



White Paper

Data Migration Management

METHODOLOGY: SUSTAINING DATA QUALITY AFTER THE GO-LIVE AND BEYOND



Figure 1: The NDMS stages

Introduction

Data Migration is a core practice under the NebuLogic Data Management Services (NDMS) Framework. NDMS is a holistic Data Architecture Strategy that aligns business and data processes using applied technologies. The NDMS Framework manages and extends the lifecycle of data across an enterprise from Source System Exploration to Production. The stages in NDMS are shown in Figure 1.

In any CRM implementation, data migration is a critical task. If the data are not migrated correctly, business processes will experience setbacks. Also, if data quality is poor, then users may resist adopting the new CRM system. Data migrations involve critical business processes, and the migration must be executed well and on time.

Source System Exploration

The first phase of the Data Migration is to identify the data file format. The most appropriate method for identification is to group data—for example, the 'name' field, 'address' field and 'descriptions' field—to organize the data in a synchronized manner.

Although the source system may contain numerous fields, some might be duplicates or not applicable to the target system. In this stage it is critical to identify the relevance of data. The relevance is based on required data, redundant data, and junk data (useless data for migration). Using multiple data sources allows us to add another element of data validation and a level of confidence in the data gathered.

Output: Required data are identified and segregated into categories which enable us to work on manageable and possible parallel tasks.

Data Assessment

In this phase, we assess the quality of the source data. In case of data inconsistency—incorrect or duplicate data—there is limited value in migrating data to the target system. To assess the data, initial data profiling is highly recommended.

Data profiling is the process of systematically scanning and analyzing the contents of all the fields. It is an integral part of the process of evaluating the conformity of the data, and safeguarding compliance to the requirements of the target system.

The profiling functions include examining the actual record value and its metadata information. By including data profiling early in the migration process, the risks of project overruns, delays and failures are reduced.

Data profiling can:

- Immediately identify whether the data will fit business purposes
- Accurately plan the integration strategy by identifying data inconsistencies early
- Successfully integrate the source data using automated data quality processes

Output: A thorough understanding of the data quality in the source systems is developed, along with the identification of data issues and a list of defined rules that can be used to correct them.

Migration Design and Build

Design:

In this phase, the main tasks are defining the technical architecture and design of the migration processes. Defining the testing processes and how to transition them to the production system is critical. Migration patterns are also identified, as in whether there will be a parallel run, a zero-downtime migration, or whether you will be expecting to complete the migration and simply 'decommission' the old system.

Output: This phase predicts next steps involved in the process. Timelines for target system, technical requirements and other related concerns are documented.

Build:

This is the most crucial phase of the entire process. The migration is executed only once, and there will be limited reuse of the code.

An effective and transparent migration starts with migrating a subset of data, and testing one category of data at a time. In case of larger projects, each category can be tested in parallel. Testing the migration solution is usually an iterative approach. For example, we start by checking the components individually in small subsets to ensure the mappings, transformations, and data cleansing routines are working.

Then, we increase the data volumes, and eventually link all of the components together into a single migration job.

Output: A fully tested data migration process that is scalable, reliable and can deliver the migration within the planned time.

Execution

After exhaustive testing, the execution phase begins. In most cases, the source systems are shut down while the migration executes. To mitigate disruptions, we prefer to conduct this phase over a weekend or a public holiday. In other cases, where the source applications are required to be up and running, a zero-downtime migration approach is used. Using zero-downtime migration technology, data from paused or running source systems can be migrated to another parallel server with no interruption. This technology has the following advantages:

- The migration time is greatly reduced. In fact, the migration eliminates the service outage or interruption for end users.
- The process of migrating the data from source systems to another parallel server is transparent, that means no modifications of system characteristics and operational procedures can be performed on the source or destination servers.

About NebuLogic Technologies

NebuLogic Technologies, LLC is a leading System Implementation and Integration Information Technology company that specializes in delivering comprehensive Service and Sales Automation solutions. NebuLogic provides solutions and services using SaaS/Cloud based as well as enterprise class applications. Our definition to deployment services include but not limited to: 1) Conducting requirements discovery and analysis (RFI, RFP review and response); 2) Conducting master requirements workshops; 3) Developing Business Requirements Documents (BRD) and Technical Requirements Documents (TRD); 4) Building prototypes, mockups and pilot solutions; 5) Configuring core Customer Relationship Management (CRM) applications; 6) Enhancing and/or developing integration components; 7) Developing use cases based on client requirements; 8) Implementing data and application security requirements; 9) Conducting Quality Assurance and User Acceptance Testing (QA and UAT); 10) Developing user and administrator training guides and related documents; 11) Delivering hands-on user and administrator training; 12) Analyzing risk factors and implementing risk mitigation processes; 13) Conducting system stress testing and developing pre-production checklists; 14) Enabling successful Go Live/production rollouts; 15) Providing post-production support and maintenance services; 16) Providing hosted services and more.

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 1-(972)-335-0699

 contact@nebulogic.com