

Connecting WhatsApp's 2 Billion Users to Your SIP Stack

The Practical Guide

Dan Jenkins – OpenSIPS Summit 2026

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WHEP specification



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Dottie Boards · vcon.store · Broadcast Bridge · ICEPerf.com



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Connecting WhatsApp's 2 Billion Users to Your SIP Stack

2,000,000,000
(A lot of zeros!)

Already on their phone

No app to install

Voice calls.

Real ones.

Who is this for?

In short: *everyone*

The PSTN sucks.

Poor voice quality.

Spam & scams

Cost as a consumer

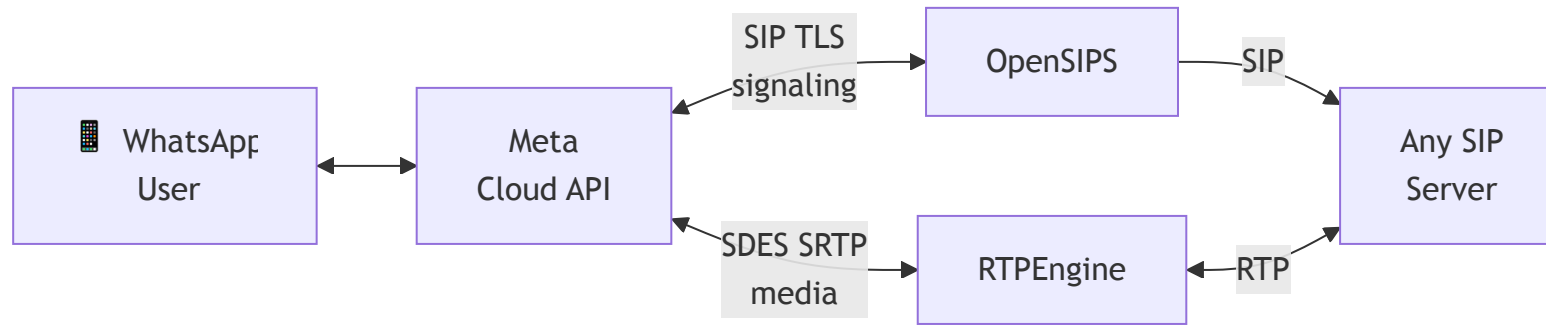
Apps suck.

No-one wants to install a special app to make a call.

People just want to use the tools they already have.

WhatsApp is one of those tools.

The simple picture



DEMO 1

WhatsApp → OpenSIPS → Playback

Let's talk about getting connected.

Five *simple* steps

Five **painful** steps

1. Business Manager verification

2. Create a Meta App

3. Add the WhatsApp product

4. Create a WABA

5. Add a phone number

Sounds simple

It isn't

Business verification

Legal name, address, website

Can take days

Or it can take weeks...

Expect good communication throughout?

I have some bad news for you...

Rejection is common.

And opaque

My advice - do this long before you actually need it.

The WABA

WhatsApp Business Account

Holds your numbers and settings

One WABA, multiple numbers

Adding a phone number

Must not be registered to a personal WhatsApp
account

Goes through OTP verification

Voice Call or SMS

But don't expect it to just work

It never does.

Display name for that number reviewed separately
by Meta

Calling must be explicitly enabled

The halfway house

Already using the WhatsApp Business app?

That number can migrate to the API while keeping the app for messaging.

Direct API vs BSP

BSPs often don't expose calling

On-premises API is deprecated

Don't go there

Even though the docs tell you about them

And you'll actively be encouraged to download certificates for that on premises API.

What. A. Mess.

Cloud API direct

Only path to calling

Dev mode vs Production

New apps start in development mode

Only your test numbers work

Only interaction with approved numbers work.

App review required to flip to production

Again, do this ASAP and get off of "development" mode as soon as you possibly can.

Parts of Whatsapp Business Calling just don't work well with development mode apps or sandbox whatsapps accounts.

The branding win

When your verified number calls a WhatsApp user...

