

# Micro frontend

Come orchestrare componenti riutilizzabili in applicativi frontend organici con il framework **micro-lc**



Edoardo **Pessina**

Full Stack Developer Specialist

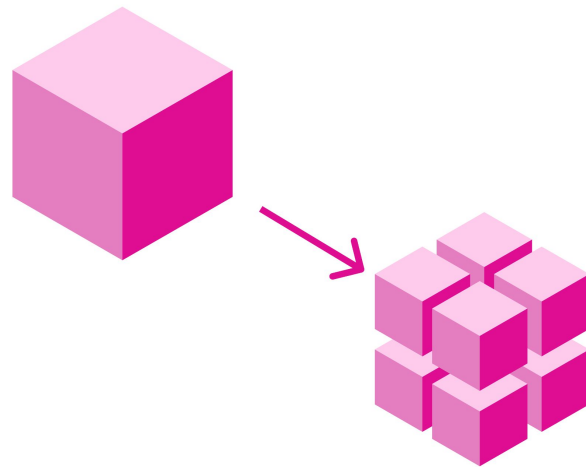
**Mia-Platform**



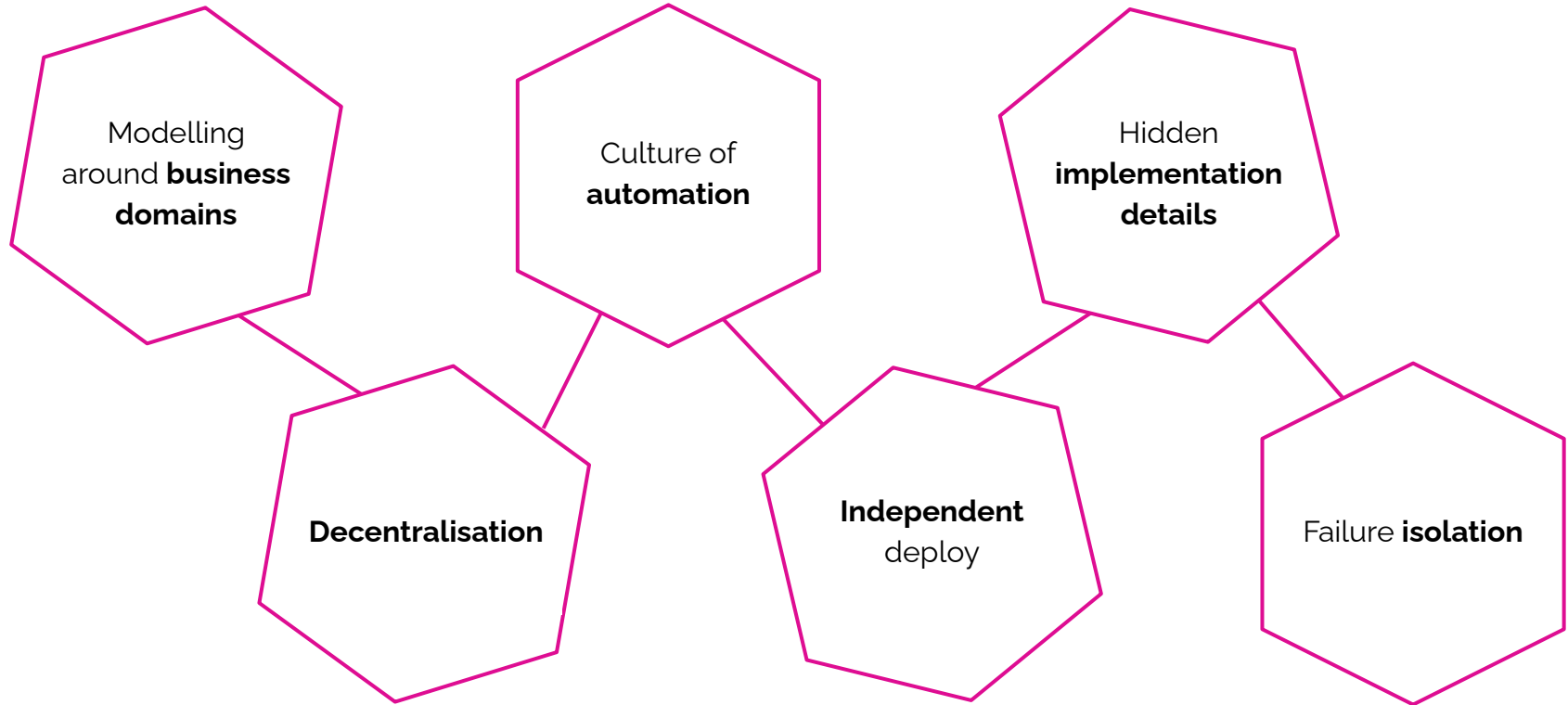
# What are Micro-Frontends?

The concept of micro-frontends extend the microservices architecture to the frontend world.

- ❖ The current trend is to build single browser applications on top of a microservice architecture (**Frontend Monolith**);
- ❖ With micro-frontends, websites or web apps are built as a composition of features owned by different **teams that work independently**;
- ❖ Each team has a distinct **area of expertise** where it specialises in, while a **cross functional team** develops end-to-end features, from database to user interface;
- ❖ This approach is gaining consensus and momentum as it enables new possibilities for **frontend development**;



The micro-frontend architectural style brings various benefits:



