WiX Engineering

Managing a 120 module npm monorepo and staying sane

Vilius, Software Engineer

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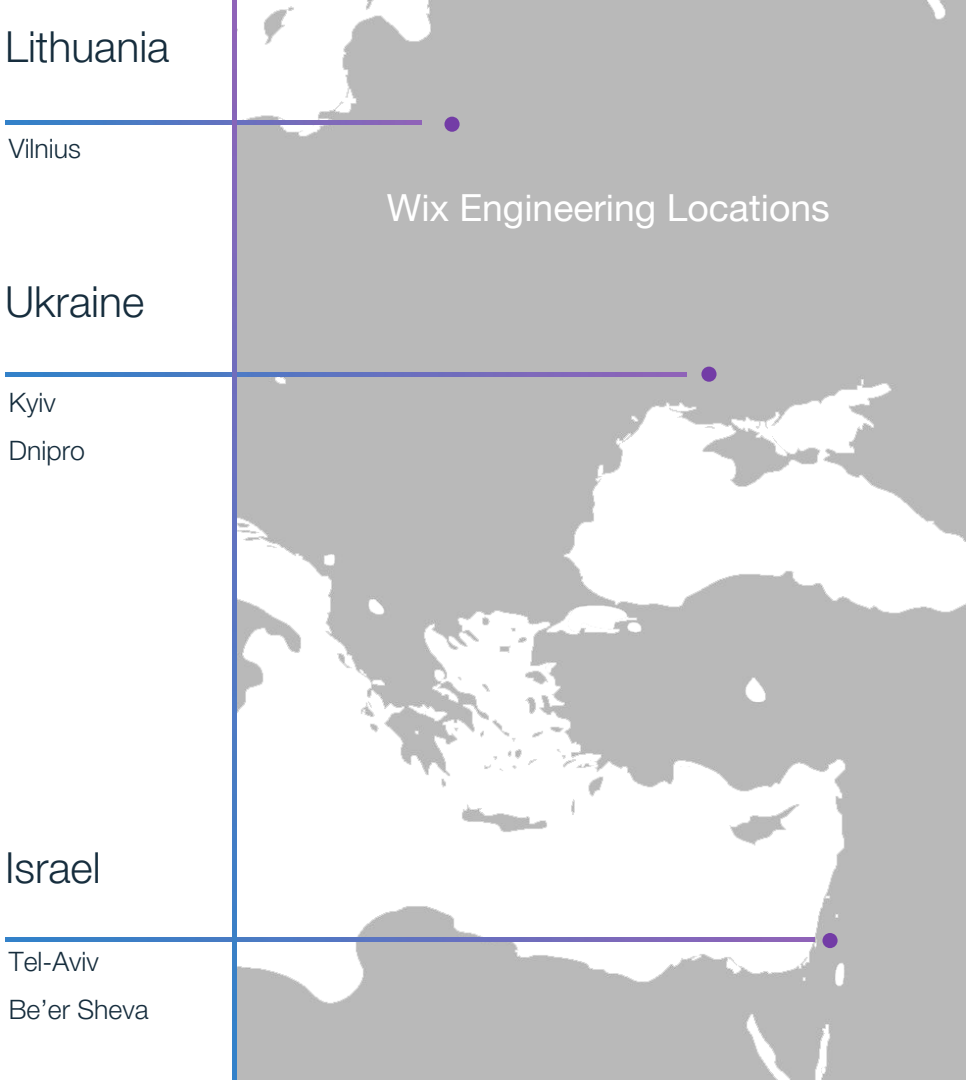
Hi.

I am Vilius



Hi.

I am Vilius

Lithuania

Vilnius

AGENDA

Modules, npm, monorepo

The thing

The journey

tl;dr

Managing a 120 module npm monorepo and staying sane

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01

Managing a 120 module npm monorepo and staying sane

Modular programming is a software design technique that emphasizes separating the functionality of a program into independent, interchangeable modules, such that each contains everything necessary to execute only one aspect of the desired functionality.

