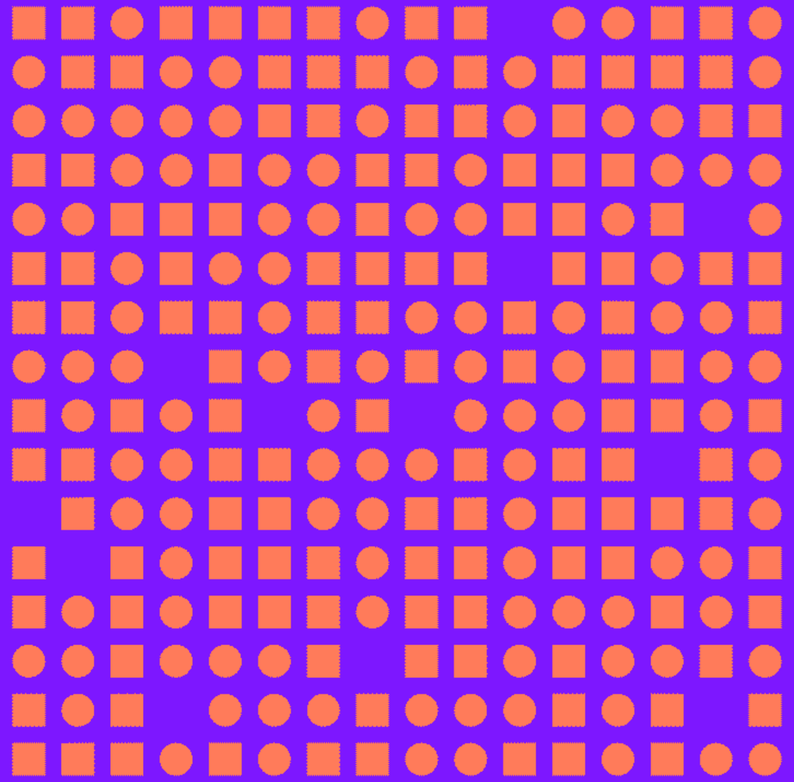
TypeFox

Building Collaborative Experiences with Theia

Mark Sujew

– TheiaCon 2024

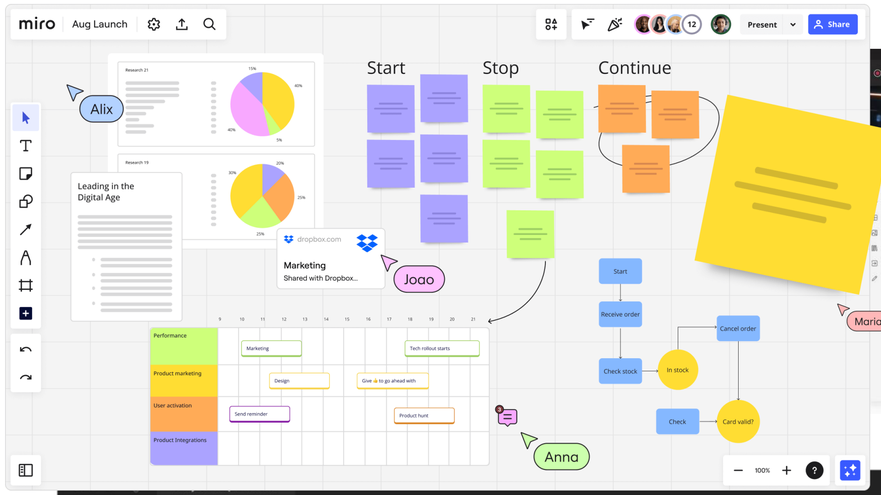


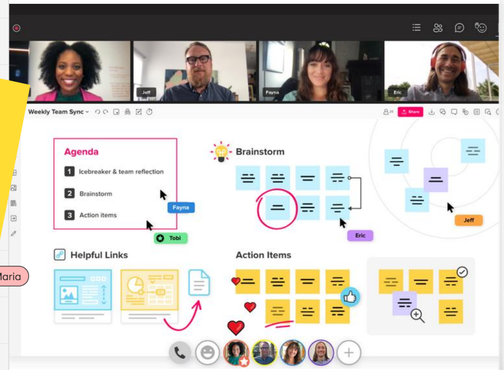
Agenda

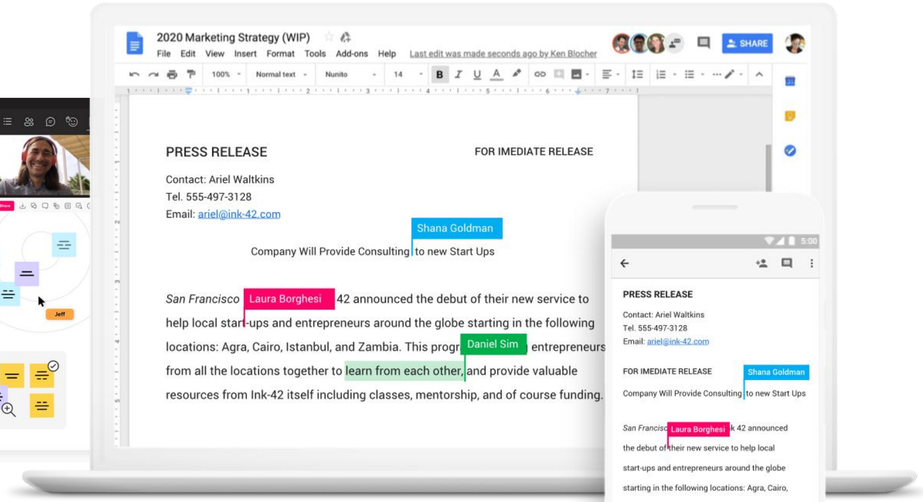
1. Engineering Collaboration
2. Existing Tooling
3. New Requirements
4. Open Collaboration Tools

