

UI5 Build and Development Tooling

Merlin Beutlberger, Matthias Oßwald, SAP SE
June 22, 2018

UI5con
learn.explore.connect.

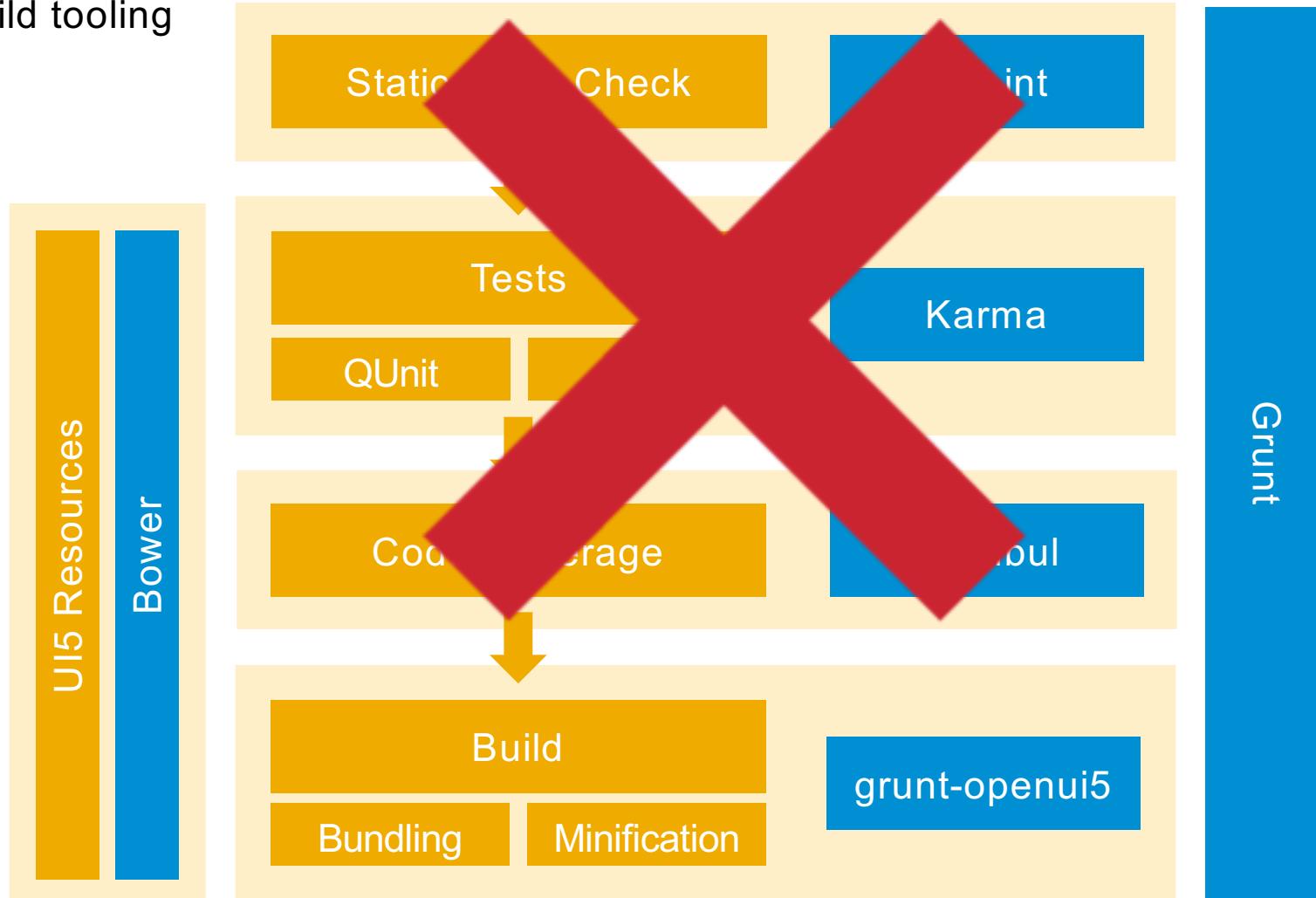
UI5con 2017

CI: Build Process & Automated Testing of UI5 Apps



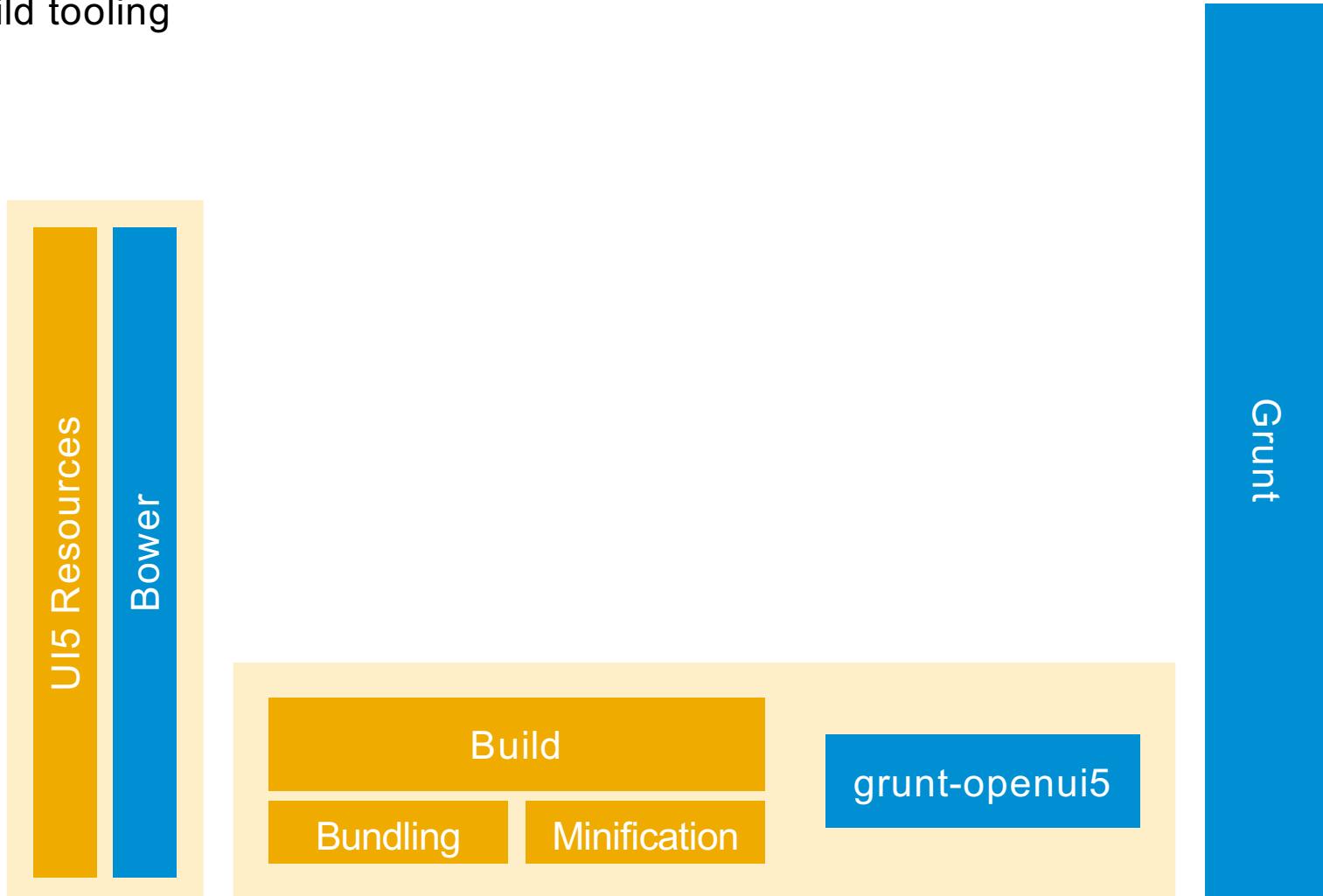
UI5con 2017

Outlook: UI5 evolution build tooling



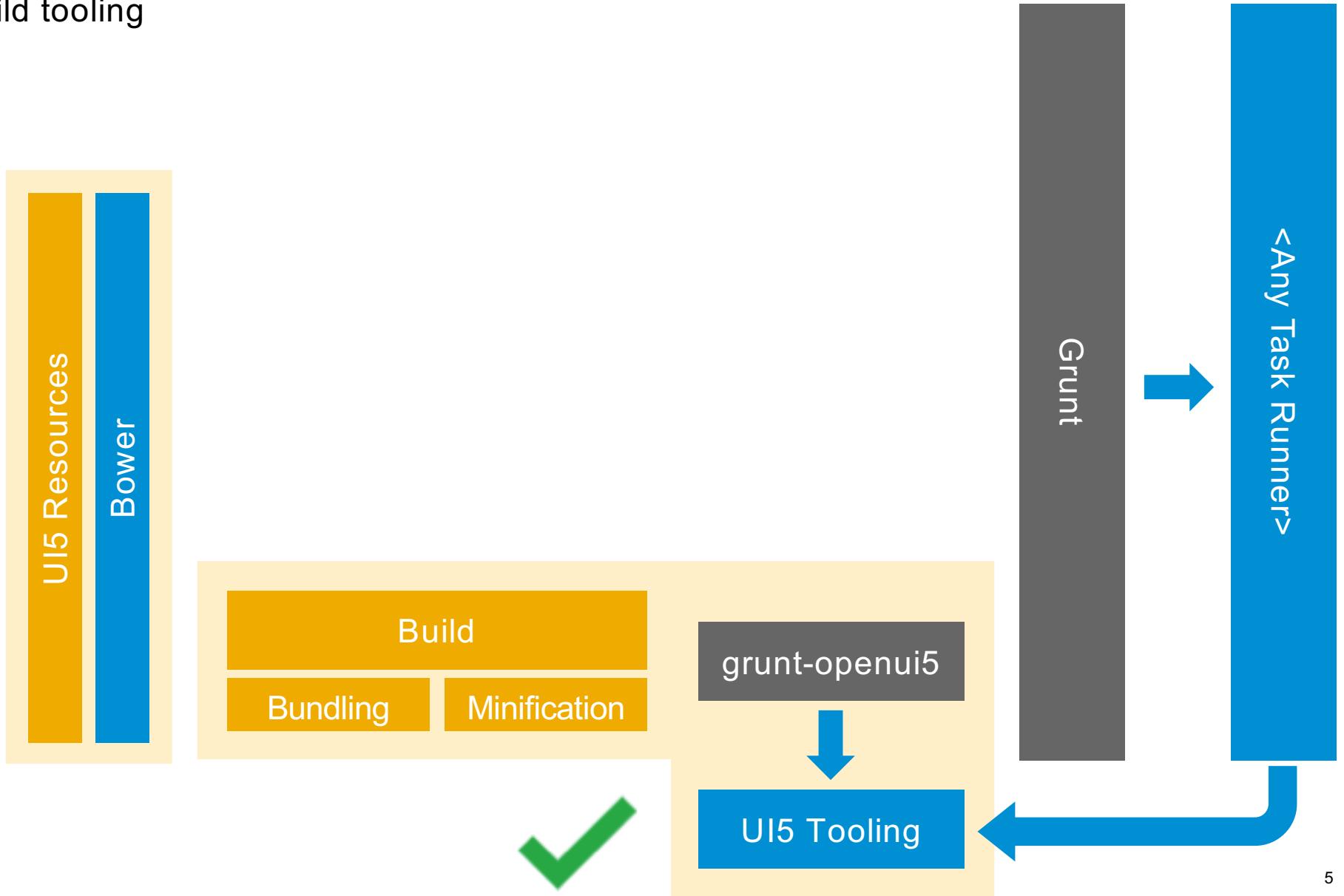
UI5con 2017

Outlook: UI5 evolution build tooling



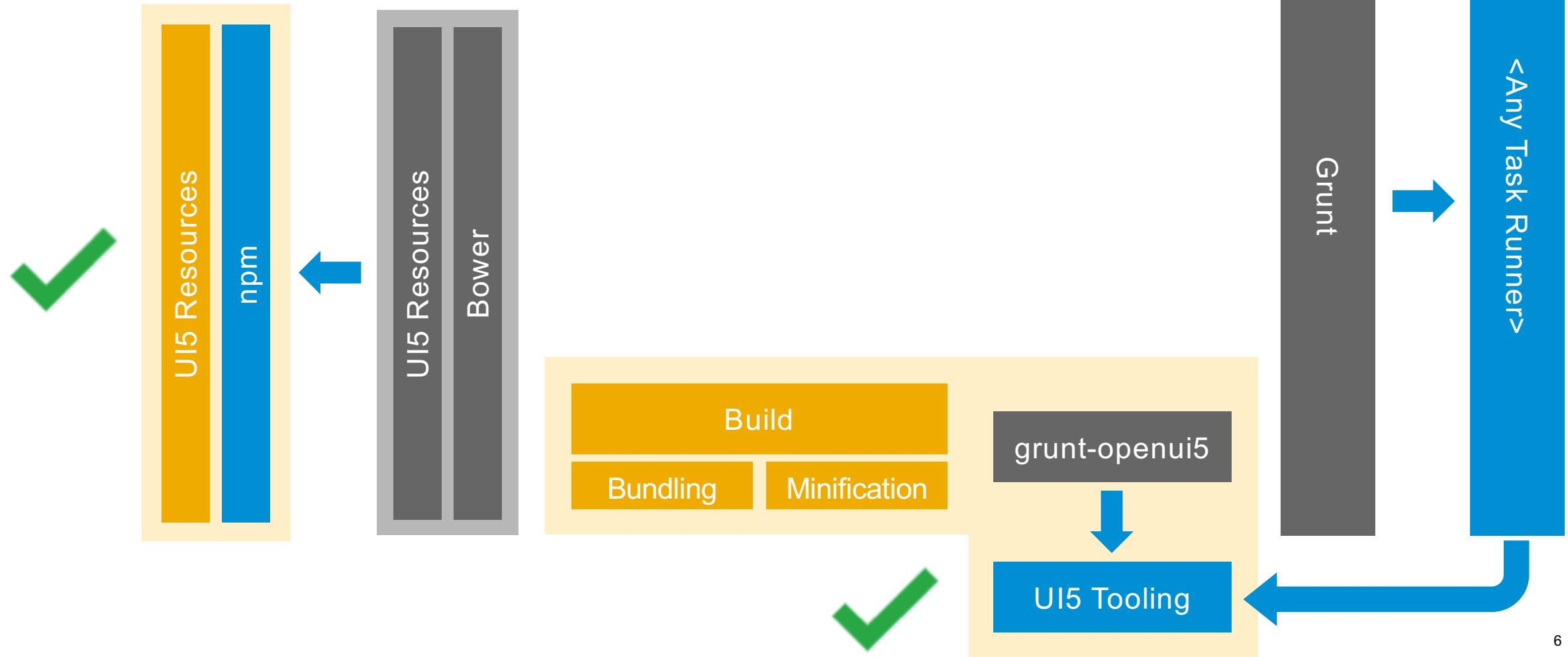
UI5con 2017

Outlook: UI5 evolution build tooling



UI5con 2017

Outlook: UI5 evolution build tooling



HISTORY

Tooling Evolution

Tooling Evolution



Maven Tooling

- Based on Maven (Java)
- Full-fledged feature-set
(/w legacy)
- Proprietary / SAP internal

Tooling Evolution



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Grunt Tooling

- Based on the Grunt Task Runner
- Limited feature-set
- Open Source (Apache 2.0)

Tooling Evolution



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Grunt Tooling

- Based on the Grunt Task Runner
- Limited feature-set
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Node.js Tooling

- Based on Node.js (JavaScript)
- Full-fledged feature-set (w/o legacy)
- Open Source (Apache 2.0)

