The Networked Resource Discovery Project

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Project Description

The Networked Resource Discovery Project at the University of Colorado, Boulder is exploring a number of experimental means by which users can discover the existence of resources in a large internet environment. Example resources include network services, documents, retail products, current events, and people. This problem is important because it is an enabling (and currently limiting) technology for the larger issue of supporting *distributed collaboration,* or the accomplishment of tasks through sharing resources among many interrelated individuals across administrative boundaries. Without the ability to discover resources of interest, users perceive only a very limited fraction of the full potential for sharing resources and collaborating with colleagues.

We impose three key goals on our approaches to resource discovery. First, we consider very large environments, spanning national or international networks. Such environments place stringent scalability requirements on the algorithms that can be used. Second, we want to avoid imposing artificial constraints on the resource space organization. Traditional directory services (such as the CCITT X.500 standard) rely on hierarchical organization to achieve good scalability. Unfortunately, the organization of a hierarchy becomes convoluted as an increasingly wide variety of resources is registered, and requires users to understand how the (increasingly deeply) nested components are arranged. Finally, we wish to minimize the need for global administrative agreement over protocols, information formats, and organizational structures. While standards are helpful, it is difficult to specify standards that are both globally adopted and technologically current. Moreover, standards based on a hierarchical organization require a high degree of agreement over the organization of at least the upper levels of the tree. As an increasingly diverse collection of institutions contribute to the global information infrastructure, smooth evolution will require the ability to support multiple organizational structures, and to interoperate with a heterogeneous set of protocols and information formats.

Report Availability

Copies of papers and technical reports descringing this project are Available for anonymous FTP from latour.colorado.edu [128.138.204.19] in the directory pub/RD.Papers.

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