

Distributed Admission Control for Voice over IP

Th. Engel, R. Sauerwein, C. Prehofer, J. Charzinski
Siemens AG, Munich, Germany

Abstract

To ensure an appropriate voice quality, IP backbones have to be enhanced by an admission control (AC) function for voice over IP traffic flows. In integrated scenarios DiffServ will be used in addition as a scalable solution to prevent congestion of voice packets through data transmissions without changing current best effort delivery service for data applications.

Central AC does not scale for large backbones and is a single point of failure. Therefore we investigated distributed AC schemes. A central resource management function distributes available resources to AC functions located at the backbone border, configuring a local AC at each edge device. The offered traffic load, as given by a traffic matrix, is used for resource assignment.

We introduced network dimensioning methods to size the network and to set admission control parameters. Using a simulation model we analysed the impact of this AC architecture. Our results show that while this architecture is able to yield an appropriate QoS, still some over-provisioning is needed.