CLAIMS

1. A service chain fault detection method, wherein the method comprises:

determining, by a service forwarding entity (SFE), to communicate with a first service function (SF) node on a service chain after obtaining a first fault tracing detection request packet, wherein the first fault tracing detection request packet comprises a path identifier (ID), and the path ID is used to identify a path of the service chain;

obtaining, by the SFE, an ID of the first SF node; and

sending, by the SFE, a first fault tracing detection response packet to the device for initiating fault detection, wherein the first fault tracing detection response packet comprises the path ID and the ID of the first SF node.

2. The method according to claim 1, wherein the determining, by an SFE, to communicate with a first SF node on the service chain comprises:

determining, by the SFE based on the path ID, to forward the first fault tracing detection request packet by using a first forwarding entry, wherein the first forwarding entry comprises the path ID and an address of the first SF node;

sending, by the SFE, the first fault tracing detection request packet to the first SF node based on the address of the first SF node; and

receiving, by the SFE, a second fault tracing detection request packet from the first SF node, wherein the second fault tracing detection request packet comprises the path ID.

3. The method according to claim 2, wherein the first fault tracing detection request packet further comprises a first parameter, the first parameter is used to identify the first SF node or is used to identify a previous-hop SF node of the first SF node on the service chain, and the first forwarding entry further comprises the first parameter; and

the determining, by the SFE based on the path ID, to forward the first fault tracing detection request packet by using a first forwarding entry comprises: determining, by the SFE based on the first parameter and the path ID, to forward the first fault tracing detection request packet by using the first forwarding entry.

4. The method according to claim 1, wherein before the sending, by the SFE, a first fault tracing detection response packet to the device for initiating fault detection,

the method further comprises:

sending, by the SFE, a second fault tracing detection response packet to the device for initiating fault detection, wherein the second fault tracing detection response packet comprises the path ID and an ID of the SFE.

5. The method according to claim 2, wherein the first fault tracing detection request packet further comprises a node list, and the node list comprises an ID of the previous-hop SF node of the first SF node on the service chain; and

before the sending, by the SFE, a first fault tracing detection response packet to the device for initiating fault detection, the method further comprises:

obtaining, by the SFE, an updated node list, wherein the updated node list is a list generated after the ID of the first SF node is added to the node list, and an order of all SF nodes comprised in the updated node list is the same as an order of all the SF nodes on the service chain; and

adding, by the SFE, the updated node list to the first fault tracing detection response packet.

6. The method according to claim 2, wherein the method further comprises:

adding, by the SFE, at least one of the first parameter or the ID of the SFE to the first fault tracing detection response packet.

7. The method according to claim 2, wherein the first fault tracing detection request packet further comprises an ID of an SF node used as an end point; and

after the sending, by the SFE, a first fault tracing detection response packet to the device for initiating fault detection, the method further comprises:

ending, by the SFE, detection on the service chain when the ID of the first SF node is the same as the ID of the SF node used as the end point.

8. The method according to claim 1, wherein the method further comprises:

receiving, by the SFE, the first fault tracing detection request packet sent by the device for initiating fault detection to obtain the first fault tracing detection request packet; or

receiving, by the SFE, the first fault tracing detection request packet sent by a previous-hop SFE of the SFE on the service chain to obtain the first fault tracing detection request packet; or

generating, by the SFE, the first fault tracing detection request packet to obtain the first fault tracing detection request packet.

9. A service forwarding apparatus, wherein the service forwarding apparatus comprising:

a memory storing instructions; and

a processor coupled to the memory to execute the instructions to:

determine to communicate with a first service function (SF) node on a service chain after obtaining a first fault tracing detection request packet, wherein the first fault tracing detection request packet comprises a path identifier (ID), and the path ID is used to identify a path of the service chain;

obtain an ID of the first SF node; and

send a first fault tracing detection response packet to the device for initiating fault detection, wherein the first fault tracing detection response packet comprises the path ID an the ID of the first SF node.

10. The service forwarding apparatus according to claim 9, wherein the processor is instructed to:

determine, based on the path ID, to forward the first fault tracing detection request packet by using a first forwarding entry, wherein the first forwarding entry comprises the path ID and an address of the first SF node;

send the first fault tracing detection request packet to the first SF node based on the address of the first SF node; and

receive a second fault tracing detection request packet from the first SF node, wherein the second fault tracing detection request packet comprises the path ID.

11. The service forwarding apparatus according to claim 10, wherein the first fault tracing detection request packet further comprises a first parameter, the first parameter is used to identify the first SF node or is used to identify a previous-hop SF node of the first SF node on the service chain, and the first forwarding entry further comprises the first parameter; and

wherein the processor is further instructed to determine, based on the first parameter and the path ID, to forward the first fault tracing detection request packet by using the first forwarding entry.

12. The service forwarding apparatus according to claim 9, wherein the processor is further instructed to send a second fault tracing detection response packet to the device for initiating fault detection, wherein the second fault tracing detection response packet comprises the path ID and an ID of the service forwarding apparatus.

13. The service forwarding apparatus according to claim 10, wherein the first

fault tracing detection request packet further comprises a node list, and the node list comprises an ID of the previous-hop SF node of the first SF node on the service chain;

wherein the processor is further instructed to:

obtain an updated node list, wherein the updated node list is a list generated after the ID of the first SF node is added to the node list, and an order of all SF nodes comprised in the updated node list is the same as an order of all the SF nodes on the service chain; and

add the updated node list to the first fault tracing detection response packet.

14. The service forwarding apparatus according to claim 10, wherein the processor is further instructed to:

add at least one of the first parameter or the ID of the SFE to the first fault tracing detection response packet.

15. The service forwarding apparatus according to claim 10, wherein the first fault tracing detection request packet further comprises an ID of an SF node used as an end point; and

wherein the processor is further instructed to:

end detection on the service chain when the ID of the first SF node is the same as the ID of the SF node used as the end point.

16. The service forwarding apparatus according to claim 9, wherein the method further comprises:

receive the first fault tracing detection request packet sent by the device for initiating fault detection to obtain the first fault tracing detection request packet; or

receive the first fault tracing detection request packet sent by a previous-hop SFE of the SFE on the service chain to obtain the first fault tracing detection request packet; or

generate the first fault tracing detection request packet to obtain the first fault tracing detection request packet.