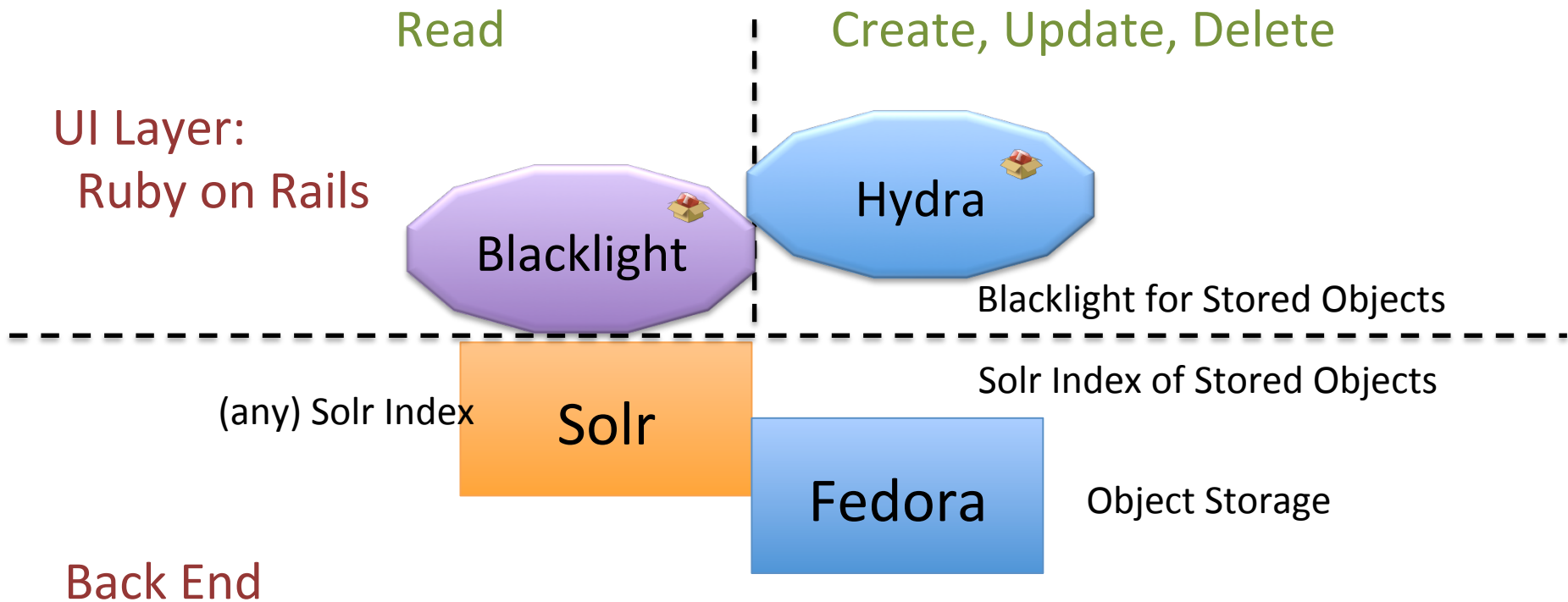


The Hydra Framework as a Series of Diagrams

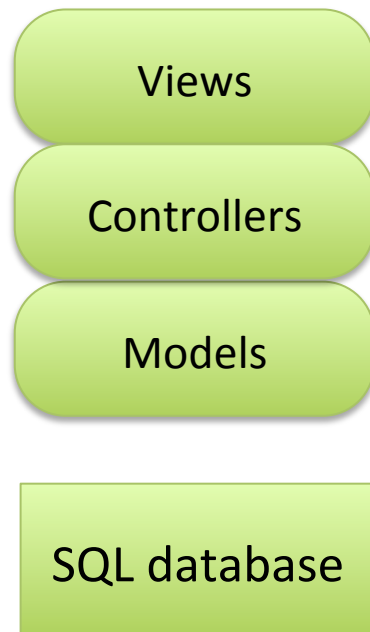
Naomi Dushay
Stanford University Libraries
April, 2012

High Level (Rough Conceptual)



