


Configuring AMR/AMR-WB Options


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Overview

This best practice provides guidance on configuring AMR/AMR-WB options from EMA in support of a Multimedia Telephony Service for IMS (MTSI) service as described on the page [AMR and RTCP Enhancements](#).

 This configuration is performed either on the PSX or on the SBC ERE platform (using either the SBC EMA or SBC CLI).

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- For the AMR/AMR-WB pass-through calls, the AMR/AMR-WB license is not required to install in the SBC.
 - For the AMR/AMR-WB transcoded calls, the AMR/AMR-WB license is required to install in the SBC.

To check the license information, execute the following command:

```
> show table system licenseInfo
```

SBC ERE Configuration

Creating Codec Entry

```
set profiles media codecEntry AMRWB-DEFAULT
```

 **Note**

The `Initial Codec Mode` flag is supported by the following AMR/AMRWB codecs:

- `amrBandwidthEfficient`
- `amrOctetAligned`
- `amrwbBandwidthEfficient`
- `amrwbOctetAligned`

Configuring AMR Codec Entry

```
set profiles media codecEntry AMRWB-DEFAULT codec amrBandwidthEfficient activeCodecSet  
AMR-0-4.75kbps
```

```
set profiles media codecEntry AMRWB-DEFAULT codec amrOctetAligned activeCodecSet AMR-0-4.75kpbs
```

Configuring AMR-WB Codec Entry

```
set profiles media codecEntry AMRWB-DEFAULT codec amrwbBandwidthEfficient modeSet AMR-1-8.85
```

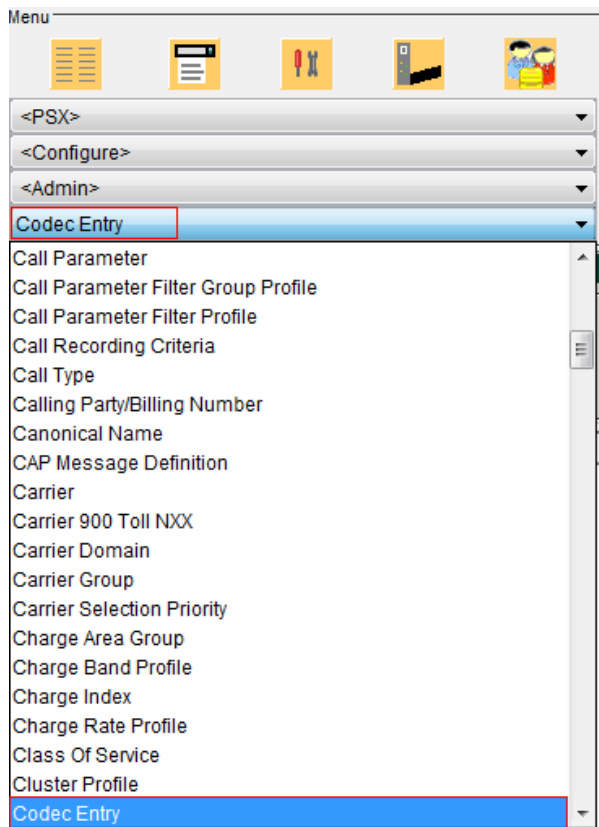
```
set profiles media codecEntry AMR-WB codec amrwbOctetAligned modeSet AMR-0-6.6
```

