



Startup Engineering

coursera.org/course/startup

Guest Lecture

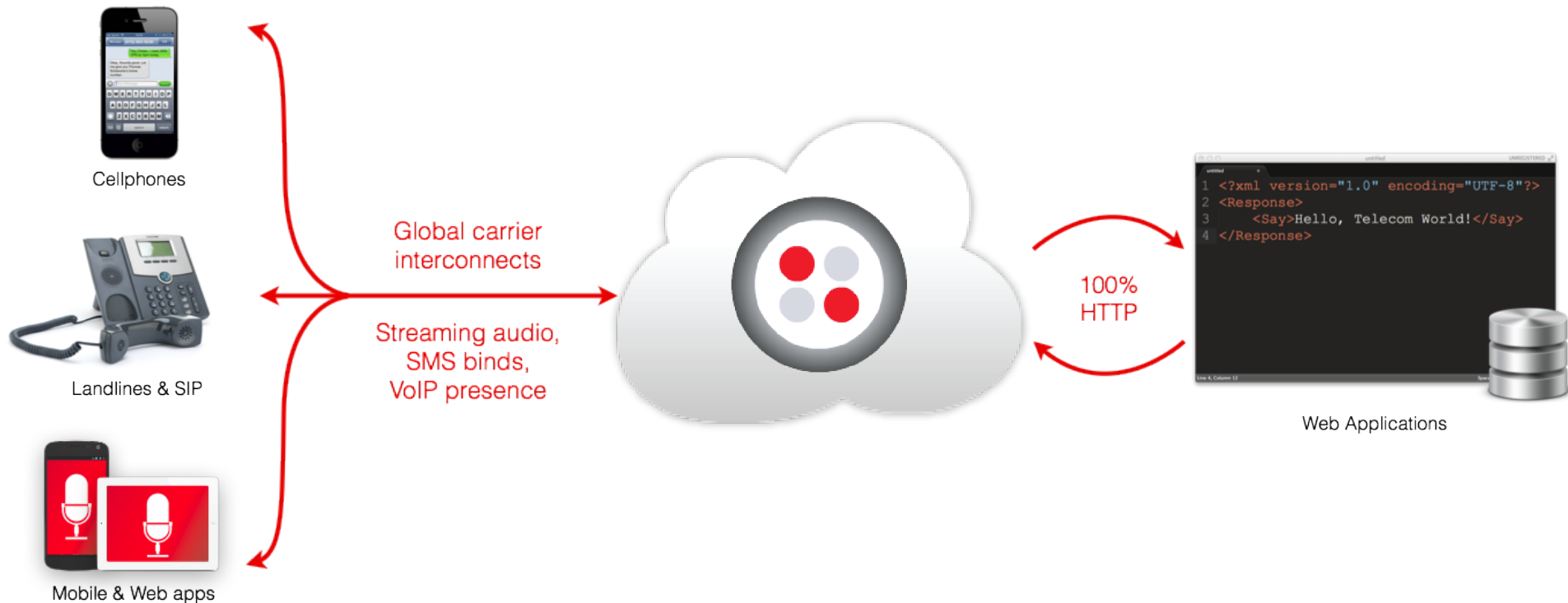
Joël Franusic

Joël Franusic



- Developer Evangelist at Twilio
- Co-organizer for [SuperHappyDevHouse](#)
- Formerly a Developer Evangelist at Microsoft
- Set up a Squid proxy for a small African country

What Twilio Does



About Twilio

- Founded 2007 by Jeff Lawson, Evan Cooke, & John Wolthuis
- \$33M raised. Investors include 500 Startups, Bessemer Venture Partners, & Union Square Ventures
- 130+ employees
- 2008: Twilio Voice
- 2010: Twilio SMS
- 2011: Twilio Client, SMS Short codes
- 2012: Global SMS, Unicode, WebRTC

```
$ cat > /dev/null
```

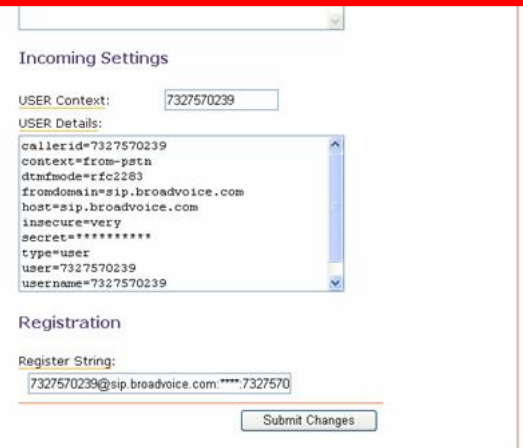
Live coding demo



Instead of this...