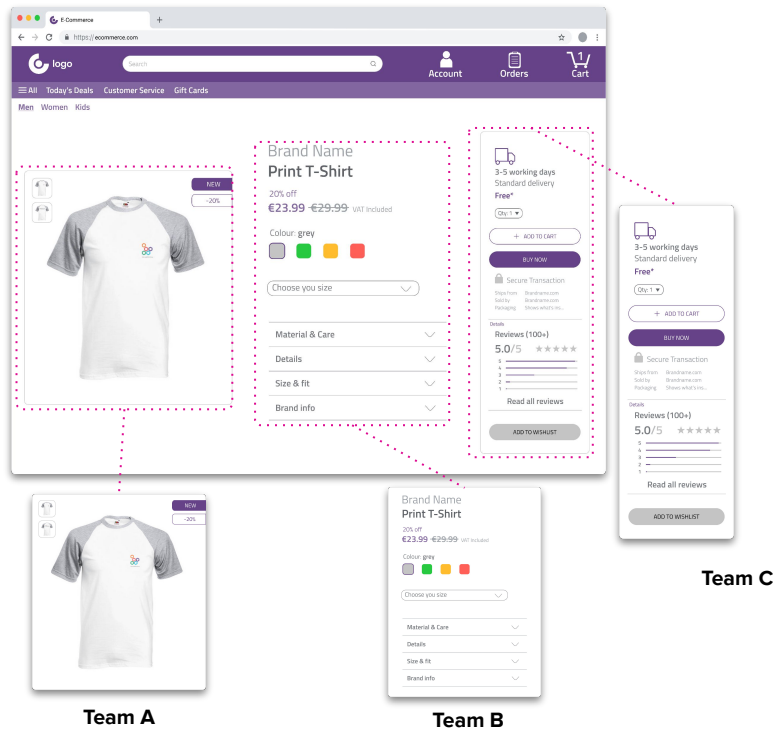
# Defining Micro-Frontends

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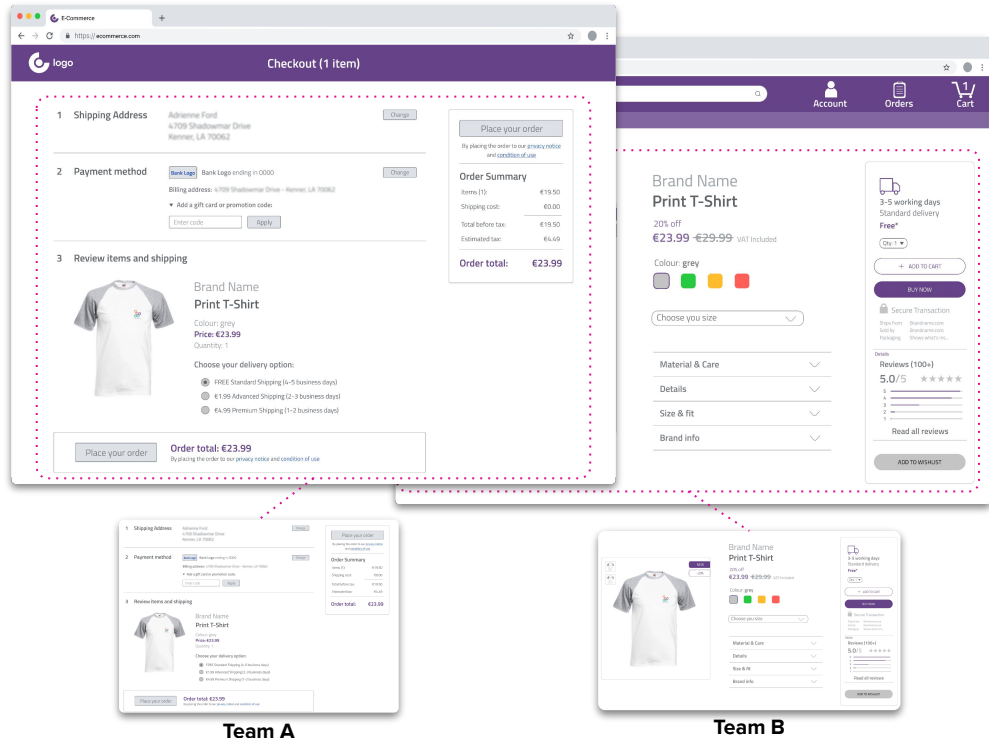
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Micro-frontends can be defined inside the same view or for a specific area of the application.

## Horizontal

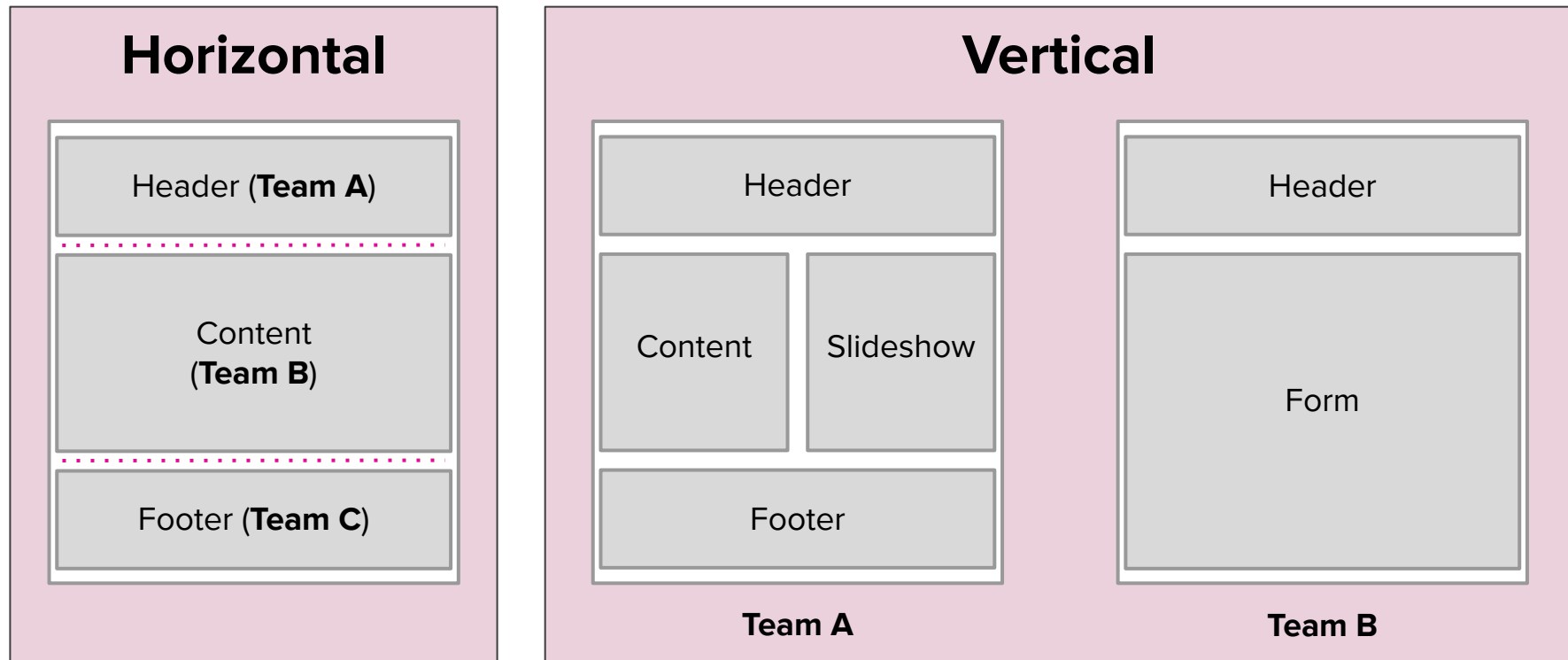


## Vertical



# Defining Micro-Frontends

Micro-Frontends can be defined inside the same view or for a specific area of the application.