Wikipedia

A module,

- encapsulates code and data to implement a particular functionality.
- has an interface that lets clients to access its functionality in an uniform manner.
- is easily pluggable with another module that expects its interface.
- is usually packaged in a single unit so that it can be easily deployed.

02

Managing a 120 module npm monorepo and staying sane

npm

- low entry barrier;
- semver for module versioning;
- module isolation;

02

Managing a 120 module npm

monorepo and staying sane

Juggling a multi-module project over multiple repos is like trying to teach a newborn baby how to ride a bike.

Babel

monorepo,

- Single lint, build, test and release process.
- Easy to coordinate changes across modules.
- Single place to report issues.
- Easier to setup a development environment.
- Tests across modules are run together which finds bugs that touch multiple modules easier.

03

Managing a 120 module npm monorepo and staying sane

wix-node-platform

- everything node @ wix;
- 130+ modules:
    - bootstrap,
    - 20+ plugins,
    - 30+ testkits,
    - 30+ opt-in modules.

But why?????

module is a simple building block with no-compromise boundary

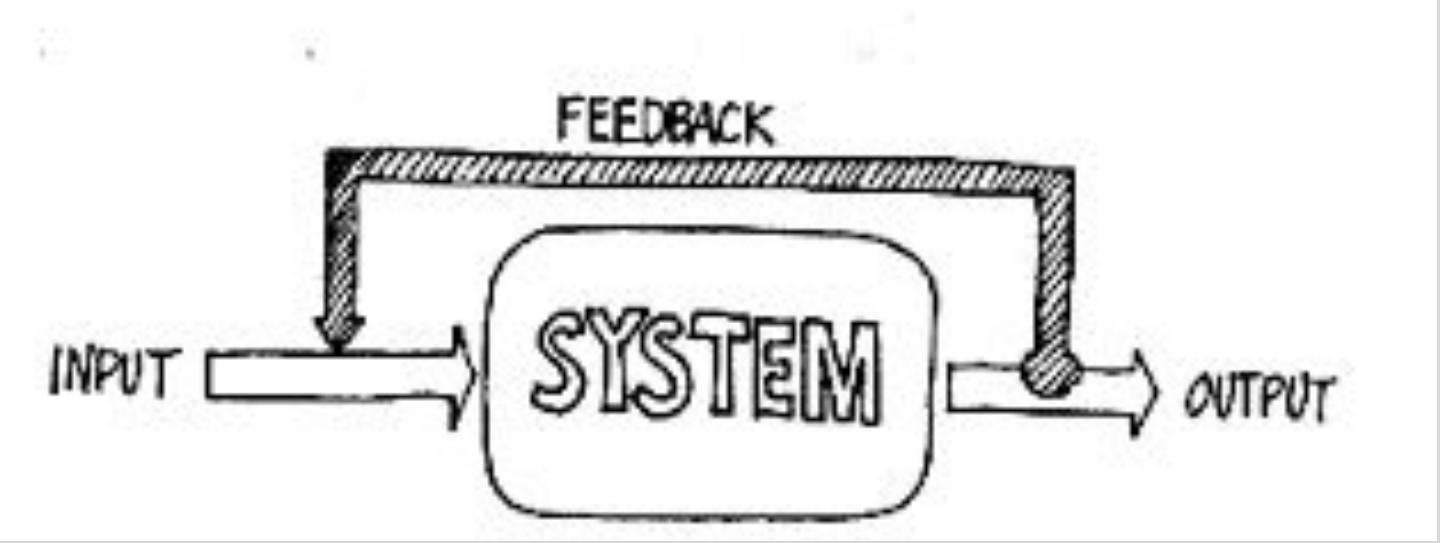
npm allows to keep it cheap and sane

all the benefits of modular programming

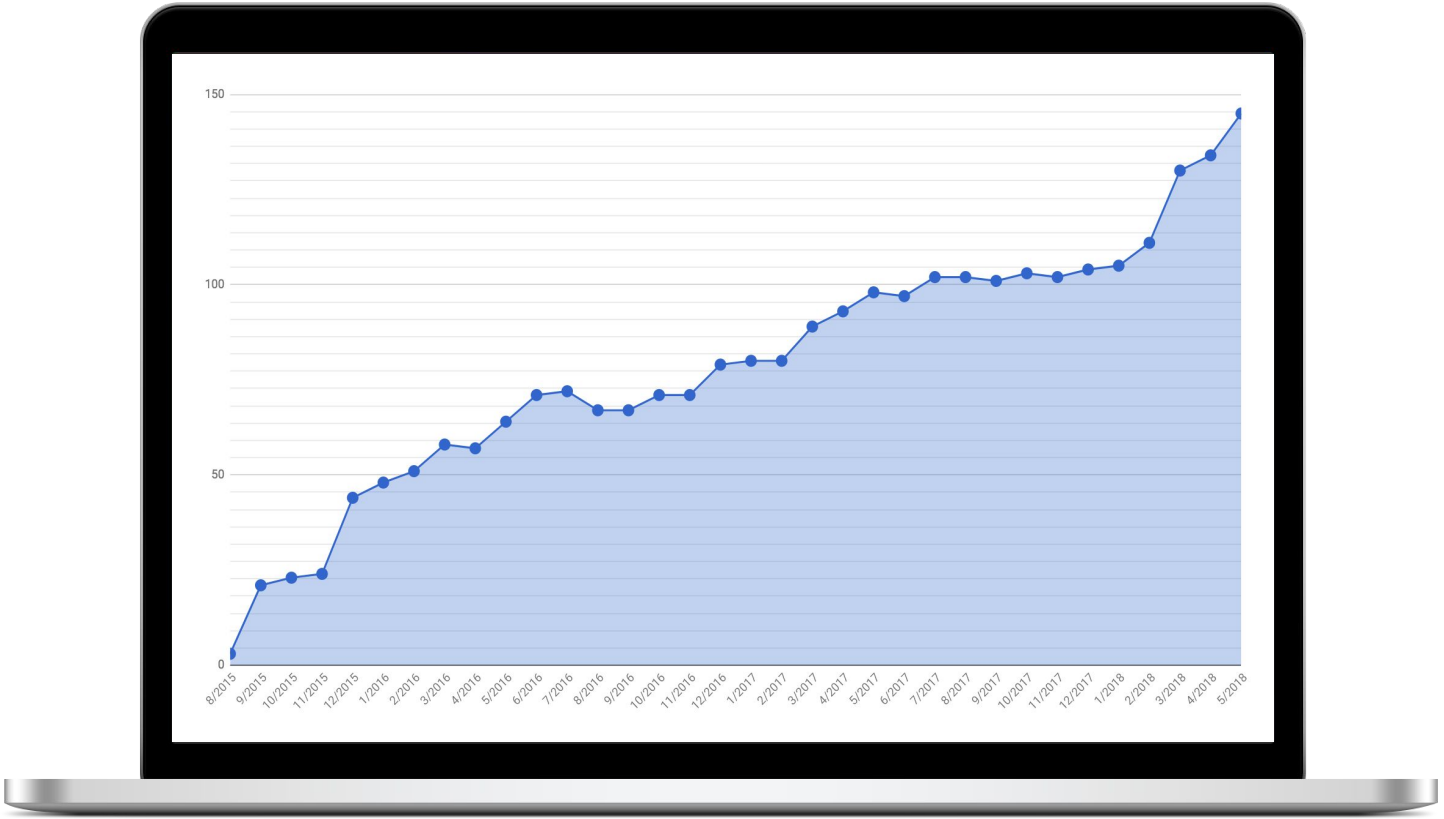
with a price to pay...