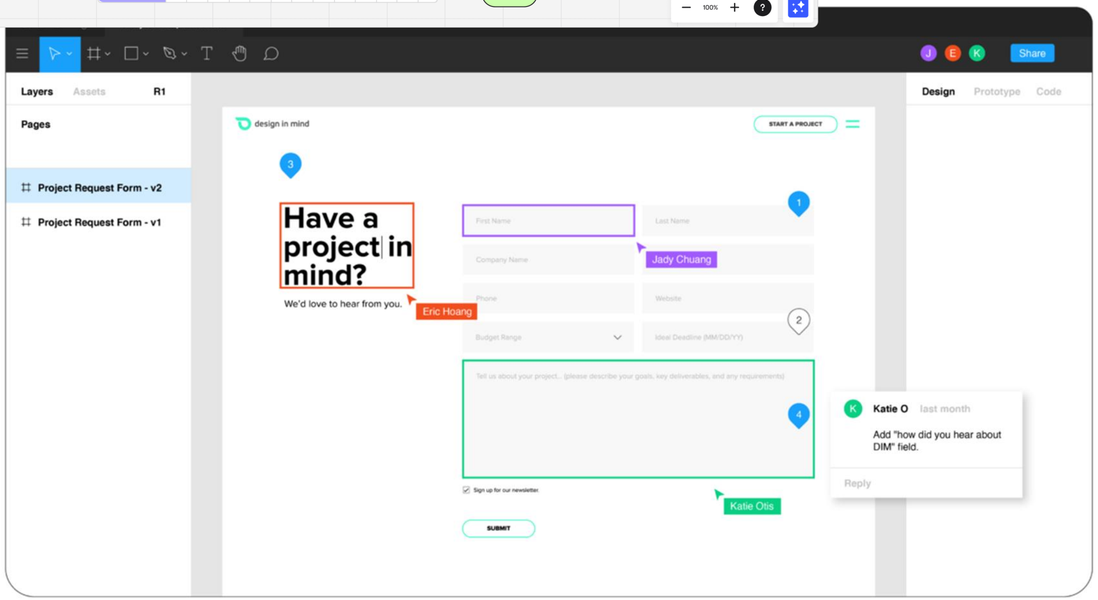


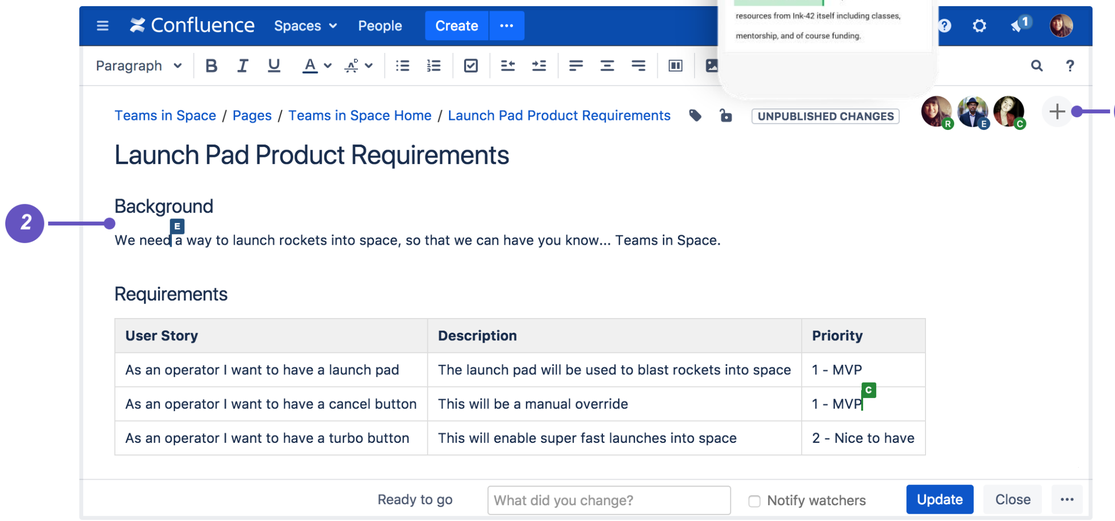
Why collaborate at all?