PSX Configuration

AMR-WB Configuration

1. In the PSX Manager window, choose **Codec Entry** from the fourth drop-down box.

Figure 1: AMR-WB Codec Entry



2. To create AMR-WB codec, right click on the Selection Area.



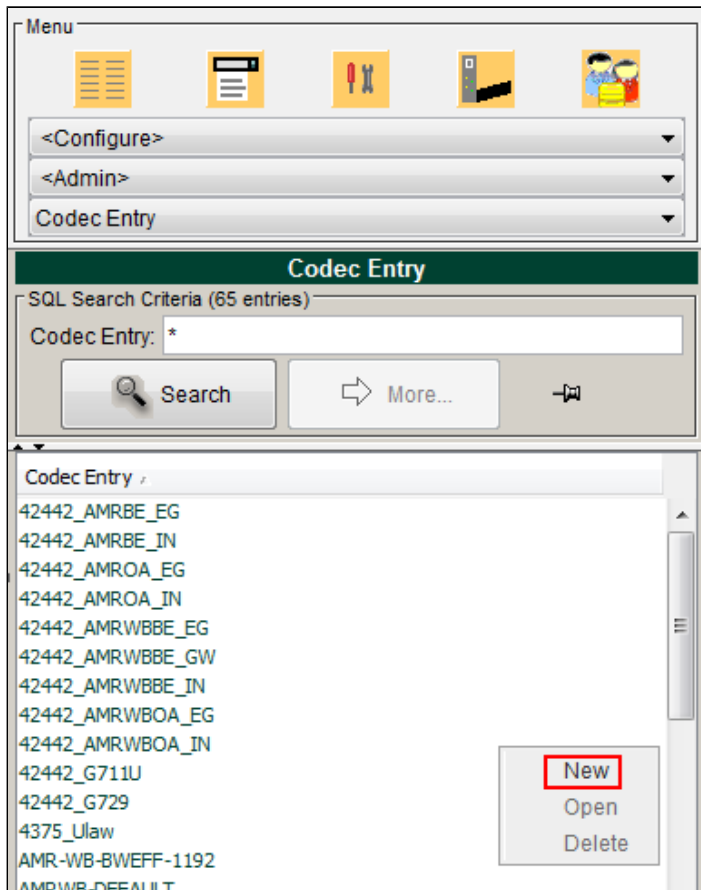
Note

The Initial Codec Mode flag is supported by the following AMR/AMRWB codecs:

- amrBandwidthEfficient
- amrOctetAligned
- amrwbBandwidthEfficient

- amrwbOctetAligned

Figure 2: Selection Area



Select **New** from the resultant pop-up menu.

3. The **Codec Entry** window displays. Provide the **Codec Entry** name.

To configure AMR WB-Bandwidth Efficient codec, select **G.722.2 (AMRWB-Bandwidth Efficient)** from the **Audio Encoding** drop-down list.

Figure 3: AMR WB-Bandwidth Efficient Codec

Codec Entry: AMRWB-DEFAULT

Audio Encoding: G.722.2 (AMRWB-Bandwidth Efficient)

Coding Rate (kbits/s): 6.3

Fax Tone Treatment: <none>

Packet Size (ms): 20

Preferred RTP Payload Type: 96

Max Interleave Depth: 0

Fax Treatment Failure Handling: Disconnect Continue

G.711 Law: Law From Other Leg A Law U Law G.711 Send SID

Modem Tone Treatment: None Notify Peer Disconnect Fallback To G.711 Apply Fax Treatment

Modem Treatment Failure Handling: Disconnect Continue

DTMF Relay: None Out-Of-Band RFC 2833 Either OOB Or 2833 Both OOB And 2833 DTMF Remove Digits enable DTMF Duration
DTMF Duration(ms): 300

AMR & AMR-WB Options

AMRWB lu-UP Mode Mode Change Neighbor

RTCP APP CMR Initial Codec Mode as per 3GPP 26.114

FEC Redundancy: 0 1 2

AMR-WB Mode Set (Kbps)

<input checked="" type="checkbox"/> 6.6	<input checked="" type="checkbox"/> 14.25	<input checked="" type="checkbox"/> 19.85
<input checked="" type="checkbox"/> 8.85	<input checked="" type="checkbox"/> 15.85	<input checked="" type="checkbox"/> 23.05
<input checked="" type="checkbox"/> 12.65	<input checked="" type="checkbox"/> 18.25	<input checked="" type="checkbox"/> 23.85

Silence Suppression: Silence Suppression vad1 vad2

OPUS Options: UseCBR UseFEC UseDTX

Max Average Bit Rate (bits/sec): 20000

Save Cancel Delete

OR

- To configure AMR WB-Octet Aligned codec, select **G.722.2 (AMRWB-Octet Aligned)** from the **Audio Encoding** drop-down list.

Figure 4: AMR WB-Octet Aligned Codec

Codec Entry: AMRWB-DEFAULT

Audio Encoding: G.722.2 (AMRWB-Octet Aligned)

Coding Rate (kbits/s): 6.3

Fax Tone Treatment: <none>

Packet Size (ms): 20

Preferred RTP Payload Type: 96

Max Interleave Depth: 0

Fax Treatment Failure Handling: Disconnect Continue

G.711 Law: Law From Other Leg A Law U Law G.711 Send SID

Modem Tone Treatment: None Notify Peer Disconnect Fallback To G.711 Apply Fax Treatment

Modem Treatment Failure Handling: Disconnect Continue

DTMF Relay: None Out-Of-Band RFC 2833 Either OOB Or 2833 Both OOB And 2833 DTMF Remove Digits enable DTMF Duration
DTMF Duration(ms): 300

