Interoperability Guide
Ascom IP-DECT R11 (11.3.4)

February 2021 Release
Session Initiation Protocol (SIP)

Gothenburg, Sweden
February 2021
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<th align="left">Table of Content:</th>
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<td align="left">Ascom IP-DECT R11, version 11.3.4</td>
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Introduction

The Ascom interoperability team has together with RingCentral validated SIP interoperability for Ascom IP-DECT version 11.3.4 with RingCentral.

This purpose of this document is to list currently available telephony features for the Ascom IP-DECT & RingCentral products combination, and provide guidelines and necessary steps to configure and provision IP-DECT with RingCentral.

**High Level Topology**

Overview of the RingCentral/Ascom Test Setup at Ascom, SE

**Dial Plan:**

2xx – Ascom Handsets, Internal Extensions

*(Not all terminals are shown here)*

**Software Versions:**

RingCentral
February 2021 (21.1)

Ascom IP-DECT
version 11.3.4

**Note:** The Ascom IP-DECT Base Station was connected over a NAT router not pictured here.
## Additional references

<table>
<thead>
<tr>
<th>Ascom Documentation</th>
<th>Link</th>
</tr>
</thead>
</table>

Note. Documentation for Ascom products can be obtained from an Ascom supplier or may be accessed at [https://www.ascom-ws.com/AscomPartnerWeb](https://www.ascom-ws.com/AscomPartnerWeb) (login account for the Ascom Partner Extranet required)

<table>
<thead>
<tr>
<th>RingCentral Documentation</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>RingCentral - Assign an existing device to an existing extension</td>
<td><a href="https://support.ringcentral.com/article/Provisioning-Assign-an-existing-device-to-an-existing-extension.html">https://support.ringcentral.com/article/Provisioning-Assign-an-existing-device-to-an-existing-extension.html</a></td>
</tr>
</tbody>
</table>
Summary

Interoperability testing were carried out using SIP as the signaling protocol towards RingCentral’s cloud SIP service. The Interoperability testing in all areas regarding Ascom IP-DECT and RingCentral produced good results with few exceptions. For the latter, please refer to “Feature limitations” section on page 5.

For more information about the RingCentral solution, please contact RingCentral.

Features list

- Basic Call, TCP
- Basic Call, TLS 1.2 (Secure Voice)
- DTMF
- Hold, Retrieve, Enquiry and Brokering
- Music on Hold (MoH)
- Unattended Transfer (blind)
- Semi-attended Transfer (upon ringing)
- Attended Transfer (supervised)
- Call Forward Unconditional
- Call Forward No Reply
- Call Forward Busy
- Call Waiting
- Check Voice Mail (*86)
- Do Not Disturb
## Feature Limitations

<table>
<thead>
<tr>
<th>Description</th>
<th>Symptom(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calling and Connected Line/Name Identification Presentation not updated appropriately.</td>
<td>DECT handsets won’t always display the correct name and number in the following scenarios: calling party, brokering, attended and semi-attended transfer.</td>
</tr>
<tr>
<td>Message Waiting Indication</td>
<td>Not supported.</td>
</tr>
<tr>
<td>Conference Call (3-way)</td>
<td>Not supported.</td>
</tr>
<tr>
<td>Adaptive Multi-Rate Wideband (AMR-WB, G.722.2)</td>
<td>Not Supported.</td>
</tr>
<tr>
<td>SIP/TLS: Attended transfer fails in some cases when using SIP/TLS.</td>
<td>One-way speech between DECT handsets (C party -&gt; A party) after attended/supervised transfer.</td>
</tr>
</tbody>
</table>

For additional information regarding known limitations, please contact [interop@ascom.com](mailto:interop@ascom.com) or [support@ascom.com](mailto:support@ascom.com).
Configuration

RingCentral, February 2021 Release

Admin Portal
This screenshot serves only as an overview of RingCentral’s web-based Admin Portal application. Please refer to the partner’s online help and documentation for further information about configuration and licensing.

