

Knowledge Base

Description of the Resource Reservation Protocol (RSVP)

PSS ID Number: 227261

Article Last Modified on 11/3/2003

The information in this article applies to:

- Microsoft Windows 2000 Server
 - Microsoft Windows 2000 Advanced Server
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This article was previously published under Q227261

SUMMARY

Resource Reservation Protocol (RSVP) is a signaling technique used to guarantee quality of service (QoS) by reserving bandwidth for RSVP-capable data flows. All nodes in the data path must be RSVP compliant for a guaranteed QoS. Reservations are receiver-initiated for unicast and multicast traffic.

MORE INFORMATION

RSVP is specified in RFC 2205. It is used to reserve bandwidth on each node for a particular flow along a given data path. The nodes along the path must support RSVP functionality. RSVP can be used with multicast and unicast traffic. RSVP is not a routing protocol, but it does use routing protocols and consults the local router tables for routes.

A typical reservation flow is initiated by sending a PATH message downstream to the receiver. Each node in the data path establishes a PATH state, to maintain the appropriate QoS. A PATH message states the flow ID, reservation information, and the source and destination address. Once the PATH message reaches its destination, the receiver passes the request to the local RSVP process, which passes the request to admission control and policy control. Admission control determines whether the node has the available resources to satisfy the request. Policy control determines whether or not the user has permission to request the reservation. If either of these is not successful, the RSVP process sends an error response to the sending program. If Admission control and Policy control succeed, parameters are set in the packet classifier and packet scheduler to implement the appropriate QoS.

A RESV message is then sent upstream from the receiver to each node in the reverse data path. The RESV message uses the same flow information used in the PATH message. Routers along the path commit to the reservation and then store the information in a flow table. This process is repeated until the sender gets the RESV message. The reservation is then set up. Once the sender and receiver are done with the reserved flow, a PathTear message is sent to tear down the flow. Resources are then released to be used in a later reservation.

Keywords: kbinfo kbnetwork KB227261

Technology: kbwin2000AdvServ kbwin2000AdvServSearch kbwin2000Search kbwin2000Serv kbwin2000ServSearch kbWinAdvServSearch

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