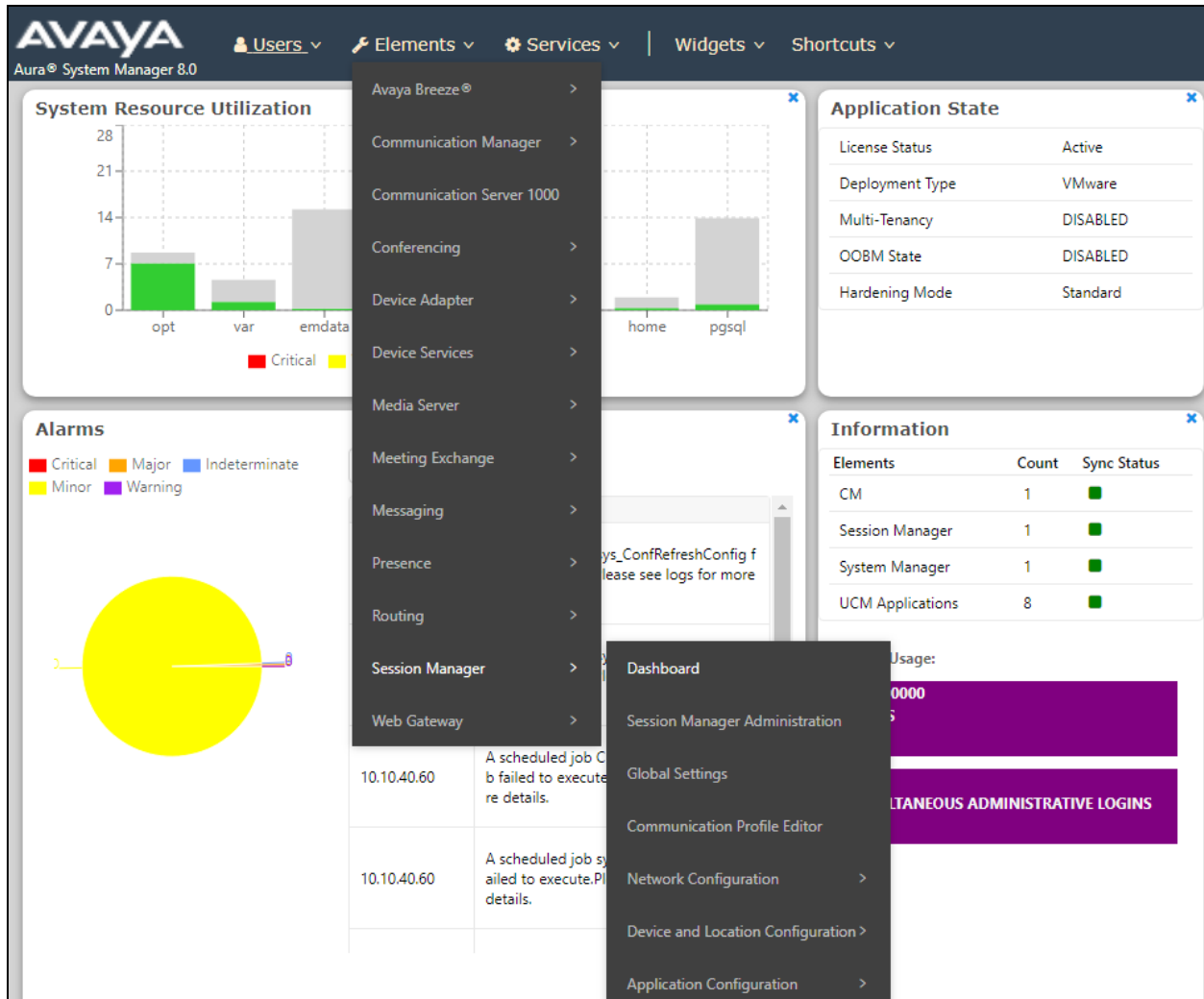
**Note:** In larger DECT systems where it takes longer (>4s) to reach the DECT handset, it is recommended to enable **Send early progress response** under **VoIP → SIP**.