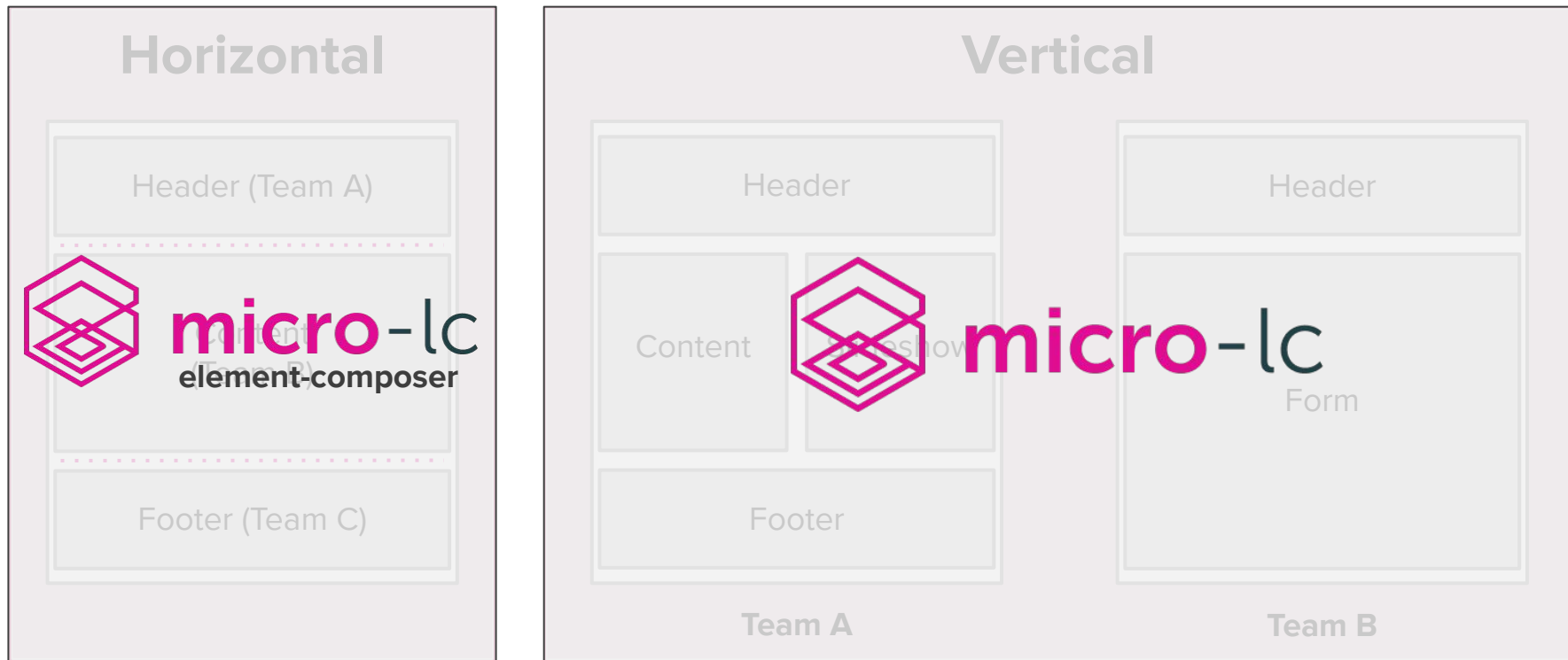


# Developing Micro-Frontends **with micro-lc**

Mia-Platform

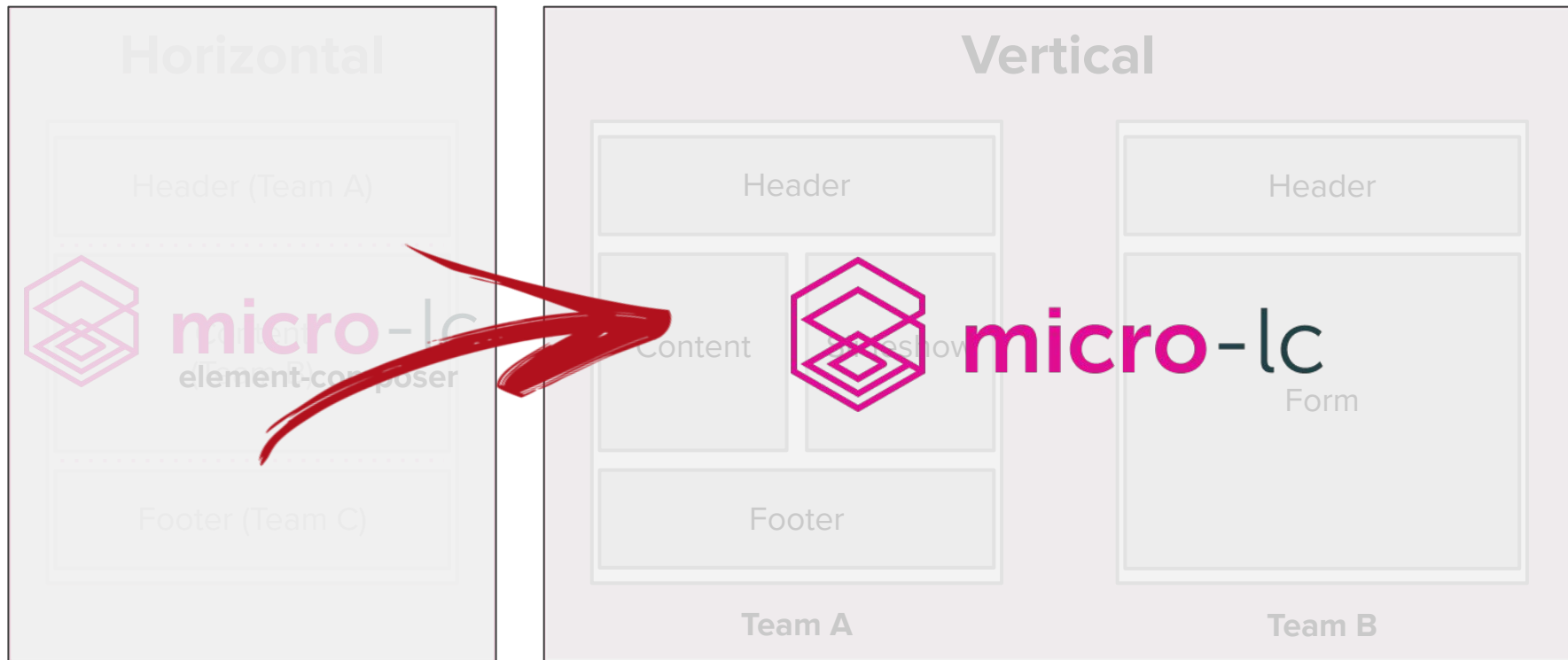
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micro-lc is the open source tool by Mia-Platform to develop your own micro-frontend application.



