Bespoke Application

Client: Anonymous
Business Size: Corporation
Industry: Insurance Company
Country: UK
Technology: C#, MYSQL, .Net, Bitbucket, Jira

Objective: Upgrade Legacy Software

The Brief
As part of a continuing Merger and Acquisitions programme, the client purchased a Fine Art insurance broker company, based in Switzerland.
As part of the acquisition, they inherited a legacy software solution. This software is a WinForms application, written in C#.
It is used to issue and maintain insurance policies for fine art.
The task was to upgrade all software so it would conform to the overall security requirements of the parent company so it could be deployed within their network.

Background
The parent client was established in 1927 and has become a prominent insurance brokerage, risk management, and HR & benefits consulting company. The company operates on a global scale with over 39,000 staff worldwide.

Methodology
The application was written in 2010 by a single developer in C#.
For the past two years or so, it has been maintained by an independent Swiss software house.

The environment consists of MYSQL databases with a .Net framework (4.5.2) and Crystal Reports.
The application is used by German speaking users in Switzerland and Liechtenstein – hence all text in the application is in German.
The application has two separate databases and two code bases, one for each country.

The Databases now need to be hosted in Azure and the application must run on a Citrix desktop.

Solution and Implementation

- The application needed to be upgraded from .Net framework 4.5.2 to .Net core 8.0
- This was done using the Microsoft .Net framework upgrade tool.
- The MS tool did most of the work, but some fine tuning was needed to get the solution to build correctly.
- Upgrading the .Net framework meant that Crystal Reports could no longer be used as the reporting solution, as this is not supported in .Net core 8.0.
- Therefore, a new reporting solution was implemented – Aspose.Words

Although the application did have two codes bases, (one for each country), with these upgrades we were able to get this down to a single code base that both countries could use.

The connection string for the application used to be stored in the user's registry; this was changed to use the app config file instead.

Added functionality was to use AD groups for user permission checks and which country database to connect to.

If the user had permissions for both countries, a pop-up was added for the user select the country database they wish to connect to.

MYSQL database was upgraded to 8.0.

There was a challenge obtaining a central test database to work on due to the software house billing the client for all interactions.
This was also the first MYSQL database instance in the client network.
This DB also needed to be in Azure - a double first for the client.
All code on the new network was stored in Bitbucket.
Veracode scanning was utilised to highlight security vulnerabilities, which were then rectified.

Consultant Contribution

1) Upgraded applications - .Net framework from 4.5.2 to .Net core 8.0
2) Removed all code references to Crystal Reports and replaced CR with Aspose.Words.
3) Provided the initial MYSQL skills to get local DBs up and running.
4) Also provided any C# code changes needed for the application upgrade.
5) Code changed to make to use of AD Group permissions.

Lessons Learned

The main lesson leant on this assignment was patience.
With any large muti-national, security is paramount and so obtaining the necessary permissions to receive and install the needed software took some time.
The third-party delay in providing a central test database also increased the project timeline.