Ruby on Rails

Rails is a Ruby gem that provides an MVC framework for writing web applications



Views: UI presentation

Controllers: UI flow of control

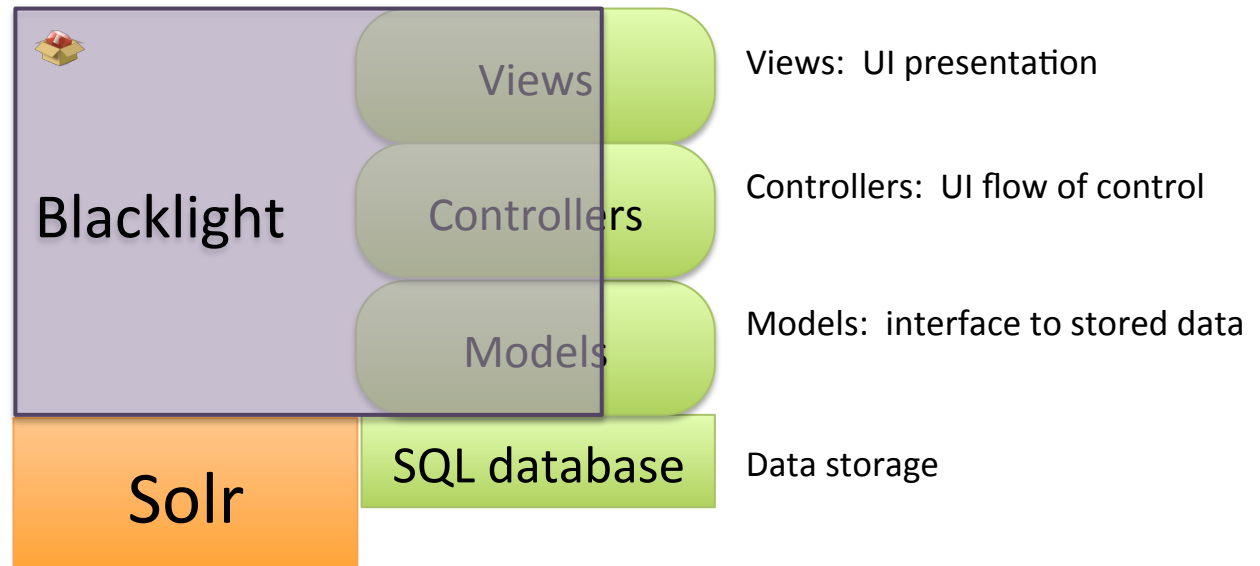
Models: interface to stored data

Data storage

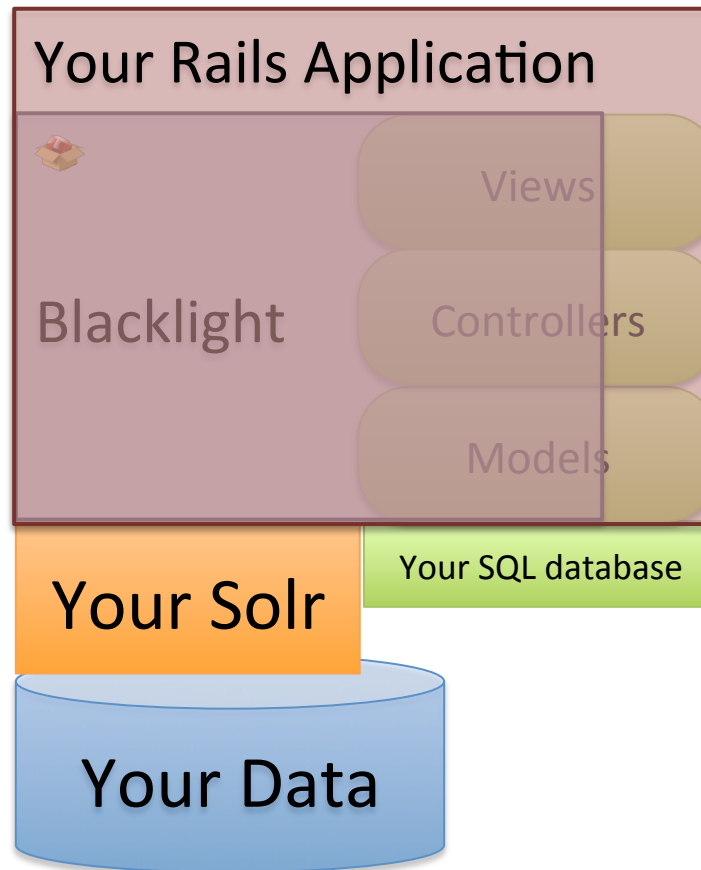
Blacklight Gem

Blacklight is a Ruby-on-Rails gem that provides a web discovery interface for a Solr index

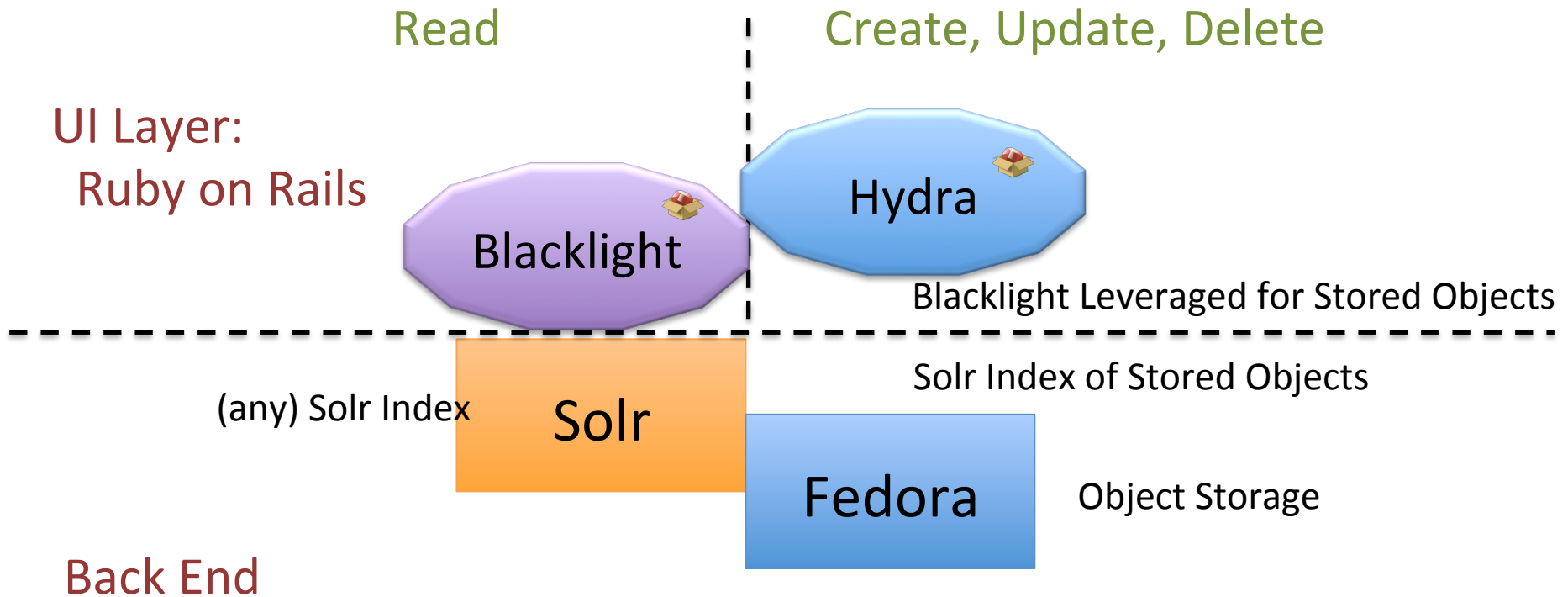
Solr is external to Blacklight, but required (much as a SQL database is required for a Ruby-on-Rails application)



Your Blacklight Application

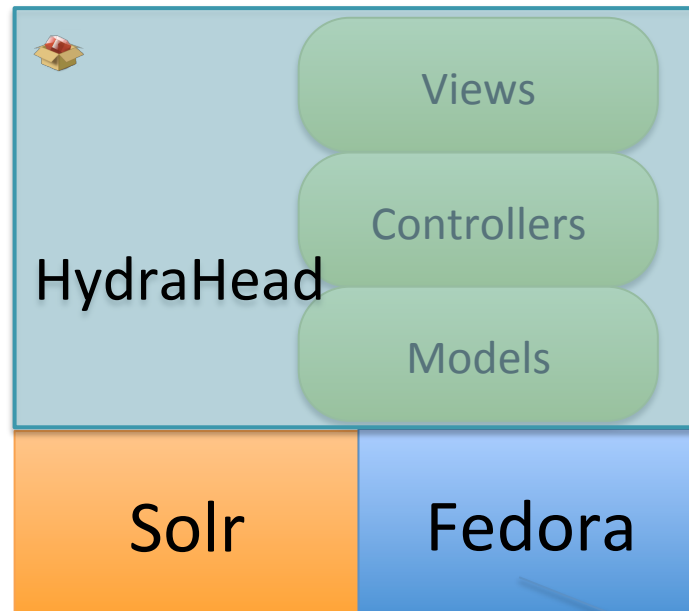


High Level (Rough Conceptual, again)



