

# System Architecture Documentation

Description of the current architecture for the storyweaver production server.

Author	Version/Date	Change
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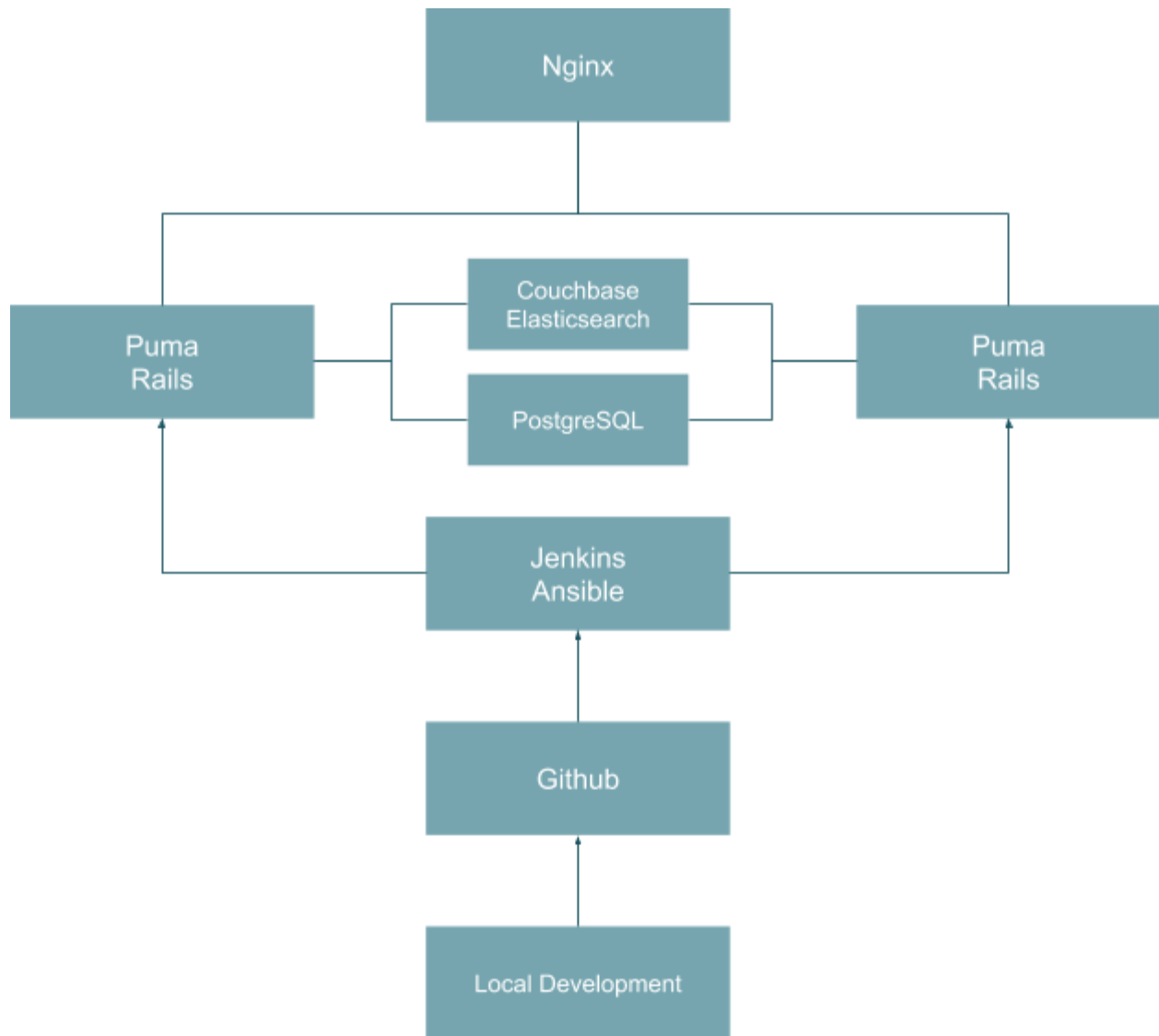
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# Architecture Diagram



The above diagram shows how our current setup is configured.

