

## Technology Case Study 2: Data Infrastructure Transformation for Scalable Performance

### Overview

A rapidly expanding team faced critical infrastructure challenges as their user base grew by 100x in just two years. The original system, designed for far fewer users, struggled to keep up—resulting in slow page load times (often exceeding 40 seconds) and an inability to handle special data error cases.


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### The Challenge / Opportunity

- **Explosive Growth:** The infrastructure was overwhelmed by a 100x increase in active users.
  - **Performance Issues:** Users experienced page load times of 40+ seconds, severely impacting productivity.
  - **Reliability Concerns:** The system could not handle special data error cases, leading to an inconsistent user experiences.
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### Guidacent's Solution

Guidacent delivered a strategic, phased approach for both the immediate and long-term challenges:

1. **Quick Wins:** Implemented all feasible improvements to the existing data store and front-end reports.
  2. **System Redesign:** Built a new, robust infrastructure when incremental fixes were no longer sufficient.
  3. **Data Store Consolidation:** Reduced the number of distinct data stores from 19 to 6, streamlining management and improving consistency.
  4. **Performance Optimization:** Enhanced the data warehouse for speed—most complex queries now run in ~7 seconds.
  5. **Security Enhancement:** Introduced a new security layer and simplified user onboarding/offboarding.
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6. **Reporting Improvements:** Removed bottlenecks and improved caching for faster, more reliable reports.
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## Results

- **Delighted Customers:** The most complicated reports now load in less than 10 seconds—down from 40+ seconds.
  - **Scalable Infrastructure:** The new system supports continued growth and evolving business needs.
  - **Simplified Operations:** Streamlined data stores and improved onboarding/offboarding processes for users.
  - **Robust Security:** Enhanced protection for data and users.
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## Best Practices Highlighted

- **Phased Modernization:** Addressed immediate issues first, then invested in long-term solutions.
  - **Data Consolidation:** Reduced complexity and improved performance by consolidating data stores.
  - **User-Centric Design:** Focused on delivering tangible improvements to end-user experience.
  - **Continuous Optimization:** Established ongoing monitoring and feedback loops to sustain performance gains.
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## Conclusion

Guidacent's expertise in data infrastructure and performance engineering enabled this team to overcome rapid growth challenges, thereby delivering a scalable, secure, and high-performing system that delights users and supports future expansion.

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## Ready to transform your data infrastructure?

Contact Guidacent today to discover how we can help your organization achieve scalable performance and operational excellence.

