



**Cardium Solutions**  
IT CONSULTANCY & SOLUTION PROVIDERS

# CASE STUDY

## Big Food Group

### Windows 2000 Design, Implementation and Migration from Windows NT 4.0



## Executive Summary

This is a brief overview of the approach taken by Cardium Solutions to design a Windows 2000 domain, implement the domain and migrate users and data from the existing NT 4.0 domain to the new Windows 2000 domain.

## Client Profile

Big Food Group (BFG) comprises Booker, Woodward Foods, and Iceland foods. The first phase that Cardium was asked to perform was the design of a Windows 2000 domain and Active Directory (AD) that would support all three companies – currently the companies have separate domains running on various different platforms. BFG were standardising their client infrastructure on Citrix/Terminal Services (Thin Client), and the design needed to support this; however there would also be a number of “Power Users” who would require a full Windows 2000/XP client (Fat Client). The first company to be migrated was Iceland and this case study reflects the considerations that were taken and the separate project streams identified to successfully implement and migrate Iceland to the new Windows 2000 domain. Cardium was tasked with designing the Windows 2000 domain, implementing the Windows 2000 domain and automating the migration of users, printers and data to the Windows 2000 domain. The implementation of the Citrix environment was performed by a third party supplier and Cardium needed to integrate the Windows 2000 deployment with the plans for the Citrix rollout.

BFG has approximately 3000 users located in various offices, in separate domains and also utilises some workgroup solutions. The client software is a mixture of Win9x, WinNT and Win2K. The server infrastructure is based on a mixture of Windows NT and Windows 2000

## Project Objectives

The objective of the project was to implement the Windows 2000 domain, and due to the nature of Iceland's 24 operation it was vital that the new solution was implemented and users migrated to it with minimal disruption. An option to roll back to the previous solution needed to be available at all times. Each user required access to the same data as was available previously, and as both environments were required to run concurrently, it was essential that both the new and existing infrastructure could access the same data and applications.

## Project Approach

Based on Cardiums real life experience of these projects and of migrating large scale networks Cardium created the following project streams:

## Project Management

This included all of the following however is not an extensive list:

- Establishment of a Project Board/Steering Group;
- Appointment of an overall project manager to whom supplier project managers would report;
- Use of a Project Definition Workshop to establish the requirements of the project and shape the overall project;
- Production of a Project Plan and detailed plans for each stream;
- Establishment of a regular reporting cycle and escalation process;
- Controlled sign of each phase;

## Technology Streams

Cardium suggested that the detailed design and development activity be broken down into a number of key technology streams. This provided for specialisation and excellence in all key areas. To ensure that all aspects of the solution are delivered coherently a Technical Architect would oversee each technology stream.

The technology streams consisted of the following:

### *Design*

- Project Definition Workshop (PDW);
- Existing Domain Audit – this was not a massive task as Cardium already had a detailed understanding of the existing Iceland infrastructure;
- Windows 2000 Domain Design;
- Windows 2000 Active Directory Design;
- TCP/IP Design;
- Proof of concept testing
  - Domain migration;
  - User migration;
  - Data migration;
  - Systems co-existence;

Once the design and proof of concept testing had been completed Cardium were then able to identify the technology streams required to implement the solution in the live environment.

## *Implementation*

The following streams were identified from the design and proof of concept phase:

### *Windows 2000 Domain Implementation*

Cardium were tasked with implementing the place holder and resource domain for the new Windows 2000 domain. This included:

- Building of Six domain controllers at two separate locations within a Campus;
- Establishing external trust relationships;
- Installation, configuration and migration of DNS as per the design;
- Migration of DHCP from Windows NT 4.0 servers to Windows 2000 servers;
- Implementation and migration of WINS services;
- Identify IP subnets and specifying Windows 2000 Sites based on the subnets;
- Implementing FSMO roles as required;
- Implementing the Organizational Units (OU) as identified in the design document;
- Implementing group policies with a specific policy to “lock out” the machine and user if they were not identified in an OU;

### *Login Script Migration*

Iceland were using KIX scripts for their login scripts and it was identified early on in the project that there was an opportunity to standardise on a login script language that would future proof the organisation and allow the complex and unstructured KIX scripts to be rationalised. Cardium implemented a VB script as the login script language using an HTML page to display the actions that were taking place during logon. As users were migrated to the new domain their login script was changed to run VBScript. The design of the VB Script ensured that the ongoing maintenance of the script was a relatively straight forward process.

### *Application Server Migration*

As part of the audit of the Iceland systems it was identified that there were several applications servers performing varying roles that required migration to the new Windows 2000 domain.

### *User and Data Migration*

A separate project had been completed to install a Compaq Storage Area Network (SAN) which would be accessed by Windows 2000 Clusters. Cardium were tasked with verifying the build of the Windows 2000 clusters, using Active Directory Migration Tool (ADMT) to migrate users, groups and importantly users SID's which ensured that a migrated user could access data that was still in the Windows NT 4.0 domain. Robocopy was used to migrate the data and robocopy switches that ensured the NTFS permissions were copied over during the migration were used. The use of robocopy was vital. There was a vast

amount of data (150 Gigabytes) to copy from the NT4.0 environment to the new Windows 2000 environment. Using robocopy allowed us to perform incremental updates once the core data was migrated, and as less than 5% of data was changing daily the actual switch over to the Windows 2000 clusters could happen over night and during a weekday. The use of robocopy also helped to identify issues with the stability of the SAN/Clusters as it is a copy/processor intensive utility.

### *Printer Consolidation*

During the design stage it was identified that there were several print servers throughout the organisation. It was identified that these could be rationalised and implemented onto two separate servers. Consideration was given to clustering the printing solution however this was not chosen due to the relatively high cost for the solution. A standby print server was built that was configured identically to the live print server. Should the live print server fail for any reason, the new server would be brought on-line with the failed servers name thus allowing printing to continue in a fairly short space of time without having to re-map client printers to a new server – this process would be fairly seamless to the user population.

### *Client Migration Automation*

As part of the client migration it was identified that there were several changes required at the client including:

- Change of domain logon
- Changes to the email client
- Changes to Internet Explorer options
- Various other changes

Cardium solutions scripted the changes required at the client and using an SMS Installer Executable the engineer could visit the client machines and make the changes both consistently and quickly using this bespoke software.

## **Systems Sign Off**

Each stream of the design provided detailed documentation along with a sign off form for all parties to agree with. Due to the nature of the on-going support of the Windows 2000 domain Cardium with BFG decided to employ the use of Microsoft Consulting Services to:

- Review and Sign off the design
- Review the Windows 2000 domain implementation against the design and sign off the implementation as per the design.

## Conclusion

This project was complex and the Windows 2000 domain was delivered in a very short space of time (under two months), as the decision to implement the Citrix environment on Windows 2000 rather than Windows NT was taken at a very late stage requiring Cardium to have several of the technology streams running in parallel. The use of a Technical Architect to design and oversee all aspects of the implementation ensured that this project was delivered in a timely fashion.

## Client Feedback

Post completion Cardium always undergo a project closedown meeting obtain feedback from the client, shown below is the clients comments;



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