# Developing Micro-Frontends with micro-lc

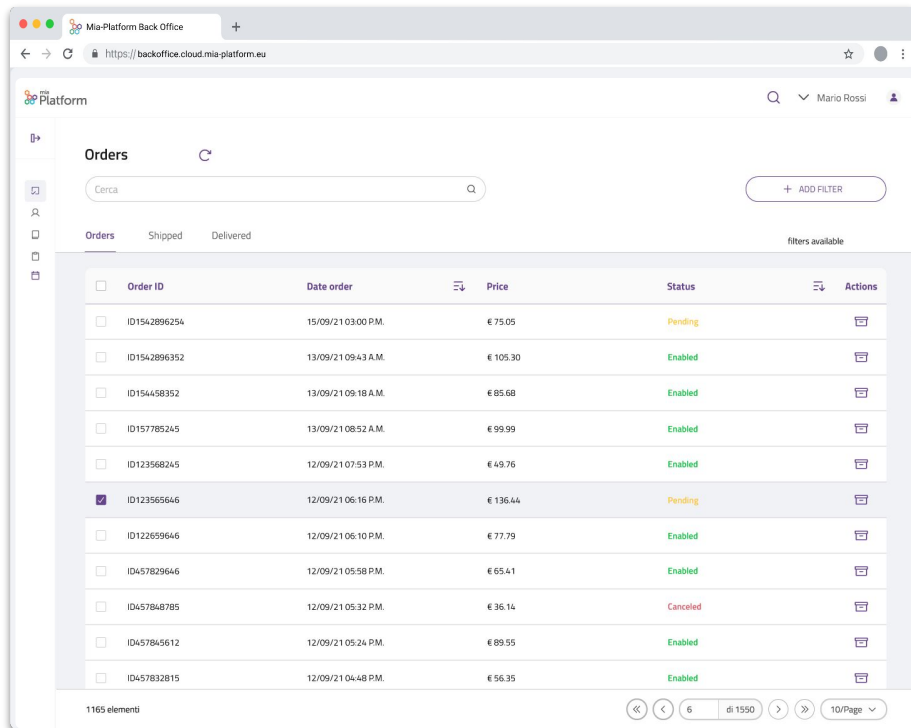
micro-lc is the open source tool by Mia-Platform to develop your own micro-frontend application.



# Orchestrate your micro-frontends with micro-lc

micro-lc is an open-source component that **contains and orchestrates** your micro-frontend architecture.

- ✧ **Flexible:** Split your monolithic front-end architecture into smaller pieces orchestrated and contained by micro-lc.
- ✧ **Use your own framework:** micro-lc works with all frameworks (React, Vue, Angular, Vanilla Javascript,...)
- ✧ **Speed up your work:** customize the layout with your brand assets, maintaining only the logic.
- ✧ **Scalable:** create or edit front-end applications with reusable components.



The screenshot shows a web application titled "Mia-Platform Back Office" with the URL "https://backoffice.cloud.mia-platform.eu". The interface includes a search bar with the text "Cerca", a filter button "+ ADD FILTER", and a table of orders. The table has columns for Order ID, Date order, Price, Status, and Actions. The status column shows various states like Pending, Enabled, and Canceled. The bottom of the table indicates "1165 elementi" and a pagination bar showing "di 1590" and "10/Page".

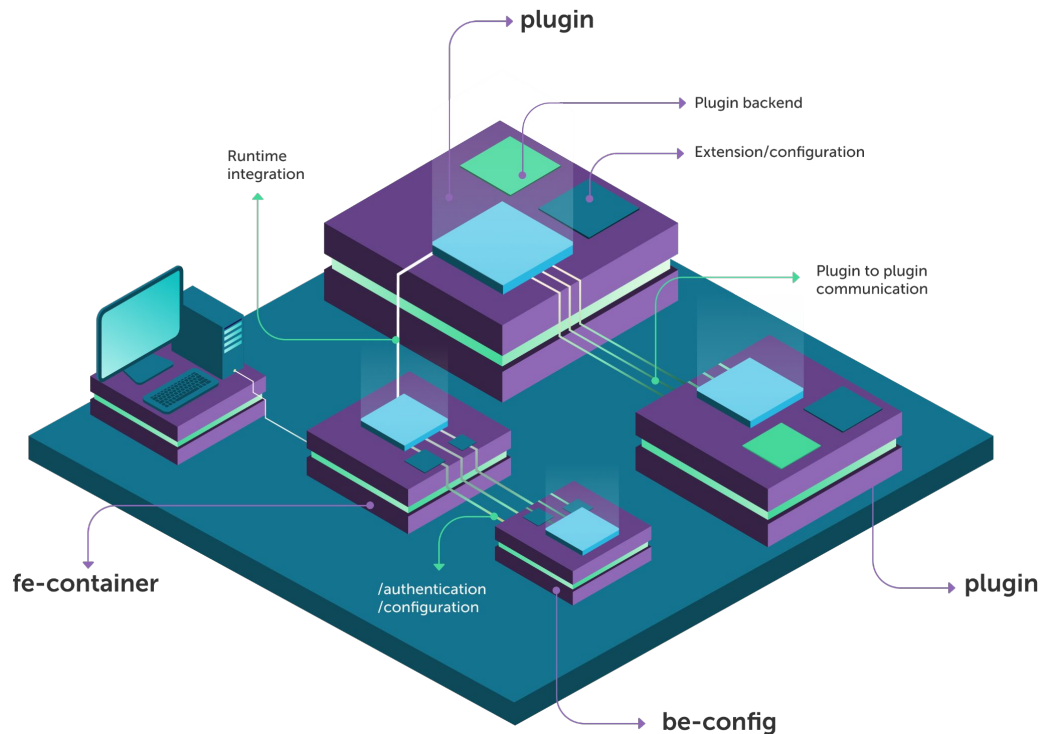
<input type="checkbox"/>	Order ID	Date order	Price	Status	Actions
<input type="checkbox"/>	ID1542896254	15/09/21 03:00 P.M.	€ 75.05	Pending	
<input type="checkbox"/>	ID1542896352	13/09/21 09:43 A.M.	€ 105.30	Enabled	
<input type="checkbox"/>	ID154458352	13/09/21 09:18 A.M.	€ 85.68	Enabled	
<input type="checkbox"/>	ID157785245	13/09/21 08:52 A.M.	€ 99.99	Enabled	
<input type="checkbox"/>	ID123568245	12/09/21 07:53 P.M.	€ 49.76	Enabled	
<input checked="" type="checkbox"/>	ID123565646	12/09/21 06:16 P.M.	€ 136.44	Pending	
<input type="checkbox"/>	ID122659646	12/09/21 06:10 P.M.	€ 77.79	Enabled	
<input type="checkbox"/>	ID457829646	12/09/21 05:58 P.M.	€ 65.41	Enabled	
<input type="checkbox"/>	ID457848785	12/09/21 05:32 P.M.	€ 36.14	Canceled	
<input type="checkbox"/>	ID457845612	12/09/21 05:24 P.M.	€ 89.55	Enabled	
<input type="checkbox"/>	ID457832815	12/09/21 04:48 P.M.	€ 56.35	Enabled	



