Compiler Support

Let's look at the compiler support for the topics in this chapter.

As of today (July 2019) only two compilers/STL implementation support parallel algorithms: it's Visual Studio (since 2017 15.7) and GCC (since 9.1).

Visual Studio implements par_unseq as par, so you shouldn't expect any difference between code runs.

GCC implementation uses modified Intel PSTL and relies on OpenMP 4.0 and Intel TBB 2018. You need to install and link with -1tbb if you want to work with parallel algorithms.

For example:

For Building GCC 9.1 and Intel TBB you can check this guide @Solarian Programmer: C++17 STL Parallel Algorithms - with GCC 9.1 and Intel TBB on Linux and macOS.

Summary:

Feature	GCC	Clang	MSVC
Parallel Algorithms	9.1[^pargcc]	in progress	VS 2017 15.7[^parstlms vc]

[^pargcc]: See in the article: GCC 9.1 Released and GCC 9 Release Series — Changes, New Features, and Fixes) [^parstlmsvc]: See Announcing: MSVC Conforms to the C++ Standard | Visual C++ Team Blog

There are also several other implementations out there:

- Codeplay SYCL Parallel STL
- STE | | AR Group HPX
- Intel Parallel STL based on OpenMP 4.0 and Intel® TBB.
- Parallel STL early Microsoft implementation for the Technical Specification.
- n3554 proposal implementation (started by Nvidia)
- Thibaut Lutz Implementation @Github early implementation

In the next chapter, we will look at other changes in the library.