HydraHead Gem – part 1

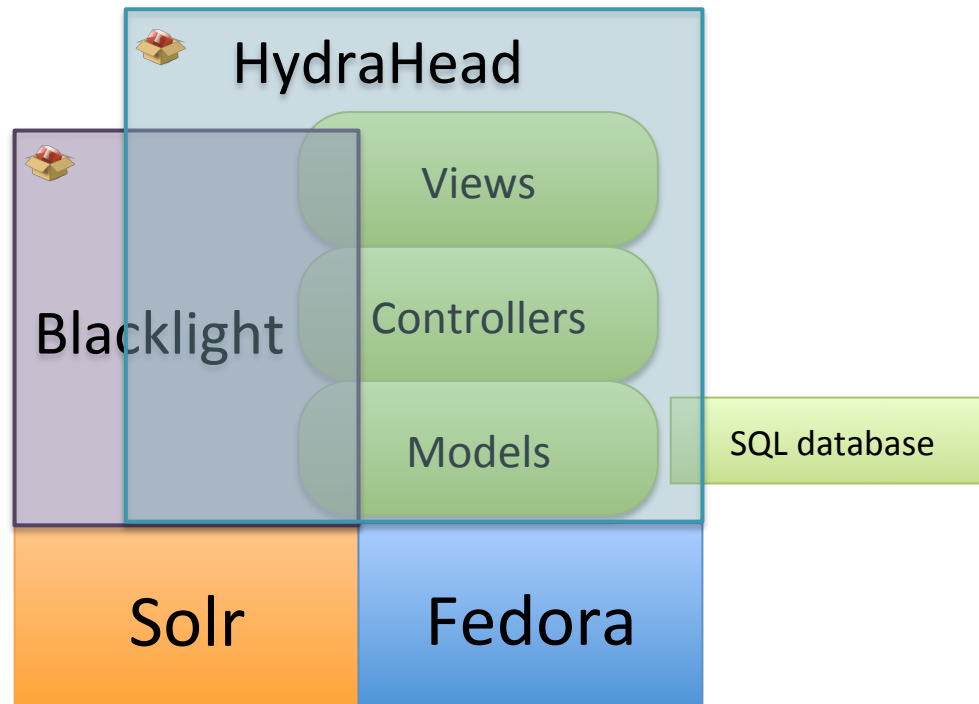
HydraHead is a Ruby-on-Rails gem that provides a web interface for creating, updating, and deleting Fedora objects.



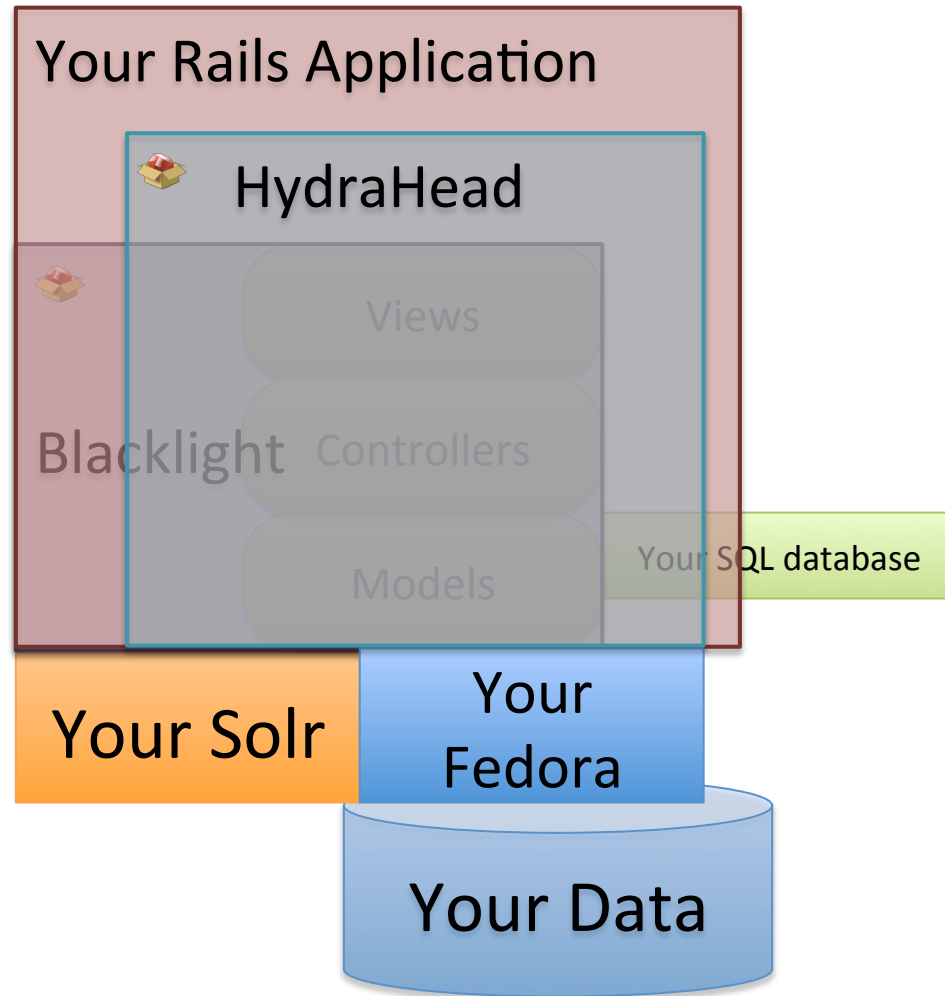
Your Data
in Fedora

HydraHead Gem – part 2

HydraHead utilizes the **Blacklight** gem for the UI pieces related to discovery (i.e. read only)

