

February 2025





## Accelerating Semantic and Similar Search Functions for a Leading Legal Publisher

Learn how tecRacer Consulting and AWS helped create a more efficient system for finding relevant documents.

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**200 – 300 milliseconds**  
of average processing time

**50 million**  
million documents searched

**30%**  
expected savings

### Overview

[MANZ](#), an Austrian company that provides information services for legal and tax professionals, sought to revolutionize how its registered users searched its vast repository of legal documents. With over 300 million documents in its database, MANZ aimed to implement a cutting-edge solution using vector embeddings to enhance similarity searches and uncover deeper connections between documents. In collaboration with [AWS Partner tecRacer Consulting](#), MANZ developed and successfully deployed a powerful solution, which reduced deployment times and empowered MANZ to independently develop and refine its solution.



## Opportunity | Searching for a Better Strategy for Finding Similar Documents

As a high-profile provider of legal information in Austria, MANZ needed a robust system to efficiently and intelligently search through an enormous database of legal documents. MANZ had developed an architecture that leveraged powerful technologies such as OpenSearch but wanted to ensure that its approach would meet its goals for speed and efficiency. In developing a new system to more efficiently manage and search huge volume of documents, MANZ had several challenges.

A lack of experience in vector databases was the first challenge. While MANZ boasts a seasoned IT team, it had minimal prior experience building or managing a vector database entirely on its own, particularly one capable of handling 50 million documents. To get the additional guidance on establishing such a database system, MANZ wanted to validate that its initial architecture draft would meet long-term demands. For example, rightsizing clusters was particularly challenging. Finally, a lack of experience with other very specialized technology products presented further obstacles. This was the reason that MANZ engaged tecRacer to help develop and implement the document search capabilities needed to take its business to the next level.

## Solution | Implementing Vector Search Capabilities With a Seasoned AWS Partner

MANZ chose tecRacer Consulting, a 2023 AWS System Integrator Partner of the Year, to help the company overcome technical and operational challenges, particularly around implementing semantic search functionality on a large document base. tecRacer's team focused on enabling MANZ to build a more customized and optimized in-house system. This approach ensured that MANZ could continue to innovate independently and maintain control over its infrastructure. The solution was designed to handle over 300 million documents efficiently, with the help of AWS products such as [Amazon OpenSearch Service](#) and [Amazon Neptune](#). MANZ wanted to avoid significant performance issues that can result in prolonged query times, so tecRacer worked closely with them to optimize their infrastructure by:

- **Correctly sizing the OpenSearch cluster:** Ensuring that the cluster was appropriately sized to handle large-scale document searches efficiently.
- **Optimizing index and shard functions:** tecRacer assisted in refining how indexes and shards were configured, a critical factor in improving search speed.
- **Fine-tuning queries:** By improving the search query logic and structure, the performance was enhanced significantly.

To automate and streamline the deployment process, tecRacer delivered a production-ready setup using Terraform. This included automated deployment scripts for Amazon OpenSearch Service and Amazon Neptune Database, along with crucial configurations for backup and security roles. The integration of infrastructure as code (IaC) allowed MANZ to scale its infrastructure easily while maintaining consistent security and operational practices. Recognizing that MANZ lacked prior experience with AWS products such as OpenSearch and Amazon Neptune Database, tecRacer provided customized hands-on workshops covering deployment, usage, and best practices, enabling MANZ's team to develop and manage its solution independently.

## Outcome | MANZ Accelerates Document Search and Improves Accuracy

By partnering with tecRacer and leveraging powerful cloud services from AWS, MANZ achieved substantial improvements in its document management and search capabilities. Through tecRacer's implementation of IaC and fast, reliable data storage, MANZ was able to achieve processing times of 200 – 300 milliseconds to search 50 million documents. This dramatic performance boost improved user experience and operational efficiency for MANZ's legal professionals.

The switch to Amazon OpenSearch Service and the use of vector search are expected to deliver significant cost savings compared to MANZ's previous search solutions—up to 30 percent in the medium term. tecRacer's implementation provided a more economical approach to managing large-scale document searches, improving both performance and resource utilization. Finally, the tailored training and resources provided by tecRacer equipped MANZ's internal teams with the skills needed to maintain and evolve their solution independently. MANZ is now capable of iterating on the system, integrating new features, and optimizing performance, all while maintaining alignment with their evolving business needs.

## About MANZ

MANZ'sche Verlags und Universitätsbuchhandlung, based in Vienna, is a leader for legal information in Austria. MANZ offers a comprehensive range of information services for the legal and tax professions—whether online, in print, or as a seminar. MANZ-Rot has stood for legal certainty and quality and innovation among legal practitioners since 1849. The company has been majority family-owned for five generations and is part of the MANZ Group, a media company of the 21st century.

## About AWS Partner tecRacer

tecRacer, based in Hanover with eight other locations in Duisburg, Hamburg, Frankfurt, Munich, Berlin, Geneva, Zurich and Lisbon, offers AWS (Amazon Web Services) consulting, training, managed services, and project management from a single source - seamlessly integrated across the entire cloud lifecycle - from strategy to implementation and operation. The strategy remains the clear focus on Amazon Web Services. tecRacer is an AWS Premier Tier Services, AWS Advanced Tier Training, AWS Managed Services and AWS Reselling Partner. With a strong focus on customer-centric solutions and long-term partnerships, tecRacer empowers organizations to achieve their goals on AWS.

## AWS Services Used

### Amazon OpenSearch Service

Amazon OpenSearch Service securely unlocks real-time search, monitoring, and analysis of business and operational data for use cases like application monitoring, log analytics, observability, and website search.

[Learn more »](#)

## Amazon Neptune Database

Neptune Database is a serverless graph database designed for superior scalability and availability. Neptune Database provides built-in security, continuous backups, and integrations with other AWS services.

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