Your approved display name appears

Your logo appears

Not a phone number

A business identity

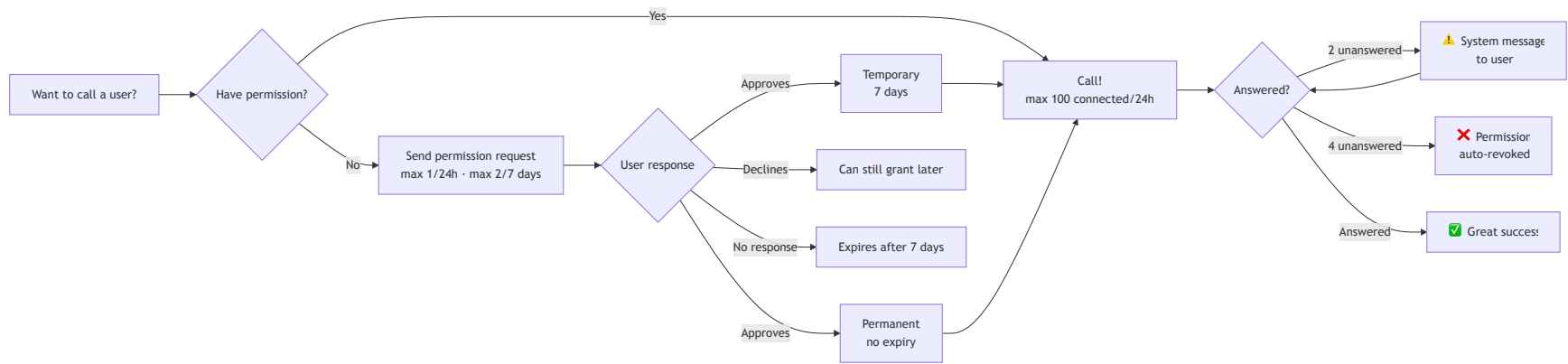
Business-initiated calling

Not available everywhere

Not available in:

USA · Canada · Egypt · Vietnam · Nigeria

The Rules.



User calls you?

Auto-grants temporary permission for 7 days

User can revoke at any time

From the business profile in WhatsApp

It's not simple. Far from it.

The SIP limitations

No re-INVITE support

No call hold. No renegotiation. At all.

500 Errors

No real detail as to what the issue is.

Encryption is enforced - both signalling and media.

Opus by default

PCMA and PCMU now also supported

Added March 2026

Webhooks must be public HTTPS

Valid cert. No self-signed.

SIP must use a valid cert. No self-signed either.

The gotchas

Handle both GET and POST on your webhook

GET is the verification challenge, you must respond to it when setting up the facebook app's webhook URL

SDES vs DTLS, no trickle ICE for SIP.

The pricing model

WhatsApp charges per message

Inbound messages are free

Outbound messages cost

What they cost *depends* on things.

What kind of message template is used?

Service
Auth
Marketing

Has the customer replied within the last 24 hours?

Now you can send free-text

And it's free!

However - Marketing and Authentication templates ARE still chargeable

Phew. You'll need a flow diagram!

Not a free message?

Pricing tiers per type and are accrued across a portfolio of numbers

Rates depend on the country code of the number you are messaging.

Calling charges are completely separate.

Inbound is free.

Outbound isn't

Starts at 0.0071 GBP / 0.0099 USD per minute when calling a
UK whatsapp number

Now let's go further.

Anything that can do SIP TLS and SRTP/DTLS can all
talk directly to Meta WhatsApp

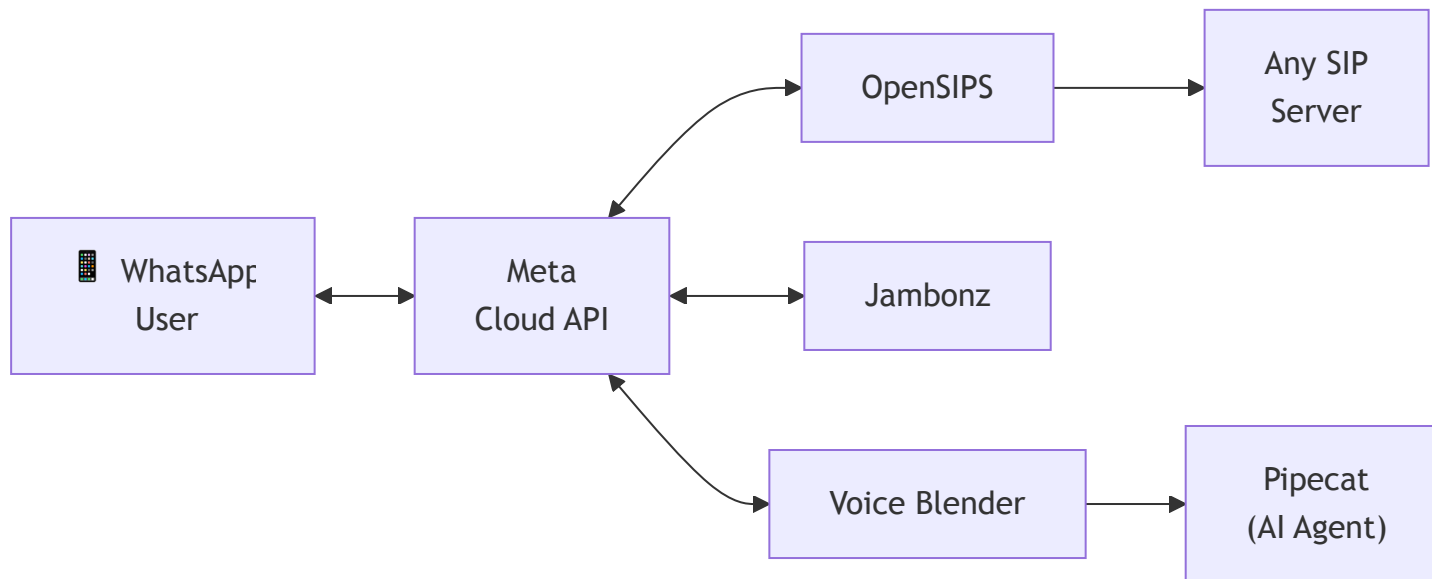
But all those gotchas...

