



GULF BUSINESS MACHINES

NOTES DOMINO
TO
MICROSOFT 365

EMAIL MIGRATION CASE STUDY

PERFORMED BY: TRANSEND CORPORATION

Customer

Gulf Business Machines

An IBM partner with 7 global offices and over 1,500 employees across the Middle East - Gulf Business Machines (GBM) is a leading end-to-end digital solutions provider, offering the region's broadest portfolio, including industry-leading digital infrastructure, digital business solutions, security and services. Since its inception in 1990, GBM has been one of IBM's most loyal and strategic partners in the Gulf.

Project Scope

GBM began with a complex Domino environment consisting of three distinct domains in two different organizations. One domain included application servers but with no local users. Another regional domain included both email users and applications. Most users' mail was hosted in an external domain managed by a third party. The project's scope included 1,500 user accounts with over 10 TB (10,000 GB) of server-based email data and an additional TB (1,000 GB) of locally archived (NSF) mail files.

Cross certification allowed users from the externally hosted domain to access applications on the application servers. User provisioning and management was managed by the outside hosting company. GBM did not have control over the hosted organizational certifiers, but their applications did rely on the hierarchical names they controlled.

As a result of IBM's sale of its collaboration offerings to HCL, GBM had previously migrated its mail from IBM's SmartCloud service to the new mail hosting service with limited success. Mail delivery and uptime was extremely unreliable, the provider was woefully unresponsive, and the lack control over the certifiers presented a potential business continuity risk.

GBM's goals were conceptually straightforward, yet extremely complex in execution:

- Migrate all email user accounts to Microsoft 365
- Retain access to the internally hosted Domino domain and its applications
- Ensure no End-user messaging disruption
- Preclude any significant application development requirements

To achieve its goal, GBM partnered with Transend's Professional Services team to embark on this challenge that was ultimately performed over a 9-month period.

“This was a unique cloud to cloud migration, made even more difficult due to a non-cooperative hosting partner. Migrating from a 30 year old Lotus Domino mail platform to Microsoft 365 required that we select a migration partner that held the professionalism and technical depth to overcome the many challenges in front of us.”

– *Anoop Gupte*
GBM IT Director

Challenges

1. ACCESS TO APPLICATIONS

Like many Domino users, GBM makes use of custom applications that were built over many years and encapsulate a great deal of business logic. Some of these applications include hard-coded references to user naming hierarchy that need to be identified and updated if names changed, and the customer couldn't rule out the chance that document encryption or digital signatures might be in play. Additionally, some applications send email notifications.

Because the original mail hosting company would not allow cross-domain administration, GBM needed another way to move users into the internal Domino domain under their control. Transend's Professional Services team (a cross functional unit of architects, engineers and developers) was comprised of experts in Domino administration, and were able to develop a process to accomplish this goal of moving users into the internal Domino domain under their control. Person documents were copied into GBM's Domino Directory and updated to reflect a new domain while retaining their original Organization, including hierarchical names and certificates. To avoid hosting unnecessary mail files, all mail was forwarded to users' new accounts in Microsoft 365.

To prepare for these updates, Transend worked with GBM to ensure full testing and validation of these changes well before cutover. This ensured GBM's staff was able to execute the necessary changes to Notes clients and communicate exactly what to expect to its user base. Transend and GBM also configured a new ID Vault and Domino Policies to preserve GBM administrators' ability to manage user security and ID continuity.

2. *NEGOTIATING WITH AN UNCOOPERATIVE HOSTING PROVIDER*

GBM had previously been a loyal IBM SmartCloud customer, but when the SmartCloud service was discontinued by HCL they had no choice but to seek a path supporting a transition to a new destination. Rather than standing up internally-hosted mail servers or migrating from Domino, they chose a new provider that offered cloud-based Domino mail hosting.

Unlike IBM's SmartCloud, this provider was unwilling to allow administrators to stamp ACLs with an account to allow global delegated access to user mail. In lieu of direct access to users' mail databases, at the request of Transend and GBM, the provider stood up a dedicated staging server with replicas of user mail databases. The new replicas were created without indexes and one-way replication from the production domain was inconsistent. Insufficient indexing performance on the staging server provided significant challenges.