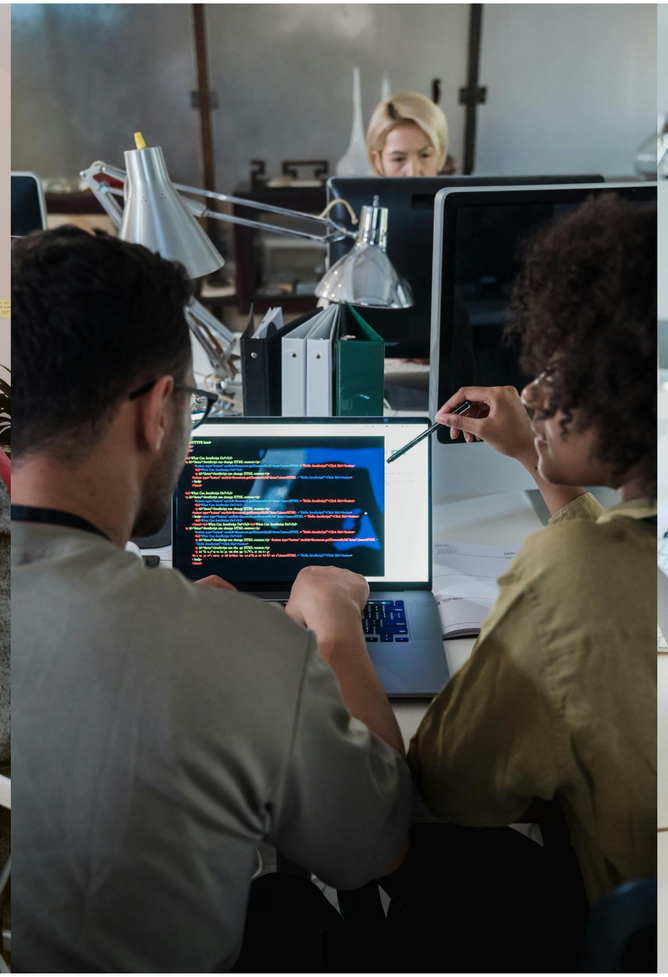




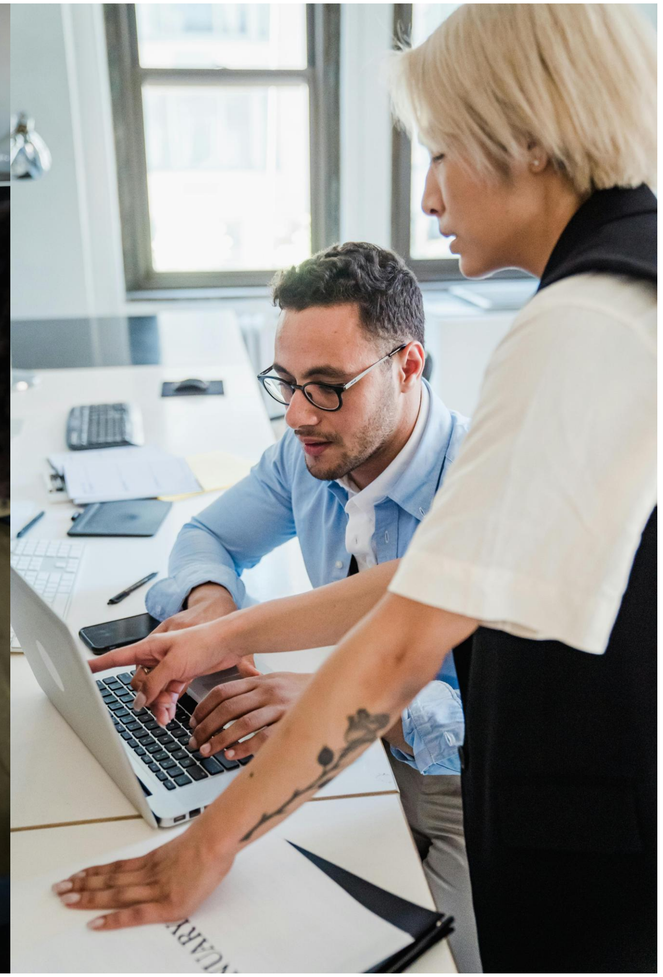
Collaboration Use Cases



Brainstorming



Debugging



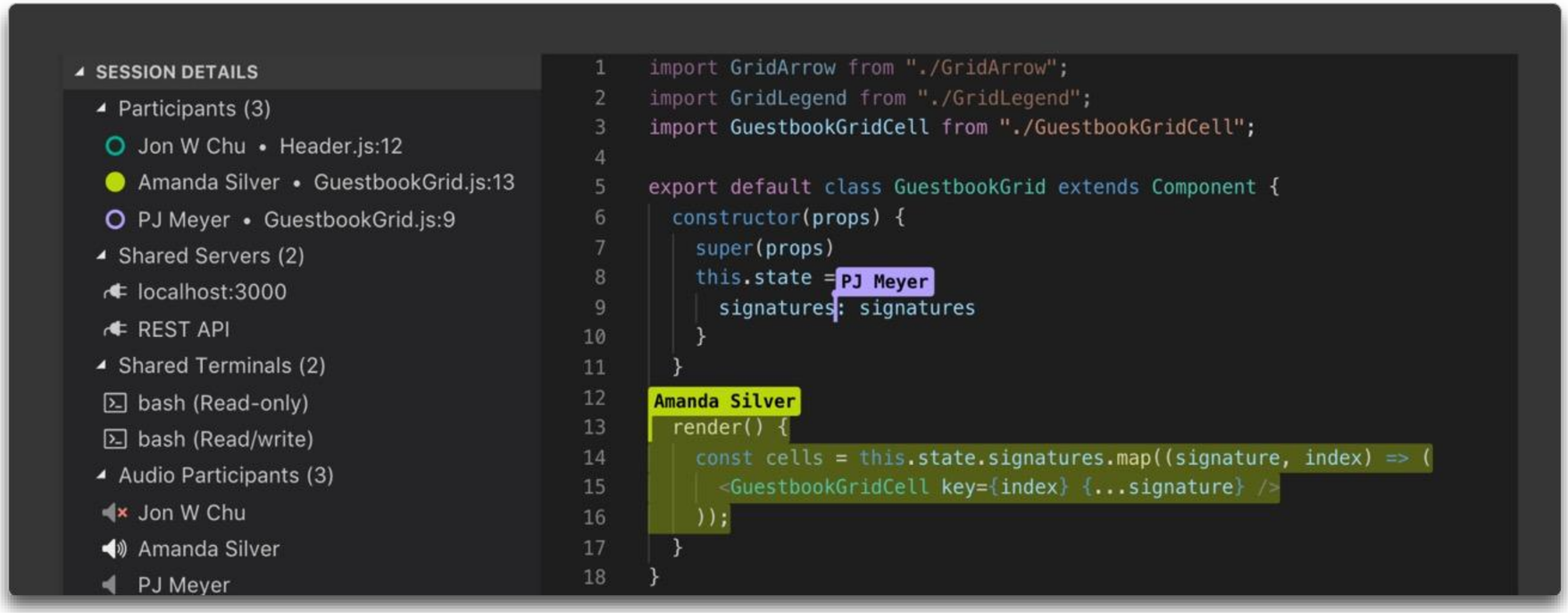
Mentoring

Existing Tooling

...and the missing link

Existing Tooling

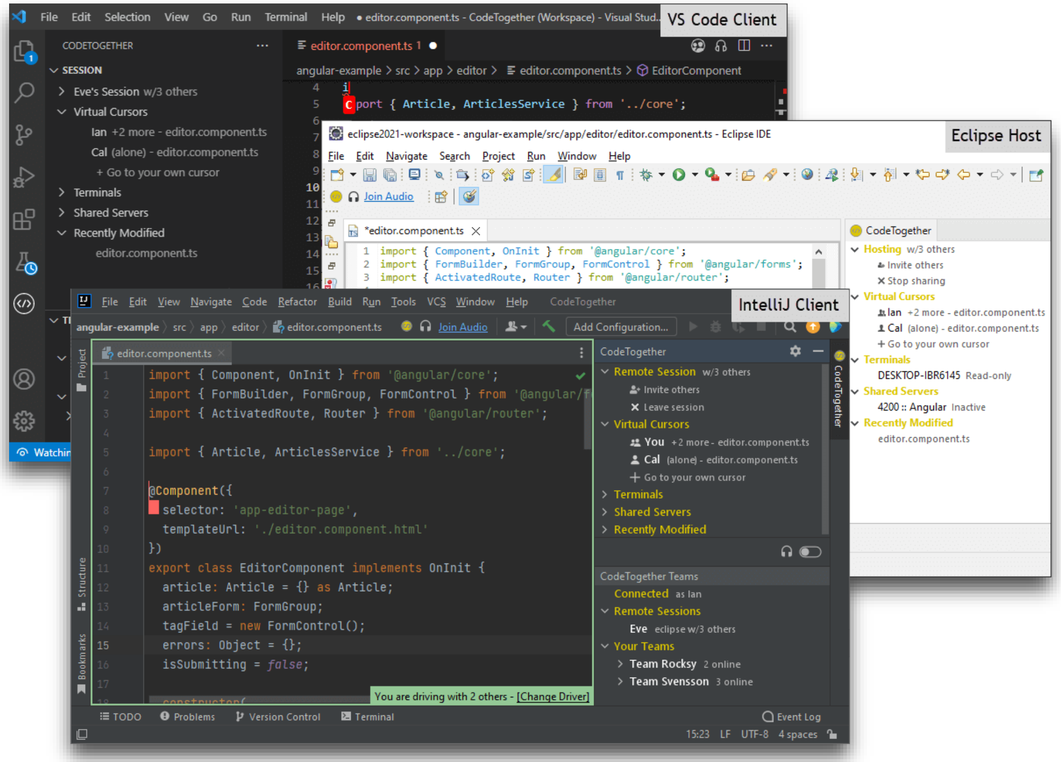
Microsoft's Take



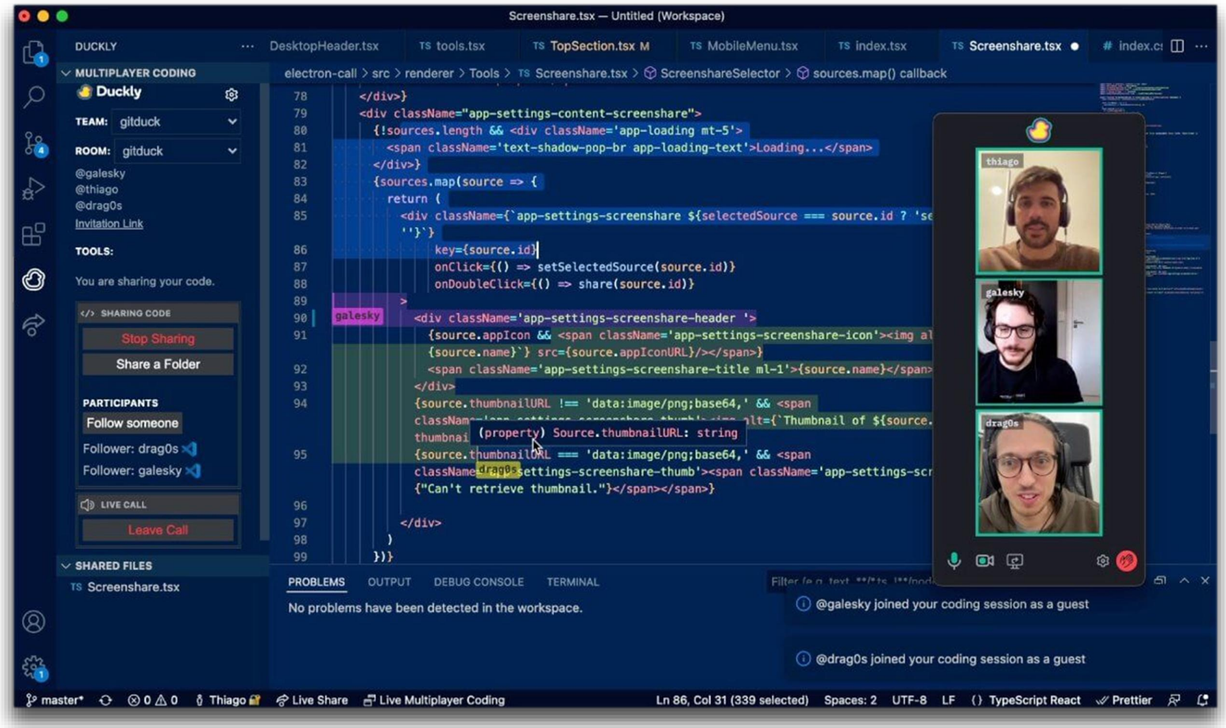
Visual Studio™ Live Share™

Existing Tooling

Startup Approaches



CodeTogether Live



Duckly

Existing Tooling

Open Source Approaches



Eclipse
Communication
Framework



EtherSync

New Tooling

TypeFox's Requirements



- Customers with Theia based products
- Customers with custom IDE-like products
- Customers needing extensible solutions for their own use cases
- On-Premise Customers

New Tooling

Developer	IDEs	Extensibility	Notable Features	On Premise	Licensing
Microsoft	Visual Studio Product Family	✓	Very good IDE integration	✗	Free, Proprietary Microsoft License
CodeTogether	VSCode, Theia, JetBrains, Eclipse IDE	✗	Large IDE Support + Web	✓	Commercial License
Duckly	VSCode, Theia, JetBrains	✗	Live audio and video transmission	✗	Commercial License
Eclipse	Eclipse IDE	✗	Uses XMPP	✓	EPL-2.0
Ethersync	NeoVim	✗	No Server / Uses Local Network	✓	AGPL-3.0
???	All the IDEs	✓	???	✓	FOSS License