04

Managing a 120 module npm monorepo and staying sane


FEEDBACK
INPUT
SYSTEM
OUTPUT

Growth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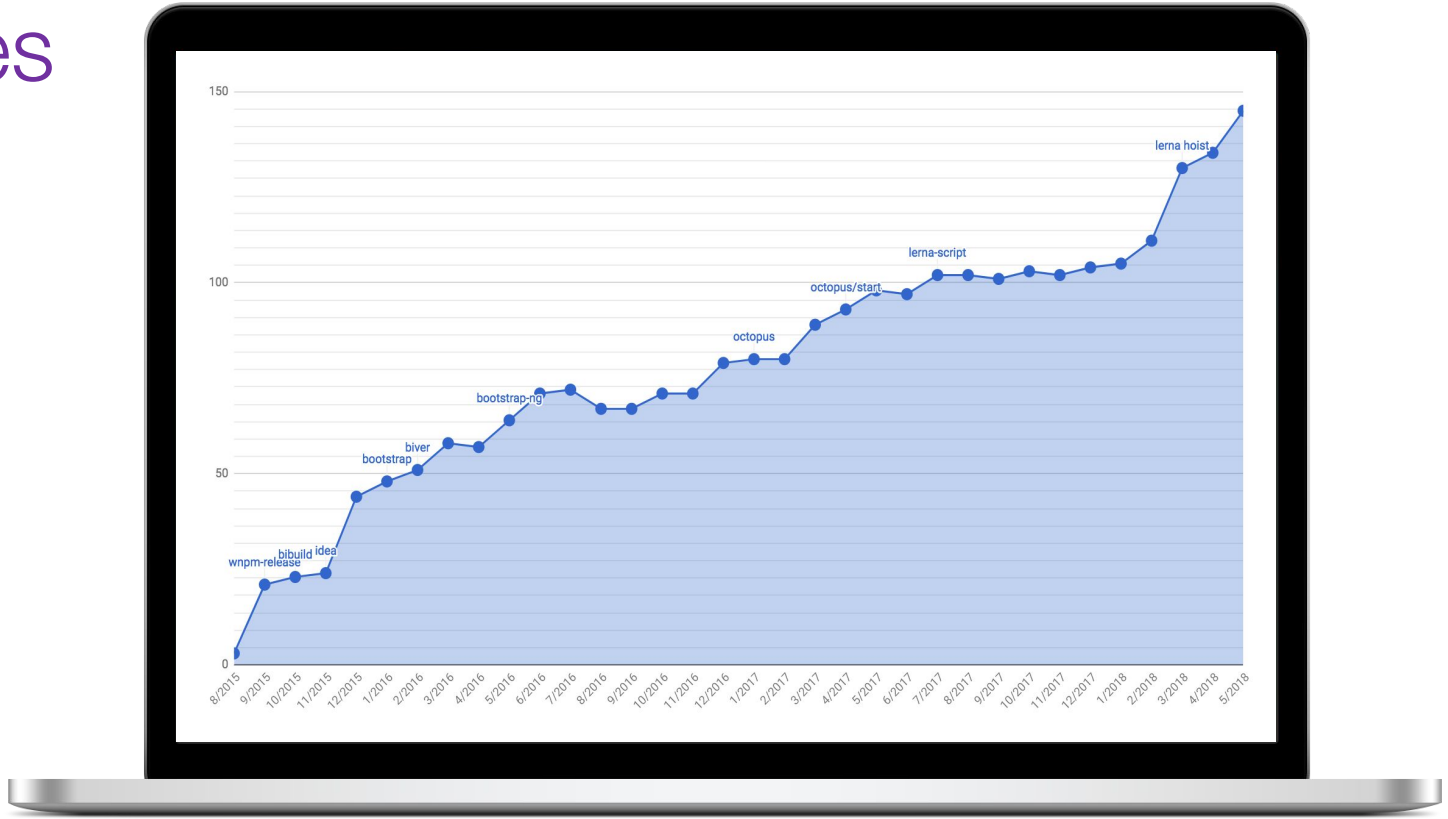
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wnpm-release
bibuild