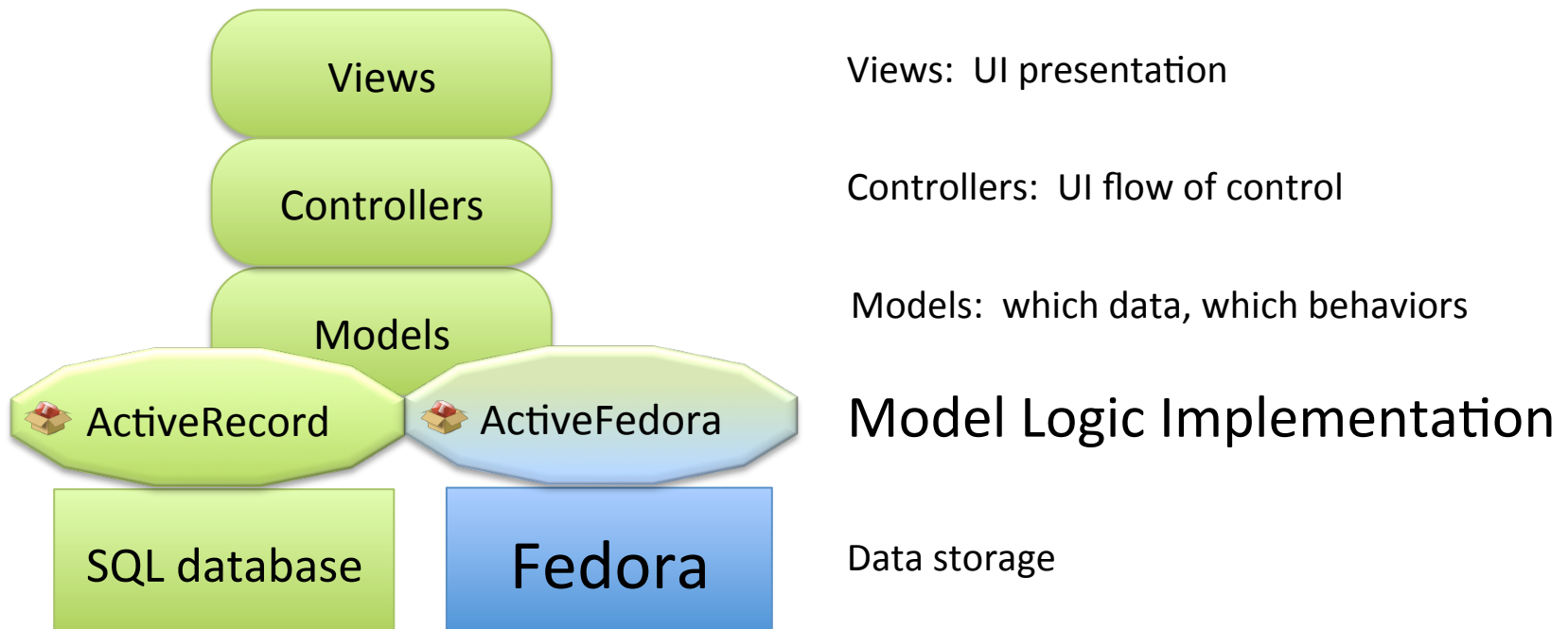


Your Hydra Head/Application – part 1



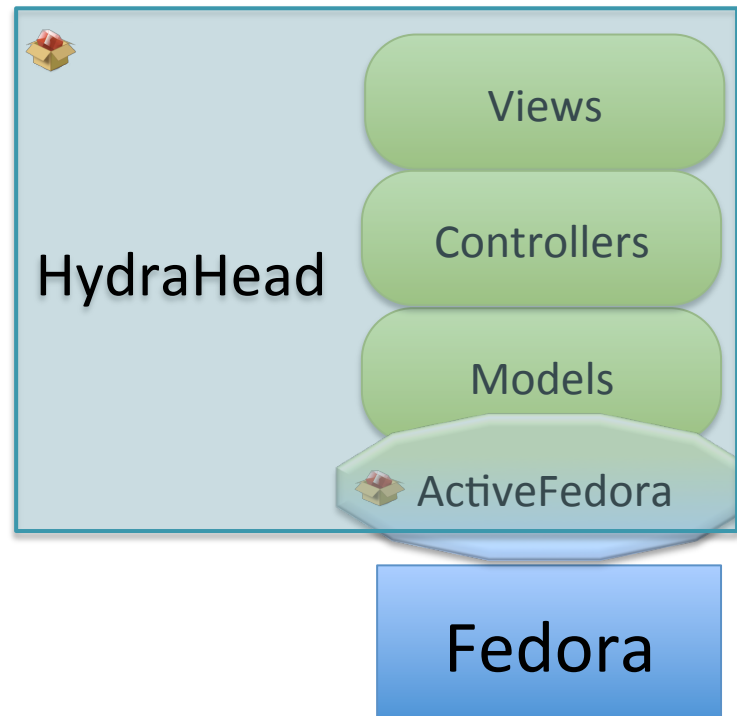
ActiveFedora Gem - part 1

ActiveFedora is akin to the ActiveRecord gem in a Rails application – it provides the implementation of the logic between the models and the data storage.



