

BACKEND ENGINEERING INTERVIEW TEST

GUIDE

1. The objective of this test is to assess the ability of the applicant to create a general process system architecture given a use case.
2. The applicant is expected to create a DIAGRAM of the SYSTEM/SOLUTION ARCHITECTURE.
3. The applicant is expected to DESCRIBE/EXPLAIN the components of the system architecture and the different processes needed to solve the problem.
4. This test must be submitted in a PDF format on/before 9 AM November 2, 2020 and send to lkp@irayaenergies.com

USE CASE / PROBLEM STATEMENT / USER REQUIREMENTS

Iraya clients (5 users) wish to process their data (1TB with 50,000 files) by uploading them into a dashboard. As an Iraya solution architect, you are tasked with receiving those files and extract the necessary information from them (file sizes, file names, file types, date of upload), and store them into a database. Once each file has been stored, this should trigger a data pipeline (5 steps/processes) and process the received files and store the outputs into a database. Finally, once a certain number of files have been processed not uploaded (for every 1000 files) there will be an email notification to all the clients.

Note:

1. *There will be failed transactions across the whole system; the system will implement a maximum of 3 retries and if these fail, the system will send a notification to all the members.*
2. *There will be duplicate files, the users must be notified if there are duplicates already uploaded in the system. These will not be uploaded and stored in the system.*

ASSUMPTIONS

1. The network or bandwidth is not a factor in this solution. (Assume unlimited bandwidth)
2. The files come in various formats and sizes.
3. Each data pipeline process will take around 10 mins for it to finish.
4. You only have access to a limited number of VMs 1 parent node and 4 worker nodes.
5. Each user/request has already been authenticated and authorized.

6. Each user belongs to the same team, therefore they should all be notified regarding any messages related to the upload and processing.
7. You are free to use any technology/service/library to solve the problem.