Open Collaboration Tools

For all IDEs, out in the open

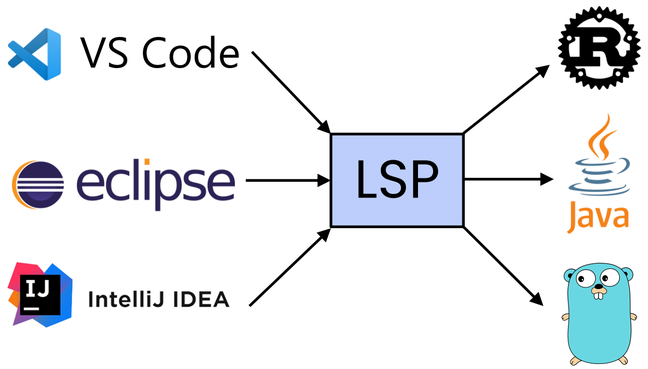
Eclipse

Open Collaboration Tools

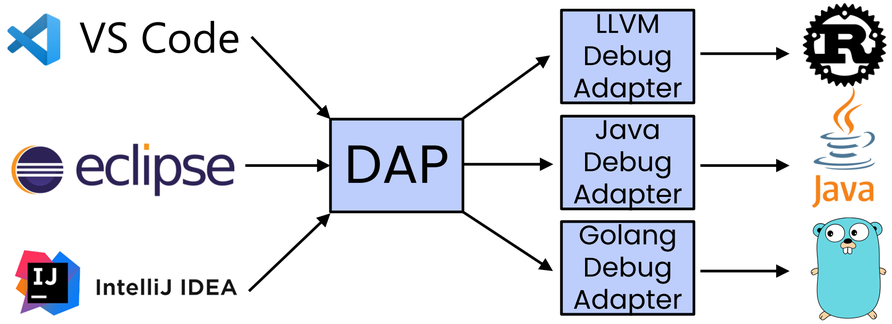
For all IDEs, out in the open

Open Collaboration Tools

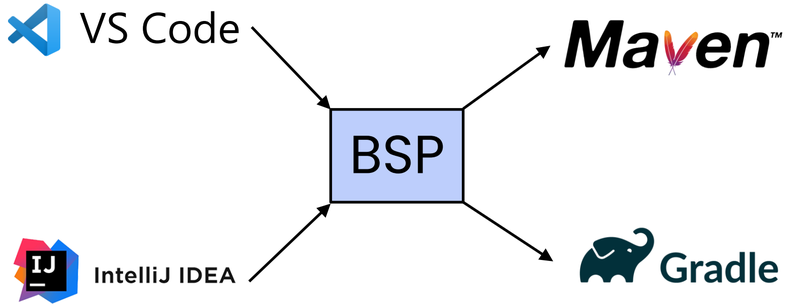
IDE Protocols Everywhere



Language Server Protocol



Debug Adapter Protocol

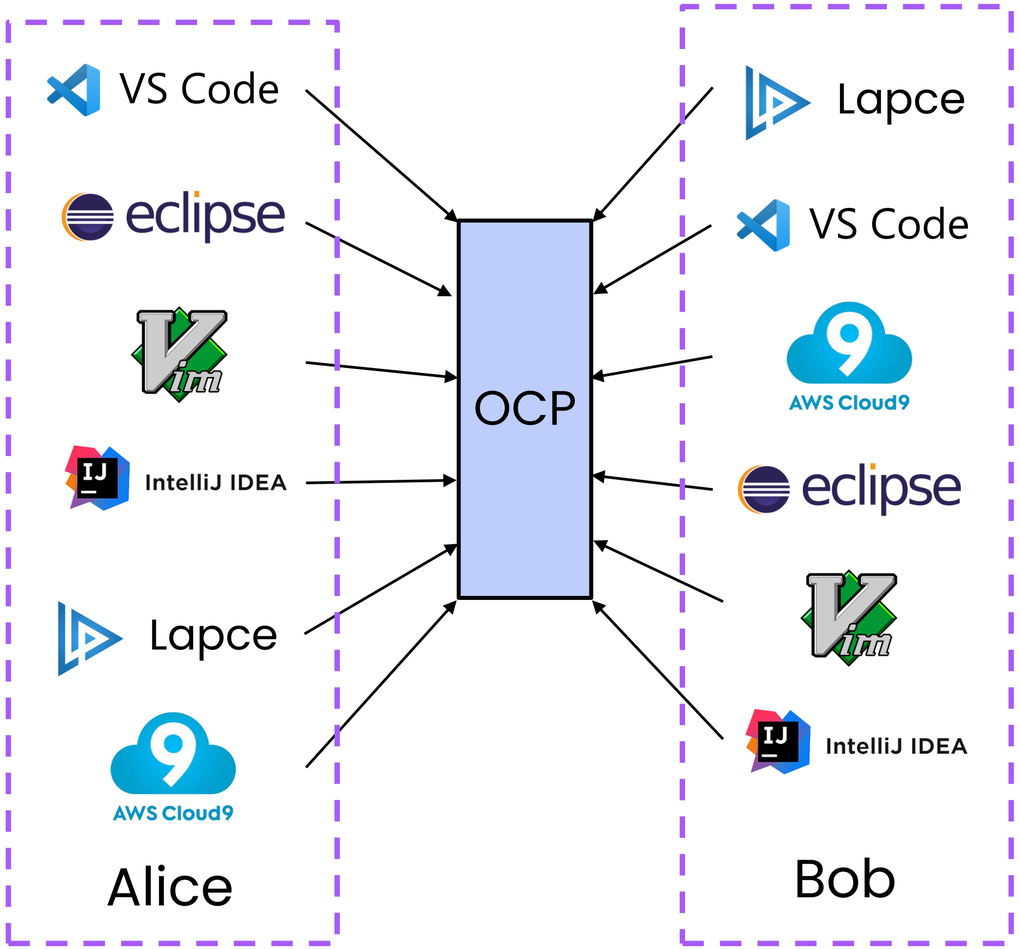


Build Server Protocol

- Made by Microsoft

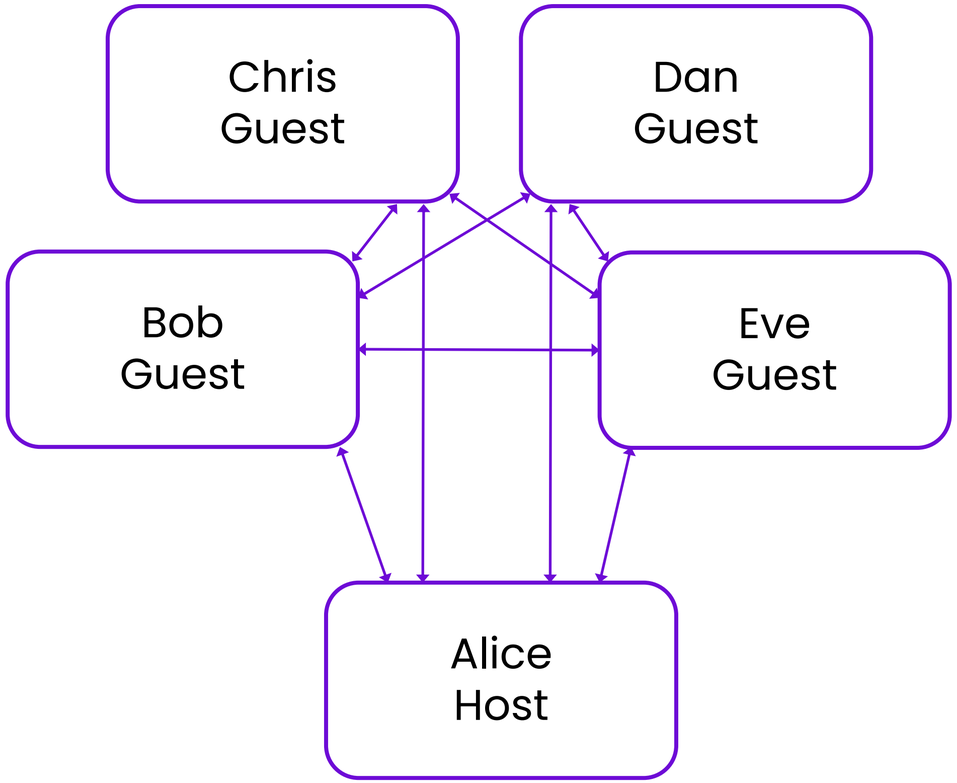
Open Collaboration Tools

… So why not for collaboration?