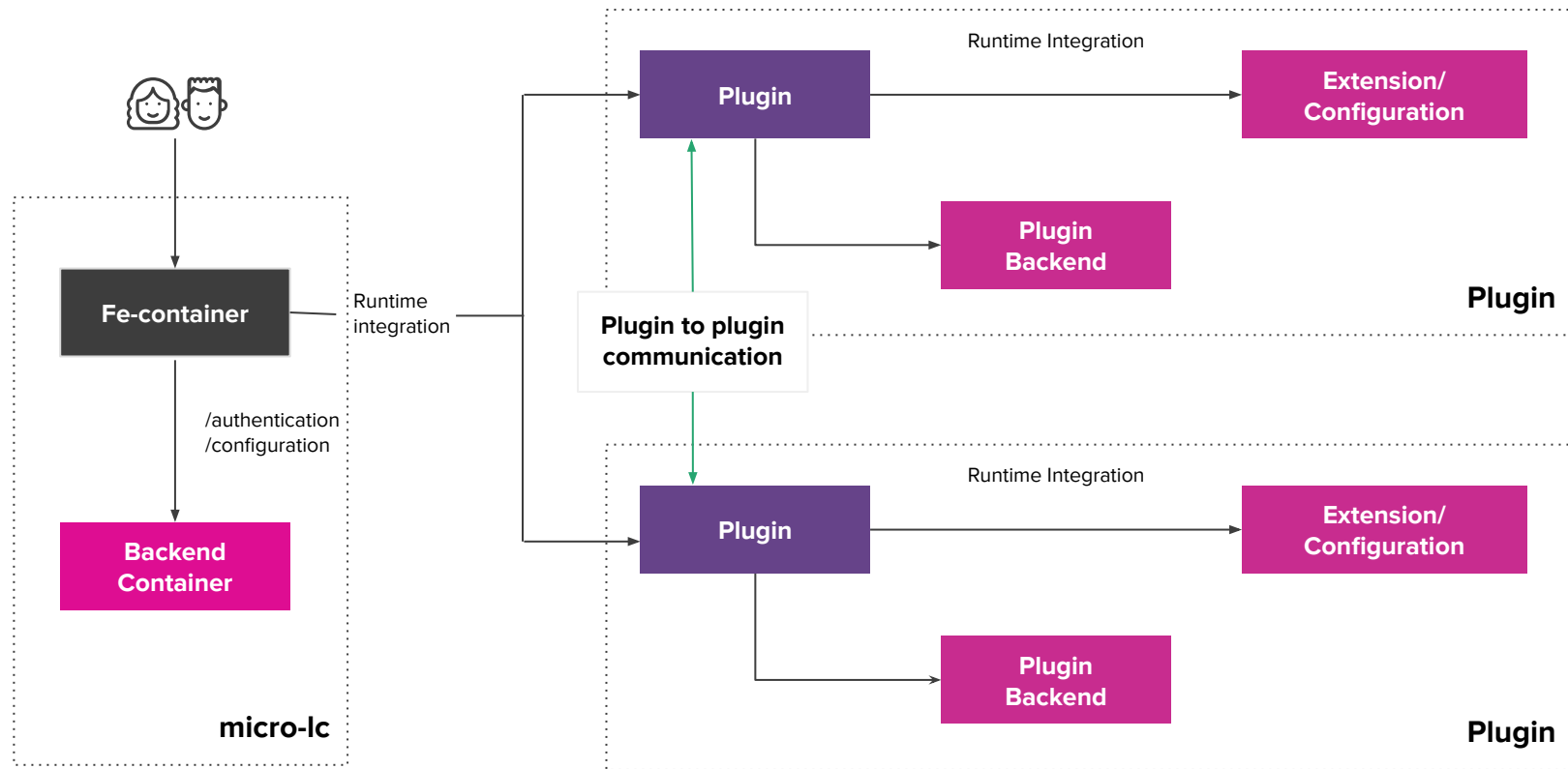
# Orchestrate your micro-frontends with micro-lc

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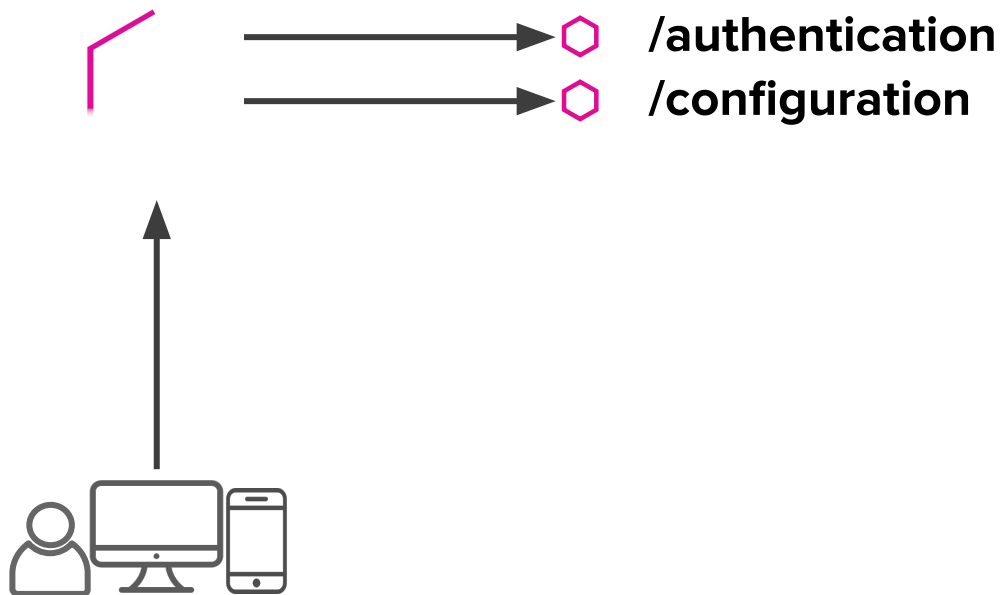
- ✧ **Orchestrator:** manage analytics, users data, plugins, error pages, assets and customizations.
- ✧ **Quick editing:** with runtime integration, edit only your configuration files and deploy your micro-frontends in no time.
- ✧ **Secure:** built-in authentication process through configuration file.
- ✧ **Plugin-to-Plugin communications:** thanks to Qiankun framework, plugins are not isolated, as it happens with iFrame, and talk to each other.