AMR & AMR-WB Options

AMRWB lu-UP Mode Mode Change Neighbor

RTCP APP CMR Initial Codec Mode as per 3GPP 26.114

FEC Redundancy: 0 1 2

AMR-WB Mode Set (Kbps)

<input checked="" type="checkbox"/> 6.6	<input checked="" type="checkbox"/> 14.25	<input checked="" type="checkbox"/> 19.85
<input checked="" type="checkbox"/> 8.85	<input checked="" type="checkbox"/> 15.85	<input checked="" type="checkbox"/> 23.05
<input checked="" type="checkbox"/> 12.65	<input checked="" type="checkbox"/> 18.25	<input checked="" type="checkbox"/> 23.85

Silence Suppression: Silence Suppression vad1 vad2

OPUS Options: UseCBR UseFEC UseDTX

Max Average Bit Rate (bits/sec): 20000

5. Once the Audio Encoding is selected, the AMR-WB Options are visible.

Figure 5: AMRWB Options

The following parameters are displayed:

Table 1: AMR-WB Codec Options parameters

Parameter	Description
Mode Change Neighbor	<p>This flag restricts the mode change of an AMR-WB to the neighboring modes in the Active Codec Mode set. Neighboring modes are the ones closest in bit rate to the current mode, either the next higher or next lower rate.</p> <p>If checked, the Egress offer/Ingress answer from SBC sets the Mode-Change-Neighbor value to 1.</p> <p>If unchecked, change between any two modes in the Active Codec Mode set is allowed.</p>
Initial Codec Mode as per 3GPP 26.114	<p>This flag determines what is the initial codec mode of AMR-WB transcoded call, once the call is established.</p> <p>If unchecked, AMR-WB call starts with the highest rate in the active mode set. If checked, AMR-WB call starts with a rate determined by the following algorithm:</p> <p>If 1 codec mode is included in the mode-set, it should be the initial codec mode.</p> <p>If 2 or 3 codec modes are included in the mode-set, the initial codec mode should be the codec mode with the lowest rate.</p> <p>If 4 or more codec modes are included in the mode-set, the initial codec mode should be the codec mode with the second lowest rate.</p>

6. By default, all the options of AMR-WB Mode Set are checked. To run the calls in a restricted AMR-WB Mode set, uncheck the modes that are not required in the Active Mode Set.

