Managing SDKs and Their Communities in Multiple Programming Languages

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@thinkingserious
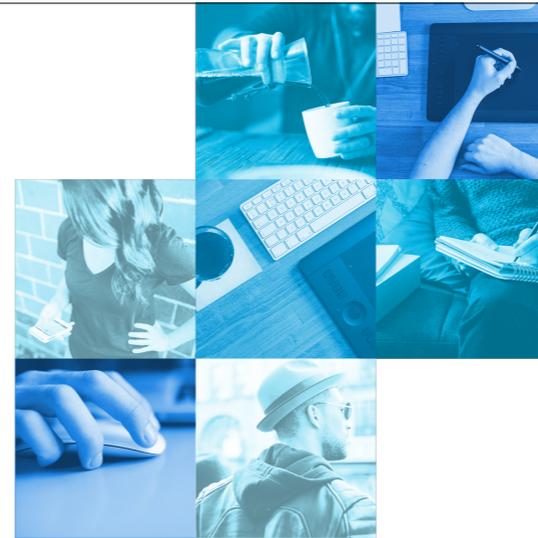
SendGrid

SendGrid's 7 Core API Client SDKs

PHP   Node.js
Python   Go
Java   Ruby
C#
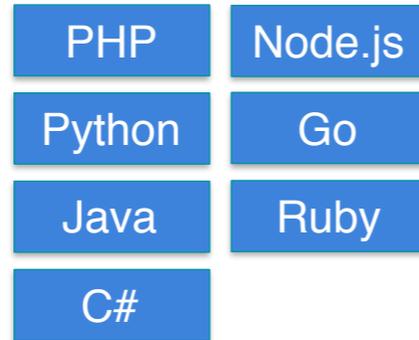
BILLIONS of emails flow through these SDKs every month.

No pressure.

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Our story and a preview of lessons learned

DX Team (just over 3 years):
• DX Product Manager
• DX Engineer
• DX Docs team

We manage 24 open source repos: https://github.com/sendgrid

First job: v2 -> v3 migration, estimated at 8 years of hand coding 233 endpoints

Dropped perl because I'm not a wizard

My face at the prospect of this challenge

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I scoff at your challenge

Your Guide to a ~35 Minute Tour

- Choosing what languages to support
- Getting up to speed with foreign languages
- OpenAPI as the source of truth
- Automating
  - Integration Tests
  - Documentation
  - Code
  - Examples
  - CLAs
  - Backlogs
  - Swag
- What NOT to Automate
- Community & Collaboration
- Prioritization
- A Day in the Life

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Quick background on me: https://www.linkedin.com/in/thinkingserious
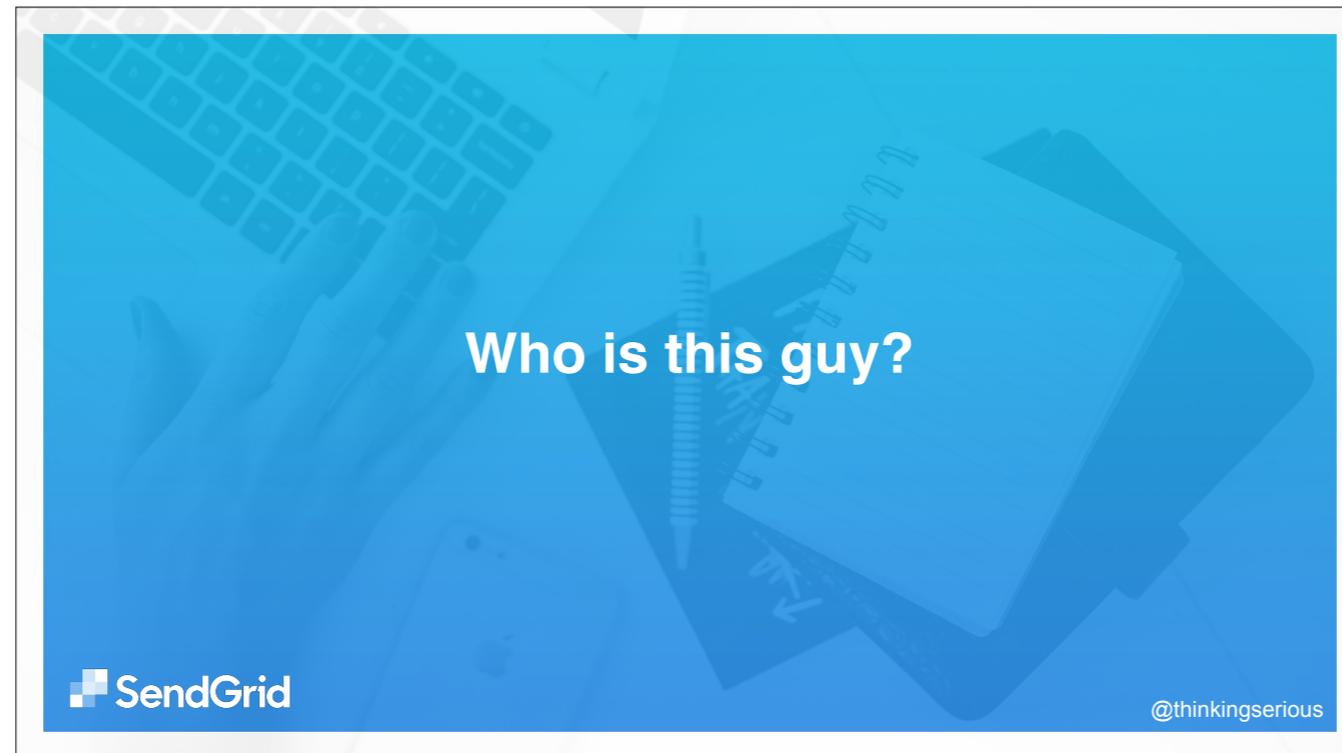
Highlights:
• B.S. Computer Engineering, 2003
• M.S. Electrical Engineering, 2005
• Failed (Challenged) Founder
• Consultant (Software/Marketing)
• SendGrid!

