CLUSTERING ALGORITHMS
FOR AD HOC WIRELESS NETWORKS

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Abstract. An ad hoc network is a multihop wireless communication network supporting mobile users without any existing infrastructure. To become commercially successful, the technology must allow networks to support many users. A complication is that addressing and routing in ad hoc networks does not scale up as easily as in the Internet. By introducing hierarchical addresses to ad hoc networks, we can effectively address this complication. Clustering provides a method to build and maintain hierarchical addresses in ad hoc networks. Here, we survey several clustering algorithms, concentrating on those that are based on graph domination. In addition, we describe results that show that building clustered hierarchies is affordable and that clustering algorithms can also be used to build virtual backbones to enhance network quality of service.

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