

NetGate Server

NetGate Server is device providing Favn network service full accessibility for LAN clients. In addition to this basic function of H323 router, there are implemented network gateway and firewall standard features, such as IP_Router, Firewall, NAT, or DHCP, in NetGate



NetGate Server

Hardware platform

- CPU Intel PXA255 / 200MHz
- 16MB FLASH memory
- 64MB SDRAM memory
- 2 x 10Mb Ethernet
- RS232 connector terminal output
- Power
100-240V AC, 50-60 Hz to 7,5V DC, 300mA
Power adapter

Network interface

- WAN: 10 BaseT Ethernet
- LAN: 10 BaseT Ethernet
- Plug-type: RJ45

Packaging:

- Desktop / rack / metal case
- Dimensions: 225/34/155 mm (W/H/D)
- Weight: 730 g

Characteristics

- Configurable TOS/DiffServ settings
- IEEE 802.1 p/Q CoS and VLAN Id
- DHCP

Management

- Realized via SSH protocol, terminal and GUI application written in JAVA
- Remote firmware upgrade

NAT (Network Address Translation) is, basically, inevitable device in the network, where only one public IP address may be used and simultaneous access of multiple units (e.g. computers) to the Internet is required. Pursuant to fast growing trend to make voice application superior over IP (VoIP) application, such as MS Net Meeting, the convergence of voice and data packets is becoming unthinkable problem. Furthermore, users are still needing several VoIP devices and we are very often facing frequency band overload caused by multiple FTP, WWW or other less important applications at one public IP address. As a result, the most sensitive network application is not assigned free frequency band, or VoIP applications on H.323 platform cannot be accessed even by private IP or LAN.

It means that general NAT, frequency band control and H.323 NAT is becoming the most serious problem in using of networks. The fact is that all of us are sharing the same available frequency band and we are processing the same data services and many VoIP applications through the use of network. Need for high-quality services and VoIP service convergence within the network is getting more and more urgent.

Netgate Server is a product, introduced by Voipac Company, to provide solution to the identified problem. The device can be used for sharing only one IP address by multiple machines and H.323 applications on the VoIP platform, while it can by means of an application control network traffic. To control frequency band, two priority queues are implemented to handle network traffic. This way, we can assign VoIP traffic to the first queue. The remaining traffic is using the second queue.

Device description

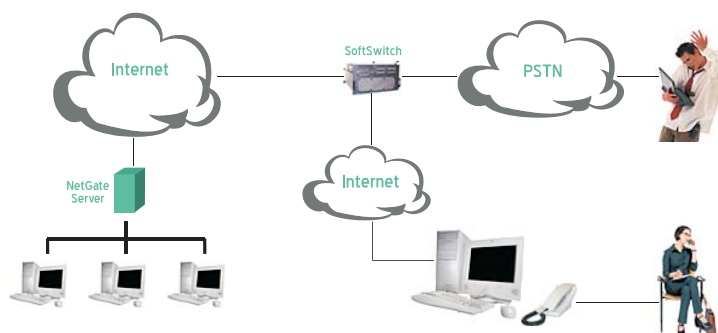
The device's design is based on Linux operating system, kernel version 2.4, supporting IPTables, and CBQueue prioritization. FLASH memory contains two partitions file system: static partition, containing required software and write-enabled partition, where configuration and some dynamic data can be stored. The system includes, in addition to default Unix service, also Voipac H323 router. Terminal is connected to the system by RS232 serial interface, or by the means of SecureShell protocol via both network interfaces. Moreover, for communication uses SecureShell protocol graphical management.

