

In this thesis I design and implement a high-performance library for developing authoritative name server software. The library supports all basic as well as several advanced features of the DNS protocol, such as EDNS0, DNSSEC or zone transfers. It is designed to be modular, extensible and easy to use. The library was integrated into an experimental server implementation used for testing and benchmarking. Its performance is evaluated and proved to be superior to prevalent implementations in most cases. The thesis also provides theoretic background and a deep analysis of the task together with detailed description of the implemented solutions.