Abstract

With the increase in the number of mobile devices and their network capabilities, users expect transparent access to available services in their pervasive environment. However, heterogeneity and interoperability issues persist in existing mechanisms. In this paper, we present a lightweight framework, PerSON (Service Overlay Network for Pervasive Environments), to abstract the details of service provision and utilization in a pervasive environment. PerSON constructs an ad hoc service overlay network in the pervasive environment based on service requests. PerSON achieves high efficiency by combining service discovery with route discovery. PerSON is especially suitable for resource constrained devices as minimal information about discovered services and the neighboring devices is maintained. In particular, the proposed framework provides the overlay network for the earlier developed middleware for pervasive computing. We also describe the implementation of a prototype for emergency response system (ERS).
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