This paper proposes a context-aware policy-based architecture that automates the management of overlay networks. The objective of this architecture is to form a policy layer above the overlay layer. The policy layer consists of a set of overlay policy enforcement points and an overlay policy decision point that cooperate to dynamically adapt the behavior of the overlay network to the preferences of the user, the network and the service providers. With this contribution to overlay networks, policies are generated dynamically at run time from the available context information and enforced on the fly. This paper describes our novel architecture, its advantages, and the simulation results that verify its effectiveness.