Abstract

Resource discovery is a real challenge in grid systems due to the dynamicity of nodes (i.e., any node can join or leave the system at any moment). This paper proposes a new protocol for resource discovery in dynamic grid systems. The hypothesis is that a grid is composed from a set of Virtual Organization (VO). The idea is to define a Distributed Hash Tables (DHTs) for each VO. The discovery inside a VO is a traditional discovery based on DHTs. The resource discovery between Virtual Organizations, i.e., between DHTs, is achieved through a new protocol enabling a persistent communication between all the VOs. The main advantage of the proposed protocol is to enable a robust global discovery between unstable VOs of a grid (any node or even VO can leave the system at any moment). We evaluate the proposed protocol by experiments showing its feasibility and benefits.

References

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Index Terms

Computer Science  Networks

Keywords

Resource Discovery  Grid Systems  Peer-to-Peer Systems.