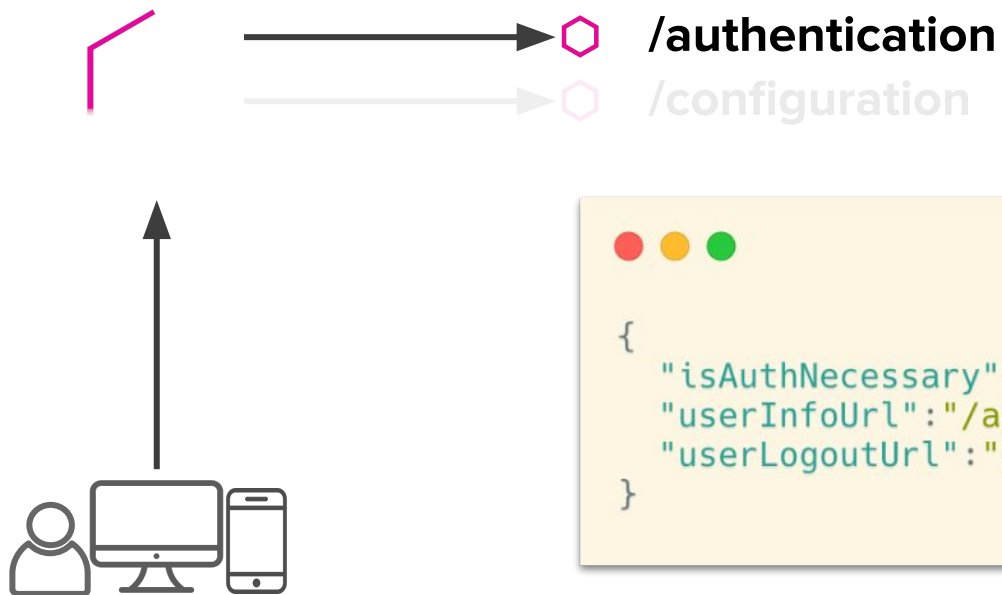


# How does micro-lc work?



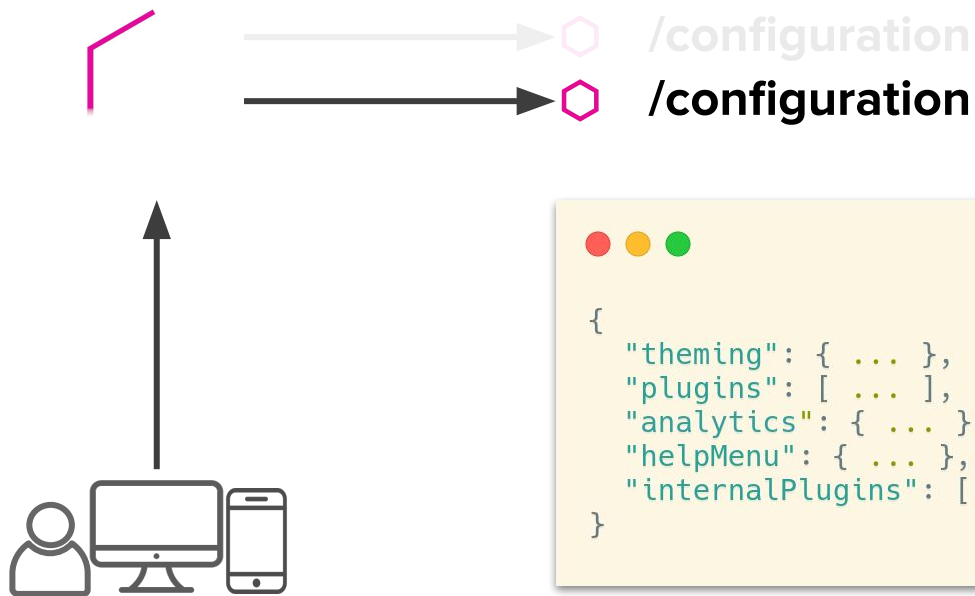
# micro-lc bootstrap





```
{
  "isAuthNecessary": true,
  "userInfoUrl": "/api/v1/microlc/user",
  "userLogoutUrl": "/api/v1/microlc/user/logout"
}
```

# micro-ic bootstrap




```
{  
  "theming": { ... },  
  "plugins": [ ... ],  
  "analytics": { ... },  
  "helpMenu": { ... },  
  "internalPlugins": [ ... ]  
}
```

# Configuration: plugins

```
const plugins = [
  {
    id: "plugin-qiankun-1",
    label: "React Qiankun",
    icon: "fab fa-react",
    order: 1,
    integrationMode: "qiankun",
    pluginRoute: "/react",
    pluginUrl: "http://localhost:3001"
  }
]
```

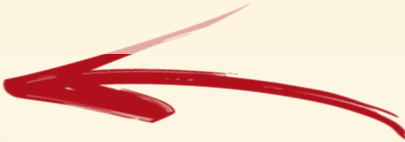
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    order: 1,
    integrationMode: "qiankun",
    pluginRoute: "/react",
    pluginUrl: "http://localhost:3001"
  }
]
```



## Other integrationMode

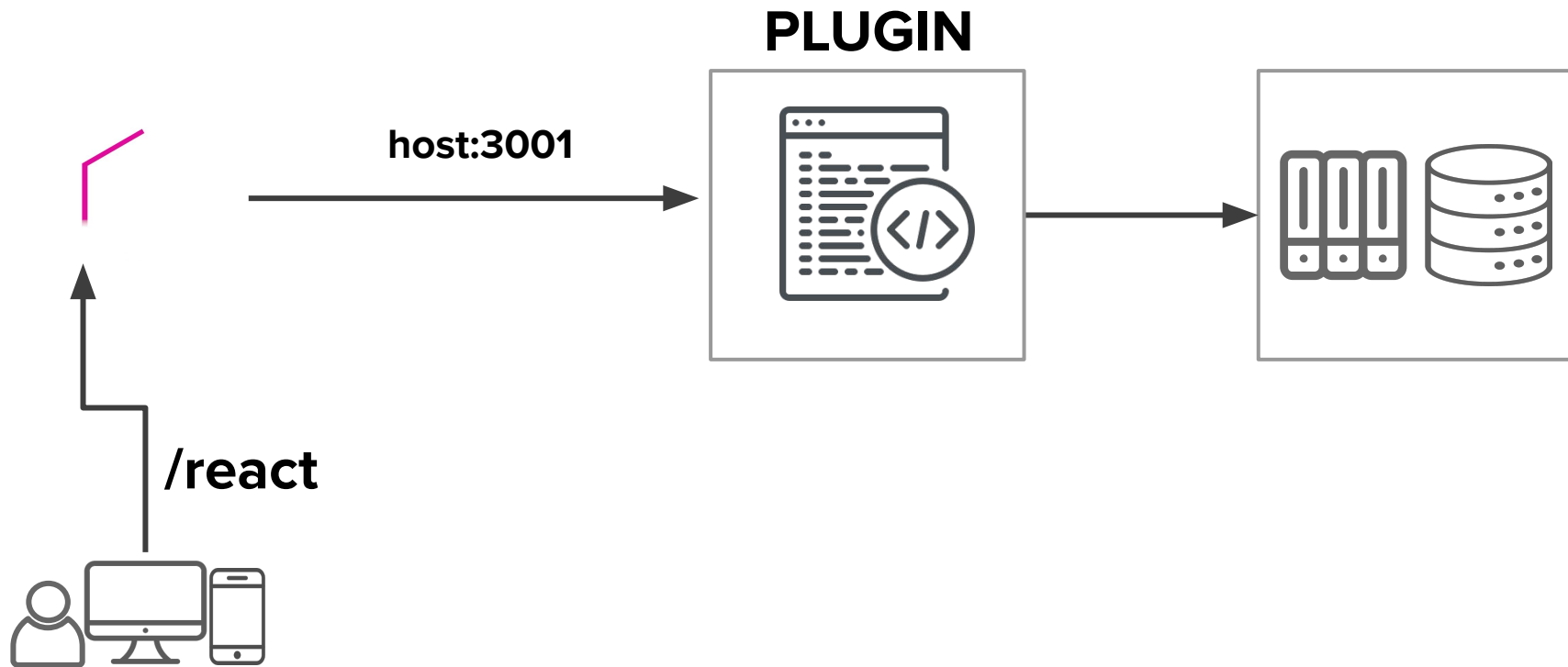


href



iframe

# micro-lc plugins



# How to create a plugin: lifecycle hooks



