

Upgrading React Native projects

with Pavlos Vinieratos

React Native EU
Wroclaw, Poland

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I'm Pavlos.

pvinis on almost everything online.

I work with Sense Health making NiceDay

I love upgrading!

I am involved with:

- rn-diff-purge
- upgrade-helper
- react-native PRs

People love React Native

😐 Upgrading 😐

People love **fresh** React Native

Upgrading React Native projects



- Past: painful 😭
- Present: pretty good 😊
- Future: awesome 😃

Past: painful 😭

You need to know all:

- JS/TS
- iOS
- Android

iOS

- ObjC/Swift
- Complicated `xcodeproj` files and schemes and configs
- Multiple ways to link libraries: `carthage`, `cocoapods`, manual
- Xcode

Android

- Java/Kotlin
- `gradle` scripts
- Android Studio

Expo exists

- It's awesome
- It helps people build apps without the need to go native
 - ...until you need to go native

JS/TS, packages, libraries, modules

- babel, metro, eslint, typescript, ...
- netinfo, keep-alive, async-storage, ...

Upgrading react on the web meant:

- Change the version number
- yarn install
- Does it work? 😊

Upgrading react native meant:

- Change the version number
- yarn install
- Does it work? 😊

Upgrading `react native` meant:

- Change the version number
- yarn install
- Does it work? 😬
- Fix native stuff
- Does it work now? 😊

Upgrading react native meant:

- Change the version number
- yarn install
- Does it work? 😊
- Fix native stuff
- Does it work now? 😊
- Upgrade libraries
- Does it work yet? 😞

Upgrading `react native` meant:

- Change the version number
- yarn install
- Does it work? 😊
- Fix native stuff
- Does it work now? 😊
- Upgrade libraries
- Does it work yet? 😕
- Fix libraries' native stuff
- Does it work, please? 😫

Upgrading react native meant:

- Change the version number
- yarn install
- Does it work? 😊
- Fix native stuff
- Does it work now? 😊
- Upgrade libraries
- Does it work yet? 😏
- Fix libraries' native stuff
- Does it work, please? 😩
- Google things, ask for help
- Why don't you work already? 😭

"Can't avoid it, let's automate it"

- react-native upgrade
- rnpm upgrade
- react-native-git-upgrade
- rn-diff repo

I never liked using any of the automated tools 😅

I only used rn-diff, upgrading manually

It helped me understand what changed

0.60.0	0.59.10...0.60.0	0.59.10...0.60.0	56 files changed, 2695 insertions(+)	0.59.10...0.60.0
0.59.10	0.60.0-rc.3...0.59.10	0.60.0-rc.3...0.59.10	55 files changed, 2542 deletions(-)	0.60.0-rc.3...0.59.10
0.60.0-rc.3	0.60.0-rc.2...0.60.0-rc.3	0.60.0-rc.2...0.60.0-rc.3	1 file changed, 1 insertion(+), 1 deletion(-)	0.60.0-rc.2...0.60.0-rc.3
0.60.0-rc.2	0.60.0-rc.1...0.60.0-rc.2	0.60.0-rc.1...0.60.0-rc.2	4 files changed, 10 insertions(+), 161 deletions(-)	0.60.0-rc.1...0.60.0-rc.2
0.60.0-rc.1	...0.60.0-rc.1	...0.60.0-rc.1	19 files changed, 463 insertions(+), 878 deletions(-)	...0.60.0-rc.1
0.59.9	0.60.0-rc.0...0.59.9	0.60.0-rc.0...0.59.9	18 files changed, 881 insertions(+), 315 deletions(-)	0.60.0-rc.0...0.59.9
0.60.0-rc.0	0.59.8...0.60.0-rc.0	0.59.8...0.60.0-rc.0	1 file changed, 3 insertions(+), 3 deletions(-)	0.59.8...0.60.0-rc.0
0.59.8	0.59.7...0.59.8	0.59.7...0.59.8	1 file changed, 3 insertions(+), 3 deletions(-)	0.59.7...0.59.8
0.59.7	0.59.5...0.59.7	0.59.5...0.59.7	1 file changed, 8 insertions(+), 8 deletions(-)	0.59.5...0.59.7
0.59.5	...0.59.5	...0.59.5	1 file changed, 1 insertion(+), 1 deletion(-)	...0.59.5
0.59.4	0.59.3...0.59.4	0.59.3...0.59.4	1 file changed, 6 insertions(+), 9 deletions(-)	0.59.3...0.59.4
0.59.3	0.59.2...0.59.3	0.59.2...0.59.3	2 files changed, 6 insertions(+), 6 deletions(-)	0.59.0...0.59.1
0.59.2	0.59.1...0.59.2	0.59.1...0.59.2	2 files changed, 6 insertions(+),	0.59.0...0.59.1

3 RnDiffApp/.flowconfig 📄

...

