🚀 Tuist Integration in Rider App

Migration to Tuist to manage projects and dependencies.

Goal: faster builds, clearer structure, better scalability.

📌 What is Tuist?

- Tool to manage Xcode projects at scale
- Generates `xcodeproj` & `xcworkspace` from manifests (`Project.swift`)
- Provides:
  - Faster compilation (local & CI)
  - Infrastructure-as-code for projects
  - Better developer experience

🔑 Key Tuist Components

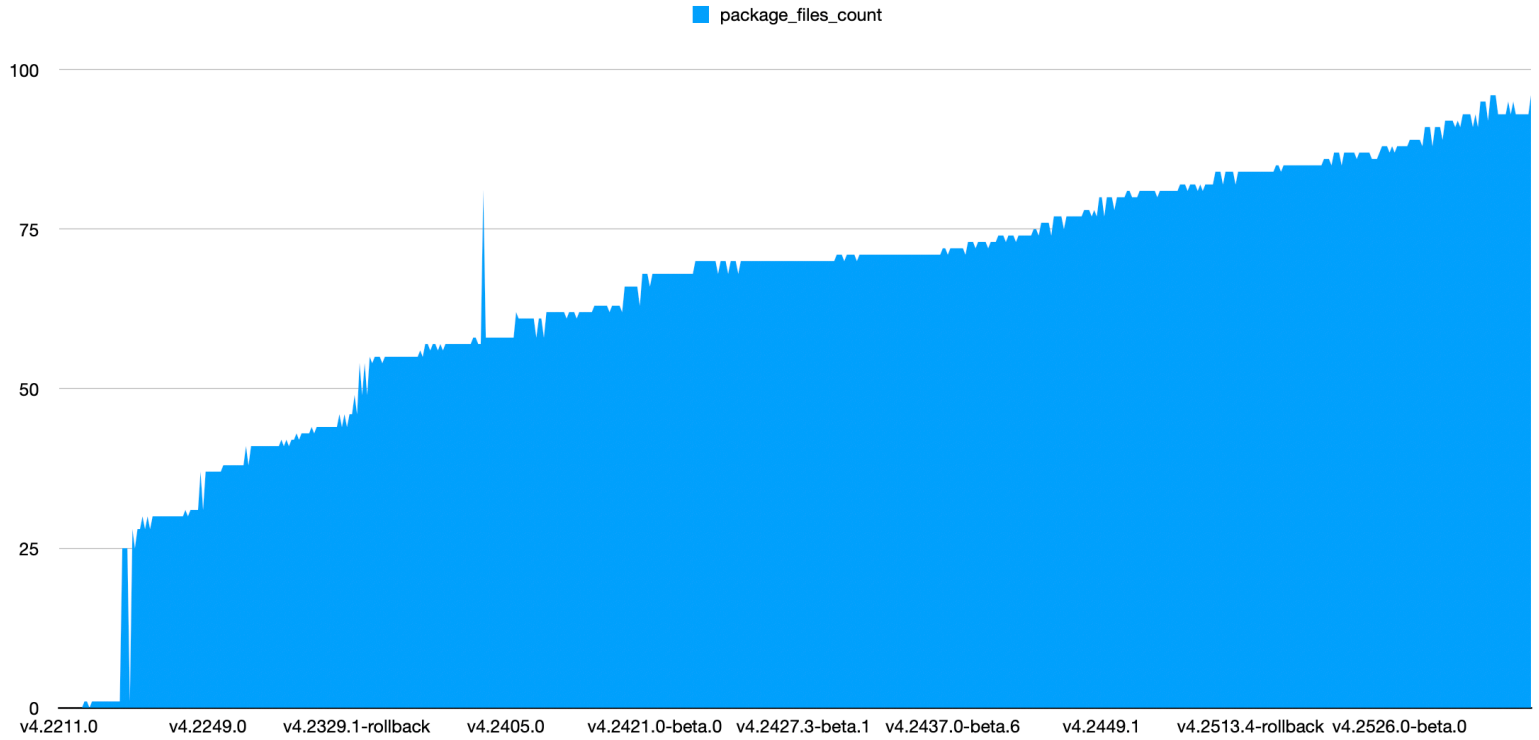
- **Tuist CLI Utility**
- **Tuist Online Service**
- `Project.swift` → defines module manifest
- `Workspace.swift` → defines the workspace

🏁 Migration Path (Start Point)

- Rider app already in **monorepo**
- Using **SPM** currently

Rider app modularization

- **96 modules**
- Modules are rapidly increasing



🔄 Migration Steps

1. Tried reusing SPM manifests → ❌ not working (no test targets for local pkgs)
2. Rewrote **all** `Package.swift` → `Project.swift`
3. Created **top-level manifest**
4. Used **LLM (Gemini agent) for 36h** → automated migration (`tuist generate` verified)

📂 Structure of Tuist Integration

- `Workspace.swift` → root workspace
- `Project.swift` → per-module definitions
- `Tuist/`
  - `Package.swift` → external dependencies
  - `Binary/` → binary 3rd-party deps
  - `Configs/` → shared `.xcconfig`
  - `ProjectDescriptionHelpers/` → helper methods