Or this...



The screenshot shows a web interface with two main sections: 'Incoming Settings' and 'Registration'. In the 'Incoming Settings' section, 'USER Context:' is set to '7327570239'. Below it, 'USER Details:' is expanded, showing a list of parameters: callerid=7327570239, context=from-pstn, dtmfmode=rfc2283, fromdomain=sip.broadvoice.com, host=sip.broadvoice.com, insecure=very, secret=*****, type=user, user=7327570239, and username=7327570239. The 'Registration' section shows a 'Register String:' field containing '7327570239@sip.broadvoice.com:****:7327570'. A 'Submit Changes' button is at the bottom right.

You will need to fill out the main items on the SIP/Trunk screens. I am using BroadVoice for incoming service only, so I will not administer outgoing

Outbound caller ID: 7327570239
Max channels: 1

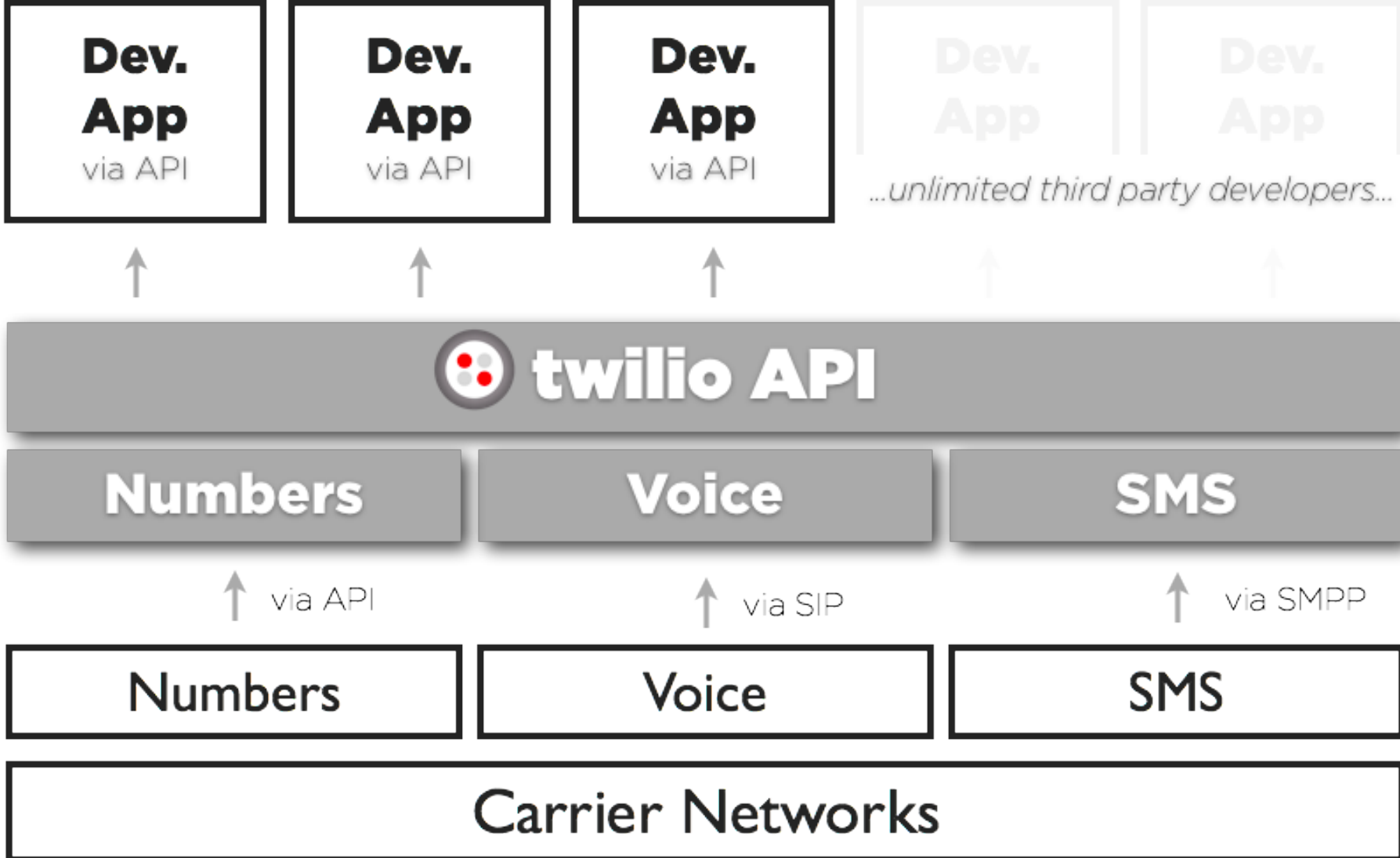
The outgoing settings can be left as is, except to fill in the trunk name as BroadVoice.

