

You are a solutions architect at AWS. A customer has contacted you because they are having some problems with the way their web application is currently hosted:

Hi,

My name is Lilly Sawyer and I am the co-founder and CTO of Fastier, the online tool that makes organizing things fast.

You may have seen that we have been in the news recently and have been experiencing some big growth as a result. Unfortunately, this means we have been having some difficulties with our website. The response times can be slow during peak periods and sometimes we even have server crashes when it runs out of memory. We also experience some downtime during deployments and do not have a disaster recovery plan. Based on our current trajectory, we predict we are going to see consistent linear growth for a while.

Our application is a SPA React Application backed by Python and Flask, with PostgreSQL as a database. It all runs off a single AWS EC2 instance currently (t3. medium, 4GB of RAM).

Can you design an architecture for us that will alleviate the problems we're experiencing? We are not on a strict budget right now, but at the same time, it is not unlimited.

Kind regards,

Lilly

Here are some points we consider:

The company is a startup. We are lucky because we can provide more of a greenfield approach, and they are more likely to be able to make changes to their application stack. Compared to an enterprise, where change can take a long time, and they may end up only being able to migrate part of their system at a time.

Again, being a startup, it is probably easy to migrate their data into AWS.

They have a single server and already experience downtime, so they are probably OK with some downtime during migration and setup.

Being a mixed API and web app, they will need to host some static content as well.