Home -> Quick Access
Provisioning Users

The following sections provide basic guidance when adding an international user with an existing phone. Note that there are various approaches to provisioning users.

Please see RingCentral’s online help for further guidance.

Flow 1 (recommended by RingCentral)

Home -> Quick Access -> Phone System
Phone System -> Phones and Devices -> User Phones -> Add Device

Run through all the steps of the “Add User Phones” wizard.

Select “Next”.

Select Location

Domestic
International

Select Country

Sweden
International numbers will have to be ordered for international users.

Select “Next”.

Note: The steps of ordering international numbers are not documented here.

Run through the rest of the wizard and confirm the order by selecting “OK”.

Make sure “Existing Phone” is chosen as the device.

Go to page 12.
Flow 2 (used during testing)

Home -> Quick Access -> Add User

Run through all the steps of the “Add Users” wizard.

Select “Next”.

Home -> Quick Access -> Add Users

Run through all the steps of the “Add Users” wizard.

Select “Next”.

Select a Location

[ ] Domestic  [ ] International

Select Country

Sweden

[ ] Cancel  [ ] Next
Make sure “Existing Phone” is chosen under “Device”. Then select “Add” and “Next”.

Run through the rest of the wizard and confirm the order by selecting “OK”.

Your order is being processed. An order confirmation will be sent to you by Email. It may take a few minutes.

You must enable International Calling for the country you have purchased Global Office license.
Adding a New User (method used during testing)

Users -> User List -> Unassigned Extensions

Select the "Ext. with Existing Phone" that corresponds to the phone number from the previous step.

![User List](image)

Note here that “Activate by assigning credentials” is selected. Enter credentials and user details for this extension (or “Existing Phone”).

![Unassigned Extension](image)
Lastly, activate the user by selecting “Save & Enable”.

Settings

Select User Language

Select Regional Format

United States

Select Greeting Language

Yes, I would like to receive information on product education, training materials, etc.
Users -> User List -> Users with Extensions

The user will now be added to the list of “Users with Extensions”.

![User List with 'Ascom d63 no3' highlighted](image-url)
This is where call forwarding is configured in RingCentral’s web-based Admin Portal application.

Here, the Caller ID for outgoing calls is configured.
SIP Registration

SIP registration details and credentials will be sent to email addresses specified in previous steps.

2. If following RingCentral manual instructions, or provisioning an unsupported device, use the settings below.

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIP Domain</td>
<td>sip.ringcentral.com:5060</td>
</tr>
<tr>
<td>Outbound Proxy</td>
<td>sip10.ringcentral.com:5090</td>
</tr>
<tr>
<td>User Name</td>
<td>4631XXXXXX</td>
</tr>
<tr>
<td>Password</td>
<td>YYYYYY</td>
</tr>
<tr>
<td>Authorization ID</td>
<td>ZZZZZZ</td>
</tr>
</tbody>
</table>

These details for respective subscriber/user are required when configuring the Ascom IP-DECT Base Station:

<table>
<thead>
<tr>
<th>RingCentral</th>
<th>Ascom IP-DECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIP Domain</td>
<td>Domain</td>
</tr>
<tr>
<td>Outbound Proxy</td>
<td>Proxy</td>
</tr>
<tr>
<td>User Name</td>
<td>Number (and Name)</td>
</tr>
<tr>
<td>Password</td>
<td>Password</td>
</tr>
<tr>
<td>Authorization ID</td>
<td>Auth. Name</td>
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</tbody>
</table>
VoIP Configuration

SIP settings are found under **DECT > Master**.

