

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

## 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 branch with all other branches
- store as a patch file

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

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>-&gt;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

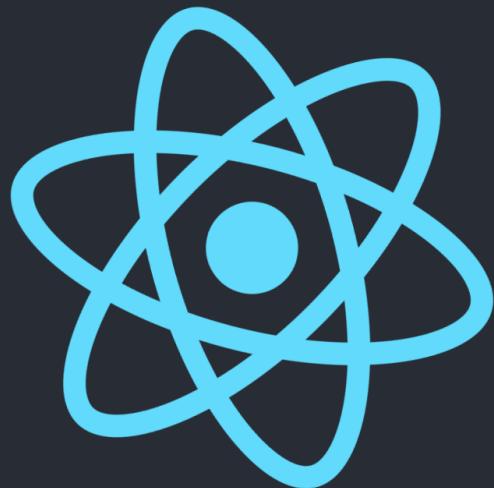
- Base of our current upgrade flow
- People already used the idea for `laravel` and `ignite` bowser
- Soon a `template` repo on GitHub, ready to be cloned and reused

## 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
- Lean Core, separate components
- 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 love while upgrading 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](https://youtu.be/wBp5_E7dsEY) (video of me upgrading and explaining)
- [pavlos.dev/talk](https://pavlos.dev/talk) (this talk, pdf)
- [pavlos.dev/talk-code](https://pavlos.dev/talk-code) (this talk, pdf)
- [niceday.app](https://niceday.app) (app we work on)
- [pvin.is](https://pvin.is) (my blog, 🚧)
- [pavlos.dev](https://pavlos.dev) (my portfolio, 🚧)

## Extra links

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