⚙️ Tuist Workflow

Login to the online services:

```
tuist auth login
```

Edit manifests:

```
tuist edit
```

☁️ Server-side Caching

- Tuist provides binary caching for modules
- Cache can be warmed on CI and pulled by developers
- Benefits:
- Faster onboarding (less local compilation)
- Consistent builds across developers & CI
- Less CPU/memory load locally

📦 Tuist Commands (1/4)

Generate workspace

```
tuist generate
```

Generate Roadrunner project

```
tuist generate Roadrunner
```

📦 Tuist Commands (2/4)

Generate keeping target as sources

```
tuist generate AcceptCommon
```

Generate without cache

```
tuist generate --no-binary-cache
```

📦 Tuist Commands (3/4)

Generate by squad (code ownership)

```
tuist generate tag:lrtmi
```

Squads:

ravl, rotw, ropd, lrtmi, rtoa, racc, ios, rxp

📦 Tuist Commands (4/4)

Generate by domain

```
tuist generate tag:mobile-infra
```

Domains:

- rider-fundamentals
- mobile-infra
- delivery-flow

Generation in practice

🤖 CI Integration

On every merged PR → CI runs:

```
tuist cache
```

- This ensures cache is always up-to-date
- Developers pull cached binaries instead of compiling everything
- Dramatic reduction of CI pipeline time

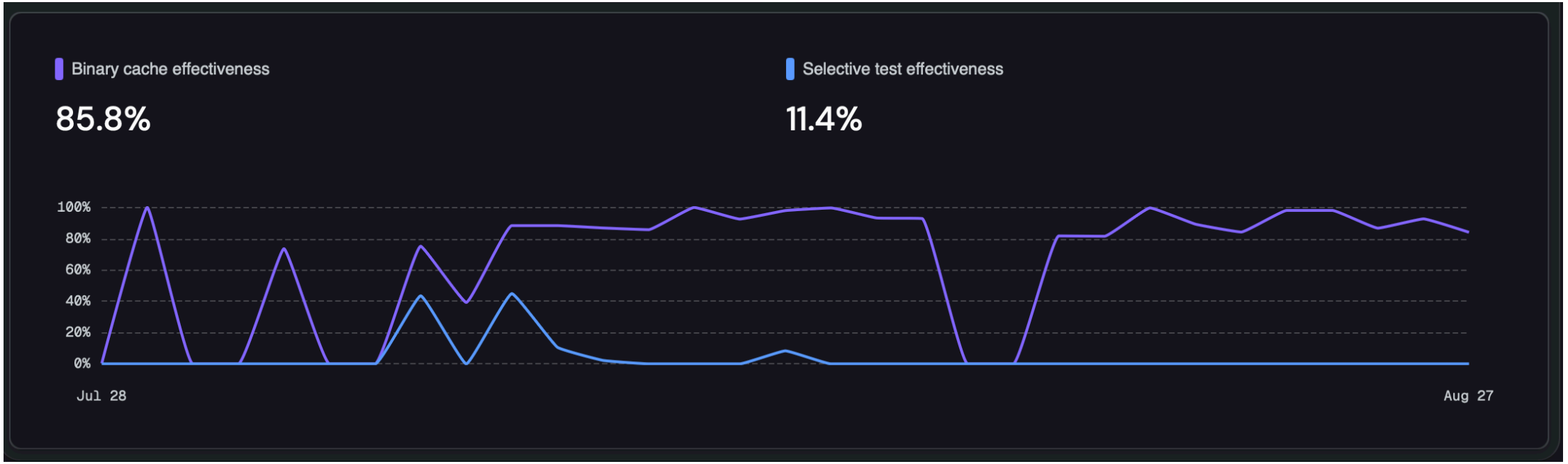
✅ Outcomes

- 🚀 Build time improvements (local & CI)
- 🧩 Manifest definition via shared ProjectDescriptionHelpers
- 📐 Project infra as code → reproducible & maintainable

⚡ Build Time Improvements

Build type	Current state	Tuist (binary)	Tuist (4 as source)
Clean build	148s	27s (-81%)	34s (-77%)
Incremental build	34s	13s (-61%)	13s (-61%)

Binary cache insights



Build insights

Provided by Tuist automatically

Selective testing

- Out of the box, but we still need to gather insights on this one

🔮 Next Steps

- Team to migrate fully from SPM to Tuist
- Remove old `Rider.xcworkspace` & `Package.swift` setup
- Explore dependency types (feature, testing, utilities)

Known limitations and quirks

- Not possible to binary cache targets migrated to XCTest
- Debugging is sometimes challenging with cached modules (missing "pch" files for no reason)

  ```
  Debugging will be degraded due to missing types. Rebuilding the project will regenerate the needed module files.
  ```

- SPM infer which targets are linking to the test targets as test helpers and give them flags that allow linking to XCTest & co.
- We actually ironed out about 4 quirks with the Tuist team, so not much to add here

⚠️ What We Still Use Old Setup For

- Tests → still running via old SPM/xcworkspace setup
- App Store builds → still using old pipeline for safety
- Tuist adoption is gradual & hybrid at this stage

🎯 Summary

- Tuist improves build speed & developer experience
- Migration is already underway (with automation help)
- Clearer structure, scalable to 100+ modules
- Next step: full adoption by the team

Channel to join: #ext-tuist-poc

Questions

Thank you!