![IP-DECT Base Station Configuration](image)

**Protocol**: SIP/TCP

**Proxy**: sip10.ringcentral.com:5090

**Domain**: sip.ringcentral.com

**Max. Internal Number Length**: 3

**International CPN Prefix**

**Registration with system password**

**Enbloc Dialing**: checked

**Enable Enbloc Send-Key**

**Allow DTMF Through RTP**: checked

**Short Disconnect Tone**

**Treat rejected calls as**: Busy

**Configured With Local GK**

**SIP Interoperability Settings**

**Registration Time-To-Live**: 120 [sec]

**STUN server**

**Hold Signalling**: inactive

**Hold Before Transfer**

**Accept Inbound Calls Not Routed Via Home Proxy**

**Register With Number** checked
Configure codec settings by going to **DECT > System**.

![IP-DECT Base Station Configuration](image)

**Note:** The actual codec used during a call is dependent on negotiation between endpoints.
VoIP Configuration – Secure Voice (TLS/SRTP)

SIP/TLS settings are found under **DECT > Master**.

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<th>Suppl. Serv.</th>
<th>Master</th>
<th>Crypto Master</th>
<th>Mobility Master</th>
<th>Radio</th>
<th>Radio config</th>
<th>PA</th>
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</table>

**IP-DECT Base Station**

- **Mode**: Active

**Multi-Master**
- **Master ID**: 0
- **Enable PARI Function**: ✔
  - **Region Code**: 

**IP-PBX**
- **Protocol**: SIP/TLS
  - **Proxy**: sip10.ringcentral.com:5096
  - **Alt. Proxy**: 
  - **Alt. Proxy**: 
  - **Alt. Proxy**: 
- **Domain**: sip.ringcentral.com

**Max. Internal Number Length**: 3
- **International CPN Prefix**: 
  - **Registration with system password**: 
  - **Enbloc Dialing**: ✔
  - **Enable Enbloc Send-Key**: 
  - **Allow DTMF Through RTP**: ✔
  - **Short Disconnect Tone**: 
  - **Treat rejected calls as**: Busy

- **Configured With Local GK**: 

**SIP Interoperability Settings**
- **Registration Time-To-Live**: 120 [sec]
  - **STUN server**: 
  - **Hold Signalling**: Inactive
  - **Hold Before Transfer**: 
  - **Accept Inbound Calls Not Routed Via Home Proxy**: 
  - **Register With Number**: ✔
Configure SRTP and codec settings by going to **DECT > System**.

### IP-DECT Base Station

<table>
<thead>
<tr>
<th>Configuration</th>
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<th>Suppl. Serv.</th>
<th>Master</th>
<th>Crypto Master</th>
<th>Mobility Master</th>
<th>Radio</th>
<th>Radio config</th>
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<tbody>
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</tbody>
</table>

- **Local R-Key Handling**: ✓
- **No Transfer on Hangup**: ✓
- **No On-Hold Display**: □
- **Display Original Called**: □
- **Early Encryption**: □
- **RFP Location**: □
- **Unite Data Channel**: □
- **Disable ICE**: ✓

**Coder**: G722.2/G711A ▼ Frame (ms) 20 □Exclusive □ SC □

**Secure RTP Key Exchange**: □
**Secure RTP Cipher**: □
**Unencrypted SRTP**: □

**Note**: The actual codec used during a call is dependent on negotiation between endpoints.
The root and intermediate certificate (certificate chain) need to be trusted under General > Certificates.

Note: This action is a requirement for registration of endpoints.

Advanced VoIP Configuration

Advanced VoIP settings are found under Advanced > SIP.
User Configuration

User details and settings can be found under **Users > Users**.

**Note:** Names and numbers for each respective subscriber are identical.

Verify user registrations under the same tab.

**Note:** Unsuccessful registrations will be marked as “FAILED.”
Configuration of Supplementary Services

Enable Supplementary Services under **DECT > Suppl. Serv.**

![IP-DECT Base Station](image)

**Note1:** Message Waiting Indication (MWI) is **not** supported by the virtual IP-PBX.

**Note2:** Voice Mail can be accessed using feature access code *86.

These settings were used in the test environment. For further information about Ascom IP-DECT settings, please refer to our documentation.