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octopus/start
lerna-script
lerna hoist
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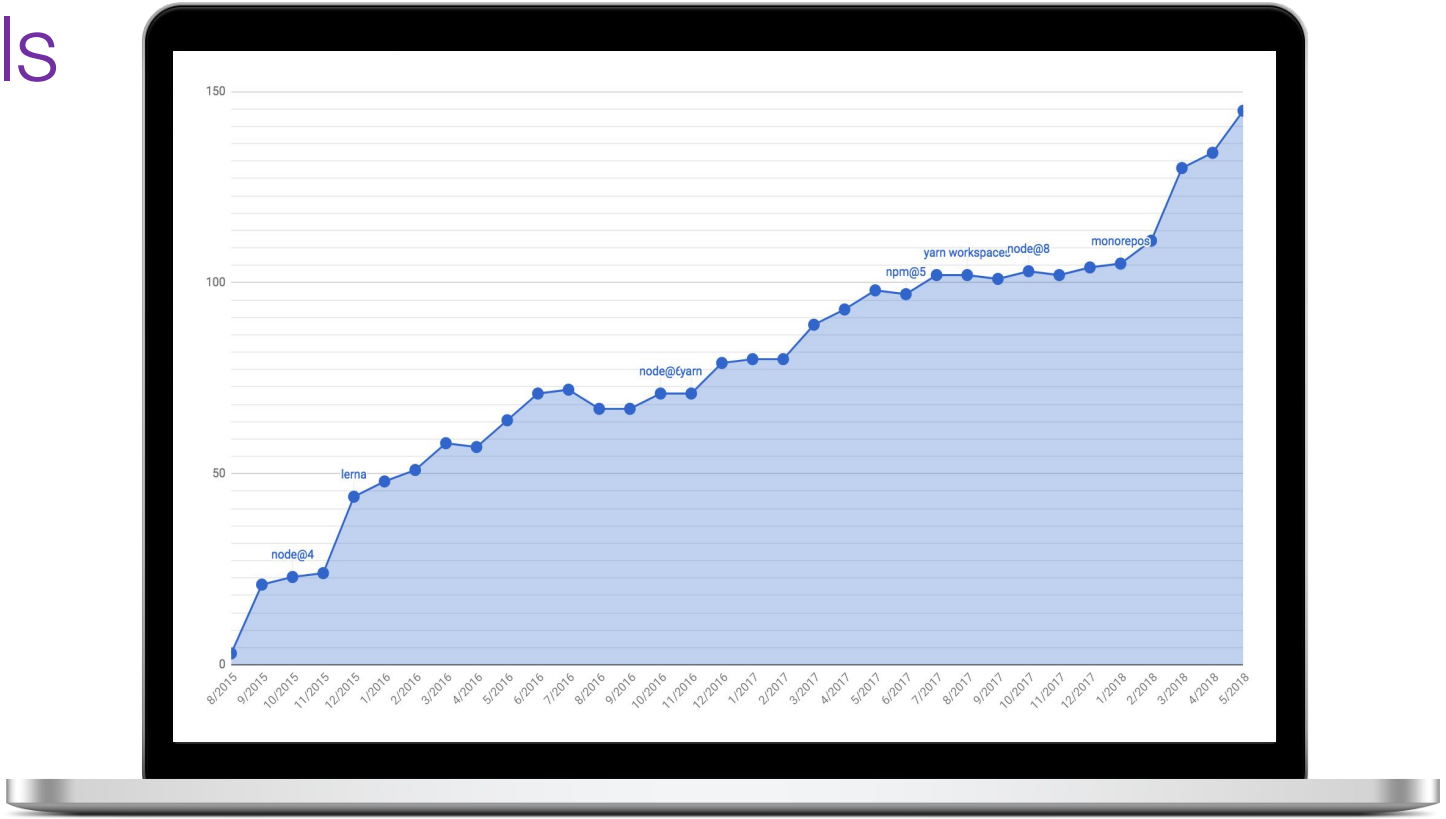
Externals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0..21 - POC