Figure 6: AMR-WB Codec Options for Restricted Mode Set

7. To run the calls in an unrestricted AMR-WB Mode set, select all the mode sets.

Figure 7: AMR-WB Codec Options for Unrestricted Mode Set

8. Click **Save**.

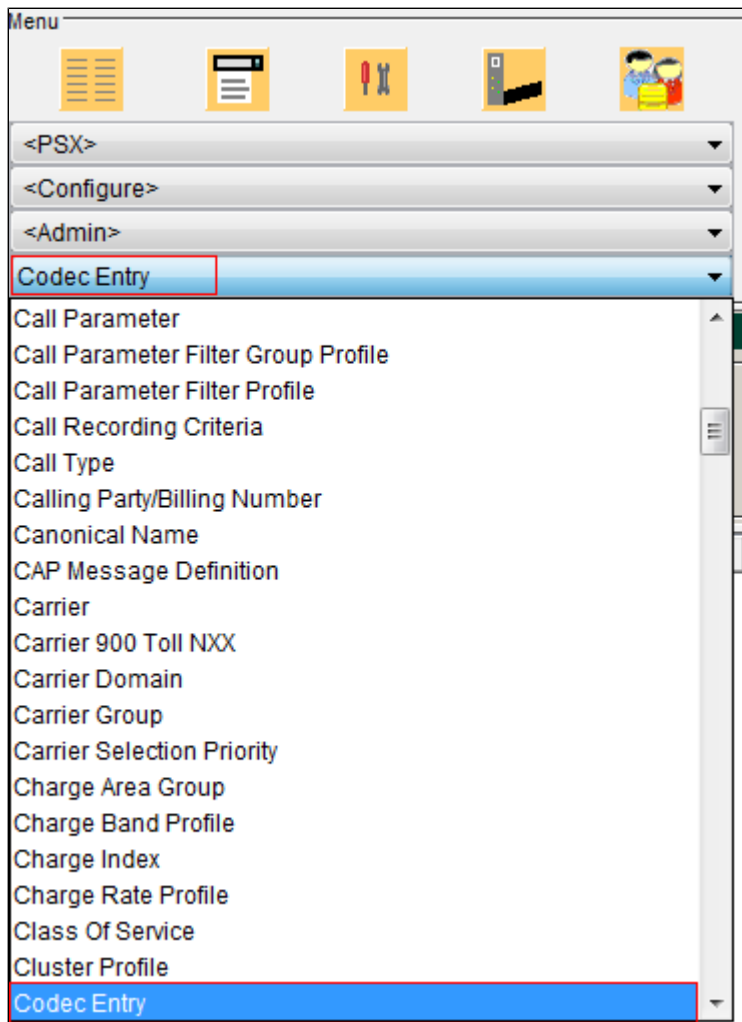
AMR Configuration

1. On the SBC EMA main screen, navigate to **Configuration > System Provisioning > Category: Call Routing > PSX**. The PSX manager window is displayed.

Figure 8: PSX Main Window

2. In the PSX Manager window, choose **Code Entry** from the fourth drop-down box.

Figure 9: AMR-WB Codec Entry



3. To create AMR codec, right click on the Selection Area.

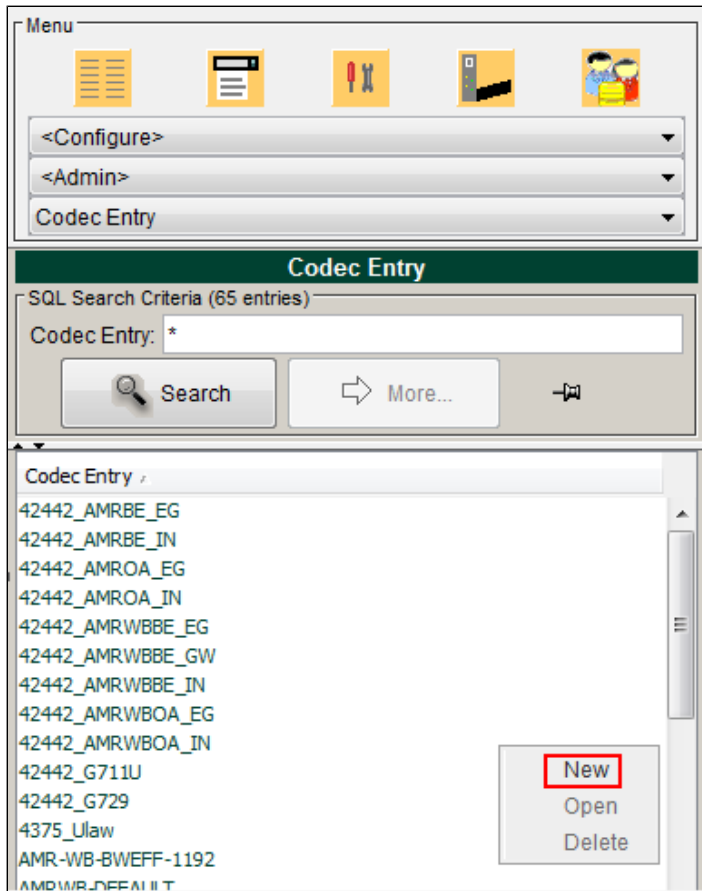


Note

The Initial Codec Mode flag is supported by the following AMR/AMRWB codecs:

- amrBandwidthEfficient
- amrOctetAligned
- amrwbBandwidthEfficient
- amrwbOctetAligned

Figure 10: Selection Area



Select **New** from the resultant pop-up menu.

4. The **Codec Entry** window displays. Provide the **Codec Entry** name.
5. Next, either configure AMR Bandwidth Efficient or Octet Aligned codec.
 - a. To configure AMR Bandwidth Efficient codec, select **AMR Bandwidth Efficient** from the **Audio Encoding** drop-down list.

Figure 11: AMR Bandwidth Efficient Codec

Codec Entry: AMR-DEFAULT
Audio Encoding: AMR-Bandwidth Efficient
 Coding Rate (kbits/s): 6.3
Fax Tone Treatment: <None>
 Packet Size (ms): 20
Preferred RTP Payload Type: 96
 Max Interleave Depth: 0

Fax Treatment Failure Handling
 Disconnect Continue

G.711 Law
 Law From Other Leg A Law U Law G.711 Send SID

Modem Tone Treatment
 None Notify Peer Disconnect Fallback To G.711 Apply Fax Treatment

Modem Treatment Failure Handling
 Disconnect Continue

DTMF Relay
 None Out-Of-Band RFC 2833 Either OOB Or 2833 Both OOB And 2833 DTMF Remove Digits enable DTMF Duration
 DTMF Duration(ms): 300

