AMENDMENTS TO THE CLAIMS

Listing of claims:

1. (Currently Amended) A service chain fault detection method implemented by a service forwarding entity (SFE), the service chain fault detection method comprising:

obtaining a first fault tracing detection request packet on a service chain, wherein the first fault tracing detection request packet comprises a path identifier (ID), and wherein the path ID identifies a path of the service chain;

determining to communicate with a first service function (SF) node on the service chain by sending the first fault tracing detection request packet to the first SF node;

obtaining an ID of the first SF node; and

sending a first fault tracing detection response packet to a 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. (Currently Amended) The service chain fault detection method of claim 1, ~~further comprising~~wherein determining to communicate with the first SF node comprises:

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

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

receiving 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. (Previously Presented) The service chain fault detection method of claim 2, wherein the first fault tracing detection request packet further comprises a first parameter, wherein the first parameter identifies the first SF node or identifies a previous-hop SF node of the first SF node on the service chain, wherein the first forwarding entry further comprises the first parameter, and wherein the service chain fault detection method further comprises further determining, based on the first parameter and the path ID, to forward the first fault tracing detection request packet.

4. (Previously Presented) The service chain fault detection method of claim 1, wherein before sending the first fault tracing detection response packet, the service chain fault detection method further comprises sending a second fault tracing detection response packet to the device for initiating fault detection, and wherein the second fault tracing detection response packet comprises the path ID and an ID of the SFE.

5. (Previously Presented) The service chain fault detection method of claim 2, wherein the first fault tracing detection request packet further comprises a node list, wherein the node list comprises an ID of a previous-hop SF node of the first SF node on the service chain, and wherein before sending the first fault tracing detection response packet to the device, the service chain fault detection method further comprises:

obtaining an updated node list, wherein the updated node list comprises the ID of the first SF node and the node list, and wherein 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 the updated node list to the first fault tracing detection response packet.

6. (Previously Presented) The service chain fault detection method of claim 3, further comprising adding at least one of the first parameter or the ID of the SFE to the first fault tracing detection response packet.

7. (Previously Presented) The service chain fault detection method of claim 2, wherein the first fault tracing detection request packet further comprises an ID of an SF node used as an end point, and wherein after sending the first fault tracing detection response packet to the device, the service chain fault detection method further comprises:

determining whether the ID of the first SF node is the same as the ID of the SF node used as the end point or not; and

ending detection on the service chain in response to determining that the ID of the first SF node is the same as the ID of the SF node.

8. (Previously Presented) The service chain fault detection method of claim 1, further comprising:

receiving the first fault tracing detection request packet from the device;

receiving the first fault tracing detection request packet from a previous-hop SFE of the SFE on the service chain; or

generating the first fault tracing detection request packet.

9. (Currently Amended) A service forwarding apparatus comprising:

a memory storing instructions; and

a processor coupled to the memory and configured to execute the instructions, which causes the processor to be configured to:

obtain a first fault tracing detection request packet on a service chain, wherein the first fault tracing detection request packet comprises a path identifier (ID), and wherein the path ID identifies a path of the service chain;

determine to communicate with a first service function (SF) node on the service chain by sending the first fault tracing detection request packet to the first SF node;

obtain an ID of the first SF node; and

send a first fault tracing detection response packet to a 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.

10. (Previously Presented) The service forwarding apparatus of claim 9, wherein the processor is further configured to:

determine, based on the path ID, to forward the first fault tracing detection request packet 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. (Previously Presented) The service forwarding apparatus of claim 10, wherein the first fault tracing detection request packet further comprises a first parameter, wherein the first parameter identifies the first SF node or identifies a previous-hop SF node of the first SF node on the service chain, wherein first forwarding entry further comprises the first parameter, and wherein the processor is further configured to further determine, based on the first parameter and the path ID, to forward the first fault tracing detection request packet.

12. (Previously Presented) The service forwarding apparatus of claim 9, wherein before sending the first fault tracing detection response packet, the processor is further configured to send a second fault tracing detection response packet to the device for initiating fault detection, and wherein the second fault tracing detection response packet comprises the path ID and an ID of the service forwarding apparatus.

13. (Previously Presented) The service forwarding apparatus of claim 10, wherein the first fault tracing detection request packet further comprises a node list, wherein the node list comprises an ID of a previous-hop SF node of the first SF node on the service chain, and wherein before sending the first fault tracing detection response packet to the device, the processor is further configured to:

obtain an updated node list, wherein the updated node list comprises the ID of the first SF node and the node list, and wherein 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. (Currently Amended) The service forwarding apparatus of claim 11, wherein the processor is further configured to add at least one of the first parameter or the ID of ~~the SFE~~the service forwarding apparatus to the first fault tracing detection response packet.

15. (Currently Amended) The service forwarding apparatus of claim 10, wherein the first fault tracing detection request packet further comprises an ID of an SF node used as an end point, ~~wherein~~and wherein after sending the first fault tracing detection response packet to the device, ~~and wherein~~ the processor is further configured to:

determine whether the ID of the first SF node is the same as the ID of the SF node used as the end point or not; and

end detection on the service chain in response to determining that the ID of the first SF node is the same as the ID of the SF node used as the end point.

16. (Currently Amended) The service forwarding apparatus of claim 9, wherein the processor is further configured to:

receive the first fault tracing detection request packet from the device;

receive the first fault tracing detection request packet from a previous-hop SFE of ~~the SFE~~the service forwarding apparatus on the service chain; or

generate the first fault tracing detection request packet.

17. (Currently Amended) A computer program product comprising computer-executable instructions ~~for storage~~stored on a non-transitory computer-readable medium ~~that, when,~~ wherein when the instructions are executed by a processor, the instructions cause ~~a service forwarding apparatus~~the processor to:

obtain a first fault tracing detection request packet on a service chain, wherein the first fault tracing detection request packet comprises a path identifier (ID), and wherein the path ID identifies a path of the service chain;

determine to communicate with a first service function (SF) node on the service chain by sending the first fault tracing detection request packet to the first SF node;

obtain an ID of the first SF node; and

send a first fault tracing detection response packet to a 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.

18. (Currently Amended) The computer program product of claim 17, wherein the instructions further cause the ~~service forwarding apparatus~~processor to:

determine, based on the path ID, to forward the first fault tracing detection request packet 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.

19. (Currently Amended) The computer program product of claim 18, wherein the first fault tracing detection request packet further comprises a first parameter, wherein the first parameter identifies the first SF node or identifies a previous-hop SF node of the first SF node on the service chain, wherein first forwarding entry further comprises the first parameter, and wherein the instructions further cause the ~~service forwarding apparatus~~processor to further determine, based on the first parameter and the path ID, to forward the first fault tracing detection request packet.

20. (Currently Amended) The computer program product of claim 17, wherein before sending the first fault tracing detection response packet, the instructions further cause the ~~service forwarding apparatus~~processor to send a second fault tracing detection response packet to the device for initiating fault detection, and wherein the second fault tracing detection response packet comprises the path ID and an ID of the service forwarding apparatus.