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(54) Title: POLICY-BASED SYNCHRONIZATION OF PER-CLASS RESOURCES BETWEEN ROUTERS IN A DATA NETWORK

(57) Abstract: A data network may include an upstream router having one or more data handling queues, a downstream router, and a policy server. In one embodiment, the policy server includes processing resources, a communication interface in communication with the processing resources, and data storage that stores a configuration manager executable by the processing resources. The configuration manager configures data handling queues of the upstream router to provide a selected bandwidth to one or more of a plurality of service classes of data flows. In addition, the configuration manager transmits to the downstream router one or more virtual pool capacities, each corresponding to a bandwidth at the upstream router for one or more associated service classes among the plurality of service classes. In one embodiment, the configuration manager configures the data handling queues on the upstream router only in response to acknowledgment that one or more virtual pool capacities transmitted to the downstream router were successfully installed.