

Assignment for the Technical Interview

READ ME BEFORE STARTING THE TECHNICAL PRE-STUDY, CLOUD ARCHITECT, NORDCLOUD

You have received this assessment, as part of the interview process at Nordcloud. In sending this to candidates we will be testing a few different skills.

- Architecture
- Ability to present solutions
- Engineering skills

As such there are two main deliverables:

1. A functioning implementation that can be shown in a demo
2. A presentation explaining the solution, and choices made.

A few notes:

- Please try to deliver the best solution you can, given the time that you have available.
- Concentrate on the parts that you do master best and remember to mention those.

Overall, please don't use too many hours for the test; your solution doesn't have to be perfect, but should work

Good luck to you for the assesment!

Recruitment & Tech Interviewers

Assignment for Technical Interview

Here is an assignment that we use for technical interviews. It demonstrates, although quite simplistically, some of our typical task at clients.

Study the assignment, create your own solution and prepare to demo/explain it in the interview. The goal is not to develop an exhaustive and complete solution with all the bells and whistles, but to reflect your own skills, experiences and approach to this assignment. It should be possible to complete the assignment with a couple hours of work. You should have working application running in the cloud of your choice that reflects the architecture that you proposed.

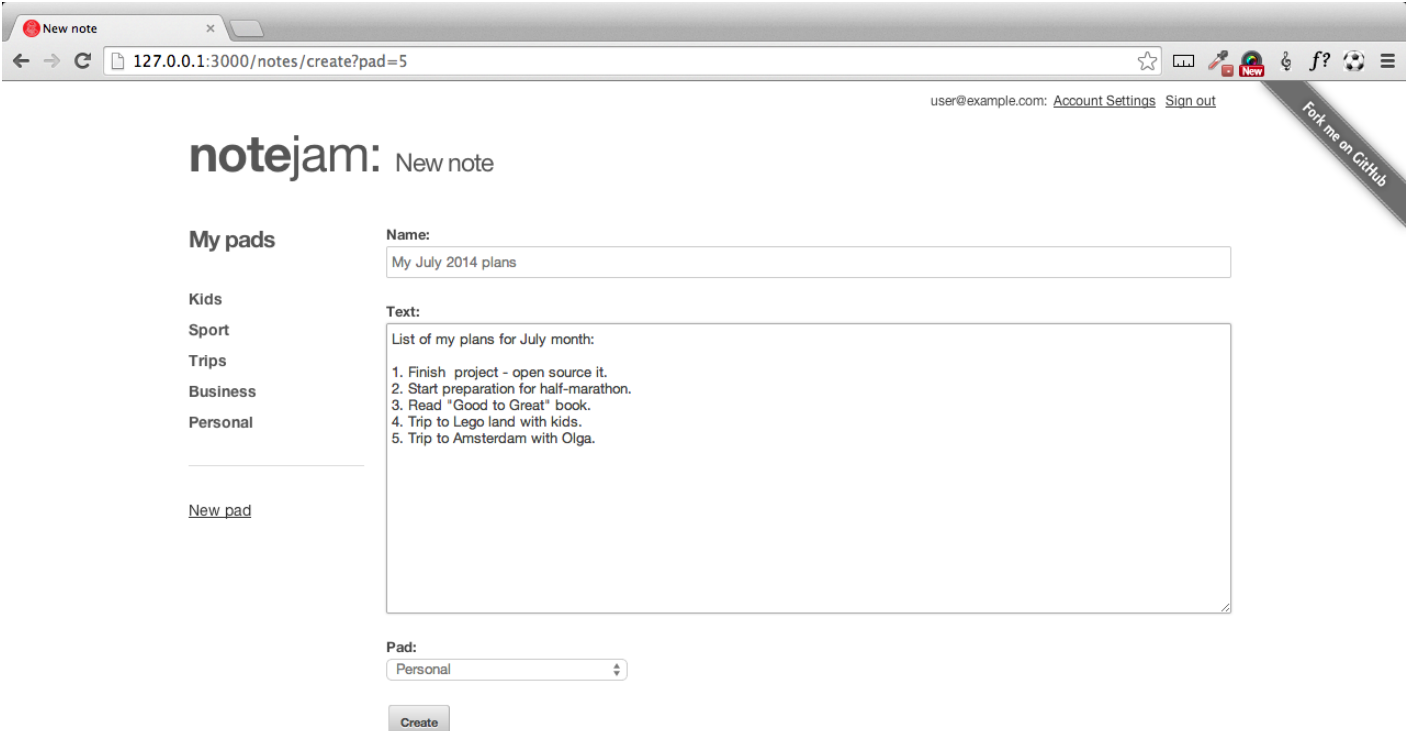
Thank you and good luck! Nordcloud Recruitment Team

Scenario

The customer, you are working with, asks you to **create a pilot for one of the company's applications in public cloud**. This is their first attempt to getting to know with non-on-prem environments so your responsibility is not only delivering the solution but to present and highlight core concepts and benefits of the designed architecture. Please do implement your solution on public cloud platform that you have applied, e.g. if you applied for Azure - role, your solution should also be on Azure.

