Scotbank Cloud Deployment Strategy

Initial Deployment

While public cloud has some advantages that would be beneficial to Scotbank such as a pay-as-you go system and the ability to access our application remotely, Scotbank would never store its whole application on the public cloud as this is a high security risk.

On initial deployment to the cloud, our main concern is ensuring all users' data is secure, since our application is for online banking and information held on the cloud would include personal details such as names and addresses as well as details about people's money and details about their accounts such as account numbers, sort codes, and unique identifiers that provide access to their account. If the security of our application is compromised this could allow unauthorized access to someone else's account and have various consequences such as their money being removed without their knowledge or approval, which could also cause reputational damage to the company and for customers to take their business elsewhere. Therefore we would not use a solely public cloud as this can be accessed from outwith Scotbank and would give us less control over our security.

Instead we would initially deploy our application to a private cloud exclusive to Scotbank as this allows for a greater level of security and would give us more direct control over resource allocation, meaning we can adjust this to meet user needs in the most cost effective way possible. We can also consistently back up data on a private cloud to minimise any loss incurred if any sort of malfunction were to occur with the cloud.

On initial deployment to the cloud we would make use of a partial migration strategy. This would include making use of resources such as a private cloud database which would allow us to take advantage of the features provided by the cloud, and the security provided with the private cloud in addition to our own implemented security. Use of the cloud database would also allow for dynamic resource allocation which avoids unnecessary use of processing and memory, but also makes scalability easier if more users start using our app and increasing the number of accounts and transactions stored. As we are only moving a part of the application to the cloud this is cost effective and less expensive than moving the entire application. The cloud's pay-as-you-go model also means we are only paying for what we use.

To bridge the learning gap when using cloud migration we would hire an external team of cloud experts to play a role in the deployment of the application. This would allow us to ensure the quickest possible deployment of the application. Hiring experts would be a temporary solution and would be replaced after initial deployment, as outlined in the next section.

A View to the Future

While a private cloud is initially most effective for our application, they do not have as high scalability as public clouds, which poses a challenge in the event that new customer demands arise and require us to adapt our application. As it is likely that we will need to perform maintenance and add new features to the application use of a public cloud may be beneficial as these new demands arise. The solution is to use a hybrid cloud formed of one public cloud and one private cloud.

On our hybrid cloud we would keep all sensitive information (account details, balances, unique user identifiers etc) on the private cloud in order to keep it behind a firewall and keep the

additional layer of security initially achieved through use of the private cloud. The public cloud can be used for quicker distribution of newer versions of the application if we were to conduct maintenance such as bug fixes or include additional features to the initial product, for example allowing the user to scan in cheques or delete their account.

While the initial deployment of the application involved a partial cloud migration, in future we would look towards making the application fully cloud native. While this may involve some disruption to the application, we would perform migration in stages in order to avoid the application being unavailable for a long period of time, for example for a full day or longer, which may frustrate users and damage the company's reputation. Instead the system would only be unavailable for a few hours at a time, and if conducted at times when the application is least used then this would minimise the disruption caused to users.

Once full migration to the cloud is complete and we are left with an application that is fully cloud native, when a demand for new features arises these features can be developed with the cloud in mind from step one, which will minimise disruption to services going forward.

While initial deployment involved a team of external experts, this is a costly solution when continuing to work with the cloud, so we would conduct training programmes for Scotbank employees so that all those involved with the development and maintenance of the application are familiar with the cloud and can migrate any additional features that are implemented. This training would be refreshed on a regular basis (for example every 1 or 2 years) to ensure employees stay familiar with the cloud.