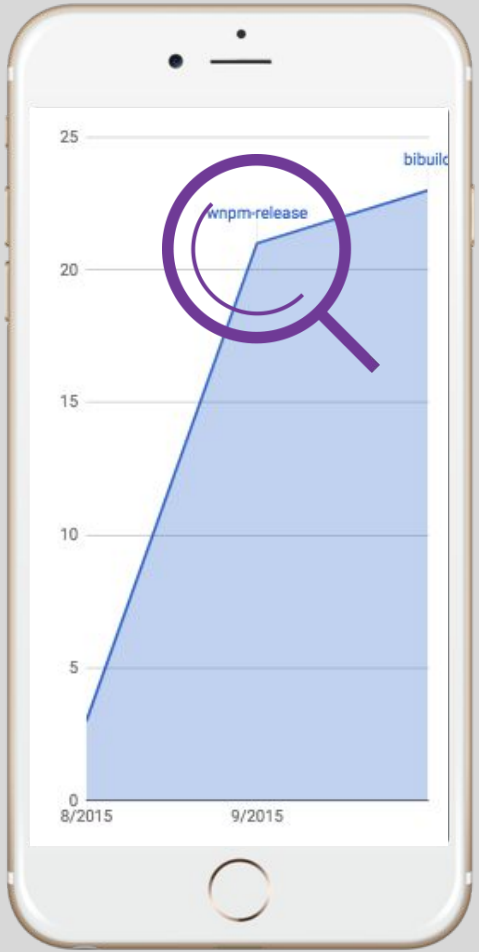
- just creating building blocks that we KNOW we will need!
- no notion of management;
- messy, but not a problem - no maintenance;
- publishing from localhost