# Jenkins & Ansible:

**Jenkins** helps to automate some parts of software development process, with continuous integration and facilitating the process of continuous delivery. We use Jenkins to automate the process of testing, building and deploying the code to servers. We manually configure Jenkins to do various tasks for us. We currently use jenkins version 1.656. Install the jenkins through the following steps :

```
wget -q -O - https://pkg.jenkins.io/debian/jenkins-ci.org.key | sudo apt-key add -  
echo deb https://pkg.jenkins.io/debian-stable binary/ | sudo tee  
/etc/apt/sources.list.d/jenkins.list  
sudo apt-get update  
sudo apt-get install jenkins
```

**Ansible** is software that automates software provisioning, configuration management, and application deployment. We use Ansible to setup new servers or deploy the code to the existing production servers. Scripts for the creating a new server are located at <https://github.com/PrathamBooks/spp-delivery> . Based on the needs of your server you need to modify the existing scripts to setup a new server.

Steps to create a new server :

- Add a new server config to the ansible/group\_vars. Setup the config details for ip, port, API keys as in sample file ansible/group\_vars/app2-e2e
  - Add credentials for the server access in ansible/inventories. Add ssh keys to the server as in sample file ansible/inventories/production
  - Edit the ansible/production.yml file to specify the config, roles needed .
  - Run the “ansible-playbook ./ansible/production.yml -vvvv -i ./ansible/inventories/production”.
- Modify the command to add your production.yml file and inventory you modified.

Scripts for deploying code to production servers are located at

<https://github.com/PrathamBooks/spp-deploy> .

## Nginx:

Nginx is a [web server](#) which can also be used as a [reverse proxy](#), [load balancer](#) and [HTTP cache](#). This is first point of contact for a request in our setup. Nginx does load-balancing of multiple servers(currently we have 2 main servers) and serves static assets. To create a new server with the Nginx on it, follow the scripts in spp-delivery as mentioned above and following steps :

- Add new server config details and credentials as mentioned above.
- Edit the roles section in the ./ansible/production.yml(or your own file) to include only nginx and comment out the pre-tasks.
- Any further modification to Nginx installation can be made in the roles/nginx

## Puma:

Puma is an application server that enables our Rails application to process requests concurrently. As Puma is not designed to be accessed by users directly, we will use Nginx as a reverse proxy that will buffer requests and responses between users and our Rails application. You can think of Rack as a common language that Ruby web frameworks (like Rails) and app servers both speak. Because each side knows the same language, it means Rails can talk to Puma and Puma to Rails, without having either Rails or Puma know anything about the other. Puma is generally installed within Rails server. To install a Rails server and Puma follow the instructions in spp-delivery and following steps:

- Add new server config details and credentials as mentioned above.
- Edit the roles section in the ./ansible/production.yml(or your own file) to include only utils, rvm1, vsftpd, phantom, newrelic and un-comment the pre-tasks if commented out.

## Couchbase:

Couchbase is multi-modal NoSQL database. We use Couchbase for caching our pages and search queries. We currently setup Elasticsearch and Couchbase in one server. To install these, follow the guidelines as mentioned above in spp-delivery and following instructions:

- Add new server config details and credentials as mentioned above.
- Edit the roles section in the ./ansible/production.yml(or your own file) to include only couchbase and elasticsearch and comment out the pre-tasks.
- Any further modification to couchbase/elasticsearch installation can be made in their respective directories in ./roles.

## Elasticsearch:

Elasticsearch is a [full-text search](#) engine with an [HTTP](#) web interface and schema-free [JSON](#) documents. We use this for search functionality in our website. This allows us for faster retrieval of the data. We currently setup Elasticsearch and Couchbase in one server. To install these, follow the guidelines as mentioned above in couchbase section.

## PostgreSQL:

PostgreSQL is an [object-relational database management system](#) . This is our main database. We have a separate server dedicated to this. To setup a new server, follow the guidelines as mentioned in spp-delivery and following guidelines :

- Add new server config details and credentials as mentioned above.
- Edit the roles section in the ./ansible/production.yml(or your own file) to include only postgres and comment out the pre-tasks.
- Any further modification to postgres installation can be made in the roles/postgres directory.