Tooling Evolution



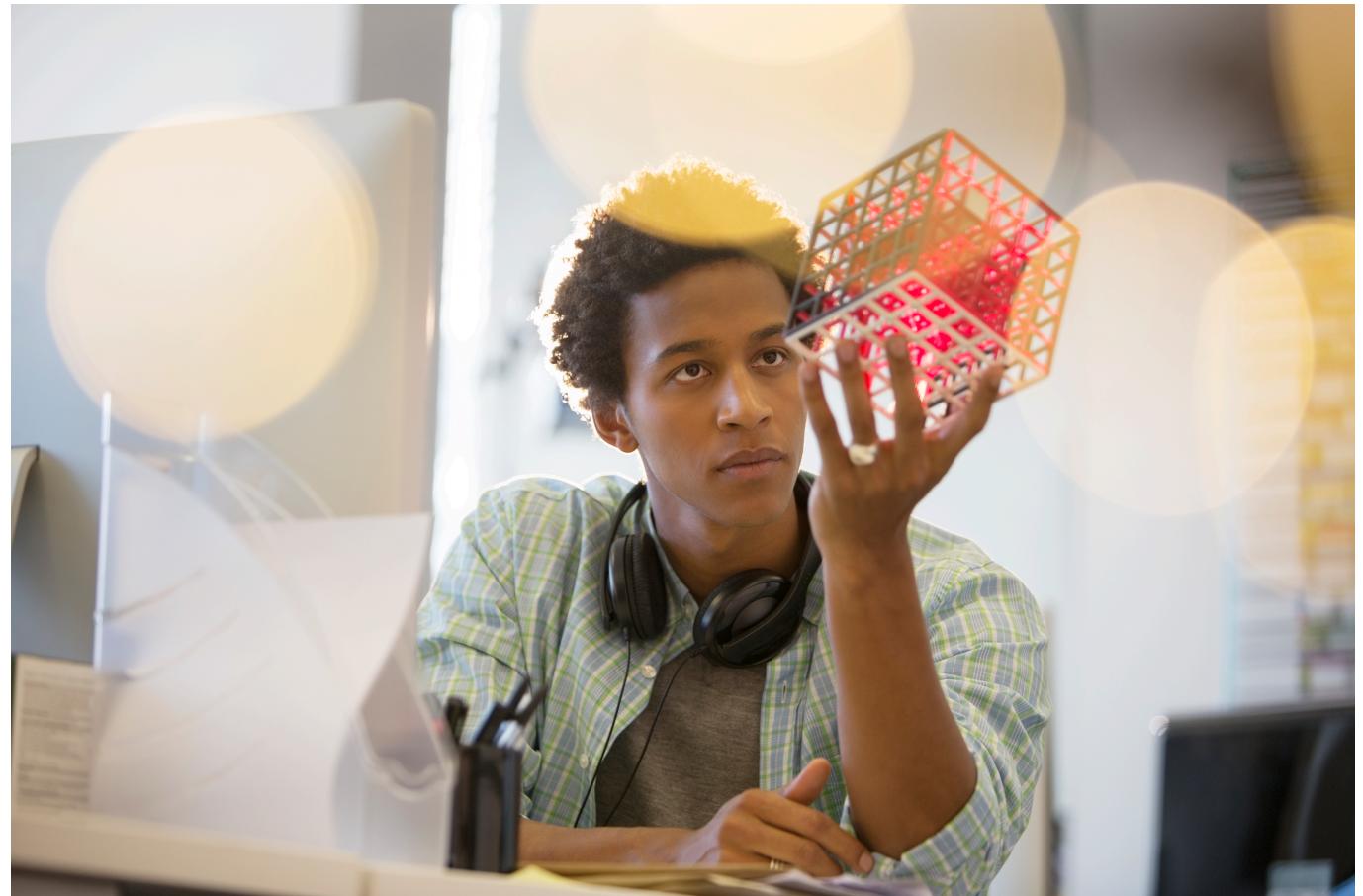
Node.js Tooling

- Based on Node.js (JavaScript)
- Full-fledged feature-set (w/o legacy)
- Open Source (Apache 2.0)

THE NEW TOOLING

What does a developer expect from a framework tooling?

- Support during **development**, **testing**- and **deployment**
- **State-of-the-art** technology
- **Easy** to use
- **Efficient** development experience
- **Reuse** what is already there
- **Extensibility**



UI5 Build and Development Tooling

Today

- Development server
- Build tool
- Command Line Interface and JavaScript-API
- Low-level extensibility
- Flexible dependency management

```
▶ ui5 build
info builder:builder Building project openui5-sample-app not including de
info builder:builder ⚡ (1/1) Building project openui5-sample-app
info builder:builder application openui5-sample-app ↗ (1/7) Running task
info builder:builder application openui5-sample-app ↗ (2/7) Running task
info builder:builder application openui5-sample-app ↗ (3/7) Running task
info builder:builder application openui5-sample-app ↗ (4/7) Running task
info builder:builder application openui5-sample-app ↗ (5/7) Running task
info builder:builder application openui5-sample-app ↗ (6/7) Running task
info builder:builder application openui5-sample-app ↗ (7/7) Running task
info builder:builder Build succeeded in 951 ms
```

GET STARTED

Get Started

github.com/SAP/ui5-tooling

The screenshot shows the GitHub repository page for SAP/ui5-tooling. The page title is "SAP / ui5-tooling". It displays basic repository statistics: 17 commits, 4 branches, 0 releases, 1 contributor, and Apache-2.0 license. A large UI5 logo is prominently displayed. Below the logo, the text "UI5 Build and Development Tooling" is written, followed by a "slack join" button and a "build passing" badge. A note states: "This is an alpha release! The UI5 Build and Development Tooling described here is not intended for productive use yet. Breaking changes are to be expected."