TODO: module graph (disconnected) here

15..21 - publishing:(

wnpm-release (@ 21)

- snapshot-like release for npm modules;
- ci support for breaking-up npm monorepo into linked builds;



15..23 - linking/building:(

bibuild (@ 23)

cli tool to build multi-platform (jvm, node) repos:

- incremental builds;
- fixed execution flow;
- independent node version support.

TODO: terminal with bibuild running and building 23 modules.

20..23 - IDE support:(

bidev idea (@ 23)

cli tool to generate IntelliJ IDEA project with:

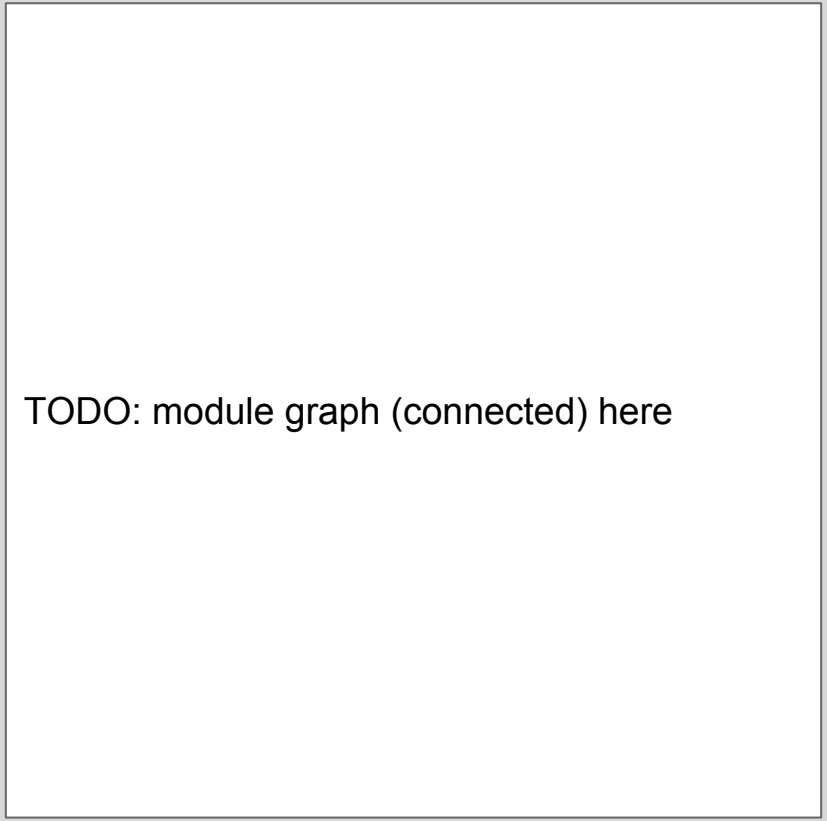
- exclusions;
- run configurations;
- src/test folders;
- ...

