(US)NUA
US Networking User Association

IXPanel:
Next Gen IXP Management Tooling

Small/Nonprofit IXPs deserve good tools too

Problems with existing tools

But first, an acknowledgement…

We (I) stand on the shoulders of giants

If it weren't for these existing tools, we would have nothing to learn from

Hard to administer

Setup

- Wants a dedicated VM
- Undocumented requirements
- ”Just run our install script”
- “Just set up a Kubernetes cluster”

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- “Just set up a Kubernetes cluster” (real quote)

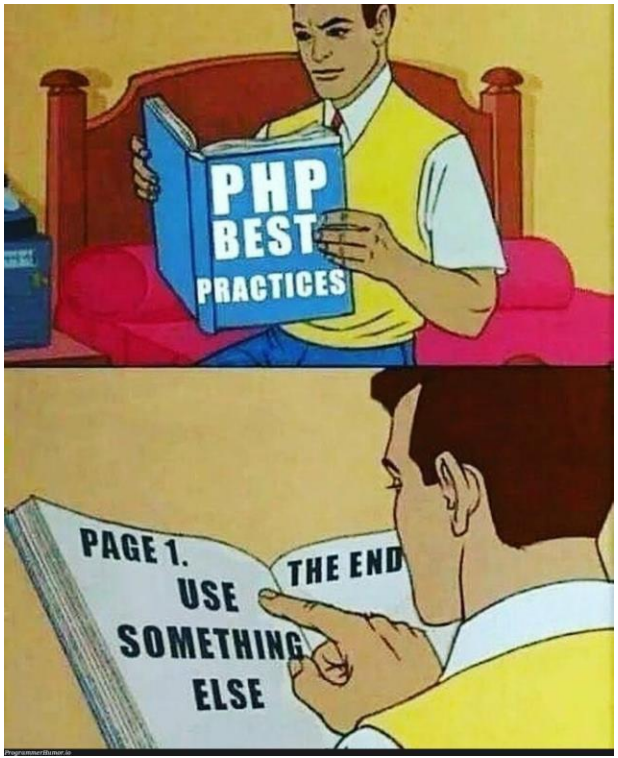
Maintenance

- Upgrades require jumping through each patch (v0.0.x) version
- Reliance on system packages
- Watch a youtube video??

Hard to administer

PHP. ’nuff said.





Interfaces made by engineers

Difficult to set up

Why do I need to make an “infrastructure”, then a rack, a switch, populate interfaces, create a pool of IPs, etc. just to make a route server config?

Interfaces made by engineers

Difficult to set up

Why are you asking me to make a facility & rack?

What do you mean the only way to learn how to generate RS configs is to watch your youtube video?

Bad validation & defaults

Why are my route servers trying to peer with each other and themselves?

Goals & Guiding Principles

Goals: Administration

- Containerized
- Easy to upgrade (just bump the tag)
- Low resource usage
- No opaque requirements or scripts
- Minimal attack surface

Goals: Integration

- Fully documented API
- **Don’t re-invent the wheel:**
  Integrate with existing tools where possible
- Separate frontend and backend (allows for re-skinning or interface changes)

Goals: User Experience

- Easy 0→1: quick payoff to get useful results
- It should not let you do stupid things
- Utilize modern features of common IX tools (like BIRD being dual stack since v2)
- Allow for importing data
- **Be minimal but powerful**

Enter: IXPanel

IXPanel

- Free & Open Source (soon)
- Single-binary (<50MB) **Rust** backend, fully containerized
  - Memory usage under no load: <50MB (compare to 400MB)
  - Self contained, minimal system dependencies
- 3 containers
  - Database (PostgreSQL)
  - Server
  - Frontend (can also be distributed on CDN)

I LOVE RUST

- Free & Open Source (soon)
- Single-binary **Rust** backend, fully co[illegible]rized



Marked Safe From

PHP vulnerability



[illegible]o load: [illegible]400MB)

[illegible]l s[illegible]

[illegible]istributed on CDN)

IXPanel

Project Status

Version: Pre-Alpha

Closed Source

IXPanel

Current Features

- **Rich OpenAPI schema**
  Fully typed with inline notes and schema explorer built in
- **Quick to set up**
  No DCI tracking - on purpose
- **Dual-stack Route Servers**
  BIRD2 from day 1, BIRD3 & OpenBGPD planned

IXPanel Demo

Questions?

Closing Note

Alpha Release will be announced on LinkedIn

If you want to help work on it, suggest features, provide a security audit, or test it out, let me know!

Contact
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Follow me on LinkedIn!

Thank you!