```
export async function bootstrap() {  
  console.log('react app bootstrapped');  
}
```



```
export async function mount(props) {  
  const container = props.container || document  
  ReactDOM.render(<App />, container.getElementById('root'));  
}
```

# How to create a plugin: lifecycle hooks



```
export async function unmount(props) {  
  const container = props.container || document  
  ReactDOM.unmountComponentAtNode(container.getElementById('root'));  
}
```



```
// Optional  
export async function update(props) {  
  console.log('update props', props);  
}
```

# How to create a plugin: bundler

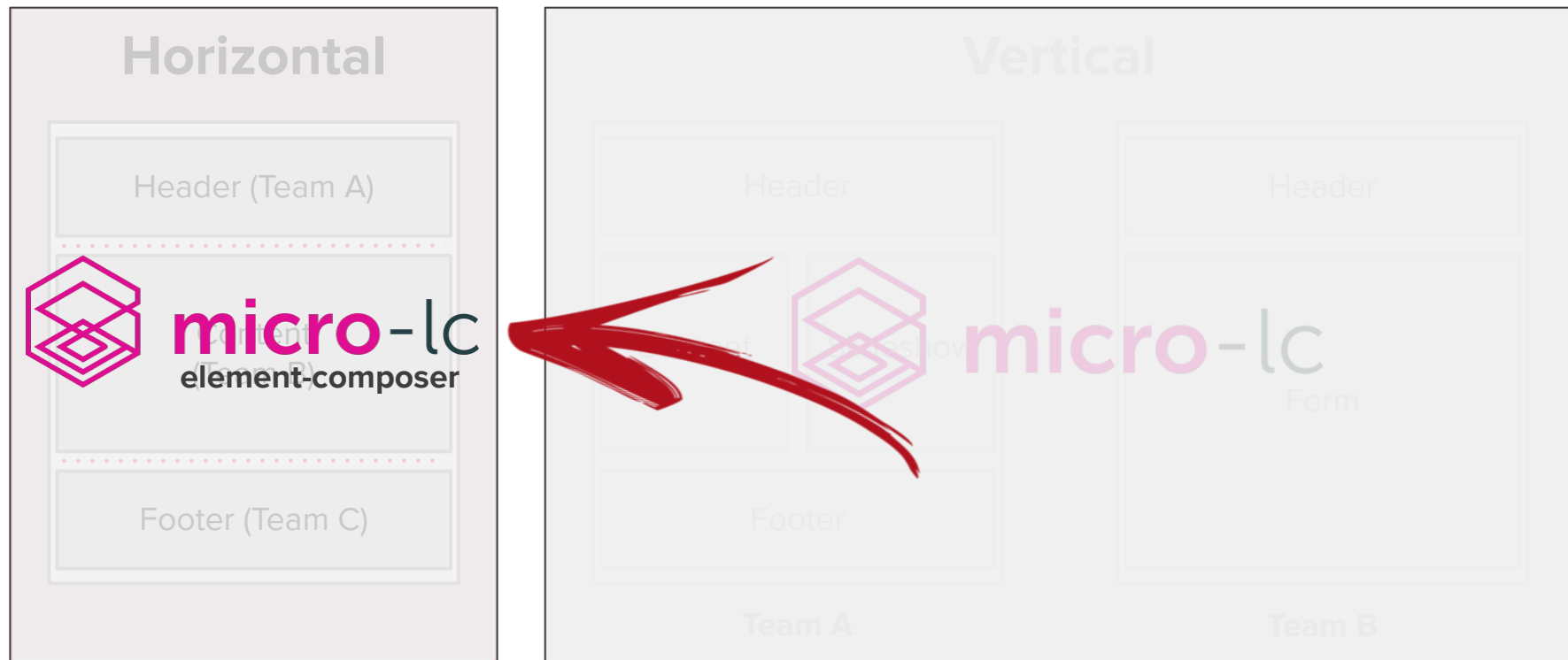


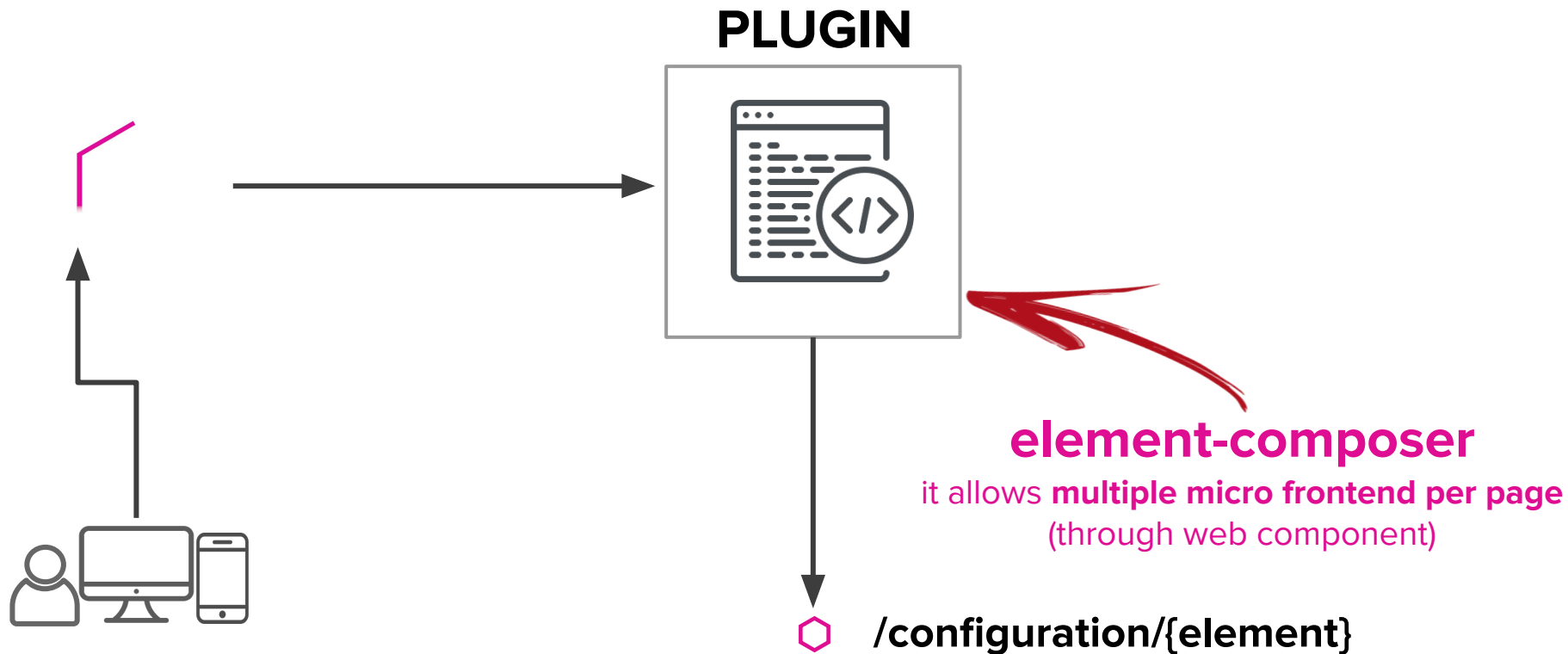
```
const packageName = require('./package.json').name;

