Page Migration in Dynamic Networks

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Abstract

One of the most crucial basic services used in every distributed program is
providing an application with a transparent access to variables, databases,
memory pages, or files, which are shared by the program instances running
at nodes of the network. This is achieved by storing the data at the local
memories of the network participants.

This thesis deals with design and analysis of dynamic re-allocation strate-
gies which migrate data between nodes upon request sequences issued by the
participants. The goal is to minimize the distance between frequently ac-
cessed data and the nodes which requested it, as such placement decreases
the communication cost within the network.

In contrast to previous works on data management in networks, this the-
sis considers strategies which react to the changes in the network topology,
caused by movement of nodes or changes of available bandwidth.