Abstract

Enterprise communications rely on the hardware and the network infrastructure through which clients connect to gain access to enterprise server resources and services. The communication protocols used in enterprise networks however, do not always take into account the optimization of data communications between the client and the server, and this may hamper the efficiency of the enterprise systems. The networking infrastructure that connects the clients to the server is a major source of communication inefficiency. This paper aims at proposing an intelligent protocol algorithm which dynamically senses the state of the network and determines the best mode for sending files from the server to the clients. The protocol algorithm uses multiple data compression algorithms to provide for data compression and decompression during communication. It initially learns by considering different communication scenarios whereby the protocol payload is compressed using different compression algorithms. After this learning curve, the protocol algorithm intelligently decides on and uses the best compression algorithm to optimize data transfer on the network, therefore increasing the efficiency of enterprise systems communications. Using TCP as Transport Layer protocol, the protocol algorithm can achieve up to an 80% gain in efficiency.
An Intelligent Protocol Algorithm to improve the Performance of Enterprise Systems Communications


to Success, in Framing the Domains of IT Research: Glimpsing the Future Through the Past, Pinnaflex Educational Resources Inc., Cincinnati, pp. 1-46.
- Henzel, J., Hutchinson, B. & Thwaits, A. 2006, Using web services to promote
- Nunn, R. 2003, “Distributed software architectures using middleware”, available at
- Wei, H. and Godfrey, T. 2008, “Database Middleware and Web Services for Data Distribution and Integration in Distributed Heterogeneous Database Systems”,

**Index Terms**

Computer Science  Communication Systems

**Keywords**

Enterprise systems  intelligent protocol algorithm  communication efficiency