No Re-Invites being the main one...

However OpenSIPS with RTPEngine/RTPProxy,
Jambonz, Voice Blender...

...can all talk directly to Meta

The fuller picture



DEMO 1 Earlier

WhatsApp → OpenSIPS → Your SIP Infrastructure

Be careful. You'll likely need to munge the SDP/SIP to remove whatsapp things.

Converting to your spec for your infrastructure

DEMO 2

WhatsApp → Jambonz → AI Agent
Jambonz talks directly to Meta

Speaks WhatsApp on one side
New AI Agent in Jambonz 10

Just works.

However Jambonz is very heavy, and not necessarily needed for systems that already have SIP working.

DEMO 3

WhatsApp → Voice Blender → Pipecat

DEMO 3

WhatsApp → Voice Blender → Pipecat
+441304 796732

Send a message. Call in. The agent already knows your location

Voice Blender

voiceblender.org – Cezary Siwek

Its an AWESOME new project, go and check it out.

Pipecat

pipecat.ai – Daily (but its open source)

An AWESOME way of handing off "AI" to something that knows how to deal with voice AI!

Why you should do this

2 billion users
Zero friction for them

Inbound calls with full message context

Outbound with verified business identity

Builds on your existing SIP stack

Your customers are already there

Get started

github.com/nimbleape/whatsapp-business-sip-setup
nimblea.pe/blog/whatsapp-business-calling-with-sip

vcon.store

Ideally we'd have saved all these conversations as VCONs

vcon.store

Coming next week at Kamilio World!

IETF DRAFT-IETF-VCON-VCON-CORE COMPLIANT

THE HOSTED VCON CONSERVER

Store, validate, sign, and serve Virtual Conversation containers. Built for telecommunications developers, contact centres, and voice AI builders.

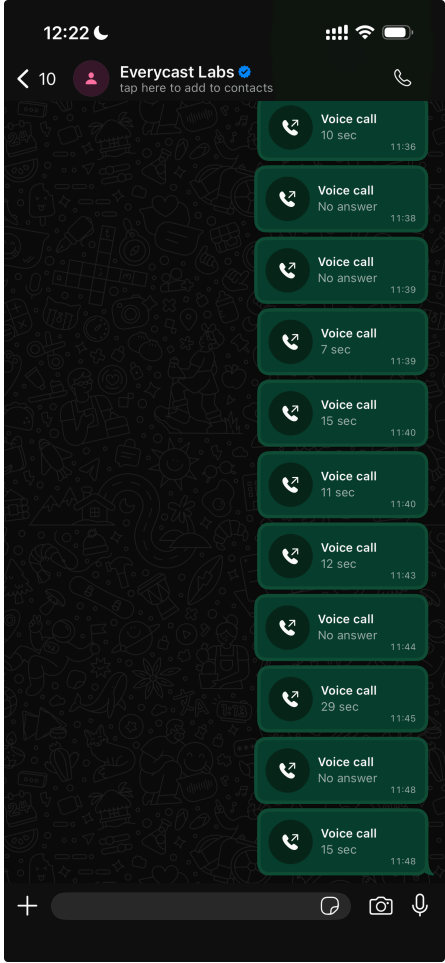
[GO TO DASHBOARD →](#)[VIEW API DOCS](#)

ONE API CALL TO STORE A CONVERSATION

POST A VCON — GET BACK A SIGNED, IMMUTABLE RECORD WITH SCITT TRANSPARENCY.

CURL

```
curl -X POST https://api.vcon.store/v1/vcons \
-H "Authorization: Bearer vcs_your_api_key" \
-H "Content-Type: application/json" \
-d '{
  "vcon": "0.0.1",
  "parties": [
    {"tel": "+44 7700 900000", "name": "Alice"},
    {"tel": "+44 7700 900001", "name": "Bob"}
  ],
  "dialog": [{
```



Voice is back!

Want help getting going? We can help.

Questions?

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