

# TKET and pytket-qiskit

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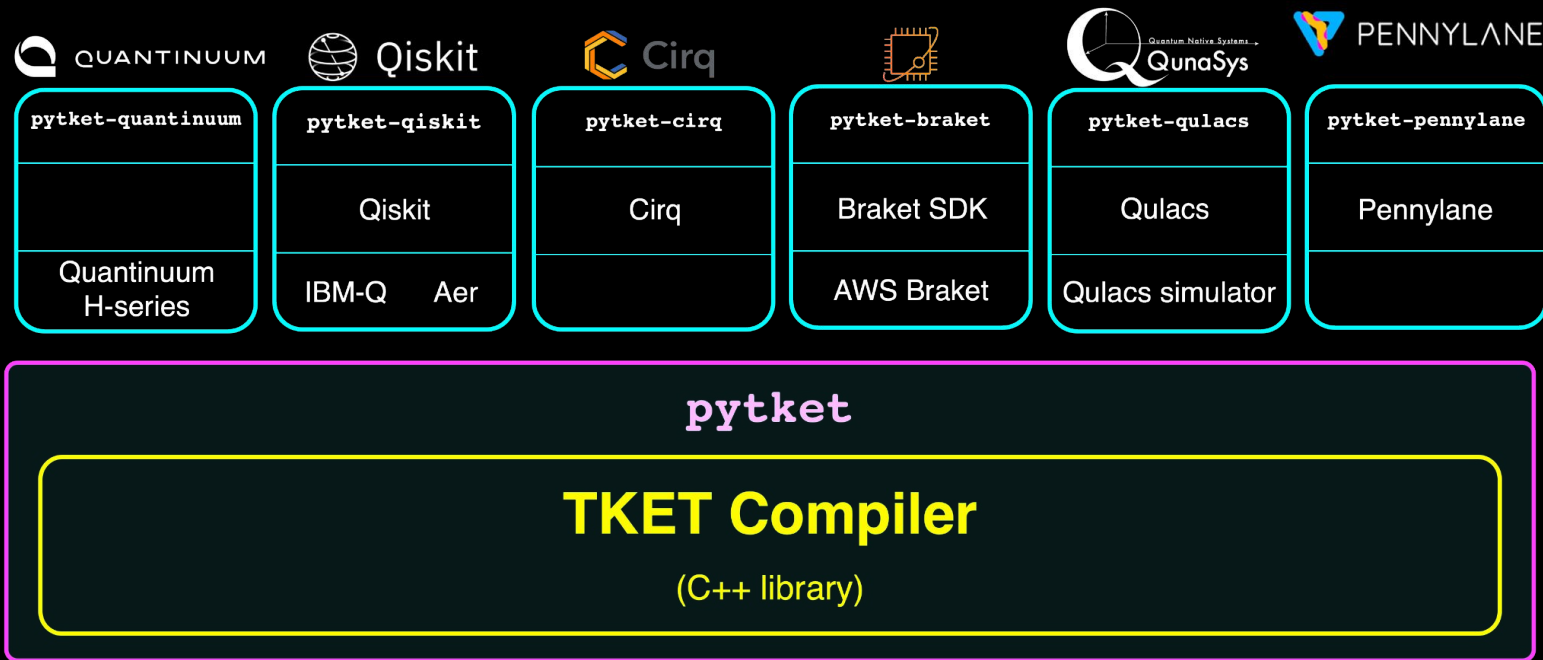
# What is TKET?

- ❖ A high performance quantum compiler
- ❖ **pytket** python frontend - build, compile and run circuits
- ❖ Open source! <https://github.com/CQCL/tket>
- ❖ “Hardware agnostic” - Target a range of devices and simulators

> **pip install pytket**

<https://tket.quantinuum.com>

# TKET Architecture



<https://tket.quantinuum.com/api-docs/extensions.html>

# Why use TKET/pytket?

- ❖ Powerful circuit optimisation and qubit routing
- ❖ Target many simulators and QPUs
- ❖ Useful special purpose optimisation passes
- ❖ Efficient circuit primitives
- ❖ Code portability to popular libraries

# What is pytket-qiskit?

**pytket-qiskit 0.52.0**

```
pip install pytket-qiskit
```



- ❖ Two way circuit conversion (pytket  $\longleftrightarrow$  qiskit)
- ❖ Support for IBM devices, emulators and qiskit Aer
- ❖ Apply TKET compilation passes to qiskit circuits directly

<https://github.com/CQCL/pytket-qiskit>

Using latest version recommended