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GUEST TEK INTERACTIVE ENTERTAINMENT LTD.
V.
NOMADIX, INC.

Case IPR2019-00211 (Patent 7,953,857)
Case IPR2019-00253 (Patent 8,626,922)

NOMADIX'S DEMONSTRATIVES

Judge Sally C. Medley
Judge Daniel J. Galligan
Judge Jason W. Melvin

February 25, 2020

Nomadix Ex. 2008
Guest Tek v. Nomadix
IPR2019-00211 and -00253

CLAIM CONSTRUCTION

“calculating a delay period”



requires calculating a length of time

'857 patent

US 7,953,857 B2

11

12

address, etc. As such the traffic shaping module can be modified to base priority on packet attributes, protocol type and/or destination port addresses.

Yet another example of the prioritization that can be performed by the traffic shaping module 34 in accordance with the present invention is the allocation of bandwidth based on a subscriber's quality of service. This type of allocation would typically guarantee a minimum level of bandwidth for the subscriber. For example, by monitoring the throughput of the gateway device 12, the traffic shaping module 34 can prioritize the packets of a subscriber who is paying for a specified percentage so that the packets of that subscriber utilize the available bandwidth. These and other prioritization techniques for traffic shaping are often used, such as weighted fair queuing, deficit round robin, and the like.

With reference to FIG. 4A, in accordance with an embodiment of the present invention, a subscriber establishes an authorization account with a communication network through a gateway device 12. In accordance with the present invention, the authorization account typically includes a predetermined authorization code, such as a user ID. When the subscriber logs into the network through the gateway device 12, the subscriber is authorized based on the subscriber ID and the authorization code. Next, bandwidth management is performed on data packets sent to and from the gateway device to limit each subscriber's bandwidth, which they have dynamically selected through a traffic shaping function, as described with reference to FIG. 4B. Managing bandwidth includes determining a predetermined bandwidth value and adjusting the limit on the uplink bandwidth, the downlink bandwidth, and the total bandwidth.

For purposes of clarity, it is noted that the predetermined bandwidth value represents merely a maximum transfer rate obtained by the user. The subscriber will often find that the actual transfer rate is less than that of their selected rate due to network congestion. Yet at other times, when the network is underused, the user/subscriber may obtain a transfer rate close to or at their selected transfer rate.

In FIG. 4B, the operation of an embodiment of the bandwidth manager on the data packets being delivered upstream to the network is provided. In particular, at block 300, a new data packet is received for processing at a gateway device or similar network interface. At block 310, the data packet is processed by extracting the MAC address from the data packet and retrieving the authorization file associated therewith, preferably from a hash table embodied with a AAA service. Based upon (a) the predetermined bandwidth chosen by the subscriber as determined from the authorization file, (b) the size of the current data packet, and/or (c) the size and time of the previous packet sent by the subscriber and processed at the bandwidth manager, it is determined if the

packet needs to be queued for a period of time to ensure that the subscriber does not receive a bandwidth greater than that which the subscriber selected, as determined at decision block 320. If the packet should be delayed, then at block 330, the appropriate delay is calculated and the packet is placed in the appropriate timeslot of a ring buffer. When the pointer of the ring buffer addresses the timeslot in which the packet resides, then the packet is further processed by the traffic shaping module of the bandwidth manager. In particular, at block 340, it is determined if the packet needs to be queued for a period of time for transmission purposes. If the packet does not need to be queued,

Based upon (a) the predetermined bandwidth chosen by the subscriber as determined from the authorization file; (b) the size of the current data packet; and/or (c) the size and time of the previous packet sent by the subscriber and processed at the bandwidth manager, it is determined if the packet needs to be queued for a period of time to ensure that the subscriber does not receive a bandwidth greater than that which the subscriber selected, as determined at decision block 320. If the packet should be delayed, then *at block 330, the appropriate delay is calculated and the packet is placed in the appropriate timeslot of a ring buffer.*

Ex. 1001¹ at col. 11 l. 63 - col. 12 l. 6
¹All citations are to exhibits and papers from IPR2019-00211 unless otherwise indicated.