SAP / ui5-tooling

UI5 Build and Development Tooling: Main Repository

17 commits 4 branches 0 releases 1 contributor Apache-2.0

README.md

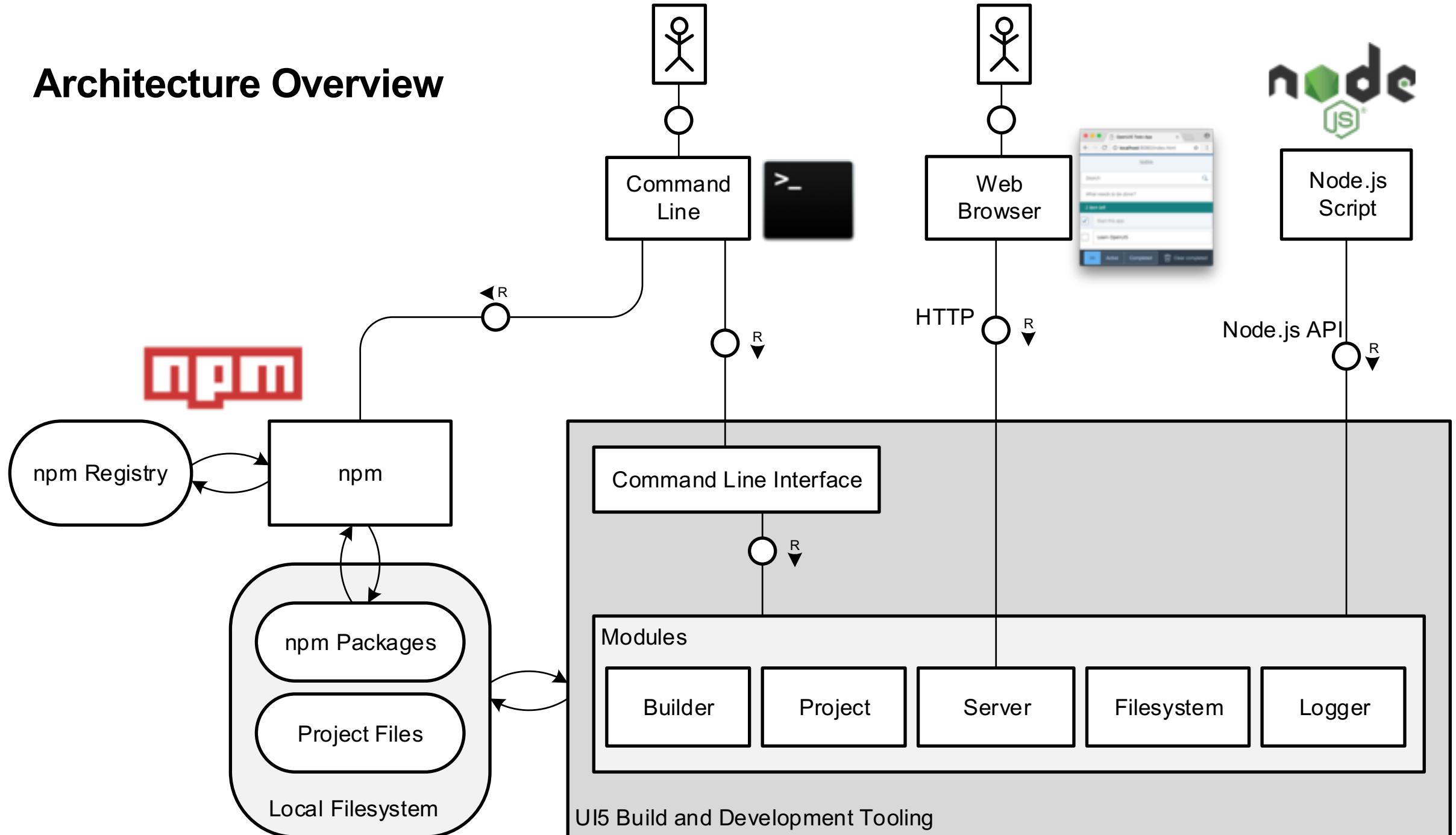
UI5

UI5 Build and Development Tooling

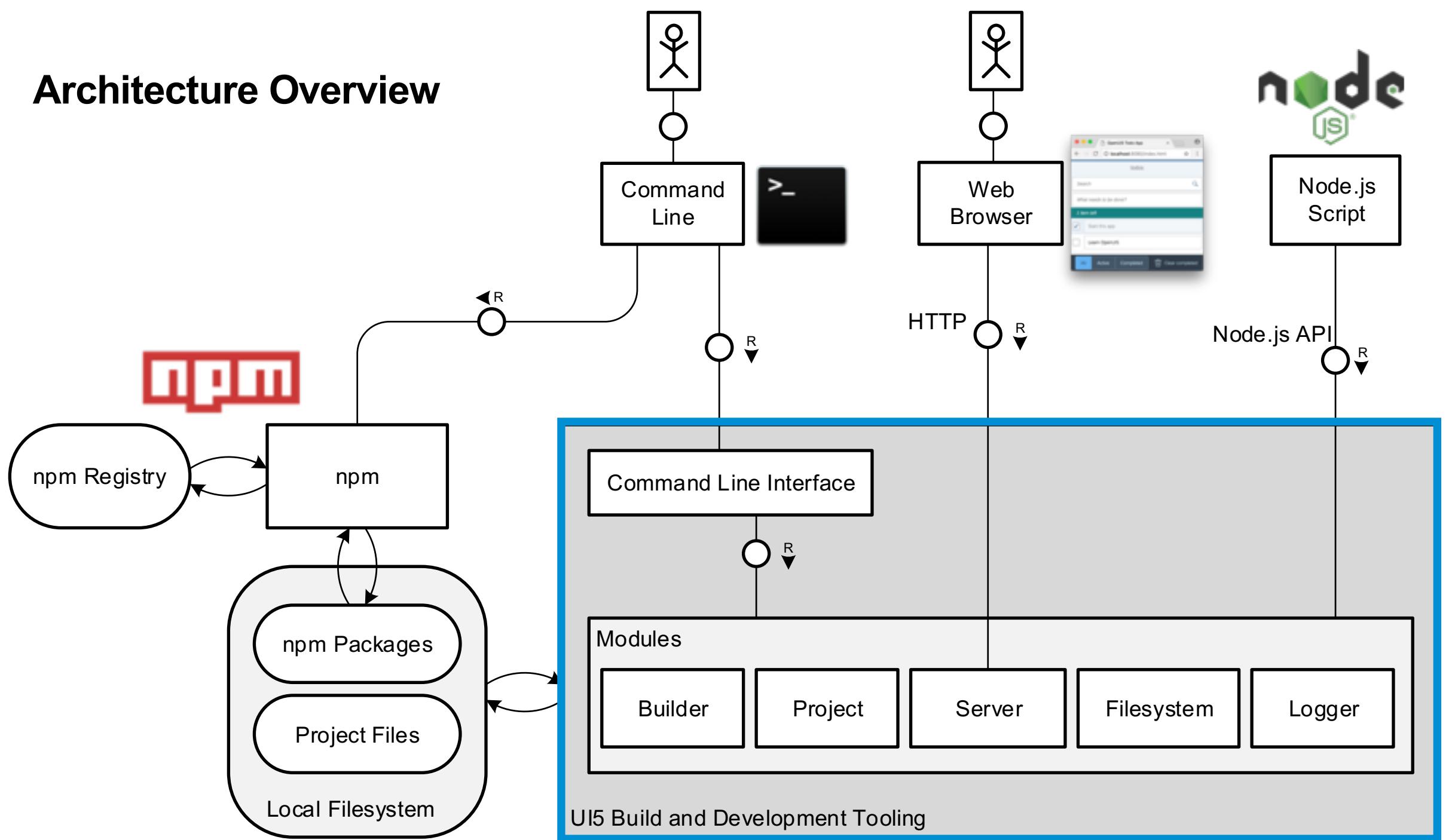
slack join build passing

This is an alpha release!
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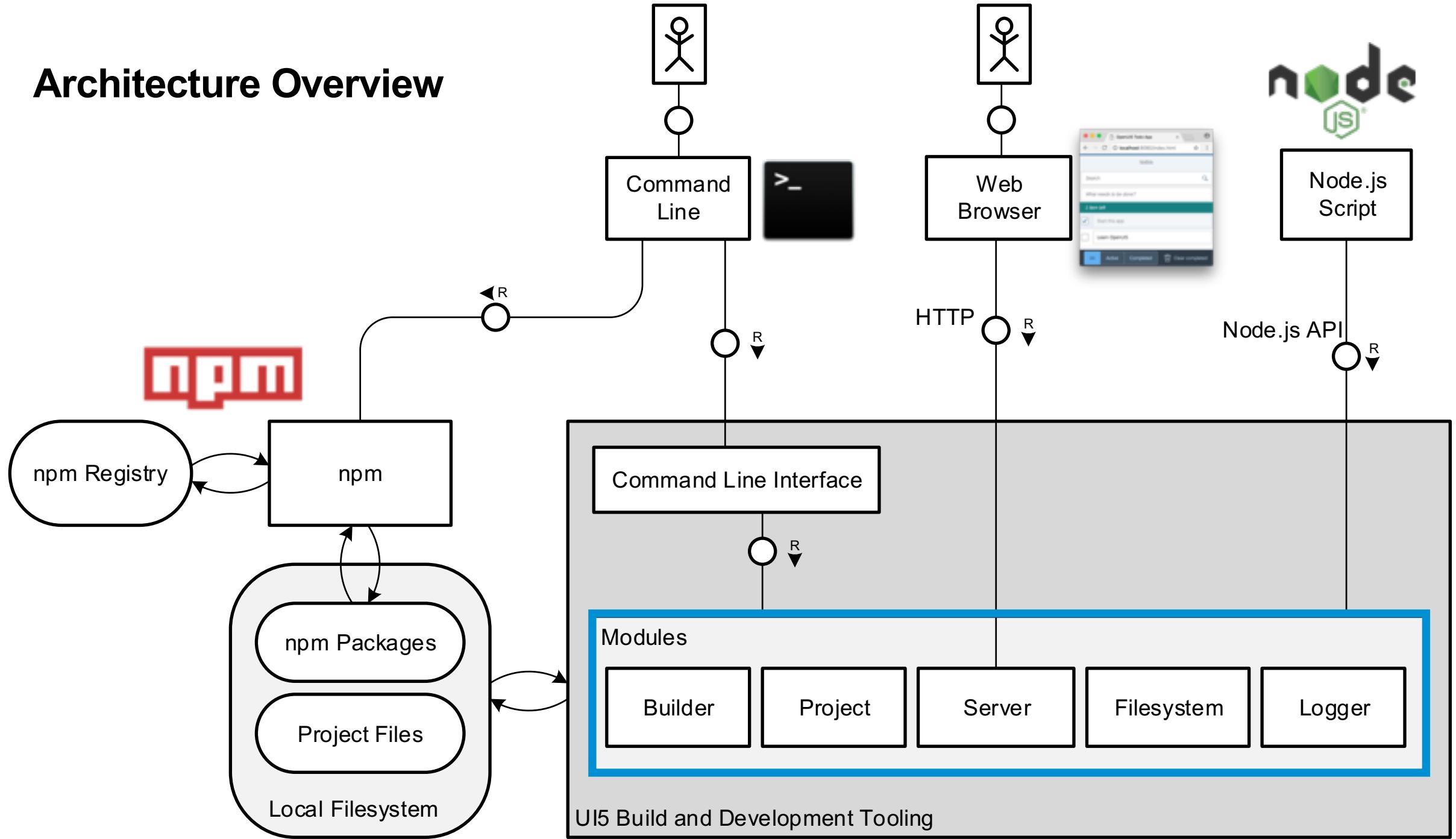
Architecture Overview



