Cluster Man Application

Cluster Man is a web application that is used to manage a Brown Dog Cluster. It is designed to be re-skinned so it could be bundled with Clowder to provide this functionality without an explicit Brown Dog dependency.

It manages configuration around:

1. Docker Swarm for starting/stopping and deleting tool instances.
2. RabbitMQ for binding exchanges to the queues of running tools.

With it you can:

1. Deploy new tools
2. Bind tools deployments to one or more projects
3. Create new projects
4. Perform bulk bindings of tools to a project

There are two views:

Tools

Docker Swarm services are represented as running instances of tools. The Service Name is unique, but has no system significance. There can be multiple instances of a tool running since the queue name and service name are unique.

And projects

RabbitMQ Exchanges are represented as projects. The exchanges are tagged with the tool type they support. There can be multiple exchanges in a project as long as they support different tool types.
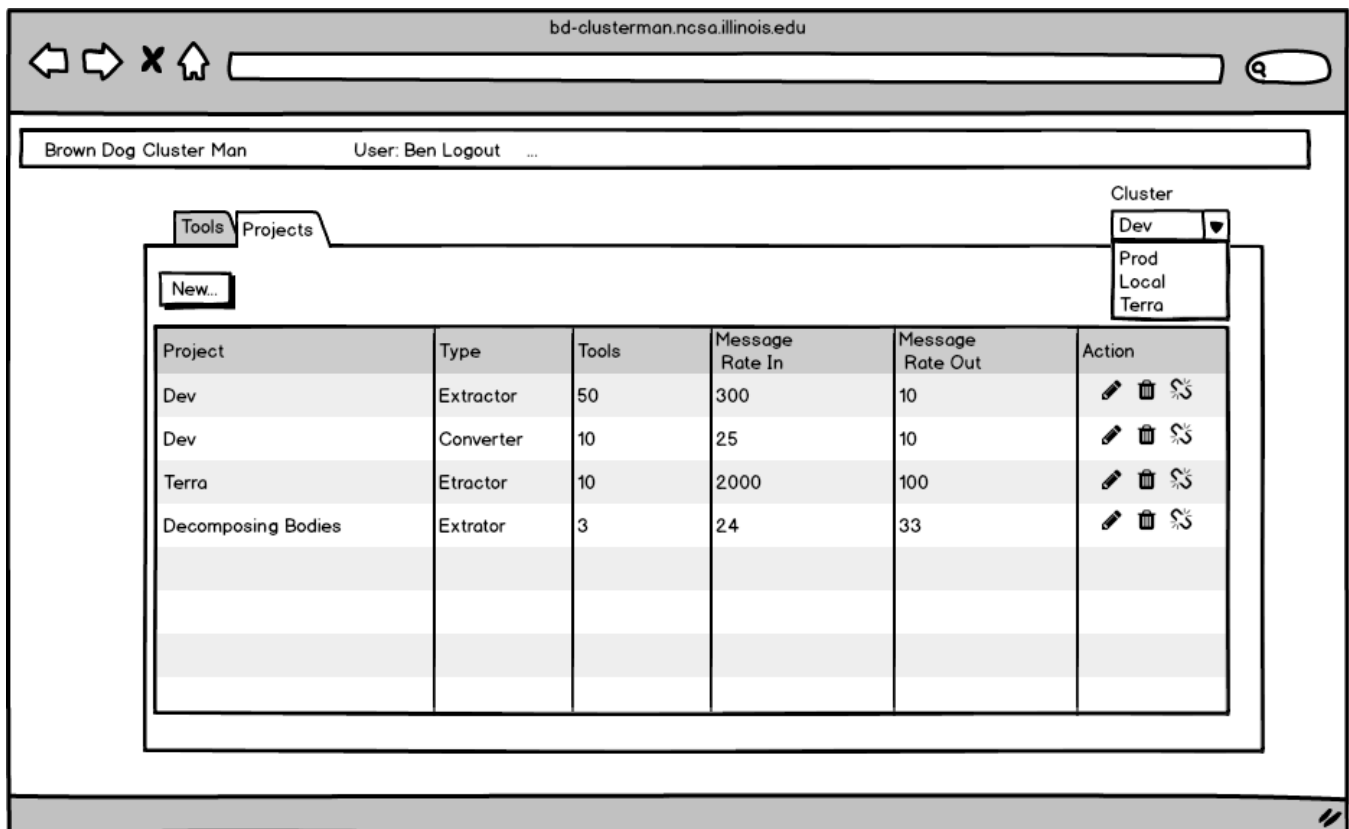
Tool Deployment

Tool Deployment is a two-step workflow.

In the first step you choose the tool by selecting a tool type and then enterering the name of the tool. The form will attempt to auto-complete the tool name as you type.

In the second step you can enter deployment parameters. ClusterMan will generate a unique queue name that is based on the defaul queue name specified in the tool defintion.

Clicking *Deploy* will attempt to deploy the tool to the cluster.

Deploy OpenCV Faces Extractor to Dev

Service Name   Fluffy bunny plays in the fields

Min Instances   3

Max Instances   3

Memory   4   GBytes

CPU Limit   2   Cores

Cancel   Deploy

Once the tool has been successfully deployed, the user will be asked to manage bindings for the new tool to the existing projects.

For an extractor they will have some choices to make:

Bind Projects to OpenCV/Faces

Fluffly Bunny plays in the fields successfully deployed to dev

Project	Binding
Dev	All messages
Terra	None
Decomposing Bodies	None
Dark Energy Survey	All messages
	Tool messages only

Cancel   Bind

For converters, there is no choice. Remind the user that the new converter has been bound to every project in the cluster.

Clusterwide Project Bindings for Converter

Fluffly Bunny plays in the fields successfully deployed to dev

Project	Binding
Dev	All Messages
Terra	All Messages
Decomposing Bodies	All Messages
Dark Energy Survey	All Messages

[Ok]

New Project

Authorized users can add new projects to the application when a new exchange is added to RabbitMQ. When the project is created, the user can specifiy which users have administrative rights over this project. They will be entitiled to bind and unbind tools within their project.

New Project

Name	Terra
Tool Type	Extractor ▼
Exchange	Dev-Clowder ▼
	Terra-Clowder

Administrators
- ☐ Moe
- ☑ Larry
- ☐ Curly
- ☐ Shemp
- ☑ Joe

[Cancel] [Submit]

Note that converters don't allow binding so we don't need to capture the exchange.

New Project

Name	Terra
Tool Type	Converter ▼
Administrators	☐ Moe ☑ Larry ☐ Curly ☐ Shemp ☑ Joe

Cancel   Submit

Bind tools to a project

Bind Tools to Terra Project on Dev

Tool Name	Binding
OpenCV/Faces	All messages ▼
OpenCV/Profiles	None ▼
OpenCV/Eyes	All messages Tool messages

Cancel   Submit