

Unified Index Comparison

The [Search and List from Unified Index](#) has support for multiple engines. While all of them offer the same general functionality and connect to various functionality such as the content search, [PluginList](#), [PluginCustomSearch](#) and various others, they will have different performance characteristics and some may offer additional features.

As a general rule, the engine can simply be switched and the index rebuilt without any additional change to the configuration.

Overview

The unified index engines are:

- [MariaDB / MySQL / Percona Server for MySQL Full Text Search](#) **(is the default for 12.x onwards)**
 - *introduced in Tiki12*
 - Additional memory required
 - Fast indexing (can be 10 times faster than now removed Zend_Search_Lucene), slower/unstable query speed
 - No configuration required
 - Not customizable
 - Stored in tables in the database with a prefix of `index_` and are stored in [MyISAM](#) even if the actual data is in [InnoDB](#)
- [Elasticsearch](#)
 - *introduced in Tiki12*
 - Independent Java server(s), horizontally scalable
 - Feature-rich
 - Fast indexing, fast/stable query speed, decent/good results
 - Typically, Elasticsearch is set up as a cluster on different servers than Tiki (or using a third-party service), but it is also possible to install on the same server.
 - Customizable
- [Manticore Search](#), new in [Tiki25](#)
 - Feature-rich
 - Very fast
 - Written in C++ with [Manticore Buddy](#) in PHP
 - Customizable
 - Can be set up as a cluster
 - Requires small amounts of RAM. (compared to Elasticsearch)
 - It runs fine on a virtual machine with 1 GB of RAM
 - Great support for [PHP](#)
 - [Can be installed without root access](#) so shared hosting should be OK (They will need SSH though).
 - [This is the default setup for WikiSuite](#) once [Tiki26](#) is released, and it is an option of the [installer](#).

The system is designed for maintaining an autonomy vis à vis the engines. So more can be added later. No long-term data is stored in the indexes and it's fairly easy to switch from one to another. The next logical addition is [OpenSearch](#). Please contact Marc Laporte if you have specific needs.

Limitations

MySQL/MariaDB

- Words with fewer than 3 or 4 characters will not be indexed unless the server configuration is modified. Variables name: `ft_min_word_len` and `innodb_ft_min_token_size`

- Comes with an extensive list of English stop words, preventing many queries from working.
- Can use a single index at a time. Depending on the query, performance can vary significantly.
- Several limitations on the number of columns and indexes it can contain. Complex sites with many different query patterns may hit those limitations.
- No support for field boosting, such as providing more relevance for hits on the title.
- There is a limitation on the number of tracker fields. The limitation is quite high (2000+), but when you hit it, you need to move to another engine because MySQL/MariaDB has a [hard limit](#). It is not possible to know in advance the precise number of maximum fields because some tracker field types require more than one column.
 - It is possible to exclude some fields from the index to stay within the limit.
- [How to search currency amounts](#) likely produces bad results (to be tested)

Elasticsearch

- [No longer Open Source](#)
- Requires a dedicated environment to be installed and works better with multiple instances running in a cluster.
 - Requires Java and a lot of RAM/CPU

A machine with 64 GB of RAM is the ideal sweet spot, but 32 GB and 16 GB machines are also common.

Source:

https://www.elastic.co/guide/en/elasticsearch/guide/current/hardware.html#_memory

Manticore

There is a hard limit of 256 full text fields per index. Additional fields will be slower.

Extra features

- [Stored Search](#)
 - Only supported by Elasticsearch and Manticore
- [Faceted search](#) (dynamic filters applicable on search results)
 - Only supported by Elasticsearch and Manticore
- [Module More Like This](#)
 - Only supported by Elasticsearch (Manticore on roadmap)
- [Federated Search](#)
 - Only supported by Elasticsearch (Manticore on roadmap)

Selection guidelines

Tiki 25 and before

- Small sites, simple functionality: MariaDB/MySQL Full Text Search
- Medium or large sites, advanced functionality: Elasticsearch

Tiki 26 and up

- Small sites, simple functionality: MySQL Full Text Search
- If you are already using Elasticsearch and are happy with it: Elasticsearch
- Medium or large sites, advanced functionality: Manticore

Speed comparison

- https://db-benchmarks.com/?cache=fast_avg&engines=elasticsearch%2Cmanticoresearch_rowwise%2Cmysql&tests=hn_small&memory=110000&queries=0%2C1%2C2%2C3%2C4%2C5%2C6%2C7%2C8%2C9%2C10%2C11%2C12%2C13%2C14%2C15%2C16%2C17%2C18%2C19%2C

20%2C21%2C22%2C23%2C24%2C25%2C27

Differences of results between engines

[index:compare-engines](#)

Legacy

Zend_Search_Lucene (PHP Implementation) was introduced in [Tiki7](#) and later removed Last version: [Tiki21](#).

alias

- [Search Engine Comparison](#)