In Incoming Settings, fill in the following:

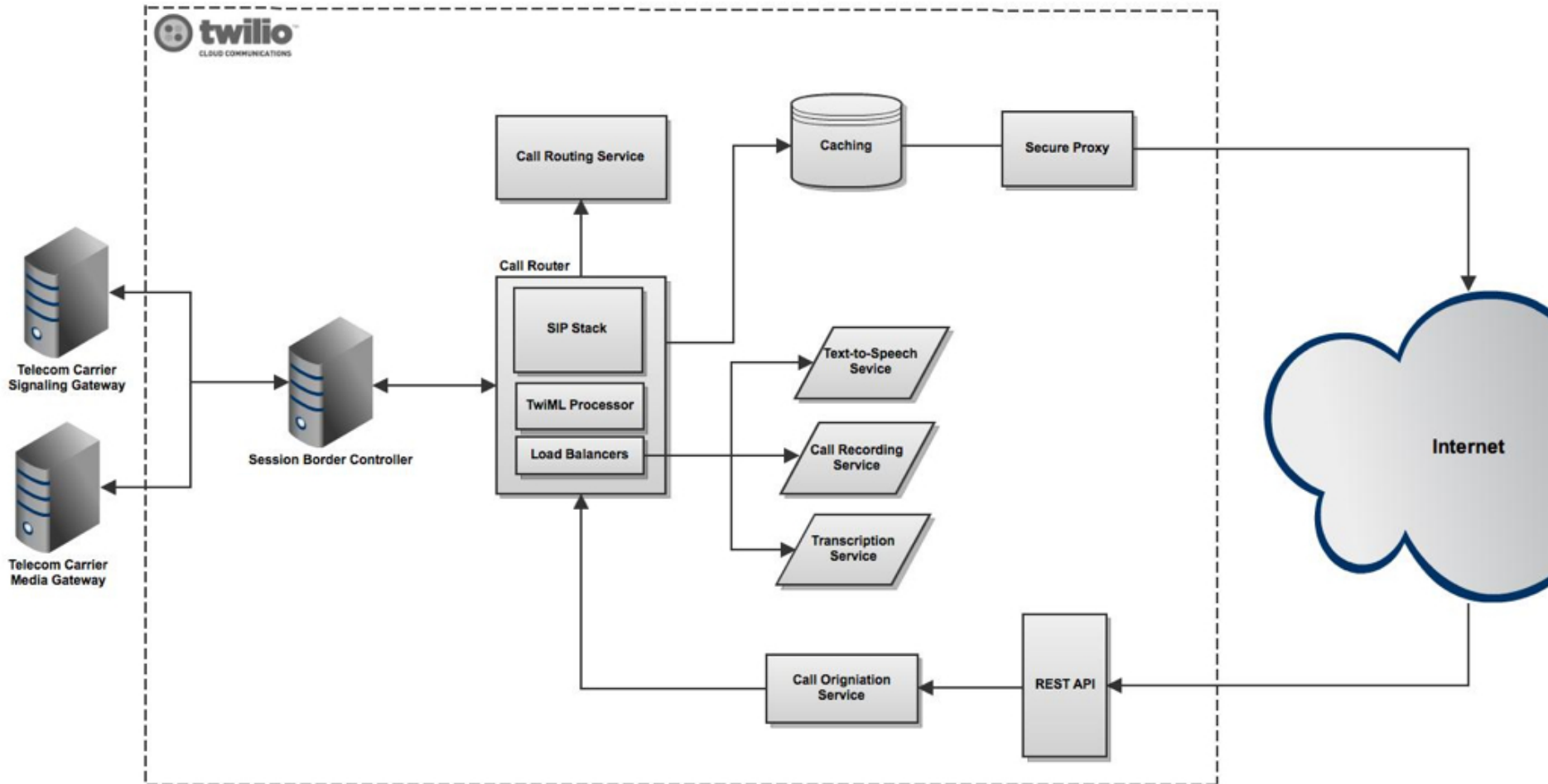
User Context: 7327570239
User Details:
callerid=7327570239
context=from-pstn
dtmfmode=rfc2283
fromdomain=sip.broadvoice.com
host=sip.broadvoice.com
insecure=very
secret=*****
type=user
user=7327570239
username=7327570239

The format of the Register String is: *username:password:phone_number@provider_domain*. For BroadVoice this is what you will want to use (replacing w
7327570239@sip.broadvoice.com:*****:7327570239@sip.broadvoice.com/200

How does it work?