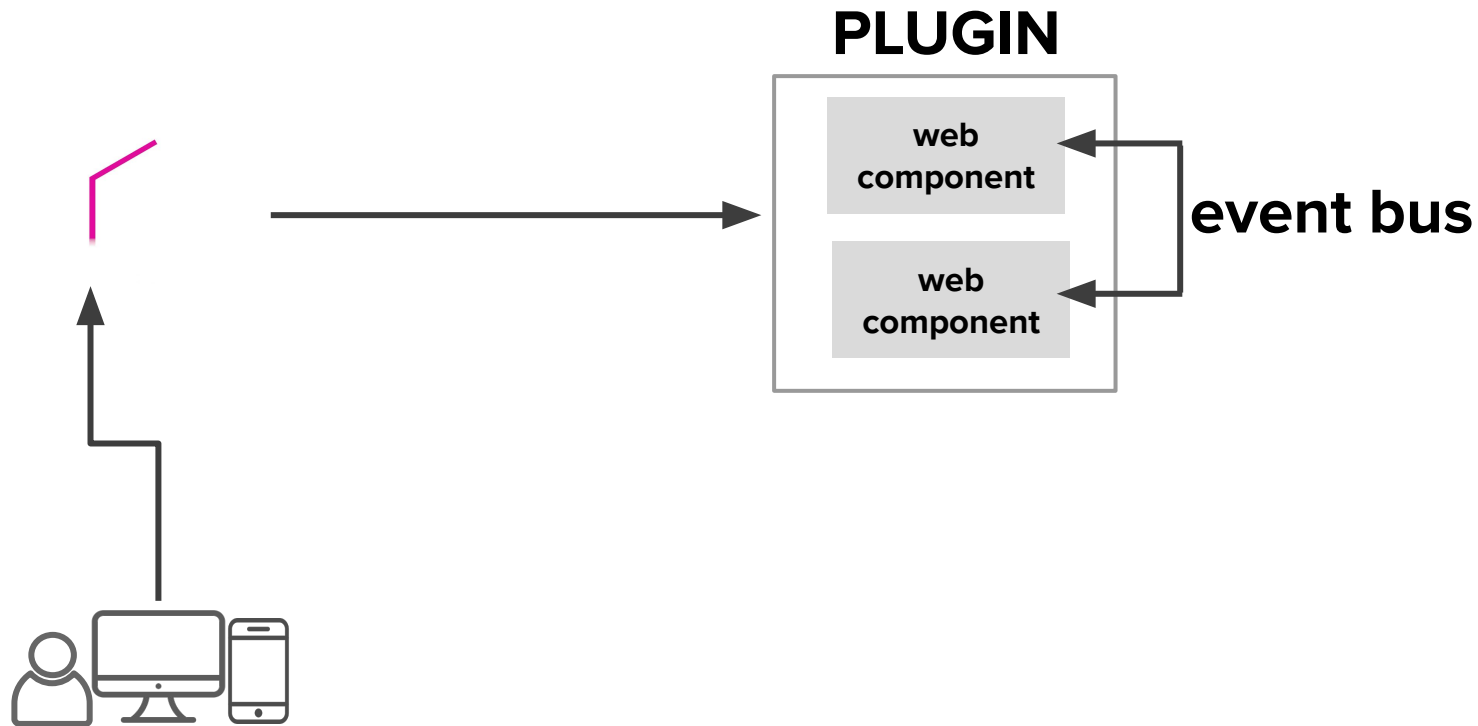
module.exports = {
  output: {
    library: `${packageName}-[name]`,
    libraryTarget: 'umd',
    jsonpFunction: `webpackJsonp_${packageName}`,
  },
};
```

# Developing Micro-Frontends **with micro-lc**

micro-lc is the open source tool by Mia-Platform to develop your own micro-frontend application.









# Join Mia-Platform micro-lc community

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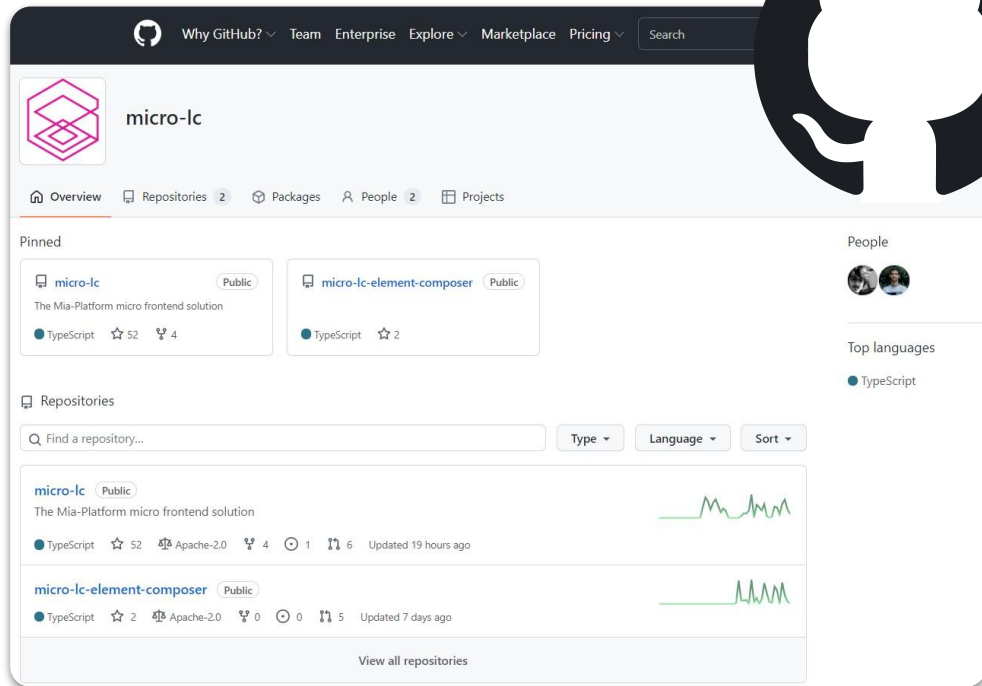
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micro-lc is completely **open source**.

Become part of the team!

Give your contribution to one of the first **micro-frontend orchestrators**.

[Join our open community](#)



# Contributors

Mia-Platform

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# Thanks!



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