Septalingual
Member of the Maintainerati

(obviously)

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Developer Relations > Hacker in Residence > DX Engineer

Choosing What Languages to Support

- One language at a time
- Interview a sample of your customers
- Utilize surveys
- GitHub research
- Page tracking
- User agents

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Popular surveys:
- https://octoverse.github.com/
- https://insights.stackoverflow.com/survey/2018/#technology

Supporting Languages You Don't Know

- Determine your optimum learning style
- Take a 2 week learning sprint
- Start with philosophy and proceed to fundamentals
- Discover the key people in each community
- Build an HTTP client from scratch
- Explore quality SDKs from top-tier API providers

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> ❝
> To automate or not to automate?
>
> **- Me**

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Build vs. Buy?

Buy (or use existing open source solution) Pros
• Quicker to market
• Potentially lower cost

Buy Cons
• Maintainability (learning curve + long term maintenance)

Build Pros
• Flexibility
• Maintainability, provided a good design

Build Cons
• Slower to market
• Potentially higher cost

We decided to build on top of OpenAPI (Swagger, at the time)

Gotchas
• Snake case vs CamelCase

Best Practices
• Think through your design and share with others before implementation
• Steal from the best

YES

- General Docs
- Integration Tests
- Examples
- Low Level Code
- CLA
- Swag
- GitHub Interactions

NO

- HTTP Client
- Helpers
- README
- Getting Started Docs
- Use Case Docs
- Troubleshooting Docs
- Contributing Docs
- Unit Tests
- Semver Versioning

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General Docs
• Automate with OpenAPI as central source of truth

Integration Tests
• Use Prism to mock these

Examples (code)
• You can derive these from your OpenAPI spec also

Low Level Code
• The low level API calls can be generated from the OpenAPI spec
• The value is in the helpers built on top of this code though

CLA
• Don't make people fax or print/sign/scan
• Use SAP's cla-assistant.io

Swag
• Doing this by hand with a spreadsheet is horrible
• Use Kotis

GitHub Interactions
• Labeling
• Canned comments (e.g. support issues)
• Webhook to backlog and other triggers

HTTP Client
• We were aiming for dependency free native code

Helpers
• Should be lovingly crafted, preferably in collaboration with your users

Hacktoberfest

Initial community feedback on changes
crickets

How we fixed that with our latest SDK updates
rabble rabble, rouse rouse

Finding and supporting external developer advocates

Talk about some stories regarding major shifts:
• .NET (dynamic-gate)
• Node.js (New Zealand FTW)
• Dynamic Template support
• ; issue

> How do we do (prioritize) all the things?

$$\frac{R * I * C}{E}$$

- Me

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Backlog

Scrumban Style

Prioritization with a RICE score in our backlog
• Reach can be computed by estimating how many of your users this issue or pull request would effect.
• Impact is subjective, keep it simple with categories like large, medium, and small.
• Confidence is your idea on how much confidence you have in the reach impact and effort estimations.
• Effort is how difficult you think it will be to complete.