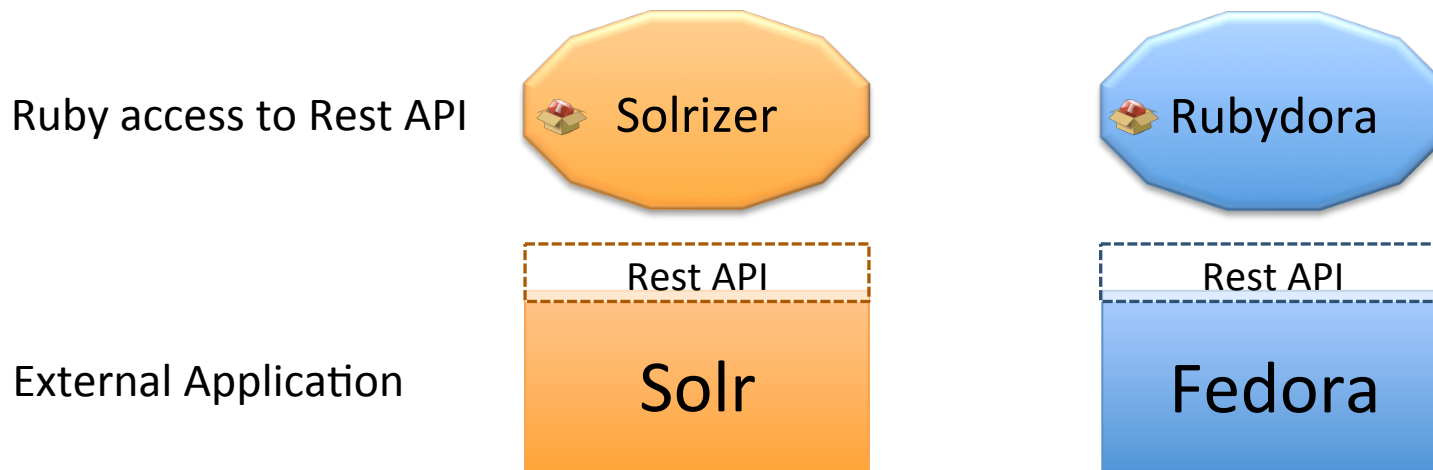
HydraHead Gem – part 3

HydraHead utilizes the **ActiveFedora** gem to interact with Fedora



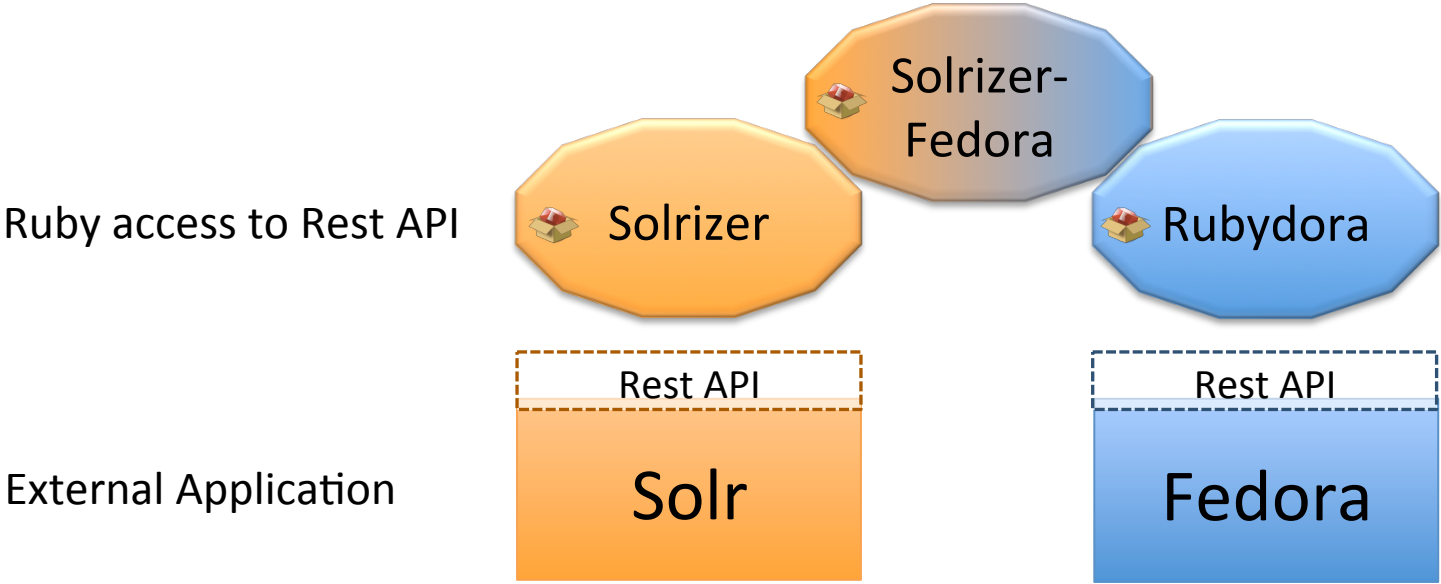
Solrizer and Rubydora Gems

The **Solrizer** and **Rubydora** gems allow Ruby access to the Rest APIs for Solr and Fedora



Solrizer-Fedora Gem

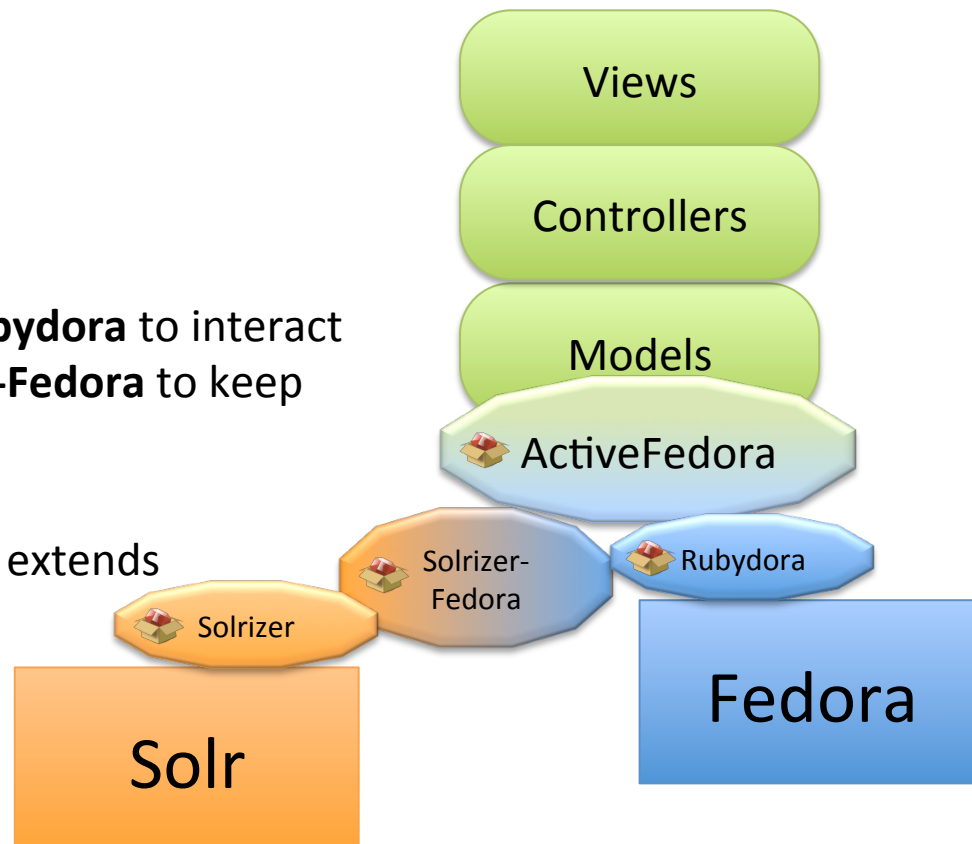
Solrizer-Fedora extends the **Solrizer** gem to work with Fedora objects.



