

The Development of a Network-based, Modular Communications Protocol

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September 12, 2006

The project would involve attempting to create a method of transferring data between a server and client using an XML-based protocol. This framework would be extended into the form of an application called NetComm. Using the developed framework, NetComm would be capable of sending data back and forth in the form of instant messages, email, news feeds, along with various other means of communication.

Current implementations of such an approach can be viewed in the form of AOL. Many people are dissatisfied with AOL, claiming it is slow, bloated, overly complicated, has too many things that users don't need, excess functionality, and is generally aggravating to deal with. NetComm would aim to integrate the functionality of various modules in a wholly optional manner, so as to provide the user choice in what they access.

The server structure will be primarily written in C++ due to interests in speed. The clients can be written in virtually any network-capable language due to the standard XML-based framework, but initially, Java will be used with an interface coded in the swing library.

The system will be developed in solid, workable segments. For example, the first step would be the creation of a simple echo server. Once that has undergone some basic testing, it may be developed into a more complex server with a handshake sequence. Following that, we would attempt to implement an XML library to encode and decode data. After all of these basics are covered, the project would need to be reviewed from a security standpoint to ensure that data is secure. Following this model of small, concrete steps, it should be relatively simple to test and verify each step along the way before proceeding further.

Since this project boils down to a combination of various standards, including encryption, XML, and network communication protocols, the system would rely on various libraries that implement this functionality for us. External libraries may be called upon during the development of various client modules (such as news feeds), but for the most part the project should be able to be accomplished using what is readily available.

The end result is expected to be a secure, efficient, and user-friendly method of communicating across the Internet. While a clean user interface might end

up being low priority, it is in fact important to the project since the application aims to be something usable by anyone. Results would be presented by a demonstration of NetComm and documentation of the steps necessary to achieve the end result.