

White Paper: MS Access to SQL Server Migration – Leveraging ClaySys

Current State: Most large organizations today are in a situation where business users and departments have leveraged Microsoft Access to meet specific solution requirements. As these Access solutions grow beyond their initial scope, Enterprise IT is then faced with the challenge of taking control of many of these Access applications, and migrating them to a more stable, secure and robust environment like SQL Server. But this entails a number of issues and challenges related to migration effort and cost, the lead time to support such a migration, the continuing need for the business to retain control and rapidly modify the app etc.

The ClaySys AppForms Solution: Since ClaySys is a no-code metadata driven rapid application development tool, it requires a skillset equal to or simpler to working with MS Access, for creating the migrated version of the Access application. ClaySys AppForms is a viable option to help organizations migrate any number of Access apps to a SQL Server environment very easily and feasibly. Since the application functionality and User Experience over the database can be created through just configuration versus writing code, it is very feasible to rapidly re-create the application front end and business logic, to work with the same Access Database schema and existing Access data, which was migrated to SQL Server.

The User Group that created the Access database can still retain control over maintaining the functionality, and to incorporate ongoing changes, while IT can manage the centralized maintenance of the application platform by managing the SQL Server environment for data backups, restores, high availability and security, while managing and monitoring the ClaySys application servers hosting the multi-tenant ClaySys AppForms Web Applications on Windows IIS Servers.

ClaySys Security and Access Control: Any application created using ClaySys AppForms, sits within the Enterprise Security module of ClaySys. This security module manages the Authentication, Authorization and Auditing of all access to any of the ClaySys applications created. Basic Authentication can be managed through Windows Authentication using the Users Active Directory credentials itself or through a Custom Membership Provider (User Name/Password) maintained by the ClaySys Security Module in SQL Server. Authorization is managed by applying access control rules to the AD Users and Groups within the ClaySys Security module, restricting access to the ClaySys Applications, Modules, Forms and Fields, that specific Users or User Groups need to have restricted access to. The ClaySys Security Module permits Enterprise IT to designate a Power User within the User Group that created the Access Application itself, possibly as the Administrator for the same application migrated to ClaySys AppForms, so control of the ClaySys application maintenance can continue to remain with the specific authorized User Group, just like they were used to in Access.

Access Migration Best Practices: There are obviously a number of additional challenges, besides just migrating an Access Database to work ‘as is’ in SQL Server with a new front end in ClaySys AppForms. These challenges are related to data redundancy issues, as each Access Database might be maintaining redundant data instead of referring to a central data repository for specific datasets such as Customer Data, Contacts Data, Product Data etc. The points below highlight a roadmap to allow an organization to first migrate Access Databases to SQL Server, and then work towards consolidating the data to ensure Data Integrity and efficiencies related to Data Management. In the new centralized multi-tenant web application framework deployed using ClaySys AppForms, versus the isolated Access Databases that currently exist, some key points to take note of are highlighted below;

- For urgent migration requirements, we would recommend migrating an Access Database ‘as is’ to SQL Server, and configuring the Application Front End exactly as it works in Access using the ClaySys product. Now while this approach is the first step to enabling the Users to move very rapidly from Access to SQL Server, it does not address the Data Management challenges highlighted.
- For small applications where the Users may not want to maintain or manage the data in a centralized SQL Database, it can also be configured to migrate data to SharePoint Lists and Libraries, after which you build the User Interface forms and business logic in ClaySys AppForms. This approach would allow the End User groups, to extend the schema for maintaining the application or forms data into SharePoint lists and libraries, after which the forms satisfying the business requirements can be configured to connect to the additional SharePoint lists and libraries, to surface data as required.
- Once you have an Access DB working ‘as is’ in SQL Server, but with the new ClaySys front end, you can then analyze the Data redundancy issues with specific Access databases. The easy tasks are modifying the application to refer to a centralized Master Data repository instead of maintaining a copy of the data within its own data schema, which was inherited when migrating the Access DB ‘as-is’ to SQL Server.
- The more complex tasks are to slowly merge multiple SQL Server databases representing the individual Access Databases one started out with, to a consolidated DB Schema that can still support the multiples of Access applications that were migrated, at the front end. This consolidation task would be a gradual process, and since incorporating the changes using ClaySys is still just configuration changes, the pain is more in relation to taking the logical decisions around data consolidation. The actual effort to incorporate the changes may be quite feasible using ClaySys.

- All reports created within Access would be supported within SQL Server through using SQL Server Reporting Services (SSRS). SSRS can import the Access Reports, after which minor configuration changes would address the reports working appropriately with the SQL Server database.
- While this White Paper highlights how the basic challenges of migrating an Access application to SQL Server and ClaySys can be addressed, it is the ability to build very complex front end functionality with Forms and Business logic using ClaySys that really makes this process of migrating Access to SQL Server feasible. The ClaySys Forms Designer and Rules editor is what enables the rapid creation of the application front end and the incorporation of the required business logic.
- Some additional benefits that can be leveraged for an Access application migrated to a ClaySys front end, and SQL Server backend, are enabling Forms Routing and Workflow for specific application features. Any data entry form in Access that is now migrated to SQL Server with the form created using ClaySys AppForms, can have workflow switched on, which will enable the administrator to easily configure workflow routing rules for approval steps to be incorporated whenever data is entered or edited. ClaySys also ensures that the migrated application is web enabled.

The purpose of this white paper is to introduce an approach towards migrating an Access Database to a ClaySys AppForms Frontend and a SQL Server backend. More specific information can be provided for any specific scenarios that are highlighted to us.

For more information please email info@claysys.com or our account managers who are in touch with you.