Requirements documentation

Cion

Version 0.1

Kenan Mahic, Erlend Tobiassen and Harald Floor Wilhelmsen

Revision history

Date	Version	Description	Author
01.02.18	0.1	First draft	Harald Floor Wilhelmsen, Kenan Mahic, Erlend Tobiassen
06.02.18	0.2	Second Draft	Harald Floor Wilhelmsen, Kenan Mahic, Erlend Tobiassen
29.05.18	1.0	Final Draft	Harald Floor Wilhelmsen

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1 Introduction

This document is written as part of a bachelor-assignment to be completed through the spring of 2018. The intention of the document is to describe the requirements of the final product. The project was provided by the municipality of Trondheim, hereby referred to as TK. They want to make full use of the CI/CD workflow, but their current solution of using Bitbucket Pipelines is suboptimal. Bitbucket Pipelines can not be self-hosted in any capacity, and requires the data/images to be sent offsite. This is viewed as a security risk by TK, and one of the primary reasons for the need of another manner to use the CI/CD workflow. This is primarily where the idea behind cion comes, a lightweight CI/CD tool.

This document is accompanied by a “Terms and Explanations” document. That document serves as a reference to explain a lot of the technical terms used in this document.

1.1 The product

The product, named cion, is a continuous deployment tool to be used for cloud provider software, such as Docker Swarm and Kubernetes. As of January 2018 cion only supports Docker Swarm, but the idea is to fully support both Docker Swarm and Kubernetes by the end of the project.

1.2 Assignment context

The assignment is to continue development of the product *cion* created as part of a development project by Harald Floor Wilhelmsen and Erlend Tobiassen through the fall and winter of 2017. This means that *cion* already has basic functionality, and this assignment will develop *cion* further.

2 User Stories

By making the user stories simple, and not too detailed you make it easier to work agile. Having too detailed user stories makes it harder to make changes later on, as the features if overly detailed will mostly be set in stone.

2.1 Prevent feature regression

As a user
I want cion to update my services running in docker swarm
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As a user
I want cion to update my services running in kubernetes
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As an administrator
I want to set the password of other users
So that I can reset forgotten passwords

As an administrator
I want to be able to add multiple environments to my cion instance
So that I can manage multiple service environments with one cion instance

As an administrator
I want to create and delete users
So that I can provide and delete personal users for my team

As a user
I want to view the logs of previous events in cion
So that I can debug errors if they occur

As a user
I want to configure what services that cion updates through the web interface
So that I can configure new services as they are created by my organization

As a user
I want a live view of events in cion
So that I can keep track of what is happening and act accordingly if something goes wrong or something is misconfigured

As a user
I want to deploy updates to services manually by selecting what image and what swarm to deploy to
So that I can roll back updates that do not work or an update happens by accident

2.2 Kubernetes support

As a developer
I want to deploy updates to services in my kubernetes environment
So that I can update my services running in kubernetes with cion

Acceptance criteria:

- I should be able to add a Kubernetes environment for cion to manage
- Cion should be able to update running services in the Kubernetes environment

As a user
I want to run cion in my kubernetes environment
So that I can run cion in a kubernetes environment

2.3 Deployment scheduling

As a developer
I want to schedule my deployment to a specific date and time
So that deployments can be scheduled and happen at a specific time, for example outside of hours of high load

Acceptance Criteria

- Before manually triggering a service-update, there should be a “schedule at a later time” option button
- When pressed I should be prompted for a date and time
- After having selected a time and date, the deployment should be queued to the specified date and time.

2.4 Permission system

As an administrator
I want to delete a user by going to his user page and clicking a delete button

So that I can remove former employees or other users that should not have access anymore.

Acceptance Criteria

- After pressing the delete button the user should be removed from the database
- The user should be removed from the list of users in cion

As an administrator
I want to create a new user in cion

So that I can give new persons access

Acceptance Criteria

- On the administrator page I should be able to specify what environment(s) the new user should have access to.
- After having pressed the create user button a new user is created in the database with the specified privileges
- The user list in cion is also update

As an administrator
I want to change the permissions of a user

So that I can change the status of a current user in cion, either to give them more or limit their current access.

Acceptance Criteria

- On the administrator page I should able to pick a specific user
- After having picked a user I should be able to add or remove permissions for specific environments

- After having pressed the ok button the new permissions should be updated in the database

2.5 Post-deploy behavior

As a user
I want to be able to configure webhooks to be fired when specific conditions are met after deployments
So that I can set up specific routines for testing or reporting after a deployment has happened

Acceptance Criteria

- On the webhooks-page i should be able to enter a url for where the webhooks should post and what headers and body to send to it
- After having picked out what to send I should be able to specify what event the webhook should be fired for and add additional filters to make the webhook only fire when the event’s fields matches configurable regex-patterns
- After pressing the submit-button the webhook should fire on the configured URL when all the config ured requirements have been met on all future events of the type I configured

2.6 User Settings Page

As a user
I want to be able to change my own password
So that I can change a default password set by the admin on creation of my user to a personal password

Acceptance Criteria

- Need to log into the user
- Go to profile settings page
- Needs a field for the old password to prevent unauthorized changes of the

password. Then one for the new and another confirming the new to check that they match.