TODO: terminal with bidev, opening ide, running tests

48 - yey, bootstrap:)

48 - bootstrap

- composition of modules into cohesive whole;
- first real users



40..51 - version hell:(

biver (@ 51)

cli tool to sync/update dependency versions:

- dump state of existing versions;
- fetch latest versions;
- modify and apply

TODO: terminal with biver running

64 - wee, bootstrap-ng:)

bootstrap-ng (@ 64)

rewrite of boostrap:

- saner api;
- plugin architecture;
- ...

TODO: example code

50..80 - slooooooow:(

bibuild (@ 80)

graph with modules and time taken to build - cold and already installed

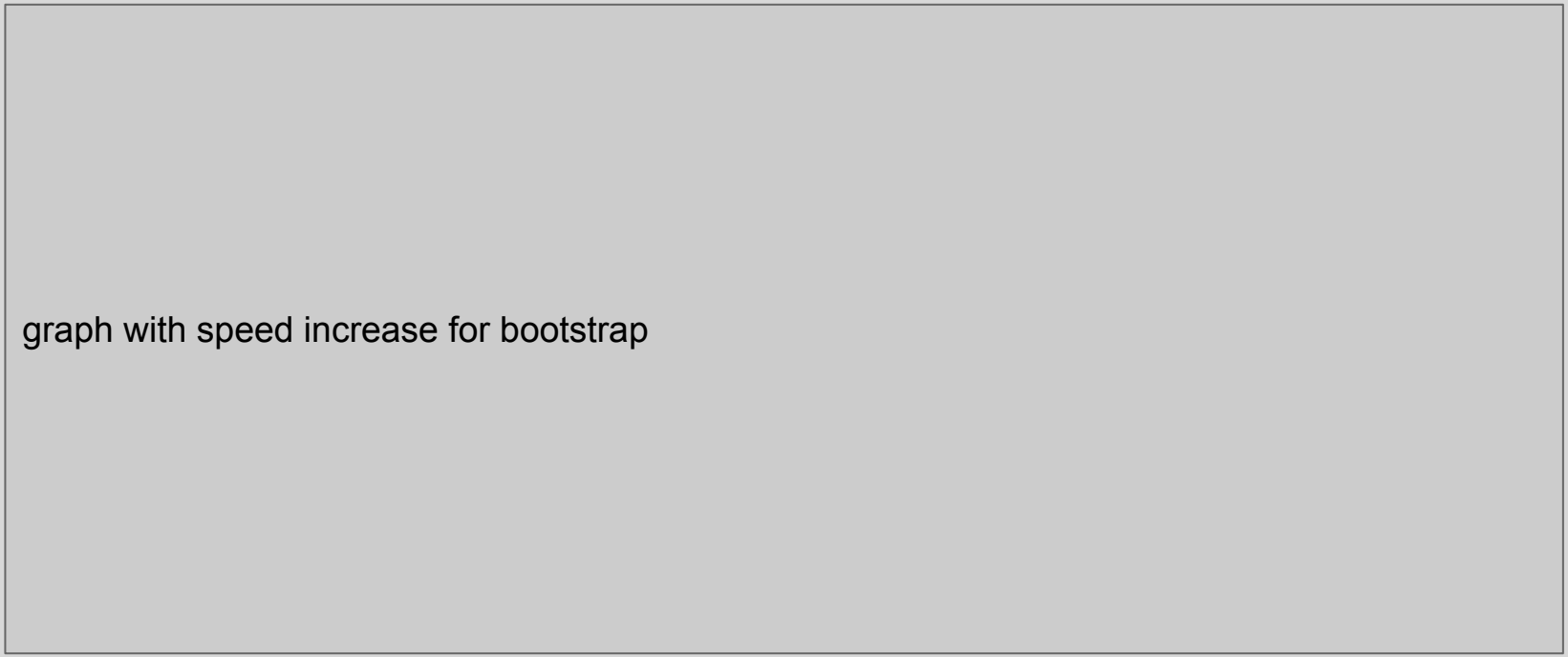
INSERT YOUR
TOPIC NAME

octopus (@ 80)