## 8. Verification Steps

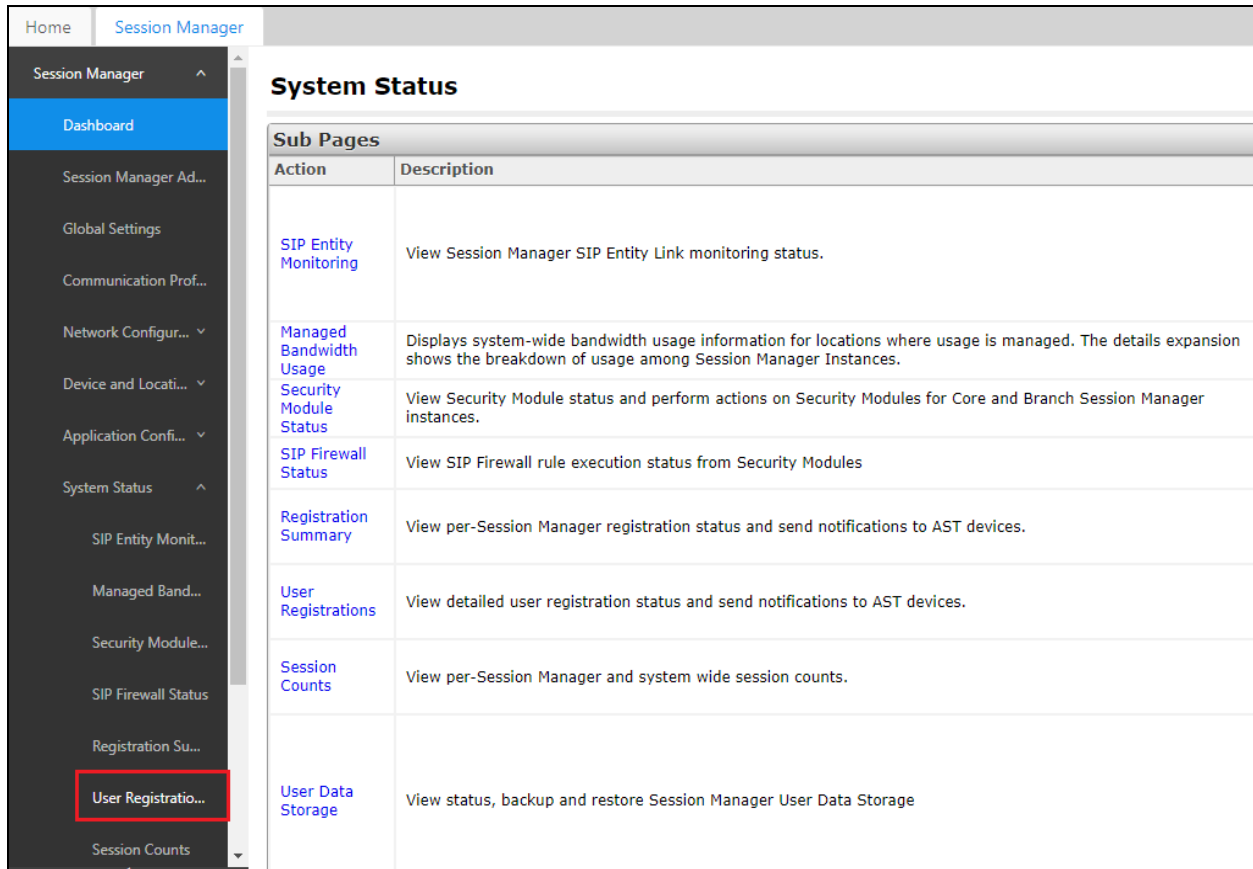
The following steps can be taken to ensure that connections between Ascom DECT handsets and Session Manager and Communication Manager are up.

### 8.1. Session Manager Registration

Log into System Manager as done previously in **Section 6**, select **Elements** → **Session Manager** → **Dashboard**.



Under **System Status** in the left window, select **User Registrations** to display all the SIP users that are currently registered with Session Manager.



The screenshot shows the Session Manager interface. On the left, the 'System Status' menu is expanded, and 'User Registrations' is highlighted with a red box. The main content area is titled 'System Status' and contains a table of sub-pages.