ActiveFedora Gem – part 2

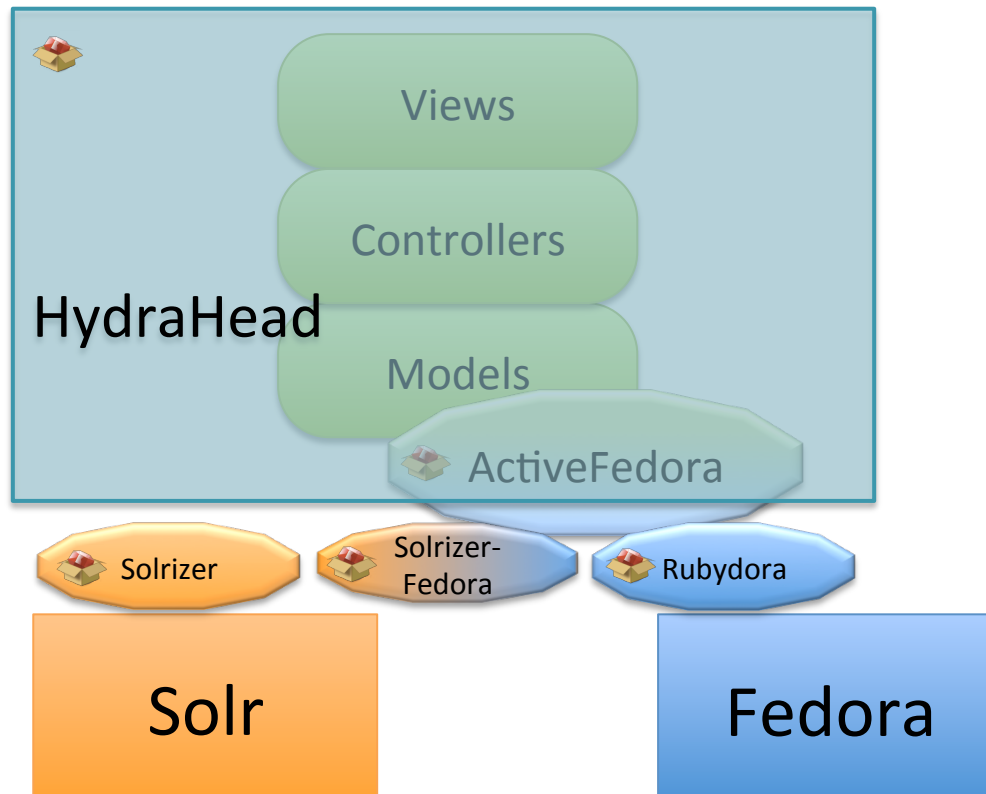
ActiveFedora utilizes **Rubydora** to interact with Fedora and **Solrizer-Fedora** to keep Solr in sync with Fedora.

The **Solrizer-Fedora** gem extends **Solrizer** gem.



HydraHead Gem – part 4

HydraHead requires **ActiveFedora** which in turn requires additional Hydra framework gems

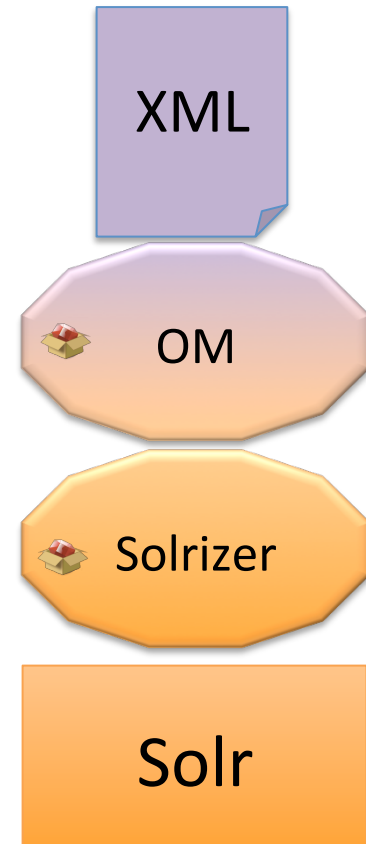


OM Gem

OM (Opinionated Metadata) eases translation between raw XML and ruby objects. OM also provides a way to map the resulting ruby object data into Solr.

Ruby access to Rest API

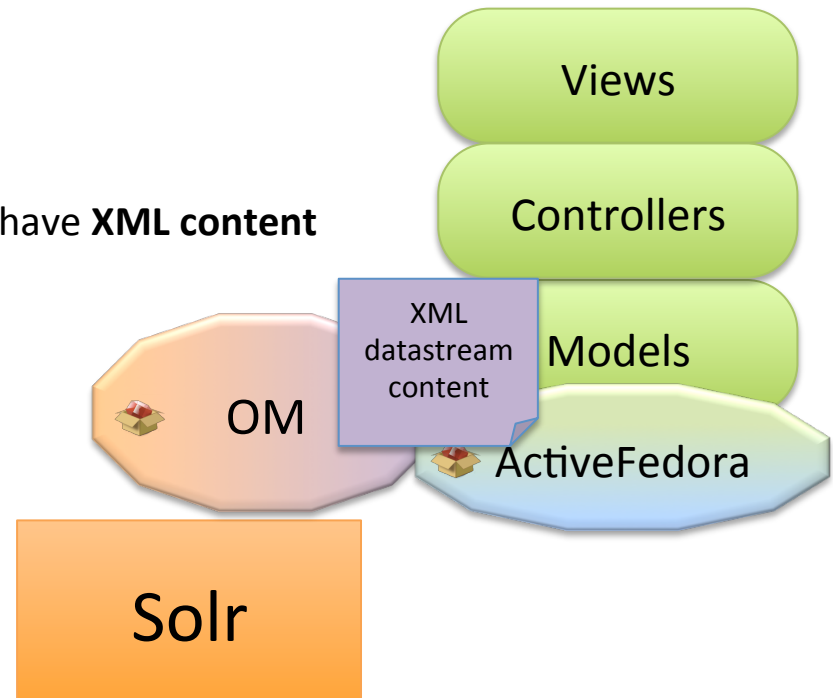
XML data



OM and ActiveFedora (Simplified)

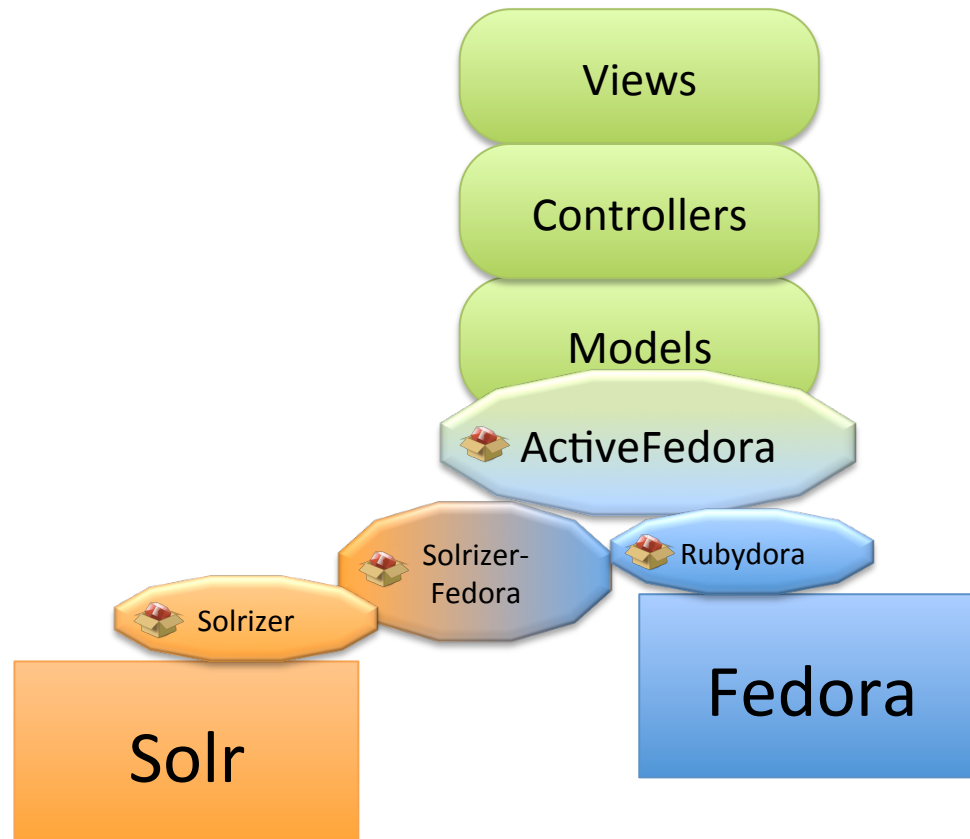
Fedora datastreams can have **XML content**

