

Engenharia de Aplicações
Infraestruturas de Centros de Dados

*Exame*¹

5 de Janeiro de 2016

Duração: 1h30min

I

The team preparing the 2016 portuguese presidential election, asked your expert help in the definition of the platform supporting the event.

This infrastructure is responsible for gathering the votes from the voting stations and for showing the results.

There are several access profiles:

- Voting stations presidents, that must send the results to the platform
- Political parties and candidates
- Social media
- anonymous people

In the Voting stations presidents the are at maximum 5000 users.

The two following profiles, access the data as soon as it is inserted into the platform, while anonymous people sees the data with a five minutes delay.

In the two middle profiles, there are an hundred of users, that must be authenticated before accessing the platform.

Anonymous people do not have any kind of authentication

To build the platform there are enough servers and a SAN with sufficient disks.

1 Define an high availability architecture for this platform. Identify the applications and associated data volumes. Justify your decisions.

2 For the defined volumes, which kind of RAID would you recommend?

3 Knowing that this is a short lived service but highly critical, the contingency plans for unexpected loads are vital. Define a plan to react to such high loads, identifying the applications, the actions and the conditions which trigger the actions

4 Which auxiliar services should you add to the platform in order to support the management and continuous operation of the platform? Which changes are required in the proposed platform?

5 Define a monitorization service for the platform.

6 Suppose that before the golive you verified that you have placed the data in the wrong volumes, and that your time windows does not allow to recreate the data volumes and copy the data again. Explain how could you repair your error without interrupting the storage service.

¹Cotação — 20