

Abstract

Policy-based Automated Provisioning has recently become a widely employed and promising solution for managing enterprise-wide networks and distributed systems that include wired and wireless networks.

This research aims to propose and implement a policy-based management framework for Wireless DiffServ Networks, and to demonstrate its application for QoS management. This research has addressed the following:

- A Policy-based Architecture for Wireless DiffServ Networks is proposed, with policy extensions to QoS.
- An Service Level Agreement (SLA) for both wired and wireless networks for effective service trading based on policies along with an efficient Directory Management and Provisioning to efficiently store and retrieve information about objects relevant to a particular application or set of applications.
- Efficient architectures for policy provisioning in routers with a simple space efficient data structure for representing a set in where both time efficiency and accuracy are critical. Policy extensions to transmit priority data enforced on routers, a simple text reduction scheme is also addressed supporting short message services.
- A Distributed Substring Authentication Protocol for authentication in wireless and distributed networks, and
- Policy based QoS Provisioning in real-time using class based approaches and implementation feasibility using network processors.