@@ -24,7 +24,6 @@

```
24 [libs]
25 node_modules/react-native/Libraries/react-native/react-native-interface.js
26 node_modules/react-native/flow/
27 -node_modules/react-native/flow-github/
28
29 [options]
30 emoji=true
```

@@ -67,4 +66,4 @@ suppress_comment=\(\.\|\n\)*\\$FlowFixedInNextDeploy

```
67 suppress_comment=\(\.\|\n\)*\$FlowExpectedError
68
69 [version]
70 -^0.86.0
```

```
24 [libs]
25 node_modules/react-native/Libraries/react-native/react-native-interface.js
26 node_modules/react-native/flow/
27
28 [options]
29 emoji=true
```

```
66 suppress_comment=\(\.\|\n\)*\$FlowExpectedError
67
68 [version]
69 +^0.92.0
```

1 RnDiffApp/App.js 📄

...

@@ -4,7 +4,6 @@

```
4 *
5 * @format
6 * @flow
7 -* @lint-ignore-every XPLATJSCOPYRIGHT1
8 */
9
10 import React, {Component} from 'react';
```

```
4 *
5 * @format
6 * @flow
7 */
8
9 import React, {Component} from 'react';
```

1 RnDiffApp/__tests__/App.js → RnDiffApp/__tests__/App-test.js 📄

...

@@ -1,6 +1,5 @@

```
1 /**
2 * @format
3 -* @lint-ignore-every XPLATJSCOPYRIGHT1
4 */
5
6 import 'react-native';
```

```
1 /**
2 * @format
3 */
4
5 import 'react-native';
```

Present: pretty good 😊

rn-diff-purge

- Stood on the shoulders of the people and repos before me
- Tries to eliminate previous problems
- I wanted this for my projects

rn-diff-purge

- Keeps a list of diffs `from` → `to` every release
- Generated by a script

rn-diff-purge

- Start a new `branch` for each release
- init a new project based on the `template`
- diff and `store` as a patch file

0.60.0	0.59.10...0.60.0	0.59.10...0.60.0	56 files changed, 2695 insertions(+)	0.59.10...0.60.0
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0.60.0-rc.2	0.60.0-rc.1...0.60.0-rc.2	0.60.0-rc.1...0.60.0-rc.2	4 files changed, 10 insertions(+), 161 deletions(-)	0.60.0-rc.1...0.60.0-rc.2
0.60.0-rc.1	...0.60.0-rc.1	...0.60.0-rc.1	19 files changed, 463 insertions(+), 878 deletions(-)	...0.60.0-rc.1
0.59.9	0.60.0-rc.0...0.59.9	0.60.0-rc.0...0.59.9	18 files changed, 881 insertions(+), 315 deletions(-)	0.60.0-rc.0...0.59.9
0.60.0-rc.0	0.59.8...0.60.0-rc.0	0.59.8...0.60.0-rc.0	1 file changed, 3 insertions(+), 3 deletions(-)	0.59.8...0.60.0-rc.0
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0.59.4	0.59.3...0.59.4	0.59.3...0.59.4	1 file changed, 6 insertions(+), 9 deletions(-)	0.59.3...0.59.4
0.59.3	0.59.2...0.59.3	0.59.2...0.59.3	2 files changed, 6 insertions(+), 6 deletions(-)	0.59.0...0.59.1
0.59.2	0.59.1...0.59.2	0.59.1...0.59.2	2 files changed, 6 insertions(+),	0.59.0...0.59.1

From->To	D	I	F	F	S		=	=	
0.61.0-rc.0	X	-	-	-	-	-	-	-	-
0.60.5	->0.61.0-rc.0	X	-	-	-	-	-	-	-
0.60.4	->0.61.0-rc.0	->0.60.5	X	-	-	-	-	-	-
0.60.3	<u>->0.61.0-rc.0</u>	->0.60.5	->0.60.4	X	-	-	-	-	-
0.60.2	->0.61.0-rc.0	->0.60.5	->0.60.4	->0.60.3	X	-	-	-	-
0.60.1	->0.61.0-rc.0	->0.60.5	->0.60.4	->0.60.3	->0.60.2	X	-	-	-
0.60.0	->0.61.0-rc.0	->0.60.5	->0.60.4	->0.60.3	->0.60.2	->0.60.1	X	-	-
0.60.0-rc.3	->0.61.0-rc.0	->0.60.5	->0.60.4	->0.60.3	->0.60.2	->0.60.1	->0.60.0	X	-
0.60.0-rc.2	->0.61.0-rc.0	->0.60.5	->0.60.4	->0.60.3	->0.60.2	->0.60.1	->0.60.0	->0.60.0-rc.3	X
0.60.0-rc.1	->0.61.0-rc.0	->0.60.5	->0.60.4	->0.60.3	->0.60.2	->0.60.1	->0.60.0	->0.60.0-rc.3	->0.6rc.2
0.60.0-rc.0	->0.61.0-rc.0	->0.60.5	->0.60.4	->0.60.3	->0.60.2	->0.60.1	->0.60.0	->0.60.0-rc.3	->0.6rc.2