Transend's Pilot testing surfaced these performance issues and defined accurate migration rates. Identifying these server limitations, and subsequent migration (throughput) rates early in the project allowed Transend to adjust processes accordingly and architect a production strategy that ultimately yielded a successful transition of all users to Microsoft 365.

While the email hosting provider's lack of cooperation provided obstacles that resulted in delays, Transend was able to help GBM negotiate with the hosting provider to obtain access to their root certifiers. This allowed Transend to architect and implement a production approach of migrating groups of users (organized by country) in phases over weekends. While sole physical control of GBM's data afforded the hosting provider significant leverage over GBM, Transend's knowledge and understanding of Domino architecture insured GBM was not forced into any uninformed decisions.

3. NAME TRANSLATION

Domino's internal naming scheme is not based on routable SMTP addresses. There are many naming formats used in a typical Domino environment, including canonicalized and abbreviated hierarchical names, short names, full names, and mail aliases. Migrating email without translating these names into routable SMTP addresses would result in email in the target (in this case Microsoft 365) with broken replies and meetings with invalid attendees.

Transend Migration Console's address translation table supports conversion of headers during migration so that all addresses line up with the target system's equivalent routable SMTP address. Transend's Services team makes it easy to prepare the translation table by programmatically extracting all necessary source and target conversion tables directly from Domino Directory.

4. LOCAL ARCHIVES & ENCRYPTED MAIL

Two features of Domino that present significant obstacles for any cloud-based migration solution are (1) client-side NSF archives and (2) mail encryption. Transend provides a solution that can solve both problems with a single tool: Transend Local Archive Migrator.

Fully customized lightweight and intuitive utility allows end-users (or local IT administrators) to easily scan local drives for archives that meet a defined criteria, and with the push of 2 or 3 buttons migrate identified files directly to a target location. This customized local tool can be delivered to end-users with the company's custom settings built in.

Domino's asymmetric mail encryption ensures that secured messages can only be read with the recipient ID file's private key. In most environments these are only available on the end-user's client workstation. Any tool that migrates directly from the server must either rely on an external tool to decrypt all mail in advance of the migration or perform the migration in a context that allows access to that key.

The Notes client allows users to create local archive databases that remove mail from their server-side mail file. Users don't always remember where on their local disk or shared drives they stored their archives. Local files aren't available to cloud-based server-to-server migration tools. Local archives are often encrypted with the same keys used for encrypted mail.

After Transend's consultants prepared, tested and validated a migration configuration, Transend's development team prepared a customized local tool for GBM that hard coded all the relevant settings, including the aforementioned translation table and archive search/scan capabilities. GBM's customized Local Archive Migrator was installed on end-user workstations so it could access the Notes APIs under the authority of each user's own ID file.

The local tool can find and migrate all local archives with just a few clicks. It also connects to the live copy of their mail file in order to migrate encrypted messages. This augments the migration of centrally unencrypted mail to ensure full control of timing and monitoring while ensuring that data not directly accessible from the Domino server is never lost.

Project Results

In the end, and despite all the challenges presented, Transend was able to successfully migrate all GBM email, calendar, contacts, and tasks from the unreliable and uncooperative hosting provider into Microsoft 365's enterprise hosting environment.

Further, GBM's internally hosted Domino servers continue to provide application services without the need to refactor any code or add additional resources. Archives and encrypted mail that had previously been unavailable to compliance and eDiscovery searches are now centrally stored and managed in Microsoft 365.

The new environment uses Azure AD Connect to synchronize user accounts with the cloud environment and provide single sign-on. Notes accounts have been moved to the internal domain. A new ID Vault gives GBM IT the ability to centrally manage their Notes ID files.

Gulf Business Machines now has an environment they can rely on to provide both their messaging and application needs. Transend is proud to have architected and implemented a process that was executed with as minimal overhead as possible, while eliminating organizational and end-user disruption.

Conclusion

“It was a great experience working with Transend. Their technical depth made the migration seamless and smooth. The entire project was performed remotely, but executed flawlessly. Transend always inspired a great deal of confidence during the nearly 9 month journey. I highly recommend Transend for any migration services.”

– *Anoop Gupte*
GBM IT Director

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