Sub Pages	
Action	Description
<a href="#">SIP Entity Monitoring</a>	View Session Manager SIP Entity Link monitoring status.
<a href="#">Managed Bandwidth Usage</a>	Displays system-wide bandwidth usage information for locations where usage is managed. The details expansion shows the breakdown of usage among Session Manager Instances.
<a href="#">Security Module Status</a>	View Security Module status and perform actions on Security Modules for Core and Branch Session Manager instances.
<a href="#">SIP Firewall Status</a>	View SIP Firewall rule execution status from Security Modules
<a href="#">Registration Summary</a>	View per-Session Manager registration status and send notifications to AST devices.
<a href="#">User Registrations</a>	View detailed user registration status and send notifications to AST devices.
<a href="#">Session Counts</a>	View per-Session Manager and system wide session counts.
<a href="#">User Data Storage</a>	View status, backup and restore Session Manager User Data Storage

**AVAYA**
Users ▾ Elements ▾ Services ▾ | Widgets ▾ Shortcuts ▾

Search

🔔 ⋮ admin

---

Home
User Management
Routing
Session Manager

**Session Manager** ▾

- Dashboard
- Session Manager Ad...
- Global Settings
- Communication Prof...
- Network Configur... ▾
- Device and Locati... ▾
- Application Conf... ▾
- System Status ▴
- SIP Entity Monit...
- Managed Band...
- Security Module...
- SIP Firewall Status
- Registration Su...
- User Registratio...

## User Registrations

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

[Customize](#)

View ▾ Default Export Force Unregister

**AST Device Notifications:** Reboot Reload ▾ Failback

As of 9:13 AM

Advanced Search

19 Items
Show 15 ▾
Filter: Enable

	Details	Address	First Name	Last Name	Actual Location	IP Address ▾	Remote Office	Shared Control	Simult. Devices	AST Device	Registered		
											Prim	Sec	Surv
<input type="checkbox"/>	► Show	2105@devconnect.local	Equinox SIP	Ext2105	DevConnectLab_PG	10.10.40.240	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> (AC)	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	► Show	2103@devconnect.local	Equinox SIP	Ext2103	DevConnectLab_PG	10.10.40.236	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> (AC)	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	► Show	2154@devconnect.local	i62_2154	Ascsm	DevConnectLab_PG	10.10.40.201	<input type="checkbox"/>	<input type="checkbox"/>	1/3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	► Show	2109@devconnect.local	J129	Ext2109	DevConnectLab_PG	10.10.40.194	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> (AC)	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	► Show	2160@devconnect.local	MYCO2160	Ascsm	DevConnectLab_PG	10.10.40.186	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	► Show	2150@devconnect.local	DECT2150	Ascsm	DevConnectLab_PG	10.10.40.128	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	► Show	---	i62_2155	Ascsm	---	---	<input type="checkbox"/>	<input type="checkbox"/>	0/1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	► Show	---	MYCO2161	Ascsm	---	---	<input type="checkbox"/>	<input type="checkbox"/>	0/1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	► Show	---	SIP	Ext2101	---	---	<input type="checkbox"/>	<input type="checkbox"/>	0/1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	► Show	---	i62_2157	Ascsm	---	---	<input type="checkbox"/>	<input type="checkbox"/>	0/1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	► Show	---	DECT2151	Ascsm	---	---	<input type="checkbox"/>	<input type="checkbox"/>	0/1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	► Show	---	i62_2156	Ascsm	---	---	<input type="checkbox"/>	<input type="checkbox"/>	0/1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	► Show	---	SIP	Ext2100	---	---	<input type="checkbox"/>	<input type="checkbox"/>	0/1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	► Show	---	MYCO2159	Ascsm	---	---	<input type="checkbox"/>	<input type="checkbox"/>	0/3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	Details	Address	First Name	Last Name	Actual Location	IP Address ▾	Remote Office	Shared Control	Simult. Devices	AST Device	Registered		
											Prim	Sec	Surv
<input type="checkbox"/>	<a href="#">► Show</a>	2105@devconnect.local	Equinox SIP	Ext2105	DevConnectLab_PG	10.10.40.240	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> (A)	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<a href="#">► Show</a>	2103@devconnect.local	Equinox SIP	Ext2103	DevConnectLab_PG	10.10.40.236	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> (A)	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<a href="#">► Show</a>	2154@devconnect.local	i62_2154	Ascom	DevConnectLab_PG	10.10.40.201	<input type="checkbox"/>	<input type="checkbox"/>	1/3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<a href="#">► Show</a>	2109@devconnect.local	J129	Ext2109	DevConnectLab_PG	10.10.40.194	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> (A)	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<a href="#">► Show</a>	2160@devconnect.local	MYCO2160	Ascom	DevConnectLab_PG	10.10.40.186	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<a href="#">► Show</a>	2150@devconnect.local	DECT2150	Ascom	DevConnectLab_PG	10.10.40.128	<input type="checkbox"/>	<input type="checkbox"/>	1/1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<a href="#">► Show</a>	---	i62_2155	Ascom	---	---	<input type="checkbox"/>	<input type="checkbox"/>	0/1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<a href="#">► Show</a>	---	MYCO2161	Ascom	---	---	<input type="checkbox"/>	<input type="checkbox"/>	0/1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<a href="#">► Show</a>	---	SIP	Ext2101	---	---	<input type="checkbox"/>	<input type="checkbox"/>	0/1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<a href="#">► Show</a>	---	i62_2157	Ascom	---	---	<input type="checkbox"/>	<input type="checkbox"/>	0/1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