About The Application

Notejam is a web application which allows user to sign up/in/out and create/view/edit/delete notes. Notes can be grouped in pads. Application is designed to be easy to build and run locally. Customer does recognize this may not be the optimal architecture to meet the business requirements (see below). You are welcome to recommend (and implement if time permits) changes to make it work better on target platform.



The screenshot shows a web browser window with the address bar displaying '127.0.0.1:3000/notes/create?pad=5'. The page title is 'notejam: New note'. On the right side of the header, it shows 'user@example.com: Account Settings Sign out' and a 'Fork me on GitHub' banner. The main content area is divided into two columns. The left column, titled 'My pads', lists categories: Kids, Sport, Trips, Business, and Personal, with a 'New pad' link at the bottom. The right column contains a form with a 'Name:' field (containing 'My July 2014 plans'), a 'Text:' field (containing a list of plans for July), and a 'Pad:' dropdown menu (set to 'Personal'). A 'Create' button is at the bottom of the form.

New note

127.0.0.1:3000/notes/create?pad=5

user@example.com: Account Settings Sign out

notejam: New note

My pads

Kids

Sport

Trips

Business

Personal

New pad

Name:

My July 2014 plans

Text:

List of my plans for July month:

1. Finish project - open source it.
2. Start preparation for half-marathon.
3. Read "Good to Great" book.
4. Trip to Lego land with kids.
5. Trip to Amsterdam with Olga.

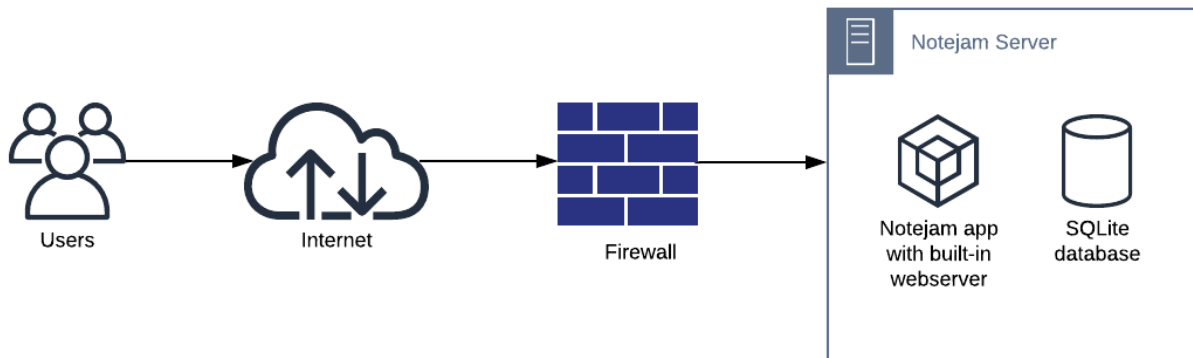
Pad:

Personal

Create

Current Architecture

Notejam is currently build as monolith containing built-in webserver and SQLite database. Your task is to redesign the architecture so it can meet business requirements on chosen public cloud platform.



Provided Resources

Notejam application is in the GIT repo <https://github.com/nordcloud/notejam> with

- Documentation how to build and run application locally
- Application source code
- Unit tests for testing the application

NOTE: There are multiple implementations of Notejam application in different languages and frameworks. Pick the one you are most comfortable with. All versions have identical functionality.

Business Requirements

NOTE: You may not be able to implement all the requirements with reasonable effort. Do what you need for a demo and ensure you can present a plan how missing features can be added. If you find something important missing from the list below, feel free to propose new features with justification and work estimates.

- The Application must serve variable amount of traffic. Most users are active during business hours. During big events and conferences the traffic could be 4 times more than typical.
- The Customer takes guarantee to preserve your notes up to 3 years and recover it if needed.
- The Customer ensures continuity in service in case of datacenter failures.
- The Service must be capable of being migrated to any regions supported by the cloud provider in case of emergency.
- The Customer is planning to have more than 100 developers to work in this project who want to roll out multiple deployments a day without interruption / downtime.
- The Customer wants to provision separated environments to support their development process for development, testing, production in the near future.
- The Customer wants to see relevant metrics and logs from the infrastructure for quality assurance and security purposes.

Outputs

The Customer (ie. Nordcloud tech. interviewer) wants you to

- Present your solution and demonstrate the benefits supported by proper documentation.
- Provide all the source code produced in the creation of the infrastructure in an organized way.
- Provide a working solution to deploy notejam and all required components on your infrastructure.