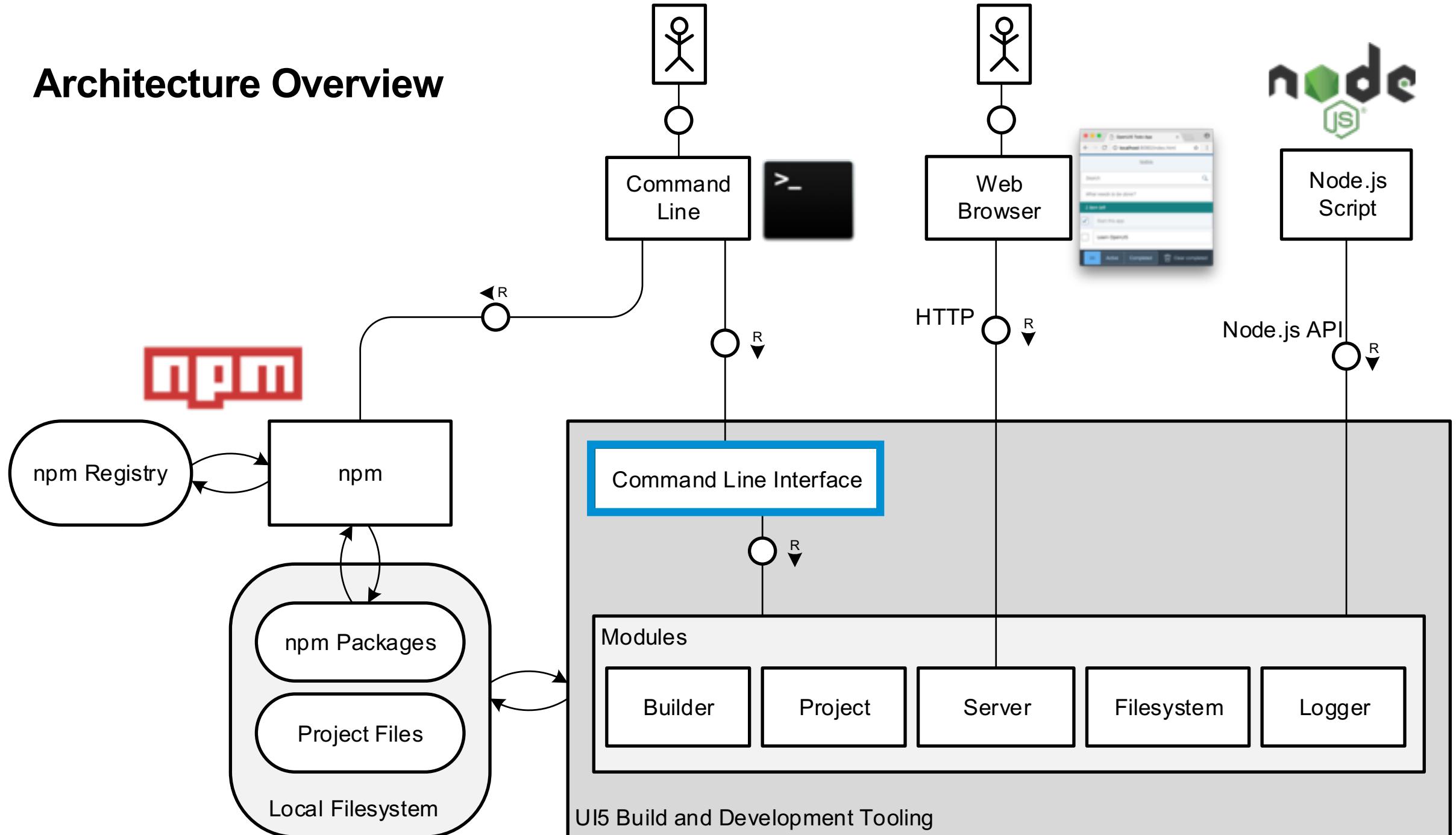
Architecture Overview



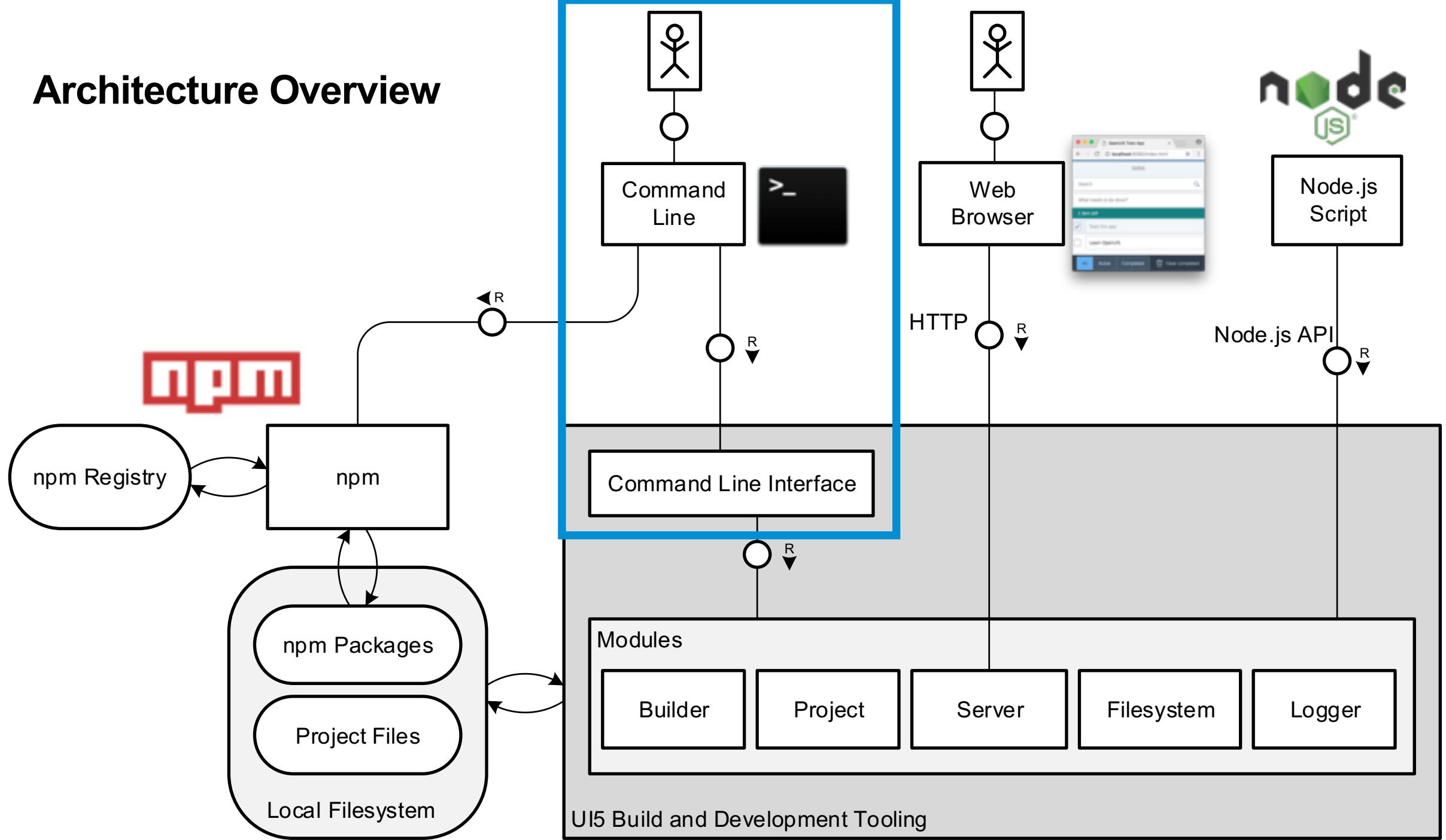
Architecture Overview



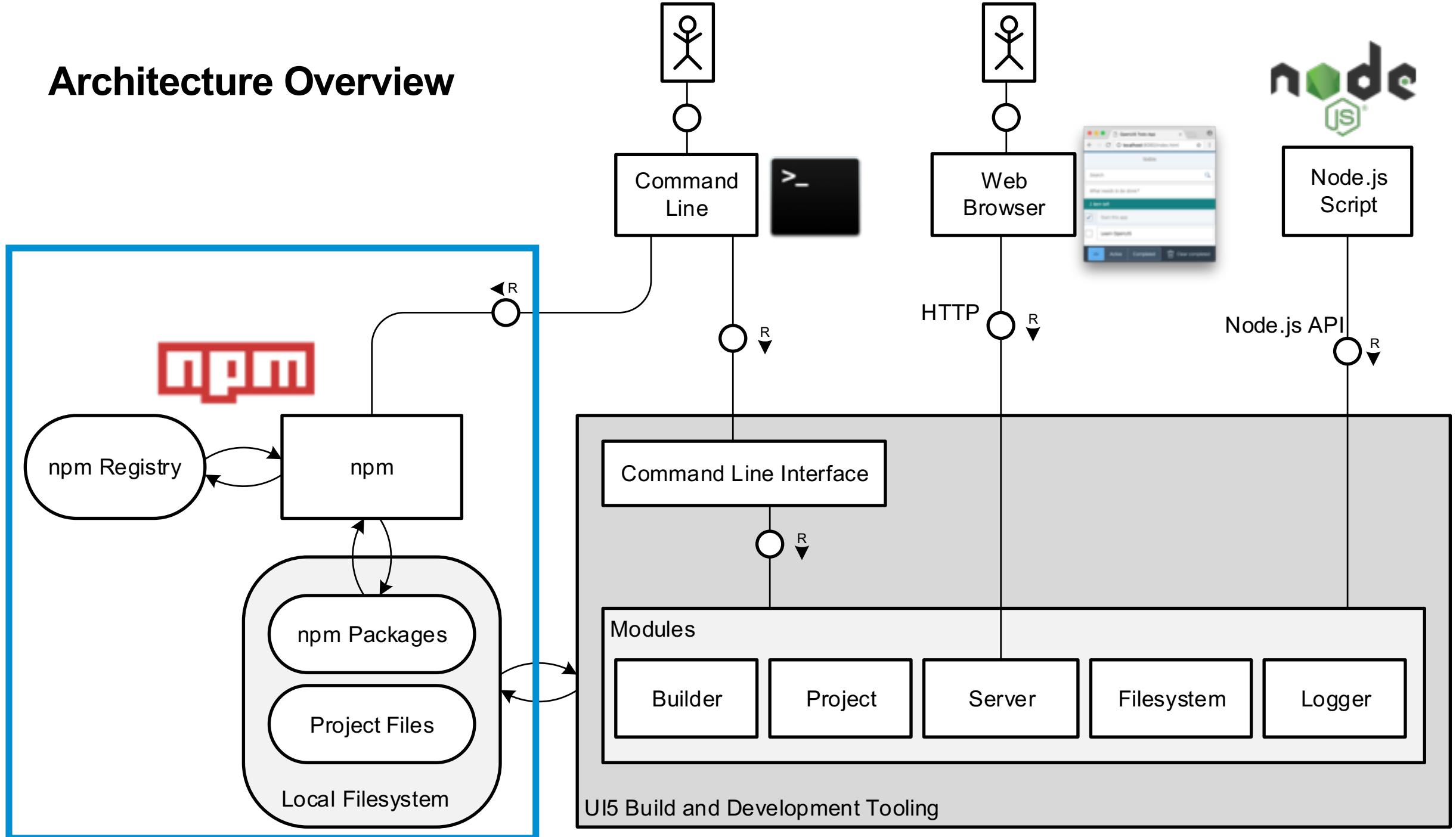
Architecture Overview



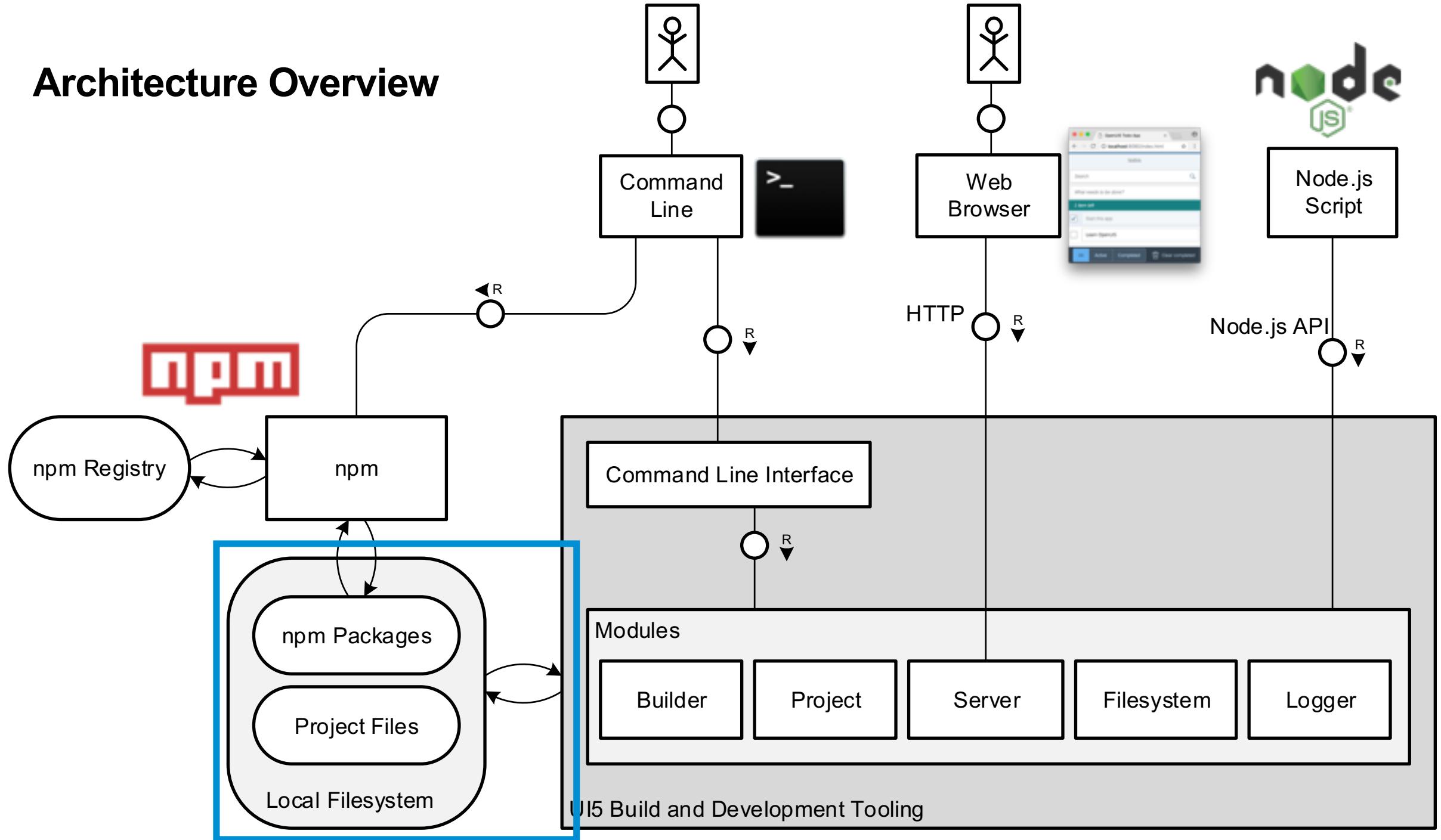
Architecture Overview



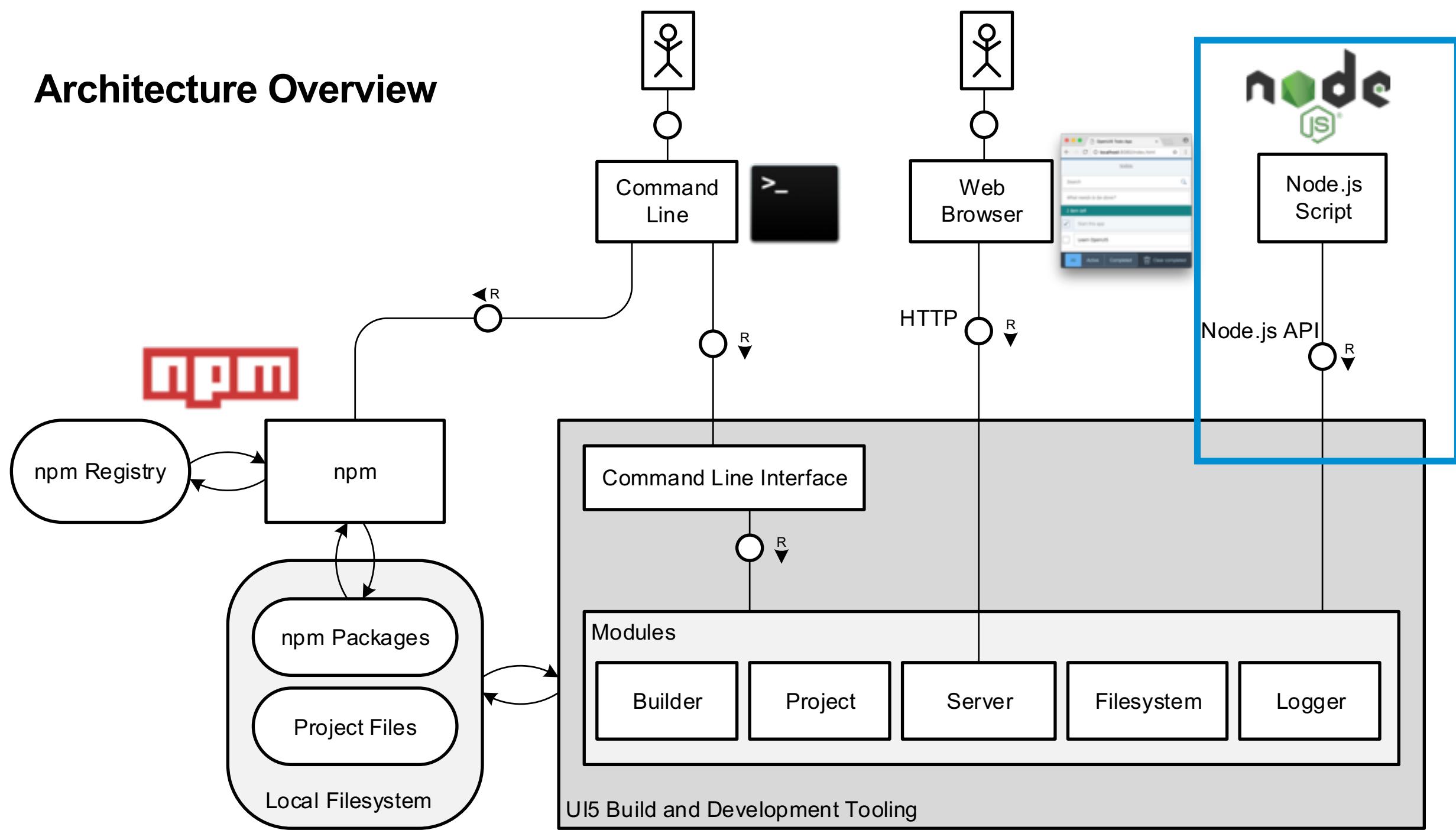
Architecture Overview



Architecture Overview



Architecture Overview



Command Line Interface

DEMO

Command Line Interface

```
ui5 init
```

```
> ui5 init  
Wrote ui5.yaml:
```

```
specVersion: '0.1'  
metadata:  
  name: my-app  
type: application
```

Command Line Interface

ui5 init

```
> ui5 init
Wrote ui5.yaml:

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ui5 serve