RICE score = (R*I*C)/E
https://sendgrid.com/blog/double-your-velocity-without-growing-your-team-with-rice

A Day in the Life

- Meeting preparations
- Admin tasks
    - Calendar, Emails, HipChat, etc..
- GitHub
    - Inbox
    - Check automated systems
    - Process intake items in backlog
- Growth tasks
- Automation
- **Backlog work**

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Pomodoro driven
Image Credit: https://en.wikipedia.org/wiki/Pomodoro_Technique#/media/File:Il_pomodoro.jpg

A Day in the Life - End of Day

- Give kudos to fellow SendGrid'ers
- Breadcrumbs
- Email review
- HipChat review
- Daily standup prep
- Prepare the next day's checklist

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Meeting Template

- Date/Time/Location
- Attendees
- Purpose
- Key discussion points
- Expected outcomes
- Action items
- Notes

For location, if it's a Zoom meeting, for example, include the link

Thank You!

please clap

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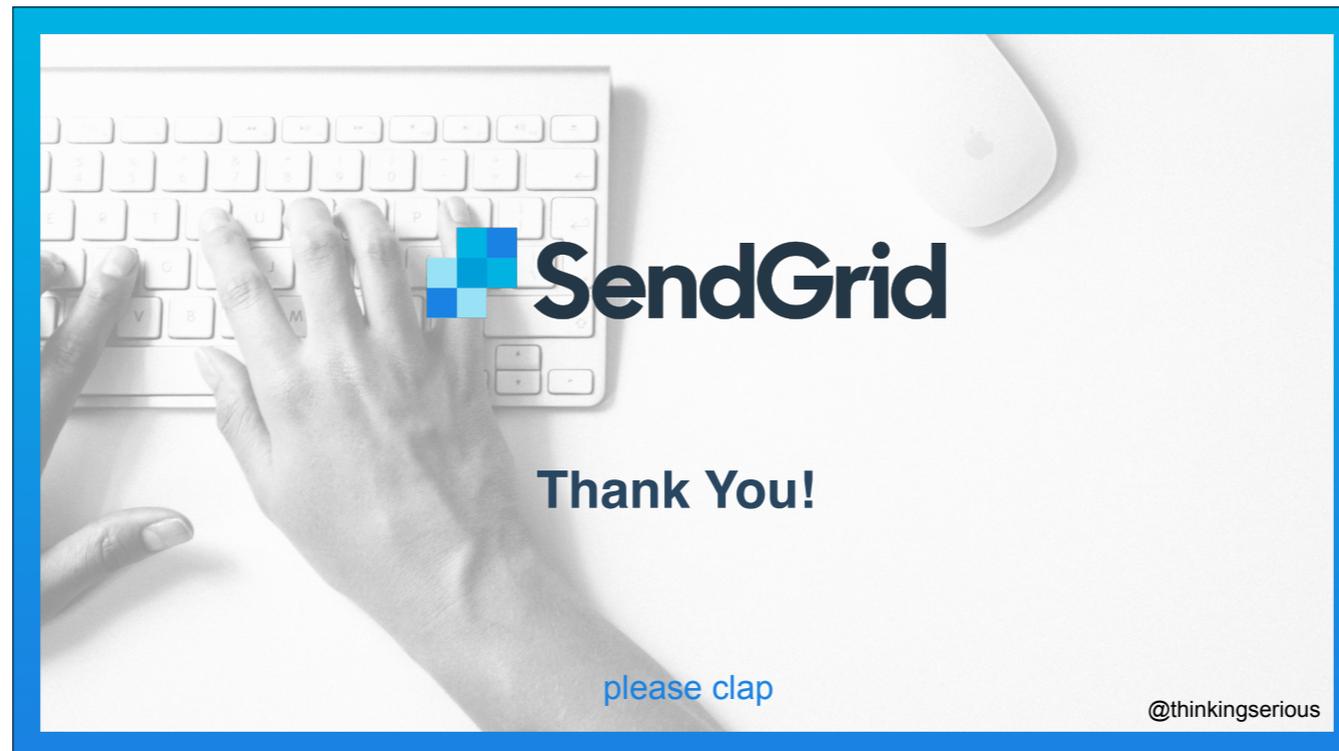
Questions

Wait, there's more

- DX@SendGrid.com
- [DZone Article](#)
  - Expands on the topics in this talk, plus it covers:
    - Creating the GitHub repository
    - Support, Collaboration and Management
- [DX Automator](#)
- [Some Coding Required Podcast](#) + Stickers

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