Ecore Editor in the cloud - behind the scenes

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Why Ecore/EMF in the cloud?

- What is EMF?
  - A simple, pragmatic approach to **modeling the data**
  - Often used for DSLs and data-centric tools
  - **Ecore is the language to define models**

- Why EMF in the cloud?
  - **Reuse** mature functionality (model manipulation, serialisation, code generator)
  - Access to large EMF **ecosystem** (EMF Compare, Edapt, EMF Validation)
  - Out-of-the-box **compatibility** with existing DSLs
What is Eclipse Theia and EMF.cloud?

- **Eclipse Theia:**
  - An open source platform for building web-based tools and IDEs

- **EMF.cloud:**
  - Enables the benefits of EMF in web-based tools
  - Provides adapter to migrate existing EMF-based applications
  - Provides new components for web-based tools when applicable
Goals:
Enable Ecore modeling in Eclipse Theia
Reuse, do not reinvent the wheel
Ecore/EMF Tooling

- Model Creation
- Graphical Modeling
- Code Generation
- Property view
- Validation

Code Generator

- Task
  - getName(): String
  - setName(String): void
  - getDescription(): String
  - setDescription(String): void
  - getAssignee(): User
  - setAssignee(User): void
  - getDueDate(): Date
  - setDueDate(Date): void
  - getSubTasks(): EList<Task>
  - isDone(): boolean
  - setDone(boolean): void
  - hasName(DiagnosticChain, Map<?, ?>): boolean
Ecore Editor - architecture

Theia Frontend
  Ecore Client Extension

Theia Backend
  Ecore (GSLP) Server

EMF Model Server

JVM: Java

Filesystem
Eclipse Graphical Server Language Platform (GLSP)

- Like LSP for diagrams
- Based on Eclipse Sprotty

GLSP Client → GLSP Protocol → GLSP Server

Domain Model

EMF Model Server
Demo
Cloud Hosting?
What is Eclipse Che?

- A “workspace server” for cloud-based tools
- Management for developer workspaces/runtimes
- Uses Eclipse Theia as the default IDE
- Allows to integrator custom “Editors”
Outlook

- Current state:
  - Alpha version available under the EPL, available in EMF.cloud
- In the lab:
  - EMF Compare
- We are looking for:
  - Contributions
  - Interested parties
  - Sponsoring
Conclusion

● Reusing existing components on the server allows to:
  ○ Save a lot of effort!
  ○ Preserve existing investments
    ■ Custom extensions
    ■ DSL specifications
    ■ Instance data

● Relevant projects:
  ○ EMF.cloud: https://emf.cloud
  ○ GLSP: https://glsp.io
  ○ JSON Forms: https://jsonform.io
Evaluate the Sessions

Sign in and vote at EclipseCon.org:
Questions?

Get in contact with us for support around web-based or desktop-based tools!
Here at our booth or jhelming@eclipsesource.com