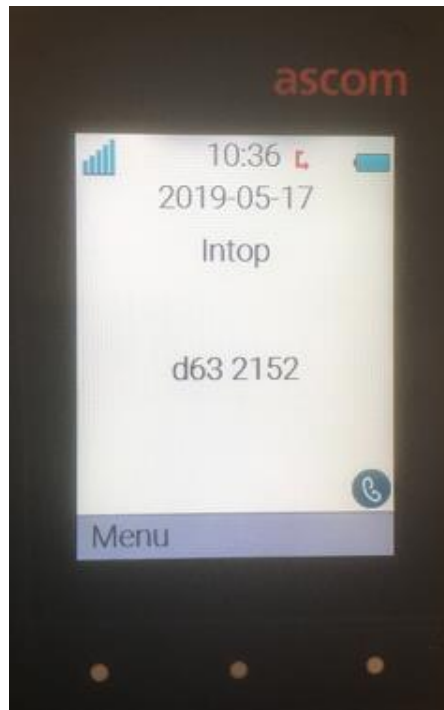
## 8.2. Ascom DECT Registration

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**, this displays the DECT handsets that are registered. In the example below, four extensions **2150** to **2153** are registered correctly.

The screenshot shows the 'IP-DECT Base Station' web interface. On the left is a navigation menu with 'Users' selected. The main area has tabs for 'Users' and 'Anonymous'. The 'Users' tab is active, showing a table of registered users. The table has columns: Long Name, Name, No, Fty, Display, IPEI / IPDI, AC, Prod, SW, EE, and Registration. Four users are listed with extensions 2150 through 2153. Below the table, it says 'Users: 8, Registrations: 4'.

Long Name	Name	No	Fty	Display	IPEI / IPDI	AC	Prod	SW	EE	Registration
d63 2150	2150	2150	+	d63 2150	002020909367	d63-Talker	2.11.4			10.10.40.58
d63 2151	2151	2151	+	d63 2151	002020772294	d63-Talker	2.11.4			10.10.40.58
d63 2152	2152	2152	+	d63 2152	110550389538	d63-Talker	2.11.4			10.10.40.58
d63 2153	2153	2153	+	d63 2153	110550389613	d63-Talker	2.11.4			10.10.40.58

The Ascom DECT handset connection to Session Manager can also be verified by an absence of an error message on the handset display as shown in the following illustration, (note this is an example from compliance testing).



## 9. Conclusion

These Application Notes describe the configuration steps required for Ascom's IP-DECT R11 to successfully interoperate with Avaya Aura® Communication Manager R8.1 and Avaya Aura® Session Manager R8.1 by registering the Ascom handsets with Session Manager as third-party SIP phones. Please refer to **Section 2.2** for test results and observations.

## 10. Additional References

This section references the product documentation relevant to these Application Notes. Product documentation for Avaya products may be found at <http://support.avaya.com>.

1. *Avaya Aura® Communication Manager Feature Description and Implementation*, Release 8.1
2. *Administering Avaya Aura® Session Manager*, Release 8.1

Documentation for Ascom Products can be obtained from an Ascom supplier or may be accessed at <https://www.ascom-ws.com/AscomPartnerWeb/Templates/WebLogin.aspx> (login account for the Ascom Partner Extranet required).