Open Collaboration Tools

Peer to Peer Communication

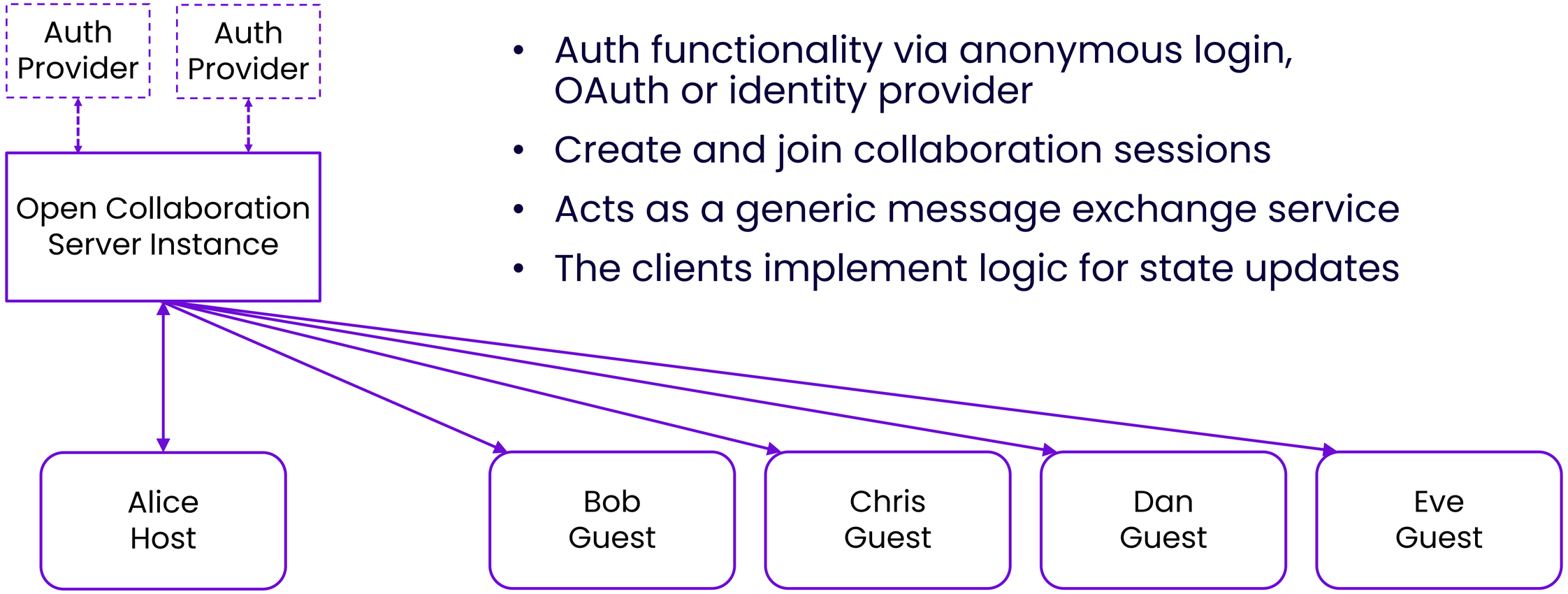


Single Source of Truth

- Everyone can communicate with one another
- Can be seen as P2P RPC with broadcasts
- The host acts as the single source of truth

Open Collaboration Tools

Server Overview



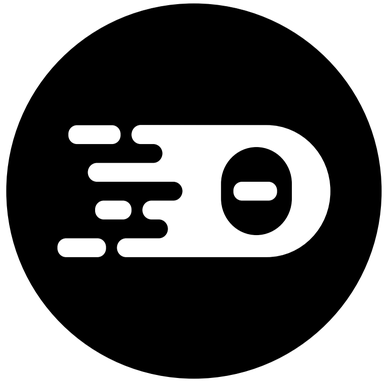
- Auth functionality via anonymous login, OAuth or identity provider
- Create and join collaboration sessions
- Acts as a generic message exchange service
- The clients implement logic for state updates

Open Collaboration Tools

Available IDEs



VS Code Extension



Theia Framework

Also available for:



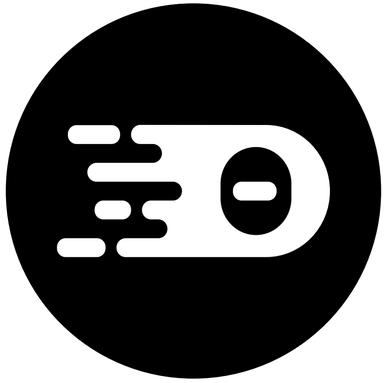


Available in all Theia based products



Open Collaboration Tools

Available in Theia



`@theia/collaboration`

- Available as a Theia extension
  - Included in every monthly release
- Runs in all Theia environments
  - Even the WIP browser-only mode
- Freely extensible – exposes the protocol