OM can be used to parse XML datastream content and map the content to Solr. The **OM** mappings become part of the **ActiveFedora** data models.



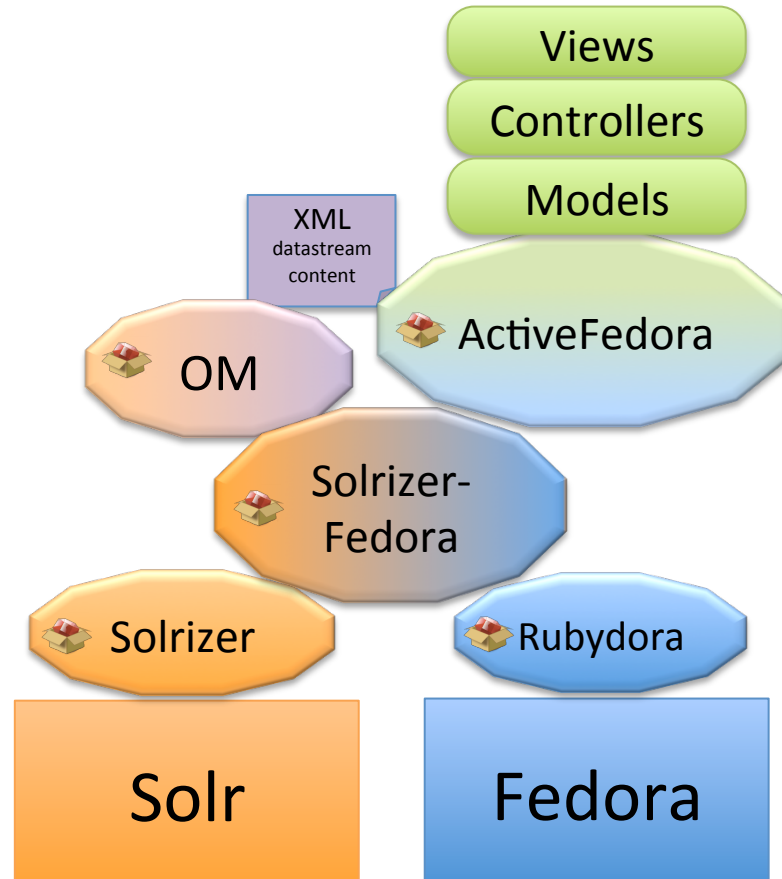
ActiveFedora Gem – part 2 (again)