```
> ui5 serve
Server started
URL: http://localhost:8080
```

Command Line Interface

Resource abstraction

Command Line Interface

Resource abstraction

File System

```
my.app
└── webapp
    └── Component.js
```



HTTP Server

```
/ └ Component.js
```

Command Line Interface

Resource abstraction

File System

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my.app
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HTTP Server

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/ └── Component.js
```

my.library

```
└── src
    └── my
        └── library
            └── MyControl.js
```



Command Line Interface

Resource abstraction

File System

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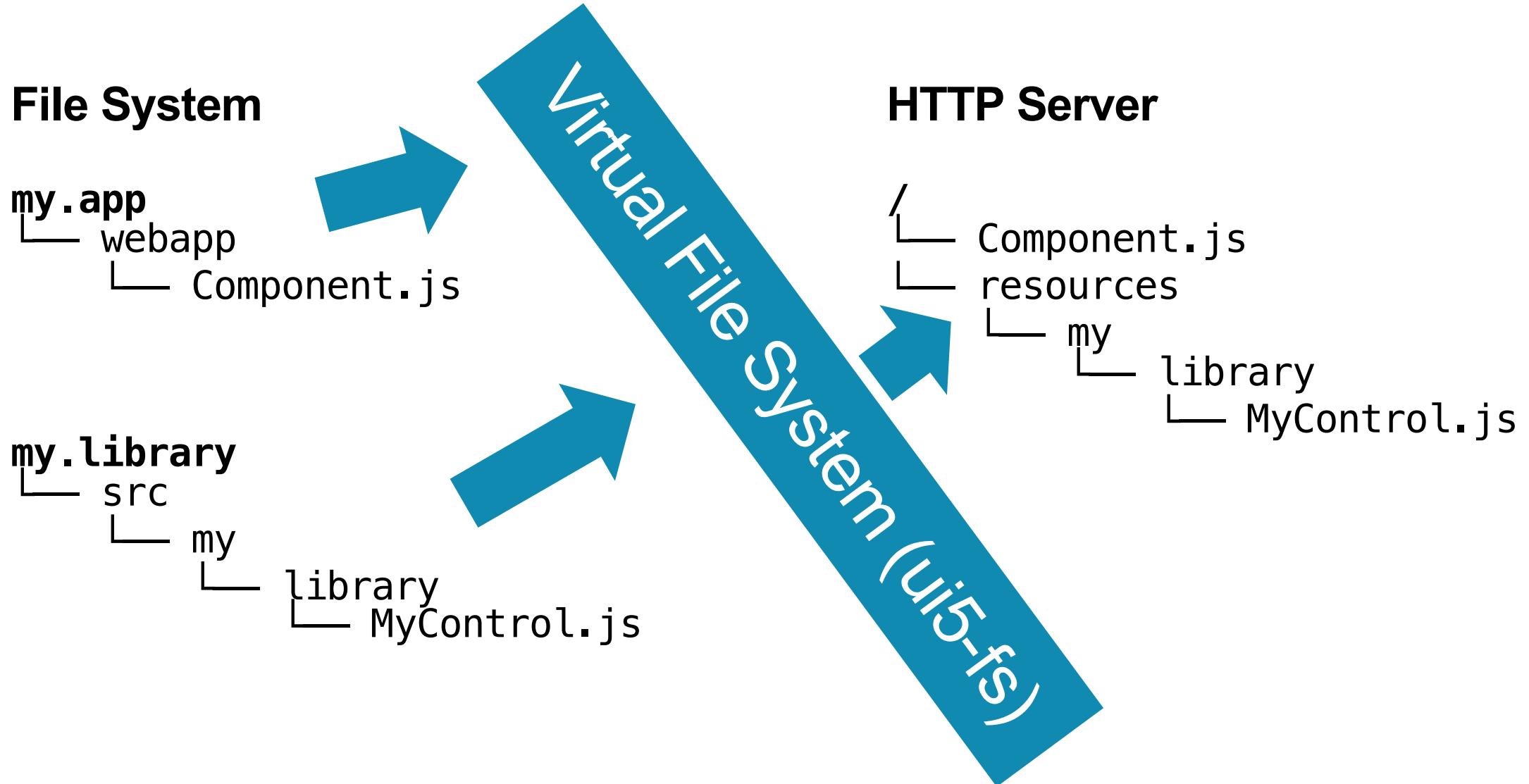
HTTP Server

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/ 
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└── resources
    └── my
        └── library
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```



Command Line Interface

Resource abstraction



Command Line Interface

Resource abstraction

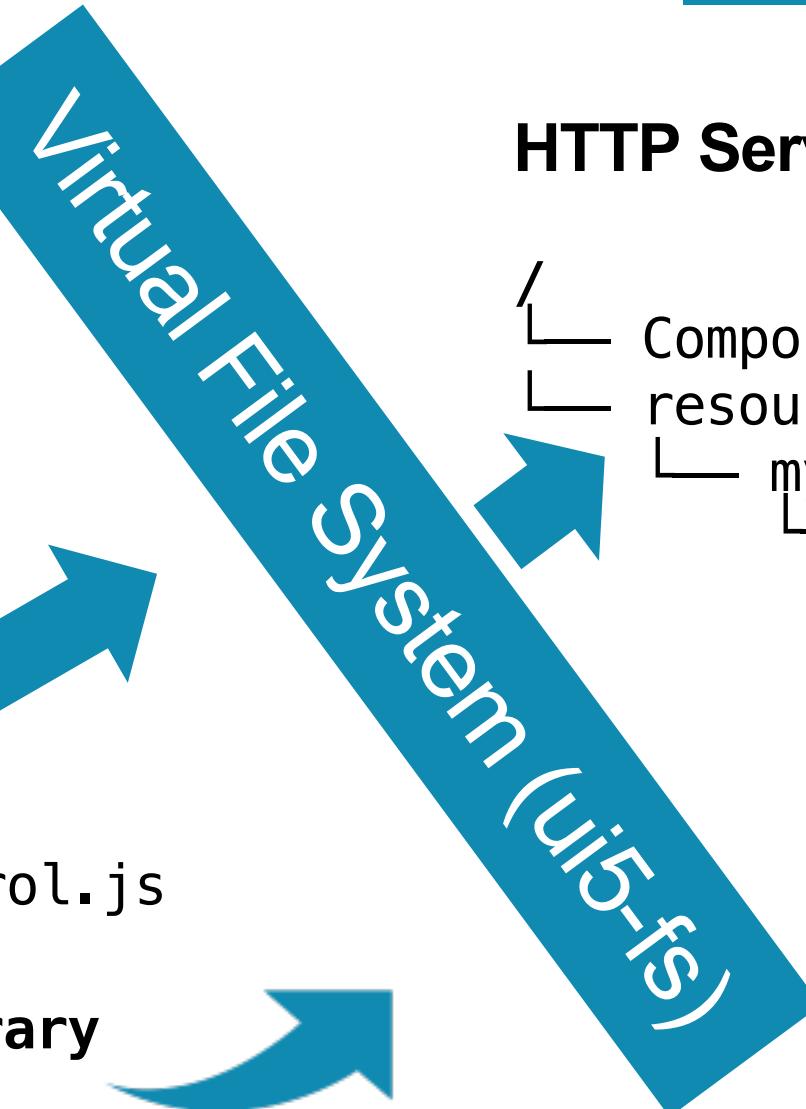
ui5 serve

File System

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```
my.library
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            └── MyControl.js
```

*sap.ui.core
sap.m
sap.f
my.other.library
that.library
some.reuse.library*



HTTP Server

