WHAT IS CLAIMED IS:

1. A traffic scheduling method, comprising:

acquiring a currently to-be-sent message through a traffic egress switch, and forwarding the message to a programmable switch connected to the traffic egress switch;

acquiring a communication parameter corresponding to the message through the programmable switch, and determining a target port identifier of the message according to the communication parameter, wherein the communication parameter comprises a current traffic value and a multivariate communication field of the message;

marking the message according to the target port identifier of the message, and returning the marked message to the traffic egress switch; and

determining a target output port corresponding to the message from a plurality of output ports of the traffic egress switch according to the target port identifier, and sending the message through the target output port,

wherein the acquiring of the communication parameter corresponding to the message through the programmable switch, and determining the target port identifier of the message according to the communication parameter comprises:

determining a time interval between the message and a previous message according to the multivariate communication field of the message; and

determining a port tag field of the message as a charging port type, a buyout port type, or an output port type corresponding to the previous message according to the current traffic value and the time interval between the message and the previous message.

2. The traffic scheduling method according to claim 1, wherein the determining the target port identifier of the message according to the communication parameter comprises:

determining an output port type corresponding to the message according to the current traffic value and the multivariate communication field of the message;

determining the target port identifier of the message from a plurality of port tag fields comprised in the output port type corresponding to the message according to the multivariate communication field of the message.

3. The traffic scheduling method according to claim 2, wherein the determining the output port type corresponding to the message according to the current traffic value and the multivariate communication field of the message comprises:

determining a flow corresponding to the message according to the multivariate communication field of the message, and acquiring a timestamp corresponding to the previous message of the flow;

acquiring a timestamp corresponding to the message, and determining the time interval between the message and the previous message according to the timestamp corresponding to the message and the timestamp corresponding to the previous message;

determining the output port type of the message according to the current traffic value and the time interval between the message and the previous message.

4. The traffic scheduling method according to claim 3, wherein the determining the flow corresponding to the message according to the multivariate communication field of the message comprises:

obtaining a hash identification code corresponding to the message according to the multivariate communication field of the message, and determining the flow corresponding to the message according to the hash identification code.

5. The traffic scheduling method according to claim 3, wherein the determining the output port type of the message according to the current traffic value and the time interval between the message and the previous message comprises:

determining whether the current traffic value is greater than a traffic limit threshold, and whether the time interval between the message and the previous message is greater than a time interval threshold;

in response to that the current traffic value is greater than the traffic limit threshold, and the time interval is greater than the time interval threshold, determining the port tag field of the message as the charging port type;

in response to that the current traffic value is less than or equal to the traffic limit threshold, and the time interval is greater than the time interval threshold, determining the port tag field of the message as the buyout port type;

in response to that the time interval is less than or equal to the time interval threshold, determining the port tag field of the message as the output port type corresponding to the previous message.

6. The traffic scheduling method according to claim 1, wherein after determining the target output port corresponding to the message from the plurality of output ports of the traffic egress switch according to the target port identifier, the method further comprises:

acquiring a current traffic value of the target output port, and determining whether the current traffic value of the target output port is less than or equal to an output port traffic threshold;

in response to that the current traffic value of the target output port is less than or equal to the output port traffic threshold, sending the message through the target output port;

in response to that the current traffic value of the target output port is greater than the output port traffic threshold, modifying the target port identifier of the message to a default port identifier, and sending the message through an output port corresponding to the default port identifier.

7. The traffic scheduling method according to claim 1, wherein a total bandwidth of a connection between the traffic egress switch and the programmable switch is greater than a total bandwidth of all output ports in the traffic egress switch.

8. A traffic scheduling apparatus, comprising:

a message acquisition module, configured to acquire a currently to-be-sent message through a traffic egress switch, and forward the message to a programmable switch connected to the traffic egress switch;

an identifier determining module, configured to acquire a communication parameter corresponding to the message through the programmable switch, and determine a target port identifier of the message according to the communication parameter, wherein the communication parameter comprises a current traffic value and a multivariate communication field of the message;

a message marking module, configured to mark the message according to the target port identifier of the message, and return the marked message to the traffic egress switch; and

a message sending module, configured to determine a target output port corresponding to the message from a plurality of output ports of the traffic egress switch according to the target port identifier, and send the message through the target output port,

wherein the identifier determining module is further configured to:

determine a time interval between the message and a previous message according to the multivariate communication field of the message; and

determine a port tag field of the message as a charging port type, a buyout port type, or an output port type corresponding to the previous message according to the current traffic value and the time interval between the message and the previous message.

9. An electronic device, comprising:

a processor; and

a memory for storing one or more programs, wherein when the one or more programs are executed by the processor, causing the processor to implement the traffic scheduling method according to any one of claims 1 to 7.

10. A computer-readable medium on which a computer program is stored, wherein when the program is executed by a processor, the traffic scheduling method according to any one of claims 1 to 7 is implemented.

ABSTRACT

The present disclosure relates to a traffic scheduling method and apparatus, and an electronic device and a computer-readable medium. The traffic scheduling method comprises: acquiring, by means of a traffic egress switch, a current packet to be sent, and forwarding the packet to a programmable switch, which is connected to the traffic egress switch; acquiring, by means of the programmable switch, a communication parameter corresponding to the packet, and determining a target port identifier of the packet according to the communication parameter; marking the packet according to the target port identifier of the packet, and returning the marked packet to the traffic egress switch; and determining, according to the target port identifier, a target output port corresponding to the packet from among a plurality of output ports of the traffic egress switch, and sending the packet by means of the target output port.
(Fig.1)