**Digital Futures Data Engineering Academy**

**Case Study part 2**

**Technical Design**

**FishTank Ltd**

After receiving some good advice from their trusted partners. FishTank Ltd have decided to move their business to the Cloud. They feel very confident in your ability to migrate their entire business to the cloud and so there will focus the next few weeks on getting their first production workload running on AWS with your help.

**Requirement**

We require a detailed design and firm costs to migrate our critical line-of-business application PETRA to the Amazon Web Services cloud. PETRA is constantly used during a working week by over 5,000 users across the UK. Fishtank Ltd own an aging but working IT estate and manage this with a dedicated team of 3 full-time employeers ensuring that systems are available and maintained.

We want the document to have the following structure.

PAGE 1 - Title Page

PAGE 2 - Detailed design diagram

PAGE 3 - Single page to describe thoughts behind the design

PAGE 4 - Single page summary of pricing

APPENDIX - Export of pricing from <https://calculator.aws/>

A note on pricing: I would like to know exactly what I’m paying for. On the Pricing summary page I would like to understand what the ANNUAL AWS costs would be for PETRA as well the cost of any support from yourselves. I then want a Total cost covering both cloud and your support costs.

**PETRA details**

Attached to this document is a table covering the full list of servers that run PETRA alongside servers and services that are deemed as dependencies of the system.

PETRA is a Customer Relationship Manager (CRM) application based on Microsoft’s COTS Dynamics CRM platform but heavily customised to provide the functionality that Fishtank Ltd need. PETRA is used extensively by the Sales, HR and Fulfilment departments. Without PETRA these departments would not be able to fulfil orders for advertisements.

At a high-level PETRA is a standard three-layer-application comprising of Web, Application and database. The platform runs on Microsoft Windows Server (currently 2008) and the database is Microsoft SQL Server 2012, both of which are out of extended support with Microsoft.

The dependencies of PETRA include DNS and Active Directory and the current firewall rules are listed below.

|  |  |  |  |
| --- | --- | --- | --- |
| Port | Source | Destination | Comment |
| HTTPS | WebServers | Internet | Webservers use HTTPS to the internet |
| 9000 | WebServers | AppServers | PETRAweb talks to PETRAapp over port 9000 |
| unknown | AppServers | Database |  |
| 3389 | Webservers | Internet | RDP port, for administrators use |
| 3389 | AppServers | Internet | RDP port, for administrators use |
| 3389 | Database | Internet | RDP port, for administrators use |
| All | All servers | Active Directory | All servers need access to the companies Active Directory server on all ports. |

**Output**

Your document will explain how you will migrate the PETRA application to the AWS cloud for Fishtank Ltd.

Your document will detail the process for migrating PETRA to the AWS Cloud. The full PETRA asset list is attached as an appendix to this document.

Your document will have a schematic diagram and detailed pricing.

We will base the award of the contract to migrate the entire Fishtank Ltd business based on the pricing we receive in this document. The pricing should include cloud costs that can be ascertained via the AWS Pricing Calculator price list. We will also share a table of day rates for certain job roles that we will agree to. Any day rate outside of this table will not be allowed.

Many thanks for your efforts and good luck.

Appendix A

PETRA ASSET LIST

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Asset Tag** | **Type** | **Description** | **Operating System** | **Environment** | **CPU** | **Memory** | **Storage** | **Application name** |
| S001 | Server | Domain Controller | Windows Server 2012 | PROD | 2 | 4GB | 30GB | Infrastructure |
| N001 | Firewall | Firewall | Cisco | PROD | N/A | N/A | N/A | N/A |
| SAN01 | SAN | Shared Storage | HP MSA | PROD | N/A | N/A | 4TB | N/A |
| S002 | Server | Web Server 1 | Windows Server 2008 | PROD | 2 | 4GB | 30GB | Web Server |
| S003 | Server | Web Server 2 | Windows Server 2008 | PROD | 2 | 4GB | 30GB | Web Server |
| S004 | Server | Web Server 3 | Windows Server 2008 | PROD | 2 | 4GB | 30GB | Web Server |
| S005 | Server | Web Server 4 | Windows Server 2008 | PROD | 2 | 4GB | 30GB | Web Server |
| S006 | Server | PETRA App Server 1 | Windows Server | PROD | 4 | 8GB | 100GB | Application Server |
| S007 | Server | PETRA App Server 2 | Windows Server | PROD | 4 | 8GB | 100GB | Application Server |
| S008 | Server | PETRA App Server 3 | Windows Server | PROD | 4 | 8GB | 100GB | Application Server |
| S009 | Server | PETRA App Server 4 | Windows Server | PROD | 4 | 8GB | 100GB | Application Server |
| N002 | Switch | Network Switch | Cisco | PROD | N/A | N/A | N/A | N/A |
| N003 | Switch | Network Switch | Cisco | PROD | N/A | N/A | N/A | N/A |
| S010 | Server | Print Server | Windows Server 2012 | PROD | 2 | 4GB | 30GB | Infrastructure |
| S011 | Server | Print Server | Windows Server 2012 | PROD | 2 | 4GB | 30GB | Infrastructure |
| S012 | Server | Database | MS SQL Server 2012 | PROD | 8 | 16GB | 1TB | Database |
| S013 | Server | Database | MS SQL Server 2012 | PROD | 8 | 16GB | 1TB | Database |

Appendix B

GENERAL ROLE RATES (per day)

|  |  |
| --- | --- |
| **Role** | **Rate** |
| Business Analyst | £400 |
| Cloud Consultant | £2000 |
| Solution Architect | £1000 |
| Server Migration Engineer | £650 |
| Database Migration Engineer | £750 |
| First/Second line Cloud support | £250 |
| Third line Cloud support | £350 |