Wharfedale Technologies, Inc.

SAP Data Center Migration Best Practices

The keys to a successful data center migration are planning, documentation, communication, team work, and execution. SAP Data center migrations are complex and require broad internal and external technical skill sets. Data center management working with business management must develop a business impact assessment to guide the prioritizing and development of move groups of equipment, operational software and business applications. The importance of clear and complete documentation coupled with ongoing communications to the technical team as well as the business team can not be over emphasized. Team leadership must work to develop strong team interaction and inter-dependencies. Execution of the plan is expected but more importantly when technical, time line, budget or delivery challenges occur the team must work creatively and quickly to keep the project on track to a successful conclusion. These key parameters coupled with a health does of constructive paranoia, assuming the worst and then assuming you are too optimistic, throughout the effort will lead to a successful data center migration.

In the past, migration projects were scheduled to be performed during off-hours, however, today's 24x7 environment has no application down-time window. Data migration is the process of making an exact copy of an organization's current data from one devce to another device – preferably without disrupting or disabling active applications – and then redirecting all input/output (I/O) activity to the new device. There are a variety of circumstances that might cause an organization to understake a data migration, including:

- Server or storage technology replacement or upgrade
- Server or storage consolidation
- Relocation of the data center
- Server or storage equipment maintenance, including workload balancing or other performance-related maintenance.

The above scenarios are fairly routine parts of IT operations in organizations of virtually any size. They are so routine, in fact, that more than 60 percent of respondents to the recent survey indicated that they migrate data quarterly or more often. However, even routine processes can cause problems for IT administrators and managers. More than 75 percent of respondents to the same survey said they had experienced problems during data migration. These problems included, but were not limited to:

- Extended or unexpected downtime
- Dat corruption, missing data or data loss
- Application performance issues
- Technical compatibility issues.

In fact, the potential problems with data migration cause some organizations to delay the deployment of new technology, or even to delay purchasing new technology. Such delays can, in and of themselves, be detrimental, because older hardware may require more hands-on maintenance, generally has lower performance and is more prone to failure. Most organizations seek to deploy new technology to eliminate such issues, therefore, delays in implementing new technology present a business risk. In addition, delaying deployment of a new storage device that has already been purchased or leased raises its effective cost, as the company is amortizing the cost of both the old and new devices or is paying lease fees for both old and new devices.

Minimize Business Impacts of Data Migration

How can organizations minimize the business impacts of data migration – down-time, data loss and increased cost? The best way is to employ a consistent, reliable and repeatable methodology for migrations that incorporates planning, technology implementations and validation. The rest of this document focusses on migration best practices, as well as the experience Wharfedale Technologies (WFT).

PLAN

Solid migration planning can help identify potential problems and how to avoid them or, if problems are unavoidable, help IT define migration strategies. While the amount of planning depends on the size and scope of the migration, the planning process generally should involve determining the requirements of the migration, identifying the current and future environment, and creating and documenting the migration plan. During the planning stage, a determination of what hardware or software is needed to successfully perform the migration is required. The design requirements include migration architecture, specific hardware and software requirements, migration procedures, and deployment and test plans. As necessary, the IT organization should also obtain any software licenses it needs to perform the migration.

The more important the data is to business operations and the greater the complexity of the environment, the more critical migration planning is. Solid migration planning can help identify where potential problems might occur and how to avoid them, and can help IT professionals define mitigation strategies if problems are unavoidable. Migration planning also can help define which data to migrate first, whether and how long to take applications offline, and which internal and external audiences should be informed regarding the migration.

Proper migration planning involves more than just the IT staff. The business owners of the applications and data being migrated should also be included – particularly as the IT organization determines how important a given application or set of data is to the business. Otherwise, for example, the IT department might plan a migration of the financial system on the same weekend that the finance system on the same weekend that the finance department is finalizing quarterly numbers. While this may represent a unique situation, the point remains that keeping all interested parties in the loop about data migrations can minimize or eliminate possible conflicts.

In planning a migration, it is important to understand design requirements such as migration/replication requirements, time schedule, vendors involved and the configuration of the hardware. When sizing data migrations, there are many key items to consider such as the number of servers, the operating system levels, the amount of storage, the volume managers, types of database and applications, network speeds, and server clusters. In looking at the time schedule, the IT organization should create estimates for planning, installation and setup time, data copy time and production cutover.

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MIGRATE

During the migration phase, the IT organization will need to communicate its plans; obtain, install and confgure any necessary software, and perform the actual data migration. A premigration data validation test is recommended, in addition to post-migration validation testing. These tests confirm that the data is in the same state after the migration as it was before.

Clearly, the most important part of this stage is the migration itself. As out-lined above, software technology can simplify this process by enhancing the speed of migration, by minimizing or eliminating appliction downtime, and/or by enabling migration during regular business hours, helping the organization to get back to business as quickly as possible.

VALIDATE

After the migration has been completed, the IT organization should compile migration statistics and prepare a report to highlight what worked, what didn't work and lessons learned. The report should be shared with all members of the migration team. These types of reports are critical in building a repeatable and consistent process through continuous process improvement – building on what worked and fixing or changing what didn't work. Further, documenting the migration process can help train staff, and simplify or streamline the next migration, reducing both expense and risk.

SUMMARY

Data migration is a critical part of any IT organization in today's business environment. Even so, it often causes a major disruption as a result of downtime or application performance problems, and it can severely impact budgets. To prevent these problems, organizations need a consistent and reliable methodology that enables them to plan, design, migrate and validate the migration. Further, they need migration software that supports their specific migration requirements, including operating systems, storage platforms and performance. I n addition, migration technology that maintain continuous data availability during the migration without affecting performance are desirable. Wharfedale Technologies with their deep expertise provides a variety of options and capabilities to support critical SAP Data center migration with minimal downtime.

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