

CITI Technical Report 95-6

Performance Modeling of the Distributed Computing Environment

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ABSTRACT

We develop an analytic performance model for client/server communications using Remote Procedure Call (RPC) with no security over the connectionless datagram protocol in the Open Software Foundation's Distributed Computing Environment (OSF/DCE). Our model combines features from NetMod, a network performance modeling tool, and the Method of Layers which is a software performance modeling tool. The purpose of this paper is to show that it is possible to develop analytic performance modeling techniques for distributed application systems by decomposing them into logically separate components based on the natural boundaries between protocol layers, modeling each component separately, and finally combining the models to characterize the system as a whole.

May 23, 1995

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