

IDA Pro is a disassembler

A disassembler is a piece of software used to translate machine code into a human readable format called assembly language.

The source code of the software we use on a daily basis isn't always available. A disassembler like IDA Pro is capable of creating maps of their execution to show the binary instructions that are actually executed by the processor in a symbolic representation called assembly language. This disassembly process allows software specialists to analyse programs that are suspected to be nefarious in nature, such as spyware or malware. However, assembly language is hard to read and make sense of. That is why advanced techniques have been implemented into IDA Pro to make that complex code more readable. In some cases, it is possible to revert the binary program back, to a quite close level, to the original source code that produced it. The map of the program's code can then be post-processed for further investigation.

Need to get to high level code?

[Get our decompiler](#) and win precious time. There is even a free, limited demonstration version for you to try...

IDA Pro is a debugger

A debugger is a computer program that assists in the detection and correction of errors in other computer programs.

In software analysis – as in real life – things are rarely simple and obvious. Hostile code usually does not cooperate with the analyst. Creators of viruses, worms and trojans often write their code in an obfuscated way, making it extremely hard to read and analyse. More powerful tools are thus required to efficiently help analysts. The debugger in IDA Pro complements the static analysis capabilities (examining the code without executing the program) of the disassembler by allowing users to single step through the code being investigated; this way, the debugger often bypasses the obfuscation and helps obtain data that the more powerful static disassembler will be able to process in depth.

IDA Pro runs on Windows, Linux and Mac OS X and can debug a large array of specific platforms (Windows 32/64-bit, Linux 32/64-bit, OS X x86/x64, iOS, Android, etc.). This can be carried out either locally or remotely. Remote debuggers are very useful to safely dissect potentially harmful programs. Some IDA debuggers can also run the application in a virtual environment making malware analysis even safer.

IDA Pro is interactive

Because no computer can currently beat the human brain when it comes to exploring the unknown, IDA Pro is fully interactive. IDA always allows the human analyst to override its

decisions or to provide hints. A built-in programming language and an open plugin architecture pushes interactivity even further.

A plugin architecture allows a program to call external code at certain points without knowing all the details of that code in advance, therefore adding functionalities to the calling program.

IDA Pro is programmable

IDA Pro is a complete integrated development environment. It consists of a very powerful macro-like language that can be used to automate simple to medium complexity tasks. For more advanced tasks, the open plugin architecture allows external developers to enhance IDA Pro's functionalities.