1.9 VoIP / QoS Support Function

SoftEther VPN incorporates advanced priority control technology (VoIP / QoS processing technology) whereby communication packets for IP telephone, such as VoIP packets in the VPN tunnel, can be transmitted at low delay and low jitter even if the networks are mixed together.

1.9.1 What is VoIP / QoS Support Function?

Communications that demand low delay / low jitter, such as VoIP packets require priority in processing over ordinary communications packets (such as downloading large files). A generic name for the technology for securing bandwidth and priority control is Quality of Service (QoS) technology. Many conventional network devices such as IP routers and layer 3 switches support QoS.

All Ethernet frames used to receive equal processing (cueing, transmission) in VPN tunnels configured by encapsulating packets by TCP/IP, such as SoftEther VPN.

New technologies incorporated into SoftEther VPN, can be realized the QoS processing for communication using layer 2 VPN configured by SoftEther VPN. Concerning the various packets flowing through the VPN tunnel, by automatically conducting priority control and securing bandwidth that is according to priority information, communication packets demanding low delay and jitter, such as VoIP, can be given priority for VPN transmission over other packets.

Sound quality can be dramatically enhanced when using IP telephone via VPN or while networks are mixed for traffic, such as file download, etc., by this technology.

1.9.2 Applying to Extension System by Connecting Bases by Layer 2 VPN Using IP Telephone Equipment

When this function is used, even if there is normally large amount of communication packets (file download, etc.) flowing through VPN, VoIP packets for telephone and so on, it can be provided with high priority for transmission within VPN, thereby dramatically enhancing sound quality when using IP telephone via VPN. This function which can be used regardless of hardware, such as the router in the physical network in which the communication packets, are flowing supports QoS.

Using layer 2 VPN such as SoftEther VPN enables you to connect multiple separate LANs and can create a single network. (for details, see 10.5 Build a LAN-to-LAN VPN (Using L2 Bridge) and 10.6 Build a LAN-to-LAN VPN (Using L3 IP Routing)). If the VoIP / QoS support function is furthermore used, because communication for IP telephone (VoIP packets) is always given higher priority than other traffic for bands, even

if the network is congested with traffic other than IP telephone, you can construct an IP telephone extension system that overlaps bases at low cost. In this case, even if there is no equipment supposed that to be used on VPN, such as IP telephone equipment or VoIP gateways. Also when the priority control header was properly set for packets that needs to be sent, priority control is automatically conducted on VPN without requiring an special operation by end users.

Thus a high quality IP telephone system can be built by using low-cost broadband connection, which ties into reduction of communication cost, hardware expense and administration cost.

If the priority control header is properly set for other IP packets to be sent and received by an existing teleconference system, the packets can be automatically provided with high priority for transmission with the VPN by the VoIP / QoS support function.

VoIP communication among bases using VPN

1.9.3 If VoIP / QoS Support Function can be Used

When using SoftEther VPN Server 2.0 that is not equipped with SoftEther VPN software or Option Pack, the VoIP / QoS function cannot be used.

With the exception of the case where the VoIP / QoS support function is disabled by security policy on the VPN Server side, or is disabled by connection setting on the VPN Client or VPN Bridge side (side that initiates VPN connection), the VoIP / QoS support function will be automatically enabled for VPN communication.

With VPN sessions, you can check whether the VoIP / QoS support function is functioning effectively by acquiring the connection status of the VPN session. For details, see 3.4 Virtual Hub Functions and 4.5 Connect to VPN Server.

1.9.4 Types of Packets Priority Controlled by VoIP / QoS Support Function

VoIP / QoS support function checks the value of the priority rank header in the IP packet, and if the value is to be priority controlled, it as marked as such and priority control is executed.

See Also

- 3.4 Virtual Hub Functions
- 4.5 Connect to VPN Server
- 10.5 Build a LAN-to-LAN VPN (Using L2 Bridge)
- 10.6 Build a LAN-to-LAN VPN (Using L3 IP Routing)