- After pressing the change password button the password needs to change in the database.
- After changing the password I should get logged out, so I would need to re-authenticate

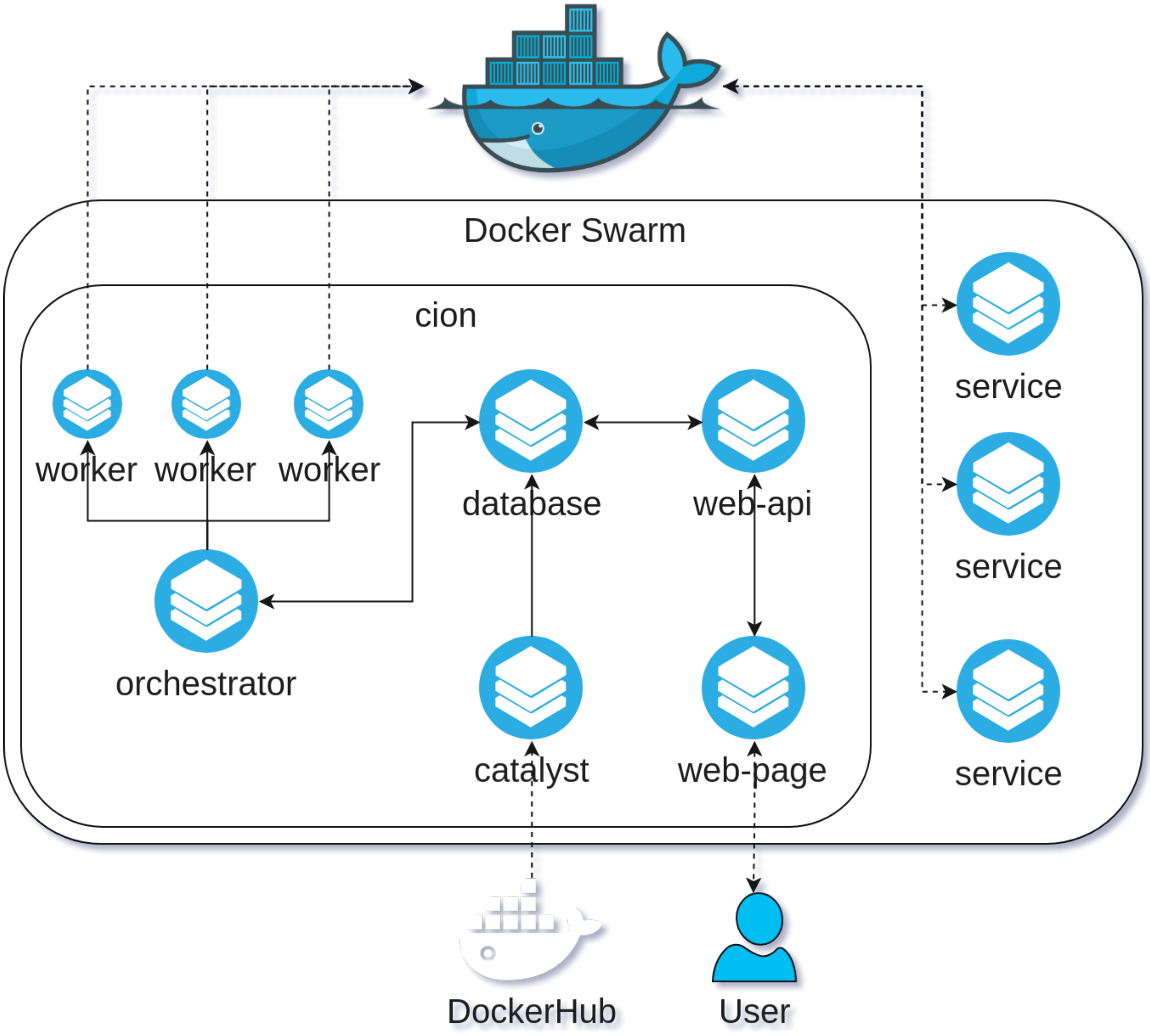
2.7 Quality of Life

As a user
I want to be able to log out from cion
So that I can change accounts or just log out so others cannot use my account

Acceptance Criteria

- The logout button should be intuitive
- After pressing the logout-button I should be logged out and the session should be deleted
- I should be routed to the login page after logout

3 Domain model



Note: This domain-model covers cion as it runs in a containerized environment, and the domain-model is pretty much the same as it was before this bachelor's assignment was started.

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The domain model offers an overview of how a running instance of cion is structured in a containerized environment. Each blue circle inside the box labeled “cion” represents a running container of one of the components of the cion solution. All the blue circles simply labeled “service” are the services that cion is updating.

4 References

https://www.atlassian.com/agile/product-management/requirements