rn-diff-purge

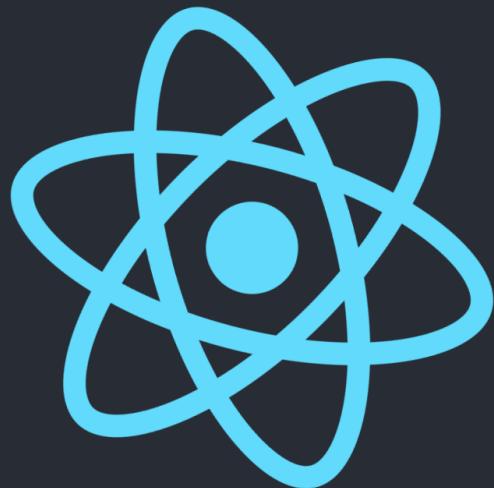
- Base of our current upgrade flow
- People already used the idea for `laravel` and `ignite` bowser
- Soon a `template` repo on GitHub, ready to be cloned and reused

upgrade-helper

- Started as `purge-web`, just pointing to the `diff` file
- Allows to choose a `from` and a `to` release
- Gives all the changes of the `init` template
- Uses `rn-diff-purge`

Upgrade your React Native apps 🎉

powered by **rn-diff-purge**



[★ Star](#) 310

Get diff

From:

0.60.3

To:

0.60.4

[Diff here](#)

[Patch here](#)

made with ❤ by **pvinis** ([github](#), [twitter](#))

upgrade-helper

- Better visuals
- Github-like diff views
- See raw files and download
- File folding
- Links to release notes
- Notes explaining changes
- Logo and party popper 
- Support for rc releases
- Dark mode

`npx react-native upgrade (cli)`

- Just run `npx react-native upgrade`
- Uses `rn-diff-purge`
- Tries to `apply` the diff

It might not work because of differences between the template and each project

Future: awesome 😊

- Native Modules Autolinking
- Standardization of some tools like CocoaPods
- `rn-diff-purge` diff generation on CI
- Investigating into tools like `xcodegen`, to decouple and make easier
- Your suggestion here

Upgrade flow

- Get notification for new release
- Read the release notes and change log
- Try `npx react-native upgrade`
- Get diff from `upgrade-helper`
- Go file-by-file and make the changes manually
- Start with config and js stuff, then iOS, then Android native
- Make sure any custom additions and modules are compatible and working
- Test to make sure things still work
- Use hooks or whatever cool new feature is in that new release or rc 💪

Tips

- Manual does not mean `slow`, it means `careful`
- Be `mindful` of `what changed`
- `Pick and choose` your changes
- Try to `stay up to date`
- Try not to `jump` too many versions
- `xcodeproj` needs some care while being changed for now

Conclusion

- Upgrading is getting better, simpler, more mature and it will keep improving
- It might always be a manual process, or it might be automatic
- People used to say "upgrading is hard"
- Now people say "that specific thing was hard while upgrading"

Wonderful people so far

@ncuillery @lucasbento @kelset @cpojer @thymikee @turnrye @grabbou @brentvatne @watadarkstar @iamrestrepo @mausworks
@KevinHu2014 @vinnyA3 @Jeanmsilva89 @RubenSandwich @Luckyuke @nirre7 @guhungry ...

- RN Core team
- RN Contributors community
- Sense Health

Wonderful people of tomorrow

@your_name_here

<https://github.com/react-native-community>

<https://github.com/react-native>

- Make PRs
- Test out PRs
- Create issues
- Answer issues

For questions:

Find me at the coffee break or on twitter

Thank you ❤



Thank you ❤

- [@ me](https://twitter.com/pvinis)
- youtu.be/wBp5_E7dsEY (video of me upgrading and explaining)
- pavlos.dev/talk (this talk, pdf)
- pavlos.dev/talk-code (this talk, pdf)
- niceday.app (app we work on)
- pvin.is (my blog, 🚧)
- pavlos.dev (my portfolio, 🚧)

Extra links

- github.com/react-native-community/upgrade-helper (our awesome tool)
- github.com/react-native-community/rn-diff-purge (purge repo)
- github.com/pvinis/template-diff-purge (template of the purge way)
- github.com/guhungry/laravel-diff-purge (uses the purge way)
- github.com/nirre7/ignite-bowser-diff-purge (uses the purge way)