I. Introduction and Overview

Chapter 1

Migrating the Windows Environment

Introduction

This workbook is the product of our business. It is literally the "write up" of how KPEnterprises designs and executes network migrations. KPEnterprises has been doing this since 1995. Because these procedures are based on real-world experiences in the trenches of small business consulting, you'll find three things that stand out in this book:

First, we think you'll see a bit of your own business here. You'll find stories about clients you'll recognize and systems you've worked on.

Second, we have a real-world view about how small businesses work. We won't recommend solutions fit for "enterprise" customers. We will also give some advice about working with small business owners and their employees.

Third, we provide advice and guidance that really can be implemented by a small shop. KPEnterprises normally employs three or four technicians. Of those, one is Karl, who primarily plays the roles of salesman, elder statesman, and ultimate escalation point. Another is Manuel, the President, Service Manager, chief cook, and bottle washer.

In other words, we're very technical, but spend a lot of time doing non-technical chores. These network migration procedures have been developed by and for a small business consulting practice. We know you'll be able to implement them successfully.

As this book goes to press, Small Business Server 2008 has been released. If it lives for five years – as its predecessor did – you'll be fine-tuning and perfecting these procedures for some time to come.

It seems odd, but migrating entire computer operations from one system to another is almost unique to the small business market. Think about that.

Larger businesses replace a machine here, a "system" there. But they never replace all of their core operating equipment at once.

Small businesses, by contrast, perform this kind of wholesale upgrade every three or four years. It's just the way things are done in the SMB (small and medium business) space.

What Does Migration Mean To You?

It only occurred to us after writing 300 pages and getting some early feedback that we need to define what we mean by migration.

Most people in our business talk about "migration" or "the migration process" in reference to moving active directory from one physical server to another. Certainly, this is the migration process that is made much simpler with Jeff Middleton's Swing Migration.

At the same time, we all know that it takes a lot more than moving active directory to migrate a network.

Karl has made several presentations about the Zero Downtime Migration process. Many people are surprised that so much time is spent discussing the business side of migrations. But the truth is that the basic technical process is not particularly complicated.

The complicate part of a migration comes with all the snags you run into. I'm sure you've seen your share:

- The unexpected 100 MB Exchange database in a company of ten people
- Profiles "from hell"
- Clients who think the migration to a new server is a great time to refresh office on every desktop and move to a new ISP
- The line of business vendor whose database breaks during the migration and can't be reached

It goes on and on.

Microsoft has developed some tools to help with the migration process. We call them out in the *Our Favorite Whitepapers* section of the checklist. But even their 100+ page explanation of the migration process stops short of addressing all these parts of a migration that don't involve moving the server's personality to its new home.

When a small business gets a new server, it is usually a major event. That client normally only has one or two servers. If the one you're replacing is the domain controller (or with SBS, domain, exchange, SQL, SharePoint, etc. all in one), then it affects every device and person on the network.

And you should treat this like a break/fix job. In other words, you can't just look at replacing a piece of hardware and not think about the bigger picture.

- How old is the UPS on the server?
- Are there any messed up profiles that should not be brought forward?
- Are profiles, user names, and security all set up exactly as you'd like them on the domain?
- Will all the line of business applications work well on the new hardware and software?
- Is the client getting maximum value from each of the subsystems on the network (e.g., printers, VPN, SharePoint)?
- Will the new backup system allow recovery from whatever media were used on the old backup system?
- How tolerant is this client of downtime?
- Are there troublesome components on the old system that should be separated out and not moved to the new system (e.g., faxing)?

We could go on, but we're sure you get the point. Migration means a lot more than moving active directory!

If you've ever compared your migration project proposal with other companies, then you've discovered two surprises.

First, it's amazing how different we all are, even when we're selling the same technology. We

The following are examples of simple migrations:

Old	New
Win NT 4.0	Server 2008 or SBS 2008 / New Hardware
Windows 2000 Server	Server 2008 or SBS 2008 / New Hardware
Windows Server 2003	Server 2008 or SBS 2008 / New Hardware
Windows Server 2008 on old hardware	Server 2008 or SBS 2008 / New Hardware

take very different routes to get to the same place.

Second, the bottom line prices are not very far apart. The truth is, we all charge about the same for a five-user or a ten-user migration. And why is that? Because there's a certain amount of labor involved in all the stuff that's *not* related to moving the active directory.

Modern Migration Strategies

In the world of Windows, and particularly in the era of Windows 2008, we have a dizzying array of migration possibilities. In most cases, you will do a simple upgrade. "Simple" means moving from an old version of an operating system to a new version of the operating system, or moving the same system to new hardware.

In standard (non-Small Business Server or non-Essential Business Server) networks, migrations tend to be rather straight forward. You put the new server in place, install your applications, move the data, and take over the domain control function as needed.

You'll still want to go through the checklist, to guarantee a complete, zero-downtime migration, but the process is not very complicated because the environment is not very complicated.

SBS and EBS are another story altogether. SBS migrations are more complicated because, by design, there can only be one primary domain controller.

Yes, we know that Microsoft got rid of the terminology of Primary Domain Controller and Backup Domain Controller in 2003. But if you've ever migrated an SBS machine, you can't escape the fact that there's one machine that controls the domain, the global catalog server, and the global everything else server.

SBS is not very flexible when it comes to FSMO (Flexible Single Master Operations). The FSMO roles include the Relative ID Master role, the PDC Emulator role, the Infrastructure Master role, the Domain Naming Master role, and the Schema Master role.

You can add a second Domain Controller, but it can't take over these functions. It can't be simply promoted to PDC, let alone become the SBS PDC with all the FSMO roles.

So we're going to use the term PDC! ☺

In a nutshell, here's what happens in a simple network migration (See Figure 1-1). For example, you could do this with a Server 2003 to Server 2008 migration.