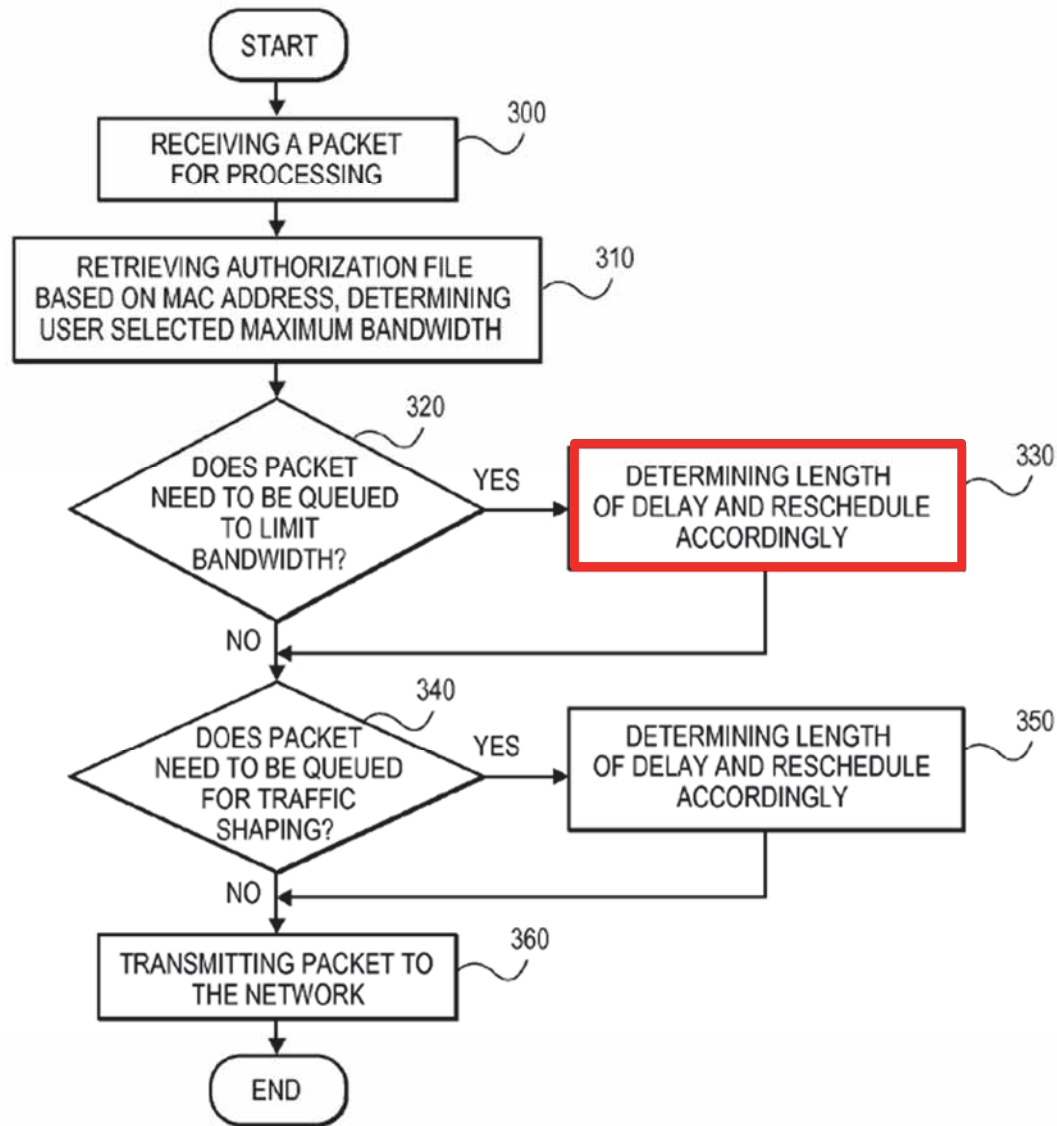


FIG. 4B

Ex. 1001 fig. 4B

Ex. 2004 ¶¶ 29-32
Response at 10-13

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