```
/ └── Component.js
      └── resources
          └── my
              └── library
                  └── MyControl.js
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Command Line Interface

ui5 serve

DEMO

Command Line Interface

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ui5 serve

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> ui5 serve
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ui5 build

```
> ui5 build
[...]
Build succeeded in 1.57
min
```

Command Line Interface

ui5 build

ui5 build

openui5-sample-app

sap.ui.core

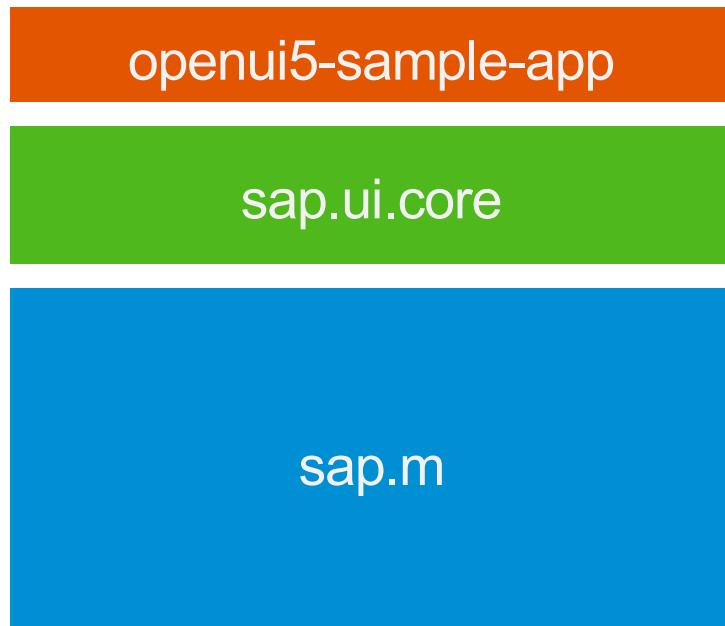
sap.m

preload

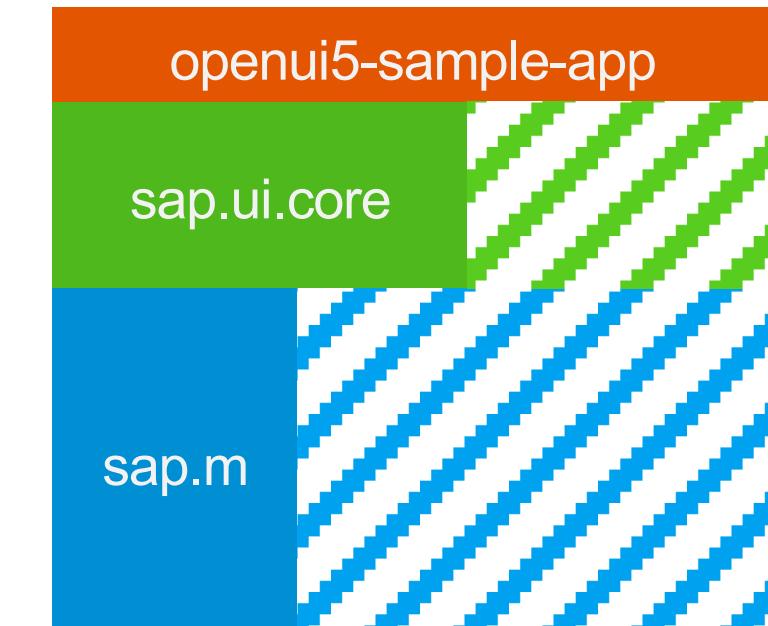
Command Line Interface

ui5 build

ui5 build



preload



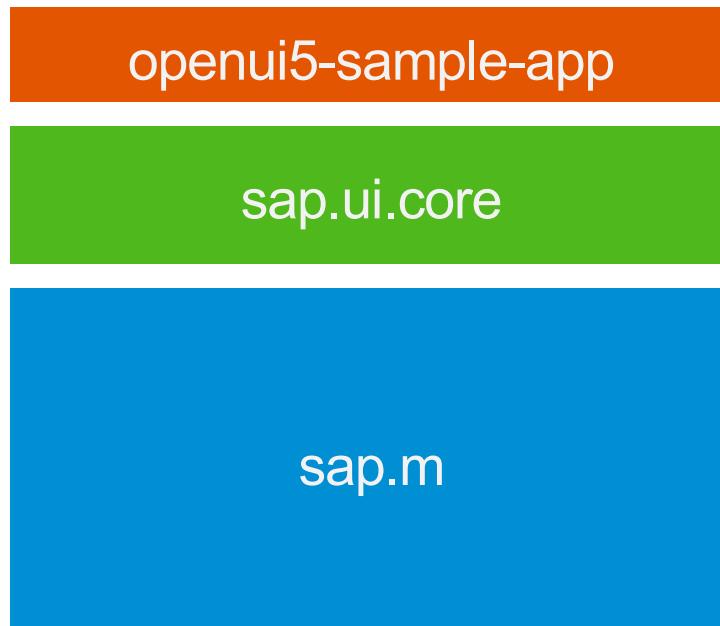
self-contained

Command Line Interface

ui5 build

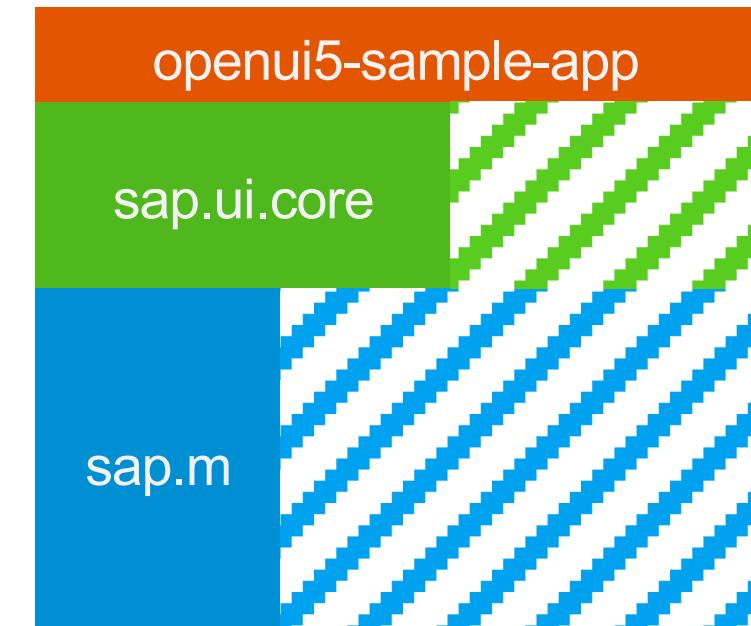
ui5 build

≈ 1170 KB (gzip)



preload

≈ 480 KB (gzip)



self-contained

Command Line Interface

ui5 build

DEMO

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[...]
Build succeeded in 1.57
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```

Command Line Interface

Development

DEMO

Command Line Interface

Today

`ui5 init`

`ui5 serve`

`ui5 build`

Future

`ui5 test`

`ui5 migrate`

`ui5 doctor`

Future

- Advanced module bundling
- Plugin mechanism
- WebIDE integration
- Part of the standard UI5 toolchain



OPEN SOURCE

Get Involved



GitHub.com

- Request for Comments (RFCs)
- Issues
- Pull Requests

Community

- OpenUI5 Slack (#tooling channel)

Try it out



github.com/SAP/ui5-tooling

⚡ Quick start: OpenUI5 Sample App

Checkout the [OpenUI5 Sample App \(ui5-tooling branch\)](#) featuring a full blown [How-to](#) to play around with the UI5 Build and Development Tooling.

Thank you.

Contact information:

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Matthias Oßwald

Developer UI5 Core Team

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GitHub/Slack: [@matz3](#)

👉 *Meet us!* 🤝
@Booth 2 - 2pm to 4pm

UI5con
learn.explore.connect.