No XML content, so
no use of **OM** gem



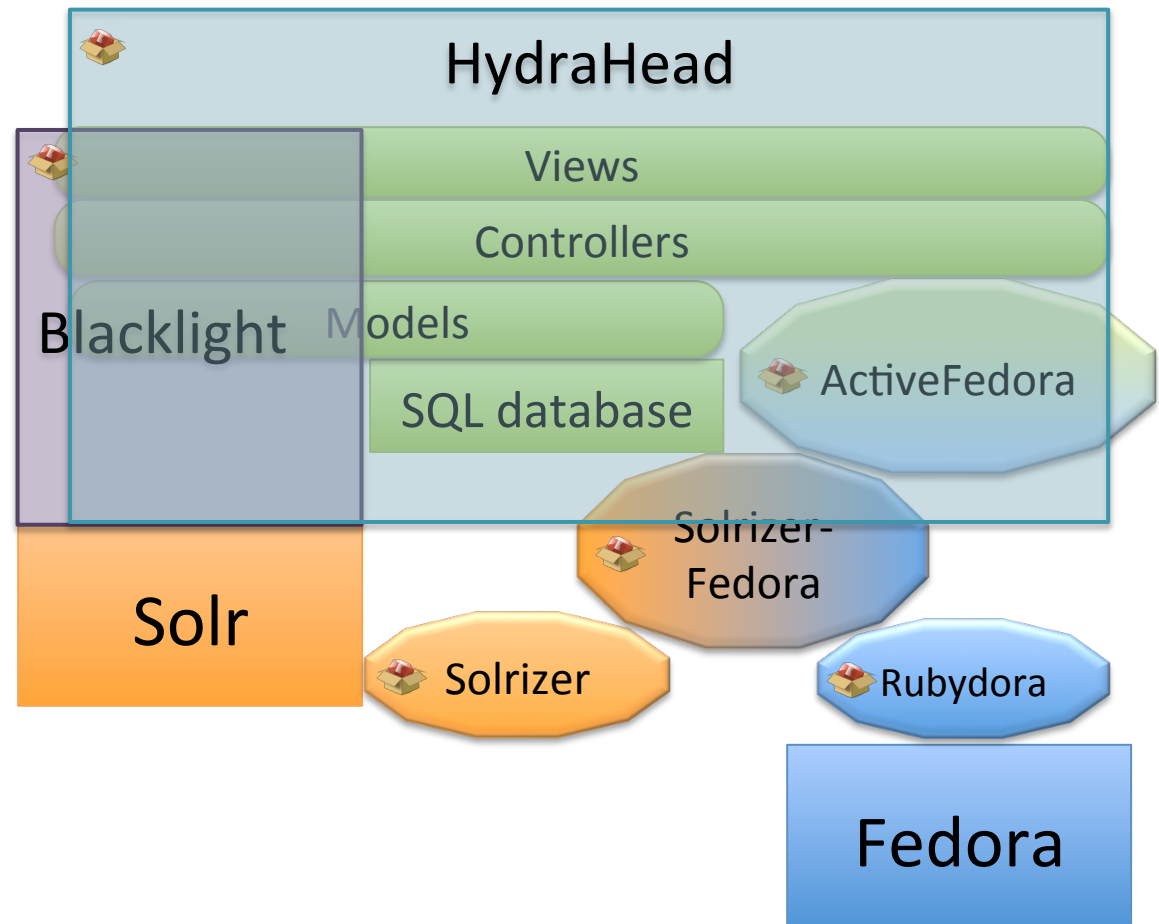
Hydra Backend Gems

Updates to Fedora content must be reflected in both Solr and Fedora

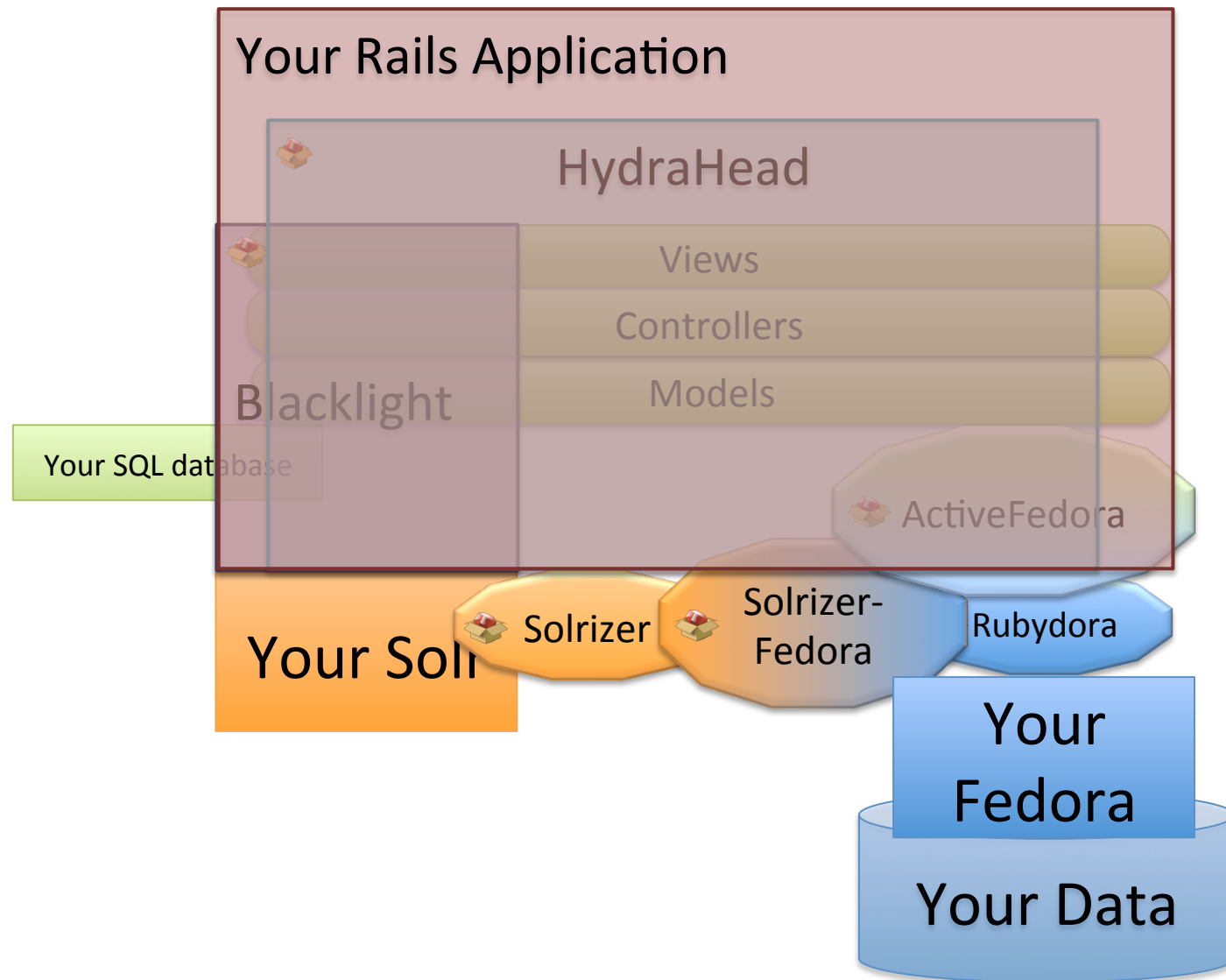


HydraHead Gem – part 5

HydraHead is a Ruby-on-Rails gem that utilizes the **Blacklight** gem to read and display Solr documents, the **ActiveFedora** gem to express Fedora objects in Ruby, the **Solrizer-Fedora** gem for ease of syncing Fedora and Solr, and other gems and their dependencies as needed.



Your Hydra Head/Application – part 2



Core Hydra-Framework Code maintained by the Hydra Community

- (Rubydora)
- Solrizer
- Solrizer-Fedora
- OM
- ActiveFedora
- HydraHead
- (Used, by not maintained by Hydra Community: Blacklight, Solr, Fedora, ...)

Additional Hydra-Framework Code maintained by the Hydra Community

- Hydra-Jetty
- JettyWrapper

Jetty – Java Web Server and Servlet Container

Jetty: Java Web Server and Servlet Container

(note that Solr and Fedora are both written in java and utilize java servlets)

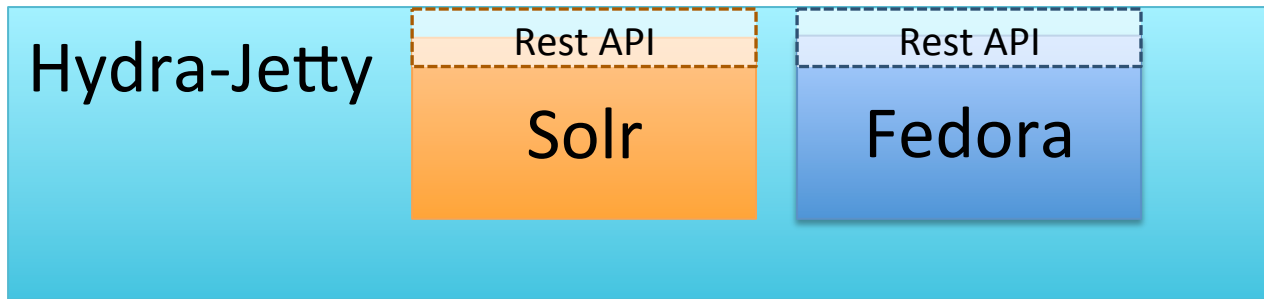


Ruby – start/stop jetty, etc.
(convenient for automated testing)

Hydra-Jetty

Jetty with Solr and Fedora pre-installed

One Possible Backend Configuration



Solr and Fedora can be in the same web application or separate web applications. Solr is also implemented in Ruby and other languages, so it doesn't need to be in a

Your Hydra Head/Application using Hydra-Jetty