AMR & AMR-WB Options
 AMRWB lu-UP Mode Mode Change Neighbor
 RTCP APP CMR Initial Codec Mode as per 3GPP 26.114
FEC Redundancy
 0 1 2

Active Codec Set(ACS)
 0 - 4.75 kbps 3 - 6.70 kbps 6 - 10.20 kbps
 1 - 5.15 kbps 4 - 7.40 kbps 7 - 12.20 kbps
 2 - 5.90 kbps 5 - 7.95 kbps

Silence Suppression
 Silence Suppression vad1 vad2

OPUS Options
 UseCBR UseFEC UseDTX
 Max Average Bit Rate (bits/sec): 20000

b. To configure AMR Octet Aligned codec, select **AMR Octet Aligned** from the **Audio Encoding** drop-down list.

Figure 12: AMR Octet Aligned Codec

Codec Entry: AMR-DEFAULT

Audio Encoding: AMR-Octet Aligned

Coding Rate (kbits/s): 6.3

Fax Tone Treatment: <None>

Packet Size (ms): 20

Preferred RTP Payload Type: 96

Max Interleave Depth: 0

Fax Treatment Failure Handling: Disconnect Continue

G.711 Law: Law From Other Leg A Law U Law G.711 Send SID

Modem Tone Treatment: None Notify Peer Disconnect Fallback To G.711 Apply Fax Treatment

Modem Treatment Failure Handling: Disconnect Continue

DTMF Relay: None Out-Of-Band RFC 2833 Either OOB Or 2833 Both OOB And 2833 DTMF Remove Digits enable DTMF Duration

DTMF Duration(ms): 300

AMR & AMR-WB Options

AMRWB lu-UP Mode Mode Change Neighbor

RTCP APP CMR Initial Codec Mode as per 3GPP 26.114

FEC Redundancy: 0 1 2

Active Codec Set(ACS)

0 - 4.75 kbps 3 - 6.70 kbps 6 - 10.20 kbps

1 - 5.15 kbps 4 - 7.40 kbps 7 - 12.20 kbps

2 - 5.90 kbps 5 - 7.95 kbps

Silence Suppression: Silence Suppression vad1 vad2

OPUS Options: UseCBR UseFEC UseDTX

Max Average Bit Rate (bits/sec): 20000

Save Cancel Delete

6. Once the Audio Encoding type is selected, observe the displayed AMR options.

Figure 13: AMR Codec Options

AMR & AMR-WB Options

AMRWB lu-UP Mode Mode Change Neighbor

RTCP APP CMR Initial Codec Mode as per 3GPP 26.114

FEC Redundancy: 0 1 2

Active Codec Set(ACS)

0 - 4.75 kbps 3 - 6.70 kbps 6 - 10.20 kbps

1 - 5.15 kbps 4 - 7.40 kbps 7 - 12.20 kbps

2 - 5.90 kbps 5 - 7.95 kbps

The following parameters are displayed:

Table 2: AMR Codec Options parameters

Parameter	Description
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<p>Mode Change Neighbor</p>	<p>This flag restricts the mode change of an AMR to the neighboring modes in the Active Codec Mode set. Neighboring modes are the ones closest in bit rate to the current mode, either the next higher or next lower rate.</p> <ul style="list-style-type: none"> • If checked, the Egress offer/Ingress answer from SBC sets the Mode-Change-Neighbor value to 1. • If unchecked, change between any two modes in the Active Codec Mode set is allowed.
<p>Initial Codec Mode as per 3GPP 26.114</p>	<p>This flag determines what is the initial codec mode of AMR transcoded call, once the call is established.</p> <ul style="list-style-type: none"> • If unchecked, AMR call starts with the highest rate in the active mode set. If checked, AMR call starts with a rate determined by the following algorithm: • If 1 codec mode is included in the mode-set, it should be the initial codec mode. • If 2 or 3 codec modes are included in the mode-set, the initial codec mode should be the codec mode with the lowest rate. • If 4 or more codec modes are included in the mode-set, the initial codec mode should be the codec mode with the second lowest rate.

7. By default, all the options of AMR Mode Set are checked. To run the calls in a restricted AMR Mode set, uncheck the modes that are not required in the Active Mode Set.

Figure 14: AMR Codec Options for Restricted Mode Set

8. To run the calls in an unrestricted AMR Mode set, select all the mode sets.

Figure 15: AMR Codec Options for Unrestricted Mode Set

9. Click **Save** to save the configuration.