The Twilio (Voice) Stack



Engineering Culture

Twilio's Nine Values

1. Live the spirit of challenge
2. Empower others
3. Start with why
4. Create experiences
5. No shenanigans
6. Be humble
7. Think at scale
8. Draw the owl
9. Be frugal

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8: Draw the owl

"There's no instruction book, it's ours to draw.
Figure it out, **ship it** and iterate."

7: Think at scale

- 6 regional data centers
- 1,000+ servers
- 80+ databases w/ 30k QPS
- 0.5+ PiB of data
- Deploy to production several times a day
- Zero maintenance window

Open Source

- **Shadow**

A proxy for validating release candidate software against production data.

- **Flask-RESTful**

The Python Flask framework that Twilio's API and internal services are built on.

- **Stashboard**

The service dashboard that powers <http://status.twilio.com>

- **Hurl.it**

A web based tool for making and diagnosing HTTP requests.

Developer Evangelism

Part of Twilio's DNA

- Danielle Morrill
 - First hire
 - First evangelist
 - Founded our developer evangelism program.
- Our success is directly tied to our customer's success.

API = self-serve biz dev



Paul Graham ✓

@paulg



Following

API = self-serve biz dev.

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10:14 PM - 20 Feb 12

Also needed:

- Clear value proposition
- Fast signup
- Simple API
- Efficient quickstarts
- Concise, accessible documentation
- Easy authentication (basic v. OAuth)
- Debuggable

In short

"It should take no more than 5 minutes for a developer to perform a *useful* task using your API for the first time."

Hero Makers

- Ambassadors between Twilio and Twilio's developers.
- Storytellers.
 - Code.
 - Writing.
 - Speaking.

Also needed:

- Clear value proposition
- Fast signup
- Simple API
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- Easy authentication (basic v. OAuth)
- Debuggable

Let's see some more code

Twiml

```
<Response>  
  <Say>Hello world</Say>  
</Response>
```

```
<Response>  
  <Dial>  
    <Conference>Party</Conference>  
  </Dial>  
</Response>
```

Twiml Verbs

- Say
- Play
- Gather
- Record
- Sms
- Dial
 - Number
 - Client
 - Conference
 - Queue
- Enqueue
- Leave
- Hangup
- Redirect
- Reject
- Pause

REST API

- RESTful
 - HTTP
- API Libraries
 - PHP
 - Ruby
 - Python
 - .NET
 - Java
 - Node.js, C++, Scala, Perl, Erlang, etc

API Credentials

```
from twilio.rest import TwilioRestClient

account_sid = "ACXXXXXXXXXXXXXXXXXXXXXXXX"
auth_token = "YYYYYYYYYYYYYYYYYYYYYYYYYYY"
client = TwilioRestClient(account_sid,
                           auth_token)
```

Make a call

```
call_url = ("http://twimlets.com/"  
            "holdmusic?Bucket=" "  
            "com.twilio.music.ambient")  
  
call = client.calls.create(  
    to="+12316851234",  
    from_="+12125551234",  
    url=call_url)
```

Send an SMS

```
message = client.sms.messages.create(  
    to="+12316851234",  
    from_="+12125551234",  
    body="Hello there!")
```


List received SMS messages

```
messages = client.sms.messages.list(  
    to="+5466758723")  
  
for message in messages:  
    print message.body
```

Buy a phone number

```
numbers = client.phone_numbers.search(  
    area_code=530)  
  
if numbers:  
    numbers[0].purchase()  
else:  
    print "No numbers in 530 available"
```

And more...

- Conferences and participants
- Accounts, Subaccounts
- Recordings
- Queues and Members
- TwiML creation

Summary

- Twilio allows you to:
 - Make and receive phone calls
 - Send and receive SMS messages
 - Using a simple RESTful API
- With phones, web browsers and mobile apps
- Focus on continually improving your service. "Ship it"
- The 5 minute rule
- Empower others



twilioTM

CLOUD COMMUNICATIONS

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