

## The Bio-Networking Architecture: An Infrastructure of Autonomic Agents in Pervasive Networks

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This presentation shows our research effort to design, implement and deploy a scalable infrastructure for autonomic adaptive agents running on pervasive networks. We have designed a network application architecture, called the Bio-Networking Architecture, which models agents after several biological concepts and mechanisms, and implemented a middleware platform to host the architecture on the real network. The platform aids developing and executing large-scale, highly distributed and adaptive network applications, each of which is composed of the biologically-inspired software agents, by abstracting low-level networking/operating details and providing a rich set of runtime services. We overview several key features of the agents in our architecture and describe the design and implementation of the proposed platform, showing how the platform satisfies the functional requirements derived from the features of our agents. We also demonstrate our platform is efficient, small footprint and scalable with a series of measurement results.