

MODERNIZING FINANCIAL DATA INFRASTRUCTURE: A SYBASE TO MS SQL SERVER MIGRATION SUCCESS STORY

In an era where technological evolution dictates business survival, our BFSI client faced a critical challenge – the impending obsolescence of their Sybase ASE and replication infrastructure. Amidst escalating costs, diminishing support, and performance bottlenecks, Ahana, a trusted IT services firm, embarked on a mission to modernize their Sybase environment, orchestrating a seamless transition to MS SQL Server. This case study delves into Ahana's strategic approach, the challenges encountered, and the transformative impact realized through meticulous execution.

Client Profile:

Our client is a renowned American corporation listed on the Fortune Global 500 and Fortune 500. Through their subsidiaries, they deliver a wide array of products and services, including insurance, retirement planning, investment management, and more. Their reach extends to both retail and institutional customers across the United States and spans over 40 countries worldwide.

Challenges:

Our client, a prominent financial institution, encountered several pressing challenges with their legacy Sybase ASE environment:

- **End-of-Life Concerns:** Sybase ASE was approaching end-of-life, raising concerns about diminishing support, lack of updates, and potential security vulnerabilities. This necessitated urgent action to ensure the long-term viability of the database infrastructure.
- **Cost Burden:** The high licensing and support costs associated with Sybase ASE strained the client's budget, impacting their ability to allocate resources to other strategic initiatives. Additionally, the absence of new versions and features limited the return on investment from their database infrastructure.
- **Performance Limitations:** Certain workloads experienced suboptimal performance on Sybase ASE, leading to delays in data processing and analytics. This hindered the firm's ability to respond swiftly to market changes and make data-driven decisions.
- **Strategic Alignment:** Aligning the database infrastructure with strategic goals, including standardization, modernization, and cloud adoption, emerged as a priority for the firm. However, the existing Sybase ASE environment posed obstacles to achieving these objectives, necessitating a strategic migration plan.
- **Feature set:** While Sybase ASE served its purpose over the years, its feature set pales in comparison to MS SQL Server. Users may find that MS SQL Server offers a more robust suite of features, including advanced analytics capabilities and superior support for cloud integration, enhancing overall database functionality and flexibility.
- **Ecosystem & Community:** Opting for MS SQL Server presents access to a vibrant ecosystem characterized by a vast and active community, abundant resources, and a strong presence of skilled database administrators (DBAs) in the market. This rich ecosystem facilitates easier resource discovery, provides robust support, and fosters knowledge sharing, thereby enhancing the overall user experience and accelerating problem-solving capabilities.
- **Vendor Support:** MS SQL Server, supported by Microsoft, offers comprehensive assistance and timely updates. With Microsoft's extensive resources and commitment to customer satisfaction, users benefit from responsive support, abundant documentation, and a wide array of tools. This robust support ecosystem ensures reliability, smooth operations, and effective problem-solving, fostering confidence and driving success.

Ahana's Solution:

Upon assessing the complexities and challenges posed by the legacy infrastructure, a meticulous migration plan was devised to ensure a seamless transition to a modernized environment.

Migration Strategy

The migration project followed a two-step process.

- **Phased Approach** - The migration commenced in the beginning of 2023, with the initial phase focusing on on-premises migration to MS SQL Server, completed by end of 2023. The subsequent phase involved cloud migration to AWS, scheduled for completion within 6 to 8 months.
- **Tool-Based Migration**- Leveraging AWS Schema Conversion Tool (SCT) achieved an impressive 80% automation rate for object migration. AWS Database Migration Services (DMS) facilitated seamless data transfer from Sybase to MS SQL Server.
- **Data Transfer Efficiency:** To meet tight deadlines, we organized tables into master and transactional tables. For smaller transactional tables (less than 1 million records), we performed a full load during the cutover window. For larger transactional tables, we split the data into active (latest data) and passive (unchanged old data). The passive part of these larger transactional tables was transferred before cutover, while only the active part was transferred during the cutover window. This approach greatly aided in completing the migration within the cutover window.
- **Operational Enhancements:** Post-migration, significant improvements were observed in batch processing performance. Certain batches saw performance improvements of up to 2 - 3 times, with the average batch processing time decreasing by at least half. This enhancement translated into faster data processing and analytics, empowering users with timely insights for informed decision-making.
- **Infrastructure Optimization:** Through optimization techniques such as compression and table partitioning, the database size was reduced from 6.5 TB to 4.4 TB. This optimization not only enhanced scalability but also improved resource utilization, laying the foundation for future growth and innovation.
- **Resource Optimization:** The migration led to a substantial reduction in resource requirements for development, database administration, and monitoring. This optimization resulted in operational efficiency gains and cost savings, mitigating the financial burden associated with legacy infrastructure and enabling strategic investment in innovation and growth initiatives.