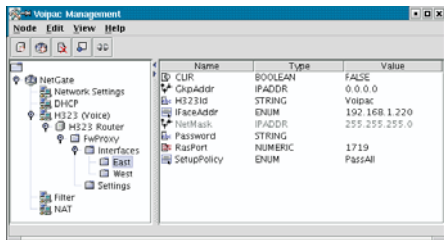
IP QoS (Quality of Service)

Packet prioritization in generally accessible networks (IP networks) is not solved. Problem how to deliver voice packets or other time-critical packets before other packets (time-uncritical ones) are delivered is not solved in such networks. The following are time-uncritical applications: file transfer (FTP), World Wide Web (HTTP), or e-mail (SMTP, POP3). The following parameters can affect sound quality in IP telephony:

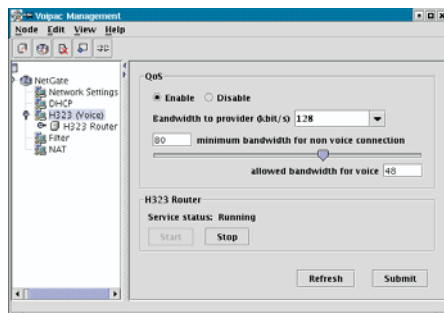
- Packet loss-rate
- Bandwidth non-availability
- Delay
- Jitter

NetGate Server solves QoS in up stream, where by means of management it is possible to adjust overall bandwidth for ISP and maximum bandwidth for calls. Voice packets are prioritizing up to the set bandwidth. In down stream we recommend to conclude SLA (Service Level Agreement) with the Internet access provider, while in SLS (Service Level Specification) would be specified agreement on packet prioritizing on the IPv4 TOS (Type Of Service) basis.

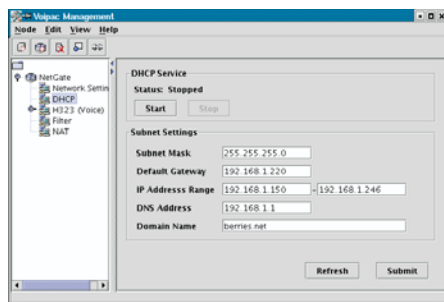




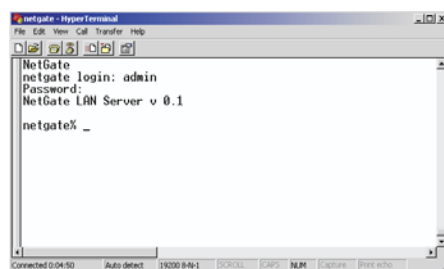
NetGate Server - H.323 router



NetGate Server - IP QoS



NetGate Server - DHCP



NetGate Server - SSH Terminal access

IP Router

Netgate provides IP packets routing between two networks. It allows static routing tables administration. As the example may serve using of NetGate Server in SOHO market, when it routes packets from private network into public network the Internet. In such case NAT (see below) should be enabled.

H323Router

H323Router is service allowing Favn network full accessibility for LAN clients. Proxy, which handles Favn H323 packets between private and public network, provides each Favn network client to be called even beyond a firewall. H323Router is independent from IP routing between public and private network.

Management

The service is managed by Voipac Management Console (VMC) application, which is built upon JavaTM platform. VMC communication with a device is realized via SecureShell encryption protocol. Thus, it is possible to manage the device easily from any platform and any location. Because a human can read the communication protocol, the device can also be managed via standard SecureShell console.

Requirements: SUN Java 2 Runtime Environment Version 1.4.0 and later.

System platform

Linux
Windows NT/2000/XP

Hardware platform

Intel xSCALE PXA255 platform (ARM)

NAT / DNAT

NAT (network address translation), FTP protocol translation support. When NAT is enabled, all packet source addresses leaving LAN across WAN interface will be remarked by WAN interface IP address.

DNAT (destination network address translation), port forwarding user-defined tables. Often is used to provide LAN-resident server service access for public network users.

Firewall

Firewall services packet filtration is provided by IPTables technology, included in Linux 2.4 kernel. Administrator can use GUI management, which offers simplified and well-arranged filtration rules setting.

DHCP server

NetGate Server could be used for automatic configuration of devices that are connected to subnet via DHCP protocol. By means of Management you may set address range and other parameters for a subnet connected to LAN interface.