- cli tool that composes bibuild, ver, dep, idea into single tool;
- drop nvm step;
- parallel bootstrap;
- Sequential build/test;
- Build is back to ~ 15 mins;

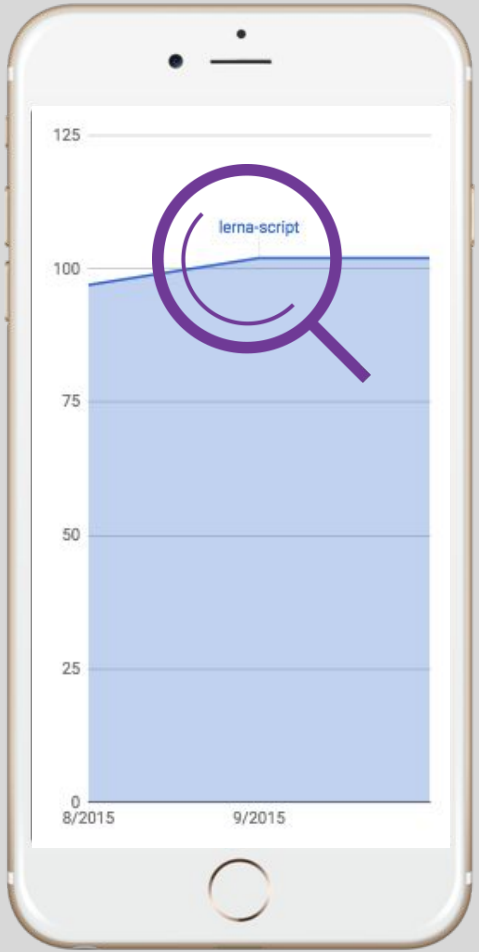
97 - npm@5:)

npm@5 (@ 97)



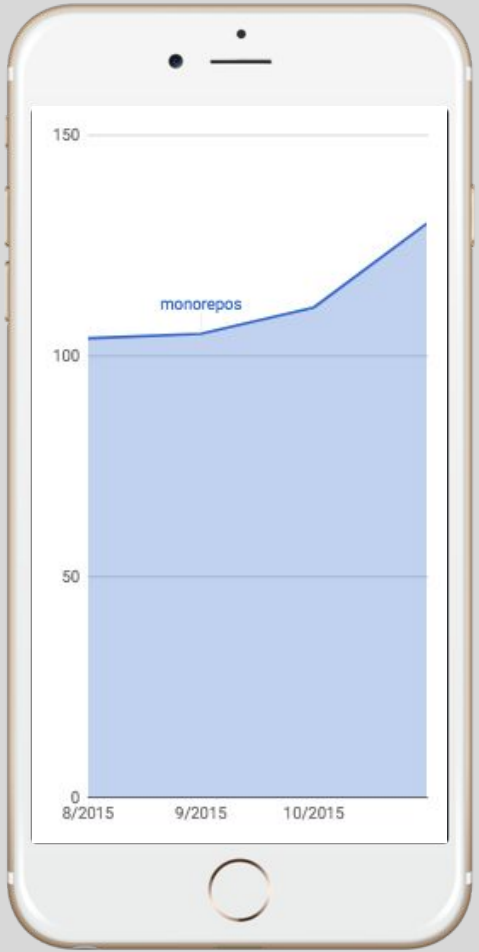
102 - lerna-script

- **lerna-script** - scripting layer on top of lerna:
    - drop homegrown toposort, module resolution, etc.
    - api for convenient scripting support.



104..130 - monorepos

- 30 modules added;
- things starting to get slow.. again...



130 - lerna hoist

- **lerna hoist:**
  - **with a flag we got 10x npm install improvement.**

130+ - tune build scripts

- **lerna hoist:**
  - **with a flag we got 10x npm install improvement.**

04

Managing a 120 module npm monorepo and staying sane

system is talking to you

listen to it

and act!

WiX Engineering

Thank You

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WiX Engineering

Q&A

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github.com/talkol