CLAIMS

1. A method for processing a packet, which is applied to a head node in a SRv6 network, comprising:

generating a first SRv6 OAM packet, wherein a source address in the first SRv6 OAM packet comprises a network segment, a host segment, and a slice segment that comprises a slice identifier;

sending the first SRv6 OAM packet to a destination node;

receiving a second SRv6 OAM packet sent by the destination node that comprises a destination address, which is obtained by clearing the slice segment in the source address in the first SRv6 OAM packet by the destination node when determining according to the network segment and the host segment that the source address in the first SRv6 OAM packet belongs to a specified slice network segment after receiving the first SRv6 OAM packet; and

if the destination address is the same as a host address of the head node, delivering the second SRv6 OAM packet up to a control plane.

2. The method of claim 1, wherein, a loopback address of the head node comprises a network segment, a host segment, and a slice segment with slice bits of 0, and the host segment comprised in the loopback address comprises a node identifier of the head node; and generating the first SRv6 OAM packet comprises:

obtaining a slice identifier of a slice to which the head node and the destination node belong, wherein the slice identifier belongs to the specified slice network segment; and

filling the slice identifier in the slice segment of the loopback address to obtain the source address to generate the first SRv6 OAM packet.

3. The method of claim 2, wherein, before generating the first SRv6 OAM packet, the method further comprises:

generating a routing advertisement packet that comprises the loopback address; and

sending the routing advertisement packet to a node other than the head node in the SRv6

network, so that the node receiving the routing advertisement packet generates a forwarding entry based on the loopback address.

4. A method for processing a packet, which is applied to a destination node in a SRv6 network, comprising:

receiving a first SRv6 OAM packet from a head node, wherein a source address in the first SRv6 OAM packet comprises a network segment, a host segment, and a slice segment that comprises a slice identifier;

matching the source address in the first SRv6 OAM packet with a specified slice network segment according to the network segment and the host segment;

if the source address in the first SRv6 OAM packet is determined to belong to the specified slice network segment according to the network segment and the host segment, clearing the slice segment in the source address, and using the source address whose slice segment has been cleared as a destination address of a second SRv6 OAM packet; and

sending the second SRv6 OAM packet to the head node.

5. The method of claim 4, wherein, clearing the slice segment in the source address comprises:

clearing the slice segment in the source address based on pre-configured slice bit length information.

6. The method of claim 4 or 5, wherein, before receiving the first SRv6 OAM packet from the head node, the method further comprises:

receiving a routing advertisement packet sent by the head node, wherein the routing advertisement packet comprises a loopback address of the head node, the loopback address comprises a network segment, a host segment, and a slice segment with slice bits of 0, and the host segment comprised in the loopback address comprises a node identifier of the head node; and

generating a forwarding entry based on the loopback address.

7. An apparatus for processing a packet, which is applied to a head node in a SRv6 network, comprising:

a generating module to generate a first SRv6 OAM packet, wherein a source address in the first SRv6 OAM packet comprises a network segment, a host segment, and a slice segment that comprises a slice identifier;

a sending module to send the first SRv6 OAM packet to a destination node;

a receiving module to receive a second SRv6 OAM packet sent by the destination node that comprises a destination address, which is obtained by clearing the slice segment in the source address in the first SRv6 OAM packet by the destination node when determining according to the network segment and the host segment that the source address in the first SRv6 OAM packet belongs to a specified slice network segment after receiving the first SRv6 OAM packet; and

a delivering-up module to deliver the second SRv6 OAM packet up to a control plane if the destination address is the same as a host address of the head node.

8. The apparatus of claim 7, wherein, a loopback address of the head node comprises a network segment, a host segment, and a slice segment with slice bits of 0, and the host segment comprised in the loopback address comprises a node identifier of the head node; the generating module is specifically to:

obtain a slice identifier of a slice to which the head node and the destination node belong, wherein the slice identifier belongs to the specified slice network segment; and

fill the slice identifier in the slice segment of the loopback address to obtain the source address to generate the first SRv6 OAM packet.

9. The apparatus of claim 8, wherein,

the generating module is further to generate a routing advertisement packet that comprises the loopback address; and

the sending module is further to send the routing advertisement packet to a node other than the head node in the SRv6 network, so that the node receiving the routing advertisement packet generates a forwarding entry based on the loopback address.

10. An apparatus for processing a packet, which is applied to a destination node in a SRv6 network, comprising:

a receiving module to receive a first SRv6 OAM packet from a head node, wherein a source address in the first SRv6 OAM packet comprises a network segment, a host segment, and a slice segment that comprises a slice identifier;

a matching module to match the source address in the first SRv6 OAM packet with a specified slice network segment according to the network segment and the host segment;

an encapsulation module to clear the slice segment in the source address and use the source address whose slice segment has been cleared as a destination address of a second SRv6 OAM packet if the source address in the first SRv6 OAM packet is determined to belong to the specified slice network segment according to the network segment and the host segment; and

a sending module to send the second SRv6 OAM packet to the head node.

11. The apparatus of claim 10, wherein,

the encapsulation module is specifically to clear the slice segment in the source address based on pre-configured slice bit length information.

12. The apparatus of claim 10 or 11, wherein, the apparatus further comprises a generating module;

the receiving module is further to receive a routing advertisement packet sent by the head node, wherein the routing advertisement packet comprises a loopback address of the head node, the loopback address comprises a network segment, a host segment, and a slice segment with slice bits of 0, and the host segment comprised in the loopback address comprises a node identifier of the head node; and

the generating module is to generate a forwarding entry based on the loopback address.

13. A network device, which comprises a processor, a communication interface, a memory, and a communication bus, wherein the processor, the communication interface, and the memory are communicated with each other through the communication bus;

the memory is to store computer programs; and

the processor is to implement any one of the methods of claims 1-3 or 4-6 when executing the programs stored on the memory.

14. A computer-readable storage medium which stores computer programs that, when executed by a processor, cause the processor to implement any one of the methods of claims 1-3 or 4-6.