Choosing a search data store in Azure

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In this article

This article compares technology choices for search data stores in Azure. A seach data store is used to create and store specialized indexes for performing searches on free-form text. The text that is indexed may reside in a separate data store, such as blob storage. An application submits a query to the search data store, and the result is a list of matching documents. For more information about this scenario, see [Processing free-form text for search](#).

What are your options when choosing a search data store?

In Azure, all of the following data stores will meet the core requirements for search against free-form text data by providing a search index:

- [Azure Search](#)
- [Elasticsearch](#)
- [HDInsight with Solr](#)
- [Azure SQL Database with full text search](#)

Key selection criteria

For search scenarios, begin choosing the appropriate search data store for your needs by answering these questions:

- Do you want a managed service rather than managing your own servers?

- Can you specify your index schema at design time? If not, choose an option that supports updateable schemas.

- Do you need an index only for full-text search, or do you also need rapid aggregation of numeric data and other analytics? If you need functionality beyond full-text search, consider options that support additional analytics.

- Do you need a search index for log analytics, with support for log collection, aggregation, and visualizations on indexed data? If so, consider Elasticsearch, which is part of a log analytics stack.

- Do you need to index data in common document formats such as PDF, Word, PowerPoint, and Excel? If yes, choose an option that provides document indexers.

- Does your database have specific security needs? If yes, consider the security features listed below.

Capability matrix

The following tables summarize the key differences in capabilities.

General capabilities

Capability	Azure Search	Elasticsearch	HDInsight with Solr	SQL Database
Is managed service	Yes	No	Yes	Yes
REST API	Yes	Yes	Yes	No
Programmability	.NET	Java	Java	T-SQL
Document indexers for common file types (PDF, DOCX, TXT, and so on)	Yes	No	Yes	No

Manageability capabilities

Capability	Azure Search	Elasticsearch	HDInsight with Solr	SQL Database
Updateable schema	No	Yes	Yes	Yes
Supports scale out	Yes	Yes	Yes	No

Analytic workload capabilities

Capability	Azure Search	Elasticsearch	HDInsight with Solr	SQL Database
Supports analytics beyond full text search	No	Yes	Yes	Yes
Part of a log analytics stack	No	Yes (ELK)	No	No
Supports semantic search	Yes (find similar documents only)	Yes	Yes	Yes

Security capabilities

Capability	Azure Search	Elasticsearch	HDInsight with Solr	SQL Database
Row-level security	Partial (requires application query to filter by group id)	Partial (requires application query to filter by group id)	Yes	Yes
Transparent data encryption	No	No	No	Yes
Restrict access to specific IP addresses	No	Yes	Yes	Yes
Restrict access to allow virtual network access only	No	Yes	Yes	Yes
Active Directory authentication (integrated authentication)	No	No	No	Yes

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