

Policy Management Overview

Policy management enables network service providers to configure services that customize the treatment of individual packet flows received on a subscriber's interface. The main tool for implementing policy management is a policy list. A policy list is a set of rules, each of which specifies a policy action. A rule is a policy action optionally combined with a classification.

Packets are sorted at ingress or egress into packet flows based on attributes defined in classifier control lists (CLACLs). You can apply policy lists to packets arriving and leaving an interface. You can use policy management on ATM, Frame Relay, generic routing encapsulation (GRE), IP, IPv6, Layer 2 Tunneling Protocol (L2TP), Multiprotocol Label Switching (MPLS), and virtual local area network (VLAN) traffic.

Policy management provides:

- Policy routing—Predefines a classified packet flow to a destination port or IP address. The router does not perform a routing table lookup on the packet. This provides superior performance for real-time applications.
- Bandwidth management—Rate-limits a classified packet flow at ingress to enforce ingress data rates below the physical line rate of a port. A rate-limit profile with a policy rate-limit profile rule provides this capability. You can construct policies to provide rate limiting for individual packet flows or for the aggregate of multiple packet flows. E-series router rate limits are calculated based on the layer 2 packet size.

To configure rate limiting, you first create a rate-limit profile, which is a set of bandwidth attributes and associated actions. You next create a policy list with a rule that has rate limit as the action and associate a rate-limit profile with this rule.

You can configure rate-limit profiles to provide:

- A variety of services, including tiered bandwidth service where traffic conforming to configured bandwidth levels is treated differently than traffic that exceeds the configured values and hard-limit service where a fixed bandwidth limit is applied to a traffic flow
- A TCP-friendly rate-limiting service that works in conjunction with TCP's native flow-control functionality
- (Routers running JUNOS Software) Dynamic bandwidth sharing between lower priority traffic and unused preferred bandwidth through rate limit hierarchies
- Security—Provides a level of network security by using policy rules that selectively forward or filter packet flows. You can use a filter rule to stop a denial-of-service attack. You can use secure policies to mirror packets and send them to an analyzer.
- RADIUS policy support—Enables you to create and attach a policy to an interface through RADIUS.

- Packet tagging—Enables the traffic-class rule in policies to tag a packet flow so that the Quality of Service (QoS) application can provide traffic-class queuing. Policies can perform both in-band and out-of-band packet tagging.
- Packet forwarding—Allows forwarding of packets in a packet flow.
- Packet filtering—Drops packets in a packet flow.
- Packet mirroring—Uses secure policies to mirror packets and send them to an analyzer.
- Packet logging—Logs packets in a packet flow.

Use the SRC CLI and C-Web interface to configure policies. You configure policy components, or modules, which can be combined to implement a policy. By combining the various policy components, you can deploy a wide variety of services.

Related Topics

- Policy Components
- Policy Information Model
- Delivering QoS Services in a Cable Environment
- Before You Configure SRC Policies
- Enabling the Policy Configuration on the SRC CLI

Published: 2009-09-22