Clangd and its working

Clangd: It helps in understanding the c++ code and providing smart features in the editor to help you code better and making it easy. It helps with features like: code completion, compile eros, go-to definition and more features like that.

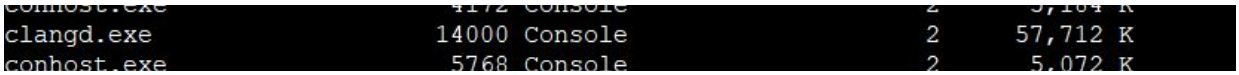
How does it work?

It requires 2 things to provide the above said feature and ease while development. Those things are:

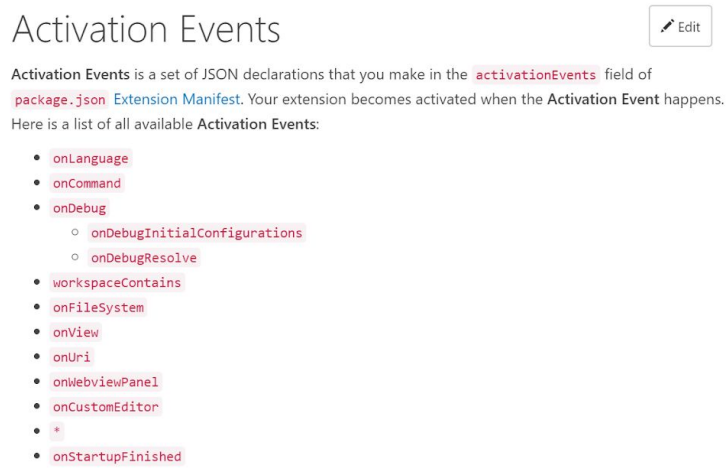
- Language server
- Language server protocol

The clangd server can be downloaded and once it is installed it is used with the editor extension to provide the smart features.

The language server protocol the extension requires the clangd language server and has its path defined and looks for it and runs it whenever the c++ or c code is opened. If the clangd language server isn't available at that path, the user can be provided a prompt to install it.

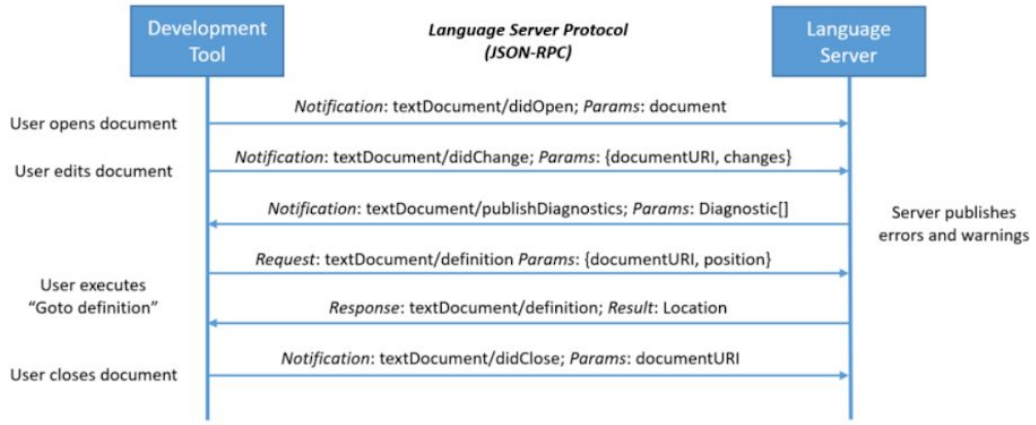


The type of file for which the clangd extension will start working is defined in the package.json file in activationEvents.



So, the activationEvents for any extension defines when it will start to work in the editor and for which kind of files and all such activation events.

The language server then is executed and it runs on a separate process communicating to the development tool over JSON-RPC.



Whenever we do any changes to the file the extension notifies the same to the language server using textDocument related apis provided by vs code. textDocument basically defines the document- the source file and has many properties and methods associated with it like when the document changed, when to provide go to definitions, the current line number in the code and things like that and then the language server response is used accordingly.