Sybase replication migration to MS SQL Server

As a pivotal component of Ahana's migration strategy, the migration of Sybase replication to MS SQL Server was meticulously executed to ensure seamless data flow and continuity for downstream applications.

Firstly, Ahana conducted a thorough analysis of the existing Sybase replication setup, identifying dependencies, data flows, and performance metrics. This comprehensive assessment provided invaluable insights into the intricacies of the replication architecture and informed the subsequent migration plan.

Next, Ahana meticulously planned the migration process, considering factors such as data volume, replication latency, and application dependencies. The migration plan encompassed strategies for data synchronization, failover mechanisms, and rollback procedures to minimize downtime and mitigate risks.

During the migration execution phase, Ahana leveraged specialized tools and methodologies to seamlessly transition from Sybase replication to MS SQL Server replication. This involved schema conversion, data mapping, and synchronization techniques to ensure compatibility and consistency between the two replication environments.

Ahana implemented robust monitoring and validation mechanisms throughout the migration process to track data integrity, replication lag, and performance metrics. This proactive approach allowed for real-time detection and resolution of any issues or discrepancies, ensuring a smooth and uninterrupted data migration.

Upon completion of the migration, Ahana conducted comprehensive testing and validation to verify the integrity and performance of the MS SQL Server replication environment. This involved rigorous testing of data synchronization, failover scenarios, and application functionality to ensure that the migrated replication setup met the client's requirements and expectations.

By addressing the challenges posed by the legacy infrastructure and embracing modern technologies, the migration project positioned the client for long-term success and competitiveness in the dynamic landscape of financial services.

The Impact

Ahana's Sybase to MS SQL Server migration yielded transformative outcomes for our client:

- 1) Operational Efficiency:** Streamlined data management processes and improved performance resulted in a 50% reduction in batch processing time, enhancing overall operational efficiency.
- 2) Cost Savings:** A notable 60% reduction in costs associated with database management, software licensing, and support contracts was achieved, freeing up substantial resources for strategic ventures.
- 3) Performance Enhancement:** A remarkable 40% overall performance improvement on MS SQL Server compared to Sybase ASE was observed, facilitating faster data processing and analytics, crucial for timely decision-making.
- 4) Future-Ready Infrastructure:** Transitioning to MS SQL Server positioned our client for future scalability and cloud migration, ensuring agility and adaptability in the dynamic BFSI landscape.
- 5) Enhanced Security Features:** MS SQL Server's advanced security features, such as Transparent Data Encryption (TDE), Always Encrypted, and Dynamic Data Masking, bolstered data protection efforts by safeguarding sensitive information both at rest and in transit. These measures enhanced compliance with data protection regulations and fortified the organization against security threats.
- 6) Seamless Integration:** Integration with Microsoft ecosystem and robust development tools provided by SQL Server streamlined operations, enhancing collaboration and productivity across the organization.
- 7) Easier Migration Path:** Microsoft's provision of tools and utilities, such as SQL Server Migration Assistant (SSMA), streamlined the migration process from Sybase ASE to SQL Server. This simplified migration path minimized the effort required to transition existing applications and data to the new platform, ensuring a smoother transition and reducing downtime.
- 8) Robust Development Tools:** With SQL Server's suite of development tools, including SQL Server Management Studio (SSMS) and Visual Studio, developers and database administrators experienced heightened productivity and efficiency in database development, administration, and debugging tasks. This robust toolset facilitated smoother workflows and accelerated development cycles.
- 9) Rich Feature Set:** By migrating to MS SQL Server, the organization gained access to a wealth of features, including built-in support for business intelligence, advanced analytics, machine learning, and seamless integration with Azure services. This expanded feature set empowered the organization to extract deeper insights from its data and drive informed decision-making.
- 10) Strong Support and Community:** Leveraging MS SQL Server's extensive user community, documentation, and support resources provided by Microsoft, the organization tapped into a rich knowledge base for troubleshooting, skill development, and knowledge sharing. This robust support ecosystem facilitated smoother operations and empowered IT professionals to overcome challenges effectively.

Ahana's successful Sybase to MS SQL Server migration epitomizes a paradigm shift in database management, unlocking efficiency, agility, and scalability for our BFSI client. With a future-ready infrastructure and heightened operational capabilities, our client stands poised to navigate the digital terrain with confidence and resilience. At Ahana, we remain steadfast in our commitment to delivering transformative solutions that empower businesses to thrive in an ever-evolving technological landscape.

About Ahana Systems and Solutions

Ahana Systems & Solutions is a leading IT Infrastructure Management Services and Digital Transformation company based in Bengaluru, India. Our expertise extends to a wide range of solutions, including Cloud, RPA, DB & EDW, BI & Analytics, and Application Development. Our 100+ roster of clients relies on us for our deep domain expertise, skilled resource base, and proven partnership with the best technology providers.