## Unified APIs and Expedient

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#### The case for a unified API

Learn once

Library reuse

Functionality definition

#### The case against a unified API

Difficult to create

Implicit heterogeneous APIs

Difficult to evolve

Barrier to entry

#### **Embracing Heterogeneity**



Pluggable platform

Aggregate Plugins  $\leftarrow \rightarrow$  User Interface Plugins

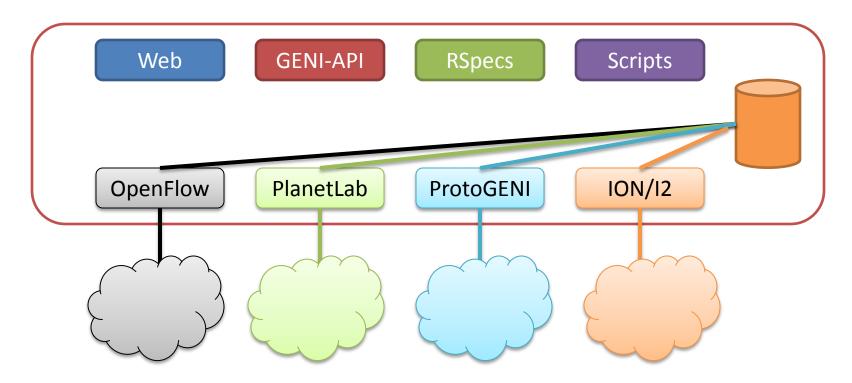
### Build as a Web App

Scalable

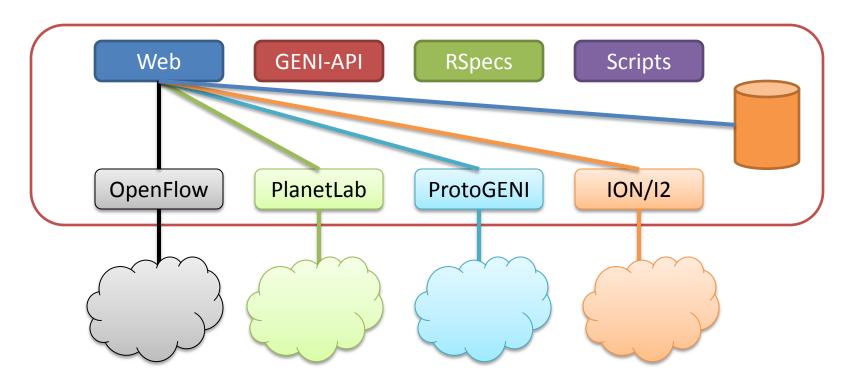
Convenient

Maintainable

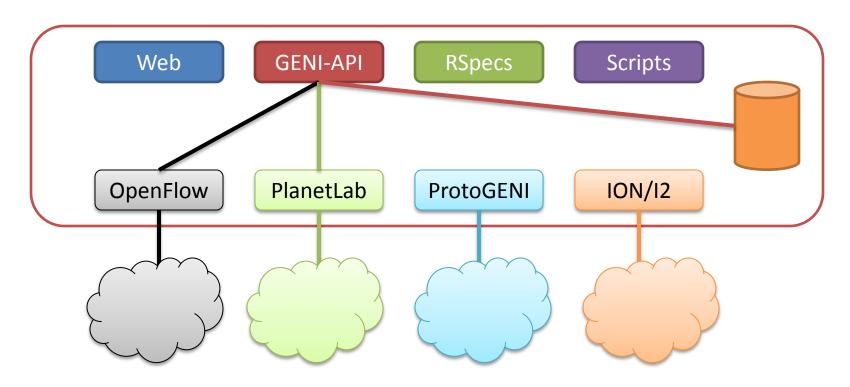




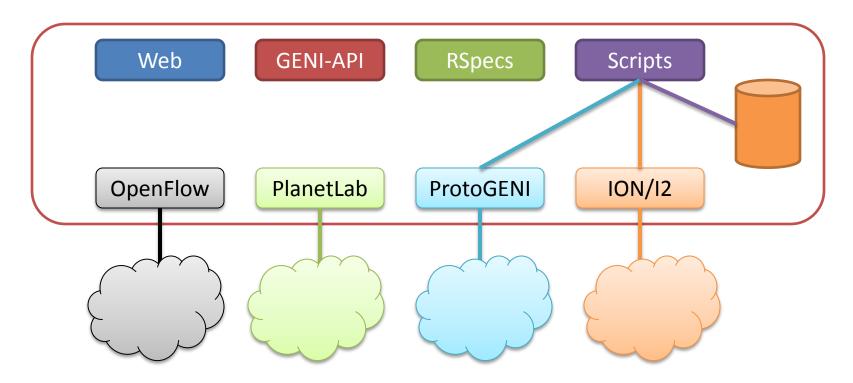












### **Experiences Using the GENI-API**

Coarse-grained security

Inconvenient API

Certificate Management Pain

**SSL Woes** 

#### Demo