# Appendix

## Signaling Group

display signaling-group 1	Page 1 of 3
SIGNALING GROUP	
Group Number: 1	Group Type: sip
IMS Enabled? n	Transport Method: tls
Q-SIP? n	
IP Video? n	Enforce SIPS URI for SRTP? n
Peer Detection Enabled? y	Peer Server: SM
	Clustered? n
Prepend '+' to Outgoing Calling/Alerting/Diverting/Connected Public Numbers? y	
Remove '+' from Incoming Called/Calling/Alerting/Diverting/Connected Numbers? n	
Alert Incoming SIP Crisis Calls? n	
Near-end Node Name: procr	Far-end Node Name: SM80vmpg
Near-end Listen Port: 5061	Far-end Listen Port: 5061
	Far-end Network Region: 1
Far-end Domain:	
	Bypass If IP Threshold Exceeded? n
Incoming Dialog Loopbacks: eliminate	RFC 3389 Comfort Noise? n
DTMF over IP: rtp-payload	Direct IP-IP Audio Connections? y
Session Establishment Timer(min): 3	IP Audio Hairpinning? n
Enable Layer 3 Test? y	Initial IP-IP Direct Media? n
H.323 Station Outgoing Direct Media? n	Alternate Route Timer(sec): 6

## Trunk Group Page 1

display trunk-group 1	Page 1 of 5
TRUNK GROUP	
Group Number: 1	Group Type: sip
Group Name: SIPTRUNK-SM80	CDR Reports: y
Direction: two-way	COR: 1
Dial Access? n	TN: 1
Queue Length: 0	TAC: *801
Service Type: tie	Night Service:
	Auth Code? n
	Member Assignment Method: auto
	Signaling Group: 1
	Number of Members: 10

## Page 2

```
display trunk-group 1                                     Page 2 of 5
  Group Type: sip

TRUNK PARAMETERS

  Unicode Name: auto

                                         Redirect On OPTIM Failure: 5000

  SCCAN? n                                         Digital Loss Group: 18
    Preferred Minimum Session Refresh Interval(sec): 600

Disconnect Supervision - In? y Out? y

  XOIP Treatment: auto    Delay Call Setup When Accessed Via IGAR? n

Caller ID for Service Link Call to H.323 1xC: station-extension
```

## Page 3

```
display trunk-group 1                                     Page 3 of 5
TRUNK FEATURES

  ACA Assignment? n          Measured: none          Maintenance Tests? y

Suppress # Outpulsing? n    Numbering Format: private
                               UII Treatment: shared
                               Maximum Size of UII Contents: 128
                               Replace Restricted Numbers? n
                               Replace Unavailable Numbers? n

                               Hold/Unhold Notifications? y
                               Modify Tandem Calling Number: no

  Send UCID? y

Show ANSWERED BY on Display? y

DSN Term? n
```

## Page 4

```
display trunk-group 1                                     Page 4 of 5
                                     SHARED UI FEATURE PRIORITIES

                                     ASAI: 1

Universal Call ID (UCID): 2

MULTI SITE ROUTING (MSR)

    In-VDN Time: 3
    VDN Name: 4
    Collected Digits: 5
    Other LAI Information: 6
    Held Call UCID: 7
```

## Page 5

```
trunk-group 1                                           Page 5 of 5
                                     PROTOCOL VARIATIONS

Mark Users as Phone? n
Prepend '+' to Calling/Alerting/Diverting/Connected Number? n
    Send Transferring Party Information? y
        Network Call Redirection? y
Build Refer-To URI of REFER From Contact For NCR? n
    Send Diversion Header? n
    Support Request History? y
    Telephone Event Payload Type: 101

    Convert 180 to 183 for Early Media? n
    Always Use re-INVITE for Display Updates? n
        Identity for Calling Party Display: P-Asserted-Identity
    Block Sending Calling Party Location in INVITE? n
    Accept Redirect to Blank User Destination? n
        Enable Q-SIP? n

Interworking of ISDN Clearing with In-Band Tones: keep-channel-active
    Request URI Contents: may-have-extra-digits
```

---

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