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# Etanova Enterprise Solutions

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<http://www.etanova.com/technologies/databases>

# Contents

<b>Relational Databases</b> .....	6
Microsoft SQL Server .....	6
Oracle SQL Server .....	6
MySQL .....	6
PostgreSQL .....	6
<b>No SQL Databases</b> .....	6
SOLR Search Engine .....	7
MongoDB Document Store .....	7
Neo4j Graph DBMS .....	7
Redis Key-Value Store .....	7

## Relational Databases

Relational Databases have been around for decades and provide an ideal solution for projects and web applications that require structured data. The foundation for these databases is relational algebra which specifies the relationships between various entities stored in the database. Advanced SQL search queries can be performed to join related data from various entities to find a particular subset of required information. Moreover, relational databases offer additional security, as sensitive data can be moved to separate entities with their own authorization controls.

### Microsoft SQL Server

Integrate Microsoft SQL Server seamlessly into .NET projects through Visual Studio. SQL Server offers high performance solutions for small to enterprise solutions. Use SQL Server Management Studio (SSMS) as an integrated environment for configuring and managing all databases.

### Oracle SQL Server

Create databases in Oracle SQL Server for cross platform compatible, medium to enterprise level solutions that operate in both Windows and Linux. Oracle server offers many advanced features such as partitioning, bitmap indexes, reverse key indexes, function-based indexes and star query optimization.

### MySQL

Use MySQL as an industry standard open source database for small to medium sized applications. The MySQL database has many robust features able to handle data persistence and querying requirements for most applications. It is used as the default database by many frameworks and content management systems.

### PostgreSQL

Use PostgreSQL as the most advanced, SQL-compliant, open source relational database. PostgreSQL has grown rapidly in the last several years and continued development is making it into a truly powerful and robust open source alternative.

## No SQL Databases

Use a NoSQL Database to obtain an architectural advantage in specialized applications. NoSQL Databases offer many benefits including efficient scaling, fewer hardware requirements, flexible data models and fewer human resources required to manage the systems. Moreover, NoSQL databases are mostly all open source and can be downloaded and customized at little to no cost.

## SOLR Search Engine

Use the SOLR database to index large amounts of content for advanced search functionality. SOLR search capabilities are built upon the Lucene database and include phrases, wildcards, joins, grouping etc. The database is highly optimized for high volume traffic and is highly scalable. SOLR indexes many types of data (JSON, CSV, XML, etc.) and includes rich document parsing (PDF, Word, Excel, etc.) SOLR is also a great option for using facets to achieve enterprise level filtering of data.

## MongoDB Document Store

Use MongoDB to store documents by pairing keys with complex data. The data stored in these documents need not be structured, as each document is an independent unit that is stored and queried optimally by the database engine. MongoDB stands out from other document databases because of its many features including support for rich queries, full indexes and a minimal need for an ORM layer.

## Neo4j Graph DBMS

Use Neo4j to store complex information about data that can be represented as a network data model. As the world's most prominent graph database, Neo4j takes an intuitive and natural approach to structuring data. For projects requiring complex relationships Neo4j offers extremely optimized querying algorithms, as opposed to traditional RDBMS join queries.

## Redis Key-Value Store

Use the Redis database for highly optimized key-value storage of data. It can store varying data structures such as hashes, arrays, bitmaps, etc. which become serialized upon storage and unserialized upon retrieval. Redis is also an ideal solution for caching data to memory, such as web application views or temporary dynamic data that is updated at an interval.