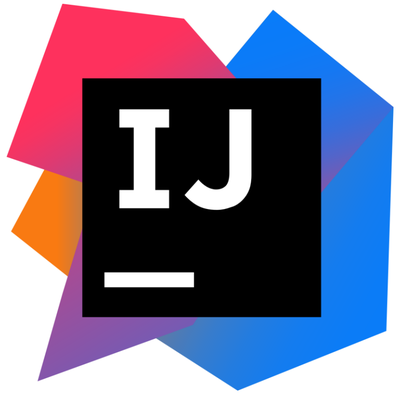


Open Collaboration Tools

Planned IDEs



Monaco Editor



JetBrains Plugin



Eclipse IDE Plugin

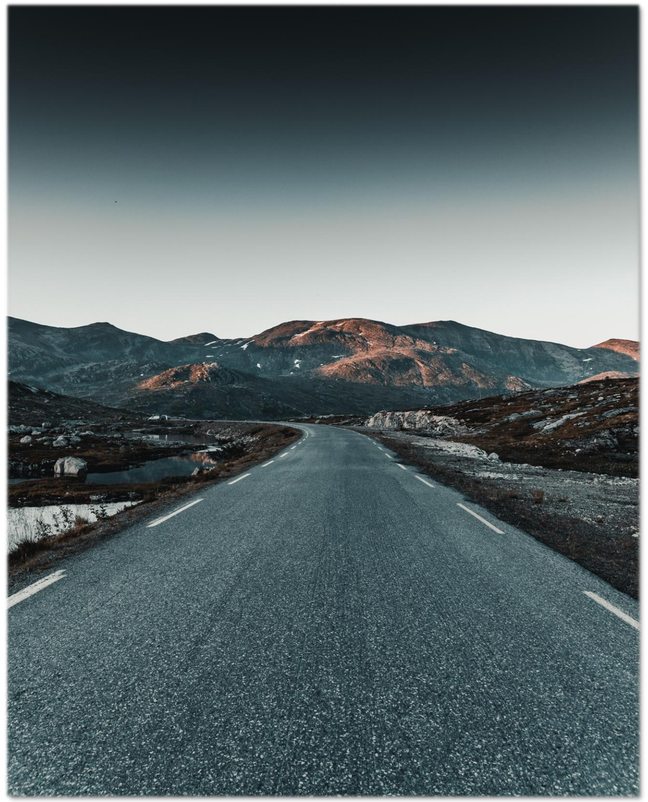
Enables collaboration in all kinds of web applications

Will be implemented via the *Open Collaboration Service Process*



Open Collaboration Tools

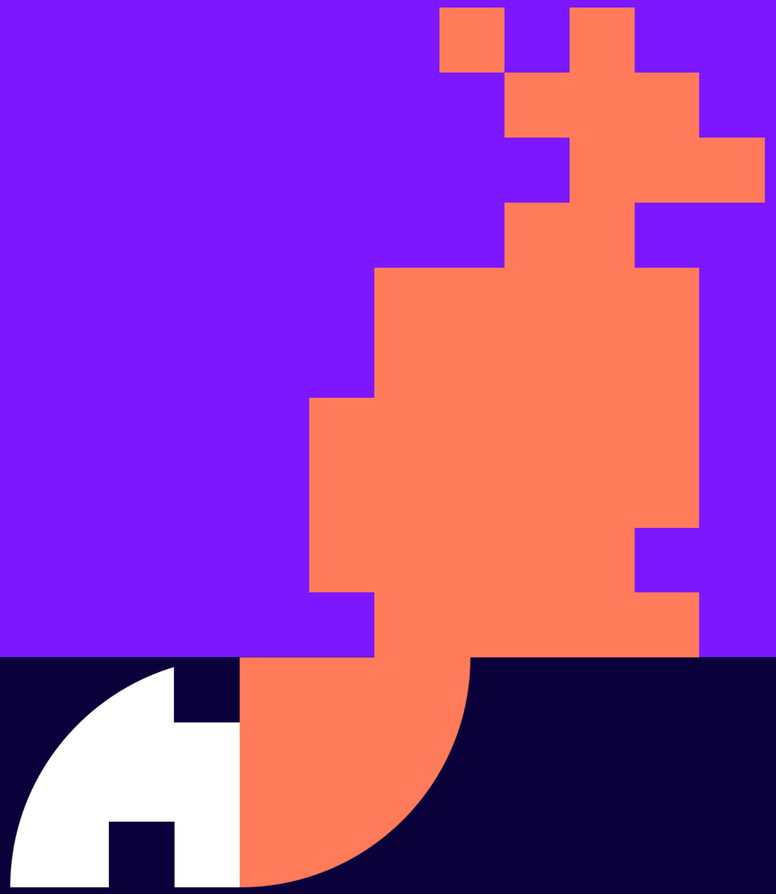
Roadmap



1. Service Daemon
   - IntelliJ/JetBrains IDEs
   - Eclipse IDE
2. Better Auth (OpenID Connect)
3. Protocol/Implementation Improvements
   - Notebooks
   - Language Services
   - Terminals
   - Port Forwarding
   - Debugging
4. Replacement for `vsls`



TypeFox



Questions?