

# MEP 21 -- Support debug and run on Mac

Current state: Under Discussion

ISSUE: <https://github.com/milvus-io/milvus/issues/12777>

PRs:

Keywords: debug, run, Mac

Released:

## Summary(required)

Separating Knowhere from Milvus project make Milvus easy to run on Mac or other laptops, due to decoupling knowhere that is the engine module make code structure more clear.

## Motivation(required)

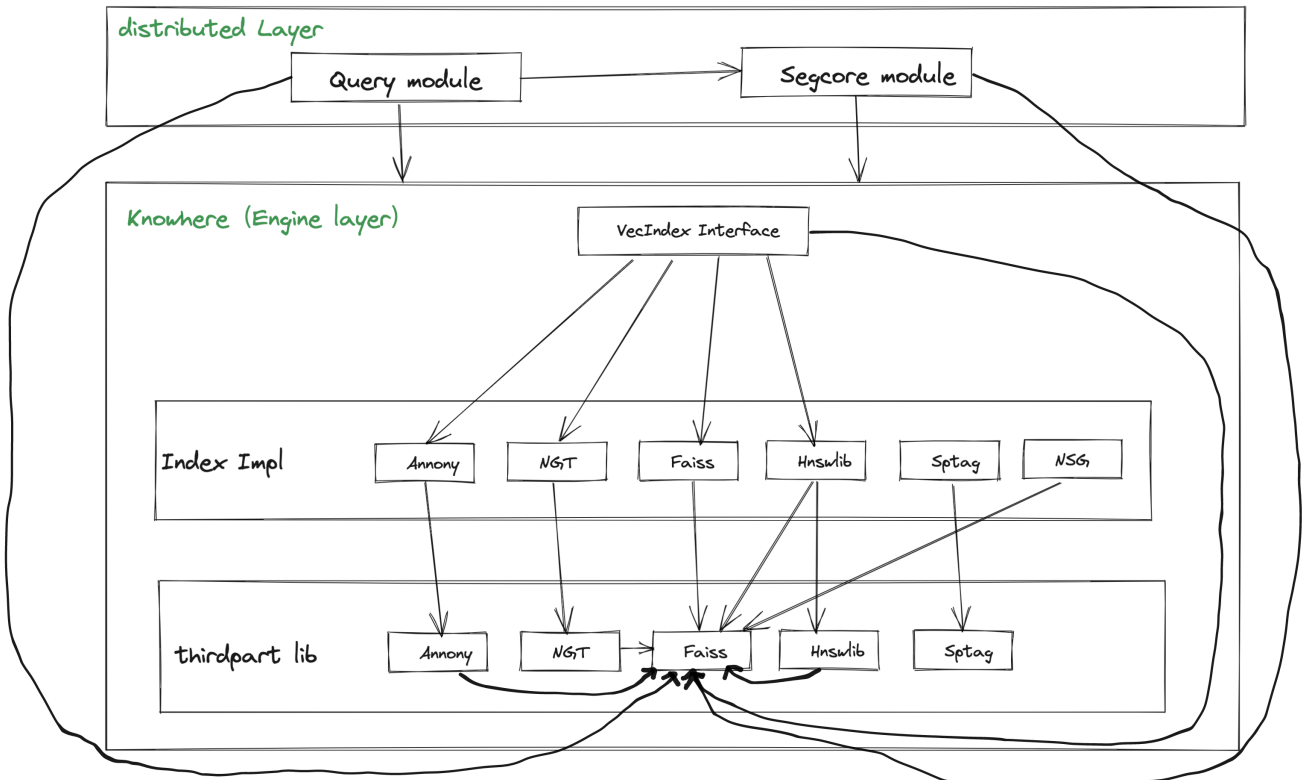
Compiling and running Milvus on Mac is a common requirement, which is helpful for work on the Mac laptop.

## Public Interfaces(optional)

TODO

## Design Details(required)

### 1. Current dependence



- Segcore depends on the query module, both of them depend on faiss lib.
- Except for NSG and SPTAG, other index implementations are based on VecIndex Interface.
- HNSWLib and NSG were implemented with faiss lib.
- The thirdpart libs include HNSWLib, NGT and Annonym that depending on faiss.

### 2. Decoupling

- The distributed layer doesn't directly depend on faiss and should access the unified interface of knowhere.
- Each index implementation should be independent, there is an important thing that we keep maintenance thirdpart libs following the new source version.
- Move Knowhere to a new project.
- We'd better decouple [libfiu](#) from the key code path, which should only use within the test code.

## 2. Support compile on MAC

- Distributed layer
  - Optimize compile phase make Query and segcore module depends on knowhere shared library.
  - Reconstruct [BinarySearchBruteForce](#) and [FloatSearchBruteForce](#) functions within the query module by knowhere supported brute force search index.
  - Support an alternative way to use [libfiu](#) which doesn't compile on Mac, or provide an option to use libfiu when compiling on Mac.
- Engine Layer(knowhere)
  - Support a brute force search which is a kind of vector index and compiled on MAC & Ubuntu.
  - Upgrade faiss to the latest version, because the current version can not be compiled on Mac.

Test Plan(required)

Rejected Alternatives(optional)

References(optional)